

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

JESCO LIGHTING GROUP, LLC,
Petitioner,

v.

AGS LIGHTING MANAGEMENT LLC,
Patent Owner.

Case No. IPR2025-01328
Patent No. 11,751,302

**PETITIONER'S REPLY TO
PATENT OWNER'S RESPONSE**

TABLE OF CONTENTS

	<u>Page</u>
LISTING OF CHALLENGED CLAIMS	vi
I. LISTING OF ARGUMENTS.....	1
II. THE BOARD SHOULD REJECT PATENT OWNER’S ATTEMPT TO REWRITE THE CLAIMS TO REQUIRE LEDS IN WHICH THE PHOSPHORS ARE LOCATED ON THE DIE	3
III. THE PETITION PROPERLY GROUPS COMMON CLAIM ELEMENTS	4
IV. EDWARDS IN VIEW OF SADWICK RENDERS OBVIOUS CLAIMS 1, 2, 4-7, AND 9-20.....	5
A. Edwards in View of Sadwick Renders Obvious the “first plurality of LEDs configured to produce a first light having a first color temperature” and a “second plurality of LEDs configured to produce a second light having a second color temperature” (claim 1) and “associated with... color temperature” (claims 10 and 18)	5
1. Edwards Discloses The Claimed First And Second Pluralities Of LEDs.....	6
2. A POSA Would be Motivated to Modify Edwards with the On-Die Phosphors of Sadwick with a Reasonable Expectation of Success to Render Obvious 1[b]-1[c], 10[b] and 10[i], and 18[c] and 18[d].....	7
B. Edwards and Sadwick render obvious a second switch that is configured to “cause the one of the plurality of currents to couple to the first plurality of LEDs, the second plurality of LEDs, or both.”	10
1. The Additional Subject Matter of Claim Limitations 18[l] and 18[w] is Rendered Obvious.....	11
C. Edwards discloses that “the linear LED lighting apparatus is	

configured to electrically couple to an additional linear LED lighting apparatus having a second length different than the first length by a scale factor” as recited in claims 1[h], 10[i], and 18[m].	12
D. Edwards Discloses a Plurality of Selectable Positions Per Claim 2	13
E. Edwards Renders Obvious the Color Temperatures of Claim 4.....	13
F. The Current Relationships of Claim Elements 10[m] and 20 are Rendered Obvious by Edwards in view of Sadwick.....	13
G. Edwards in view of Sadwick Renders Obvious Claim 15	16
V. EDWARDS IN VIEW OF SADWICK AND FURTHER IN VIEW OF JESWANI RENDERS OBVIOUS CLAIMS 2, 3, AND 8	17
VI. MAY IN VIEW OF JESWANI RENDERS OBVIOUS CLAIMS 1-14 AND 16-20	18
A. A POSA Would Combine May and Jeswani to Render Obvious Claim Elements 1[e], 10[d], and 18[g].....	18
1. A POSA Would be Motivated to Combine May and Jeswani	18
2. A POSA Could Combine the Switch of Jeswani with a Reasonable Expectation of Success	20
B. The Combination of Jeswani and May Renders Obvious Claims 1[d]-1[g], 10[d]-10[g], and 18[f]-18[i].....	21
1. The Additional Subject Matter of Claim Limitations 18[l] and 18[w] is Rendered Obvious.....	23
C. The Combination of May and Jeswani Renders Obvious Fixtures Varying by a Scale Factor as Recited in Claims 1[h], 10[i] and 18[m].....	23
D. The Current Relationship of Claim Element 10[m] is Rendered Obvious by May in view of Jeswani	24

