

HIGHLY CONFIDENTIAL –ATTORNEYS’ EYES ONLY

**IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
MARSHALL DIVISION**

SINOTECHNIX LLC,

Plaintiff,

v.

SAMSUNG ELECTRONICS CO., LTD.,
SAMSUNG ELECTRONICS AMERICA,
INC., AND SAMSUNG DISPLAY CO.,
LTD.

Defendants.

Civil Action No. 2:24-cv-544-JRG-RSP

JURY TRIAL DEMANDED

**DEFENDANTS’ AMENDED LOCAL PATENT RULE 3-3
INVALIDITY CONTENTIONS**

Defendants Samsung Electronics Co., Ltd., Samsung Electronics America, Inc., and Samsung Display Co., Ltd., (collectively, “Samsung” or “Defendants”) hereby provide their Amended P.R. 3-3 Invalidity Contentions, including charts attached as Exhibits 162-1 through 162-14, 873-1 through 873-19, 113-1 through 113-13, 626-1 through 626-20, 952-1 through 952-17, and 913-1 through 913-16 and cited herein, to Plaintiff Sinotechnix LLC (“Sinotechnix” or “Plaintiff”), with respect to the asserted claims of U.S. Patent Nos. 7,618,162 (the “162 Patent”), 7,748,873 (the “873 Patent”), 7,901,113 (the “113 Patent”), 7,951,626 (the “626 Patent”), 8,132,952 (the “952 Patent”), and 9,412,913 (the “913 Patent”) (collectively, the “Asserted Patents”) identified in Plaintiff’s P.R. 3-1 Infringement Contentions, served on October 24, 2024, and Plaintiff’s P.R. 3-1 Amended Infringement Contentions, served on March 25, 2024 (collectively, the “P.R. 3-1 Infringement Contentions”).

In its P.R. 3-1 Infringement Contentions Sinotechnix has asserted the following claims (collectively, the “Asserted Claims”) against Samsung:

of its claims, Shinichi included all claimed features of the '162 Patent, at least under Plaintiff's apparent application of its claims.

For example, Exhibit 162-13 contains a claim chart demonstrating that the Osram TOPLED included each and every element of the Asserted Claims of the '162 Patent, at least under Plaintiff's apparent application of its claims. The Osram TOPLED was sold, offered for sale, and was known or used by others in this country before the alleged priority date of the '162 Patent. *See* Section III.C.22. As shown in Exhibit 162-13, at least under Plaintiff's apparent application of its claims, the Osram TOPLED included all claimed features of the '162 Patent, at least under Plaintiff's apparent application of its claims.

B. '873 Patent

As detailed in Section II.A above, the Asserted Claims of the '873 Patent are not supported by the Korean Prior Applications and, therefore, are not entitled to a priority date before September 8, 2005. At least under the proper priority date, and subject to the reservation of rights set forth above and based on Samsung's present understanding of the Asserted Claims of the Asserted Patents, and the apparent application of claim terms Plaintiff is asserting based on its Infringement Contentions, the Asserted Claims of the '873 Patent are anticipated by the following prior art references charted in Exhibits 873-1 to 873-18:

- Japanese Patent Application No. 2002-344027 ("Odawara")
- U.S. Patent No. 6,674,096 ("Sommers")
- U.S. Patent No. 6,598,998 ("West I")
- Japanese Patent No. 2,593,554 ("Koike")
- Japanese Patent Application No. H09-18058 ("Koizumi")
- Japanese Patent Publication No. 2000-133822 ("Kunii")

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- U.S. Patent No. 3,774,021 (“Johnson”)
- European Patent Publication No. 1,453,107 (“Suehiro”)
- U.S. Patent No. 6,679,621 (“West II”)
- U.S. Patent Publication No. 2004/0140543 (“Elpedes”)
- U.S. Patent Publication No. US2005/0135105 (“Teixeira”)
- U.S. Patent Publication No. 2005/0270666 (“Loh I”)
- U.S. Patent Publication No. 2005/0269587 (“Loh II”)
- U.S. Patent Publication No. 2004/0041222 (“Loh III”)
- Japanese Patent Publication No. 2005-056109 (“Sanga”)
- Lumileds Luxeon Side Emitter
- Carclo Optics Side-Emitting Optic
- Samsung LN-R460D

For example, Exhibit 873-1 contains a claim chart demonstrating that Odawara disclosed, suggested, and/or rendered obvious each and every element of the Asserted Claims of the ’873 Patent, at least under Plaintiff’s apparent application of its claims. Odawara is prior art to the ’873 Patent. *See* Section III.A. As shown in Exhibit 873-1, at least under Plaintiff’s apparent application of its claims, Odawara included all claimed features of the ’873 Patent, at least under Plaintiff’s apparent application of its claims.

For example, Exhibit 873-2 contains a claim chart demonstrating that Sommers disclosed, suggested, and/or rendered obvious each and every element of the Asserted Claims of the ’873 Patent, at least under Plaintiff’s apparent application of its claims. Sommers is prior art to the ’873 Patent. *See* Section III.A. As shown in Exhibit 873-2, at least under Plaintiff’s apparent application

of its claims, Sommers included all claimed features of the '873 Patent, at least under Plaintiff's apparent application of its claims.

