

20427 U.S. PTO
110905

UTILITY
PATENT APPLICATION
TRANSMITTAL

(Only for new nonprovisional applications under 37 CFR 1.53(b))

Attorney Docket No.	12,677
First Inventor	William A. Parkyn et al
Title	IRRADIANCE-REDISTRIBUTION LENS AND ITS APPLICATIONS TO LED DOWNLIGHTS
Express Mail Label No.	

APPLICATION ELEMENTS

See MPEP chapter 600 concerning utility patent application contents.

1. ☒ **Fee Transmittal Form** (e.g., PTO/SB/17)
(Submit an original and a duplicate for fee processing)
2. ☒ **Applicant claims small entity status.**
See 37 CFR 1.27.
3. ☒ **Specification** [Total Pages 29]
Both the claims and abstract must start on a new page
(For information on the preferred arrangement, see MPEP 608.01(a))
4. ☒ **Drawing(s)** (35 U.S.C. 113) [Total Sheets 11]
5. **Oath or Declaration** [Total Sheets 3]
 - a. ☒ Newly executed (original or copy)
 - b. ☐ A copy from a prior application (37 CFR 1.63(d))
(for continuation/divisional with Box 18 completed)
 - i. ☐ **DELETION OF INVENTOR(S)**
Signed statement attached deleting inventor(s)
name in the prior application, see 37 CFR 1.63(d)(2) and 1.33(b).
6. ☐ **Application Data Sheet.** See 37 CFR 1.76
7. ☐ **CD-ROM or CD-R** in duplicate, large table or
Computer Program (Appendix)
☐ Landscape Table on CD
8. **Nucleotide and/or Amino Acid Sequence Submission**
(if applicable, items a. - c. are required)
 - a. ☐ Computer Readable Form (CRF)
 - b. ☐ Specification Sequence Listing on:
 - i. ☐ CD-ROM or CD-R (2 copies); or
 - ii. ☐ Paper
 - c. ☐ Statements verifying identity of above copies

ADDRESS TO: Commissioner for Patents
P.O. Box 1450
Alexandria VA 22313-1450

ACCOMPANYING APPLICATION PARTS

9. ☒ **Assignment Papers** (cover sheet & document(s))
Name of Assignee Pelka & Associates, Inc.
10. ☐ **37 CFR 3.73(b) Statement** (when there is an assignee) ☒ **Power of Attorney**
11. ☐ **English Translation Document** (if applicable)
12. ☒ **Information Disclosure Statement** (PTO/SB/08 or PTO-1449)
☐ Copies of foreign patent documents, publications, & other information
13. ☐ **Preliminary Amendment**
14. ☒ **Return Receipt Postcard** (MPEP 503)
(Should be specifically itemized)
15. ☐ **Certified Copy of Priority Document(s)**
(if foreign priority is claimed)
16. ☐ **Nonpublication Request** under 35 U.S.C. 122(b)(2)(B)(i).
Applicant must attach form PTO/SB/35 or equivalent.
17. ☐ **Other:** _____

18. If a CONTINUING APPLICATION, check appropriate box, and supply the requisite information below and in the first sentence of the specification following the title, or in an Application Data Sheet under 37 CFR 1.76:

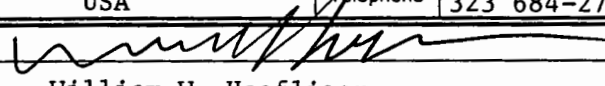
☐ Continuation ☐ Divisional ☐ Continuation-in-part (CIP) of prior application No.: _____

Prior application information: Examiner: _____ Art Unit: _____

19. CORRESPONDENCE ADDRESS

☒ The address associated with Customer Number: 2675 OR ☒ Correspondence address below

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Signature		Date	<u>11-9-05</u>
Name (Print/Type)	William W. Haeffliger	Registration No. (Attorney/Agent)	17,120

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IPR2025-00331

Samsung Electronics Co., Ltd. v. Sinotechnix, LLC.

Samsung's Exhibit 1003

EX1003, Page 1

110905

20427

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Effective on 12/08/2004.

Fees pursuant to the Consolidated Appropriations Act, 2005 (H.R. 4818).

FEE TRANSMITTAL

For FY 2005

☒ Applicant claims small entity status. See 37 CFR 1.27

TOTAL AMOUNT OF PAYMENT (\$) 1,090.00

PTO/SB/17 (12-04v2)

Approved for use through 07/31/2006. OMB 0651-0032

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

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Complete if Known

Application Number	
Filing Date	
First Named Inventor	William A. Parkyn et al
Examiner Name	
Art Unit	
Attorney Docket No.	12,677

METHOD OF PAYMENT (check all that apply)

☒ Check ☐ Credit Card ☐ Money Order ☐ None ☐ Other (please identify): _____
☒ Deposit Account Deposit Account Number: 08-0118 Deposit Account Name: William W. Haefliger
 For the above-identified deposit account, the Director is hereby authorized to: (check all that apply)
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FEE CALCULATION

1. BASIC FILING, SEARCH, AND EXAMINATION FEES

Application Type	FILING FEES		SEARCH FEES		EXAMINATION FEES		Fees Paid (\$)
	Fee (\$)	Small Entity Fee (\$)	Fee (\$)	Small Entity Fee (\$)	Fee (\$)	Small Entity Fee (\$)	
Utility	300	150	500	250	200	100	\$500.00
Design	200	100	100	50	130	65	
Plant	200	100	300	150	160	80	
Reissue	300	150	500	250	600	300	
Provisional	200	100	0	0	0	0	

2. EXCESS CLAIM FEES

Fee Description	Fee (\$)	Small Entity Fee (\$)
Each claim over 20 (including Reissues)	50	25
Each independent claim over 3 (including Reissues)	200	100
Multiple dependent claims	360	180

Total Claims 38 - 20 or HP = 18 x 25 = 450.00
 HP = highest number of total claims paid for, if greater than 20.
Indep. Claims 4 - 3 or HP = 1 x 100 = 100.00
 HP = highest number of independent claims paid for, if greater than 3.

3. APPLICATION SIZE FEE

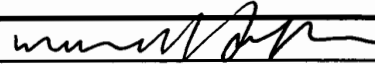
If the specification and drawings exceed 100 sheets of paper (excluding electronically filed sequence or computer listings under 37 CFR 1.52(e)), the application size fee due is \$250 (\$125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).

Total Sheets	Extra Sheets	Number of each additional 50 or fraction thereof	Fee (\$)	Fee Paid (\$)
<u>100</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>

4. OTHER FEE(S)

Description	Fees Paid (\$)
Non-English Specification, \$130 fee (no small entity discount)	
Other (e.g., late filing surcharge): <u>Assignment recording fee</u>	<u>40.00</u>

SUBMITTED BY

Signature		Registration No. (Attorney/Agent)	17,120	Telephone	323 684-2707
Name (Print/Type)	William W. Haefliger	Date	11-9-05		

This collection of information is required by 37 CFR 1.136. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 30 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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PATENT
IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Art Unit

Examiner:

Applicant:

William A. Parkyn et al

Serial No.:

Filed:

For:

IRRADIANCE-REDISTRIBUTION
LENS AND ITS APPLICATIONS
TO LED DOWNLIGHTS

Pasadena, California
November 9, 2005

DISCLOSURE STATEMENT

Mail Stop Patent Application
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

Examiner's attention is directed to the
following patents: none.

Respectfully submitted,


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WWH:ts

Docket 12,677

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November 9, 2005

CERTIFICATE OF EXPRESS MAILING

Mail Stop Patent Application
Commissioner for Patents
P. O. Box 1450
Alexandria, VA 22313-1450

Sir:

I, WILLIAM W. HAEFLIGER, hereby certify that the enclosed U.S. Patent Application, \$1,090 check, and self-addressed, stamped, return receipt postcard, were deposited with the U.S. Patent and Trademark Office 'Express Mail - Post Office to Addressee', mailing label number EV 367127987 US in an envelope addressed to: Mail Stop Patent Application, Commissioner for Patents, P. O. Box 1450, Alexandria, VA 22313-1450 on November 9, 2005.

Dated: November 9, 2005


William W. Haefliger
Attorney for Applicant
Reg. No. 17,120
(323) 684-2707

1 TO WHOM IT MAY CONCERN:
2
3 BE IT KNOW THAT WE, WILLIAM A. PARKYN, a
4 citizen of the United States of America, residing in
5 Lomita, in the County of Los Angeles, and DAVID G.
6 PELKA, a citizen of the United States of America,
7 residing in Los Angeles, both in the State of
8 California, have invented a new and useful improvement
9 in

10

11

12 **IRRADIANCE-REDISTRIBUTION LENS AND**
13 **ITS APPLICATIONS TO LED DOWNLIGHTS**

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1 **BACKGROUND OF THE INVENTION**

2
3 This application is based on provisional
4 application serial number 60/627,287 filed November 12,
5 2004.

6 Illumination lenses act to collect light from
7 a source and gather it into a useful beam to cast upon
8 a target. Frequently, uniform illumination is desired,
9 but most often not attained. Sometimes this is because
10 the target, such as a room's floor, has widely varying
11 distance and slant to the luminaire, so that uniform
12 intensity becomes nonuniform illumination. In most
13 cases, though, the luminaire itself has widely varying
14 distance from its light source to its different light-
15 redirecting sections. Thus both mirrors and lenses
16 typically have nonuniform illumination across their
17 exit apertures. The present invention addresses this
18 problem with a general method of making a lens achieve
19 uniform exit-aperture irradiance as well as uniform
20 target irradiance. This capability is particularly
21 important for the next generation of high-brightness
22 light-emitting diodes (LEDs). Their comparatively high
23 cost per lumen puts a premium on luminaire uniformity
24 and efficiency, for which the present invention
25 provides a significant boost.

1 A particular illumination field for such a
2 device is downlights, ubiquitously seen in ceilings as
3 comprising an incandescent spotlight bulb in a recessed
4 can. These 50-100W lamps must typically be replaced at
5 least once per year. An LED downlight would be of
6 great benefit, due to the much lower power consumption
7 and ten times longer life of LEDs. Also, the low
8 voltage of LEDs would enable LED downlights to be
9 installed without the extremely high price of licensed
10 electricians who must be used to install the otherwise
11 low-priced conventional downlight cans.

12 Conventional LED optics, however, provide
13 neither uniform output nor the high directionality
14 required for a downlight to produce, for example, a
15 small spot of light on a table. A standard target,
16 moreover, is not round but a three-foot square that is
17 nine feet distant from the lamp. Currently only
18 expensive and bulky projection lamps can produce a
19 square light beam, and quite inefficiently at that, by
20 using large lenses to form an image of a square
21 aperture placed in the output beam of a collimating
22 lens or mirror that uses an incandescent lamp.

23 The present invention remedies the current
24 lack of suitable optics for LED downlights, and in
25 particular provides an LED downlight with a square
26 spot.

1 **SUMMARY OF THE INVENTION**

2 The present invention relates generally to
3 illumination lenses, especially for LEDs, that produce
4 uniform output-irradiance from highly nonuniform
5 inputs. In particular, the present invention
6 discloses several LED downlights providing marked
7 improvements over the conventional cans. In general
8 form the present invention comprises a thick aspheric
9 lens lying close to a quasi-hemispheric light source,
10 typically an LED but possibly a combination of
11 incandescent lamp and reflector. The lower surface of
12 the lens acts primarily to redistribute the flux it
13 receives by refracting it in such a way that it has a
14 uniform distribution by the time it has intercepted
15 the front surface, which typically has the form of a
16 thick aspheric section. This top surface then
17 refracts the uniform distribution into a suitable
18 beam.

19 One preferred embodiment of this new lens
20 produces a very tightly collimated beam with uniform
21 irradiance. This is advantageous for LED downlights
22 because different diffuser-covers can go across this

1 beam to produce a variety of circular or elliptical
2 beam patterns, albeit with fuzzy boundaries.

3 Another preferred embodiment produces a
4 square diverging beam that uniformly illuminates a
5 square target, a valuable trait for LED downlights,
6 particularly because of the sharp boundary of the
7 square.

8 These and other objects and advantages of
9 the invention, as well as the details of an
10 illustrative embodiment, will be more fully understood
11 from the following specification and drawings, in
12 which:

13 DRAWING DESCRIPTION

14
15 FIG. 1 is an intensity graph showing the
16 distinction between Lambertian and sub-Lambertian
17 emitters;

18 FIG. 2 shows a receiving aperture and a
19 nearby compact light-emitter;

20 FIG. 3 shows the highly nonuniform
21 distribution of irradiance across the aperture, and
22 compares its cumulative distribution with that of
23 uniform irradiance;

1 FIG. 4 shows how finite source size causes a
2 lateral spread of received rays refracted through a
3 flat aperture;
4 FIG. 5 shows an irradiance-redistribution
5 lens;
6 FIG. 6 shows how this lens uniformly
7 illuminates a standard target;
8 FIG. 7 shows the square distribution possible
9 with this lens;
10 FIG. 8 shows the squared-off lens making a
11 square illuminance distribution;
12 FIG. 9 shows an array of such squared-off
13 lenses;
14 FIG. 10 shows a square downlight based on
15 such an array;
16 FIG. 11 shows a hexagonal array of lenses;
17 FIG. 11A shows the entire downlight;
18 FIG. 12 shows downlights with different
19 holographic diffusers, powered by low-voltage wiring;
20 FIG. 13 shows the mathematical generation of
21 a lens profile;
22 FIG. 14 shows a wide-angle irradiance-
23 redistribution lens;
24 FIG. 14A shows the beam of same;
25 FIG. 15A shows an extremely wide-angle
26 irradiance-redistribution lens;

1 FIG. 15B shows the beam of same;
2 FIG. 16 shows a collimating irradiance-
3 redistribution lens;and
4 FIG. 17 shows a luminaire utilizing
5 semicircular lens to form a semicircular output beam.
6 Corresponding reference characters indicate
7 corresponding components throughout the several views
8 of the drawings.

9
10 **DETAILED DESCRIPTION**

11
12 A Lambertian light source presents constant
13 luminance at all angles, so that off-axis
14 foreshortening of its flat output aperture gives a
15 cosine dependence of intensity. Actual LED chips can
16 differ from this ideal pattern. FIG. 1, as an example,
17 shows intensity graph 10 with horizontal angular scale
18 11 and vertical scale 12 showing relative intensity.
19 Curve 13 is the measured output of the Flash-LED made
20 by the Lumileds Corporation. For comparison, curve 14
21 graphs the cosine dependence of a perfectly Lambertian
22 emitter, showing that curve 13 may be called 'sub-
23 Lambertian', in spite of horizontal branch 13h. This
24 latter feature is due to lateral leakage out of the top
25 of the Flash package.

1 An important feature of an intensity
2 distribution is the cumulative flux distribution,
3 defined as the normalized angular integral of the
4 intensity $I(\theta)$:

$$5 \qquad J(\psi) = \int_0^\psi I(\theta) \sin\theta \, d\theta / \int_0^{90} I(\theta) \sin\theta \, d\theta$$

6 Curve 15 graphs this function, showing that 90% of the
7 flux lies within 63° of the axis, a solid angle equal
8 to half that of a hemisphere's 2π steradians. A
9 Lambertian emitter, however, has the cumulative
10 function $\sin^2(\theta)$, equal to 79% at 63° .

11 Both the ideal Lambertian emitter and the
12 Flash LED emit into a hemisphere of solid angle, with
13 far more than half their output going into half the
14 hemisphere. Such emitters can be called 'quasi-
15 hemispheric'. For their luminosity to be usefully
16 collected, quasi-hemispheric emitters require wide-
17 angle illumination optics. FIG. 2 is a perspective
18 view of such a situation, showing Flash LED 21
19 illuminating nearby flat aperture 22, which subtends a
20 63° half angle. Quasi-hemispheric emission 23 can be
21 seen to be vertically stronger, because it has the
22 intensity distribution of curve 13 of FIG. 1, so that
23 90% of its rays are intercepted by aperture 22.
24 Arrowed rays 24 represent the 10% of the emission

1 missing the lens because they fall in the lower half-
2 hemisphere of solid angle. Because the outer portions
3 of aperture 22 are much further away than the center,
4 with the less intense off-axis rays hitting it at a
5 slant, the illumination distribution across 22 is far
6 more nonuniform than emission 23 itself.

7 For aperture 22, FIG. 3 shows normalized
8 illuminance graph 30 with horizontal scale 31, in
9 radial millimeters from aperture center, and vertical
10 scale 32 in percent. Curve 33 graphs the highly
11 nonuniform relative illuminance on the aperture.
12 Broken-line curve 34 shows the relative encircled flux
13 for radius r along scale 31. Parabolic curve 35 is the
14 cumulative distribution for uniform illuminance.
15 Arrows 36 run horizontally from curve 34 to curve 35 to
16 show how the nonuniform illuminance of curve 33 must be
17 redistributed radially outward to produce uniform
18 illuminance. That is, the rays intercepting the
19 aperture at radius r must be shifted outwards to radius
20 R . Carrying out the redistribution function $R[r]$ is an
21 objective of the present invention, and this mapping of
22 cumulative distributions constitutes its method of
23 producing uniform illuminance from initial
24 nonuniformity.

25 FIG. 4 shows LED package 41 sending ray-
26 triplets 42 to points 43 on refracting flat surface 44

1 of a transparent dielectric. Note the relatively small
2 size (a few square millimeters) of the emitter to the
3 relatively large size (hundreds of mm²) of the
4 aperture. Such a small emitter is termed a 'compact'
5 light source, and is said to be 'nearby' from such a
6 wide-angle aperture. This source-compactness means
7 that above aperture 44 source 41 subtends small angle
8 45. This means that deflecting a ray triplet from r to
9 R will not greatly spread out the flux received at
10 point r. FIG. 4 shows the different ray-triplets 42
11 stopping at different heights, deliberately suggestive
12 of an upper surface to go with surface 44. In fact,
13 such a configuration, of redistributive lower surface
14 and beam-forming convex upper surface, encompasses all
15 preferred embodiments of the present invention. The
16 ratio shown in FIG. 4 of the width of emitter 41 to
17 that of receiving surface 44 is the cause of the narrow
18 spread 45 of the luminosity through any point 43. If
19 emitter 41 were made even larger, a size would
20 eventually be reached that where the R[r] function did
21 not deliver uniform illuminance. Said ratio in FIG. 4
22 is less than 1/5.

23 FIG. 5 shows a preferred embodiment in
24 profile 50 of a 35mm-diameter circularly symmetric
25 illumination-redistribution lens formed of
26 polycarbonate and comprising concave lower surface 50L,

1 upper exit-surface 50U, and optically inactive flange
2 50F. Flash LED 51 emits ray-fan 52, extending to 63°
3 off-axis and thereby representing 90% of the luminosity
4 of source 51. Rays 52 are received along concave lower
5 surface 52, each at a radius r . A diagram quite
6 similar to FIG. 3 would describe the encircled flux at
7 each radius r and give it the corresponding top-surface
8 radius R . Both r and R are shown in FIG. 5.

9 Furthermore in FIG. 5, the ray going from
10 radius r on lower surface 50L to radius R on upper
11 surface 50U is refractively deflected therefrom toward
12 radius RT on target surface 53, herein shown for
13 clarity in close proximity to lens profile 50, but
14 customarily more distant. Radius RT on target 53
15 follows a parabolic profile of encircled flux, a
16 property of uniform illuminance thereupon.

17 FIG. 6 shows the practical situation for
18 which the present invention is especially useful,
19 diagonal 63 of a 3-ft square at distance $h = 9'$ from
20 lens 60 forming beam 62 from LED source 61. Distance
21 RT is in correspondence with that of FIG. 5, as a part
22 of uniform illumination of target 63. This is a common
23 commercial lighting specification, but a square pattern
24 does not seem to be commercially available today except
25 via bulky and expensive imaging-spotlights, a market
26 deficit the present invention ably remedies.

1 FIG. 7 shows a square illumination pattern in
2 the form of flux pattern 70, a perspective view of a
3 flat-topped square distribution over x and y coordinate
4 scales in mm.

5 FIG. 8 shows the preferred embodiment
6 producing the pattern of FIG. 7. Illumination lens 80
7 comprises upper surface 80U, vertical planar side walls
8 80S, one of which is removed, and lower surface 80L.
9 Just below lens 80 is nearby compact light source 81.

10 FIG. 9 shows an array of such squared-off
11 lenses. Array 90 is positioned above sources 91, which
12 are mounted on circuit board 92.

13 Illustrating the use of such a lens array,
14 FIG. 10 shows downlight 100, comprising lens array 101,
15 case 102, and rectangular convective heat-sink fins
16 103, oversized for longer operating life of the LEDs
17 they cool (not shown).

18 FIG. 11 shows how the lens of FIG. 5 can be
19 hexagonally packed into a circular configuration.
20 Downlight 110 comprises an array of 17 lenses 111. It
21 is positioned over round circuit board 112 upon which
22 are mounted LEDs 113. Lower lens surfaces 111L are
23 visible, also showing hexagonal-cell boundary-line
24 111H. Although this configuration will produce a round
25 spot instead of a square, more of the luminosity of its
26 LEDs will end up in its beam.

1 FIG. 11A shows downlight 110 from another
2 angle, as well as case 114 and translucent cover 115.
3 Case 114 is cut away to reveal lenses 111, circuit
4 board 112, and LEDs 113. Several lower lens surfaces
5 111L are visible, as well as hexagonal-cell boundary-
6 lines 111H.

7 It is possible to utilize a holographic
8 diffuser on the translucent cover, to alter the beam
9 pattern for particular situations. In this case the
10 lenses would make a narrow beam and different
11 diffusers could be selected to get different wide
12 beams. FIG. 12 shows the illumination function of the
13 present invention. Alcove 120 comprises floor 121,
14 wall 122, and false-ceiling 123. Display table 124 is
15 illuminated by downlights 125, 126, & 127,
16 respectively casting small elliptical beam 125B, large
17 elliptical beam 126B, and tight circular beam 127B.
18 Each of these beams is produced by a different version
19 of the holographic diffuser on cover 115 of 11 of FIG.
20 11A. Low-voltage wiring system 127 is fed by low-
21 voltage power supply 128.

22 It can be seen that differing distances and
23 target sizes will call for lenses with somewhat

1 differing profiles than that of FIG. 5 & 6. Such
2 profiles are circularly symmetric and generated by a
3 differential equation relating the bottom-surface
4 coordinates to the slope angle of the bottom surface,
5 via the bottom-surface deflection angle required by
6 value-matching the cumulative distribution $C[r]$ of
7 bottom illuminance with the parabolic distribution of
8 uniform illuminance, $D[R] = (R/R_{MAX})^2$. That is, the
9 deflection function $R[r]$ comes from inverting the
10 redistribution equation $C\{r\} = D(R[r])$, as shown by
11 the horizontal arrows of FIG. 3.

12 Given this function $R[r]$, the lens profile
13 can be calculated by the method of FIG. 13, which is a
14 close-up view of the edge of irradiance-redistribution
15 lens 130, in the vicinity of flange 130F, showing lower
16 surface 130L and upper surface 130U. The mathematical
17 generation of lower surface 130L begins with its outer
18 edge, at defined point (r, z) . Flange 130F has defined
19 thickness t , so that the corresponding initial point of
20 upper surface 130U is $(R, z+t)$. Vectors are expressed
21 in terms of horizontal unit vector $\mathbf{i}$ and vertical unit
22 vector $\mathbf{k}$, so that the input ray vector of ray 131 is $\mathbf{A}$
23 $= \mathbf{i} \sin \alpha + \mathbf{k} \cos \alpha$, where α is the inclination of ray

1 131 from vertical vector $\mathbf{k}$. The lower-surface
 2 inclination angle is ρ_1 , so that the corresponding
 3 normal vector is $\mathbf{N}_1 = \mathbf{i} \cos \rho_1 + \mathbf{k} \sin \rho_1$. Similarly on
 4 upper surface 130U having inclination angle ρ_2 , the
 5 normal vector is $\mathbf{N}_2 = \mathbf{i} \cos \rho_2 + \mathbf{k} \sin \rho_2$.

6 From initial points (r_1, z_1) and (R_1, Z_1) , with
 7 $Z_1 = z_1 + t$, comes the interior angle $\gamma = \tan^{-1} t/(R-r)$,
 8 and thence the ray-vector $\mathbf{C} = \mathbf{i} \sin \gamma + \mathbf{k} \cos \gamma$. The
 9 exit-angle β is derived from the known target distance
 10 ZT and the known radius RT on the target, which is
 11 given by the requirements of uniform illumination
 12 thereupon:

13 $\beta = \tan^{-1} (ZT-Z_1)/(RT-R_1)$. Thence ray-vector $\mathbf{B}$ is given
 14 by $\mathbf{B} = \mathbf{i} \sin \beta + \mathbf{k} \cos \beta$. The normal vector $\mathbf{N}_1$ is
 15 that which refracts $\mathbf{A}$ into $\mathbf{C}$, and is given by

$$16 \quad \mathbf{N}_1 = (\mathbf{C} - \mathbf{A}) / \|\mathbf{C} - \mathbf{A}\|$$

17 where $\|\mathbf{x}\|$ is the scalar magnitude of vector $\mathbf{x}$.

18 Similarly on upper surface 130U, normal vector $\mathbf{N}_2$ is
 19 that which refracts $\mathbf{C}$ into $\mathbf{B}$:

$$20 \quad \mathbf{N}_2 = (\mathbf{B} - \mathbf{C}) / \|\mathbf{B} - \mathbf{C}\|$$

21 Given vector $\mathbf{N}_1$, the next point on lower
 22 surface 130L is (r_2, z_2) on ray 132, at small distance
 23 ds from the first point (r_1, z_1) . These next

1 coordinates are given by
2 $r_2 = r_1 - ds \cos \rho_1$ $z_2 = z_1 + ds \cos \rho_1$
3 From lower-surface coordinate r_2 comes upper-surface
4 coordinate $R_2 = R[r_2]$, from which can be calculated the
5 other upper-surface coordinate: $Z_2 = Z_1 + \tan \rho_2(R_2 -$
6 $R_1)$. By using small intervals ds , smooth surfaces 130L
7 and 130U can thus be mathematically iterated from the
8 periphery to the center, with different resultant
9 shapes dependent upon the size and distance of the
10 illumination target, such as target 63 of FIG. 6. The
11 narrower the target, the thicker the lens, but uniform
12 illumination is always the result.

13 FIG. 14 shows the profile of wide-angle
14 irradiance-redistribution lens 140, illuminated by LED
15 141 with rays 142. FIG. 14A also shows target 143
16 uniformly illuminated by rays 142.

17 FIG. 15A shows the profile of extremely wide-
18 angle irradiance-redistribution lens 150, illuminated
19 by LED source 151, with rays 152 that illuminate the
20 arched interior surface 150i, which advantageously can
21 extend to the same level as source 151, more fully
22 intercepting its light than previous, narrower-angle
23 lenses. External rays 153 are shaped to uniformly
24 illuminate a 160° wide planar target. Central rays

1 153c are diverging because the target center is so
2 close, while side rays 153s are nearly collimated for
3 illuminating the distance flanks of the target.

4 FIG.15B is a side view of planar target 155
5 being uniformly illuminated by wide-angle rays 153 from
6 lens 150, including central rays 153c and side rays
7 153s from FIG. 15A.

8 FIG. 16 shows the profile of collimating
9 irradiance-redistribution lens 160, illuminated by LED
10 161 with rays 162 that uniformly illuminate target 163.

11 FIG. 17 is a perspective view of semicircular
12 luminaire 170, comprising semilens 170, vertical planar
13 mirror 171, and LED light source 172 adjacent thereto.
14 This preferred embodiment produces a semicircular beam
15 suitable for gaming tables of that shape.

16 The preceding description of the presently
17 contemplated best mode of practicing the optical
18 transformer described herein is not to be taken in a
19 limiting sense, but is made merely for the purpose of
20 describing the general principles of the invention.
21 The scope of the invention should be determined with
22 reference to the claims.

23 It will be appreciated by those skilled in
24 the art, in view of these teachings, that alternative

1 embodiments may be implemented without deviating from
2 the spirit or scope of the invention. This invention
3 is to be limited only by the following claims, which
4 include all such embodiments and modifications when
5 viewed in conjunction with the above specification and
6 accompanying drawings.

7

1 WE CLAIM:

2

3 1. An irradiance-redistribution lens
4 comprising a transparent dielectric solid of revolution
5 with external surface area predominantly comprised of
6 an entry surface that receives light of nonuniform
7 irradiance from a nearby compact light source and of an
8 opposing exit surface that forms a pre-specified
9 diverging output beam; said entry surface given a
10 specific profile that refractively deflects said
11 received light into a different solid angle, said
12 entry-face deflection spatially distributed such that
13 said exit surface receives said deflected light with
14 predominantly uniform irradiance, said exit face given
15 a specific shape that refractively deflects said
16 uniform irradiance into said output beam; said light
17 source being sufficiently compact for said specific
18 shapes to be calculated by mathematical integration of
19 the slope distributions required by said refractive
20 deflections.

21

22 2. The lens of claim 1 wherein said
23 specific profile of said entry face is calculated in
24 concordance with the cumulative angular distribution of
25 said received nonuniform light; said concordance

1 established by the correspondence of said distribution
2 with equal values at wider radii of the shallower
3 square-root distribution of uniform irradiance; said
4 establishment embodied as the deflection function from
5 each point of said entry surface to the wider radius on
6 said exit surface having the same value of the
7 cumulative distribution of uniform irradiance as the
8 value at said entry-surface point of said cumulative
9 distribution of said nonuniform irradiance from said
10 light source.

11

12

13 3. The lens of claim 2 wherein said
14 specific shape of said exit face has the slope
15 distribution that deflects said uniform irradiance into
16 said pre-specified intensity distribution of said
17 output beam.

18

19

20 4. The lens of claim 1 wherein said output
21 beam has predominantly uniform intensity within a
22 predetermined angular limit.

23

24

25 5. The lens of claim 1 wherein said output
26 beam uniformly illuminates a target zone.

1 6. The lens of claim 5 wherein said target
2 zone is on a plane facing said lens.

3

4

5 7. The lens of claim 5 also comprised of
6 inactive lateral surfaces forming a rectangular limit
7 of said exit face, so that said target zone is a
8 similar rectangle.

9

10

11 8. The lens of claim 1 wherein said light
12 source is a light emitting diode.

13

14

15 9. The lens of claim 8 with multiple
16 embodiments laterally arrayed in proximity, above light
17 sources on a common circuit board, and having their
18 output beams illuminating the same target.

19

20

21 10. An illumination system for producing a
22 semicircular beam, comprising the lens of claim 1,
23 modified by cutting in half, a mirrored surface on said
24 cutting plane, and a compact light source adjacent
25 thereto for illuminating the entry surface of said
26 lens.

1 11. The system of claim 1 wherein said beam
2 is collimated and also comprising a secondary lens for
3 producing a specified diverging beam.

4

5

6 12. The system of claim 11 wherein said
7 secondary lens is a holographic diffuser.

8

9

10 13. The system of claim 11 wherein said
11 secondary lens is a lenslet array.

12

13

14 14. A lighting device, comprising in
15 combination:

16 a) an array of aspheric lenses extending in
17 side-by-side relation,

18 b) an array of quasi-hemispheric light
19 sources one for each lens,

20 c) each source positioned to direct light
21 at its corresponding lens, and the sources and lenses
22 configured to produce light emitted from the lens
23 array, the emitted light having substantially uniform
24 intensity across an area corresponding to the area of
25 the lens array.

26

1 15. The combination of claim 14 wherein said
2 emitted light is substantially collimated.

3

4

5 16. The combination of claim 14 wherein the
6 lenses have output sides which are generally dome
7 shaped.

8

9

10 17. The combination of claim 14 wherein the
11 lenses extend in edge to edge peripherally packed
12 relation.

13

14

15 18. The combination of claim 14 wherein the
16 lenses have peripheries which are polygonal.

17

18

19 19. The combination of claim 17 wherein the
20 lenses have peripheries which are square.

21

22

23 20. The combination of claim 14 including
24 relatively reduced size ball shaped lenses proximate
25 said sources which are LEDs, and directing LED emitted
26 light at the rear sides of said first mentioned lenses.

1 21. The combination of claim 14 wherein said
2 lenses are oriented to direct light downwardly in a
3 room, for room illumination.

4

5

6 22. The combination of claim 14 wherein
7 there are spaced apart groups of said lenses oriented
8 to direct light downwardly from the ceiling zone of a
9 room, for room illumination.

10

11

12 23. The combination of claim 22 including an
13 electrical DC conductor proximate said ceiling zone and
14 to which said sources which are LEDs associated with
15 said group of lenses are electrically connected.

16

17

18 24. The combination of claim 23 including an
19 AC to DC converter connected to said line to convert AC
20 current to low voltage DC current supplied to the LEDs
21 in said group.

22

23

24

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26

1 25. The combination of claim 14 wherein the
2 sources are oriented in one of the following
3 configurations:

- 4 i) at an axis defined by a lens,
5 ii) sidewardly spaced from an axis
6 defined by the lens.

7
8 26. The combination of claim 14 wherein said
9 sources are lambertian.

10

11

12 27. In combination,

13 a) an LED package comprising multiple LEDs,

14 b) and a transparent dielectric having a
15 refracting flat surface to which rays from the LEDs are
16 transmitted for refraction,

17 c) the rays refracted from the LEDs at
18 points along the flat surface extending in narrow
19 bands.

20

21

22 28. The combination of claim 27 wherein the
23 rays transmitted to each said point are triplet rays.

24

25

26

1 29. The combination of claim 27 wherein the
2 overall width spacing of the LEDs in the package is
3 small relative to the overall operative width of the
4 flat surface receiving rays transmitted from the LEDs.

5
6
7 30. The combination of claim 29 wherein the
8 ratio of said overall width spacing of the LEDs in the
9 package to the operative width of the flat surface
10 receiving the rays transmitted by the LEDs is less than
11 $1/5$, whereby substantially uniform illumination is
12 produced by said refracted rays.

13
14
15 31. A light redistribution system
16 comprising,
17 a) LED means,
18 b) a lens having a concave lower refracting
19 surface receiving rays from said LED means,
20 c) the lens having a dome-shaped refracting
21 upper surface, the curvature of which is one of the
22 following:
23 i) exceeds the curvature of the lower
24 surface,
25 ii) is less than the curvature of the
26 lower surface,

1 d) a target surface receiving rays
2 refracted by said upper surface,

3 e) said LED means and said upper and lower
4 surfaces configured to produce a profile of bounded
5 flux at said target surface that provides substantially
6 uniform illuminance.

7

8

9 32. The system of claim 31 wherein said
10 bounded flux defines a substantially square pattern.

11

12

13 33. The system of claim 32 wherein the lens
14 has four vertical planar side walls each intersecting
15 said upper and lower surfaces.

16

17

18 34. An array of adjacent lenses as defined
19 in claim 33.

20

21

22 35. The array of claim 34 including heat
23 sink fins associated with said lenses.

24

25

26

1 36. The array of claim 34 wherein the lenses
2 face downwardly to direct light downwardly.

3

4

5 37. The array of claim 34 wherein the lenses
6 are hexagonally packed, and a circuit board associated
7 with the lenses, the LED means associated with said
8 board.

9

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11 38. The system of claim 31 wherein said
12 profile is substantially parabolic.