VII. MAY IN VIEW OF JESWANI AND SADWICK RENDERS OBVIOUS CLAIM 15.....	25
VIII. CONCLUSION.....	25

TABLE OF AUTHORITIES

Cases	Page(s)
<i>Allied Erecting & Dismantling Co. v. Genesis Attachments, LLC</i> , 825 F.3d 1373 (Fed. Cir. 2016).....	17, 18, 20
<i>Amazon.com, Inc. et al v. NL Giken Inc.</i> , IPR2024-01345, Paper 14 (P.T.A.B. Mar. 26, 2025).....	5
<i>Ariosa Diagnostics, Inc. v. Verinata Health, Inc.</i> , 805 F.3d 1359 (Fed. Cir. 2015)	16, 25
<i>Bayer Pharma AG v. Watson Labs., Inc.</i> , 874 F.3d 1316 (Fed. Cir. 2017)	8, 19
<i>Blue Calypso, LLC v. Groupon</i> , 815 F.3d 1331, 1344 (Fed. Cir. 2016)	17
<i>Comcast Cable Commc'n, LLC v. Entropic Commc'n, LLC</i> , IPR2024-00438, Paper 14 (P.T.A.B. Oct. 4, 2024).....	5
<i>INVT SPE LLC v. ITC</i> , 46 F.4th 1361 (Fed. Cir. 2022)	4
<i>Kennametal Inc. v. Ingersoll Cutting Tool Co.</i> , 780 F.3d 1376 (Fed. Cir. 2015)	17
<i>Koninklijke Philips N.V. v. Google LLC</i> , 948 F.3d 1330, 1333 (Fed. Cir. 2020)	15
<i>In re Mouttet</i> , 686 F.3d 1322 (Fed. Cir. 2012)	17, 19
<i>PAR Pharm., Inc. v. TWI Pharms., Inc.</i> , 773 F.3d 1186 (Fed. Cir. 2014)	8, 19
<i>In re Ratti</i> , 270 F.2d 810 (CCPA 1959).....	19

Silicon Graphics, Inc. v. ATI Techs.,
607 F.3d 784, 788 (Fed. Cir. 2010) 4

Yeda Research & Development Co. v. Mylan Pharmaceuticals Inc.,
906 F.3d 1031 (Fed. Cir. 2018) 15, 16

LISTING OF CHALLENGED CLAIMS

[1pre]. A linear light-emitting diode (LED) lighting apparatus, comprising:

[1a] an array of light emitting diodes (LEDs) having a first length, wherein the array of LEDs comprises:

[1b] a first plurality of LEDs configured to produce a first light having a first color temperature, wherein the first plurality of LEDs aligns within a first linear shape;

[1c] a second plurality of LEDs configured to produce a second light having a second color temperature different from the first color temperature, wherein the second plurality of LEDs align within a second linear shape;

[1d] a driver circuit configured to output a plurality of currents;

[1e] a switch assembly configured to couple to the driver circuit, wherein the switch assembly comprises:

[1f] a first switch configured to cause the driver circuit to output one of the plurality of currents;

[1g] a second switch configured to cause the one of the plurality of currents to couple to the first plurality of LEDs, the second plurality of LEDs, or both; and

[1h] wherein the linear LED lighting apparatus is configured to electrically couple to an additional linear LED lighting apparatus having a second length different than the first length by a scale factor, wherein the additional linear LED lighting apparatus is configured to produce a third light having the first color temperature via a third plurality of LEDs or a fourth light having the second color temperature via a fourth plurality of LEDs.

2. The linear LED lighting apparatus of claim 1, wherein the second switch comprises a plurality of selectable positions.

3. The linear LED lighting apparatus of claim 2, wherein the plurality of selectable positions comprises:

a first position configured to cause the switch assembly to couple the one of the plurality of currents to the first plurality of LEDs;

a second position configured to cause the switch assembly to couple the one of the plurality of currents to the second plurality of LEDs; and

a third position configured to cause the switch assembly to couple a first portion of the one of the plurality of currents to the first plurality of LEDs and a second portion of the one of the plurality of currents to the second plurality of LEDs.

4. The linear LED lighting apparatus of claim 1, wherein the first color temperature corresponds to 3000 Kelvin and the second color temperature corresponds to 4000 Kelvin.

5. The linear LED lighting apparatus of claim 1, wherein the second switch comprises a plurality of selectable positions, wherein each of the plurality of selectable positions is configured to cause the switch assembly to send a respective signal to the driver circuit, wherein the respective signal is configured to cause the driver circuit to output the one of the plurality of currents that corresponds to a current position of the plurality of selectable positions.

6. The linear LED lighting apparatus of claim 1, comprising a housing comprising an interior volume configured to hold the driver circuit, the first plurality of LEDs, and the second plurality of LEDs.

7. The linear LED lighting apparatus of claim 6, wherein the housing comprises a length greater than or equal to 24 inches.

8. The linear LED lighting apparatus of claim 6, wherein the switch assembly is configured to be positioned in a receptacle of the housing, and wherein the switch assembly is configured to be flush with a surface of the housing when positioned in the receptacle.

9. The linear LED lighting apparatus of claim 1, comprising at least one electrical connection configured to transmit electricity from the lighting apparatus to at least one other lighting apparatus.