For example, Exhibit 873-3 contains a claim chart demonstrating that West I disclosed, suggested, and/or rendered obvious each and every element of the Asserted Claims of the '873 Patent, at least under Plaintiff's apparent application of its claims. West I is prior art to the '873 Patent. *See* Section III.A. As shown in Exhibit 873-3, at least under Plaintiff's apparent application of its claims, West I included all claimed features of the '873 Patent, at least under Plaintiff's apparent application of its claims.

For example, Exhibit 873-4 contains a claim chart demonstrating that Koike disclosed, suggested, and/or rendered obvious each and every element of the Asserted Claims of the '873 Patent, at least under Plaintiff's apparent application of its claims. Koike is prior art to the '873 Patent. *See* Section III.A. As shown in Exhibit 873-4, at least under Plaintiff's apparent application of its claims, Koike included all claimed features of the '873 Patent, at least under Plaintiff's apparent application of its claims.

For example, Exhibit 873-5 contains a claim chart demonstrating that Koizumi disclosed, suggested, and/or rendered obvious each and every element of the Asserted Claims of the '873 Patent, at least under Plaintiff's apparent application of its claims. Koizumi is prior art to the '873 Patent. *See* Section III.A. As shown in Exhibit 873-5, at least under Plaintiff's apparent application of its claims, Koizumi included all claimed features of the '873 Patent, at least under Plaintiff's apparent application of its claims.

For example, Exhibit 873-6 contains a claim chart demonstrating that Kunii disclosed, suggested, and/or rendered obvious each and every element of the Asserted Claims of the '873 Patent, at least under Plaintiff's apparent application of its claims. Kunii is prior art to the '873

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Patent. *See* Section III.A. As shown in Exhibit 873-6, at least under Plaintiff's apparent application of its claims, Kunii included all claimed features of the '873 Patent, at least under Plaintiff's apparent application of its claims.

For example, Exhibit 873-7 contains a claim chart demonstrating that Johnson disclosed, suggested, and/or rendered obvious each and every element of the Asserted Claims of the '873 Patent, at least under Plaintiff's apparent application of its claims. Johnson is prior art to the '873 Patent. *See* Section III.A. As shown in Exhibit 873-7, at least under Plaintiff's apparent application of its claims, Johnson included all claimed features of the '873 Patent, at least under Plaintiff's apparent application of its claims.

For example, Exhibit 873-8 contains a claim chart demonstrating that Suehiro disclosed, suggested, and/or rendered obvious each and every element of the Asserted Claims of the '873 Patent, at least under Plaintiff's apparent application of its claims. Suehiro is prior art to the '873 Patent. *See* Section III.A. As shown in Exhibit 873-8, at least under Plaintiff's apparent application of its claims, Suehiro included all claimed features of the '873 Patent, at least under Plaintiff's apparent application of its claims.

For example, Exhibit 873-9 contains a claim chart demonstrating that West II disclosed, suggested, and/or rendered obvious each and every element of the Asserted Claims of the '873 Patent, at least under Plaintiff's apparent application of its claims. West II is prior art to the '873 Patent. *See* Section III.A. As shown in Exhibit 873-9, at least under Plaintiff's apparent application of its claims, West II included all claimed features of the '873 Patent, at least under Plaintiff's apparent application of its claims.

For example, Exhibit 873-10 contains a claim chart demonstrating that the Lumileds Luxeon Side Emitter included each and every element of the Asserted Claims of the '873 Patent,

at least under Plaintiff’s apparent application of its claims. The Lumileds Luxeon Side Emitter was sold, offered for sale, and was known or used by others in this country before either the claimed or proper priority date of the ’873 Patent. *See* Section III.C.3. As shown in Exhibit 873-12, at least under Plaintiff’s apparent application of its claims, the Lumileds Luxeon Side Emitter included all claimed features of the ’873 Patent, at least under Plaintiff’s apparent application of its claims.

For example, Exhibit 873-11 contains a claim chart demonstrating that Elpedes disclosed, suggested, and/or rendered obvious each and every element of the Asserted Claims of the ’873 Patent, at least under Plaintiff’s apparent application of its claims. Elpedes is prior art to the ’873 Patent. *See* Section III.A. As shown in Exhibit 873-11, at least under Plaintiff’s apparent application of its claims, Elpedes included all claimed features of the ’873 Patent, at least under Plaintiff’s apparent application of its claims.

For example, Exhibit 873-12 contains a claim chart demonstrating that Teixeira disclosed, suggested, and/or rendered obvious each and every element of the Asserted Claims of the ’873 Patent, at least under Plaintiff’s apparent application of its claims. Teixeira is prior art to the ’873 Patent. *See* Section III.A. As shown in Exhibit 873-12, at least under Plaintiff’s apparent application of its claims, Teixeira included all claimed features of the ’873 Patent, at least under Plaintiff’s apparent application of its claims.

For example, Exhibit 873-13 contains a claim chart demonstrating that Loh I disclosed, suggested, and/or rendered obvious each and every element of the Asserted Claims of the ’873 Patent, at least under Plaintiff’s apparent application of its claims. Loh I is prior art to the ’873 Patent. *See* Section III.A. As shown in Exhibit 873-13, at least under Plaintiff’s apparent

application of its claims, Loh I included all claimed features of the '873 Patent, at least under Plaintiff's apparent application of its claims.