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1 **ABSTRACT OF THE DISCLOSURE**

2

3 An illumination-redistribution lens

4 comprising a thick aspheric lens collecting a high

5 proportion of the luminous output of a compact LED with

6 a quasi-hemispheric pattern. After receiving the

7 highly nonuniform illuminance from the nearby LED, the

8 lower surface refractively deflects these rays into a

9 less diverging angular pattern that results in uniform

10 illuminance on the upper surface of the lens, which

11 itself is shaped so its distribution of slope angles

12 refractively deflects the uniform illuminance

13 distribution into an exiting beam that will produce

14 uniform illuminance on a distant target, such as a

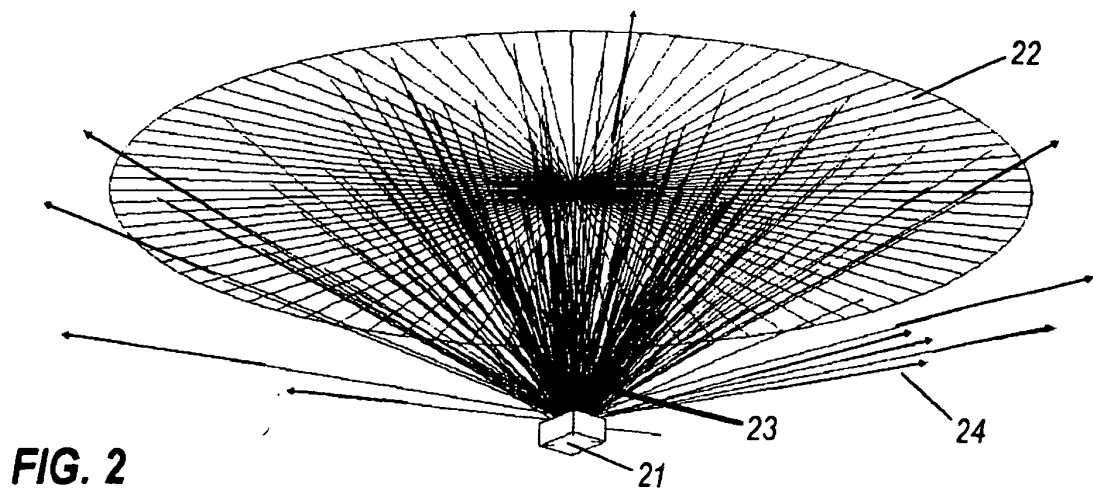
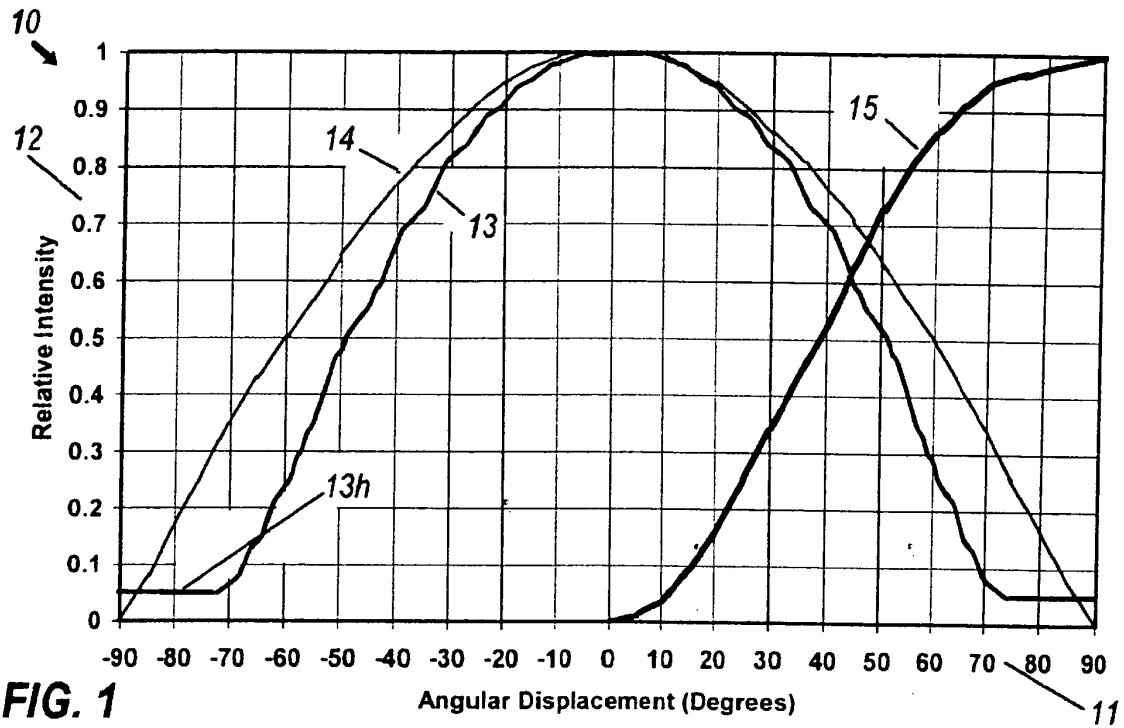
15 table below a ceiling-mounted unit. When square-cut

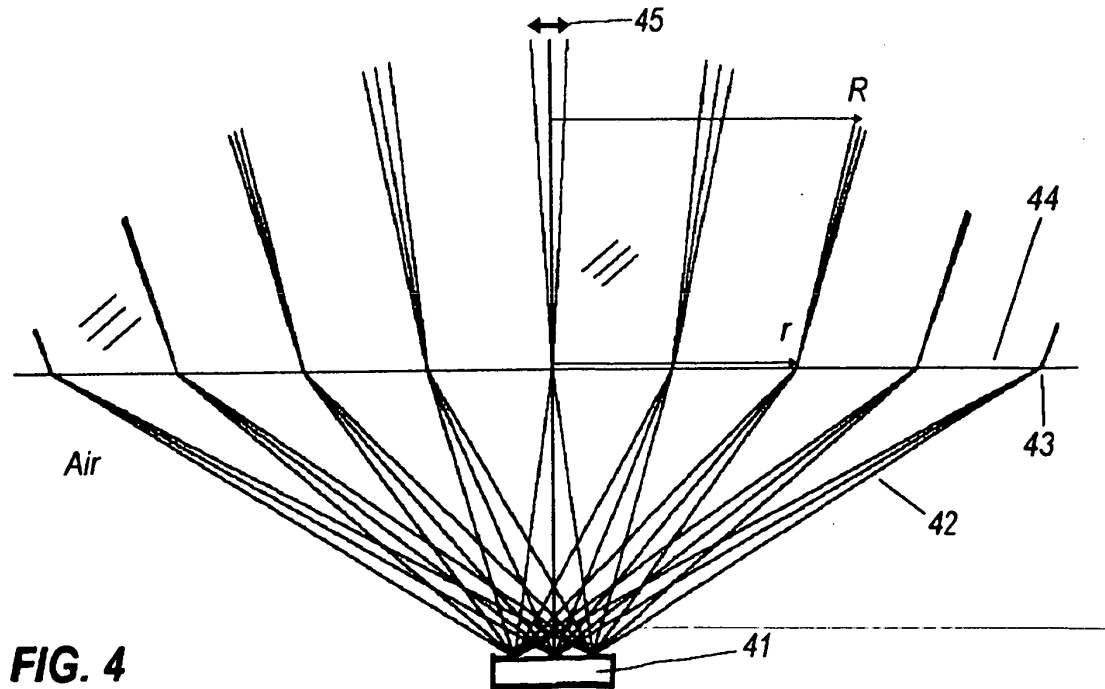
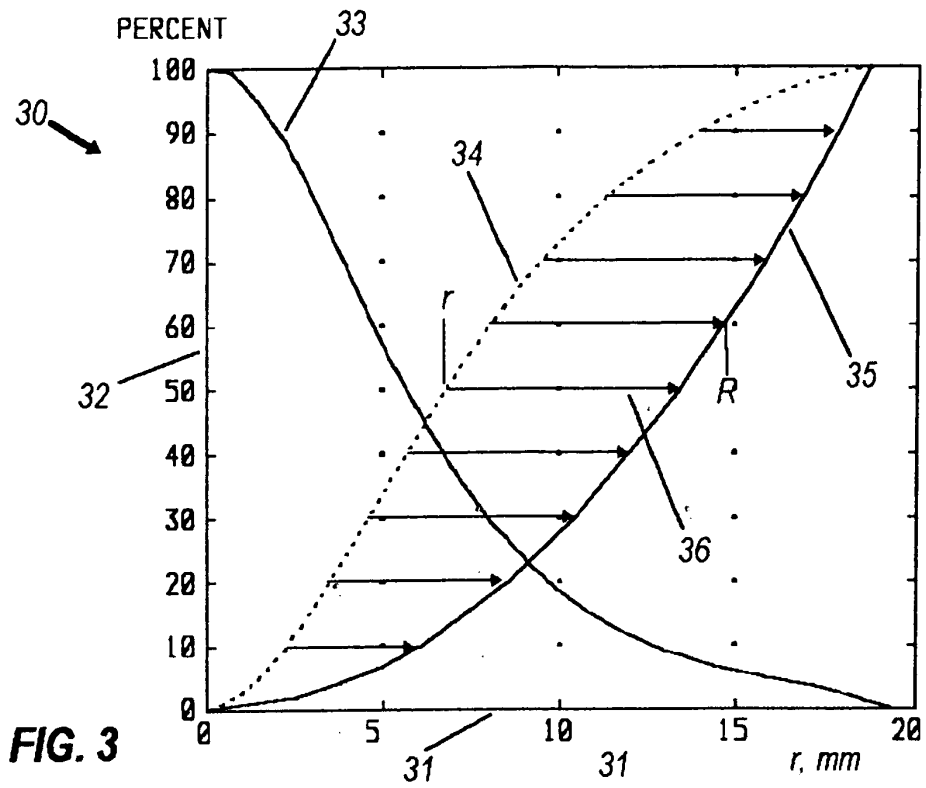
16 sections of such lenses are laterally arrayed to form a

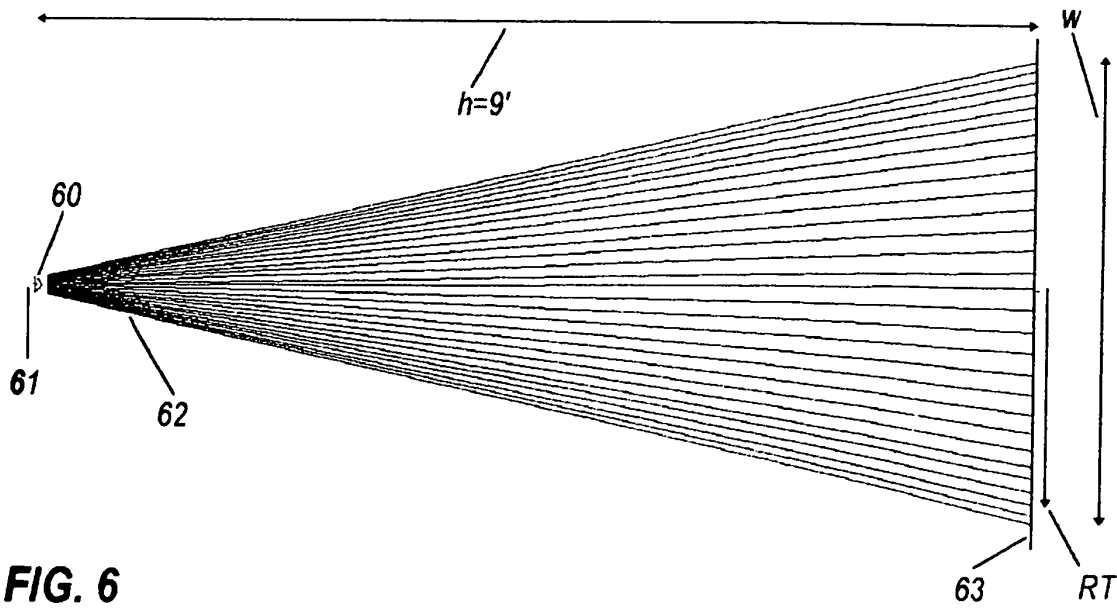
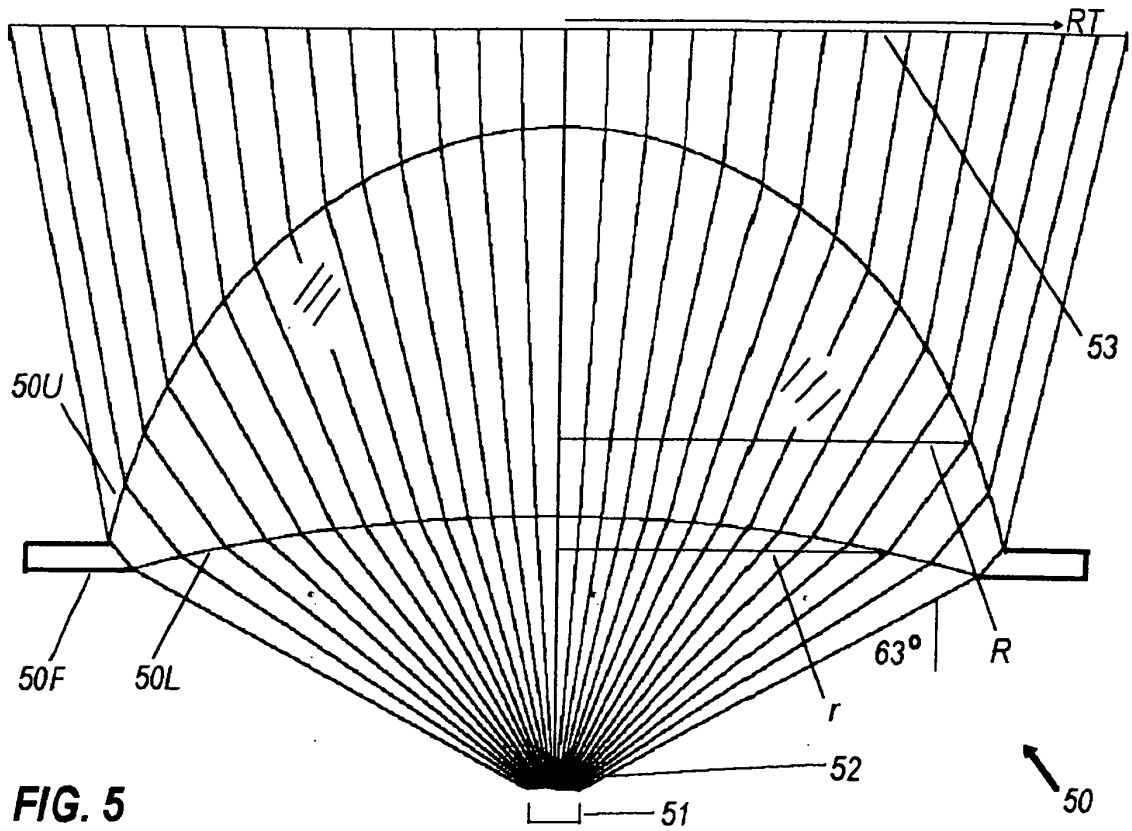
17 downlight, a uniform rectangular spot will be produced

18 on the target.

19







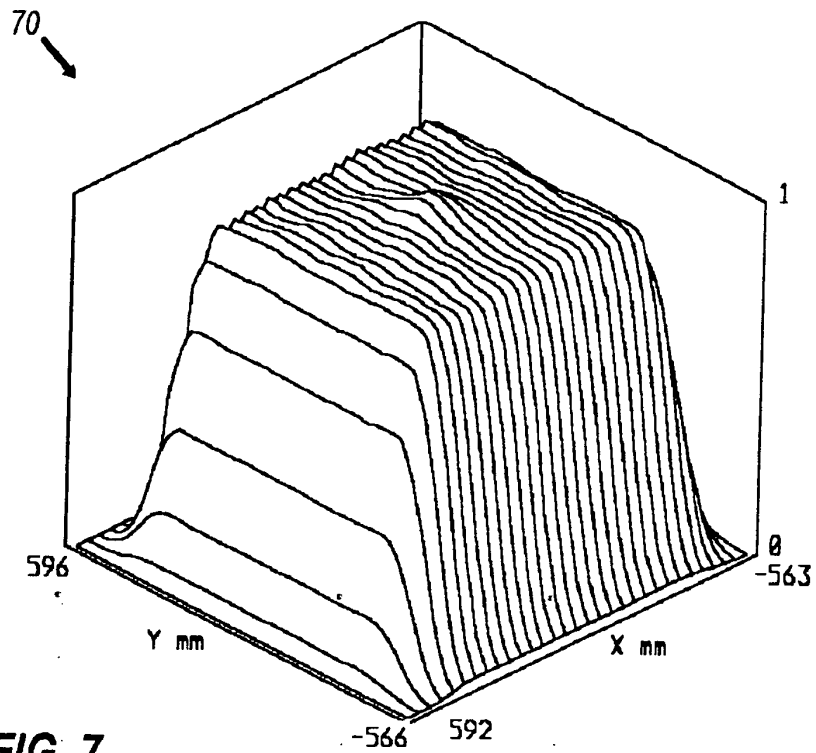


FIG. 7

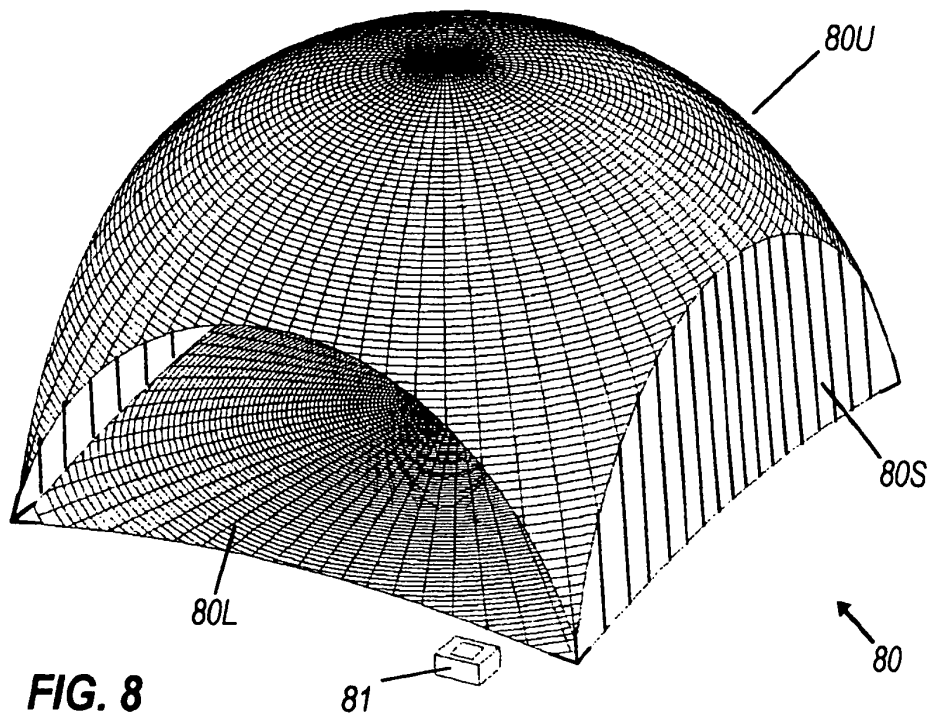


FIG. 8

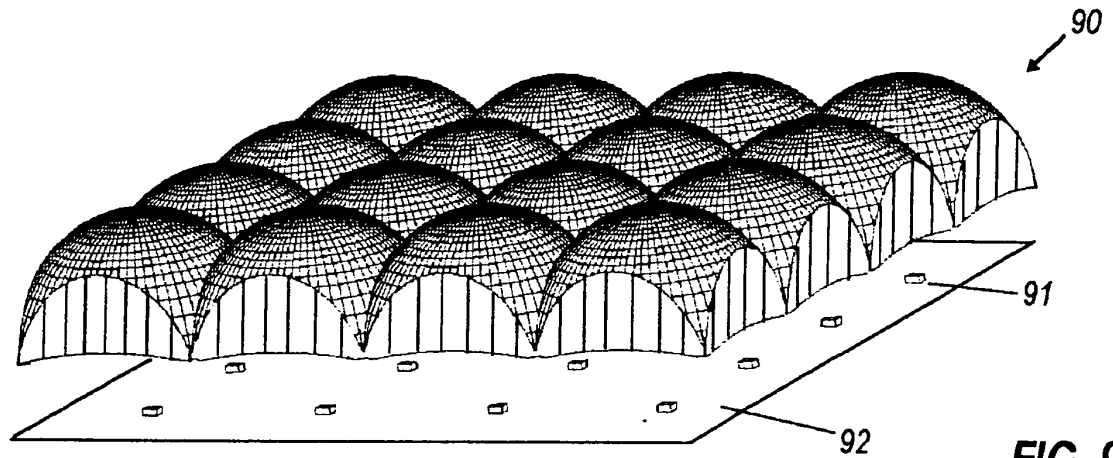


FIG. 9

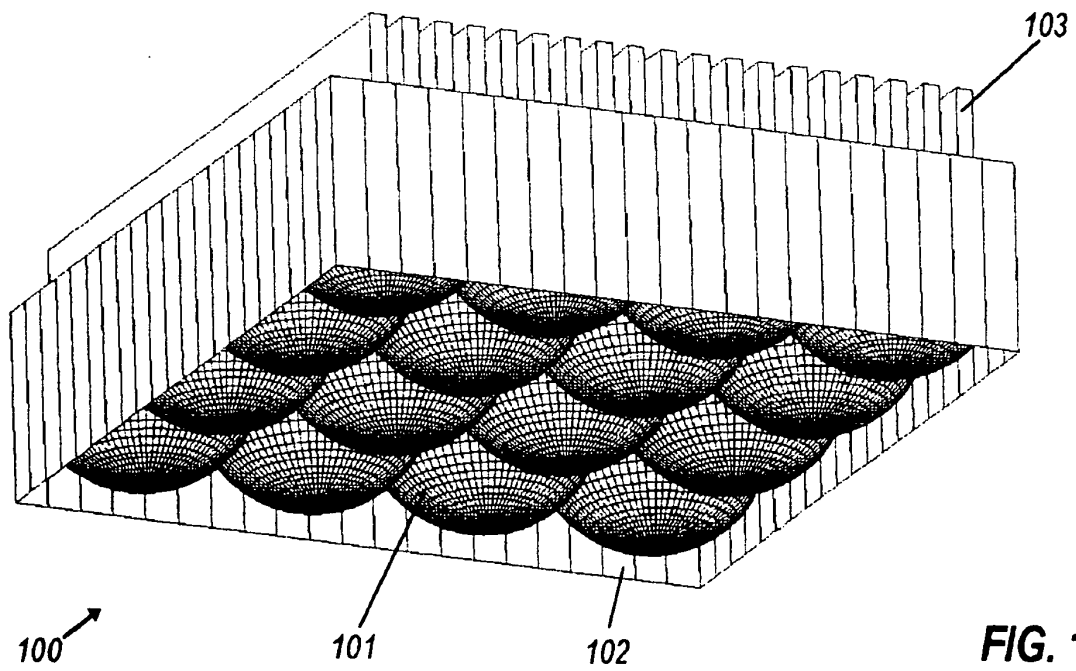


FIG. 10

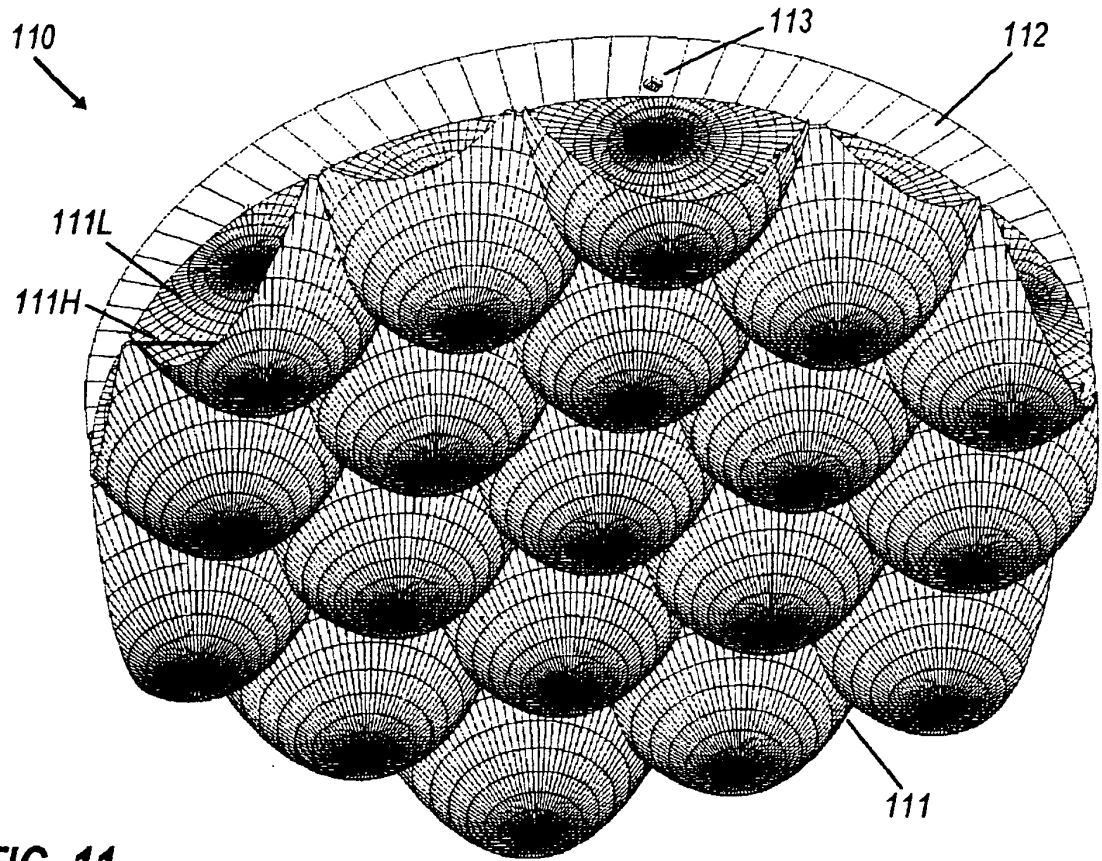


FIG. 11

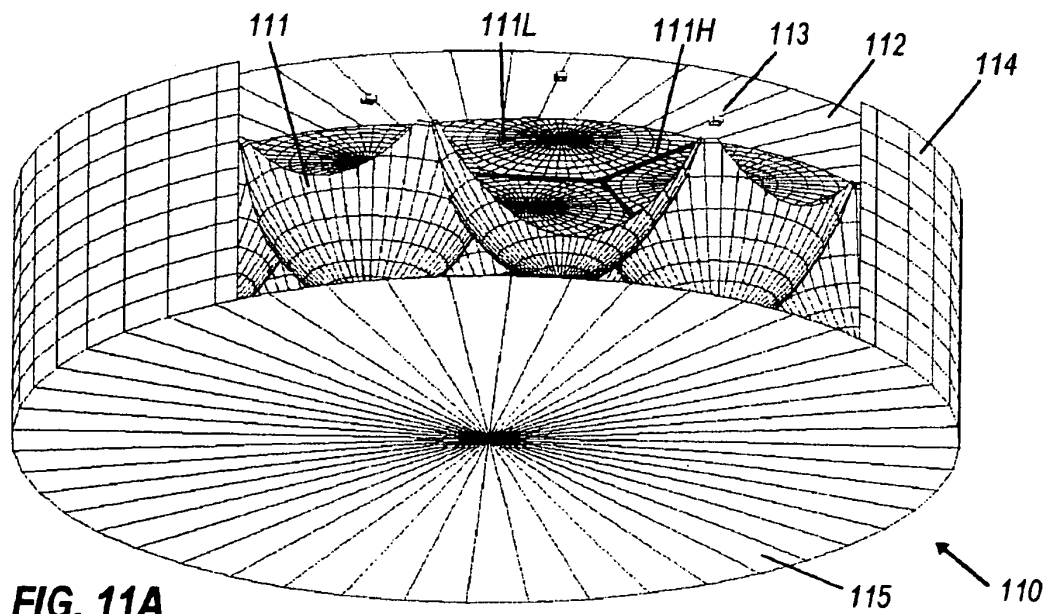


FIG. 11A

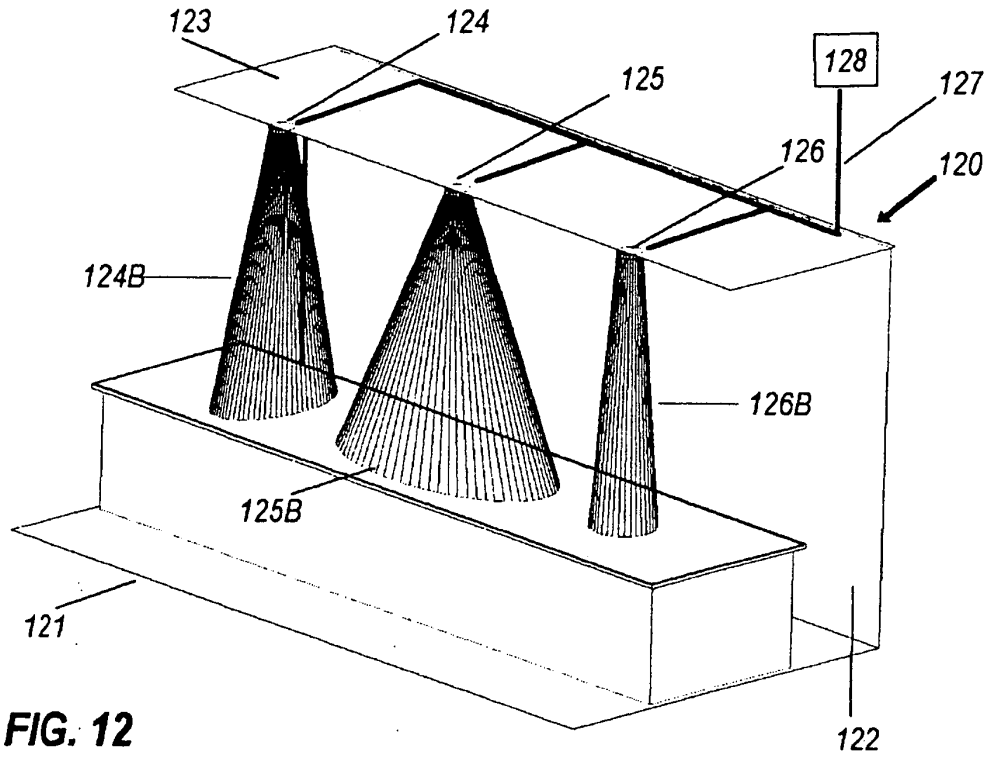


FIG. 12

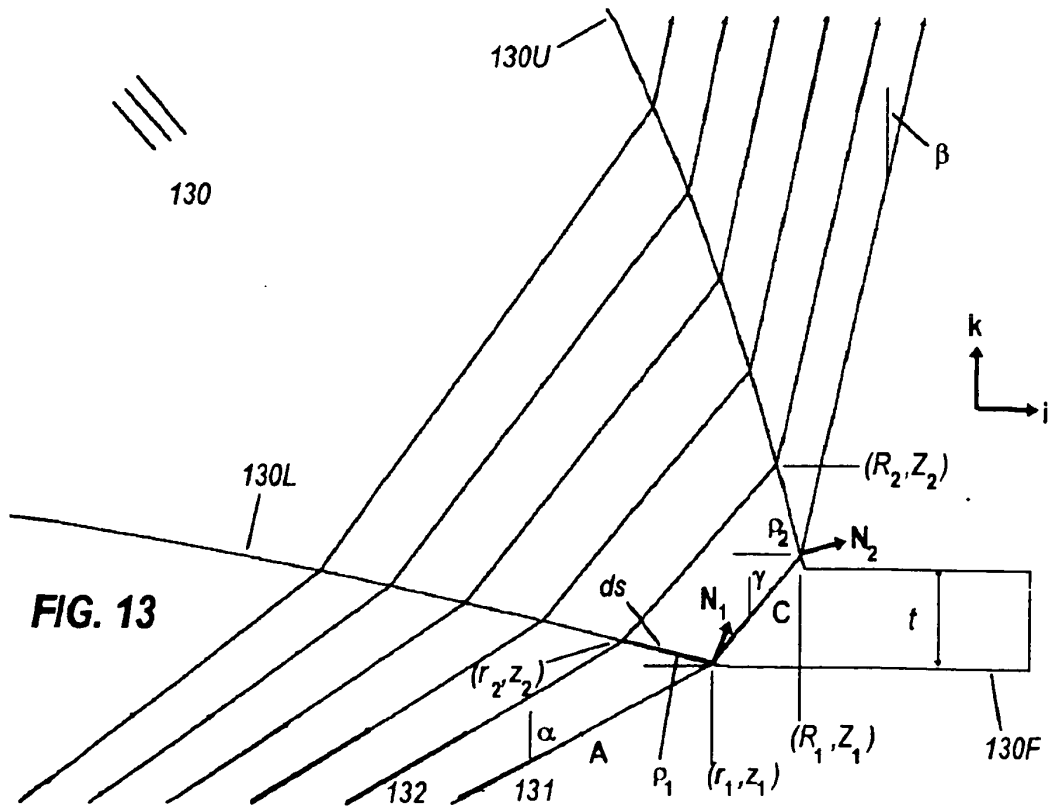
**FIG. 13**

FIG. 14

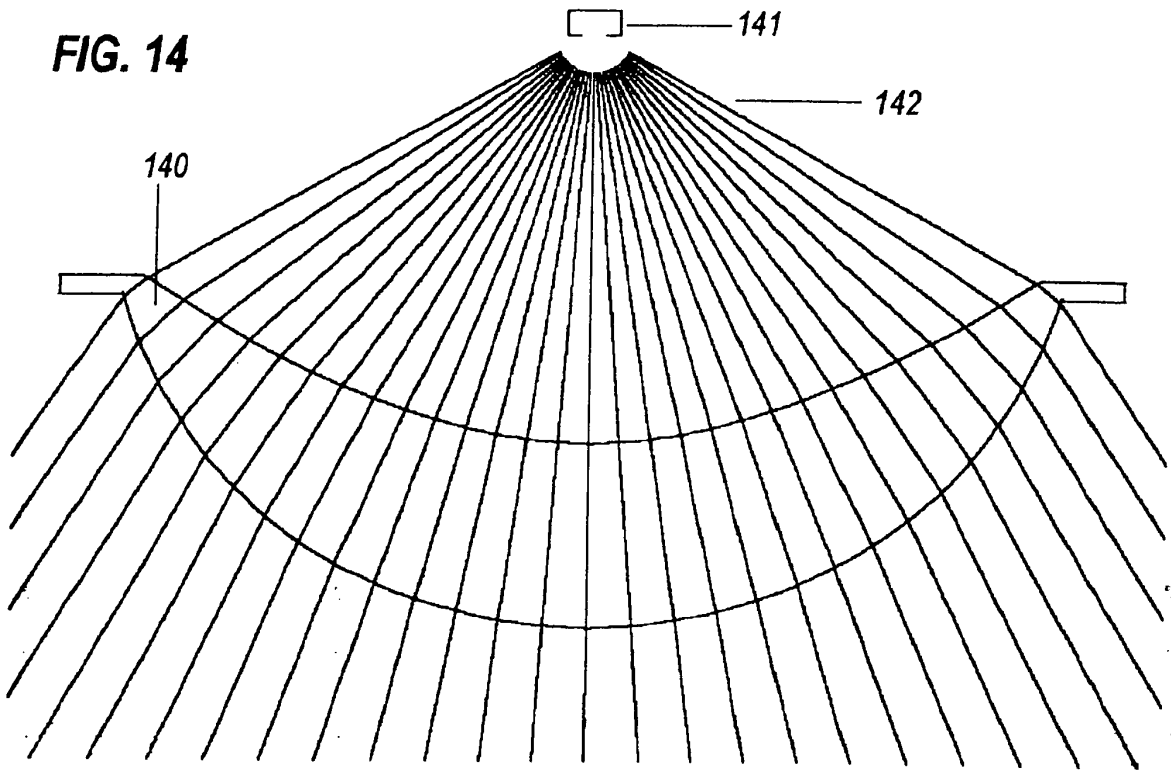
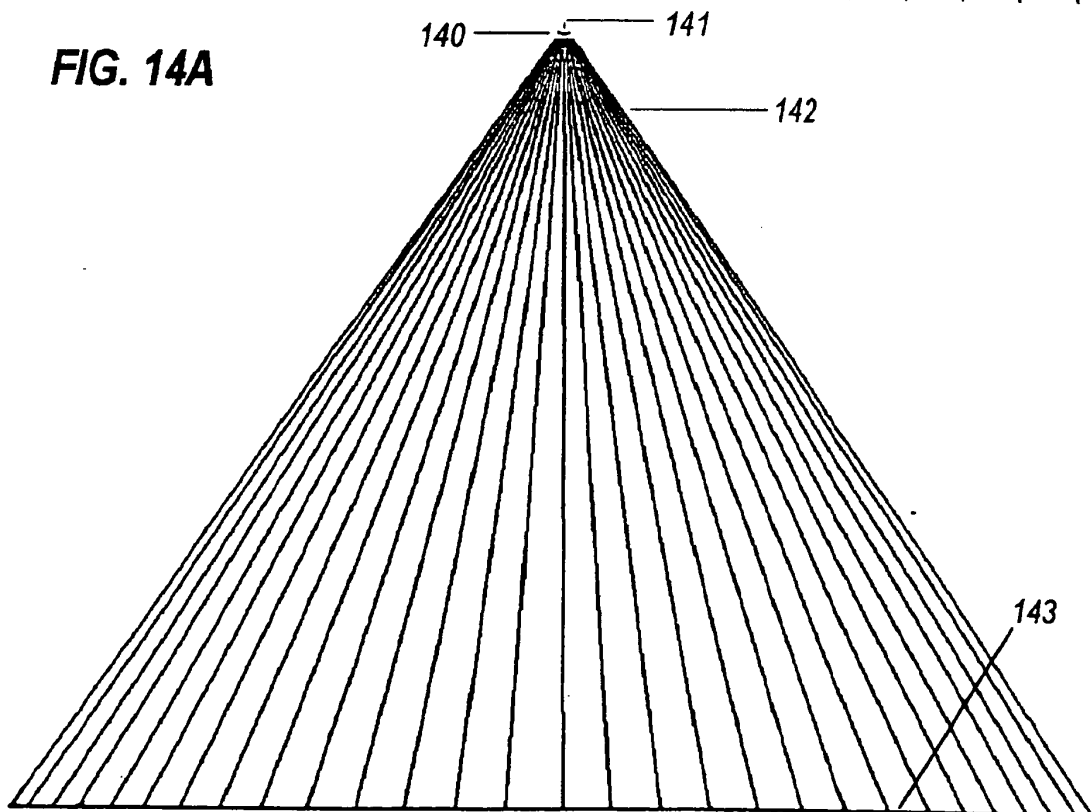