For example, Exhibit 873-14 contains a claim chart demonstrating that Loh II disclosed, suggested, and/or rendered obvious each and every element of the Asserted Claims of the '873 Patent, at least under Plaintiff's apparent application of its claims. Loh II is prior art to the '873 Patent. *See* Section III.A. As shown in Exhibit 873-14, at least under Plaintiff's apparent application of its claims, Loh II included all claimed features of the '873 Patent, at least under Plaintiff's apparent application of its claims.

For example, Exhibit 873-15 contains a claim chart demonstrating that Loh III disclosed, suggested, and/or rendered obvious each and every element of the Asserted Claims of the '873 Patent, at least under Plaintiff's apparent application of its claims. Loh III is prior art to the '873 Patent. *See* Section III.A. As shown in Exhibit 873-15, at least under Plaintiff's apparent application of its claims, Loh III included all claimed features of the '873 Patent, at least under Plaintiff's apparent application of its claims.

For example, Exhibit 873-16 contains a claim chart demonstrating that Sanga disclosed, suggested, and/or rendered obvious each and every element of the Asserted Claims of the '873 Patent, at least under Plaintiff's apparent application of its claims. Sanga is prior art to the '873 Patent. *See* Section III.A. As shown in Exhibit 873-16, at least under Plaintiff's apparent application of its claims, Sanga included all claimed features of the '873 Patent, at least under Plaintiff's apparent application of its claims.

For example, Exhibit 873-17 contains a claim chart demonstrating that the Carclo Optics Side-Emitting Optic included each and every element of the Asserted Claims of the '873 Patent, at least under Plaintiff's apparent application of its claims. The Carclo Optics Side-Emitting Optic

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was sold, offered for sale, and was known or used by others in this country before either the claimed or proper priority date of the '873 Patent. *See* Section III.C.23. As shown in Exhibit 873-17, at least under Plaintiff's apparent application of its claims, the Carclo Optics Side-Emitting Optic included all claimed features of the '873 Patent, at least under Plaintiff's apparent application of its claims.

For example, Exhibit 873-18 contains a claim chart demonstrating that the Samsung LN-R460D included each and every element of the Asserted Claims of the '873 Patent, at least under Plaintiff's apparent application of its claims. The Samsung LN-R460D was sold, offered for sale, and was known or used by others in this country before either the claimed or proper priority date of the '873 Patent. *See* Section III.C.24. As shown in Exhibit 873-18, at least under Plaintiff's apparent application of its claims, the Samsung LN-R460D included all claimed features of the '873 Patent, at least under Plaintiff's apparent application of its claims.

The Asserted Claims of the '873 Patent are further invalid under the doctrine of anticipation by accusation. *See Vanmoor v. Wal-Mart Stores, Inc.*, 201 F.3d 1363, 1367 (Fed. Cir. 2000); *Evans Cooling Sys. Inc. v. General Motors Corp.*, 125 F.3d 1448, 1448 (Fed. Cir. 1997). Plaintiff alleges that each Asserted Claim of the '873 Patent is infringed by: “televisions or liquid crystal display modules (or their components) that are direct lit via LEDs with candle shaped lenses”; “all Samsung direct backlit products that include these lenses”; “lenses ... included as part of LED assemblies used as the light-sources in the backlighting units of accused end-user products, i.e. televisions and their liquid crystal display modules”; and “any other display product that includes the same or reasonably similar LED assemblies or candle shaped lenses” (the “'873 Patent Accusations”). *See* Mar. 24, 2025 Amended Infringement Contentions, Exhibit B. Plaintiff contends that all of Samsung's products encompassed by the '873 Patent Accusations satisfy each

and every limitation of each asserted claim of the '873 Patent. *Id.* At least one product encompassed by the '873 Patent Accusations (and therefore accused of infringement), Samsung LN-R460D, is prior art to the '873 Patent, as demonstrated, for example, in Exhibit '873-18. If the Court were to accept Plaintiff's '873 Patent Accusations, all Asserted Claims of the '873 Patent are invalid due to anticipation.

C. '113 Patent

As detailed in Section II.A above, the Asserted Claims of the '113 Patent are not supported by the Korean Prior Applications and, therefore, are not entitled to a priority date before September 8, 2005. At least under the proper priority date, and subject to the reservation of rights set forth above and based on Samsung's present understanding of the Asserted Claims of the Asserted Patents, and the apparent application of claim terms Plaintiff is asserting based on its Infringement Contentions, the Asserted Claims of the '113 Patent are anticipated by the following prior art references charted in Exhibits 113-1-113-12:

- Japanese Patent Application No 2002-344027 ("Odawara")
- U.S. Patent No. 6,674,096 ("Sommers")
- U.S. Patent No. 6,598,998 ("West I")
- Japanese Patent No. 2,593,554 ("Koike")
- Japanese Patent Application No. H09-18058 ("Koizumi")
- Japanese Patent Publication No. 2000-133822 ("Kunii")
- U.S. Patent No. 3,774,021 ("Johnson")
- European Patent Publication No. 1,453,107 ("Suehiro")
- U.S. Patent No. 6,679,621 ("West II")
- Lumileds Luxeon Side Emitter

D. '873 Patent

Prior art references rendering the Asserted Claims of the '873 Patent obvious, alone or in combination with other references, are identified and discussed below and are included in the claim charts Exhibits 873-1 through 873-10. Exhibits 873-1 through 873-10 include exemplary claim charts for the '873 Patent showing specific combinations of references, including citations to where in the references the teachings, suggestions, and motivations to combine the references are disclosed. Further reasons to combine the references identified in Exhibits 873-1 through 873-10 include the nature of the problem being solved, the express, implied and inherent teachings of the prior art, the knowledge of persons of ordinary skill in the art, that such combinations would have yielded predictable results, and that such combinations would have represented known alternatives to a person of ordinary skill in the art.