FIG. 14A



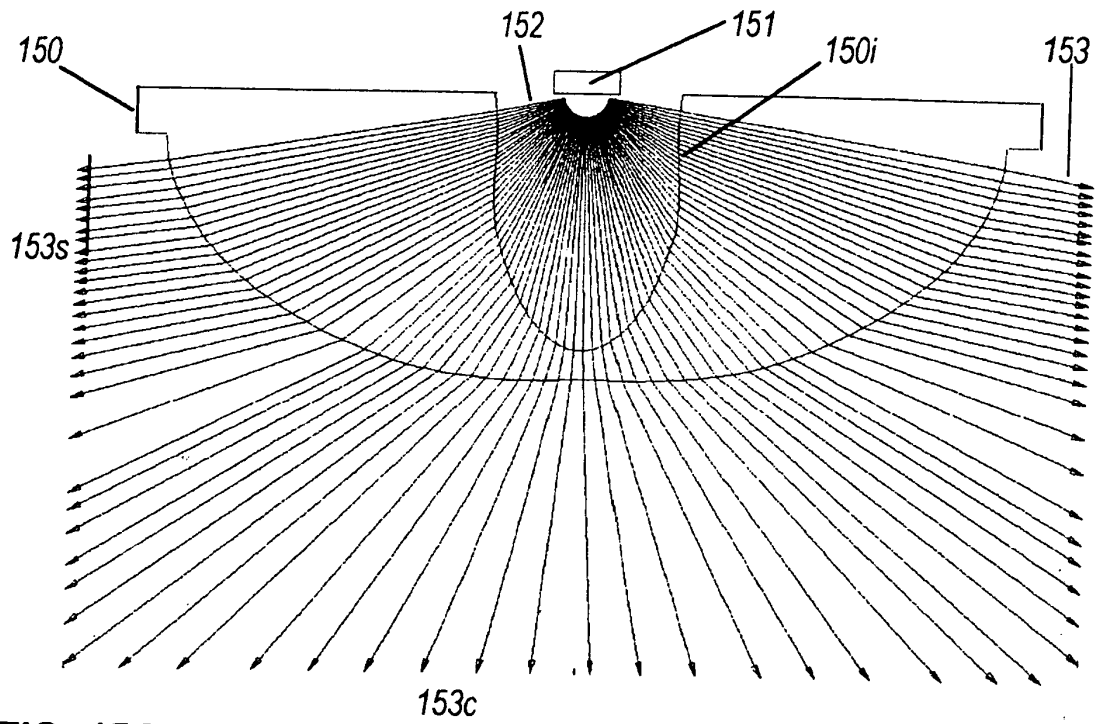


FIG. 15A

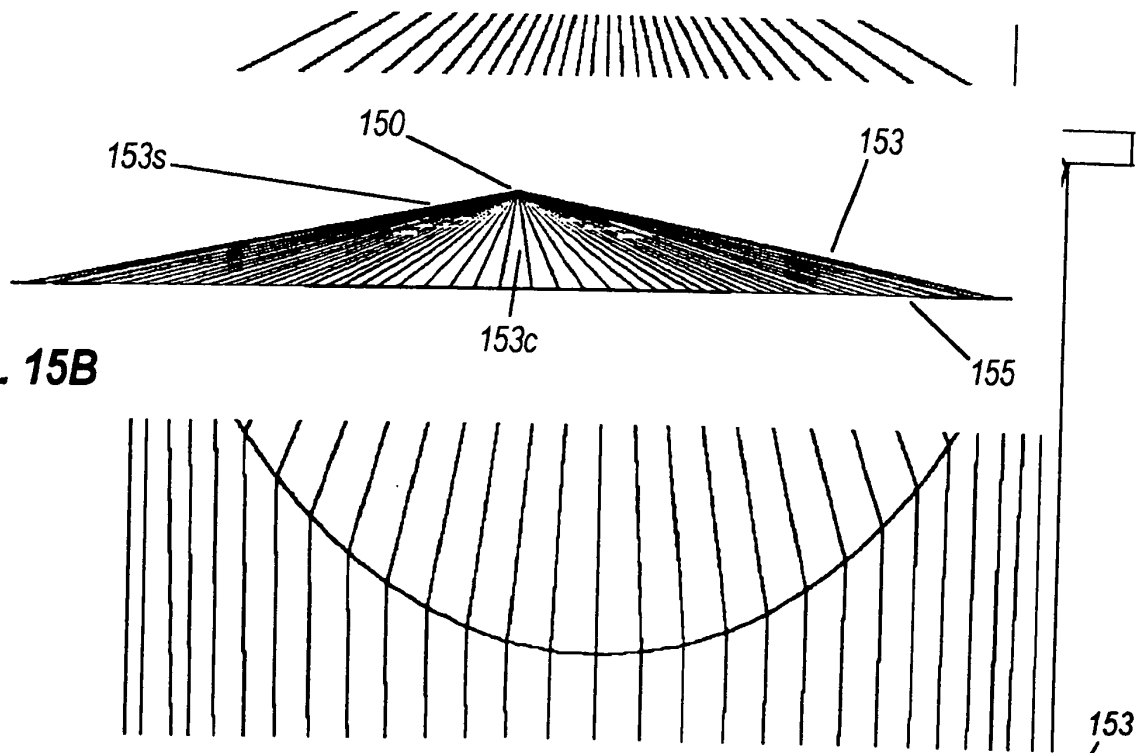
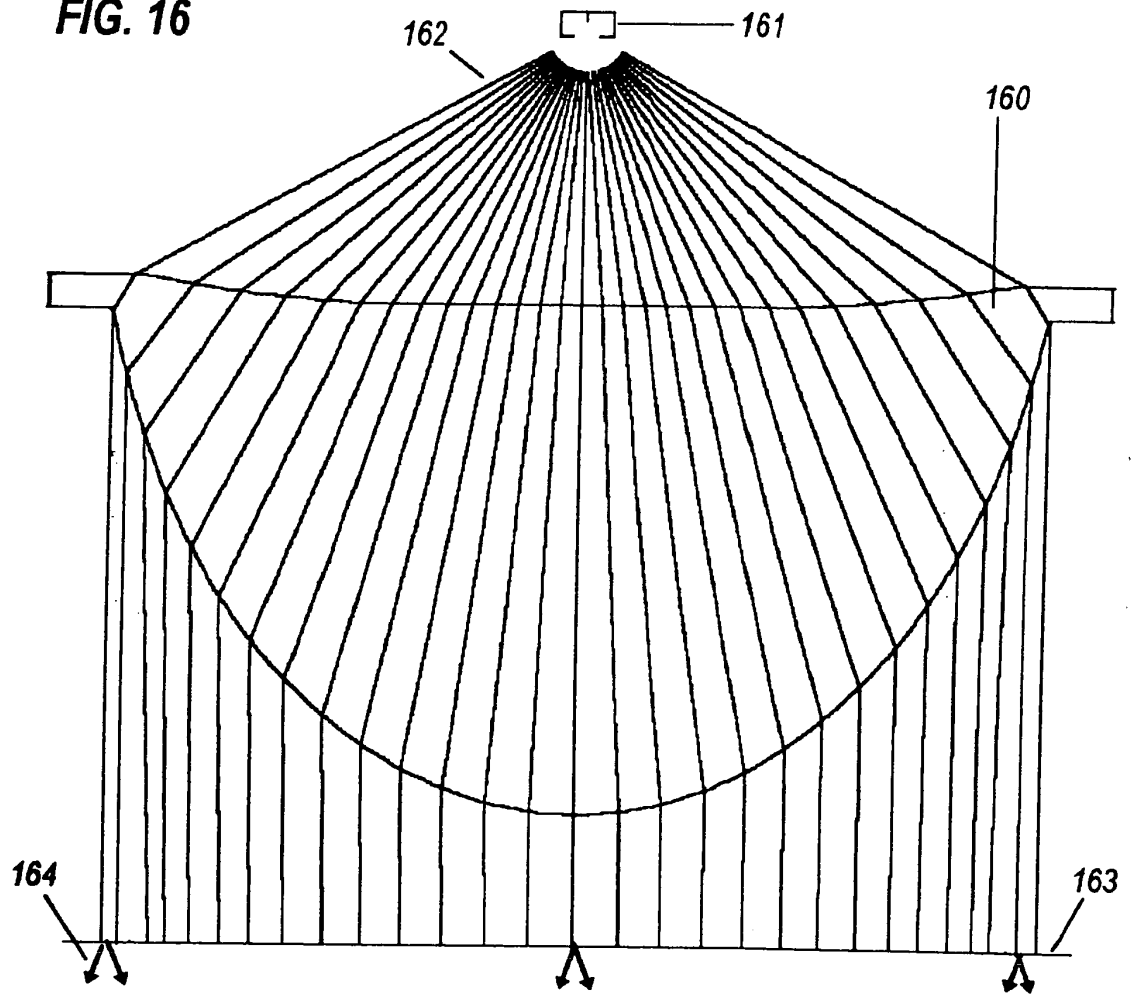
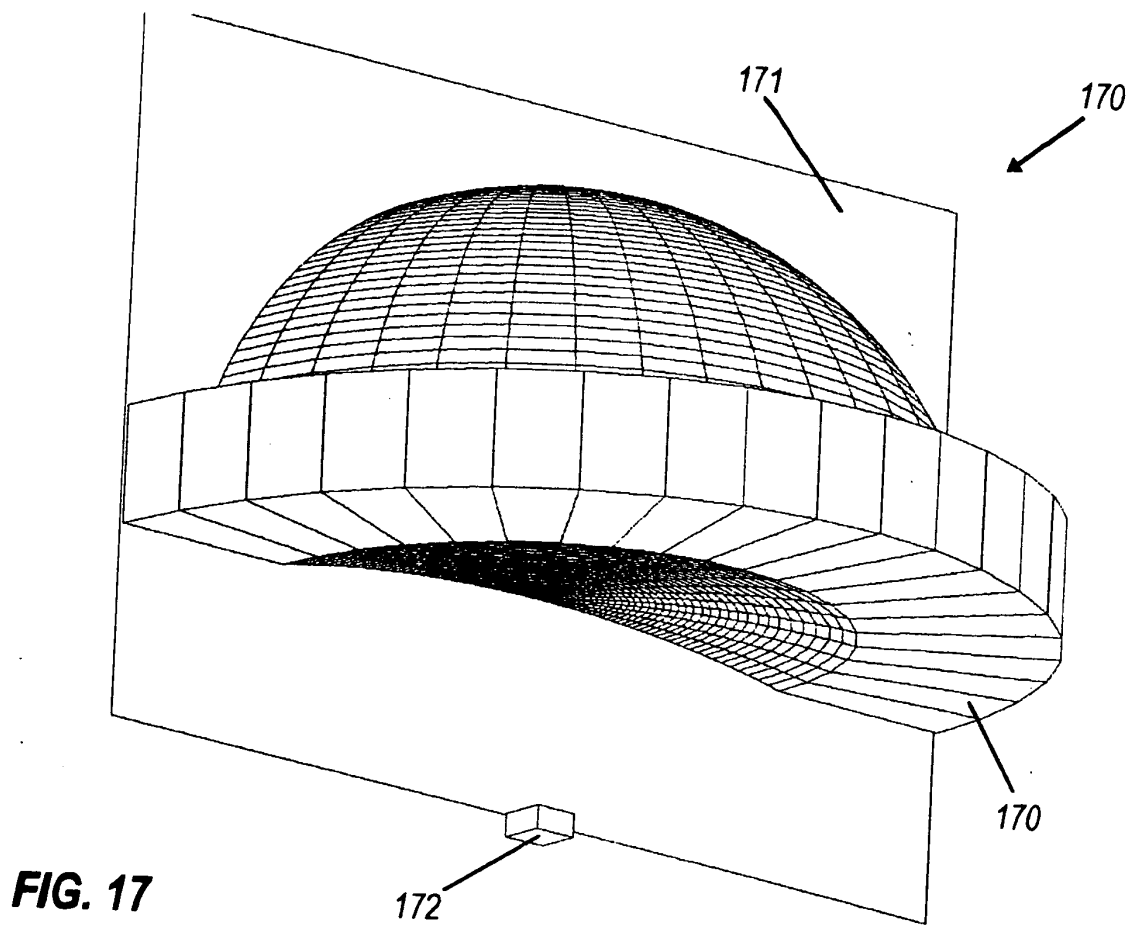


FIG. 15B

FIG. 16





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INDICATION FORM**

Application Number	
Filing Date	
First Named Inventor	William A. Parkyn et al
Title	IRRADIANCE-REDISTRIBUTION LENS AND ITS
Art Unit	XXXX APPLICATIONS TO LED DOWNLIGHTS
Examiner Name	
Attorney Docket Number	12,677

I hereby revoke all previous powers of attorney given in the above-identified application.

I hereby appoint:

☒ Practitioners associated with the Customer Number:

2675

OR

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Name	Registration Number

as my/our attorney(s) or agent(s) to prosecute the application identified above, and to transact all business in the United States Patent and Trademark Office connected therewith.

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91101

Country

USA

Telephone

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Email whaefflig@pacbell.net

I am the:

☒ Applicant/Inventor.

☐ Assignee of record of the entire interest. See 37 CFR 3.71.
Statement under 37 CFR 3.73(b) is enclosed. (Form PTO/SB/96)

SIGNATURE of Applicant or Assignee of Record

Signature

William A. Parkyn

Date

11-8-05

Name

William A. Parkyn

Telephone

310-355-1835

Title and Company

NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required. Submit multiple forms if more than one signature is required, see below*.

☐ *Total of _____ forms are submitted.

This collection of information is required by 37 CFR 1.31, 1.32 and 1.33. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 3 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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DECLARATION FOR UTILITY OR DESIGN PATENT APPLICATION (37 CFR 1.63)		Attorney Docket Number	12,677
		First Named Inventor	William A. Parkyn et al
COMPLETE IF KNOWN			
		Application Number	
		Filing Date	
		Art Unit	
		Examiner Name	

☒ Declaration Submitted With Initial Filing
 OR
☐ Declaration Submitted after Initial Filing (surcharge (37 CFR 1.16 (e)) required)

I hereby declare that:

Each inventor's residence, mailing address, and citizenship are as stated below next to their name.

I believe the inventor(s) named below to be the original and first inventor(s) of the subject matter which is claimed and for which a patent is sought on the invention entitled:

IRRADIANCE-REDISTRIBUTION LENS AND ITS APPLICATIONS TO LED DOWNLIGHTS

(Title of the Invention)

the specification of which

☒ is attached hereto

OR

☐ was filed on (MM/DD/YYYY) as United States Application Number or PCT International Application Number and was amended on (MM/DD/YYYY) (if applicable).

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment specifically referred to above.

I acknowledge the duty to disclose information which is material to patentability as defined in 37 CFR 1.56, including for continuation-in-part applications, material information which became available between the filing date of the prior application and the national or PCT international filing date of the continuation-in-part application.

I hereby claim foreign priority benefits under 35 U.S.C. 119(a)-(d) or (f), or 365(b) of any foreign application(s) for patent, inventor's or plant breeder's rights certificate(s), or 365(a) of any PCT international application which designated at least one country other than the United States of America, listed below and have also identified below, by checking the box, any foreign application for patent, inventor's or plant breeder's rights certificate(s), or any PCT international application having a filing date before that of the application on which priority is claimed.

Prior Foreign Application Number(s)	Country	Foreign Filing Date (MM/DD/YYYY)	Priority Not Claimed	Certified Copy Attached?	
				YES	NO
			☐	☐	☐
			☐	☐	☐
			☐	☐	☐
			☐	☐	☐

☐ Additional foreign application numbers are listed on a supplemental priority data sheet PTO/SB/02B attached hereto.

[Page 1 of 2]

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DECLARATION — Utility or Design Patent Application

Direct all correspondence to: ☒ The address associated with Customer Number: 2675		OR ☒ Correspondence address below	
Name William W. Haeffliger			
Address 201 So. Lake Ave., Suite 512			
City Pasadena		State CA	
		ZIP 91101	
Country USA	Telephone 323 684-2707		Email whaefflig@pacbell.net
I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under 18 U.S.C. 1001 and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.			
NAME OF SOLE OR FIRST INVENTOR:		☐ A petition has been filed for this unsigned inventor	
Given Name (first and middle [if any]) William A.		Family Name or Surname Parkyn	
Inventor's Signature <i>William A. Parkyn</i>			Date 11-8-05
Residence: City Lomita	State CA	Country USA	Citizenship USA
Mailing Address 25031 Neko Drive			
City Lomita	State CA	Zip 90717	Country USA
NAME OF SECOND INVENTOR:		☐ A petition has been filed for this unsigned inventor	
Given Name (first and middle [if any]) David G.		Family Name or Surname Pelka	
Inventor's Signature <i>David G. Pelka</i>			Date 11-8-05
Residence: City Los Angeles	State CA	Country USA	Citizenship USA
Mailing Address 8315 Kenyon Ave.			
City Los Angeles	State CA	Zip 90045	Country USA
☐ Additional inventors or a legal representative are being named on the _____ supplemental sheet(s) PTO/SB/02A or 02LR attached hereto.			

PATENT APPLICATION SERIAL NO _____

U.S. DEPARTMENT OF COMMERCE
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FEE RECORD SHEET

11/15/2005 MBIZUNES 00000059 11271420

01 FC:2011	150.00 OP
02 FC:2111	250.00 OP
03 FC:2311	100.00 OP
04 FC:2201	100.00 OP
05 FC:2202	450.00 OP

PTO-1556
(5/87)

U.S. Government Printing Office: 2002 — 499-267/88003

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

PATENT APPLICATION FEE DETERMINATION RECORD

Substitute for Form PTO-875 Effective December 8, 2004

Application or Docket Number

11271420

APPLICATION AS FILED - PART I

(Column 1)

(Column 2)

SMALL ENTITY

OR

OTHER THAN
SMALL ENTITY

FOR	NUMBER FILED	NUMBER EXTRA
BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A
SEARCH FEE (37 CFR 1.16(k), (l), or (m))	N/A	N/A
EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A
TOTAL CLAIMS (37 CFR 1.16(i))	38 minus 20 =	18
INDEPENDENT CLAIMS (37 CFR 1.16(h))	4 minus 3 =	1
APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is \$250 (\$125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).	
MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))		

RATE (\$)	FEE (\$)
N/A	150.00
N/A	\$250
N/A	\$100
X\$ 25 =	450
X100 =	100
+180=	
TOTAL	1050

RATE (\$)	FEE (\$)
N/A	300.00
N/A	\$500
N/A	\$200
X\$50 =	
X200 =	
+360=	
TOTAL	

* If the difference in column 1 is less than zero, enter "0" in column 2.

APPLICATION AS AMENDED - PART II

(Column 1)

(Column 2)

(Column 3)

SMALL ENTITY

OR

OTHER THAN
SMALL ENTITY

AMENDMENT A	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA
Total (37 CFR 1.16(i))	•	Minus **	=
Independent (37 CFR 1.16(h))	•	Minus ***	=
Application Size Fee (37 CFR 1.16(s))			
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))			

RATE (\$)	ADDITIONAL FEE (\$)
X\$ 25 =	
X100 =	
+180=	
TOTAL ADD'L FEE	

RATE (\$)	ADDITIONAL FEE (\$)
X\$50 =	
X200 =	
+360=	
TOTAL ADD'L FEE	

1, 14, 27, 31,

(Column 1)

(Column 2)

(Column 3)

AMENDMENT B	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA
Total (37 CFR 1.16(i))	•	Minus **	=
Independent (37 CFR 1.16(h))	•	Minus ***	=
Application Size Fee (37 CFR 1.16(s))			
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))			

RATE (\$)	ADDITIONAL FEE (\$)
X\$ 25 =	
X100 =	
+180=	
TOTAL ADD'L FEE	

RATE (\$)	ADDITIONAL FEE (\$)
X\$50 =	
X200 =	
+360=	
TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.

** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".

*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".

The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

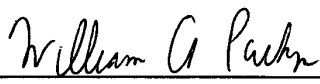
If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

NONPUBLICATION REQUEST UNDER 35 U.S.C. 122(b)(2)(B)(i)	First Named Inventor		William A. Parkyn
	Title	IRRADIANCE-REDISTRIBUTION LENS AND ITS APPLICATIONS TO LED DOWNLIGHTS	
	Attorney Docket Number		12,677

I hereby certify that the invention disclosed in the attached application **has not and will not be** the subject of an application filed in another country, or under a multilateral agreement, that requires publication at eighteen months after filing.

I hereby request that the attached application not be published under 35 U.S.C. 122(b).

11-00-05
 Date


 Signature

310-325-1835
 Telephone number

William A. Parkyn
 Typed or printed name

This request must be signed in compliance with 37 CFR 1.33(b) and submitted with the application **upon filing**.

Applicant may rescind this nonpublication request at any time. If applicant rescinds a request that an application not be published under 35 U.S.C. 122(b), the application will be scheduled for publication at eighteen months from the earliest claimed filing date for which a benefit is claimed.

If applicant subsequently files an application directed to the invention disclosed in the attached application in another country, or under a multilateral international agreement, that requires publication of applications eighteen months after filing, the applicant **must** notify the United States Patent and Trademark Office of such filing within forty-five (45) days after the date of the filing of such foreign or international application. **Failure to do so will result in abandonment of this application (35 U.S.C. 122(b)(2)(B)(iii)).**

This collection of information is required by 37 CFR 1.213(a). The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 6 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 (1-800-786-9199) and select option 2.

PLUS Search Results for S/N 11271420, Searched Fri Apr 27 08:59:52 EDT 2007
 The Patent Linguistics Utility System (PLUS) is a USPTO automated search system for U.S. Patents from 1971 to the present PLUS is a query-by-example search system which produces a list of patents that are most closely related linguistically to the application searched. This search was prepared by the staff of the Scientific and Technical Information Center, SIRA.

4285034 46	4924474 36	20050190578 35
5491384 46	4982075 36	4937424 35
6014202 44	4984226 36	
6606173 44	5218597 36	
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5504317 44	5377177 36	
5781651 44	5412408 36	
5568320 43	5425012 36	
5604607 43	5455715 36	
4521075 42	5548568 36	
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6400391 42	5602379 36	
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4500918 36	20060002112 35	
4530080 36	5808295 35	
4775970 36	5818033 35	
4868802 36	5959740 35	
4906839 36	5986415 35	



UNITED STATES PATENT AND TRADEMARK OFFICE

11/10
UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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11/271,420

11/09/2005

William A. Parkyn

12,677

1170

2675 7590 05/18/2007
WILLIAM W. HAEFLIGER
201 S. LAKE AVE
SUITE 512
PASADENA, CA 91101

EXAMINER

DUNN, DANIELLE N

ART UNIT

PAPER NUMBER

2809

MAIL DATE

DELIVERY MODE

05/18/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 11/271,420	Applicant(s) PARKYN ET AL.	
	Examiner Danielle Dunn	Art Unit 2809	
	-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --		

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 1 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on 09 November 2005.

2a) ☐ This action is **FINAL**. 2b) ☐ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) 1-37 is/are pending in the application.

 4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☐ Claim(s) _____ is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☒ Claim(s) 1-37 are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☐ None of:

 1. ☐ Certified copies of the priority documents have been received.

 2. ☐ Certified copies of the priority documents have been received in Application No. _____.

 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

 * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
 Paper No(s)/Mail Date _____.

4) ☒ Interview Summary (PTO-413)
 Paper No(s)/Mail Date. _____.

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
 - I. Claims 1-13, drawn to a single lens, classified in class 362, subclass 335.
 - II. Claims 14-26, drawn to a light device with an array of lenses, classified in class 362, subclass 168, 169.
 - III. Claims 27-30, drawn to an LED package with multiple LEDS, classified in class 362, subclass 800.
 - IV. Claims 31-37, drawn to a light redistribution system with a LED, classified in class 362, subclass 333.

The inventions are distinct, each from the other because of the following reasons:

2. Inventions I and II are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct if they do not overlap in scope and are not obvious variants, and if it is shown that at least one subcombination is separately usable. In the instant case, the subcombination of Group I has separate utility such as being used in a projector. See MPEP § 806.05(d).

The examiner has required restriction between subcombinations usable together. Where applicant elects a subcombination and claims thereto are subsequently found allowable, any claim(s) depending from or otherwise requiring all the limitations of the

allowable subcombination will be examined for patentability in accordance with 37 CFR 1.104. See MPEP § 821.04(a). Applicant is advised that if any claim presented in a continuation or divisional application is anticipated by, or includes all the limitations of, a claim that is allowable in the present application, such claim may be subject to provisional statutory and/or nonstatutory double patenting rejections over the claims of the instant application.

3. Inventions I and III are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct if they do not overlap in scope and are not obvious variants, and if it is shown that at least one subcombination is separately usable. In the instant case, the subcombination of Group III has separate utility such as being used in a light guide. See MPEP § 806.05(d).

The examiner has required restriction between subcombinations usable together. Where applicant elects a subcombination and claims thereto are subsequently found allowable, any claim(s) depending from or otherwise requiring all the limitations of the allowable subcombination will be examined for patentability in accordance with 37 CFR 1.104. See MPEP § 821.04(a). Applicant is advised that if any claim presented in a continuation or divisional application is anticipated by, or includes all the limitations of, a claim that is allowable in the present application, such claim may be subject to provisional statutory and/or nonstatutory double patenting rejections over the claims of the instant application.

4. Inventions I and IV are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct if they do not overlap in scope and are not obvious variants, and if it is shown that at least one subcombination is separately usable. In the instant case, the subcombination Group I has separate utility such as being used in a printer. See MPEP § 806.05(d).

The examiner has required restriction between subcombinations usable together. Where applicant elects a subcombination and claims thereto are subsequently found allowable, any claim(s) depending from or otherwise requiring all the limitations of the allowable subcombination will be examined for patentability in accordance with 37 CFR 1.104. See MPEP § 821.04(a). Applicant is advised that if any claim presented in a continuation or divisional application is anticipated by, or includes all the limitations of, a claim that is allowable in the present application, such claim may be subject to provisional statutory and/or nonstatutory double patenting rejections over the claims of the instant application.

5. Inventions II and III are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct if they do not overlap in scope and are not obvious variants, and if it is shown that at least one subcombination is separately usable. In the instant case, the subcombination of Group II has separate utility such as being used in a light guide. See MPEP § 806.05(d).

The examiner has required restriction between subcombinations usable together. Where applicant elects a subcombination and claims thereto are subsequently found

allowable, any claim(s) depending from or otherwise requiring all the limitations of the allowable subcombination will be examined for patentability in accordance with 37 CFR 1.104. See MPEP § 821.04(a). Applicant is advised that if any claim presented in a continuation or divisional application is anticipated by, or includes all the limitations of, a claim that is allowable in the present application, such claim may be subject to provisional statutory and/or nonstatutory double patenting rejections over the claims of the instant application.

6. Inventions II and IV are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct if they do not overlap in scope and are not obvious variants, and if it is shown that at least one subcombination is separately usable. In the instant case, subcombination Group IV has separate utility such as a headlamp. See MPEP § 806.05(d).

The examiner has required restriction between subcombinations usable together. Where applicant elects a subcombination and claims thereto are subsequently found allowable, any claim(s) depending from or otherwise requiring all the limitations of the allowable subcombination will be examined for patentability in accordance with 37 CFR 1.104. See MPEP § 821.04(a). Applicant is advised that if any claim presented in a continuation or divisional application is anticipated by, or includes all the limitations of, a claim that is allowable in the present application, such claim may be subject to provisional statutory and/or nonstatutory double patenting rejections over the claims of the instant application.

7. Inventions III and IV are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct if they do not overlap in scope and are not obvious variants, and if it is shown that at least one subcombination is separately usable. In the instant case, the subcombination of Group III has separate utility such as a flashlight. See MPEP § 806.05(d).

The examiner has required restriction between subcombinations usable together. Where applicant elects a subcombination and claims thereto are subsequently found allowable, any claim(s) depending from or otherwise requiring all the limitations of the allowable subcombination will be examined for patentability in accordance with 37 CFR 1.104. See MPEP § 821.04(a). Applicant is advised that if any claim presented in a continuation or divisional application is anticipated by, or includes all the limitations of, a claim that is allowable in the present application, such claim may be subject to provisional statutory and/or nonstatutory double patenting rejections over the claims of the instant application.

8. Because these inventions are independent or distinct for the reasons given above and there would be a serious burden on the examiner if restriction is not required because the inventions have acquired a separate status in the art in view of their different classification, restriction for examination purposes as indicated is proper.

9. A telephone call was made to William Haeffiger on 5/16/07 to request an oral election to the above restriction requirement, but did not result in an election being made.

Applicant is advised that the reply to this requirement to be complete must include (i) an election of a species or invention to be examined even though the requirement be traversed (37 CFR 1.143) and (ii) identification of the claims encompassing the elected invention.

The election of an invention or species may be made with or without traverse. To reserve a right to petition, the election must be made with traverse. If the reply does not distinctly and specifically point out supposed errors in the restriction requirement, the election shall be treated as an election without traverse.

Should applicant traverse on the ground that the inventions or species are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the inventions or species to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions unpatentable over the prior art, the evidence or admission may be used in a rejection under 35 U.S.C.103(a) of the other invention.

10. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim

remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Danielle Dunn whose telephone number is 571-270-3039. The examiner can normally be reached on M-F 7:30-5:00 with alternate Friday's off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Assouad can be reached on 571-272-2210. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

DND
5/16/07


N. DREW RICHARDS
PRIMARY EXAMINER

Interview Summary	Application No.		Applicant(s)	
	11/271,420		PARKYN ET AL.	
	Examiner		Art Unit	
	Danielle Dunn		2809	

All participants (applicant, applicant's representative, PTO personnel):

(1) Danielle Dunn. (3) _____.

(2) William Haefliger. (4) _____.

Date of Interview: 16 May 2007.

Type: a) ☒ Telephonic b) ☐ Video Conference
c) ☐ Personal [copy given to: 1) ☐ applicant 2) ☐ applicant's representative]

Exhibit shown or demonstration conducted: d) ☐ Yes e) ☒ No.
If Yes, brief description: _____.

Claim(s) discussed: 1-37.

Identification of prior art discussed: N/A.

Agreement with respect to the claims f) ☐ was reached. g) ☒ was not reached. h) ☐ N/A.

Substance of Interview including description of the general nature of what was agreed to if an agreement was reached, or any other comments: A phone call was made to William Haefliger, but no agreement was reached in regards to the restriction requirement..

(A fuller description, if necessary, and a copy of the amendments which the examiner agreed would render the claims allowable, if available, must be attached. Also, where no copy of the amendments that would render the claims allowable is available, a summary thereof must be attached.)

THE FORMAL WRITTEN REPLY TO THE LAST OFFICE ACTION MUST INCLUDE THE SUBSTANCE OF THE INTERVIEW. (See MPEP Section 713.04). If a reply to the last Office action has already been filed, APPLICANT IS GIVEN A NON-EXTENDABLE PERIOD OF THE LONGER OF ONE MONTH OR THIRTY DAYS FROM THIS INTERVIEW DATE, OR THE MAILING DATE OF THIS INTERVIEW SUMMARY FORM, WHICHEVER IS LATER, TO FILE A STATEMENT OF THE SUBSTANCE OF THE INTERVIEW. See Summary of Record of Interview requirements on reverse side or on attached sheet.

Examiner Note: You must sign this form unless it is an Attachment to a signed Office action.

Examiner's signature, if required

<i>Index of Claims</i> 	Application/Control No. 11271420	Applicant(s)/Patent Under Reexamination PARKYN ET AL.
	Examiner Dunn, Danielle	Art Unit 2809

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

☐ Claims renumbered in the same order as presented by applicant			☐ CPA			☐ T.D.			☐ R.1.47			
CLAIM			DATE									
Final	Original	05/16/2007										
	1	+										
	2	+										
	3	+										
	4	+										
	5	+										
	6	+										
	7	+										
	8	+										
	9	+										
	10	+										
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	30	+										
	31	+										
	32	+										
	33	+										
	34	+										
	35	+										
	36	+										

<i>Index of Claims</i> 	Application/Control No. 11271420	Applicant(s)/Patent Under Reexamination PARKYN ET AL.
	Examiner Dunn, Danielle	Art Unit 2809

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

☐ Claims renumbered in the same order as presented by applicant				☐ CPA				☐ T.D.				☐ R.1.47			
CLAIM			DATE												
Final	Original	05/16/2007													
	37	+													

HW



PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Group Art Unit 2809

Examiner: Danielle Dunn

Applicant:

William A. Parkyn et al

Serial No.:

11/271,420

Filed:

November 09, 2005

For:

**IRRADIANCE-REDISTRIBUTION
LENS AND ITS APPLICATIONS
TO LED DOWNLIGHTS**

Pasadena, California
May 31, 2007

A M E N D M E N T

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

In response to a telephone discussion with
Examiner on May 16, 2007, and in response to the office
Action dated 5/18/07 re an election of species, please
amend the above-identified application as follows:

Amendments to the Claims are reflected in the listing
of claims which begins on page 2 of this paper.

Remarks/Arguments begin on page 12 of this paper.

Serial No. 11/271,420

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Claim 1 (original). An irradiance-redistribution lens comprising a transparent dielectric solid of revolution with external surface area predominantly comprised of an entry surface that receives light of nonuniform irradiance from a nearby compact light source and of an opposing exit surface that forms a pre-specified diverging output beam; said entry surface given a specific profile that refractively deflects said received light into a different solid angle, said entry-face deflection spatially distributed such that said exit surface receives said deflected light with predominantly uniform irradiance, said exit face given a specific shape that refractively deflects said uniform irradiance into said output beam; said light source being sufficiently compact for said specific shapes to be calculated by mathematical integration of the slope distributions required by said refractive deflections.

Claim 2 (original). The lens of claim 1 wherein said specific profile of said entry face is calculated in concordance with the cumulative angular distribution of said received nonuniform light; said concordance

Serial No. 11/271,420

established by the correspondence of said distribution with equal values at wider radii of the shallower square-root distribution of uniform irradiance; said establishment embodied as the deflection function from each point of said entry surface to the wider radius on said exit surface having the same value of the cumulative distribution of uniform irradiance as the value at said entry-surface point of said cumulative distribution of said nonuniform irradiance from said light source.

Claim 3 (original). The lens of claim 2 wherein said specific shape of said exit face has the slope distribution that deflects said uniform irradiance into said pre-specified intensity distribution of said output beam.

Claim 4 (original). The lens of claim 1 wherein said output beam has predominantly uniform intensity within a predetermined angular limit.

Claim 5 (original). The lens of claim 1 wherein said output beam uniformly illuminates a target zone.

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Claim 6 (original). The lens of claim 5 wherein said target zone is on a plane facing said lens.

Claim 7 (original). The lens of claim 5 also comprised of inactive lateral surfaces forming a rectangular limit of said exit face, so that said target zone is a similar rectangle.

Claim 8 (original). The lens of claim 1 wherein said light source is a light emitting diode.

Claim 9 (original). The lens of claim 8 with multiple embodiments laterally arrayed in proximity, above light sources on a common circuit board, and having their output beams illuminating the same target.

Claim 10 (original). An illumination system for producing a semicircular beam, comprising the lens of claim 1, modified by cutting in half, a mirrored surface on said cutting plane, and a compact light source adjacent thereto for illuminating the entry surface of said lens.

Serial No. 11/271,420

Claim 11 (original). The system of claim 1 wherein said beam is collimated and also comprising a secondary lens for producing a specified diverging beam.

Claim 12 (original). The system of claim 11 wherein said secondary lens is a holographic diffuser.

Claim 13 (original). The system of claim 11 wherein said secondary lens is a lenslet array.

Claim 14 (currently amended). ~~A lighting device, comprising in~~ The lens of claim 1, and including multiple such lenses in the following combination:

- a) an array of aspheric lenses extending in side-by-side relation,
- b) an array of quasi-hemispheric light sources one for each lens,
- c) each source positioned to direct light at its corresponding lens, and the sources and lenses configured to produce light emitted from the lens array, the emitted light having substantially uniform intensity across an area corresponding to the area of the lens array.

Serial No. 11/271,420

Claim 15 (original). The combination of claim 14 wherein said emitted light is substantially collimated.

Claim 16 (original). The combination of claim 14 wherein the lenses have output sides which are generally dome shaped.

Claim 17 (original). The combination of claim 14 wherein the lenses extend in edge to edge peripherally packed relation.

Claim 18 (original). The combination of claim 14 wherein the lenses have peripheries which are polygonal.

Claim 19 (original). The combination of claim 17 wherein the lenses have peripheries which are square.

Claim 20 (original). The combination of claim 14 including relatively reduced size ball shaped lenses proximate said sources which are LEDs, and directing LED emitted light at the rear sides of said first mentioned lenses.

Serial No. 11/271,420

Claim 21 (original). The combination of claim 14 wherein said lenses are oriented to direct light downwardly in a room, for room illumination.

Claim 22 (original). The combination of claim 14 wherein there are spaced apart groups of said lenses oriented to direct light downwardly from the ceiling zone of a room, for room illumination.

Claim 23 (original). The combination of claim 22 including an electrical DC conductor proximate said ceiling zone and to which said sources which are LEDs associated with said group of lenses are electrically connected.

Claim 24 (original). The combination of claim 23 including an AC to DC converter connected to said line to convert AC current to low voltage DC current supplied to the LEDs in said group.

Serial No. 11/271,420

Claim 25 (original). The combination of claim 14 wherein the sources are oriented in one of the following configurations:

- i) at an axis defined by a lens,
- ii) sidewardly spaced from an axis defined by the lens.

Claim 26 (original). The combination of claim 14 wherein said sources are lambertian.

Claim 27 (currently amended). In combination, The lens of claim 1, and including multiple such lenses in combination with:

- a) an LED package comprising multiple LEDs, the lenses receiving light rays from the LEDs,
- b) and a transparent dielectric having a refracting flat surface to which rays from the LEDs are transmitted for refraction,
- c) the rays refracted from the LEDs at points along the flat surface extending in narrow bands.

Claim 28 (original). The combination of claim 27 wherein the rays transmitted to each said point are triplet rays.

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Claim 29 (original). The combination of claim 27 wherein the overall width spacing of the LEDs in the package is small relative to the overall operative width of the flat surface receiving rays transmitted from the LEDs.

Claim 30 (original). The combination of claim 29 wherein the ratio of said overall width spacing of the LEDs in the package to the operative width of the flat surface receiving the rays transmitted by the LEDs is less than $1/5$, whereby substantially uniform illumination is produced by said refracted rays.

Claim 31 (currently amended). A light redistribution system comprising, in combination with a lens as defined in claim 1,

- a) LED means,
- b) a the lens having a concave lower refracting surface receiving rays from said LED means,
- c) the lens having a dome-shaped refracting upper surface, the curvature of which is one of the following:
 - i) exceeds the curvature of the lower surface,

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- ii) is less than the curvature of the lower surface,
- d) a target surface receiving rays refracted by said upper surface,
- e) said LED means and said upper and lower surfaces configured to produce a profile of bounded flux at said target surface that provides substantially uniform illuminance.

Claim 32 (original). The system of claim 31 wherein said bounded flux defines a substantially square pattern.

Claim 33 (original). The system of claim 32 wherein the lens has four vertical planar side walls each intersecting said upper and lower surfaces.

Claim 34 (original). An array of adjacent lenses as defined in claim 33.

Claim 35 (original). The array of claim 34 including heat sink fins associated with said lenses.

Claim 36 (original). The array of claim 34 wherein the lenses face downwardly to direct light downwardly.

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Claim 37 (original). The array of claim 34 wherein the lenses are hexagonally packed, and a circuit board associated with the lenses, the LED means associated with said board.

Claim 38 (original). The system of claim 31 wherein said profile is substantially parabolic.

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R E M A R K S

The species of Group I, Claims 1-13 is, and has been elected, with traverse. This was telephoned to Examiner on May 17, 2007.

By this preliminary amendment, base claim 14 (of Group II species, claims 14-26); base claim 27 (of Group II species, claims 27-30); and base claim 31 (of Group IV, claims 31-38) have been amended to depend from Group I, claims 1-13. Therefore, claims 14-38 are effectively within Group I, for purposes of examination including searching, and their novelty and unobviouness has been materially enhanced, in such recited combinations with claim 1.

In view of the above, expedited examination, and allowance, are respectfully solicited.

A call to Counsel to discuss any issue is respectfully invited.

Respectfully submitted,



William W. Haefliger
Attorney for Applicant
Reg. No. 17,120
(323) 684-2707

WWH:ts
Docket 12,677

11/271,420

PTO/SB-08 (12-04)

Approved for use through 7/31/2006. OMB 0651-0032

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875 Effective December 8, 2004	Application or Docket Number 11271420
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APPLICATION AS FILED - PART I			SMALL ENTITY		OR	OTHER THAN SMALL ENTITY	
FOR (Column 1)	NUMBER FILED (Column 2)	NUMBER EXTRA (Column 2)	RATE (\$)	FEE (\$)		RATE (\$)	FEE (\$)
BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A	150.00		N/A	300.00
SEARCH FEE (37 CFR 1.16(k), (l), or (m))	N/A	N/A	N/A	\$250		N/A	\$500
EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A	\$100		N/A	\$200
TOTAL CLAIMS (37 CFR 1.16(i))	38 minus 20 =	18	X\$ 25 =	450	OR	X\$50 =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	4 minus 3 =	1	X100 =	100		X200 =	
APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is \$250 (\$125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).			—			
MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))			+180=	—		+360=	
			TOTAL	1050		TOTAL	

* If the difference in column 1 is less than zero, enter "0" in column 2.

APPLICATION AS AMENDED - PART II						SMALL ENTITY		OR	OTHER THAN SMALL ENTITY	
AMENDMENT A	CLAIMS REMAINING AFTER AMENDMENT (Column 1)	MINUS	HIGHEST NUMBER PREVIOUSLY PAID FOR (Column 2)	PRESENT EXTRA (Column 3)	RATE (\$)	ADDITIONAL FEE (\$)		RATE (\$)	ADDITIONAL FEE (\$)	
Total (37 CFR 1.16(i))	38	Minus	38	=	X\$ 25 =	—	OR	X\$50 =	—	
Independent (37 CFR 1.16(h))	4	Minus	4	=	X100 =	—	OR	X200 =	—	
Application Size Fee (37 CFR 1.16(s))					+180=	—	OR	+360=	—	
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))					TOTAL ADD'L FEE	—	OR	TOTAL ADD'L FEE	—	

AMENDMENT B	CLAIMS REMAINING AFTER AMENDMENT (Column 1)	MINUS	HIGHEST NUMBER PREVIOUSLY PAID FOR (Column 2)	PRESENT EXTRA (Column 3)	RATE (\$)	ADDITIONAL FEE (\$)		RATE (\$)	ADDITIONAL FEE (\$)
Total (37 CFR 1.16(i))	—	Minus	—	=	X\$ 25 =	—	OR	X\$50 =	—
Independent (37 CFR 1.16(h))	—	Minus	—	=	X100 =	—	OR	X200 =	—
Application Size Fee (37 CFR 1.16(s))					+180=	—	OR	+360=	—
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))					TOTAL ADD'L FEE	—	OR	TOTAL ADD'L FEE	—

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.

** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".

*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".

The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.



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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
11/271,420	11/09/2005	William A. Parkyn	12,677	1170

2675 7590 08/02/2007
WILLIAM W. HAEFLIGER
201 S. LAKE AVE
SUITE 512
PASADENA, CA 91101

EXAMINER

DUNN, DANIELLE N

ART UNIT	PAPER NUMBER
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2875

MAIL DATE	DELIVERY MODE
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08/02/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 11/271,420		Applicant(s) PARKYN ET AL.	
	Examiner Danielle Dunn		Art Unit 2875	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 1 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on 05 June 2007.

2a) ☐ This action is **FINAL**. 2b) ☐ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) 1-38 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☐ Claim(s) _____ is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☒ Claim(s) 1-38 are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f):

a) ☐ All b) ☐ Some * c) ☐ None of:

1. ☐ Certified copies of the priority documents have been received.

2. ☐ Certified copies of the priority documents have been received in Application No. _____.

3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892) 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____	4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ 5) ☐ Notice of Informal Patent Application 6) ☐ Other: _____
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DETAILED ACTION

In light of the Applicant's amendment to the claims filed on 6/05/2007, the following new restriction applies.

Election/Restrictions

1. This application contains claims directed to the following patentably distinct species: Claims 2-13, drawn to a single lens; Claims 14-26, drawn to a light device with an array of lenses; Claims 27-30, drawn to an LED package with multiple LEDS; and Claims 31-38, drawn to a light redistribution system with a LED. The species are independent or distinct because a lens, an array of lenses, an LED package with multiple LEDS, and a light redistribution system with a LED each has separate utility.

Applicant is required under 35 U.S.C. 121 to elect a single disclosed species for prosecution on the merits to which the claims shall be restricted if no generic claim is finally held to be allowable. Currently, claim 1 is generic.

Applicant is advised that a reply to this requirement must include an identification of the species that is elected consonant with this requirement, and a listing of all claims readable thereon, including any claims subsequently added. An argument that a claim is allowable or that all claims are generic is considered nonresponsive unless accompanied by an election.