The primary references cited in Defendants' exemplary claim charts, Exhibits 873-1 through 873-10, are Odawara, Sommers, West, Koike, Koizumi, Kunii, Johnson, Suehiro, West II, and Luxeon. Each of the primary references discloses and/or suggests all or, at a minimum, the vast majority of the limitations of the Asserted Claims of the '873 Patent. To the extent any claim elements are found to be missing from a particular primary reference, the claim element would have been rendered obvious by the particular primary reference in combination with other primary references and/or with secondary references identified and described in Sections V.B.9 (Total Reflection), V.B.10 (Refractive Surface), V.B.11 (Elliptical), V.B.12 (Bent), V.B.13 (Refractive Index), and V.B.14 (Package Housing).

Specifically, subject to the reservation of rights above and based at least on Samsung's present understanding of the Asserted Claims of the '873 Patent and Sinotechnix's apparent application of its Asserted Claims, the following Asserted Claims of the '873 Patent are rendered obvious by the specified combinations of references. These specified combinations of references

are meant to be illustrative only and are not meant to be limited to only the exemplary combinations explicitly noted below. For example, each of the primary reference can be combined with any one of the specific secondary references identified in Sections V.B.9 through V.B.14.

To the extent a finder of fact finds that a limitation of a given claim was not disclosed by one of the references identified above, those claims are nevertheless unpatentable as obvious because the asserted claims contain nothing that goes beyond ordinary creativity. To the extent not anticipated, no asserted claim goes beyond combining known elements to achieve predictable results or does more than choose between clear alternatives known to those of ordinary skill in the art, particularly in view of the state of the art as reflected in the relevant references listed above in Sections V.B.9 (Total Reflection), V.B.10 (Refractive Surface), V.B.11 (Elliptical), V.B.12 (Bent), V.B.13 (Refractive Index), and V.B.14 (Package Housing).

1. Reasons For Modifications And/Or Combinations

Applying the principles of obviousness described in Section V.A, it would have been obvious to a person of ordinary skill in the art at the time the application that issued as the '873 Patent was filed to combine, modify, or use the teachings of the prior art to make the purported inventions of those patents, including by making each of the combinations identified above. The motivation to combine the teachings of the prior art references disclosed herein can be found in each of (1) the references themselves, (2) the nature of the problem being solved, (3) the express, implied and inherent teachings of the prior art, (4) the knowledge of persons of ordinary skill in the art, (5) the fact that the prior art is generally directed towards the subject matter of each respective asserted patent, and (6) the predictable results obtained in combining the elements of the prior art.

Any reference or combination of references that anticipates or makes obvious an asserted independent claim also makes obvious any asserted claim dependent on that independent claim

(citation omitted). “The scope of the claims must be less than or equal to the scope of the enablement.” *Nat’l Recovery Techs., Inc. v. Magnetic Separation Sys., Inc.*, 166 F.3d 1190, 1196 (Fed. Cir. 1999).

At least the Asserted Claims referenced below are invalid because the specifications fail to provide an enabling disclosure of at least the following limitations:

1. ’162 Patent

- “said entry surface spatially distributed such that said exit surface receives said deflected light with predominantly uniform irradiance” (’162 Patent Claim 1).
- “said entry surface having first concavity facing toward said light source, and second concavity facing toward the entry surface” (’162 Patent Claims 1, 39).
- “said second concavity being substantially greater than said first concavity,” (’162 Patent Claims 1, 39).
- “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,” (’162 Patent Claims 31, 43).
- “said entry-surface deflection spatially distributed such that said exit surface receives said deflected light with predominantly uniform irradiance,” (’162 Patent Claim 39).

2. ’873 Patent

- “a total reflection surface with a total reflection slope with respect to a central axis of the body” (’873 Patent Claims 1, 8).

3. ’113 Patent

- “a total reflection surface with a total reflection slope with respect to a central axis of the body” (’113 Patent Claim 1).

EXHIBIT 873-10

Invalidity Claim Chart for U.S. Patent No. 7,748,873

The Lumileds Luxeon®III Side-Emitter (“Luxeon”), which was on sale to the U.S. public at least as early as May 28, 2004, is prior art to U.S. Patent No. 7,748,873 (the “’873 Patent”). As explained in Section II.A of Defendants’ Patent L.R. 3-3 Invalidity Contentions (the “Invalidity Contentions”), the proper priority date of the ’873 Patent is no earlier than September 8, 2005, rendering Luxeon prior art pursuant to at least pre-AIA 35 U.S.C. §§ 102(a), (b), and (e). To the extent Plaintiff asserts that an earlier priority date should be afforded, at least to Korean Patent Application No. 2005-0056436, filed on Jun. 28, 2005; Korean Patent Application No. 2005-0000269 filed on Jan. 3, 2005; or Korean Patent Application No. 2004-0079909, filed on Oct. 7, 2004, Luxeon is prior art under at least pre-AIA 35 U.S.C. §§ 102(a), (b), and (e). Luxeon anticipates and/or renders obvious the asserted claims of the ’873 Patent under pre-AIA and/or AIA 35 U.S.C. §§ 102 and/or 103.