Upon the allowance of a generic claim, applicant will be entitled to consideration of claims to additional species which depend from or otherwise require all the limitations of an allowable generic claim as provided by 37 CFR 1.141. If claims are added after

the election, applicant must indicate which are readable upon the elected species.
MPEP § 809.02(a).

2. Because these inventions are independent or distinct for the reasons given above and there would be a serious burden on the examiner if restriction is not required because the inventions have acquired a separate status in the art in view of their different classification, restriction for examination purposes as indicated is proper.

3. Applicant is advised that the reply to this requirement to be complete must include (i) an election of a species or invention to be examined even though the requirement be traversed (37 CFR 1.143) and (ii) identification of the claims encompassing the elected invention.

The election of an invention or species may be made with or without traverse. To reserve a right to petition, the election must be made with traverse. If the reply does not distinctly and specifically point out supposed errors in the restriction requirement, the election shall be treated as an election without traverse.

Should applicant traverse on the ground that the inventions or species are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the inventions or species to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions unpatentable over the prior art, the evidence or admission may be used in a rejection under 35 U.S.C. 103 (a) of the other invention.

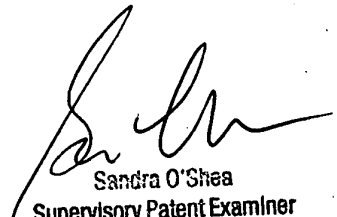
4. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Danielle Dunn whose telephone number is 571-270-3039. The examiner can normally be reached on M-F 7:30-5:00 with alternate Friday's off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sandra O'Shea can be reached on 571-272-2378. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

DND
7/25/07



Sandra O'Shea
Supervisory Patent Examiner
Technology Center 2800

<i>Index of Claims</i> 	Application/Control No. 11271420	Applicant(s)/Patent Under Reexamination PARKYN ET AL.
	Examiner Dunn, Danielle	Art Unit 2809

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

☐ Claims renumbered in the same order as presented by applicant				☐ CPA		☐ T.D.		☐ R.1.47	
CLAIM		DATE							
Final	Original	05/16/2007	07/25/2007						
	1	+	+						
	2	+	+						
	3	+	+						
	4	+	+						
	5	+	+						
	6	+	+						
	7	+	+						
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	35	+	+						
	36	+	+						

<i>Index of Claims</i> 	Application/Control No. 11271420	Applicant(s)/Patent Under Reexamination PARKYN ET AL.
	Examiner Dunn, Danielle	Art Unit 2809

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

☐ Claims renumbered in the same order as presented by applicant				☐ CPA				☐ T.D.				☐ R.1.47			
CLAIM		DATE													
Final	Original	05/16/2007	07/25/2007												
	37	+	+												
	38	+	+												



08-31-07

IFW

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August 30, 2007

CERTIFICATE OF EXPRESS MAILING

Mail Stop Amendment
Commissioner for Patents
P. O. Box 1450
Alexandria, VA 22313-1450

Sir:

I, WILLIAM W. HAEFLIGER, hereby certify that the enclosed amendment, and return receipt postcard, were deposited with the U.S. Patent and Trademark Office 'Express Mail - Post Office to Addressee', mailing label number ED 982274839 US in an envelope addressed to: Mail Stop Amendment, Commissioner for Patents, P. O. Box 1450, Alexandria, VA 22313-1450 on August 30, 2007

Dated: August 30, 2007


William W. Haeffliger
Attorney for Applicant
Reg. No. 17,120
(323) 684-2707



PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Group Art Unit 2809

Examiner: Danielle Dunn

Applicant:

William A. Parkyn et al

Serial No.:

11/271,420

Filed:

November 09, 2005

For:

**IRRADIANCE-REDISTRIBUTION
LENS AND ITS APPLICATIONS
TO LED DOWNLIGHTS**

Pasadena, California
August 30, 2007

A M E N D M E N T

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Madam:

In response to the office Action dated 8/2/07,
please amend the above-identified application as
follows:

Amendments to the Claims are reflected in the listing
of claims which begins on page 2 of this paper.

Remarks/Arguments begin on page 12 of this paper.

Serial No. 11/271,420

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Claim 1 (original). An irradiance-redistribution lens comprising a transparent dielectric solid of revolution with external surface area predominantly comprised of an entry surface that receives light of nonuniform irradiance from a nearby compact light source and of an opposing exit surface that forms a pre-specified diverging output beam; said entry surface given a specific profile that refractively deflects said received light into a different solid angle, said entry-face deflection spatially distributed such that said exit surface receives said deflected light with predominantly uniform irradiance, said exit face given a specific shape that refractively deflects said uniform irradiance into said output beam; said light source being sufficiently compact for said specific shapes to be calculated by mathematical integration of the slope distributions required by said refractive deflections.

Serial No. 11/271,420

Claim 2 (original). The lens of claim 1 wherein said specific profile of said entry face is calculated in concordance with the cumulative angular distribution of said received nonuniform light; said concordance established by the correspondence of said distribution with equal values at wider radii of the shallower square-root distribution of uniform irradiance; said establishment embodied as the deflection function from each point of said entry surface to the wider radius on said exit surface having the same value of the cumulative distribution of uniform irradiance as the value at said entry-surface point of said cumulative distribution of said nonuniform irradiance from said light source.

Claim 3 (original). The lens of claim 2 wherein said specific shape of said exit face has the slope distribution that deflects said uniform irradiance into said pre-specified intensity distribution of said output beam.

Claim 4 (original). The lens of claim 1 wherein said output beam has predominantly uniform intensity within a predetermined angular limit.

Serial No. 11/271,420

Claim 5 (original). The lens of claim 1 wherein said output beam uniformly illuminates a target zone.

Claim 6 (original). The lens of claim 5 wherein said target zone is on a plane facing said lens.

Claim 7 (original). The lens of claim 5 also comprised of inactive lateral surfaces forming a rectangular limit of said exit face, so that said target zone is a similar rectangle.

Claim 8 (original). The lens of claim 1 wherein said light source is a light emitting diode.

Claim 9 (original). The lens of claim 8 with multiple embodiments laterally arrayed in proximity, above light sources on a common circuit board, and having their output beams illuminating the same target.

Claim 10 (original). An illumination system for producing a semicircular beam, comprising the lens of claim 1, modified by cutting in half, a mirrored surface on said cutting plane, and a compact light source adjacent thereto for illuminating the entry surface of said lens.

Serial No. 11/271,420

Claim 11 (original). The system of claim 1 wherein said beam is collimated and also comprising a secondary lens for producing a specified diverging beam.

Claim 12 (original). The system of claim 11 wherein said secondary lens is a holographic diffuser.

Claim 13 (original). The system of claim 11 wherein said secondary lens is a lenslet array.

Claim 14 (withdrawn). The lens of claim 1, and including multiple such lenses in the following combination:

- a) an array of aspheric lenses extending in side-by-side relation,
- b) an array of quasi-hemispheric light sources one for each lens,
- c) each source positioned to direct light at its corresponding lens, and the sources and lenses configured to produce light emitted from the lens array, the emitted light having substantially uniform intensity across an area corresponding to the area of the lens array.

Serial No. 11/271,420

Claim 15 (withdrawn). The combination of claim 14 wherein said emitted light is substantially collimated.

Claim 16 (withdrawn). The combination of claim 14 wherein the lenses have output sides which are generally dome shaped.

Claim 17 (withdrawn). The combination of claim 14 wherein the lenses extend in edge to edge peripherally packed relation.

Claim 18 (withdrawn). The combination of claim 14 wherein the lenses have peripheries which are polygonal.

Claim 19 (withdrawn). The combination of claim 17 wherein the lenses have peripheries which are square.

Claim 20 (withdrawn). The combination of claim 14 including relatively reduced size ball shaped lenses proximate said sources which are LEDs, and directing LED emitted light at the rear sides of said first mentioned lenses.

Serial No. 11/271,420

Claim 21 (withdrawn). The combination of claim 14 wherein said lenses are oriented to direct light downwardly in a room, for room illumination.

Claim 22 (withdrawn). The combination of claim 14 wherein there are spaced apart groups of said lenses oriented to direct light downwardly from the ceiling zone of a room, for room illumination.

Claim 23 (withdrawn). The combination of claim 22 including an electrical DC conductor proximate said ceiling zone and to which said sources which are LEDs associated with said group of lenses are electrically connected.

Claim 24 (withdrawn). The combination of claim 23 including an AC to DC converter connected to said line to convert AC current to low voltage DC current supplied to the LEDs in said group.

Serial No. 11/271,420

Claim 25 (withdrawn). The combination of claim 14 wherein the sources are oriented in one of the following configurations:

- i) at an axis defined by a lens,
- ii) sidewardly spaced from an axis defined by the lens.

Claim 26 (withdrawn). The combination of claim 14 wherein said sources are lambertian.

Claim 27 (withdrawn). The lens of claim 1, and including multiple such lenses in combination with:

- a) an LED package comprising multiple LEDs, the lenses receiving light rays from the LEDs,
- b) and a transparent dielectric having a refracting flat surface to which rays from the LEDs are transmitted for refraction,
- c) the rays refracted from the LEDs at points along the flat surface extending in narrow bands.

Claim 28 (withdrawn). The combination of claim 27 wherein the rays transmitted to each said point are triplet rays.

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Claim 29 (withdrawn). The combination of claim 27 wherein the overall width spacing of the LEDs in the package is small relative to the overall operative width of the flat surface receiving rays transmitted from the LEDs.

Claim 30 (withdrawn). The combination of claim 29 wherein the ratio of said overall width spacing of the LEDs in the package to the operative width of the flat surface receiving the rays transmitted by the LEDs is less than $1/5$, whereby substantially uniform illumination is produced by said refracted rays.

Claim 31 (withdrawn). A light redistribution system comprising, in combination with a lens as defined in claim 1,

- a) LED means,
- b) the lens having a concave lower refracting surface receiving rays from said LED means,
- c) the lens having a dome-shaped refracting upper surface, the curvature of which is one of the following:
 - i) exceeds the curvature of the lower surface,

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- ii) is less than the curvature of the lower surface,
- d) a target surface receiving rays refracted by said upper surface,
- e) said LED means and said upper and lower surfaces configured to produce a profile of bounded flux at said target surface that provides substantially uniform illuminance.

Claim 32 (withdrawn). The system of claim 31 wherein said bounded flux defines a substantially square pattern.

Claim 33 (withdrawn). The system of claim 32 wherein the lens has four vertical planar side walls each intersecting said upper and lower surfaces.

Claim 34 (withdrawn). An array of adjacent lenses as defined in claim 33.

Claim 35 (withdrawn). The array of claim 34 including heat sink fins associated with said lenses.

Claim 36 (withdrawn). The array of claim 34 wherein the lenses face downwardly to direct light downwardly.

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Claim 37 (withdrawn). The array of claim 34 wherein the lenses are hexagonally packed, and a circuit board associated with the lenses, the LED means associated with said board.

Claim 38 (withdrawn). The system of claim 31 wherein said profile is substantially parabolic.

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R E M A R K S

Applicant hereby elects with traverse, the designated species of claims 2-13, reserving the other species for divisional applications, if necessary and if filed; however, note the following:

Claims readable upon the elected species are claims 1-13, and also claims 14-26; claims 27-30; and claims 31-38; since base claims 14, '27 and 31 have been amended to depend from generic claim 1, in the preceding amendment. Therefore, all claims should be examined together.

Allowance of all claims 1-36 is believed in order and is respectfully solicited. A call to Counsel to discuss any issue is invited.

Respectfully submitted,


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WWH:ts
Docket 12,677

11/27/420

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

PATENT APPLICATION FEE DETERMINATION RECORD
Substitute for Form PTO-875 Effective December 8, 2004

Application or Docket Number
11271420

APPLICATION AS FILED - PART I			SMALL ENTITY		OTHER THAN SMALL ENTITY	
FOR	NUMBER FILED (Column 1)	NUMBER EXTRA (Column 2)	RATE (\$)	FEE (\$)	RATE (\$)	FEE (\$)
BASIC FEE (37 CFR 1.18(a), (b), or (c))	N/A	N/A	N/A	150.00	N/A	300.00
SEARCH FEE (37 CFR 1.18(d), (f), or (m))	N/A	N/A	N/A	\$250	N/A	\$500
EXAMINATION FEE (37 CFR 1.18(a), (p), or (q))	N/A	N/A	N/A	\$100	N/A	\$200
TOTAL CLAIMS (37 CFR 1.18(i))	38	minus 20 = 18	X\$ 25 =	450	X\$50 =	
INDEPENDENT CLAIMS (37 CFR 1.18(h))	4	minus 3 = 1	X100 =	100	X200 =	
APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is \$250 (\$125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).					
MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))			+180=		+360=	
			TOTAL	1050	TOTAL	

* If the difference in column 1 is less than zero, enter "0" in column 2.

6/5/07 APPLICATION AS AMENDED - PART II

AMENDMENT A					SMALL ENTITY		OTHER THAN SMALL ENTITY	
	CLAIMS REMAINING AFTER AMENDMENT (Column 1)		HIGHEST NUMBER PREVIOUSLY PAID FOR (Column 2)	PRESENT EXTRA (Column 3)	RATE (\$)	ADDITIONAL FEE (\$)	RATE (\$)	ADDITIONAL FEE (\$)
Total (37 CFR 1.18(i))	38	Minus	38		X\$ 25 =		X\$50 =	
Independent (37 CFR 1.18(h))	4	Minus	4		X100 =		X200 =	
Application Size Fee (37 CFR 1.16(s))								
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))					+180=		+360=	
					TOTAL ADD'L FEE		TOTAL ADD'L FEE	

1, 14, 27, 31, 8-30-07

AMENDMENT B					SMALL ENTITY		OTHER THAN SMALL ENTITY	
	CLAIMS REMAINING AFTER AMENDMENT (Column 1)		HIGHEST NUMBER PREVIOUSLY PAID FOR (Column 2)	PRESENT EXTRA (Column 3)	RATE (\$)	ADDITIONAL FEE (\$)	RATE (\$)	ADDITIONAL FEE (\$)
Total (37 CFR 1.18(i))	38	Minus	38		X\$ 25 =		X\$50 =	
Independent (37 CFR 1.18(h))	1	Minus	4		X100 =		X200 =	
Application Size Fee (37 CFR 1.16(s))								
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))					+180=		+360=	
					TOTAL ADD'L FEE		TOTAL ADD'L FEE	

- * If the entry in column 1 is less than the entry in column 2, write "0" in column 3.
- ** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".
- *** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".

The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2

EAST Search History

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	6121	(light adj source) and lens and (light adj emitting adj diode) and (circuit adj board)	US-PGPUB; USPAT; USOCR	OR	ON	2007/09/27 12:43
L2	546	(light adj source) and lens and (light adj emitting adj diode) and (circuit adj board) and (mirror\$2 near surface)	US-PGPUB; USPAT; USOCR	OR	ON	2007/09/27 12:43
L3	119	(light adj source) and lens and (light adj emitting adj diode) and (circuit adj board) and (mirror\$2 near surface) and "362"/\$.ccls.	US-PGPUB; USPAT; USOCR	OR	ON	2007/09/27 12:43
L4	107	(light adj source) and lens and (light adj emitting adj diode) and (circuit adj board) and (mirror\$2 near surface) and "359"/\$.ccls.	US-PGPUB; USPAT; USOCR	OR	ON	2007/09/27 13:31
L5	200	3 or 4	US-PGPUB; USPAT; USOCR	OR	ON	2007/09/27 13:32
L6	2	5 and (half adj mirror)	US-PGPUB; USPAT; USOCR	OR	ON	2007/09/27 13:45
L7	99	5 and half	US-PGPUB; USPAT; USOCR	OR	ON	2007/09/27 13:46
L8	47	7 and cut	US-PGPUB; USPAT; USOCR	OR	ON	2007/09/27 14:00
L9	13315	half adj mirror	US-PGPUB; USPAT; USOCR	OR	ON	2007/09/27 14:01
L10	194	9 and ("362"/\$.ccls.)	US-PGPUB; USPAT; USOCR	OR	ON	2007/09/27 14:02
L11	59	9 and ("362"/\$.ccls.) and (light adj emitting adj diode)	US-PGPUB; USPAT; USOCR	OR	ON	2007/09/27 14:04
L12	26	9 and ("362"/\$.ccls.) and (light adj emitting adj diode) and (mirror\$3 near3 surface)	US-PGPUB; USPAT; USOCR	OR	ON	2007/09/27 14:04
L13	481	9 and (light adj emitting adj diode) and (mirror\$3 near3 surface)	US-PGPUB; USPAT; USOCR	OR	ON	2007/09/27 14:05
L14	419	9 and (light adj emitting adj diode) and (mirror\$3 near3 surface) and lens	US-PGPUB; USPAT; USOCR	OR	ON	2007/09/27 14:05
L15	41	9 and (light adj emitting adj diode) and (mirror\$3 near3 surface) and lens and (circuit adj board)	US-PGPUB; USPAT; USOCR	OR	ON	2007/09/27 14:34
L16	10	9 and (light adj emitting adj diode) and lens and (cut\$4 near3 plane)	US-PGPUB; USPAT; USOCR	OR	ON	2007/09/27 14:52

EAST Search History

L17	89	9 and (light adj source) and lens and (cut\$4 near3 plane)	US-PGPUB; USPAT; USOCR	OR	ON	2007/09/27 14:35
L18	4	9 and (light adj emitting adj diode) and lens and (cut\$4 with plane with mirror\$3)	US-PGPUB; USPAT; USOCR	OR	ON	2007/09/27 14:55
L19	0	9 and (light adj emitting adj diode) and lens and (cut\$4 near3 plane near3 mirror\$3)	US-PGPUB; USPAT; USOCR	OR	ON	2007/09/27 14:55
L20	5	(light adj emitting adj diode) and lens and (cut\$4 near3 plane near3 mirror\$3)	US-PGPUB; USPAT; USOCR	OR	ON	2007/09/27 14:57
L21	5	(light adj emitting adj diode) and lens and (mirror\$3 near3 surface) and (cutting adj plane)	US-PGPUB; USPAT; USOCR	OR	ON	2007/09/27 14:57
L23	900	holographic adj diffuser	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	ON	2007/09/27 15:28
L24	509	23 and collimat\$3	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	ON	2007/09/27 15:47
L25	0	"4655539".pn. and (cut\$4 near3 plane)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	ON	2007/09/27 15:47
L26	0	"4655539".pn. and (cut\$4 and plane)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	ON	2007/09/27 15:47
S1	304	362/168.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	ON	2007/09/27 08:25
S2	16	362/168.ccls. and lens	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	ON	2007/09/26 14:44

EAST Search History

S3	0	359/619+.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	ON	2007/09/26 14:44
S4	1510	359/619.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	ON	2007/09/26 14:47
S5	0	359/618+.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	ON	2007/09/26 14:48
S6	8062	359/618-640.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	ON	2007/09/26 14:50
S7	13702	362/157-208.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	ON	2007/09/26 14:51
S8	1	S6 and S7	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	ON	2007/09/26 16:36
S9	2265	362/239,168,169215,268,335,558.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	ON	2007/09/26 14:55
S10	4589	362/800,237,244,330-332,334-336,340.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	ON	2007/09/26 14:56
S11	23523	"362"/\$.ccls. and lens	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	ON	2007/09/26 16:36

EAST Search History

S12	7102	"362"/\$.ccls. and lens and distribut\$3	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	ON	2007/09/26 16:37
S13	102	"362"/\$.ccls. and lens and distribut\$3 and irradiance	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	ON	2007/09/26 16:37
S14	95	"362"/\$.ccls. and lens and distribut\$3 and irradiance and (angle or angular)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	ON	2007/09/26 16:38
S15	4851	"362"/\$.ccls. and lens and (light adj emitting adj diode)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	ON	2007/09/26 16:39
S16	1805	"362"/\$.ccls. and lens and (light adj emitting adj diode) and (circuit adj board)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	ON	2007/09/26 16:40
S17	192	"362"/\$.ccls. and (holographic near3 diffus\$3)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	ON	2007/09/26 16:41
S18	0	"362"/\$.ccls. and (lenset adj array)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	ON	2007/09/26 16:42
S19	0	"362"/\$.ccls. and (lenset near3 array)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	ON	2007/09/26 16:42
S20	2	"362"/\$.ccls. and (lenset with array)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	ON	2007/09/26 16:43

EAST Search History

S21	2	"359"/\$.ccls. and (lenset with array)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	ON	2007/09/26 16:42
S22	2	"359"/\$.ccls. and (lenset near3 array)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	ON	2007/09/26 16:42
S23	2	"359"/\$.ccls. and (lenset adj array)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	ON	2007/09/26 17:03
S24	2	S21 S22 S23	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	ON	2007/09/26 16:43
S25	194	S20 S17	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	ON	2007/09/26 16:43
S26	196	S25 S24	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	ON	2007/09/26 16:43
S27	692	len and ((lenset adj array) or (holographic adj diffuser))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	ON	2007/09/26 17:04
S28	752	lens and ((lenset adj array) or (holographic adj diffuser))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	ON	2007/09/26 17:14
S29	818	S26 or S28	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	ON	2007/09/26 17:05

EAST Search History

S30	655	lens and ((lenset adj array) or (holographic adj diffuser)) and (light adj source)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	ON	2007/09/26 17:14
S31	2	"5339177".pn.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	ON	2007/09/27 08:25
S32	96	("3421809" "3523054" "3539241" "3545835" "3831035" "4001635" "4637122" "4786918" "4831629" "4860304" "4940303" "4953166" "4988153" "5007690" "5115335" "5115445" "5126263" "5228050" "5267255").PN. OR ("2442506" "3754814" "5339177").URPN.	US-PGPUB; USPAT; USOCR	OR	ON	2007/09/27 08:37
S33	41	S32 and (light adj. source) and lens	US-PGPUB; USPAT; USOCR	OR	ON	2007/09/27 08:38
S34	7	S32 and (light adj source) and lens and (light adj emitting adj diode)	US-PGPUB; USPAT; USOCR	OR	ON	2007/09/27 08:42
S35	6121	(light adj source) and lens and (light adj emitting adj diode) and (circuit adj board)	US-PGPUB; USPAT; USOCR	OR	ON	2007/09/27 09:38
S36	1	"6433936".pn.	US-PGPUB; USPAT; USOCR	OR	ON	2007/09/27 09:38
S37	26	("3133285" "3470561" "3656165" "3680123" "3703723" "3765021" "3781900" "3914769" "3972043" "4287519" "4309710" "4361841" "4531129" "4973965" "5142290" "5243186" "5424737" "5607492" "5677796" "5781163" "6043769" "6229500").PN. OR ("6433936").URPN.	US-PGPUB; USPAT; USOCR	OR	ON	2007/09/27 10:26



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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
11/271,420	11/09/2005	William A. Parkyn	12,677	1170
2675 7590 10/04/2007 WILLIAM W. HAEFLIGER 201 S. LAKE AVE SUITE 512 PASADENA, CA 91101				
			EXAMINER DUNN, DANIELLE N	
			ART UNIT 2875	PAPER NUMBER
			MAIL DATE 10/04/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 11/271,420	Applicant(s) PARKYN ET AL.	
	Examiner Danielle Dunn	Art Unit 2875	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on 30 August 2007.

2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) 1-38 is/are pending in the application.

4a) Of the above claim(s) 14-38 is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) 1-13 is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☒ The drawing(s) filed on 09 August 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) ☐ All b) ☐ Some * c) ☐ None of:

1. ☐ Certified copies of the priority documents have been received.

2. ☐ Certified copies of the priority documents have been received in Application No. _____.

3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892) 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____	4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date: _____ 5) ☐ Notice of Informal Patent Application 6) ☐ Other: _____
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DETAILED ACTION

Election/Restrictions

1. Applicant's election with traverse of group 1 in the reply filed on 8/30/2007 is acknowledged. The traversal is on the ground(s) that claims 14, 27, and 31 have been amended to depend from generic claim 1. This is not found persuasive because of the reasons stated in the previous office action mailed on 8/02/2007 in sections 1 and 2.

The requirement is still deemed proper and is therefore made FINAL.

2. **Claims 14-38** are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected species. Applicant timely traversed the restriction (election) requirement in the reply filed on 8/30/2007.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. **Claims 1-13** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 3-8 are included because of their dependency.

5. Regarding **claim 1**, it is unclear how a lens receives light from a compact nearby light source and "of an opposing surface exit surface that forms a pre-specified diverging output beam," lines 4-7.

6. **Claim 1** recites the limitation "entry-face" in line 10. There is insufficient antecedent basis for this limitation in the claim.

7. **Claim 1** recites the limitation "exit face" in line 12. There is insufficient antecedent basis for this limitation in the claim

8. **Claim 2** recites the limitation "entry face" in line 2. There is insufficient antecedent basis for this limitation in the claim.

9. **Claim 2** recites the limitation "nonuniform light" in line 4. There is insufficient antecedent basis for this limitation in the claim.

10. Regarding **claim 9**, it is unclear how the one lens claimed in claim 1 has multiple embodiments laterally arrayed in proximity above several light sources when only a nearby light source is claimed in claim 1. Also it is unclear if the lens(es) are on the common circuit board which is above the light sources or if the lens(es) are above the light sources and the common circuit board. It is further not clear what is having "their output beams" illuminating the same target.

11. Regarding **claim 10**, it is unclear if the lens is being cut in half or if the mirrored surface on the cutting plane is being cut in half. Claim 10 is not clear enough to examine further at this time.

12. **Claim 10** recites the limitation "cutting plane" in line 3. There is insufficient antecedent basis for this limitation in the claim.

13. Regarding **claim 11**, it is unclear how a beam can comprise a lens.

14. **Claims 11-13** recite the limitation "the system" in line 1. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

15. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

16. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

17. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

18. **Claims 1-3 and 8** are rejected under 35 U.S.C. 103(a) as being unpatentable over Doric (US 5,607,492) and Carpenter et al. (US 6,433,936).

With respect to **claim 1**, Carpenter et al. teach a lens having a transparent dielectric solid of revolution (a Luneberg lens is a spherical gradient lens having a defined dielectric constant gradient; col. 1, ln 18-19) with an external surface area with an entry and exit face (light enters through one side of a lens and exits through the other side) that receives light on non-uniform irradiance from a nearby compact light source (when this lens is in a room with a lamp on, it receives light from a nearby compact light source). Carpenter et al. also teach the entry surface having a specific profile that refractively deflects the received light into a different solid angle (spherical gradient lens, col. 1, ln 18-19, deflects light into a different solid angle). Carpenter et al. also teaches the light exit face having a specific shape which refractively deflects the uniform irradiance into an output beam (as light passes through the lens, an output light beam is created). Carpenter et al. do not explicitly teach a lens with the exit surface receiving the deflected light with uniform radiance.

However, Doric teaches a Luneberg lens with the exit surface receiving the deflected light with uniform radiance (the lens 13 is placed in front of light source 15 and the beam 21 is deflected with uniform radiance; Fig. 3) Doric teaches a light source being sufficiently compact (light source 15 such as a laser diode).

Carpenter et al. and Doric are analogous art because they are from the same field of endeavor, correcting light beams with a Luneberg lens. It would have been obvious to one skilled in the art at the time of the invention having the teachings of

Carpenter et al. and Doric before him or her to modify the device of Doric with the Luneberg lens of Carpenter et al. because this would allow an Luneberg-type lens to correct the light beams of an adjacent light source.

With respect to **claim 2**, Doric teaches calculating (5) a refractive index profile $n(r)$, where r is the distance from the center to the core (col. 4, ln 1-3). It would have been obvious to one skilled in the art at the time the invention was formed to calculate the profile of the entry face in concordance with the cumulative angular distribution of the received nonuniform light, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only ordinary skill in the art. *In re Aller*, 105 USPQ 233.

With respect to **claim 3**, Carpenter et al. teach the shape of the exit face having a slope distribution that deflects uniform irradiance into a pre-specified intensity distribution of the output beam (a Luneberg lens is a spherical gradient lens; col. 1, ln 18-19; which has a slope distribution that deflects uniform irradiance into a pre-specified intensity). Doric teaches using the Luneberg lens (lens 13) for correcting adjacent light source. It would have been obvious to one skilled in the art at the time of the invention, having the teachings of Doric and Carpenter et al. before him or her, to modify the device of Doric with the Luneberg lens of Carpenter et al. because this would allow an Luneberg-type lens to correct the light beams of an adjacent light source.

With respect to **claim 8**, Doric teaches the light source being a laser diode (light source 15; Col. 5, ln 13; a laser diode emits light and therefor anticipates using light emitting diodes).

19. **Claims 4-7** are rejected under 35 U.S.C. 103(a) as being unpatentable over Doric (US 5,607,492) and Carpenter et al. (US 6,433,936), as applied to claim 1 above and further in view of Leith (US 3,754,814).

With respect to **claims 4-6**, Carpenter et al. and Doric teach all the limitations as disclosed above. Doric teaches the output beam having a predominantly uniform intensity within a predetermined angular limit and the output beam uniformly illuminating a target zone (input and output beams are shown in Fig. 3, the target zone is anything in the illumination path such as a wall or sheet of paper). Leith teaches the target zone being on a plane facing the lens (image plane 19; Fig. 1).

With respect to **claim 7**, Carpenter et al. and Doric teach all the limitations as disclosed above. However, Carpenter et al. and Doric do not explicitly teach the lens being comprised of inactive lateral surfaces forming a rectangular limit of the exit face, so that the target zone is a similar triangle. However, the device of Doric would need to be enclosed in a housing. It only takes the knowledge of one skilled in the art to devise a rectangular housing for the lens, which would create inactive lateral surfaces forming a rectangular limit of the exit face, so that the target zone is a similar triangle.

Carpenter et al., Doric, and Leith are analogous art because they are from the same field of endeavor, using a lens for correcting light beams. It would have been

obvious to one skilled in the art at the time of the invention having the teachings of Carpenter et al., Doric, and Leith before him or her, to modify the device of Doric to include the lens of Carpenter et al. and the object space of Leith because this will allow the lens to illuminate a specific target.

20. **Claim 9** is rejected under 35 U.S.C. 103(a) as being unpatentable over Doric (US 5,607,492) and Carpenter et al. (US 6,433,936), as applied to claim 1 above and further in view of Wunderer (US 2007/0109615).

With respect to **claim 9**, Carpenter et al. and Doric teach all the limitations as disclosed above. Carpenter et al. do not appear to explicitly disclose multiple embodiments of a lens laterally arrayed above light sources on a common circuit board illuminating the same target. However, Wunderer teaches a light source 5 such as light emitting diodes (Para 41, ln 1) disposed on screen 16 which can be formed by or can have a printed circuit board (Para 29, ln 13-15) with the imaging system 18 used, i.e. a gradient lens (Para 29, ln 5-8). Carpenter et al., Doric and Wunderer are analogous art because they are from the same field of endeavor, using a lens for correcting light beams. It would have been obvious to one skilled in the art at the time of the invention having the teachings of Carpenter et al., Doric, and Wunderer before him or her, to modify the device of Doric to include the lens of Carpenter et al. and the imaging system of Wunderer because this will allow the lens to be used as a reflector also.

21. **Claims 11-13** are rejected under 35 U.S.C. 103(a) as being unpatentable over Doric (US 5,607,492) and Carpenter et al. (US 6,433,936), as applied to claim 1 above and further in view of Caulfield et al. (US 4,655,539).

With respect to claims 11 and 12, Carpenter et al. and Doric disclose all the limitations as disclosed above. Carpenter et al. and Doric do not explicitly teach the beam being collimated. However, Caulfield et al. teach a beam being collimated as shown in Fig. 3. Caulfield et al. also teach a second lens being used producing a specific diverging beam (lenses 13, 22 and 26 produce specific diverging beams; Fig. 3). Caulfield et al. also teach the second beam being a holographic diffuser or a lenslet array (col. 6, ln 2-15). Carpenter et al., Doric and Caulfield et al. are analogous art because they are from the same field of endeavor, using a lens for correcting light beams. It would have been obvious to one skilled in the art at the time of the invention having the teachings of Carpenter et al., Doric, and Caulfield et al. before him or her, to modify the device of Doric to include the lens of Carpenter et al. and the collimating system of Wunderer because this will allow the lens to be used as a pre-designed hologram or a holographic mirror.

Conclusion

22. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

US 3,470,561 teach a spherical Luneberg lens.

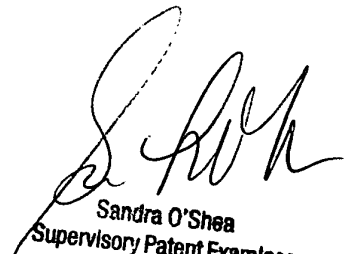
US 5,339,177 teach an incoherent/coherent source array.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Danielle Dunn whose telephone number is 571-270-3039. The examiner can normally be reached on M-F 7:30-5:00 with alternate Friday's off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sandra O'Shea can be reached on 571-272-2378. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

DND
9/27/07



Sandra O'Shea
Supervisory Patent Examiner
Technology Center 2800

Notice of References Cited	Application/Control No. 11/271,420	Applicant(s)/Patent Under Reexamination PARKYN ET AL.	
	Examiner Danielle Dunn	Art Unit 2875	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
*	A	US-5,339,177	08-1994	Jenkins et al.	359/35
*	B	US-3,470,561	09-1969	HORST ROBERT L	343/911R
*	C	US-4,655,539	04-1987	Caulfield et al.	359/9
*	D	US-5,607,492	03-1997	Doric, Sead	65/17.4
*	E	US-2007/0109615	05-2007	Wunderer, Bernd	358/509
*	F	US-3,754,814	08-1973	Leith, Emmett N.	359/599
*	G	US-6,433,936	08-2002	Carpenter et al.	359/652
	H	US-			
	I	US-			
	J	US-			
	K	US-			
	L	US-			
	M	US-			

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.



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BIB DATA SHEET

CONFIRMATION NO. 1170

SERIAL NUMBER 11/271,420	FILING or 371(c) DATE 11/09/2005 RULE	CLASS 362	GROUP ART UNIT 2875	ATTORNEY DOCKET NO. 12,677	
APPLICANTS William A. Parkyn, Lomita, CA; David G. Pelka, Los Angeles, CA; ** CONTINUING DATA ***** This appln claims benefit of 60/627,287 11/12/2004 ** FOREIGN APPLICATIONS ***** ** IF REQUIRED, FOREIGN FILING LICENSE GRANTED ** ** SMALL ENTITY ** 12/08/2005					
Foreign Priority claimed ☐ Yes ☐ No 35 USC 119(a-d) conditions met ☐ Yes ☐ No Verified and Acknowledged <u>Examiner's Signature</u>		☐ Met after Allowance <u>Initials</u>	STATE OR COUNTRY CA	SHEETS DRAWINGS 11	TOTAL CLAIMS 38 INDEPENDENT CLAIMS 4
ADDRESS WILLIAM W. HAEFLIGER 201 S. LAKE AVE SUITE 512 PASADENA, CA 91101 UNITED STATES					
TITLE Irradiance-redistribution lens and its applications to LED downlights					
FILING FEE RECEIVED 1050	FEES: Authority has been given in Paper No. _____ to charge/credit DEPOSIT ACCOUNT No. _____ for following:		☐ All Fees ☐ 1.16 Fees (Filing) ☐ 1.17 Fees (Processing Ext. of time) ☐ 1.18 Fees (Issue) ☐ Other _____ ☐ Credit		

<i>Index of Claims</i> 	Application/Control No. 11271420	Applicant(s)/Patent Under Reexamination PARKYN ET AL.
	Examiner Dunn, Danielle	Art Unit 2809

✓	Rejected
=	Allowed

-	Cancelled
÷	Restricted

N	Non-Elected
I	Interference

A	Appeal
O	Objected

☐ Claims renumbered in the same order as presented by applicant					☐ CPA					☐ T.D.					☐ R.1.47				
CLAIM		DATE																	
Final	Original	05/16/2007	07/25/2007	09/27/2007															
	1	+	+	✓															
	2	+	+	✓															
	3	+	+	✓															
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	35	+	+	N															
	36	+	+	N															

<i>Index of Claims</i> 	Application/Control No. 11271420	Applicant(s)/Patent Under Reexamination PARKYN ET AL.
	Examiner Dunn, Danielle	Art Unit 2809

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

☐ Claims renumbered in the same order as presented by applicant				☐ CPA		☐ T.D.		☐ R.1.47	
CLAIM		DATE							
Final	Original	05/16/2007	07/25/2007	09/27/2007					
	37	+	+	N					
	38	+	+	N					

Search Notes 	Application/Control No. 11271420	Applicant(s)/Patent Under Reexamination PARKYN ET AL.
	Examiner Dunn, Danielle	Art Unit 2875

SEARCHED			
Class	Subclass	Date	Examiner

SEARCH NOTES		
Search Notes	Date	Examiner
Restriction Consulted J Choi AU 2875	4/27/2007	DND
Restriction Consulted I Negron AU 2885	5/15/2007	DND
362/800,237,244,330-332,334-336,340 Consulted A Ton AU 2875	7/25/2007	DND
Consulted S OShea and C Spyrou for Restriction	7/30/2007	DND
Consulted I Negron AU 2885 362/239,168,169,215,268,335,558	7/26/2007	DND
Consulted A Lavarious AU 2872 315/169,76,200	7/26/2007	DND
362/362,333 Consulted I Negron AU 2885	7/26/2007	DND
EAST Search	9/27/2007	DND
Inventor name search	9/27/2007	DND

INTERFERENCE SEARCH			
Class	Subclass	Date	Examiner



PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Group Art Unit 2809

Examiner: Danielle Dunn

Applicant:

William A. Parkyn et al

Serial No.:

11/271,420

Filed:

November 09, 2005

For:

**IRRADIANCE-REDISTRIBUTION
LENS AND ITS APPLICATIONS
TO LED DOWNLIGHTS**

Pasadena, California
January 8, 2008

A M E N D M E N T

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Madam:

In response to the office Action dated 10/4/07,
please amend the above-identified application as
follows:

Amendments to the Claims are reflected in the listing
of claims which begins on page 2 of this paper.

Remarks/Arguments begin on page 13 of this paper.

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Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Claim 1 (currently amended). An irradiance-redistribution illumination lens comprising a transparent dielectric solid of revolution with external surface area predominantly comprised of an entry surface that receives light of nonuniform irradiance from a nearby compact light source and of an opposing exit surface that forms from said received light a pre-specified diverging output beam; said entry surface given a specific profile that refractively deflects said received light into a different solid angle, said ~~entry face deflection~~ entry surface spatially distributed such that said exit surface receives said deflected light with predominantly uniform irradiance, said exit ~~face~~ surface given a specific shape that refractively deflects said uniform irradiance into said output beam; said light source being sufficiently compact for said specific shapes to be calculated by mathematical integration of the slope distributions required by said refractive deflections.

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Claim 2 (currently amended). The lens of claim 1 wherein said specific profile of said entry ~~face~~ surface is calculated in concordance with the cumulative angular distribution of said received ~~nonuniform~~ light; said concordance established by the correspondence of said distribution with equal values at wider radii of the shallower square-root distribution of uniform irradiance; said establishment embodied as the deflection function from each point of said entry surface to the wider radius on said exit surface having the same value of the cumulative distribution of uniform irradiance as the value at said entry-surface point of said cumulative distribution of said ~~nonuniform~~ irradiance from said light source.

Claim 3 (original). The lens of claim 2 wherein said specific shape of said exit face has the slope distribution that deflects said uniform irradiance into said pre-specified intensity distribution of said output beam.

Claim 4 (original). The lens of claim 1 wherein said output beam has predominantly uniform intensity within a predetermined angular limit.

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Claim 5 (original). The lens of claim 1 wherein said output beam uniformly illuminates a target zone.

Claim 6 (original). The lens of claim 5 wherein said target zone is on a plane facing said lens.

Claim 7 (original). The lens of claim 5 also comprised of inactive lateral surfaces forming a rectangular limit of said exit face, so that said target zone is a similar rectangle.

Claim 8 (original). The lens of claim 1 wherein said light source is a light emitting diode.

Claim 9 (currently amended). ~~The lens of claim 8 with multiple embodiments~~ Multiple lenses as defined in claim 8 laterally arrayed in proximity, above multiple light sources, ~~on~~ in association with a common circuit board, and having their output beams illuminating the same target.

Claim 10 (currently amended). An illumination system for producing a semicircular beam, comprising the lens of claim 1, modified by being cutting in half at a

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cutting plane, a mirrored surface ~~on~~ associated with said cutting plane, and a compact light source adjacent thereto for illuminating the entry surface of said lens.

Claim 11 (currently amended). The ~~system~~ lens of claim 1 wherein said output beam is collimated and also comprising ~~a~~ an associated secondary lens for receiving said output beam and producing a specified diverging beam.

Claim 12 (currently amended). The ~~system~~ lens of claim 11 wherein said secondary lens is a holographic diffuser.

Claim 13 (currently amended). The ~~system~~ lens of claim 11 wherein said secondary lens is a lenslet array.

Claim 14 (withdrawn). The lens of claim 1, and including multiple such lenses in the following combination:

- a) an array of aspheric lenses extending in side-by-side relation,
- b) an array of quasi-hemispheric light sources one for each lens,

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c) each source positioned to direct light at its corresponding lens, and the sources and lenses configured to produce light emitted from the lens array, the emitted light having substantially uniform intensity across an area corresponding to the area of the lens array.

Claim 15 (withdrawn). The combination of claim 14 wherein said emitted light is substantially collimated.

Claim 16 (withdrawn). The combination of claim 14 wherein the lenses have output sides which are generally dome shaped.

Claim 17 (withdrawn). The combination of claim 14 wherein the lenses extend in edge to edge peripherally packed relation.

Claim 18 (withdrawn). The combination of claim 14 wherein the lenses have peripheries which are polygonal.

Claim 19 (withdrawn). The combination of claim 17 wherein the lenses have peripheries which are square.

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Claim 20 (withdrawn). The combination of claim 14 including relatively reduced size ball shaped lenses proximate said sources which are LEDs, and directing LED emitted light at the rear sides of said first mentioned lenses.

Claim 21 (withdrawn). The combination of claim 14 wherein said lenses are oriented to direct light downwardly in a room, for room illumination.

Claim 22 (withdrawn). The combination of claim 14 wherein there are spaced apart groups of said lenses oriented to direct light downwardly from the ceiling zone of a room, for room illumination.

Claim 23 (withdrawn). The combination of claim 22 including an electrical DC conductor proximate said ceiling zone and to which said sources which are LEDs associated with said group of lenses are electrically connected.

Claim 24 (withdrawn). The combination of claim 23 including an AC to DC converter connected to said line to convert AC current to low voltage DC current supplied to the LEDs in said group.

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Claim 25 (withdrawn). The combination of claim 14 wherein the sources are oriented in one of the following configurations:

- i) at an axis defined by a lens,
- ii) sidewardly spaced from an axis defined by the lens.

Claim 26 (withdrawn). The combination of claim 14 wherein said sources are lambertian.

Claim 27 (withdrawn). The lens of claim 1, and including multiple such lenses in combination with:

- a) an LED package comprising multiple LEDs, the lenses receiving light rays from the LEDs,
- b) and a transparent dielectric having a refracting flat surface to which rays from the LEDs are transmitted for refraction,
- c) the rays refracted from the LEDs at points along the flat surface extending in narrow bands.

Claim 28 (withdrawn). The combination of claim 27 wherein the rays transmitted to each said point are triplet rays.

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Claim 29 (withdrawn). The combination of claim 27 wherein the overall width spacing of the LEDs in the package is small relative to the overall operative width of the flat surface receiving rays transmitted from the LEDs.

Claim 30 (withdrawn). The combination of claim 29 wherein the ratio of said overall width spacing of the LEDs in the package to the operative width of the flat surface receiving the rays transmitted by the LEDs is less than $1/5$, whereby substantially uniform illumination is produced by said refracted rays.

Claim 31 (withdrawn). A light redistribution system comprising, in combination with a lens as defined in claim 1,

- a) LED means,
- b) the lens having a concave lower refracting surface receiving rays from said LED means,
- c) the lens having a dome-shaped refracting upper surface, the curvature of which is one of the following:
 - i) exceeds the curvature of the lower surface,

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- ii) is less than the curvature of the lower surface,
- d) a target surface receiving rays refracted by said upper surface,
- e) said LED means and said upper and lower surfaces configured to produce a profile of bounded flux at said target surface that provides substantially uniform illuminance.

Claim 32 (withdrawn). The system of claim 31 wherein said bounded flux defines a substantially square pattern.

Claim 33 (withdrawn). The system of claim 32 wherein the lens has four vertical planar side walls each intersecting said upper and lower surfaces.

Claim 34 (withdrawn). An array of adjacent lenses as defined in claim 33.

Claim 35 (withdrawn). The array of claim 34 including heat sink fins associated with said lenses.

Claim 36 (withdrawn). The array of claim 34 wherein the lenses face downwardly to direct light downwardly.

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Claim 37 (withdrawn). The array of claim 34 wherein the lenses are hexagonally packed, and a circuit board associated with the lenses, the LED means associated with said board.

Claim 38 (withdrawn). The system of claim 31 wherein said profile is substantially parabolic.

Claim 39 (new). An irradiance-redistribution lens comprising a transparent dielectric formed as a solid of revolution with an axis about which a planar curved profile-line is swept, with external surface area comprised of an optically active entry surface, an optically active exit surface, and an optically inactive mounting surface; said entry surface receiving light of nonuniform irradiance from a compact light source situated on said axis in a nearby focal zone; said entry surface having a specific profile that produces refractive deflection of said received light into interiorly propagating light of a different solid angle; said exit surface opposing said entry surface and receiving said internally propagating light therefrom; said exit surfacing forming a pre-specified diverging output beam from said internally propagating light;, said entry-surface deflection spatially

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distributed such that said exit surface receives said deflected light with predominantly uniform irradiance, said exit surface given a specific shape that refractively deflects said uniform irradiance into said output beam; said light source being sufficiently compact for said specific shapes to be calculated by mathematical integration of the slope distributions required by said refractive deflections.

Claim 40 (new). An illumination system for producing a semicircular beam, comprising the lens of Claim 39, modified by being cut in half by a cutting plane passing through said axis of said lens ; a vertically oriented planar mirror situated on said cutting plane and extending downward to said nearby compact light source, with said compact light source laterally displaced so as to be positioned thereto for illuminating the entry surface of said lens.

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R E M A R K S

Claims 1, 9 and 10-13 have been amended to clarify terminology in accordance with examiner's comments, to meet objections.

Claims 1-3 and 8 have been rejected as unpatentable over Doric and Carpenter. The following unusual differences exist as between such claims (and claim 39) and the references:

1. Carpenter's lens is designed for microwaves, so he has nothing analogous to teach about herein provided lenses, for light.

2. Regarding claim 39 neither patent uses the term "solid of revolution". Doric is a cylindrical lens and thus is not a body of revolution about the optical axis, which is perpendicular to the axis of the cylinder.

3. Neither patent has teaching relevance to the design or provision of herein provided lenses for light. Both Doric and Carpenter disclose gradient index lenses, which produce refractive deflection by means of a changing refractive index. Although there is additional refraction at the lens surface, the lens surfaces are portions of a sphere, and thus do not have profiles specifically shaped for functions as provided herein.

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4. Neither patent appears to contain the words "entry", "exit", or "irradiance". Carpenter refers only to "outer surface". Doric specifically says that noncircular profiles are hard to make, in contrast to his circular profile.

5. Neither patent appears to contain the word "illumination" or any other photometric term, since both serve to correct laser aberrations, not produce a given distribution of lighting.

6. Doric does not appear to use the words "compact", "deflected", "uniform", "intensity", "radiance", or "output" and thus are not suggestive of a lens as defined herein, using such terms.

7. "Correcting a light beam" is an imaging function, not an illumination function, and thus has nothing to teach regarding the configuration of an illumination lens.

8. With respect to Claim 2, Doric uses the word "profile" in a metaphorical way to describe a refractive index gradient. He does not teach how to calculate or determine the geometric profile of a revolved surface, which is an entirely different concept that coincidentally uses the same word, "profile", but literally and not metaphorically. Doric does not teach how to calculate or determine actual profiles.

9. Neither patent uses the term "cumulative" or the phrase "angular distribution", which are photometric concepts whereas these reference patents

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are concerned with aberration correction of lasers and teach nothing about illumination, let alone angular distributions.

10. Carpenter does not teach anything about the shape of an exit face and does not use the phrase "slope distribution" or even the words "shape" or "pre-specified".

11. Carpenter's device is for microwaves and thus cannot be obviously applied to Doric's device, which is for laser light.

12. With respect to claim 8, Doric does not anticipate or suggest the use of light emitting diodes because his lens would be useless with one. The output of LEDs is over too wide an angle for a Luneburg lens to collect, whereas laser diodes have relatively narrow output beams that permit such a lens to be used. Therefore Doric does not anticipate or suggest the use of LEDs.

With respect to ¶19, claims 4-7, 9, and 11-13, note the following additional reasons for unobviousness:

13. Doric does not refer to the words "uniform" or "intensity", and fails to refer to any pre-specified angular limits. His Figure 3 shows no target, nor does the word "target" appear.

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14. Leith is one of the original inventors of holography and his use of "image plane" is common throughout optics and has nothing to do with targets.

15. Regarding Claim 7, no previous lens has ever sought to produce uniform irradiance of the exit surface by the entrance surface.

16. Illuminating a target is the function of an illumination lens, so that citing an ancient holography patent is irrelevant. Applicants' way to illuminate a target has not been previously taught or suggested.

17. The citation of Leith is irrelevant because it is a mirror device. Incidentally, it is not an "imaging system", and is unlike the previous citations.

18. Caulfield is another irrelevant holography patent. The laser lens of Doric cannot be obviously combined with the microwave lens of Carpenter, nor with the mirrors of Wunderer (which do not collimate).

CONCLUSION

The cited prior art is unrelated to the present application. None of the terminology or concepts of the application appear in any of the cited patents, which include the fields of microwave optics, lasers, holography, and reflectors, but do not include any of the concepts of the present application.

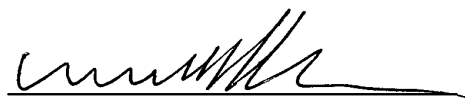
An important novelty of the invention lies in the fact that the entry surface is tailored for a particular light source, while the exit surface is

Serial No. 11/271,420

tailored for a particular target. A different light source would only require a different entry surface, while keeping the exit surface. Conversely, a different target would only require a different exit surface, while keeping the entry surface. No prior lens has this ability.

In view of the above changes and argument, reconsideration and allowance are respectfully requested.

Respectfully submitted,



William W. Haefliger
Attorney for Applicant
Reg. No. 17,120
(323) 684-2707

WWH:ts
Docket 12,677



IFW

PTO/SB/22 (08-03)
Approved for use through 7/31/2006. OMB 0651-0031
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01/10/2008 HDEMESS1 00000002 11271420
01 FC:225 60.00 OP

PETITION FOR EXTENSION OF TIME UNDER 37 CFR 1.136(a)		Docket Number (Optional) 12,677	
In re Application of William A. Parkyn et al			
Application Number 11/271,420		Filed 11/09/05	
For IRRADIANCE-REDISTRIBUTION LENS AND ITS APPLICATIONS TO LED DOWNLIGHTS			
Art Unit 2809		Examiner Danielle Dunn	
This is a request under the provisions of 37 CFR 1.136(a) to extend the period for filing a reply in the above identified application. The requested extension and appropriate non-small-entity fee are as follows (check time period desired): ☒ One month (37 CFR 1.17(a)(1)) \$ <u>120.00</u> ☐ Two months (37 CFR 1.17(a)(2)) \$ _____ ☐ Three months (37 CFR 1.17(a)(3)) \$ _____ ☐ Four months (37 CFR 1.17(a)(4)) \$ _____ ☐ Five months (37 CFR 1.17(a)(5)) \$ _____ ☒ Applicant claims small entity status. See 37 CFR 1.27. Therefore, the fee amount shown above is reduced by one-half, and the resulting fee is: \$ <u>60.00</u>. ☒ A check in the amount of the fee is enclosed. ☐ Payment by credit card. Form PTO-2038 is attached. ☐ The Director has already been authorized to charge fees in this application to a Deposit Account. ☐ The Director is hereby authorized to charge any fees which may be required, or credit any overpayment, to Deposit Account Number _____. I have enclosed a duplicate copy of this sheet. I am the ☐ applicant/inventor. ☐ assignee of record of the entire interest. See 37 CFR 3.71. Statement under 37 CFR 3.73(b) is enclosed (Form PTO/SB/96). ☒ attorney or agent of record. Registration Number <u>17,120</u> ☐ attorney or agent under 37 CFR 1.34(a). Registration number if acting under 37 CFR 1.34(a) _____ WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038. <u>1-8-08</u> Date <u>William W. Haefliger</u> Signature <u>323 684-2707</u> Telephone Number <u>William W. Haefliger</u> Typed or printed name NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required. Submit multiple forms if more than one signature is required, see below. ☐ Total of _____ forms are submitted.			

This collection of information is required by 37 CFR 1.136(a). The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 6 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

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PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875					Application or Docket Number 11/271,420		Filing Date 11/09/2005		☐ To be Mailed	
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APPLICATION AS FILED – PART I						OTHER THAN SMALL ENTITY			
(Column 1)		(Column 2)		SMALL ENTITY ☒		OR		SMALL ENTITY	
FOR	NUMBER FILED	NUMBER EXTRA	RATE (\$)	FEE (\$)	RATE (\$)	FEE (\$)	RATE (\$)	FEE (\$)	
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A		N/A		N/A		
☐ SEARCH FEE (37 CFR 1.16(k), (l), or (m))	N/A	N/A	N/A		N/A		N/A		
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A		N/A		N/A		
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*	X \$ =		OR	X \$ =			
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*	X \$ =		OR	X \$ =			
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))			If the specification and drawings exceed 100 sheets of paper, the application size fee due is \$250 (\$125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).						
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))									
			TOTAL		TOTAL				

* If the difference in column 1 is less than zero, enter "0" in column 2.

APPLICATION AS AMENDED – PART II						OTHER THAN SMALL ENTITY					
(Column 1)		(Column 2)		(Column 3)		SMALL ENTITY		OR		SMALL ENTITY	
AMENDMENT	01/10/2008	CLAIMS REMAINING AFTER AMENDMENT	MINUS	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE (\$)	ADDITIONAL FEE (\$)	RATE (\$)	ADDITIONAL FEE (\$)		
	Total (37 CFR 1.16(i))	* 40	Minus	** 38	= 2	X \$25 =	50	OR	X \$ =		
	Independent (37 CFR 1.16(h))	* 3	Minus	*** 4	= 0	X \$105 =	0	OR	X \$ =		
☐ Application Size Fee (37 CFR 1.16(s))											
☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))											
						TOTAL ADD'L FEE	50	OR	TOTAL ADD'L FEE		

(Column 1)		(Column 2)		(Column 3)		SMALL ENTITY		OR		SMALL ENTITY	
AMENDMENT	Total (37 CFR 1.16(i))	CLAIMS REMAINING AFTER AMENDMENT	MINUS	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE (\$)	ADDITIONAL FEE (\$)	RATE (\$)	ADDITIONAL FEE (\$)		
	Total (37 CFR 1.16(i))	*	Minus	**	=	X \$ =		OR	X \$ =		
	Independent (37 CFR 1.16(h))	*	Minus	***	=	X \$ =		OR	X \$ =		
☐ Application Size Fee (37 CFR 1.16(s))											
☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))											
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE		

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.
 ** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".
 *** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".

The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

Legal Instrument Examiner:
/YOLANDA MIDDLETON/

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
11/271,420	11/09/2005	William A. Parkyn	12,677	1170
2675 7590 04/29/2008 WILLIAM W. HAEFLIGER 201 S. LAKE AVE SUITE 512 PASADENA, CA 91101			EXAMINER DUNN, DANIELLE N	
			ART UNIT 2875	PAPER NUMBER
			MAIL DATE 04/29/2008	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 11/271,420	Applicant(s) PARKYN ET AL.	
	Examiner Danielle Dunn	Art Unit 2875	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 January 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-40 is/are pending in the application.
- 4a) Of the above claim(s) 14-38 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13 and 39-40 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) ☒ Notice of References Cited (PTO-892) | 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) ☐ Notice of Informal Patent Application |
| 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) ☐ Other: _____ |

DETAILED ACTION

Response to Amendment

Applicant's amendment filed on 1/10/2008 has been entered. Claims 1, 2, and 9-13 have been amended. No claims have been cancelled. Claims 39 and 40 have been added. Claims 1-13 and 39-40 are still pending in this application, with claims 1 and 39 being independent.

Claim Objections

1. **Claim 1** is objected to because of the following informalities: It appears as if line 6-7 of claim 1 should read "irradiance from a nearby compact light source and of an opposing exit surface". Appropriate correction is required.
2. **Claims 1, 4, 8 and 39** are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.
3. The term "predominantly" in **claims 1, 4 and 39**, is a relative term which renders the claim indefinite. The term "predominantly " is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

4. **Claim 8** does not further limit the lens of claim 1. The invention is drawn to a lens and the light source is not part of the claimed lens.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. **Claims 1, 7 and 9** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 2-13 are included because of their dependency.

7. Regarding **claim 1**, it is unclear how a lens receives light from a compact nearby light source and "of an opposing surface exit surface that forms a pre-specified diverging output beam," lines 4-7.

8. Regarding **claim 7**, it is unclear how the solid of revolution can have a rectangular limit.

9. **Claim 9** recites the limitation "multiple light sources" in line 4. There is insufficient antecedent basis for this limitation in the claim. Also, claim 8 does not define multiple lenses as stated in the preamble of claim 9. Claim 8 defines the light source being a light emitting diode. Independent claim 1, from which claims 8 and 9 depend, is drawn to a single lens. Claim 9 cannot be examined at this time.

Claim Rejections - 35 USC § 102

10. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

11. **Claims 1, 4-6, 8, 11-13 and 39**, are rejected under 35 U.S.C. 102(e) as being anticipated by Minano et al. (US 2004/0228131).

The applied reference has a common inventor with the instant application.

Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention “by another,” or by an appropriate showing under 37 CFR 1.131.

With respect to **claims 1, 8 and 39**, Minano et al. teach the irradiance-redistribution illumination lens having a transparent dielectric solid of revolution (circularly symmetric lens 10) with the external surface area having an entry surface that receives light on non-uniform irradiance from a nearby compact light source (area where the tri-colored light emitting diodes 20 are; Fig. 2). Minano et al. also teach the entry surface having a specific profile that refractively deflects the received light into a

different solid angle (Fig. 2). Minano et al. also teach the light exit face having a specific shape which refractively deflects the uniform irradiance into an output beam (Fig. 2). Minano et al. teach the exit surface being given a specific shape that refractively deflects the uniform irradiance into an output beam (Fig. 20c). Minano et al. also teaches the light source being compact for specific shapes to calculated by mathematical integration of the slope of distributions required by the refractive deflections (light emitting diodes 20 are compact). Minano et al. teach a planar curved profile line (Fig. 2), an optically active entry surface (area where tri-colored LED's 20 emit light into lens 10). Minano et al. teach an optically inactive mounting surface (collar 34).

With respect to **claims 4-6**, Minano et al. teach the output beam having a predominantly uniform intensity within a predetermined angular limit (Fig. 19). Minano et al. teach the output beam uniformly illuminating a target zone (Fig. 20c). Minano et al. teach the target zone being on a plane that is facing the lens (Para 61, In 1-8 teach an incandescent flashlight which is used for illuminating a target zone on a plane that is facing the lens).

With respect to **claims 11-13**, Minano et al. teach the output beam being collimated (Fig. 10) and having a second lens for receiving the output beam and producing a specified diverging beam (front lens 36 with transparent glass bulb 35). Minano et al. teach the secondary lens being a holographic diffuser (Para 63, In 5-15). Minano et al. teach the secondary lens being a 1x1 lenslet array (Figs. 12 and 13).

Claim Rejections - 35 USC § 103

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

13. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

14. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

15. **Claims 2 and 3**, are rejected under 35 U.S.C. 103(a) as being unpatentable over Minano et al. (US 2004/0228131) as applied to claim 1 above, and further in view of Parkyn Jr. (US 5,924,788).

With respect to **claims 2 and 3**, Minano et al. teach all the limitations as disclosed above. Minano et al. does not explicitly teach a method for calculating the profile of the entry face in concordance with the cumulative angular distribution of the received nonuniform light. Parkyn Jr. teaches the profile of the entry surface being calculated in concordance with the cumulative angular distribution of the received light (Col. 1, ln 59-Col. 2, ln 6). Parkyn Jr. also teaches the shape of the exit face having a slope distribution that deflects the uniform irradiance into the pre-specified intensity distribution of the output beam (Col. 2, ln 6-9). Therefore, it would have been obvious to one skilled in the art at the time the invention was formed to calculate the profile of the entry face in concordance with the cumulative angular distribution of the received nonuniform light because this allows for the greatest illumination of the target zone, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only ordinary skill in the art. *In re Aller*, 105 USPQ 233. It also would have been obvious to one skilled in the art at the time the invention was formed to have the specific shape of the exit face to have a slope distribution that deflects the uniform irradiance into the pre-specified intensity distribution of the output beam because this allows light to be directed in a specific direction, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only

ordinary skill in the art. *In re Aller*, 105 USPQ 233. Furthermore, it would have been obvious to one skilled in the art having the teachings of Minano et al. and Parkyn Jr. before him or her to modify the entry face of the lens of Minano et al. using the calculation method as taught by Parkyn et al. because this would allow the lens to have light redirecting properties.

16. **Claims 7 and 10**, are rejected under 35 U.S.C. 103(a) as being unpatentable over Minano et al. (US 2004/0228131).

With respect to **claim 7**, it would have been obvious to one skilled in the art at the time the invention was formed to have lateral surfaces to form a rectangular limit of the exit face because this allows for the greatest illumination of the target zone, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only ordinary skill in the art. *In re Aller*, 105 USPQ 233.

With respect to **claim 10**, Minano et al. teach all the limitations as disclosed above. Minano et al. do not explicitly teach the lens being cut in half. However, it would have been obvious to one skilled in the art at the time of the invention to cut the lens of Minano et al. in half in order to generate a semicircular beam because this would allow the device to be used as decorative lighting.

17. **Claim 40**, are rejected under 35 U.S.C. 103(a) as being unpatentable over Minano et al. (US 2004/0228131) as applied to claim 39 above, and further in view of Kiyomoto et al (US 5,600,487).

Minano et al. teach all the limitations as disclosed above. Minano et al. do not explicitly teach a vertically oriented planar mirror being situated on the cutting plane and extending downward to the light source. However, Kiyomoto et al. teaches using a mirror on a cutting plane (Fig. 8). Therefore it would have been obvious to one skilled in the art at the time of the invention to modify the device of Minano et al. to include a mirror on the cutting plane as taught by Kiyomoto et al. because this allows light to be distributed at specific angles.

Response to Arguments

18. Applicant's arguments with respect to claims 1-13 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Danielle Dunn whose telephone number is (571)270-3039. The examiner can normally be reached on Monday thru Friday 9:00AM-5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sandra O'Shea can be reached on 571-272-2378. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/DND/
/Sharon E. Payne/
Primary Examiner, Art Unit 2875

Notice of References Cited	Application/Control No. 11/271,420	Applicant(s)/Patent Under Reexamination PARKYN ET AL.	
	Examiner Danielle Dunn	Art Unit 2875	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
*	A	US-2004/0228131	11-2004	Minano et al.	362/307
*	B	US-5,600,487	02-1997	Kiyomoto et al.	359/634
*	C	US-5,924,788	07-1999	Parkyn, Jr., William A.	362/329
	D	US-			
	E	US-			
	F	US-			
	G	US-			
	H	US-			
	I	US-			
	J	US-			
	K	US-			
	L	US-			
	M	US-			

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
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	V	
	W	
	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

Search Notes 	Application/Control No. 11271420	Applicant(s)/Patent Under Reexamination PARKYN ET AL.
	Examiner Dunn, Danielle	Art Unit 2875

SEARCHED			
Class	Subclass	Date	Examiner

SEARCH NOTES		
Search Notes	Date	Examiner
Restriction Consulted J Choi AU 2875	4/27/2007	DND
Restriction Consulted I Negron AU 2885	5/15/2007	DND
362/800,237,244,330-332,334-336,340 Consulted A Ton AU 2875	7/25/2007	DND
Consulted S OShea and C Spyrou for Restriction	7/30/2007	DND
Consulted I Negron AU 2885 362/239,168,169,215,268,335,558	7/26/2007	DND
Consulted A Lavarious AU 2872 315/169,76,200	7/26/2007	DND
362/362,333 Consulted I Negron AU 2885	7/26/2007	DND
EAST Search	9/27/2007	DND
Inventor name search	9/27/2007	DND
Update Search	4/9/2008	DND

INTERFERENCE SEARCH			
Class	Subclass	Date	Examiner

Index of Claims 	Application/Control No. 11271420	Applicant(s)/Patent Under Reexamination PARKYN ET AL.
	Examiner Dunn, Danielle	Art Unit 2809

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

☐ Claims renumbered in the same order as presented by applicant
☐ CPA
☐ T.D.
☐ R.1.47

CLAIM		DATE									
Final	Original	05/16/2007	07/25/2007	09/27/2007	04/10/2008						
	1	÷	÷	✓	✓						
	2	÷	÷	✓	✓						
	3	÷	÷	✓	✓						
	4	÷	÷	✓	✓						
	5	÷	÷	✓	✓						
	6	÷	÷	✓	✓						
	7	÷	÷	✓	✓						
	8	÷	÷	✓	✓						
	9	÷	÷	✓	✓						
	10	÷	÷	✓	✓						
	11	÷	÷	✓	✓						
	12	÷	÷	✓	✓						
	13	÷	÷	✓	✓						
	14	÷	÷	N	N						
	15	÷	÷	N	N						
	16	÷	÷	N	N						
	17	÷	÷	N	N						
	18	÷	÷	N	N						
	19	÷	÷	N	N						
	20	÷	÷	N	N						
	21	÷	÷	N	N						
	22	÷	÷	N	N						
	23	÷	÷	N	N						
	24	÷	÷	N	N						
	25	÷	÷	N	N						
	26	÷	÷	N	N						
	27	÷	÷	N	N						
	28	÷	÷	N	N						
	29	÷	÷	N	N						
	30	÷	÷	N	N						
	31	÷	÷	N	N						
	32	÷	÷	N	N						
	33	÷	÷	N	N						
	34	÷	÷	N	N						
	35	÷	÷	N	N						
	36	÷	÷	N	N						

<i>Index of Claims</i> 	Application/Control No. 11271420	Applicant(s)/Patent Under Reexamination PARKYN ET AL.
	Examiner Dunn, Danielle	Art Unit 2809

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

☐ Claims renumbered in the same order as presented by applicant						☐ CPA		☐ T.D.		☐ R.1.47	
CLAIM		DATE									
Final	Original	05/16/2007	07/25/2007	09/27/2007	04/10/2008						
	37	÷	÷	N	N						
	38	÷	÷	N	N						
	39				✓						
	40				✓						

EAST Search History

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
		"1" and lens	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	ON	2008/04/10 16:17
L2	2	"5696371".pn.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	ON	2008/04/10 16:12
L3	1730	lenslet adj array	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	ON	2008/04/10 16:13
L4	1600	3 and lens	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	ON	2008/04/10 16:17
L5	343	4 and (second\$3 adj lens)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	ON	2008/04/10 16:17
L6	196	5 and diverg\$3	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	ON	2008/04/10 16:18
L7	2	"5796522".pn.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	ON	2008/04/10 16:35
L8	24	(US-20040228131-\$). did. or (US-6433936-\$ or US-5607492-\$ or US-4862330-\$ or US- 4935665-\$ or US- 1348618-\$ or US- 5924788-\$ or US- 4941072-\$ or US- 6924943-\$ or US- 7006306-\$ or US- 7021797-\$ or US- 7042655-\$ or US- 7152985-\$ or US- 7347599-\$ or US- 5964525-\$ or US- 6056739-\$ or US- 5577492-\$ or US- 2469080-\$ or US- 3941993-\$ or US- 5696371-\$).did. or (US- 1657502-\$ or US- 1399973-\$ or US- 3425056-\$).did. or (US- 4655539-\$ or US-	US-PGPUB; USPAT; USOCR; DERWENT	OR	ON	2008/04/10 17:10

		20040228131-A-\$).did.				
L9	45	(US-20040228131-\$). did. or (US-6433936-\$ or US-5607492-\$ or US-4862330-\$ or US- 4935665-\$ or US- 1348618-\$ or US- 5924788-\$ or US- 4941072-\$ or US- 6924943-\$ or US- 7006306-\$ or US- 7021797-\$ or US- 7042655-\$ or US- 7152985-\$ or US- 7347599-\$ or US- 5964525-\$ or US- 6056739-\$ or US- 5577492-\$ or US- 2469080-\$ or US- 3941993-\$ or US- 5696371-\$).did. or (US- 1657502-\$ or US- 1399973-\$ or US- 3425056-\$).did. or (US- 4655539-\$ or US- 20040228131-A-\$).did. and mirror	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	ON	2008/04/10 17:11
L10	45	(US-20040228131-\$). did. or (US-6433936-\$ or US-5607492-\$ or US-4862330-\$ or US- 4935665-\$ or US- 1348618-\$ or US- 5924788-\$ or US- 4941072-\$ or US- 6924943-\$ or US- 7006306-\$ or US- 7021797-\$ or US- 7042655-\$ or US- 7152985-\$ or US- 7347599-\$ or US- 5964525-\$ or US- 6056739-\$ or US- 5577492-\$ or US- 2469080-\$ or US- 3941993-\$ or US- 5696371-\$).did. or (US- 1657502-\$ or US- 1399973-\$ or US- 3425056-\$).did. or (US- 4655539-\$ or US- 20040228131-A-\$).did. and mirror\$3	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	ON	2008/04/10 17:11

L11	44	(US-20040228131-\$). did. or (US-6433936-\$ or US-5607492-\$ or US- 4862330-\$ or US- 4935665-\$ or US- 1348618-\$ or US- 5924788-\$ or US- 4941072-\$ or US- 6924943-\$ or US- 7006306-\$ or US- 7021797-\$ or US- 7042655-\$ or US- 7152985-\$ or US- 7347599-\$ or US- 5964525-\$ or US- 6056739-\$ or US- 5577492-\$ or US- 2469080-\$ or US- 3941993-\$ or US- 5696371-\$).did. or (US- 1657502-\$ or US- 1399973-\$ or US- 3425056-\$).did. or (US- 4655539-\$ or US- 20040228131-A-\$).did. and mirror\$3 and cut\$4	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	ON	2008/04/10 17:11
L12	44	(US-20040228131-\$). did. or (US-6433936-\$ or US-5607492-\$ or US- 4862330-\$ or US- 4935665-\$ or US- 1348618-\$ or US- 5924788-\$ or US- 4941072-\$ or US- 6924943-\$ or US- 7006306-\$ or US- 7021797-\$ or US- 7042655-\$ or US- 7152985-\$ or US- 7347599-\$ or US- 5964525-\$ or US- 6056739-\$ or US- 5577492-\$ or US- 2469080-\$ or US- 3941993-\$ or US- 5696371-\$).did. or (US- 1657502-\$ or US- 1399973-\$ or US- 3425056-\$).did. or (US- 4655539-\$ or US- 20040228131-A-\$).did. and (mirror\$3 near3 cut \$4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	ON	2008/04/10 17:14
L13	1	12 and (mirror\$3 near3 cut\$4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	ON	2008/04/10 17:16
L14	1	10 and (mirror\$3 near3 cut\$4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	ON	2008/04/10 17:16

L15	146	("1399973" "1977689" "20020034012" "20030076034" "20040105171" "20040125614" "20040189933" "20040190304" "20040228131" "20040246606" "20040252390" "20050024744" "20050086032" "20050088758" "20050117125" "20050117172" "20050135095" "20050169002" "20050200812" "20050219464" 2254961" "2362176" "2908197" "3760237" "3774021" "3938177" "4188111" "4192994" "4211955" "4337759" "4342908" "4384769" "4388673" "4464707" "4638343" "4675725" "4698730" "4727289" "4727457" "4920404" "5055892" "5140220" "5302778" "5335157" "5343330" "5404282" "5404869" "5438453" "5452190" "5453877" "5528474" "5557471" "5577492" "5580142" "5600487" "5608290" "5613769" "5655830" "5655832" "5676453" "5699186" "5757557" "5777433" "5806955" "5813743" "5865529" "5894195" "5894196" "5897201" "5898267" "5898809" "5924788" "5926320" "5966250" "6019493" "6030099" "6044196" "6048083" "6097549" "6139166" "6166860" "6166866" "6177761" "6181476" "6201229" "6222623" "6252636"	US-PGPUB; USPAT; USOCR	OR	ON	2008/ 04/ 10 17:17
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L16	1	15 and (mirror\$3 near3 cut \$4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; J PO; DERWENT	OR	ON	2008/ 04/ 10 17:18
L17	5	15 and (semicircle of semi-circle)	US-PGPUB; USPAT; USOCR; FPRS; EPO; J PO; DERWENT	OR	ON	2008/ 04/ 10 17:24
L18	5	15 and (semicircl\$4 of semi-circl\$4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; J PO; DERWENT	OR	ON	2008/ 04/ 10 17:25
L19	3	15 and (semicircl\$4 of semi-circl\$4) and mirror	US-PGPUB; USPAT; USOCR; FPRS; EPO; J PO; DERWENT	OR	ON	2008/ 04/ 10 17:25
L20	30	15 and (semicircl\$4 of semi-circl\$4 or hemispher\$4) and mirror	US-PGPUB; USPAT; USOCR; FPRS; EPO; J PO; DERWENT	OR	ON	2008/ 04/ 10 17:26

L21	22	15 and (semicircl\$4 of semi-circl\$4 or hemispher\$4) and mirror and cut\$4	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	ON	2008/04/10 17:26
L22	3	15 and ((semicircl\$4 of semi-circl\$4 or hemispher\$4) near3 beam)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	ON	2008/04/10 17:27
L23	78	15 and mirror\$3	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	ON	2008/04/10 17:31
S1	2	"6433936".pn.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	ON	2008/04/07 16:08
S2	2	"6433936".pn. and microwave	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	ON	2008/04/07 16:12
S3	0	"6433936".pn. and (light or (light adj source))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	ON	2008/04/07 16:16
S4	0	"6433936".pn. and (((light or (light source) or lamp or lamps or ((lamp or light) (bulb or bulbs)) or luminaire or luminary or luminari or luminaries or torch or torches) or (LED or LEDs or (LED) or ((light or (visible radiation)) (emitting or producing or generating or radiating) (diode or diodes or device or devices or element or elements or semiconductor or (semiconductor) or (circuit element))))))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	ADJ	ON	2008/04/07 16:16
S5	2	"4655539".pn.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	ADJ	ON	2008/04/07 16:18
S6	2	"5607492".pn.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	ADJ	ON	2008/04/07 16:18

S7	675119	(refractor or refractors or lens or lenses or ((optical or translucent or translucent or transparent or (optically active)) (element or member or component or device))) and (((light or (light source) or lamp or lamps or ((lamp or light) (bulb or bulbs)) or luminaire or luminary or luminari or luminaries or torch or torches) or (LED or LEDs or (LED) or ((light or (visible radiation)) (emitting or producing or generating or radiating) (diode or diodes or device or devices or element or elements or semiconductor or (semiconductor) or (circuit element))))))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	ADJ	ON	2008/04/07 16:33
S8	2366	S7 and redistribution	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	ON	2008/04/07 16:36
S9	329	S8 and ("362"/\$.ccls. or "359"/\$.ccls.)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	ON	2008/04/07 16:41
S10	1042081	(refractor or refractors or lens or lenses or ((optical or translucent or translucent or transparent or (optically active)) (element or member or component or device)))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	ADJ	ON	2008/04/07 17:07
S11	26501	S10 and "362"/\$.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	ADJ	ON	2008/04/07 17:09
S12	581	S10 and 362/545.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	ADJ	ON	2008/04/07 17:10
S13	539	S10 and 362/308.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	ADJ	ON	2008/04/07 17:10

S14	237	S10 and 362/ 520.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; J PO; DERWENT	ADJ	ON	2008/ 04/ 07 17:10
S15	151	S10 and 362/ 521.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; J PO; DERWENT	ADJ	ON	2008/ 04/ 07 17:10
S16	201	S10 and 362/ 522.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; J PO; DERWENT	ADJ	ON	2008/ 04/ 07 17:10
S17	1531	S12 S13 S14 S15 S16	US-PGPUB; USPAT; USOCR; FPRS; EPO; J PO; DERWENT	OR	ON	2008/ 04/ 07 17:11
S18	760	S17 and (LED or LEDs or (L E D) or (light (emitting or producing or generating or radiating) (diode or diodes or device or devices or element or elements or semiconductor or (semi conduct or) or (circuit element)))	US-PGPUB; USPAT; USOCR; FPRS; EPO; J PO; DERWENT	ADJ	ON	2008/ 04/ 07 17:12
S19	1042483	(refractor or refractors or lens or lenses or ((optical or translucent or translucent or transparent or (optically active)) (element or member or component or device)))	US-PGPUB; USPAT; USOCR; FPRS; EPO; J PO; DERWENT	ADJ	ON	2008/ 04/ 08 17:25
S20	581	S19 and 362/ 545.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; J PO; DERWENT	ADJ	ON	2008/ 04/ 08 17:25
S21	539	S19 and 362/ 308.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; J PO; DERWENT	ADJ	ON	2008/ 04/ 08 17:25
S22	237	S19 and 362/ 520.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; J PO; DERWENT	ADJ	ON	2008/ 04/ 08 17:25
S23	151	S19 and 362/ 521.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; J PO; DERWENT	ADJ	ON	2008/ 04/ 08 17:25
S24	201	S19 and 362/ 522.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; J PO; DERWENT	ADJ	ON	2008/ 04/ 08 17:25

S25	1531	S20 S21 S22 S23 S24	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	ON	2008/04/08 17:25
S26	760	S25 and (LED or LEDs or (L E D) or (light (emitting or producing or generating or radiating) (diode or diodes or device or devices or element or elements or semiconductor or (semi conduct or) or (circuit element))))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	ADJ	ON	2008/04/08 17:28
S27	46	("2647202" "2921181" "3210536" "3331960" "3390262" "3398272" "3423584" "3428397" "3471231" "3494693" "3526459" "4698730" "4868719" "4941072" "4975814" "5140220" "5704709").PN. OR ("5924788").URPN.	US-PGPUB; USPAT; USOCR	OR	ON	2008/04/08 17:33
S28	56	parkyn-william.in. or parkyn-william-\$.in. or pelka-david.in. or pelka- david-\$.in.	US-PGPUB; USPAT; USOCR	OR	ON	2008/04/08 17:39
S29	3	irrandiance and lens	US-PGPUB; USPAT; USOCR	OR	ON	2008/04/08 17:40
S30	0	irrandiance near3 lens	US-PGPUB; USPAT; USOCR	OR	ON	2008/04/08 17:41
S31	2230	redistributi on and lens	US-PGPUB; USPAT; USOCR	OR	ON	2008/04/08 17:42
S32	44	redistributi on near3 lens	US-PGPUB; USPAT; USOCR	OR	ON	2008/04/08 17:42
S33	48	redistributi on near3 lens	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	ON	2008/04/08 17:43
S34	14	S33 and (LED or LEDs or (L E D) or (light (emitting or producing or generating or radiating) (diode or diodes or device or devices or element or elements or semiconductor or (semi conduct or) or (circuit element))))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	ADJ	ON	2008/04/08 17:43

S35	63	("1421506" "1676464" "1782732" "2254961" "2469080" "3425056" "3915148" "3941993" "3970070" "4002031" "4022186" "4050789" "4074704" "4103673" "4108540" "4116223" "4124017" "4136670" "4171695" "4194949" "4198953" "4282858" "4299201" "4337759" "4755921" "4803608" "4805984" "5059013" "5150966" "5381309" "5486983").PN. OR ("5577492").URPN.	US-PGPUB; USPAT; USOCR	OR	ON	2008/04/08 17:48
S36	2	"20040228131".pn.	US-PGPUB; USPAT; USOCR; FPRS; EPO; J PO; DERWENT	OR	ON	2008/04/08 17:53
S37	111	("1399973" "1977689" "20020034012" "20020080623" "20030076034" "20040070855" "20040105171" "20040189933" "20050117125" "20050129358" "2254961" "2362176" "2908197" "3760237" "3774021" "3938177" "4192994" "4211955" "4337759" "4342908" "4388673" "4464707" "4638343" "4675725" "4698730" "4727289" "4727457" "4920404" "5055892" "5140220" "5302778" "5335157" "5343330" "5404282" "5404869" "5438453" "5452190" "5528474" "5557471" "5577492" "5580142" "5608290" "5613769" "5655830" "5655832" "5676453" "5757557" "5777433" "5806955" "5813743" "5865529"	US-PGPUB; USPAT; USOCR	OR	ON	2008/04/09 10:08

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S38	1	"20050030630".pn.	US-PGPUB; USPAT; USOCR	OR	ON	2008/04/09 13:03

4/10/2008 5:45:46 PM

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Serial No. 11/271,420

Amendments to the Specification:

Please replace paragraph beginning on page 10, line 23, with the following amended paragraph:

FIG. 5 shows a preferred embodiment in profile 50 of a 35mm-diameter circularly symmetric illumination-redistribution lens formed of polycarbonate and comprising concave lower surface 50L, upper exit-surface 50U, and optically inactive flange 50F. Flash LED 51 emits ray-fan 52, extending to 63° off-axis and thereby representing 90% of the luminosity of source 51. Rays 52 are received along concave lower surface ~~52~~ 50L, each at a radius r . A diagram quite similar to FIG. 3 would describe the encircled flux at each radius r and give it the corresponding top-surface radius R . Both r and R are shown in FIG. 5.