As set forth in the chart below, all the ’873 Patent’s asserted claims are anticipated by and/or rendered obvious over Luxeon under at least the apparent claim constructions advanced by Plaintiff based on its Patent L.R. 3-1 Infringement Contentions (the “Infringement Contentions”).¹

The citations to portions of any reference in this chart are exemplary only. Defendants reserve the right to use the entirety of any reference described in Sections III and IV of the Invalidity Contentions to show that the asserted claims are anticipated and/or obvious.

The structure, function, technical operation, and manufacture of Luxeon prior to the ’113 Patent’s proper priority date is evidenced by at least:

- Luxeon® III Emitter Luxeon Datasheet DS45 (“Luxeon Datasheet”).
- Lumileds™ “LED Backlighting from Revolution to Reality” Presentation at The 6th Annual DisplaySearch US FPD Conference (“Pugh”).
- Lumileds™ “LED Backlighting: Disruptive Technology made Easy” Presentation (“Lumileds”).
- Lumileds™ “From Concept to Reality to the Future” Presentation at IESNA 2004 (“Scott”).
- Lumileds™ “LED Backlight designs using Luxeon high flux Light source solutions” Presentation at SID 2004 (“Folkerts”).

¹ The excerpts cited herein are exemplary; for any claim limitation, Defendants may rely on excerpts cited for any other limitation and/or additional excerpts not set forth fully herein to the extent necessary to comprehensively explain a reference’s disclosed limitation. Where an excerpt refers to or discusses a figure or figure items, that figure and any additional figure descriptions are incorporated by reference as if set forth fully therein.

- Lumileds™ “White Lighting (Illumination) with LEDs” Presentation at First International Conference on Nitride Semiconductors (ICNS), 2003 (“Goetz”).
- Lumileds™ “Light-emitting diodes in automotive forward lighting applications: materials engineering solutions to fundamental challenges” Presentation at SAE 2004 (“Kern”).

The structure, function, technical operation, and manufacture of Luxeon prior to the ’113 Patent’s proper priority date is further expected to be evidenced by at least:

- Documents and testimony from Lumileds, LLC or its affiliates.
- The knowledge of persons familiar with Luxeon, including without limitation its inventors.

Defendants expressly reserve the right to supplement these contentions by adding additional information showing that Luxeon invalidates the ’873 Patent’s asserted claims.

To the extent that any of the below claim limitations are found to not be expressly disclosed by the below reference, Defendants contends that any such limitation would have been obvious, either based on the knowledge of a person of ordinary skill in the art (“POSITA”) or based on any of the art cited in Defendants’ Invalidity Contentions Exhibits 873-1 through 873-9 and 873-11 through 873-19, which are incorporated herein by reference. As evidenced by the below and in Defendants’ Invalidity Contentions Sections V.B and V.D, the ’873 Patent is merely a collection of prior art elements that fails to meet the statutory requirement of nonobviousness under § 103, and the factors delineated in *KSR International Co. v. Teleflex, Inc.*, 550 U.S. 398 (2007), weigh against a finding of nonobviousness.

For example, it would have been obvious to a POSITA to combine the teaching of Luxeon with the teachings of the references charted in Defendants’ Invalidity Contentions Exhibits 873-1 through 873-9 and 873-11 through 873-19; such references are in the same field of art, and discuss various techniques and improvements that would have been known to yield predictable results when applied to the technology claimed in the ’873 Patent, and a POSITA therefore would have been motivated to so combine them in view of the disclosures therein.

It is also Defendants’ contention that a POSITA would find such limitations obvious for numerous reasons, including (1) the combination would unite old elements with no change in their respective function, (2) the combination would have been a predictable variation of a work in the same or a different field of endeavor, (3) the modification would have used a known technique to improve a similar device in the same way, (4) the modification was a known problem for which there was an obvious solution, (5) the modification would have been “obvious to try,” (6) the modification was known work in one field of endeavor that would have prompted variations of it for use in either the same or different field based on design incentives or other market forces, or (7) there was an explicit teaching, suggestion, or motivation in the prior art for the modification.

EXHIBIT 873-17

Invalidity Claim Chart for U.S. Patent No. 7,748,873

The Carclo Optics “Side-Emitting Optic” (“Carclo”), which was on sale to the U.S. public at least as early as June 21, 2004, is prior art to U.S. Patent No. 7,748,873 (the “’873 Patent”). As explained in Section II.A of Defendants’ Patent L.R. 3-3 Invalidity Contentions (the “Invalidity Contentions”), the proper priority date of the ’873 Patent is no earlier than September 8, 2005, rendering Carclo prior art pursuant to at least pre-AIA 35 U.S.C. §§ 102(a) and (b). To the extent Plaintiff asserts that an earlier priority date should be afforded, at least to Korean Patent Application No. 2005-0056436, filed on Jun. 28, 2005; Korean Patent Application No. 2005-0000269 filed on Jan. 3, 2005; or Korean Patent Application No. 2004-0079909, filed on Oct. 7, 2004, Carclo is prior art under at least pre-AIA 35 U.S.C. §§ 102(a) and (b). Carclo anticipates and/or renders obvious the asserted claims of the ’873 Patent under pre-AIA and/or AIA 35 U.S.C. §§ 102 and/or 103.