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Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Claim 1 (currently amended). An irradiance-redistribution illumination lens comprising a transparent dielectric solid of revolution with external surface area predominantly comprised of an entry surface that receives light of nonuniform irradiance from a nearby compact light source and of an opposing exit surface that forms from said received light a pre-specified diverging output beam; said entry surface given a specific profile that refractively deflects said received light into a different solid angle, said entry surface spatially distributed such that said exit surface receives said deflected light with predominantly uniform irradiance, said exit surface given a specific shape that refractively deflects said uniform irradiance into said output beam; said light source being sufficiently compact for said specific shapes to be calculated by mathematical integration of the slope distributions required by said refractive deflections[[.]], said

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entry surface having first concavity facing toward
said light source, and second concavity facing toward
the entry surface, said second concavity being
substantially greater than said first concavity.

Claim 2 (previously presented). The lens of claim 1 wherein said specific profile of said entry surface is calculated in concordance with the cumulative angular distribution of said received light; said concordance established by the correspondence of said distribution with equal values at wider radii of the shallower square-root distribution of uniform irradiance; said establishment embodied as the deflection function from each point of said entry surface to the wider radius on said exit surface having the same value of the cumulative distribution of uniform irradiance as the value at said entry-surface point of said cumulative distribution of said irradiance from said light source.

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Claim 3 (original). The lens of claim 2 wherein said specific shape of said exit face has the slope distribution that deflects said uniform irradiance into said pre-specified intensity distribution of said output beam.

Claim 4 (original). The lens of claim 1 wherein said output beam has predominantly uniform intensity within a predetermined angular limit.

Claim 5 (original). The lens of claim 1 wherein said output beam uniformly illuminates a target zone.

Claim 6 (original). The lens of claim 5 wherein said target zone is on a plane facing said lens.

Claim 7 (original). The lens of claim 5 also comprised of inactive lateral surfaces forming a rectangular limit of said exit face, so that said target zone is a similar rectangle.

Serial No. 11/271,420

Claim 8 (original). The lens of claim 1 wherein said light source is a light emitting diode.

Claim 9 (previously presented). Multiple lenses as defined in claim 8 laterally arrayed in proximity, above multiple light sources, in association with a common circuit board, and having their output beams illuminating the same target.

Claim 10 (previously presented). An illumination system for producing a semicircular beam, comprising the lens of claim 1, modified by being cutting in half at a cutting plane, a mirrored surface associated with said cutting plane, and a compact light source adjacent thereto for illuminating the entry surface of said lens.

Serial No. 11/271,420

Claim 11 (previously presented). The lens of claim 1 wherein said output beam is collimated and also comprising an associated secondary lens for receiving said output beam and producing a specified diverging beam.

Claim 12 (previously presented). The lens of claim 11 wherein said secondary lens is a holographic diffuser.

Claim 13 (previously presented). The lens of claim 11 wherein said secondary lens is a lenslet array.

Claim 14 (withdrawn). The lens of claim 1, and including multiple such lenses in the following combination:

- a) an array of aspheric lenses extending in side-by-side relation,
- b) an array of quasi-hemispheric light sources one for each lens,

Serial No. 11/271,420

c) each source positioned to direct light at its corresponding lens, and the sources and lenses configured to produce light emitted from the lens array, the emitted light having substantially uniform intensity across an area corresponding to the area of the lens array.

Claim 15 (withdrawn). The combination of claim 14 wherein said emitted light is substantially collimated.

Claim 16 (withdrawn). The combination of claim 14 wherein the lenses have output sides which are generally dome shaped.

Claim 17 (withdrawn). The combination of claim 14 wherein the lenses extend in edge to edge peripherally packed relation.

Serial No. 11/271,420

Claim 18 (withdrawn). The combination of claim 14 wherein the lenses have peripheries which are polygonal.

Claim 19 (withdrawn). The combination of claim 17 wherein the lenses have peripheries which are square.

Claim 20 (withdrawn). The combination of claim 14 including relatively reduced size ball shaped lenses proximate said sources which are LEDs, and directing LED emitted light at the rear sides of said first mentioned lenses.

Claim 21 (withdrawn). The combination of claim 14 wherein said lenses are oriented to direct light downwardly in a room, for room illumination.

Claim 22 (withdrawn). The combination of claim 14 wherein there are spaced apart groups of said lenses oriented to direct light downwardly from the ceiling zone of a room, for room illumination.

Serial No. 11/271,420

Claim 23 (withdrawn). The combination of claim 22 including an electrical DC conductor proximate said ceiling zone and to which said sources which are LEDs associated with said group of lenses are electrically connected.

Claim 24 (withdrawn). The combination of claim 23 including an AC to DC converter connected to said line to convert AC current to low voltage DC current supplied to the LEDs in said group.

Claim 25 (withdrawn). The combination of claim 14 wherein the sources are oriented in one of the following configurations:

- i) at an axis defined by a lens,
- ii) sidewardly spaced from an axis defined by the lens.

Claim 26 (withdrawn). The combination of claim 14 wherein said sources are lambertian.

Serial No. 11/271,420

Claim 27 (withdrawn). The lens of claim 1, and including multiple such lenses in combination with:

- a) an LED package comprising multiple LEDs, the lenses receiving light rays from the LEDs,
- b) and a transparent dielectric having a refracting flat surface to which rays from the LEDs are transmitted for refraction,
- c) the rays refracted from the LEDs at points along the flat surface extending in narrow bands.

Claim 28 (withdrawn). The combination of claim 27 wherein the rays transmitted to each said point are triplet rays.

Claim 29 (withdrawn). The combination of claim 27 wherein the overall width spacing of the LEDs in the package is small relative to the overall operative width of the flat surface receiving rays transmitted from the LEDs.

Serial No. 11/271,420

Claim 30 (withdrawn). The combination of claim 29 wherein the ratio of said overall width spacing of the LEDs in the package to the operative width of the flat surface receiving the rays transmitted by the LEDs is less than $1/5$, whereby substantially uniform illumination is produced by said refracted rays.

Claim 31 (withdrawn). A light redistribution system comprising, in combination with a lens as defined in claim 1,

- a) LED means,
- b) the lens having a concave lower refracting surface receiving rays from said LED means,
- c) the lens having a dome-shaped refracting upper surface, the curvature of which is one of the following:
 - i) exceeds the curvature of the lower surface,

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ii) is less than the curvature of the
lower surface,

d) a target surface receiving rays
refracted by said upper surface,

e) said LED means and said upper and lower
surfaces configured to produce a profile of bounded
flux at said target surface that provides
substantially uniform illuminance.

Claim 32 (withdrawn). The system of claim 31 wherein
said bounded flux defines a substantially square
pattern.

Claim 33 (withdrawn). The system of claim 32 wherein
the lens has four vertical planar side walls each
intersecting said upper and lower surfaces.

Claim 34 (withdrawn). An array of adjacent lenses as
defined in claim 33.

Serial No. 11/271,420

Claim 35 (withdrawn). The array of claim 34 including heat sink fins associated with said lenses.

Claim 36 (withdrawn). The array of claim 34 wherein the lenses face downwardly to direct light downwardly.

Claim 37 (withdrawn). The array of claim 34 wherein the lenses are hexagonally packed, and a circuit board associated with the lenses, the LED means associated with said board.

Claim 38 (withdrawn). The system of claim 31 wherein said profile is substantially parabolic.

Claim 39 (currently amended). An irradiance-redistribution lens comprising a transparent dielectric formed as a solid of revolution with an axis about which a planar curved profile-line is swept, with external surface area comprised of an optically active entry surface, an optically active exit surface, and an optically inactive mounting

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surface; said entry surface receiving light of nonuniform irradiance from a compact light source situated on said axis in a nearby focal zone; said entry surface having a specific profile that produces refractive deflection of said received light into interiorly propagating light of a different solid angle; said exit surface opposing said entry surface and receiving said internally propagating light therefrom; said exit ~~surfacing~~ surface forming a pre-specified diverging output beam from said internally propagating light; said entry-surface deflection spatially distributed such that said exit surface receives said deflected light with predominantly uniform irradiance, said exit surface given a specific shape that refractively deflects said uniform irradiance into said output beam; said light source being sufficiently compact for said specific shapes to be calculated by mathematical integration of the slope distributions required by said refractive deflections~~[[.]]~~, said entry surface having first concavity facing toward said light source, and second

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concavity facing toward the entry surface, said second concavity being substantially greater than said first concavity.

Claim 40 (previously presented). An illumination system for producing a semicircular beam, comprising the lens of Claim 39, modified by being cut in half by a cutting plane passing through said axis of said lens; a vertically oriented planar mirror situated on said cutting plane and extending downward to said nearby compact light source, with said compact light source laterally displaced so as to be positioned thereto for illuminating the entry surface of said lens.

Claim 41 (new). The lens of claim 1, and including multiple such lenses in the following combination:

- a) an array of aspheric lenses extending in side-by-side relation,
- b) an array of quasi-hemispheric light sources one for each lens,

Serial No. 11/271,420

c) each source positioned to direct light at its corresponding lens, and the sources and lenses configured to produce light emitted from the lens array, the emitted light having substantially uniform intensity across an area corresponding to the area of the lens array.

Claim 42 (new). The lens of claim 1, and including multiple such lenses in combination with:

- a) an LED package comprising multiple LEDs, the lenses receiving light rays from the LEDs,
- b) and a transparent dielectric having a refracting flat surface to which rays from the LEDs are transmitted for refraction,
- c) the rays refracted from the LEDs at points along the flat surface extending in narrow bands.

Serial No. 11/271,420

Claim 43 (new). A light redistribution system comprising, in combination with a lens as defined in claim 1,

- a) said light source comprising LED means,
- b) the lens concave lower refracting surface receiving rays from said LED means,

- c) the lens having a dome-shaped refracting exit surface, the curvature of which is one of the following:

- i) exceeds the curvature of the lower surface,

- ii) is less than the curvature of the lower surface,

- d) there being a target surface receiving rays refracted by said exit surface,

- e) said LED means and said entry and exit surfaces configured to produce a profile of bounded flux at said target surface that provides substantially uniform illuminance.

Serial No. 11/271,420

Claim 44 (new). The lens of claim 1 having circularly spaced, flat surface zones which are generally planar in a common direction of said entry and exit surface concavities.

Claim 45 (new). The lens of claim 44, wherein multiple such lenses are provided in a cluster and have flat surfaces thereof extending in contiguous relations.

R E M A R K S

Added new claims 41-45 are dependent from claim 1, which as amended is believed and urged to be allowable over cited art. (See argument below.) Further, these new claims correspond respectively to withdrawn claims 14, 27, and 31. New claim 44, based on claim 1, is directed to the Fig. 8 lens shape, and claim 45 is directed to Fig. 9.

Base claim 1 now further defines over the art, including Minano, by the following added to claim 1:

said entry surface having first concavity facing toward said light source, and second concavity facing toward the entry surface, said second concavity being substantially greater than said first concavity.

In this regard, the entry and exit concave surfaces are for example see at 50L and 50U in Fig. 5, the light source being at 51. Note also beam refractions. Minano configurations lack suggestion of such lesser and greater concave surfaces, as claimed,

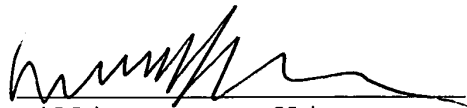
Serial No. 11/271,420

and further, cited art including Minano does not suggest the totality of claim 1. See applicant's Comments, attached.

New claims 41-45 add even further to the novelty and unobviousness, over the cited art, and are urged to be allowable in the novel and unobvious environment of base claim 1.

In view of the changes and argument, reconsideration and allowance are respectfully solicited.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'William W. Haeffliger', written over a horizontal line.

William W. Haeffliger
Attorney for Applicant
Reg. No. 17,120
(323) 684-2707

WWH:ts
Docket 12,677



Reply to 11/271,420

No Anticipation by Minano

The examiner's comparison to Minano is believed without merit. This device simulates an incandescent light bulb, and none of its numerous embodiments have the slightest thing to do with providing prescribed illuminance on a target plane. Minano's disclosure is simply a way to transform the hemispherical output of an LED into a fully spherical one. The key concepts used in our application are nowhere to be found in Minano, whether it is cumulative distributions, their matching, or the generation of a surface profile by integration of the slopes given by said matching.

Section 11 (pages 4 & 5)

With respect to **claims 1, 8, and 39**, Minano, et. al. nowhere use the words 'redistribution', 'integration', 'uniform irradiance', or even 'illumination lens'. This patent does not at all deal with tailoring of illumination. The purpose of the Minano patent is to simulate the filament of an incandescent light bulb. A variety of embodiments are disclosed towards this end, all with predominantly spherical emission.

Minano Figure 2 does not show a 'nearby light source', because item 20 is optically immersed in item 11, which has no 'entry surface' on its external surface (it is an all-TIR surface, with nothing going in). Minano in fact teaches a configuration with NO entry surface, so it cannot be teaching any specific profile.

Minano never uses the term 'uniform irradiance' and the term 'output beam' is applied solely to a parabolic reflector, since all the claimed embodiments produce the opposite of a beam, namely a spherical emission pattern.

The examiner has completely misconstrued Figures 20a & 20b, which are close up views of the end section of the embodiment of Figure 15. That is, Figure 20 does not show an output beam but the injection of light into a cylindrical waveguide, which emits by controlled scattering of totally internally reflected light. Again, there is no output beam, just a glowing simulation of a neon lamp.

Minano nowhere teaches any kind of 'integration of slope distributions', which is neither mentioned nor used in any way whatsoever, nor is the word 'compact' used to refer to LED 20. In fact, LED 20 is NOT compact relative to transfer section (NOT lens) 11, but is rather about the same size. The present invention teaches a

separate lens that is much larger than its light source, whereas Minano teaches an attached body about the same size as the light source, which therefore is the opposite of 'compact'. Also, surface 20 is not part of the embodiment, merely an incidental mouthing feature that does not occur in any of the Claims.

With respect to **claims 4-6**, the examiner misunderstands Figures 19 20a,b,c of Minano, which do NOT show an output beam, but rather how a cylindrical waveguide acts as a magnifier for its interior surface (which scatters internal light). NO output beam is formed, just a uniform glow in all directions. Figure 20c is not an output beam but simply the radiation pattern of the injector into the cylindrical waveguide, so there is NO 'target zone' (terms not found therein). It is the flashlight that forms a beam, not the light bulb substitute.

With respect to **claims 11-13**, the Examiner misconstrues Figure 10, which does NOT show any collimation or output beams (there is none). Examiner mixes this up with Figure 2, in which items 35 & 36 are NOT part of the preferred embodiment claimed (item 12 only) but merely incidental apparatus utilizing the substitute exactly as it

would an actual light bulb. The holographic diffuser is also part of that incidental apparatus, separate from the claimed embodiment. Figures 12 & 13 do NOT show a lenslet arrays, but a single waveguide with narrow sections having the purpose of leakage, NOT controlling a beam (nonexistent).

Paragraphs 12-14

The differences in subject matter between Minano and the present invention are as great as the differences between a fluorescent bulb and a laser. As proven above, there is absolutely no connection whatsoever between the two inventions other than their common inventor and the fact that both are optical. Anyone skilled in the art would know that.

Paragraph 15

With respect to claims 2 & 3, the examiner admits that Minano does not *explicitly* teach any profile calculation. Nor is there any implicit teaching either, since there is no such teaching whatsoever. Neither the terms nor the ideas appear in Minano.

With respect to the inventor's prior patent ('Parkyn Jr.'), the examiner cites a passage, but misconstrues it. The inventor is discussing a general

design principle known for decades in the design of reflectors but previously not applied to lenses. This principle is NOT cited as an original teaching but is brought up merely as a part of the prior art, one that is NOT used in that invention (column 2, lines 10-18). In her citation of this passage, moreover, the examiner inserts the phrase 'uniform irradiance', which never appears therein. In fact, the entry surface's provision of uniform irradiance upon the upper surface of the lens of the present invention, is not obvious from the prior art, which nowhere teaches it. Parkyn, Jr. is a totally unrelated invention dealing solely with NON-rotationally symmetric lenses, whereas the present invention explicitly utilizes that symmetry.

The profile of an entry face of the present invention is calculated for the provision of uniform irradiance upon the exit face, which assures uniform irradiance of the collimated output. This principle is something NEVER disclosed in the prior art.

Also, Minano does NOT teach a 'lens' but a combination of waveguide and ejector, with NO entry face, since the device is optically bonded to the source (which is NOT compact).

Paragraph 16

With respect to **claim 7**, the use of lateral limiting surfaces is nowhere taught by Minano, since it is only useful with a device the produces uniform irradiance upon the exit face, which only the present invention does.

With respect to **claim 10**, Minano does not teach any cutting, and it would not be obvious to cut Minano's device in half because then it would not work at all. As previously stated, the Minano device does not produce any 'beam' whatsoever, its purpose being to produce the very opposite of a beam, namely a completely spherical output that is by definition undirected, whereas the essence of a beam is being directed.

Paragraph 17

With respect to **claim 40**, the Examiner misconstrues Figure 8 of Kiyomoto, which is a mere dichroic folding mirror, not a 'cutting mirror' (a term not used therein). Item 3 of Figure 8 combines the light from items 1a & 1b, of differing wavelengths. It is a combiner, not a cutter. The Examiner's phrase 'because this allows light to be distributed at specific angles' is incorrect, because any such 'cutting plane' if there even was one, would not do this.

Paragraph 18

The examiner has cited no grounds for rejection, since there is confusion as to the operation of the present invention and of those cited, which are totally unrelated and non-germane.



IFW

PTO/SB/22 (01-08)

Approved for use through 02/29/2008. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

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PETITION FOR EXTENSION OF TIME UNDER 37 CFR 1.136(a) FY 2008 (Fees pursuant to the Consolidated Appropriations Act, 2005 (H.R. 4818).)		Docket Number (Optional) 12,677	
Application Number 11/271,420		Filed Nov. 9, 2005	
For IRRADIANCE-REDISTRIBUTION LENS AND ITS APPLICATIONS TO LED DOWNLIGHTS			
Art Unit 2809		Examiner Danielle Dunn	
This is a request under the provisions of 37 CFR 1.136(a) to extend the period for filing a reply in the above identified application. The requested extension and fee are as follows (check time period desired and enter the appropriate fee below):			
	<u>Fee</u>	<u>Small Entity Fee</u>	
☐ One month (37 CFR 1.17(a)(1))	\$120	\$60	\$ _____
☒ Two months (37 CFR 1.17(a)(2))	\$460	\$230	\$ <u>230.00</u>
☐ Three months (37 CFR 1.17(a)(3))	\$1050	\$525	\$ _____
☐ Four months (37 CFR 1.17(a)(4))	\$1640	\$820	\$ _____
☐ Five months (37 CFR 1.17(a)(5))	\$2230	\$1115	\$ _____
☒ Applicant claims small entity status. See 37 CFR 1.27.			
☒ A check in the amount of the fee is enclosed.			
☐ Payment by credit card. Form PTO-2038 is attached.			
☐ The Director has already been authorized to charge fees in this application to a Deposit Account.			
☐ The Director is hereby authorized to charge any fees which may be required, or credit any overpayment, to Deposit Account Number _____ I have enclosed a duplicate copy of this sheet.			
WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.			
I am the ☐ applicant/inventor.			
☐ assignee of record of the entire interest. See 37 CFR 3.71. Statement under 37 CFR 3.73(b) is enclosed (Form PTO/SB/96).			
☒ attorney or agent of record. Registration Number <u>17,120</u>			
☐ attorney or agent under 37 CFR 1.34. Registration number if acting under 37 CFR 1.34 _____			
 Signature		<u>9-11-05</u> Date	
William W. Haefliger		323 684-2707	
Typed or printed name		Telephone Number	
NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required. Submit multiple forms if more than one signature is required, see below.			
☐ Total of _____ forms are submitted.			

This collection of information is required by 37 CFR 1.136(a). The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 6 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875					Application or Docket Number 11/271,420		Filing Date 11/09/2005		☐ To be Mailed	
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APPLICATION AS FILED – PART I						OTHER THAN SMALL ENTITY			
(Column 1)		(Column 2)		SMALL ENTITY ☒		OR		SMALL ENTITY	
FOR	NUMBER FILED	NUMBER EXTRA	RATE (\$)	FEE (\$)	RATE (\$)	FEE (\$)	RATE (\$)	FEE (\$)	
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A		N/A		N/A		
☐ SEARCH FEE (37 CFR 1.16(k), (l), or (m))	N/A	N/A	N/A		N/A		N/A		
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A		N/A		N/A		
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*	X \$ =		OR	X \$ =			
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*	X \$ =		OR	X \$ =			
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))			If the specification and drawings exceed 100 sheets of paper, the application size fee due is \$250 (\$125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).						
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))									
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL			TOTAL			

APPLICATION AS AMENDED – PART II						OTHER THAN SMALL ENTITY					
(Column 1)		(Column 2)		(Column 3)		SMALL ENTITY		OR		SMALL ENTITY	
AMENDMENT	09/18/2008	CLAIMS REMAINING AFTER AMENDMENT	MINUS	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE (\$)	ADDITIONAL FEE (\$)	RATE (\$)	ADDITIONAL FEE (\$)		
	Total (37 CFR 1.16(i))	* 45	Minus	** 40	= 5	X \$25 =	125	OR	X \$ =		
	Independent (37 CFR 1.16(h))	* 3	Minus	*** 4	= 0	X \$105 =	0	OR	X \$ =		
☐ Application Size Fee (37 CFR 1.16(s))											
☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))											
TOTAL ADD'L FEE						125		OR		TOTAL ADD'L FEE	

(Column 1)		(Column 2)		(Column 3)		SMALL ENTITY		OR		SMALL ENTITY	
AMENDMENT	Total (37 CFR 1.16(i))	CLAIMS REMAINING AFTER AMENDMENT	MINUS	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE (\$)	ADDITIONAL FEE (\$)	RATE (\$)	ADDITIONAL FEE (\$)		
	Total (37 CFR 1.16(i))	*	Minus	**	=	X \$ =		OR	X \$ =		
	Independent (37 CFR 1.16(h))	*	Minus	***	=	X \$ =		OR	X \$ =		
☐ Application Size Fee (37 CFR 1.16(s))											
☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))											
TOTAL ADD'L FEE								OR		TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.
 ** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".
 *** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".
 The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

Legal Instrument Examiner:
/Anita J. Johnson/

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Group Art Unit 2809

Examiner: Danielle Dunn

Applicant:

William A. Parkyn et al

Serial No.:

11/271,420

Filed:

November 09, 2005

For:

IRRADIANCE-
REDISTRIBUTION LENS AND
ITS APPLICATIONS
TO LED DOWNLIGHTS

Pasadena, California
September 11, 2008

A M E N D M E N T

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Madam:

In response to the office Action dated April 29,
2008, please amend the above-identified application as
follows:

Amendments to the Specification begin on page 2.

Amendments to the Claims are reflected in the listing
of claims which begins on page 3 of this paper.

Remarks/Arguments begin on page 20 of this paper.



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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
11/271,420	11/09/2005	William A. Parkyn	12,677	1170
2675 7590 12/12/2008 WILLIAM W. HAEFLIGER 201 S. LAKE AVE SUITE 512 PASADENA, CA 91101			EXAMINER DUNN, DANIELLE N	
			ART UNIT 2875	PAPER NUMBER
			MAIL DATE 12/12/2008	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Advisory Action Before the Filing of an Appeal Brief	Application No. 11/271,420	Applicant(s) PARKYN ET AL.	
	Examiner Danielle Dunn	Art Unit 2875	

--The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

THE REPLY FILED 18 September 2008 FAILS TO PLACE THIS APPLICATION IN CONDITION FOR ALLOWANCE.

1. ☒ The reply was filed after a final rejection, but prior to or on the same day as filing a Notice of Appeal. To avoid abandonment of this application, applicant must timely file one of the following replies: (1) an amendment, affidavit, or other evidence, which places the application in condition for allowance; (2) a Notice of Appeal (with appeal fee) in compliance with 37 CFR 41.31; or (3) a Request for Continued Examination (RCE) in compliance with 37 CFR 1.114. The reply must be filed within one of the following time periods:

a) ☒ The period for reply expires 3 months from the mailing date of the final rejection.

b) ☐ The period for reply expires on: (1) the mailing date of this Advisory Action, or (2) the date set forth in the final rejection, whichever is later. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of the final rejection.

Examiner Note: If box 1 is checked, check either box (a) or (b). ONLY CHECK BOX (b) WHEN THE FIRST REPLY WAS FILED WITHIN TWO MONTHS OF THE FINAL REJECTION. See MPEP 706.07(f).

Extensions of time may be obtained under 37 CFR 1.136(a). The date on which the petition under 37 CFR 1.136(a) and the appropriate extension fee have been filed is the date for purposes of determining the period of extension and the corresponding amount of the fee. The appropriate extension fee under 37 CFR 1.17(a) is calculated from: (1) the expiration date of the shortened statutory period for reply originally set in the final Office action; or (2) as set forth in (b) above, if checked. Any reply received by the Office later than three months after the mailing date of the final rejection, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

NOTICE OF APPEAL

2. ☐ The Notice of Appeal was filed on _____. A brief in compliance with 37 CFR 41.37 must be filed within two months of the date of filing the Notice of Appeal (37 CFR 41.37(a)), or any extension thereof (37 CFR 41.37(e)), to avoid dismissal of the appeal. Since a Notice of Appeal has been filed, any reply must be filed within the time period set forth in 37 CFR 41.37(a).

AMENDMENTS

3. ☒ The proposed amendment(s) filed after a final rejection, but prior to the date of filing a brief, will not be entered because

(a) ☒ They raise new issues that would require further consideration and/or search (see NOTE below);

(b) ☐ They raise the issue of new matter (see NOTE below);

(c) ☐ They are not deemed to place the application in better form for appeal by materially reducing or simplifying the issues for appeal; and/or

(d) ☒ They present additional claims without canceling a corresponding number of finally rejected claims.

NOTE: See Continuation Sheet. (See 37 CFR 1.116 and 41.33(a)).

4. ☐ The amendments are not in compliance with 37 CFR 1.121. See attached Notice of Non-Compliant Amendment (PTOL-324).

5. ☐ Applicant's reply has overcome the following rejection(s): _____.

6. ☐ Newly proposed or amended claim(s) _____ would be allowable if submitted in a separate, timely filed amendment canceling the non-allowable claim(s).

7. ☒ For purposes of appeal, the proposed amendment(s): a) ☒ will not be entered, or b) ☐ will be entered and an explanation of how the new or amended claims would be rejected is provided below or appended.

The status of the claim(s) is (or will be) as follows:

Claim(s) allowed: _____.

Claim(s) objected to: _____.

Claim(s) rejected: 1-13, 39 and 40.

Claim(s) withdrawn from consideration: 14-38.

AFFIDAVIT OR OTHER EVIDENCE

8. ☐ The affidavit or other evidence filed after a final action, but before or on the date of filing a Notice of Appeal will not be entered because applicant failed to provide a showing of good and sufficient reasons why the affidavit or other evidence is necessary and was not earlier presented. See 37 CFR 1.116(e).

9. ☐ The affidavit or other evidence filed after the date of filing a Notice of Appeal, but prior to the date of filing a brief, will not be entered because the affidavit or other evidence failed to overcome all rejections under appeal and/or appellant fails to provide a showing a good and sufficient reasons why it is necessary and was not earlier presented. See 37 CFR 41.33(d)(1).

10. ☐ The affidavit or other evidence is entered. An explanation of the status of the claims after entry is below or attached.

REQUEST FOR RECONSIDERATION/OTHER

11. ☐ The request for reconsideration has been considered but does NOT place the application in condition for allowance because: _____.

12. ☐ Note the attached Information *Disclosure Statement*(s). (PTO/SB/08) Paper No(s). _____

13. ☐ Other: _____.

/Ismael Negron/
Primary Examiner, Art Unit 2885

Continuation of 3. NOTE: The amendment to the claims require the entry surface to have a first concavly facing the light source and a second concavity facing the entry surface with the second concavity being greater than the first; such features being presented for examination for the first time. Claims 41-45 are newly added. No claims have been canceled.



/D.D. Do Not Enter/

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Group Art Unit 2809

Examiner: Danielle Dunn

Applicant:

William A. Parkyn et al

Serial No.:

11/271,420

Filed:

November 09, 2005

For:

IRRADIANCE-
REDISTRIBUTION LENS AND
ITS APPLICATIONS
TO LED DOWNLIGHTS

Pasadena, California
September 11, 2008

A M E N D M E N T

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

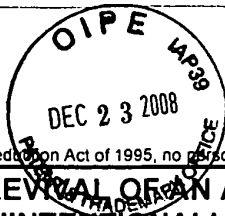
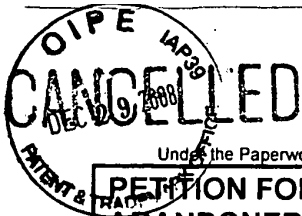
Madam:

In response to the office Action dated April 29,
2008, please amend the above-identified application as
follows:

Amendments to the Specification begin on page 2.

Amendments to the Claims are reflected in the listing
of claims which begins on page 3 of this paper.

Remarks/Arguments begin on page 20 of this paper.



12-29-08

DAC/JFW

PTO/SB/64 (11-08)

Approved for use through 12/31/2008. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

**PETITION FOR REVIVAL OF AN APPLICATION FOR PATENT
ABANDONED UNINTENTIONALLY UNDER 37 CFR 1.137(b)**

Docket Number (Optional)

12,677

First named inventor: William A. Parkyn et al

Application No.: 11/271,420

Art Unit: 2875

Filed: Nov. 9, 2005

Examiner: Danielle N. Dunn

Title: IRRADIANCE-REDISTRIBUTION LENS AND ITS APPLICATIONS TO LED DOWNLIGHTS

Attention: Office of Petitions

Mail Stop Petition

Commissioner for Patents

P.O. Box 1450

Alexandria, VA 22313-1450

FAX (571) 273-8300

NOTE: If information or assistance is needed in completing this form, please contact Petitions Information at (571) 272-3282.

The above-identified application became abandoned for failure to file a timely and proper reply to a notice or action by the United States Patent and Trademark Office. The date of abandonment is the day after the expiration date of the period set for reply in the office notice or action plus an extensions of time actually obtained.

APPLICANT HEREBY PETITIONS FOR REVIVAL OF THIS APPLICATION

NOTE: A grantable petition requires the following items:

- (1) Petition fee;
- (2) Reply and/or issue fee;
- (3) Terminal disclaimer with disclaimer fee - required for all utility and plant applications filed before June 8, 1995; and for all design applications; and
- (4) Statement that the entire delay was unintentional.

1. Petition fee

☒ Small entity-fee \$ 810.00 (37 CFR 1.17(m)). Applicant claims small entity status. See 37 CFR 1.27.

☐ Other than small entity - fee \$ _____ (37 CFR 1.17(m))

2. Reply and/or fee

A. The reply and/or fee to the above-noted Office action in the form of RCE (identify type of reply):

- ☐ has been filed previously on _____
☒ is enclosed herewith.

B. The issue fee and publication fee (if applicable) of \$ _____

12/30/2008 SLUANG1 00000004 11271420
01 FC:2453

- ☐ has been paid previously on _____
☐ is enclosed herewith.

810.00 op

[Page 1 of 2]

This collection of information is required by 37 CFR 1.137(b). The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 1.0 hour to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Mail Stop Petition, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

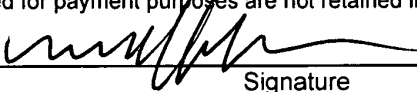
3. Terminal disclaimer with disclaimer fee

☒ Since this utility/plant application was filed on or after June 8, 1995, no terminal disclaimer is required.☐ A terminal disclaimer (and disclaimer fee (37 CFR 1.20(d)) of \$ _____ for a small entity or \$ _____ for other than a small entity) disclaiming the required period of time is enclosed herewith (see PTO/SB/63).

4. STATEMENT: The entire delay in filing the required reply from the due date for the required reply until the filing of a grantable petition under 37 CFR 1.137(b) was unintentional. [NOTE: The United States Patent and Trademark Office may require additional information if there is a question as to whether either the abandonment or the delay in filing a petition under 37 CFR 1.137(b) was unintentional (MPEP 711.03(c), subsections (III)(C) and (D)).]

WARNING:

Petitioner/applicant is cautioned to avoid submitting personal information in documents filed in a patent application that may contribute to identity theft. Personal information such as social security numbers, bank account numbers, or credit card numbers (other than a check or credit card authorization form PTO-2038 submitted for payment purposes) is never required by the USPTO to support a petition or an application. If this type of personal information is included in documents submitted to the USPTO, petitioners/applicants should consider redacting such personal information from the documents before submitting them to the USPTO. Petitioner/applicant is advised that the record of a patent application is available to the public after publication of the application (unless a non-publication request in compliance with 37 CFR 1.213(a) is made in the application) or issuance of a patent. Furthermore, the record from an abandoned application may also be available to the public if the application is referenced in a published application or an issued patent (see 37 CFR 1.14). Checks and credit card authorization forms PTO-2038 submitted for payment purposes are not retained in the application file and therefore are not publicly available.


Signature

12-12-08
Date

William W. Haefliger
Typed or printed name

17,120
Registration Number, if applicable

201 So. Lake Ave., Suite 512
Address

323 684-2707
Telephone Number

Pasadena, CA 91101
Address

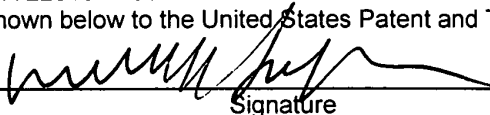
Enclosures: ☒ Fee Payment☒ Reply and RCE Fee☐ Terminal Disclaimer Form☒ Additional sheets containing statements establishing unintentional delay☐ Other: _____**CERTIFICATE OF MAILING OR TRANSMISSION [37 CFR 1.8(a)]**

I hereby certify that this correspondence is being:

☒ Deposited with the United States Postal Service on the date shown below with sufficient postage as first class mail in an envelope addressed to: Mail Stop Petition, Commissioner for Patents, P. O. Box 1450, Alexandria, VA 22313-1450.☐ Transmitted by facsimile on the date shown below to the United States Patent and Trademark Office at (571) 273-8300.

Dec. 23, 2008

Date


Signature

William W. Haefliger

Typed or printed name of person signing certificate



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Group Art Unit 2875

Examiner: Danielle Dunn

Applicant:

William A. Parkyn et al

Serial No.:

11/271,420

Filed:

November 09, 2005

For:

IRRADIANCE-
REDISTRIBUTION LENS AND
ITS APPLICATIONS
TO LED DOWNLIGHTS

December 22, 2008

STATEMENT

The entire delay in filing the required
reply from the due date for the required reply until
the filing of a grantable petition under 37 CFR
1.137(b) was unintentional.

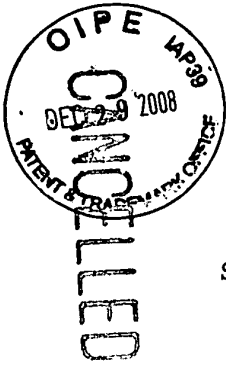
Date

12-22-08

By

William W. Haefliger

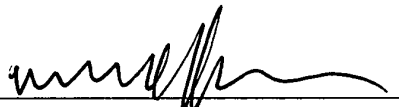
Registration No. 17,120



Serial No. 11/271,420

DECLARATION

I, William W. HAEFLIGER, attorney of record
in the above case, declare that all statements made
herein of my own knowledge are true and that all
statements made on information and belief are believed
to be true; and further that these statements were
made with the knowledge that willful false statements
and the like so made are punishable by fine or
imprisonment, or both under Section 1001 of Title 18
of the United States Code and that such willful false
statements may jeopardize the validity of the patent
application.

Date 12-22-08 By 
William W. Haeffliger
Registration No. 17,120

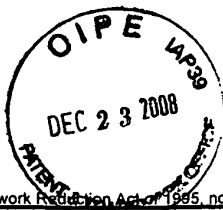
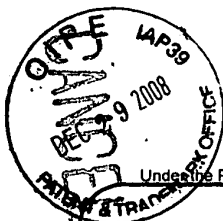
Docket 12,677

Privacy Act Statement

The **Privacy Act of 1974 (P.L. 93-579)** requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (*i.e.*, GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.



PTO/SB/30 (08-08)

Approved for use through 09/30/2008. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

**Request
for
Continued Examination (RCE)
Transmittal**

Address to:
Mail Stop RCE
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Application Number	11/271,420
Filing Date	Nov. 9, 2005
First Named Inventor	William A. Parkyn et al
Art Unit	2875
Examiner Name	Danielle N. Dunn
Attorney Docket Number	12,677

This is a Request for Continued Examination (RCE) under 37 CFR 1.114 of the above-identified application.

Request for Continued Examination (RCE) practice under 37 CFR 1.114 does not apply to any utility or plant application filed prior to June 8, 1995, or to any design application. See Instruction Sheet for RCEs (not to be submitted to the USPTO) on page 2.