As set forth in the chart below, all the ’873 Patent’s asserted claims are anticipated by and/or rendered obvious over Carclo under at least the apparent claim constructions advanced by Plaintiff based on its Patent L.R. 3-1 Infringement Contentions (the “Infringement Contentions”).¹

The citations to portions of any reference in this chart are exemplary only. Defendants reserve the right to use the entirety of any reference described in Sections III and IV of the Invalidity Contentions to show that the asserted claims are anticipated and/or obvious.

The structure, function, technical operation, and manufacture of Carclo prior to the ’873 Patent’s proper priority date is evidenced by at least:

- The Carclo Optics Side-Emitting Optic product.
- Carclo Optics “Side Emitting Optic Datasheet” (June 21, 2004) (“Carclo Datasheet”).
- Carclo Optics “Guide to choosing secondary optics” (January 3, 2008) (“Carclo Guide”).
- Lumileds™ “LED Backlighting from Revolution to Reality” Presentation at The 6th Annual DisplaySearch US FPD Conference (“Pugh”).
- Lumileds™ “LED Backlighting: Disruptive Technology made Easy” Presentation (“Lumileds”).
- Lumileds™ “From Concept to Reality to the Future” Presentation at IESNA 2004 (“Scott”).
- Lumileds™ “LED Backlight designs using Luxeon high flux Light source solutions” Presentation at SID 2004 (“Folkerts”).
- Lumileds™ “White Lighting (Illumination) with LEDs” Presentation at First International Conference on Nitride Semiconductors (ICNS), 2003 (“Goetz”).

The structure, function, technical operation, and manufacture of Carclo prior to the ’873 Patent’s proper priority date is further expected to be evidenced by at least:

¹ The excerpts cited herein are exemplary; for any claim limitation, Defendants may rely on excerpts cited for any other limitation and/or additional excerpts not set forth fully herein to the extent necessary to comprehensively explain a reference’s disclosed limitation. Where an excerpt refers to or discusses a figure or figure items, that figure and any additional figure descriptions are incorporated by reference as if set forth fully therein.

- Documents and testimony from Carclo Optics or its affiliates.
- The knowledge of persons familiar with Carclo, including without limitation its inventors.
- Documents and testimony from Lumileds, LLC or its affiliates.
- The knowledge of persons familiar with the Lumileds Luxeon® line of emitters, including without limitation its inventors.

Defendants expressly reserve the right to supplement these contentions by adding additional information showing that Carclo invalidates the '873 Patent's asserted claims.

To the extent that any of the below claim limitations are found to not be expressly disclosed by the below reference, Defendants contends that any such limitation would have been obvious, either based on the knowledge of a person of ordinary skill in the art ("POSITA") or based on any of the art cited in Defendants' Invalidity Contentions Exhibits 873-1 through 873-19, which are incorporated herein by reference. As evidenced by the below and in Defendants' Invalidity Contentions Sections V.B and V.D, the '873 Patent is merely a collection of prior art elements that fails to meet the statutory requirement of nonobviousness under § 103, and the factors delineated in *KSR International Co. v. Teleflex, Inc.*, 550 U.S. 398 (2007), weigh against a finding of nonobviousness.

For example, it would have been obvious to a POSITA to combine the teaching of Carclo with the teachings of the references charted in Defendants' Invalidity Contentions Exhibits 873-1 through 873-19; such references are in the same field of art, and discuss various techniques and improvements that would have been known to yield predictable results when applied to the technology claimed in the '873 Patent, and a POSITA therefore would have been motivated to so combine them in view of the disclosures therein.

It is also Defendants' contention that a POSITA would find such limitations obvious for numerous reasons, including (1) the combination would unite old elements with no change in their respective function, (2) the combination would have been a predictable variation of a work in the same or a different field of endeavor, (3) the modification would have used a known technique to improve a similar device in the same way, (4) the modification was a known problem for which there was an obvious solution, (5) the modification would have been "obvious to try," (6) the modification was known work in one field of endeavor that would have prompted variations of it for use in either the same or different field based on design incentives or other market forces, or (7) there was an explicit teaching, suggestion, or motivation in the prior art for the modification.

Defendants are still investigating this prior art, and third-party discovery may yield pertinent information. Defendants reserve the right to modify, amend, and supplement these contentions as information becomes available (e.g., witness testimony and non-public documentation) and as discovery proceeds.

Except where specifically noted otherwise, this chart applies the apparent claim term constructions as used in Plaintiff's Infringement Contentions; such use, however, does not imply that Defendants adopt or agree with Plaintiff's constructions in any way.