1. **Submission required under 37 CFR 1.114** Note: If the RCE is proper, any previously filed unentered amendments and amendments enclosed with the RCE will be entered in the order in which they were filed unless applicant instructs otherwise. If applicant does not wish to have any previously filed unentered amendment(s) entered, applicant must request non-entry of such amendment(s).
- a. ☒ Previously submitted. If a final Office action is outstanding, any amendments filed after the final Office action may be considered as a submission even if this box is not checked.
- i. ☐ Consider the arguments in the Appeal Brief or Reply Brief previously filed on _____
- ii. ☐ Other _____
- b. ☒ Enclosed
- i. ☒ Amendment/Reply
- iii. ☐ Information Disclosure Statement (IDS)
- ii. ☐ Affidavit(s)/ Declaration(s)
- iv. ☐ Other _____
2. **Miscellaneous**
- a. ☐ Suspension of action on the above-identified application is requested under 37 CFR 1.103(c) for a period of _____ months. (Period of suspension shall not exceed 3 months; Fee under 37 CFR 1.17(i) required)
- b. ☐ Other _____
3. **Fees** The RCE fee under 37 CFR 1.17(e) is required by 37 CFR 1.114 when the RCE is filed.
- The Director is hereby authorized to charge the following fees, any underpayment of fees, or credit any overpayments, to Deposit Account No. _____
- a. ☐
- i. ☒ RCE fee required under 37 CFR 1.17(e)
- ii. ☒ Extension of time fee (37 CFR 1.136 and 1.17) If any extension fee is necessary, please charge to our Deposit Acct. 08-0118.
- iii. ☐ Other _____
- b. ☒ Check in the amount of \$ 405.00 enclosed
- c. ☐ Payment by credit card (Form PTO-2038 enclosed)

WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT REQUIRED

Signature		Date	12-22-08
Name (Print/Type)	William W. Haefliger	Registration No.	17,120

CERTIFICATE OF MAILING OR TRANSMISSION

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Mail Stop RCE, Commissioner for Patents, P. O. Box 1450, Alexandria, VA 22313-1450 or facsimile transmitted to the U.S. Patent and Trademark Office on the date shown below.

Signature		Date	
Name (Print/Type)			

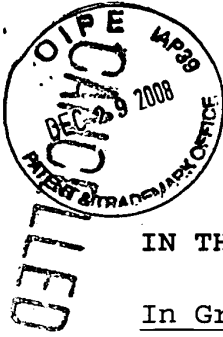
This collection of information is required by 37 CFR 1.114. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Mail Stop RCE, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

12/30/2008 SLUANG1 00000004 11271420

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PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Group Art Unit 2875

Examiner: Danielle Dunn

Applicant:

William A. Parkyn et al

Serial No.:

11/271,420

Filed:

November 09, 2005

For:

IRRADIANCE-
REDISTRIBUTION LENS AND
ITS APPLICATIONS
TO LED DOWNLIGHTS

Pasadena, California
December 22, 2008

A M E N D M E N T

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Madam:

In response to the office Action dated April 29,
2008, please amend the above-identified application as
follows:

Amendments to the Specification begin on page 2.

Amendments to the Claims are reflected in the listing
of claims which begins on page 3 of this paper.

Remarks/Arguments begin on page 20 of this paper.

Serial No. 11/271,420

Amendments to the Specification:

Please replace paragraph beginning on page 10, line 23, with the following amended paragraph:

FIG. 5 shows a preferred embodiment in profile 50 of a 35mm-diameter circularly symmetric illumination-redistribution lens formed of polycarbonate and comprising concave lower surface 50L, upper exit-surface 50U, and optically inactive flange 50F. Flash LED 51 emits ray-fan 52, extending to 63° off-axis and thereby representing 90% of the luminosity of source 51. Rays 52 are received along concave lower surface 52 50L, each at a radius r . A diagram quite similar to FIG. 3 would describe the encircled flux at each radius r and give it the corresponding top-surface radius R . Both r and R are shown in FIG. 5.

Serial No. 11/271,420

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Claim 1 (currently amended). An irradiance-redistribution illumination lens comprising a transparent dielectric solid of revolution with external surface area predominantly comprised of an entry surface that receives light of nonuniform irradiance from a nearby compact light source and of an opposing exit surface that forms from said received light a pre-specified diverging output beam; said entry surface given a specific profile that refractively deflects said received light into a different solid angle, said entry surface spatially distributed such that said exit surface receives said deflected light with predominantly uniform irradiance, said exit surface given a specific shape that refractively deflects said uniform irradiance into said output beam; said light source being sufficiently compact for said specific shapes to be calculated by mathematical integration of the slope distributions required by said refractive deflections[[.]], said

Serial No. 11/271,420

entry surface having first concavity facing toward
said light source, and second concavity facing toward
the entry surface, said second concavity being
substantially greater than said first concavity.

Claim 2 (previously presented). The lens of claim 1 wherein said specific profile of said entry surface is calculated in concordance with the cumulative angular distribution of said received light; said concordance established by the correspondence of said distribution with equal values at wider radii of the shallower square-root distribution of uniform irradiance; said establishment embodied as the deflection function from each point of said entry surface to the wider radius on said exit surface having the same value of the cumulative distribution of uniform irradiance as the value at said entry-surface point of said cumulative distribution of said irradiance from said light source.

Serial No. 11/271,420

Claim 3 (original). The lens of claim 2 wherein said specific shape of said exit face has the slope distribution that deflects said uniform irradiance into said pre-specified intensity distribution of said output beam.

Claim 4 (original). The lens of claim 1 wherein said output beam has predominantly uniform intensity within a predetermined angular limit.

Claim 5 (original). The lens of claim 1 wherein said output beam uniformly illuminates a target zone.

Claim 6 (original). The lens of claim 5 wherein said target zone is on a plane facing said lens.

Claim 7 (original). The lens of claim 5 also comprised of inactive lateral surfaces forming a rectangular limit of said exit face, so that said target zone is a similar rectangle.

Serial No. 11/271,420

Claim 8 (original). The lens of claim 1 wherein said light source is a light emitting diode.

Claim 9 (previously presented). Multiple lenses as defined in claim 8 laterally arrayed in proximity, above multiple light sources, in association with a common circuit board, and having their output beams illuminating the same target.

Claim 10 (previously presented). An illumination system for producing a semicircular beam, comprising the lens of claim 1, modified by being cutting in half at a cutting plane, a mirrored surface associated with said cutting plane, and a compact light source adjacent thereto for illuminating the entry surface of said lens.

Serial No. 11/271,420

Claim 11 (previously presented). The lens of claim 1 wherein said output beam is collimated and also comprising an associated secondary lens for receiving said output beam and producing a specified diverging beam.

Claim 12 (previously presented). The lens of claim 11 wherein said secondary lens is a holographic diffuser.

Claim 13 (previously presented). The lens of claim 11 wherein said secondary lens is a lenslet array.

Claim 14 (withdrawn). The lens of claim 1, and including multiple such lenses in the following combination:

- a) an array of aspheric lenses extending in side-by-side relation,
- b) an array of quasi-hemispheric light sources one for each lens,

Serial No. 11/271,420

c) each source positioned to direct light at its corresponding lens, and the sources and lenses configured to produce light emitted from the lens array, the emitted light having substantially uniform intensity across an area corresponding to the area of the lens array.

Claim 15 (withdrawn). The combination of claim 14 wherein said emitted light is substantially collimated.

Claim 16 (withdrawn). The combination of claim 14 wherein the lenses have output sides which are generally dome shaped.

Claim 17 (withdrawn). The combination of claim 14 wherein the lenses extend in edge to edge peripherally packed relation.

Serial No. 11/271,420

Claim 18 (withdrawn). The combination of claim 14 wherein the lenses have peripheries which are polygonal.

Claim 19 (withdrawn). The combination of claim 17 wherein the lenses have peripheries which are square.

Claim 20 (withdrawn). The combination of claim 14 including relatively reduced size ball shaped lenses proximate said sources which are LEDs, and directing LED emitted light at the rear sides of said first mentioned lenses.

Claim 21 (withdrawn). The combination of claim 14 wherein said lenses are oriented to direct light downwardly in a room, for room illumination.

Claim 22 (withdrawn). The combination of claim 14 wherein there are spaced apart groups of said lenses oriented to direct light downwardly from the ceiling zone of a room, for room illumination.

Serial No. 11/271,420

Claim 23 (withdrawn). The combination of claim 22 including an electrical DC conductor proximate said ceiling zone and to which said sources which are LEDs associated with said group of lenses are electrically connected.

Claim 24 (withdrawn). The combination of claim 23 including an AC to DC converter connected to said line to convert AC current to low voltage DC current supplied to the LEDs in said group.

Claim 25 (withdrawn). The combination of claim 14 wherein the sources are oriented in one of the following configurations:

- i) at an axis defined by a lens,
- ii) sidewardly spaced from an axis defined by the lens.

Claim 26 (withdrawn). The combination of claim 14 wherein said sources are lambertian.

Serial No. 11/271,420

Claim 27 (withdrawn). The lens of claim 1, and including multiple such lenses in combination with:

- a) an LED package comprising multiple LEDs, the lenses receiving light rays from the LEDs,
- b) and a transparent dielectric having a refracting flat surface to which rays from the LEDs are transmitted for refraction,
- c) the rays refracted from the LEDs at points along the flat surface extending in narrow bands.

Claim 28 (withdrawn). The combination of claim 27 wherein the rays transmitted to each said point are triplet rays.

Claim 29 (withdrawn). The combination of claim 27 wherein the overall width spacing of the LEDs in the package is small relative to the overall operative width of the flat surface receiving rays transmitted from the LEDs.

Serial No. 11/271,420

Claim 30 (withdrawn). The combination of claim 29 wherein the ratio of said overall width spacing of the LEDs in the package to the operative width of the flat surface receiving the rays transmitted by the LEDs is less than $1/5$, whereby substantially uniform illumination is produced by said refracted rays.

Claim 31 (withdrawn). A light redistribution system comprising, in combination with a lens as defined in claim 1,

- a) LED means,
- b) the lens having a concave lower refracting surface receiving rays from said LED means,
- c) the lens having a dome-shaped refracting upper surface, the curvature of which is one of the following:
 - i) exceeds the curvature of the lower surface,

Serial No. 11/271,420

ii) is less than the curvature of the
lower surface,

d) a target surface receiving rays
refracted by said upper surface,

e) said LED means and said upper and lower
surfaces configured to produce a profile of bounded
flux at said target surface that provides
substantially uniform illuminance.

Claim 32 (withdrawn). The system of claim 31 wherein
said bounded flux defines a substantially square
pattern.

Claim 33 (withdrawn). The system of claim 32 wherein
the lens has four vertical planar side walls each
intersecting said upper and lower surfaces.

Claim 34 (withdrawn). An array of adjacent lenses as
defined in claim 33.

Serial No. 11/271,420

Claim 35 (withdrawn). The array of claim 34 including heat sink fins associated with said lenses.

Claim 36 (withdrawn). The array of claim 34 wherein the lenses face downwardly to direct light downwardly.

Claim 37 (withdrawn). The array of claim 34 wherein the lenses are hexagonally packed, and a circuit board associated with the lenses, the LED means associated with said board.

Claim 38 (withdrawn). The system of claim 31 wherein said profile is substantially parabolic.

Claim 39 (currently amended). An irradiance-redistribution lens comprising a transparent dielectric formed as a solid of revolution with an axis about which a planar curved profile-line is swept, with external surface area comprised of an optically active entry surface, an optically active exit surface, and an optically inactive mounting

Serial No. 11/271,420

surface; said entry surface receiving light of nonuniform irradiance from a compact light source situated on said axis in a nearby focal zone; said entry surface having a specific profile that produces refractive deflection of said received light into interiorly propagating light of a different solid angle; said exit surface opposing said entry surface and receiving said internally propagating light therefrom; said exit ~~surfacing~~ surface forming a pre-specified diverging output beam from said internally propagating light; said entry-surface deflection spatially distributed such that said exit surface receives said deflected light with predominantly uniform irradiance, said exit surface given a specific shape that refractively deflects said uniform irradiance into said output beam; said light source being sufficiently compact for said specific shapes to be calculated by mathematical integration of the slope distributions required by said refractive deflections~~[[.]]~~, said entry surface having first concavity facing toward said light source, and second

Serial No. 11/271,420

concavity facing toward the entry surface, said second
concavity being substantially greater than said first
concavity.

Claim 40 (previously presented). An illumination system for producing a semicircular beam, comprising the lens of Claim 39, modified by being cut in half by a cutting plane passing through said axis of said lens; a vertically oriented planar mirror situated on said cutting plane and extending downward to said nearby compact light source, with said compact light source laterally displaced so as to be positioned thereto for illuminating the entry surface of said lens.

Claim 41 (new). The lens of claim 1, and including multiple such lenses in the following combination:

- a) an array of aspheric lenses extending in side-by-side relation,
- b) an array of quasi-hemispheric light sources one for each lens,

Serial No. 11/271,420

c) each source positioned to direct light at its corresponding lens, and the sources and lenses configured to produce light emitted from the lens array, the emitted light having substantially uniform intensity across an area corresponding to the area of the lens array.

Claim 42 (new). The lens of claim 1, and including multiple such lenses in combination with:

a) an LED package comprising multiple LEDs, the lenses receiving light rays from the LEDs,

b) and a transparent dielectric having a refracting flat surface to which rays from the LEDs are transmitted for refraction,

c) the rays refracted from the LEDs at points along the flat surface extending in narrow bands.

Serial No. 11/271,420

Claim 43 (new). A light redistribution system comprising, in combination with a lens as defined in claim 1,

- a) said light source comprising LED means,
- b) the lens concave lower refracting surface receiving rays from said LED means,

- c) the lens having a dome-shaped refracting exit surface, the curvature of which is one of the following:

- i) exceeds the curvature of the lower surface,

- ii) is less than the curvature of the lower surface,

- d) there being a target surface receiving rays refracted by said exit surface,

- e) said LED means and said entry and exit surfaces configured to produce a profile of bounded flux at said target surface that provides substantially uniform illuminance.

Serial No. 11/271,420

Claim 44 (new). The lens of claim 1 having circularly spaced, flat surface zones which are generally planar in a common direction of said entry and exit surface concavities.

Claim 45 (new). The lens of claim 44, wherein multiple such lenses are provided in a cluster and have flat surfaces thereof extending in contiguous relations.

Serial No. 11/271,420

R E M A R K S

Added new claims 41-45 are dependent from claim 1, which as amended is believed and urged to be allowable over cited art. (See argument below.) Further, these new claims correspond respectively to withdrawn claims 14, 27, and 31. New claim 44, based on claim 1, is directed to the Fig. 8 lens shape, and claim 45 is directed to Fig. 9.

Base claim 1 now further defines over the art, including Minano, by the following added to claim 1:

said entry surface having first concavity facing toward said light source, and second concavity facing toward the entry surface, said second concavity being substantially greater than said first concavity.

In this regard, the entry and exit concave surfaces are for example see at 50L and 50U in Fig. 5, the light source being at 51. Note also beam refractions. Minano configurations lack suggestion of such lesser and greater concave surfaces, as claimed,

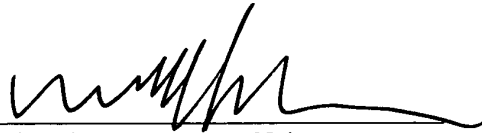
Serial No. 11/271,420

and further, cited art including Minano does not suggest the totality of claim 1. See applicant's Comments, attached.

New claims 41-45 add even further to the novelty and unobviousness, over the cited art, and are urged to be allowable in the novel and unobvious environment of base claim 1.

In view of the changes and argument, reconsideration and allowance are respectfully solicited.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'William W. Haeffliger', written over a horizontal line.

William W. Haeffliger
Attorney for Applicant
Reg. No. 17,120
(323) 684-2707

WWH:ts
Docket 12,677

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875					Application or Docket Number 11/271,420		Filing Date 11/09/2005		☐ To be Mailed	
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APPLICATION AS FILED – PART I						OTHER THAN SMALL ENTITY			
(Column 1)		(Column 2)		SMALL ENTITY ☒		OR		SMALL ENTITY	
FOR	NUMBER FILED	NUMBER EXTRA	RATE (\$)	FEE (\$)	RATE (\$)	FEE (\$)	RATE (\$)	FEE (\$)	
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A		N/A		N/A		
☐ SEARCH FEE (37 CFR 1.16(k), (l), or (m))	N/A	N/A	N/A		N/A		N/A		
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A		N/A		N/A		
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*	X \$ =		OR	X \$ =			
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*	X \$ =		OR	X \$ =			
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))			If the specification and drawings exceed 100 sheets of paper, the application size fee due is \$250 (\$125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).						
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))									
			TOTAL		TOTAL				

* If the difference in column 1 is less than zero, enter "0" in column 2.

APPLICATION AS AMENDED – PART II						OTHER THAN SMALL ENTITY					
(Column 1)		(Column 2)		(Column 3)		SMALL ENTITY		OR		SMALL ENTITY	
AMENDMENT	12/23/2008	CLAIMS REMAINING AFTER AMENDMENT	MINUS	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE (\$)	ADDITIONAL FEE (\$)	RATE (\$)	ADDITIONAL FEE (\$)		
	Total (37 CFR 1.16(i))	* 45	Minus	** 45	= 0	X \$26 =	0	OR	X \$ =		
	Independent (37 CFR 1.16(h))	* 3	Minus	***3	= 0	X \$110 =	0	OR	X \$ =		
☐ Application Size Fee (37 CFR 1.16(s))											
☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))											
						TOTAL ADD'L FEE	0	OR	TOTAL ADD'L FEE		

(Column 1)		(Column 2)		(Column 3)		SMALL ENTITY		OR		SMALL ENTITY	
AMENDMENT	Total (37 CFR 1.16(i))	CLAIMS REMAINING AFTER AMENDMENT	MINUS	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE (\$)	ADDITIONAL FEE (\$)	RATE (\$)	ADDITIONAL FEE (\$)		
	Total (37 CFR 1.16(i))	*	Minus	**	=	X \$ =		OR	X \$ =		
	Independent (37 CFR 1.16(h))	*	Minus	***	=	X \$ =		OR	X \$ =		
☐ Application Size Fee (37 CFR 1.16(s))											
☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))											
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE		

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.
 ** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".
 *** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".

The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

Legal Instrument Examiner:
/DAVID SASFAI/

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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MULTIPLE DEPENDENT CLAIM FEE CALCULATION SHEET Substitute for Form PTO-1360 (For use with Form PTO/SB/06)				Application Number 11/271,420		Filing Date 09 November, 2005		☐ To be Mailed					
				Applicant(s) PARKYN ET AL.						Page 1 of 1			
* May be used for additional claims or amendments													
CLAIMS	AS FILED		AFTER FIRST AMENDMENT		AFTER SEC. AMENDMENT		*		*		*		
	Indep	Depend	Indep	Depend	Indep	Depend		Indep	Depend	Indep	Depend	Indep	Depend
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2		1					52						
3		1					53						
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45		1					95						
46							96						
47							97						
48							98						
49							99						
50							100						
Total Indep	3						Total Indep						
Total Depend		42					Total Depend						
Total Claims	45						Total Claims						

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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Part of Paper No20090109-1.



UNITED STATES PATENT AND TRADEMARK OFFICE

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
11/271,420	11/09/2005	William A. Parkyn	12,677	1170
2675 7590 01/09/2009 WILLIAM W. HAEFLIGER 201 S. LAKE AVE SUITE 512 PASADENA, CA 91101			EXAMINER DUNN, DANIELLE N	
			ART UNIT 2875	PAPER NUMBER
			MAIL DATE 01/09/2009	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of Abandonment	Application No.	Applicant(s)	
	11/271,420	PARKYN ET AL.	
	Examiner	Art Unit	
	Danielle Dunn	2875	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

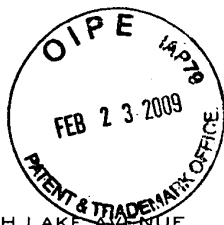
This application is abandoned in view of:

1. ☒ Applicant's failure to timely file a proper reply to the Office letter mailed on 29 April 2008.
 - (a) ☐ A reply was received on ____ (with a Certificate of Mailing or Transmission dated ____), which is after the expiration of the period for reply (including a total extension of time of ____ month(s)) which expired on ____.
 - (b) ☒ A proposed reply was received on 18 September 2008, but it does not constitute a proper reply under 37 CFR 1.113 (a) to the final rejection.
 (A proper reply under 37 CFR 1.113 to a final rejection consists only of: (1) a timely filed amendment which places the application in condition for allowance; (2) a timely filed Notice of Appeal (with appeal fee); or (3) a timely filed Request for Continued Examination (RCE) in compliance with 37 CFR 1.114).
 - (c) ☐ A reply was received on ____ but it does not constitute a proper reply, or a bona fide attempt at a proper reply, to the non-final rejection. See 37 CFR 1.85(a) and 1.111. (See explanation in box 7 below).
 - (d) ☐ No reply has been received.
2. ☐ Applicant's failure to timely pay the required issue fee and publication fee, if applicable, within the statutory period of three months from the mailing date of the Notice of Allowance (PTOL-85).
 - (a) ☐ The issue fee and publication fee, if applicable, was received on ____ (with a Certificate of Mailing or Transmission dated ____), which is after the expiration of the statutory period for payment of the issue fee (and publication fee) set in the Notice of Allowance (PTOL-85).
 - (b) ☐ The submitted fee of \$ ____ is insufficient. A balance of \$ ____ is due.
 The issue fee required by 37 CFR 1.18 is \$ _____. The publication fee, if required by 37 CFR 1.18(d), is \$ ____.
 - (c) ☐ The issue fee and publication fee, if applicable, has not been received.
3. ☐ Applicant's failure to timely file corrected drawings as required by, and within the three-month period set in, the Notice of Allowability (PTO-37).
 - (a) ☐ Proposed corrected drawings were received on ____ (with a Certificate of Mailing or Transmission dated ____), which is after the expiration of the period for reply.
 - (b) ☐ No corrected drawings have been received.
4. ☐ The letter of express abandonment which is signed by the attorney or agent of record, the assignee of the entire interest, or all of the applicants.
5. ☐ The letter of express abandonment which is signed by an attorney or agent (acting in a representative capacity under 37 CFR 1.34(a)) upon the filing of a continuing application.
6. ☐ The decision by the Board of Patent Appeals and Interference rendered on ____ and because the period for seeking court review of the decision has expired and there are no allowed claims.
7. ☐ The reason(s) below:

NOTE: Interview Summary Attached

/Ismael Negron/
 Primary Examiner, Art Unit 2885

Petitions to revive under 37 CFR 1.137(a) or (b), or requests to withdraw the holding of abandonment under 37 CFR 1.181, should be promptly filed to minimize any negative effects on patent term.



201 SOUTH LAKE AVENUE
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LAW OFFICES
WILLIAM W. HAEFLIGER
PATENT LAWYER

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(626) 449-0467
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E-MAIL: whaeflig@pacbell.net

February 17, 2009

Mail Stop Petition
Commissioner for Patents
P. O. Box 1450
Alexandria, VA 22313-1450

Re: U.S. Patent Application
Serial No. 11/271,420
Inventors: William A. Parkyn
David G. Pelka

**IRRADIANCE-REDISTRIBUTION LENS AND
ITS APPLICATIONS TO LED DOWNLIGHTS**
Our Docket 12,677

Sir:

Examiner Dunn advises that this re-file of the Petition To Revive is necessary (the earlier Petition was filed December 3).

Please apply the prior fee payments for the original Petition and for the original RCE to this re-filed Petition and RCE.

Respectfully submitted,


William W. Haefliger
Attorney for Applicant
Reg. No. 17,120

WWH:ts
Enclosures

**WILLIAM W. HAEFLIGER
PATENT LAWYER**

PH. 323-684-2707
201 S. LAKE AVE., STE. 512
PASADENA, CA 91101

30837

16-49 769
1220

Dec. 22, 2008

Commissioner for Patents and Trademarks

Eight hundred ten and no/100*****

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Dkt. 12,677

⑈030837⑈

NOT NEGOTIABLE

**WILLIAM W. HAEFLIGER
PATENT LAWYER**

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30838

16-49 769
1220

Dec. 22, 2008

Commissioner for Patents and Trademarks

Four hundred five and no/100*****

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Dkt. 12,677

⑈030838⑈

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**PETITION FOR REVIVAL OF AN APPLICATION FOR PATENT
ABANDONED UNINTENTIONALLY UNDER 37 CFR 1.137(b)**

Docket Number (Optional)

12,677

First named inventor: William A. Parkyn et al

Application No.: 11/271,420

Art Unit: 2875

Filed: Nov. 9, 2005

Examiner: Danielle N. Dunn

Title: IRRADIANCE-REDISTRIBUTION LENS AND ITS APPLICATIONS TO LED DOWNLIGHTS

Attention: Office of Petitions
Mail Stop Petition
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450
FAX (571) 273-8300

NOTE: If information or assistance is needed in completing this form, please contact Petitions Information at (571) 272-3282.

The above-identified application became abandoned for failure to file a timely and proper reply to a notice or action by the United States Patent and Trademark Office. The date of abandonment is the day after the expiration date of the period set for reply in the office notice or action plus an extensions of time actually obtained.

APPLICANT HEREBY PETITIONS FOR REVIVAL OF THIS APPLICATION

NOTE: A grantable petition requires the following items:

- (1) Petition fee;
- (2) Reply and/or issue fee;
- (3) Terminal disclaimer with disclaimer fee - required for all utility and plant applications filed before June 8, 1995; and for all design applications; and
- (4) Statement that the entire delay was unintentional.

1. Petition fee

☒ Small entity-fee \$ 810.00 (37 CFR 1.17(m)). Applicant claims small entity status. See 37 CFR 1.27.

☐ Other than small entity - fee \$ _____ (37 CFR 1.17(m))

2. Reply and/or fee

A. The reply and/or fee to the above-noted Office action in the form of RCE (identify type of reply):

- ☐ has been filed previously on _____.
- ☒ is enclosed herewith.

B. The issue fee and publication fee (if applicable) of \$ _____.

- ☐ has been paid previously on _____.
- ☐ is enclosed herewith.

[Page 1 of 2]

This collection of information is required by 37 CFR 1.137(b). The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 1.0 hour to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Mail Stop Petition, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Group Art Unit 2875

Examiner: Danielle Dunn

Applicant:

William A. Parkyn et al

Serial No.:

11/271,420

Filed:

November 09, 2005

For:

IRRADIANCE-
REDISTRIBUTION LENS AND
ITS APPLICATIONS
TO LED DOWNLIGHTS

December 22, 2008

STATEMENT

The entire delay in filing the required
reply from the due date for the required reply until
the filing of a grantable petition under 37 CFR
1.137(b) was unintentional.

Date

12-22-08

By

William W. Haefliger

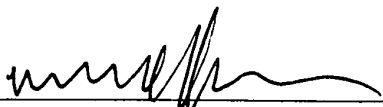
Registration No. 17,120



Serial No. 11/271,420

DECLARATION

I, William W. HAEFLIGER, attorney of record
in the above case, declare that all statements made
herein of my own knowledge are true and that all
statements made on information and belief are believed
to be true; and further that these statements were
made with the knowledge that willful false statements
and the like so made are punishable by fine or
imprisonment, or both under Section 1001 of Title 18
of the United States Code and that such willful false
statements may jeopardize the validity of the patent
application.

Date 12-22-08 By 
William W. Haefliger
Registration No. 17,120

Docket 12,677

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3. Terminal disclaimer with disclaimer fee

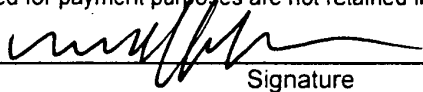
☒ Since this utility/plant application was filed on or after June 8, 1995, no terminal disclaimer is required.

☐ A terminal disclaimer (and disclaimer fee (37 CFR 1.20(d)) of \$ _____ for a small entity or \$ _____ for other than a small entity) disclaiming the required period of time is enclosed herewith (see PTO/SB/63).

4. STATEMENT: The entire delay in filing the required reply from the due date for the required reply until the filing of a grantable petition under 37 CFR 1.137(b) was unintentional. [NOTE: The United States Patent and Trademark Office may require additional information if there is a question as to whether either the abandonment or the delay in filing a petition under 37 CFR 1.137(b) was unintentional (MPEP 711.03(c), subsections (III)(C) and (D)).]

WARNING:

Petitioner/applicant is cautioned to avoid submitting personal information in documents filed in a patent application that may contribute to identity theft. Personal information such as social security numbers, bank account numbers, or credit card numbers (other than a check or credit card authorization form PTO-2038 submitted for payment purposes) is never required by the USPTO to support a petition or an application. If this type of personal information is included in documents submitted to the USPTO, petitioners/applicants should consider redacting such personal information from the documents before submitting them to the USPTO. Petitioner/applicant is advised that the record of a patent application is available to the public after publication of the application (unless a non-publication request in compliance with 37 CFR 1.213(a) is made in the application) or issuance of a patent. Furthermore, the record from an abandoned application may also be available to the public if the application is referenced in a published application or an issued patent (see 37 CFR 1.14). Checks and credit card authorization forms PTO-2038 submitted for payment purposes are not retained in the application file and therefore are not publicly available.


Signature

12-22-08
Date

William W. Haeffliger
Typed or printed name

17,120
Registration Number, if applicable

201 So. Lake Ave., Suite 512
Address

323 684-2707
Telephone Number

Pasadena, CA 91101
Address

Enclosures: ☒ Fee Payment

☒ Reply and RCE Fee

☐ Terminal Disclaimer Form

☒ Additional sheets containing statements establishing unintentional delay

☐ Other: _____

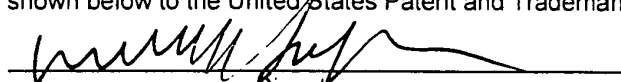
CERTIFICATE OF MAILING OR TRANSMISSION [37 CFR 1.8(a)]

I hereby certify that this correspondence is being:

☒ Deposited with the United States Postal Service on the date shown below with sufficient postage as first class mail in an envelope addressed to: Mail Stop Petition, Commissioner for Patents, P. O. Box 1450, Alexandria, VA 22313-1450.

☐ Transmitted by facsimile on the date shown below to the United States Patent and Trademark Office at (571) 273-8300.

Dec. 23, 2008
Date


Signature
William W. Haeffliger
Typed or printed name of person signing certificate



Privacy Act Statement

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7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (*i.e.*, GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.



PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Group Art Unit 2875

Examiner: Danielle Dunn

Applicant:

William A. Parkyn et al

Serial No.:

11/271,420

Filed:

November 09, 2005

For:

IRRADIANCE-
REDISTRIBUTION LENS AND
ITS APPLICATIONS
TO LED DOWNLIGHTS

Pasadena, California
December 22, 2008

A M E N D M E N T

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Madam:

In response to the office Action dated April 29,
2008, please amend the above-identified application as
follows:

Amendments to the Specification begin on page 2.

Amendments to the Claims are reflected in the listing
of claims which begins on page 3 of this paper.

Remarks/Arguments begin on page 20 of this paper.

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Amendments to the Specification:

Please replace paragraph beginning on page 10, line 23, with the following amended paragraph:

FIG. 5 shows a preferred embodiment in profile 50 of a 35mm-diameter circularly symmetric illumination-redistribution lens formed of polycarbonate and comprising concave lower surface 50L, upper exit-surface 50U, and optically inactive flange 50F. Flash LED 51 emits ray-fan 52, extending to 63° off-axis and thereby representing 90% of the luminosity of source 51. Rays 52 are received along concave lower surface 52 50L, each at a radius r . A diagram quite similar to FIG. 3 would describe the encircled flux at each radius r and give it the corresponding top-surface radius R . Both r and R are shown in FIG. 5.

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Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Claim 1 (currently amended). An irradiance-redistribution illumination lens comprising a transparent dielectric solid of revolution with external surface area predominantly comprised of an entry surface that receives light of nonuniform irradiance from a nearby compact light source and of an opposing exit surface that forms from said received light a pre-specified diverging output beam; said entry surface given a specific profile that refractively deflects said received light into a different solid angle, said entry surface spatially distributed such that said exit surface receives said deflected light with predominantly uniform irradiance, said exit surface given a specific shape that refractively deflects said uniform irradiance into said output beam; said light source being sufficiently compact for said specific shapes to be calculated by mathematical integration of the slope distributions required by said refractive deflections[[]], said

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entry surface having first concavity facing toward
said light source, and second concavity facing toward
the entry surface, said second concavity being
substantially greater than said first concavity.

Claim 2 (previously presented). The lens of claim 1 wherein said specific profile of said entry surface is calculated in concordance with the cumulative angular distribution of said received light; said concordance established by the correspondence of said distribution with equal values at wider radii of the shallower square-root distribution of uniform irradiance; said establishment embodied as the deflection function from each point of said entry surface to the wider radius on said exit surface having the same value of the cumulative distribution of uniform irradiance as the value at said entry-surface point of said cumulative distribution of said irradiance from said light source.

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Claim 3 (original). The lens of claim 2 wherein said specific shape of said exit face has the slope distribution that deflects said uniform irradiance into said pre-specified intensity distribution of said output beam.

Claim 4 (original). The lens of claim 1 wherein said output beam has predominantly uniform intensity within a predetermined angular limit.

Claim 5 (original). The lens of claim 1 wherein said output beam uniformly illuminates a target zone.

Claim 6 (original). The lens of claim 5 wherein said target zone is on a plane facing said lens.

Claim 7 (original). The lens of claim 5 also comprised of inactive lateral surfaces forming a rectangular limit of said exit face, so that said target zone is a similar rectangle.

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Claim 8 (original). The lens of claim 1 wherein said light source is a light emitting diode.

Claim 9 (previously presented). Multiple lenses as defined in claim 8 laterally arrayed in proximity, above multiple light sources, in association with a common circuit board, and having their output beams illuminating the same target.

Claim 10 (previously presented). An illumination system for producing a semicircular beam, comprising the lens of claim 1, modified by being cutting in half at a cutting plane, a mirrored surface associated with said cutting plane, and a compact light source adjacent thereto for illuminating the entry surface of said lens.

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Claim 11 (previously presented). The lens of claim 1 wherein said output beam is collimated and also comprising an associated secondary lens for receiving said output beam and producing a specified diverging beam.

Claim 12 (previously presented). The lens of claim 11 wherein said secondary lens is a holographic diffuser.

Claim 13 (previously presented). The lens of claim 11 wherein said secondary lens is a lenslet array.

Claim 14 (withdrawn). The lens of claim 1, and including multiple such lenses in the following combination:

- a) an array of aspheric lenses extending in side-by-side relation,
- b) an array of quasi-hemispheric light sources one for each lens,

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c) each source positioned to direct light at its corresponding lens, and the sources and lenses configured to produce light emitted from the lens array, the emitted light having substantially uniform intensity across an area corresponding to the area of the lens array.

Claim 15 (withdrawn). The combination of claim 14 wherein said emitted light is substantially collimated.

Claim 16 (withdrawn). The combination of claim 14 wherein the lenses have output sides which are generally dome shaped.

Claim 17 (withdrawn). The combination of claim 14 wherein the lenses extend in edge to edge peripherally packed relation.

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Claim 18 (withdrawn). The combination of claim 14 wherein the lenses have peripheries which are polygonal.

Claim 19 (withdrawn). The combination of claim 17 wherein the lenses have peripheries which are square.

Claim 20 (withdrawn). The combination of claim 14 including relatively reduced size ball shaped lenses proximate said sources which are LEDs, and directing LED emitted light at the rear sides of said first mentioned lenses.

Claim 21 (withdrawn). The combination of claim 14 wherein said lenses are oriented to direct light downwardly in a room, for room illumination.

Claim 22 (withdrawn). The combination of claim 14 wherein there are spaced apart groups of said lenses oriented to direct light downwardly from the ceiling zone of a room, for room illumination.

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Claim 23 (withdrawn). The combination of claim 22 including an electrical DC conductor proximate said ceiling zone and to which said sources which are LEDs associated with said group of lenses are electrically connected.

Claim 24 (withdrawn). The combination of claim 23 including an AC to DC converter connected to said line to convert AC current to low voltage DC current supplied to the LEDs in said group.

Claim 25 (withdrawn). The combination of claim 14 wherein the sources are oriented in one of the following configurations:

- i) at an axis defined by a lens,
- ii) sidewardly spaced from an axis defined by the lens.

Claim 26 (withdrawn). The combination of claim 14 wherein said sources are lambertian.

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Claim 27 (withdrawn). The lens of claim 1, and including multiple such lenses in combination with:

- a) an LED package comprising multiple LEDs, the lenses receiving light rays from the LEDs,
- b) and a transparent dielectric having a refracting flat surface to which rays from the LEDs are transmitted for refraction,
- c) the rays refracted from the LEDs at points along the flat surface extending in narrow bands.

Claim 28 (withdrawn). The combination of claim 27 wherein the rays transmitted to each said point are triplet rays.

Claim 29 (withdrawn). The combination of claim 27 wherein the overall width spacing of the LEDs in the package is small relative to the overall operative width of the flat surface receiving rays transmitted from the LEDs.

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Claim 30 (withdrawn). The combination of claim 29 wherein the ratio of said overall width spacing of the LEDs in the package to the operative width of the flat surface receiving the rays transmitted by the LEDs is less than $1/5$, whereby substantially uniform illumination is produced by said refracted rays.

Claim 31 (withdrawn). A light redistribution system comprising, in combination with a lens as defined in claim 1,

- a) LED means,
- b) the lens having a concave lower refracting surface receiving rays from said LED means,
- c) the lens having a dome-shaped refracting upper surface, the curvature of which is one of the following:
 - i) exceeds the curvature of the lower surface,

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- ii) is less than the curvature of the
lower surface,
- d) a target surface receiving rays
refracted by said upper surface,
- e) said LED means and said upper and lower
surfaces configured to produce a profile of bounded
flux at said target surface that provides
substantially uniform illuminance.

Claim 32 (withdrawn). The system of claim 31 wherein
said bounded flux defines a substantially square
pattern.

Claim 33 (withdrawn). The system of claim 32 wherein
the lens has four vertical planar side walls each
intersecting said upper and lower surfaces.

Claim 34 (withdrawn). An array of adjacent lenses as
defined in claim 33.

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Claim 35 (withdrawn). The array of claim 34 including heat sink fins associated with said lenses.

Claim 36 (withdrawn). The array of claim 34 wherein the lenses face downwardly to direct light downwardly.

Claim 37 (withdrawn). The array of claim 34 wherein the lenses are hexagonally packed, and a circuit board associated with the lenses, the LED means associated with said board.

Claim 38 (withdrawn). The system of claim 31 wherein said profile is substantially parabolic.

Claim 39 (currently amended). An irradiance-redistribution lens comprising a transparent dielectric formed as a solid of revolution with an axis about which a planar curved profile-line is swept, with external surface area comprised of an optically active entry surface, an optically active exit surface, and an optically inactive mounting

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surface; said entry surface receiving light of nonuniform irradiance from a compact light source situated on said axis in a nearby focal zone; said entry surface having a specific profile that produces refractive deflection of said received light into interiorly propagating light of a different solid angle; said exit surface opposing said entry surface and receiving said internally propagating light therefrom; said exit surfacing surface forming a pre-specified diverging output beam from said internally propagating light; said entry-surface deflection spatially distributed such that said exit surface receives said deflected light with predominantly uniform irradiance, said exit surface given a specific shape that refractively deflects said uniform irradiance into said output beam; said light source being sufficiently compact for said specific shapes to be calculated by mathematical integration of the slope distributions required by said refractive deflections[[]], said entry surface having first concavity facing toward said light source, and second

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concavity facing toward the entry surface, said second concavity being substantially greater than said first concavity.

Claim 40 (previously presented). An illumination system for producing a semicircular beam, comprising the lens of Claim 39, modified by being cut in half by a cutting plane passing through said axis of said lens; a vertically oriented planar mirror situated on said cutting plane and extending downward to said nearby compact light source, with said compact light source laterally displaced so as to be positioned thereto for illuminating the entry surface of said lens.

Claim 41 (new). The lens of claim 1, and including multiple such lenses in the following combination:

- a) an array of aspheric lenses extending in side-by-side relation,
- b) an array of quasi-hemispheric light sources one for each lens,

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c) each source positioned to direct light at its corresponding lens, and the sources and lenses configured to produce light emitted from the lens array, the emitted light having substantially uniform intensity across an area corresponding to the area of the lens array.

Claim 42 (new). The lens of claim 1, and including multiple such lenses in combination with:

- a) an LED package comprising multiple LEDs, the lenses receiving light rays from the LEDs,
- b) and a transparent dielectric having a refracting flat surface to which rays from the LEDs are transmitted for refraction,
- c) the rays refracted from the LEDs at points along the flat surface extending in narrow bands.

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Claim 43 (new). A light redistribution system comprising, in combination with a lens as defined in claim 1,

- a) said light source comprising LED means,
- b) the lens concave lower refracting surface receiving rays from said LED means,
- c) the lens having a dome-shaped refracting exit surface, the curvature of which is one of the following:
 - i) exceeds the curvature of the lower surface,
 - ii) is less than the curvature of the lower surface,
- d) there being a target surface receiving rays refracted by said exit surface,
- e) said LED means and said entry and exit surfaces configured to produce a profile of bounded flux at said target surface that provides substantially uniform illuminance.

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Claim 44 (new). The lens of claim 1 having circularly spaced, flat surface zones which are generally planar in a common direction of said entry and exit surface concavities.

Claim 45 (new). The lens of claim 44, wherein multiple such lenses are provided in a cluster and have flat surfaces thereof extending in contiguous relations.

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R E M A R K S

Added new claims 41-45 are dependent from claim 1, which as amended is believed and urged to be allowable over cited art. (See argument below.) Further, these new claims correspond respectively to withdrawn claims 14, 27, and 31. New claim 44, based on claim 1, is directed to the Fig. 8 lens shape, and claim 45 is directed to Fig. 9.

Base claim 1 now further defines over the art, including Minano, by the following added to claim 1:

said entry surface having first concavity facing toward said light source, and second concavity facing toward the entry surface, said second concavity being substantially greater than said first concavity.

In this regard, the entry and exit concave surfaces are for example see at 50L and 50U in Fig. 5, the light source being at 51. Note also beam refractions. Minano configurations lack suggestion of such lesser and greater concave surfaces, as claimed,

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and further, cited art including Minano does not suggest the totality of claim 1. See applicant's Comments, attached.

New claims 41-45 add even further to the novelty and unobviousness, over the cited art, and are urged to be allowable in the novel and unobvious environment of base claim 1.

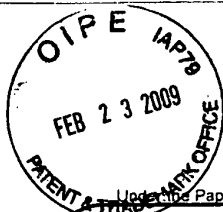
In view of the changes and argument, reconsideration and allowance are respectfully solicited.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'William W. Haeffliger', written over a horizontal line.

William W. Haeffliger
Attorney for Applicant
Reg. No. 17,120
(323) 684-2707

WWH:ts
Docket 12,677



PTO/SB/30 (08-08)
Approved for use through 09/30/2008. OMB 0651-0031
U.S. Patent and Trademark Office, U.S. DEPARTMENT OF COMMERCE

Request
for
Continued Examination (RCE)
Transmittal

Address to:
Mail Stop RCE
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Application Number	11/271,420
Filing Date	Nov. 9, 2005
First Named Inventor	William A. Parkyn et al
Art Unit	2875
Examiner Name	Danielle N. Dunn
Attorney Docket Number	12,677

This is a Request for Continued Examination (RCE) under 37 CFR 1.114 of the above-identified application. Request for Continued Examination (RCE) practice under 37 CFR 1.114 does not apply to any utility or plant application filed prior to June 8, 1995, or to any design application. See Instruction Sheet for RCEs (not to be submitted to the USPTO) on page 2.

1. **Submission required under 37 CFR 1.114** Note: If the RCE is proper, any previously filed unentered amendments and amendments enclosed with the RCE will be entered in the order in which they were filed unless applicant instructs otherwise. If applicant does not wish to have any previously filed unentered amendment(s) entered, applicant must request non-entry of such amendment(s).
- a. ☒ Previously submitted. If a final Office action is outstanding, any amendments filed after the final Office action may be considered as a submission even if this box is not checked.
- i. ☐ Consider the arguments in the Appeal Brief or Reply Brief previously filed on _____
- ii. ☐ Other _____
- b. ☒ Enclosed
- i. ☒ Amendment/Reply
- iii. ☐ Information Disclosure Statement (IDS)
- ii. ☐ Affidavit(s)/ Declaration(s)
- iv. ☐ Other _____
2. **Miscellaneous**
- a. ☐ Suspension of action on the above-identified application is requested under 37 CFR 1.103(c) for a period of _____ months. (Period of suspension shall not exceed 3 months; Fee under 37 CFR 1.17(i) required)
- b. ☐ Other _____
3. **Fees** The RCE fee under 37 CFR 1.17(e) is required by 37 CFR 1.114 when the RCE is filed. The Director is hereby authorized to charge the following fees, any underpayment of fees, or credit any overpayments, to
- a. ☐ Deposit Account No. _____
- i. ☒ RCE fee required under 37 CFR 1.17(e)
- ii. ☒ Extension of time fee (37 CFR 1.136 and 1.17) If any extension fee is necessary, please charge to our Deposit Acct. 08-0118.
- iii. ☐ Other _____
- b. ☒ Check in the amount of \$ 405.00 enclosed
- c. ☐ Payment by credit card (Form PTO-2038 enclosed)

WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT REQUIRED

Signature		Date	12-22-05
Name (Print/Type)	William W. Haefliger	Registration No.	17,120

CERTIFICATE OF MAILING OR TRANSMISSION

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Mail Stop RCE, Commissioner for Patents, P. O. Box 1450, Alexandria, VA 22313-1450 or facsimile transmitted to the U.S. Patent and Trademark Office on the date shown below.

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This collection of information is required by 37 CFR 1.114. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Mail Stop RCE, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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OFFICE OF PETITIONS

WILLIAM W. HAEFLIGER
201 S. LAKE AVE
SUITE 512
PASADENA CA 91101

In re Application of :
William A. Parkyn et al. :
Application No. 11/271,420 : DECISION ON PETITION
Filed: November 9, 2005 : PURSUANT TO
Attorney Docket No.: 12,677 : 37 C.F.R. § 1.137(B)
Title: IRRADIANCE- :
REDISTRIBUTION LENS AND ITS :
APPLICATIONS TO LED :
DOWNLIGHTS :

This is a decision on the petition filed December 23, 2008, pursuant to 37 C.F.R. § 1.137(b), to revive the above-identified application.

The petition pursuant to 37 C.F.R. § 1.137(b) is **GRANTED**.

The above-identified application became abandoned for failure to reply within the meaning of 37 C.F.R § 1.113 in a timely manner to the final Office action mailed April 29, 2008, which set a shortened statutory period for reply of three months. An after-final amendment was received on September 18, 2008 along with a two-month extension of time, and an advisory action was mailed on December 12, 2008. No additional extensions of time under the provisions of 37 C.F.R § 1.136(a) were obtained, and no further responses were received. Accordingly, the above-identified

application became abandoned on September 30, 2007. A notice of abandonment was mailed on January 9, 2009.

A grantable petition pursuant to 37 C.F.R. § 1.137(b) must be accompanied by:

- (1) The reply required to the outstanding Office action or notice, unless previously filed;
- (2) The petition fee as set forth in 37 C.F.R. § 1.17(m);
- (3) A statement that the entire delay in filing the required reply from the due date for the reply until the filing of a grantable petition pursuant to this paragraph was unintentional. The Commissioner may require additional information where there is a question whether the delay was unintentional, and;
- (4) Any terminal disclaimer (and fee as set forth in 37 C.F.R. § 1.20(d)) required pursuant to paragraph (d) of this section.

With this petition, Petitioner has submitted the petition fee, a Request for Continued Examination (RCE) along with the associated fee, an amendment, and the proper statement of unintentional delay.

The first three requirements of Rule 1.137(b) have been met. The fourth requirement of Rule 1.137(b) is not applicable, as a terminal disclaimer is not required.¹

The Technology Center will be notified of this decision. The Technology Center's support staff will notify the Examiner of this decision, so that the submission under 37 C.F.R. § 1.114 - the amendment received on December 23, 2008 - can be processed.

Petitioner may find it beneficial to view Private PAIR within a fortnight of the present decision to ensure that the revival has been acknowledged by the Technology Center in response to this decision. It is noted that all inquiries with regard to any failure of that change in status should be directed to the Technology Center where that change of status must be effected - the Office of Petitions cannot effectuate a change of status.

Telephone inquiries regarding *this decision* should be directed to the undersigned at (571) 272-3225.² All other inquiries

¹ See Rule 1.137(d).

concerning examination procedures or status of the application should be directed to the Technology Center.

/Paul Shanowski/

Paul Shanowski

Senior Attorney

Office of Petitions

2 Petitioner will note that all practice before the Office should be in writing, and the action of the Office will be based exclusively on the written record in the Office. See 37 C.F.R. § 1.2. As such, Petitioner is reminded that no telephone discussion may be controlling or considered authority for any further action(s) of Petitioner.



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NOTICE OF ALLOWANCE AND FEE(S) DUE

2675 7590 07/16/2009

WILLIAM W. HAEFLIGER
201 S. LAKE AVE
SUITE 512
PASADENA, CA 91101

EXAMINER

ALLEN, DANIELLE NICOLE

ART UNIT

PAPER NUMBER

2875

DATE MAILED: 07/16/2009

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
11/271,420	11/09/2005	William A. Parkyn	12,677	1170

TITLE OF INVENTION: IRRADIANCE-REDISTRIBUTION LENS AND ITS APPLICATIONS TO LED DOWNLIGHTS

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	YES	\$755	\$0	\$0	\$755	10/16/2009

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.

HOW TO REPLY TO THIS NOTICE:

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If the SMALL ENTITY is shown as YES, verify your current SMALL ENTITY status:

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B. If the status above is to be removed, check box 5b on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and twice the amount of the ISSUE FEE shown above, or

If the SMALL ENTITY is shown as NO:

A. Pay TOTAL FEE(S) DUE shown above, or

B. If applicant claimed SMALL ENTITY status before, or is now claiming SMALL ENTITY status, check box 5a on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and 1/2 the ISSUE FEE shown above.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.

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**Complete and send this form, together with applicable fee(s), to: Mail Mail Stop ISSUE FEE
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INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

2675 7590 07/16/2009

WILLIAM W. HAEFLIGER
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(Depositor's name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
11/271,420	11/09/2005	William A. Parkyn	12,677	1170

TITLE OF INVENTION: IRRADIANCE-REDISTRIBUTION LENS AND ITS APPLICATIONS TO LED DOWNLIGHTS

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	YES	\$755	\$0	\$0	\$755	10/16/2009

EXAMINER	ART UNIT	CLASS-SUBCLASS
ALLEN, DANIELLE NICOLE	2875	362-326000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

- ☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.
- ☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list

- (1) the names of up to 3 registered patent attorneys or agents OR, alternatively, 1 _____
- (2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed. 2 _____
- 3 _____

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE

(B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent): ☐ Individual ☐ Corporation or other private group entity ☐ Government

4a. The following fee(s) are submitted:

- ☐ Issue Fee
- ☐ Publication Fee (No small entity discount permitted)
- ☐ Advance Order - # of Copies _____

4b. Payment of Fee(s): (Please first reapply any previously paid issue fee shown above)

- ☐ A check is enclosed.
- ☐ Payment by credit card. Form PTO-2038 is attached.
- ☐ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment, to Deposit Account Number _____ (enclose an extra copy of this form).

5. Change in Entity Status (from status indicated above)

- ☐ a. Applicant claims SMALL ENTITY status. See 37 CFR 1.27. ☐ b. Applicant is no longer claiming SMALL ENTITY status. See 37 CFR 1.27(g)(2).

NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

Authorized Signature _____

Date _____

Typed or printed name _____

Registration No. _____

This collection of information is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
11/271,420	11/09/2005	William A. Parkyn	12,677	1170
2675	7590	07/16/2009		
WILLIAM W. HAEFLIGER 201 S. LAKE AVE SUITE 512 PASADENA, CA 91101				
EXAMINER ALLEN, DANIELLE NICOLE				
ART UNIT		PAPER NUMBER		
2875				
DATE MAILED: 07/16/2009				

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b) (application filed on or after May 29, 2000)

The Patent Term Adjustment to date is 0 day(s). If the issue fee is paid on the date that is three months after the mailing date of this notice and the patent issues on the Tuesday before the date that is 28 weeks (six and a half months) after the mailing date of this notice, the Patent Term Adjustment will be 0 day(s).

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (<http://pair.uspto.gov>).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

Notice of Allowability	Application No.		Applicant(s)	
	11/271,420		PARKYN ET AL.	
	Examiner		Art Unit	
	DANIELLE ALLEN		2875	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 2/23/09.
2. ☒ The allowed claim(s) is/are 1-45.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: ____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date ____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date ____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892) 2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 3. ☐ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date ____ 4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material	5. ☐ Notice of Informal Patent Application 6. ☐ Interview Summary (PTO-413), Paper No./Mail Date ____ 7. ☐ Examiner's Amendment/Comment 8. ☒ Examiner's Statement of Reasons for Allowance 9. ☐ Other ____.
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DETAILED ACTION

Response to Amendment

Applicant's amendment filed on 2/23/09 has been entered. Claims 1 and 39 have been amended. No claims have been cancelled. Claims 41-45 have been added. Claims 1-45 are still pending in this application, with claims 1 and 39 being independent. No new rejection could be made in light of the amendments to the claims.

Election/Restrictions

1. Claims 14-38 are allowable because they depend from an allowable independent claim. The restriction requirement between claims 1-13, 14-26, 27-30 and 31-38, as set forth in the Office action mailed on 5/18/2007, has been reconsidered in view of the allowability of claims to the elected invention pursuant to MPEP § 821.04(a). **The restriction requirement is hereby withdrawn as to any claim that requires all the limitations of an allowable claim.** Claims 14-38, directed to a light device with an array of lenses are no longer withdrawn from consideration because the claim(s) requires all the limitations of an allowable claim.

In view of the above noted withdrawal of the restriction requirement, applicant is advised that if any claim presented in a continuation or divisional application is anticipated by, or includes all the limitations of, a claim that is allowable in the present application, such claim may be subject to provisional statutory and/or nonstatutory double patenting rejections over the claims of the instant application.

Once a restriction requirement is withdrawn, the provisions of 35 U.S.C. 121 are no longer applicable. See *In re Ziegler*, 443 F.2d 1211, 1215, 170 USPQ 129, 131-32 (CCPA 1971). See also MPEP § 804.01.

Allowable Subject Matter

2. Claims 1-45 are allowed.

3. The following is an examiner's statement of reasons for allowance: Applicant's arguments filed on 9/18/08 are convincing. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DANIELLE ALLEN whose telephone number is (571)270-3039. The examiner can normally be reached on Monday thru Friday 9:00AM-5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sandra O'Shea can be reached on 571-272-2378. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

DA
7/10/09

/Bao Q. Truong/
Primary Examiner, Art Unit 2875

Issue Classification 	Application/Control No. 11271420	Applicant(s)/Patent Under Reexamination PARKYN ET AL.
	Examiner DANIELLE ALLEN	Art Unit 2875

ORIGINAL						INTERNATIONAL CLASSIFICATION													
CLASS		SUBCLASS				CLAIMED					NON-CLAIMED								
362		335				F	2	1	V	5 / 04 (2006.01.01)									
CROSS REFERENCE(S)																			
CLASS	SUBCLASS (ONE SUBCLASS PER BLOCK)																		
362	334	335	336	340	800														

☒ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47															
Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original
	1		17		33										
	2		18		34										
	3		19		35										
	4		20		36										
	5		21		37										
	6		22		38										
	7		23		39										
	8		24		40										
	9		25		41										
	10		26		42										
	11		27		43										
	12		28		44										
	13		29		45										
	14		30												
	15		31												
	16		32												

/DANIELLE ALLEN/ Examiner.Art Unit 2875 (Assistant Examiner)	7/10/2009 (Date)	Total Claims Allowed: 45	
/BAO Q TRUONG/ Primary Examiner.Art Unit 2875 (Primary Examiner)	07/13/2009 (Date)	O.G. Print Claim(s) 1	O.G. Print Figure 16

Search Notes 	Application/Control No. 11271420	Applicant(s)/Patent Under Reexamination PARKYN ET AL.
	Examiner Dunn, Danielle	Art Unit 2875

SEARCHED			
Class	Subclass	Date	Examiner

SEARCH NOTES		
Search Notes	Date	Examiner
Restriction Consulted J Choi AU 2875	4/27/2007	DND
Restriction Consulted I Negron AU 2885	5/15/2007	DND
362/800,237,244,330-332,334-336,340 Consulted A Ton AU 2875	7/25/2007	DND
Consulted S OShea and C Spyrou for Restriction	7/30/2007	DND
Consulted I Negron AU 2885 362/239,168,169,215,268,335,558	7/26/2007	DND
Consulted A Lavarious AU 2872 315/169,76,200	7/26/2007	DND
362/362,333 Consulted I Negron AU 2885	7/26/2007	DND
EAST Search	9/27/2007	DND
Inventor name search	9/27/2007	DND
Update Search	4/9/2008	DND
Updated Search	6/29/2009	DA
Consulted J Choi AU 2875 - 362/334-336 and 340	6/30/2009	DA
Consulted B Troung regarding allowability	7/9/2009	DA

INTERFERENCE SEARCH			
Class	Subclass	Date	Examiner
	See Search History	7/9/2009	DA

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EAST Search History

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
S82	1080	362/ 334-336,340.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	ON	2009/07/06 15:25
S83	1385	362/ 362,333.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	ON	2009/07/06 15:26
S84	681	315/ 169,76,200.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	ON	2009/07/06 15:26
S85	1620	315/ 239,168,169,215,268,558.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	ON	2009/07/06 15:27
S87	4237	362/ 800,237,244,330-332.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	ON	2009/07/06 15:28
S88	8667	S82 S83 S84 S85 S87	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	ON	2009/07/06 15:30
S89	3320	S88 and (refractor or refractors or lens or lenses or ((optical or translucent or translucent or transparent or (optically active)) (element or member or component or device)))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	ADJ	ON	2009/07/06 15:31
S90	35294	concave near3 (refractor or refractors or lens or lenses or ((optical or translucent or translucent or transparent or (optically active)) (element or member or component or device)))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	ADJ	ON	2009/07/06 15:40
S91	16886	concave (refractor or refractors or lens or lenses or ((optical or translucent or translucent or transparent or (optically active)) (element or member or component or device)))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	ADJ	ON	2009/07/06 15:40
S92	1383	(S90 or S91) and "362"/\$.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	ADJ	ON	2009/07/06 15:42
S93	94	(S90 or S91) and "315"/\$.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	ADJ	ON	2009/07/06 15:42
S94	1470	S92 S93	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	ON	2009/07/06 15:43

S95	19	(US-20030016539-\$).did. or (US-4305099-\$ or US-5173810-\$ or US-5836676-\$ or US-7198376-\$).did. or (US-1333304-\$ or US-1548252-\$ or US-1637622-\$ or US-1888995-\$ or US-1977689-\$ or US-2072849-\$ or US-2112411-\$ or US-2120263-\$ or US-2170979-\$ or US-2183249-\$ or US-2216965-\$ or US-2224178-\$ or US-2587956-\$ or US-2708388-\$).did.	US-PGPUB; USPAT; USOCR	OR	ON	2009/07/07 12:31
S96	5	(US-20030016539-\$).did. or (US-5173810-\$).did. or (US-1888995-\$ or US-1977689-\$ or US-2224178-\$).did.	US-PGPUB; USPAT; USOCR	OR	ON	2009/07/07 12:36
S97	86	("2942102" "3124306" "3299262" "3739167" "4777582" "4792685" "4880974" "4967069" "4978843" "5062899").PN. OR ("1888995" "1977689" "2003/0016539" "2224178" "5173810").URPN.	US-PGPUB; USPAT; USOCR	OR	ON	2009/07/07 12:36
S98	2	irradiance-redistribution.clm.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	ADJ	ON	2009/07/09 12:59
S99	2	irradiance-redistribution lens.clm.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	ADJ	ON	2009/07/09 13:00
S100	0	irradiance-redistribution illumination lens.clm.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	ADJ	ON	2009/07/09 13:00
S101	179	first concavity.clm.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	ADJ	ON	2009/07/09 13:00
S102	195	second concavity.clm.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	ADJ	ON	2009/07/09 13:01
S103	163	S101 and S102	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	ADJ	ON	2009/07/09 13:01
S104	0	S103 and S98	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	ADJ	ON	2009/07/09 13:01
S105	6	parkyn-william.in.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	ADJ	ON	2009/07/09 13:14
S106	27	parkyn-william-a.in.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	ADJ	ON	2009/07/09 13:15
S107	56	pelka-david-g.in.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	ADJ	ON	2009/07/09 13:15
S108	0	pelka-david.in.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	ADJ	ON	2009/07/09 13:15

S109	74	S105 or S106 or S107	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	ADJ	ON	2009/07/09 13:15
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7/10/2009 12:37:08 PM

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PART B - FEE(S) TRANSMITTAL

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CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

2675 7590 07/16/2009

WILLIAM W. HAEFLIGER
201 S. LAKE AVE
SUITE 512
PASADENA, CA 91101

10/06/2009 RMEBRAH1 00000058 11271420

01 FC:2501

755.00 OP

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Certificate of Mailing or Transmission

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

William W. Haeffliger	(Depositor's name)
<i>William W. Haeffliger</i>	(Signature)
October 1, 2009	(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
11/271,420	11/09/2005	William A. Parkyn	12,677	1170

TITLE OF INVENTION: IRRADIANCE-REDISTRIBUTION LENS AND ITS APPLICATIONS TO LED DOWNLIGHTS

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	YES	\$755	\$0	\$0	\$755	10/16/2009

EXAMINER	ART UNIT	CLASS-SUBCLASS
ALLEN, DANIELLE NICOLE	2875	362-326000

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2. For printing on the patent front page, list

- (1) the names of up to 3 registered patent attorneys or agents OR, alternatively,
- (2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

William W. Haeffliger

2

3

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE

InteLED Corp.

(B) RESIDENCE: (CITY and STATE OR COUNTRY)

Huntington Beach, California

Please check the appropriate assignee category or categories (will not be printed on the patent): ☐ Individual ☒ Corporation or other private group entity ☐ Government

4a. The following fee(s) are submitted:

- ☒ Issue Fee
- ☐ Publication Fee (No small entity discount permitted)
- ☐ Advance Order - # of Copies _____

4b. Payment of Fee(s): (Please first reapply any previously paid issue fee shown above)

- ☒ A check is enclosed. Check #31425
- ☐ Payment by credit card. Form PTO-2038 is attached.
- ☐ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment, to Deposit Account Number _____ (enclose an extra copy of this form).

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- ☐ a. Applicant claims SMALL ENTITY status. See 37 CFR 1.27.
- ☐ b. Applicant is no longer claiming SMALL ENTITY status. See 37 CFR 1.27(g)(2).

NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

Authorized Signature William W. Haeffliger

Date **October 1, 2009**

Typed or printed name **William W. Haeffliger**

Registration No. **17,120**

This collection of information is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

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APPLICATION NO.	ISSUE DATE	PATENT NO.	ATTORNEY DOCKET NO.	CONFIRMATION NO.
11/271,420	11/17/2009	7618162	12,677	1170

2675 7590 10/28/2009

WILLIAM W. HAEFLIGER
201 S. LAKE AVE
SUITE 512
PASADENA, CA 91101

ISSUE NOTIFICATION

The projected patent number and issue date are specified above.

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b) (application filed on or after May 29, 2000)

The Patent Term Adjustment is 0 day(s). Any patent to issue from the above-identified application will include an indication of the adjustment on the front page.

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (<http://pair.uspto.gov>).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Application Assistance Unit (AAU) of the Office of Data Management (ODM) at (571)-272-4200.

APPLICANT(s) (Please see PAIR WEB site <http://pair.uspto.gov> for additional applicants):

William A. Parkyn, Lomita, CA;
David G. Pelka, Los Angeles, CA;

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

POWER OF ATTORNEY TO PROSECUTE APPLICATIONS BEFORE THE USPTO

I hereby revoke all previous powers of attorney given in the application identified in the attached statement under 37 CFR 3.73(b).

I hereby appoint:



Practitioners associated with the Customer Number:

58027

OR



Practitioner(s) named below (if more than ten patent practitioners are to be named, then a customer number must be used):

Name	Registration Number	Name	Registration Number

as attorney(s) or agent(s) to represent the undersigned before the United States Patent and Trademark Office (USPTO) in connection with any and all patent applications assigned only to the undersigned according to the USPTO assignment records or assignment documents attached to this form in accordance with 37 CFR 3.73(b).

Please change the correspondence address for the application identified in the attached statement under 37 CFR 3.73(b) to:



The address associated with Customer Number:

58027

OR

☐ Firm or Individual Name			
Address			
City	State	Zip	
Country			
Telephone			Email

Assignee Name and Address:

Seoul Semiconductor Co., Ltd.
97-11, Sandan-ro 163beon-gil, Danwon-gu
Ansan-si, Gyeonggi-do, 15429 Republic of Korea

A copy of this form, together with a statement under 37 CFR 3.73(b) (Form PTO/SB/96 or equivalent) is required to be filed in each application in which this form is used. The statement under 37 CFR 3.73(b) may be completed by one of the practitioners appointed in this form if the appointed practitioner is authorized to act on behalf of the assignee, and must identify the application in which this Power of Attorney is to be filed.

SIGNATURE of Assignee of Record

The individual whose signature and title is supplied below is authorized to act on behalf of the assignee

Signature	<i>Oh Jin Kwon</i>	Date	<i>August 12, 2015</i>
Name	<i>OH JIN KWON</i>	Telephone	<i>+82 10 8957 4709</i>
Title	<i>Director of Patent Team</i>		

This collection of information is required by 37 CFR 1.31, 1.32 and 1.33. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 3 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
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5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (*i.e.*, GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
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9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

STATEMENT UNDER 37 CFR 3.73(b)

Applicant/Patent Owner: Seoul Semiconductor Co., Ltd.

Application No./Patent No.: 11/271,420

Filed/Issue Date: 2005-11-09

Titled: IRRADIANCE-REDISTRIBUTION LENS AND ITS APPLICATIONS TO LED DOWNLIGHTS

Seoul Semiconductor Co., Ltd.

, a Corporation

(Name of Assignee)

(Type of Assignee, e.g., corporation, partnership, university, government agency, etc.)

states that it is:

1. ☒ the assignee of the entire right, title, and interest in;
2. ☐ an assignee of less than the entire right, title, and interest in
(The extent (by percentage) of its ownership interest is _____ %); or
3. ☐ the assignee of an undivided interest in the entirety of (a complete assignment from one of the joint inventors was made)

the patent application/patent identified above, by virtue of either:

- A. ☐ An assignment from the inventor(s) of the patent application/patent identified above. The assignment was recorded in the United States Patent and Trademark Office at Reel _____, Frame _____, or for which a copy therefore is attached.

OR

- B. ☒ A chain of title from the inventor(s), of the patent application/patent identified above, to the current assignee as follows:

1. From: William A. Parkyn, et al. To: Peika & Associates, Inc.

The document was recorded in the United States Patent and Trademark Office at

Reel 017211, Frame 0866, or for which a copy thereof is attached.

2. From: Peika & Associates, Inc. To: Inteled Corp.

The document was recorded in the United States Patent and Trademark Office at

Reel 021825, Frame 0970, or for which a copy thereof is attached.

3. From: Inteled Corp. To: Seoul Semiconductor Co., Ltd.

The document was recorded in the United States Patent and Trademark Office at

Reel 041012, Frame 0054, or for which a copy thereof is attached.

☐ Additional documents in the chain of title are listed on a supplemental sheet(s).

- ☐ As required by 37 CFR 3.73(b)(1)(i), the documentary evidence of the chain of title from the original owner to the assignee was, or concurrently is being, submitted for recordation pursuant to 37 CFR 3.11.

[NOTE: A separate copy (i.e., a true copy of the original assignment document(s)) must be submitted to Assignment Division in accordance with 37 CFR Part 3, to record the assignment in the records of the USPTO. See MPEP 302.08]

The undersigned (whose title is supplied below) is authorized to act on behalf of the assignee.

/Young Sun Kwon/

2017-04-04

Signature

Date

Young Sun Kwon

Attorney (Reg. No. L1,171)

Printed or Typed Name

Title

This collection of information is required by 37 CFR 3.73(b). The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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Electronic Acknowledgement Receipt	
EFS ID:	28832925
Application Number:	11271420
International Application Number:	
Confirmation Number:	1170
Title of Invention:	IRRADIANCE-REDISTRIBUTION LENS AND ITS APPLICATIONS TO LED DOWNLIGHTS
First Named Inventor/Applicant Name:	William A. Parkyn
Customer Number:	2675
Filer:	Hae-Chan Park/eun jo
Filer Authorized By:	Hae-Chan Park
Attorney Docket Number:	12,677
Receipt Date:	04-APR-2017
Filing Date:	09-NOV-2005
Time Stamp:	18:41:53
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no
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File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Power of Attorney	P7122US00-POA.pdf	1061645 c56abf1612c828dc5de3a5f96a048f4f716680e6	no	4

Warnings:

Information:	
Total Files Size (in bytes):	1061645
This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503. <u>New Applications Under 35 U.S.C. 111</u> If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application. <u>National Stage of an International Application under 35 U.S.C. 371</u> If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course. <u>New International Application Filed with the USPTO as a Receiving Office</u> If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.	



PTO/SB/80 (11-08)
Approved for use through 11/30/2011, OMB 0651-0035
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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POWER OF ATTORNEY TO PROSECUTE APPLICATIONS BEFORE THE USPTO

I hereby revoke all previous powers of attorney given in the application identified in the attached statement under 37 CFR 3.73(b).

I hereby appoint:



Practitioners associated with the Customer Number:

58027

OR



Practitioner(s) named below (if more than ten patent practitioners are to be named, then a customer number must be used):

Name	Registration Number	Name	Registration Number

as attorney(s) or agent(s) to represent the undersigned before the United States Patent and Trademark Office (USPTO) in connection with any and all patent applications assigned only to the undersigned according to the USPTO assignment records or assignment documents attached to this form in accordance with 37 CFR 3.73(b).

Please change the correspondence address for the application identified in the attached statement under 37 CFR 3.73(b) to:



The address associated with Customer Number:

58027

OR



Firm or Individual Name

Address

City

State

Zip

Country

Telephone

Email

Assignee Name and Address:

Seoul Semiconductor Co., Ltd.
97-11, Sandan-ro 163beon-gil, Danwon-gu
Ansan-si, Gyeonggi-do, 15429 Republic of Korea

A copy of this form, together with a statement under 37 CFR 3.73(b) (Form PTO/SB/96 or equivalent) is required to be filed in each application in which this form is used. The statement under 37 CFR 3.73(b) may be completed by one of the practitioners appointed in this form if the appointed practitioner is authorized to act on behalf of the assignee, and must identify the application in which this Power of Attorney is to be filed.

SIGNATURE of Assignee of Record

The individual whose signature and title is supplied below is authorized to act on behalf of the assignee

Signature	<i>Oh Jin Kwon</i>	Date	<i>August 12, 2015</i>
Name	<i>OH JIN KWON</i>	Telephone	<i>+82 10 8757 4708</i>
Title	<i>Director of Patent Team</i>		

This collection of information is required by 37 CFR 1.31, 1.32 and 1.33. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11, and 1.14. This collection is estimated to take 3 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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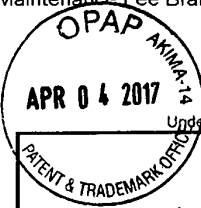


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PTO/SB/96 (07-09)

Approved for use through 07/31/2012. OMB 0651-0031

U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

STATEMENT UNDER 37 CFR 3.73(b)Applicant/Patent Owner: Seoul Semiconductor Co., Ltd.Application No./Patent No.: 11/271,420Filed/Issue Date: 2005-11-09Titled: **IRRADIANCE-REDISTRIBUTION LENS AND ITS APPLICATIONS TO LED DOWNLIGHTS**

Seoul Semiconductor Co., Ltd. , a Corporation

(Name of Assignee)

(Type of Assignee, e.g., corporation, partnership, university, government agency, etc.)

states that it is:

1. ☒ the assignee of the entire right, title, and interest in;
2. ☐ an assignee of less than the entire right, title, and interest in
(The extent (by percentage) of its ownership interest is _____ %); or
3. ☐ the assignee of an undivided interest in the entirety of (a complete assignment from one of the joint inventors was made)

the patent application/patent identified above, by virtue of either:

- A. ☐ An assignment from the inventor(s) of the patent application/patent identified above. The assignment was recorded in the United States Patent and Trademark Office at Reel _____, Frame _____, or for which a copy therefore is attached.

OR

- B. ☒ A chain of title from the inventor(s), of the patent application/patent identified above, to the current assignee as follows:

1. From: William A. Parkyn, et al. To: Pelka & Associates, Inc.The document was recorded in the United States Patent and Trademark Office at
Reel 017211 , Frame 0866 , or for which a copy thereof is attached.2. From: Pelka & Associates, Inc. To: Inteled Corp.The document was recorded in the United States Patent and Trademark Office at
Reel 021825 , Frame 0970 , or for which a copy thereof is attached.3. From: Inteled Corp. To: Seoul Semiconductor Co., Ltd.The document was recorded in the United States Patent and Trademark Office at
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[NOTE: A separate copy (i.e., a true copy of the original assignment document(s)) must be submitted to Assignment Division in accordance with 37 CFR Part 3, to record the assignment in the records of the USPTO. See MPEP 302.08]

The undersigned (whose title is supplied below) is authorized to act on behalf of the assignee.

/Young Sun Kwon/2017-04-04

Signature

Date

Young Sun Kwon

Attorney (Reg. No. L1,171)

Printed or Typed Name

Title

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5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (*i.e.*, GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

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APR 13 2017

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:

Docket No.: P7122US00

William A. Parkyn, *et. al.*

Serial No.: 11/271,420

Group Art Unit: 2875

Confirmation No.: 1170

Filed: November 9, 2005

Patent No: 7,618,162.

For: **IRRADIANCE-REDISTRIBUTION LENS AND ITS APPLICATIONS TO LED
DOWNLIGHTS**

Fax: 571-273-6500
Mail Stop: Maintenance Fee Branch
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

**NOTIFICATION OF LOSS OF ENTITLEMENT
TO SMALL ENTITY STATUS (37 CFR § 1.27 (g)(2))**

Dear Commissioner:

Applicants hereby notify the Patent and Trademark Office that it is no longer entitled to status as a small entity and that the claim for small entity status is hereby withdrawn.

On November 9, 2005, this application was filed claiming small entity status. The assertion of small entity status in this patent application and the payment of fees as a small entity were made in good faith.

On January 18, 2017, the assignee of the present patent application was newly recorded at reel/frame, 041012/0054 in the name of Seoul Semiconductor Co., Ltd., resulting in the payment of 7.5 year maintenance fee as large entity on or by May 17, 2017.

It is not believed that any extensions of time or fees are required. Any fees that may be necessary may be charged to Deposit Account No. 50-3698.

Respectfully submitted,

Applicants: William A. Parkyn, *et al.*
Patent No.: 7,618,162

/Young Sun Kwon/

Young Sun Kwon
Reg. No. L1,171

Dated: April 4, 2017

CUSTOMER NO.: 58027
H.C. Park & Associates, PLC



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
11/271,420	11/09/2005	William A. Parkyn	12,677

2675
WILLIAM W. HAEFLIGER
201 S. LAKE AVE
SUITE 512
PASADENA, CA 91101

CONFIRMATION NO. 1170
POWER OF ATTORNEY NOTICE



Date Mailed: 04/12/2017

NOTICE REGARDING CHANGE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 04/04/2017.

- The Power of Attorney to you in this application has been revoked by the assignee who has intervened as provided by 37 CFR 3.71. Future correspondence will be mailed to the new address of record(37 CFR 1.33).

Questions about the contents of this notice and the requirements it sets forth should be directed to the Office of Data Management, Application Assistance Unit, at (571) 272-4000 or (571) 272-4200 or 1-888-786-0101.

/megga/



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
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APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
11/271,420	11/09/2005	William A. Parkyn	12,677

58027
H.C. PARK & ASSOCIATES, PLC
1894 PRESTON WHITE DRIVE
RESTON, VA 20191

CONFIRMATION NO. 1170
POA ACCEPTANCE LETTER



Date Mailed: 04/12/2017

NOTICE OF ACCEPTANCE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 04/04/2017.

The Power of Attorney in this application is accepted. Correspondence in this application will be mailed to the above address as provided by 37 CFR 1.33.

Questions about the contents of this notice and the requirements it sets forth should be directed to the Office of Data Management, Application Assistance Unit, at (571) 272-4000 or (571) 272-4200 or 1-888-786-0101.

/megga/

AO 120 (Rev. 08/10)

TO: Mail Stop 8 Director of the U.S. Patent and Trademark Office P.O. Box 1450 Alexandria, VA 22313-1450	REPORT ON THE FILING OR DETERMINATION OF AN ACTION REGARDING A PATENT OR TRADEMARK
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In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been filed in the U.S. District Court Eastern District, Texas on the following

☐ Trademarks or ☒ Patents. (☐ the patent action involves 35 U.S.C. § 292.):

DOCKET NO. 2:18-cv-00386	DATE FILED 8/31/2018	U.S. DISTRICT COURT Eastern District, Texas
PLAINTIFF Seoul Semiconductor Co., Ltd. and Seoul Viosys Co., Ltd.		DEFENDANT Fry's Electronics, Inc.
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1 8,829,552	9/9/2014	Seoul Semiconductor Co., Ltd.
2 8,525,212	9/3/2013	Seoul Viosys Co., Ltd.
3 7,901,113	3/8/2011	Seoul Semiconductor Co., Ltd.
4 9,530,947	12/27/2016	Seoul Semiconductor Co., Ltd.
5		Please see attached for continuation

In the above—entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED	INCLUDED BY ☐ Amendment ☐ Answer ☐ Cross Bill ☐ Other Pleading		
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK	
1			
2			
3			
4			
5			

In the above—entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT CONSENT JUDGMENT AND PERMANENT INJUNCTION

CLERK <i>David A. O'Poole</i>	(BY) DEPUTY CLERK nkl	DATE 10/7/19
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Copy 1—Upon initiation of action, mail this copy to Director Copy 3—Upon termination of action, mail this copy to Director
 Copy 2—Upon filing document adding patent(s), mail this copy to Director Copy 4—Case file copy

	Patent or Trademark No.	Date of Patent or Trademark	Holder of Patent or Trademark
5	9,022,618	5/5/2015	Seoul Semiconductor Co. Ltd.
6	8,608,328	12/17/2013	Seoul Semiconductor Co. Ltd.
7	7,618,162	11/17/2009	Seoul Semiconductor Co. Ltd.
8	8,132,952	3/13/2012	Seoul Semiconductor Co. Ltd.
9	8,058,662	11/15/2011	Seoul Semiconductor Co. Ltd.
10	9,577,157	2/21/2017	Seoul Viosys Co., Ltd.
11	9,343,631	5/17/2016	Seoul Viosys Co., Ltd.
12	7,951,626	5/31/2011	Seoul Viosys Co., Ltd.
13	9,799,800	10/24/2017	Seoul Viosys Co., Ltd.
14	9,716,210	7/25/2017	Seoul Viosys Co., Ltd.
15	6,942,731	9/13/2005	Seoul Semiconductor Co. Ltd.