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EXHIBIT 873-18

Invalidity Claim Chart for U.S. Patent No. 7,748,873

The LN-R460D Optics “Side-Emitting Optic” (“LN-R460D”), which was on sale to the U.S. public at least as early as August 14, 2004, is prior art to U.S. Patent No. 7,748,873 (the “’873 Patent”). As explained in Section II.A of Defendants’ Patent L.R. 3-3 Invalidity Contentions (the “Invalidity Contentions”), the proper priority date of the ’873 Patent is no earlier than September 8, 2005, rendering LN-R460D prior art pursuant to at least pre-AIA 35 U.S.C. §§ 102(a) and (b). To the extent Plaintiff asserts that an earlier priority date should be afforded, at least to Korean Patent Application No. 2005-0056436, filed on Jun. 28, 2005; Korean Patent Application No. 2005-0000269 filed on Jan. 3, 2005; or Korean Patent Application No. 2004-0079909, filed on Oct. 7, 2004, LN-R460D is prior art under at least pre-AIA 35 U.S.C. §§ 102(a) and (b). LN-R460D anticipates and/or renders obvious the asserted claims of the ’873 Patent under pre-AIA and/or AIA 35 U.S.C. §§ 102 and/or 103.

As set forth in the chart below, all the ’873 Patent’s asserted claims are anticipated by and/or rendered obvious over LN-R460D under at least the apparent claim constructions advanced by Plaintiff based on its Patent L.R. 3-1 Infringement Contentions (the “Infringement Contentions”).¹

The citations to portions of any reference in this chart are exemplary only. Defendants reserve the right to use the entirety of any reference described in Sections III and IV of the Invalidity Contentions to show that the asserted claims are anticipated and/or obvious.

The structure, function, technical operation, and manufacture of LN-R460D prior to the ’873 Patent’s proper priority date is evidenced by at least:

- The Samsung LN-R460D LCD HDTV product.
- *CES Innovations 2005 Awards Call for Entries – Now Open!*, Consumer Elecs. Ass’n (October 10, 2004), <https://web.archive.org/web/20041001010723/http://www.cesweb.org/attendees/awards/innovations/CFE.asp> [hereinafter Call for Entries].
- *LEDs Are Light Source of Choice at CES*, Buildings (Jan. 13, 2005), <https://www.buildings.com/architecture/interiors/article/55257006/leds-are-light-source-of-choice-at-ces> [hereinafter Light Source of Choice].
- *Making Sense of It All*, Sound & Vision (Jan. 16, 2005), <https://www.soundandvision.com/content/making-sense-it-all> [hereinafter Making Sense of It All].
- *Best of CES Finalists*, G4 Tech TV (2005) [hereinafter G4 Tech], https://web.archive.org/web/20050120041838/http://www.g4techtv.com/CES2005/features/50705/Best_of_CES_Finalists.html.
- *2005 Award Winners*, Consumer Elecs. Ass’n [hereinafter Award Winners], https://web.archive.org/web/20050303010540/http://www.cesweb.org/attendees/awards/best_of_ces/2004.asp (last visited Mar. 13, 2025).

¹ The excerpts cited herein are exemplary; for any claim limitation, Defendants may rely on excerpts cited for any other limitation and/or additional excerpts not set forth fully herein to the extent necessary to comprehensively explain a reference’s disclosed limitation. Where an excerpt refers to or discusses a figure or figure items, that figure and any additional figure descriptions are incorporated by reference as if set forth fully therein.

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- Samsung Elecs. Co., Ltd., *LN-R460D LCD-TV Service Manual* (2005) [hereinafter LN-R460D Service Manual],
- Luxeon™ III Emitter Technical Datasheet DS45 (“Luxeon Datasheet”),
- Lumileds™ “LED Backlighting from Revolution to Reality” Presentation at The 6th Annual DisplaySearch US FPD Conference (“Pugh”),
- Lumileds™ “LED Backlighting: Disruptive Technology made Easy” Presentation (“Lumileds”),
- Lumileds™ “From Concept to Reality to the Future” Presentation at IESNA 2004 (“Scott”),
- Lumileds™ “LED Backlight designs using Luxeon high flux Light source solutions” Presentation at SID 2004 (“Folkerts”),
- Lumileds™ “White Lighting (Illumination) with LEDs” Presentation at First International Conference on Nitride Semiconductors (ICNS), 2003 (“Goetz”),
- Lumileds™ “Light-emitting diodes in automotive forward lighting applications: materials engineering solutions to fundamental challenges” Presentation at SAE 2004 (“Kern”).

The structure, function, technical operation, and manufacture of LN-R460D prior to the ’873 Patent’s proper priority date is further expected to be evidenced by at least:

- Documents and testimony from LN-R460D Optics or its affiliates.
- The knowledge of persons familiar with LN-R460D, including without limitation its inventors.
- Documents and testimony from Lumileds, LLC or its affiliates.
- The knowledge of persons familiar with the Lumileds Luxeon™ line of emitters, including without limitation its inventors.

Defendants expressly reserve the right to supplement these contentions by adding additional information showing that LN-R460D invalidates the ’873 Patent’s asserted claims.

To the extent that any of the below claim limitations are found to not be expressly disclosed by the below reference, Defendants contends that any such limitation would have been obvious, either based on the knowledge of a person of ordinary skill in the art (“POSITA”) or based on any of the art cited in Defendants’ Invalidity Contentions Exhibits 873-1 through 873-19, which are incorporated herein by reference. As evidenced by the below and in Defendants’ Invalidity Contentions Sections V.B and V.D, the ’873 Patent is merely a collection of prior art elements that fails to meet the statutory requirement of nonobviousness under § 103, and the factors delineated in *KSR International Co. v. Teleflex, Inc.*, 550 U.S. 398 (2007), weigh against a finding of nonobviousness.

For example, it would have been obvious to a POSITA to combine the teaching of LN-R460D with the teachings of the references charted in Defendants’ Invalidity Contentions Exhibits 873-1 through 873-19; such references are in the same field of art, and discuss various techniques and improvements that would have been known to yield predictable results when applied to the technology claimed in the ’873 Patent, and a POSITA therefore would have been motivated to so combine them in view of the disclosures therein.

EXHIBIT 873-19

Invalidity Claim Chart for U.S. Patent No. 7,748,873

The prior art references discussed in the following chart are prior art to U.S. Patent No. 7,748,873 (the “’873 Patent”) pursuant to at least pre-AIA 35 U.S.C. §§ 102(a), 102(b), and 102(e) under the ’873 Patent’s proper priority date. The prior art references anticipate and/or render obvious the asserted claims of the ’873 Patent under pre-AIA 35 U.S.C. §§ 102 and/or 103.

As set forth in the charts below, all the ’873 Patent’s asserted claims are anticipated and/or obvious over the prior art references under at least Plaintiff’s apparent claim constructions based on its Patent L.R. 3-1 Infringement Contentions (the “Infringement Contentions”).¹

The citations to portions of any reference in this chart are exemplary only. Defendants reserve the right to use the entirety of any reference described in Sections III and IV of Defendants’ Patent L.R. 3-3 Invalidity Contentions (the “Invalidity Contentions”) to show that the asserted claims are anticipated and/or obvious.²

A person of ordinary skill in the art (a “POSITA”), as of the ’873 Patent’s proper priority date, would have known to combine the prior art elements disclosed by the references below and/or the references cited in Exhibits 873-1 through 873-18 of the Invalidity Contentions using known methods, and to use these elements according to their established functions to achieve a known and predictable result. Because these prior art references are within a common field of endeavor, and/or are directed to a related set of problems, it would have been obvious for a POSITA to look from one of the identified references to another to find any missing functionality. A POSITA would have been motivated to do so for the reasons identified by the references below, because there were only a finite number of predictable solutions, because known work in a common field of endeavor often prompts variations based on predictable design incentives, and/or because of market forces in the same or a related field. Moreover, a POSITA would have found the combination obvious to try, due at least to the similarity and interrelatedness of the technical teachings of the art. As another example, a POSITA would have found that the teachings may have been predictably interchanged by, for example, simple substitution of parts, at least because of the predictability of the art and the known interchangeability of the various elements or process steps. In addition, combining the references identified

¹ The excerpts cited herein are exemplary. For any claim limitation, Defendants may rely on excerpts cited for any other limitation and/or additional excerpts not set forth fully herein to the extent necessary to provide a more comprehensive explanation for a reference’s disclosure of a limitation. Where an excerpt refers to or discusses a figure or figure items, that figure and any additional descriptions of that figure should be understood to be incorporated by reference as if set forth fully therein.

² The prior art references discussed herein are cited by the abbreviations identified in the cover pleading. See Invalidity Contentions Sec. IV.

below would have been obvious because the combinations represent known potential options with a reasonable expectation of success. Further, a POSITA would have been motivated to combine any of the references below and/or the references cited in Exhibits 873-1 through 873-18 with one or more of the references below for the reasons set forth in Section V.D of the Invalidity Contentions. A POSITA would have had a reasonable expectation of success in combining any of the references below and/or the references cited Exhibits 873-1 through 873-18 with one or more of those references for the reasons set forth in Section V.D of the Invalidity Contentions.

Defendants are investigating this prior art and have not yet completed discovery from third parties who may have information concerning it. Defendants reserve the right to modify, amend, and/or supplement these contentions as information becomes available (e.g., witness testimony and/or non-public documentation) and as discovery proceeds.

Except where specifically noted otherwise, this chart applies the apparent constructions of claim terms as used by Plaintiff in its Infringement Contentions; such use, however, does not imply that Defendants adopt or agree with Plaintiff’s constructions in any way.

Claim	Claim Language	Prior Art Disclosure
1(pre)	A lens, comprising:	Under at least the apparent constructions in Plaintiff’s Infringement Contentions, and to the extent that the preamble is limiting, Odawara discloses, suggests, and/or renders obvious a lens. For example, Odawara discloses, suggests, and/or renders obvious a lens. <i>See, e.g.,</i> Odawara at Abstract (“A surface mounted LED 10 includes a chip substrate 12 having a surface mounted terminal part, an LED chip 13 mounted on the chip substrate, and a lens part 14 formed of a transparent or translucent resin on the chip substrate so as to surround the LED chip, wherein the lens part 14 has a cone shaped recessed part 14a near a center of an upper surface.”). <i>See, e.g.,</i> Odawara at [Claim 1] (“A surface mounted LED, comprising: a chip substrate having a surface mounted terminal part; an LED chip mounted on the chip substrate; and a lens part formed of a transparent or translucent resin on the chip substrate so as to surround the LED chip; wherein the lens part has a cone shaped recessed part near a center of an upper surface thereof.”). <i>See, e.g.,</i> Odawara at [Claim 2] (“The LED according to claim 1, wherein a center axis of the cone shaped recessed part of the lens part is substantially aligned with an optical axis of the LED chip.”). <i>See, e.g.,</i> Odawara at [Claim 3] (“The surface mounted LED according to claim 1 or 2, wherein a side surface of a periphery of the lens part is formed to be tapered upward.”).