[10pre] A linear light-emitting diode (LED) lighting system, comprising:

[10a] a first modular lighting apparatus traversing a first linear distance, wherein the first modular lighting apparatus comprises:

[10b] a first plurality of light-emitting diodes (LEDs) arranged within a first linear form factor and having a first number of LEDs, each LED of the first plurality of LEDs associated with a first color temperature;

[10c] a first driver circuit configured to output a first plurality of currents;

[10d] a first switch assembly configured to:

[10e] cause the first driver circuit to output one of the first plurality of currents; and

[10f] couple the one of the first plurality of currents to the first plurality of LEDs; and

[10g] a first extender port; and

[10h] a second modular lighting apparatus traversing a second linear distance that is longer than the first linear distance, wherein the second modular lighting apparatus comprises:

[10i] a second plurality of light-emitting diodes (LEDs) arranged within a second linear form factor and having a second number of LEDs, each LED of the second plurality of LEDs associated with the first color temperature, wherein the second number is greater than the first number by a scale factor;

[10j] a second driver circuit configured to output a second plurality of currents;

[10k] a second switch assembly configured to:

[10l] cause the second driver circuit to output one of the second plurality of currents; and

[10m] couple the one of the second plurality of currents to the second plurality of LEDs, wherein the one of the second plurality of currents is greater than the one of the first plurality of currents by the scale factor; and

[10n] a second extender port configured to couple with the first extender port to combine the first modular lighting apparatus and the second modular lighting apparatus to traverse the first linear distance and the second linear distance.

11. The linear LED lighting system of claim 10, wherein the first switch assembly is configured to receive a signal to cause the first driver circuit to output the one of the first plurality of currents.

12. The linear LED lighting system of claim 11, wherein the signal is received via a wired connection.

13. The linear LED lighting system of claim 11, wherein the signal is received via a mechanical switch.

14. The linear LED lighting system of claim 11, wherein the signal comprises a wireless signal.

15. The linear LED lighting system of claim 10, wherein the first driver circuit comprise a current regulator.

16. The linear LED lighting system of claim 10, wherein the first extender port is configured to electrically couple the first modular lighting apparatus to the second modular lighting apparatus.

17. The linear LED lighting system of claim 10, wherein each LED of the first plurality of LEDs receives a same amount of current via the one of the first plurality of currents that each LED of the second plurality of LEDs receives via the one of the second plurality of currents.

[18pre] A linear light-emitting diode (LED) system, comprising:

[18a] a first modular lighting apparatus comprising:

[18b] a first array of light emitting diodes (LEDs) comprising:

[18c] a first plurality of LEDs associated with a first color temperature, wherein the first plurality of LEDs aligns within a first linear shape;

[18d] a second plurality of LEDs associated with a second color temperature different from the first color temperature,

[18e] wherein the second plurality of LEDs aligns within a second linear shape;

[18f] a first driver circuit configured to output a first plurality of currents;

[18g] a first switch assembly configured to couple to the first driver circuit, wherein the first switch assembly comprises:

[18h] a first switch configured to cause the first driver circuit to output one of the first plurality of currents;

[18i] a second switch configured to:

[18j] cause a first portion of the one of the first plurality of currents to couple to each LED of the first plurality of LEDs;

[18k] cause the first portion of the one of the first plurality of currents to couple to each LED of the second plurality of LEDs; or

[18l] cause half of the first portion of the one of the first plurality of currents to couple to each LED of the first plurality of LEDs and each LED of the second plurality of LEDs; and

[18m] a second modular lighting apparatus configured to electrically couple to the first modular lighting apparatus, wherein the second modular lighting apparatus comprises:

[18n] a second array of light emitting diodes (LEDs) comprising:

[18o] a third plurality of LEDs associated with a third color temperature, wherein the third plurality of LEDs aligns within a third linear shape, wherein the third color temperature matches the first color temperature, and wherein the third plurality of LEDs is longer than the first plurality of LEDs;

[18p] a fourth plurality of LEDs associated with a fourth color temperature matching the second color temperature, wherein the fourth plurality of LEDs aligns within a fourth linear shape, and wherein the fourth plurality of LEDs is longer than the second plurality of LEDs;

[18q] a second driver circuit configured to output a second plurality of currents;

[18r] a second switch assembly configured to couple to the second driver circuit, wherein the second switch assembly comprises:

[18s] a third switch configured to cause the second driver circuit to output one of the second plurality of currents; and

[18t] a fourth switch configured to:

[18u] cause a second portion of the one of the second plurality of currents to couple to each LED of the third plurality of LEDs;

[18v] cause the second portion of the one of the second plurality of currents to couple to each LED of the fourth plurality of LEDs; or

[18w] cause half of the second portion of the one of the second plurality of currents to couple to each LED of the third plurality of LEDs and each LED of the fourth plurality of LEDs.

19. The linear LED system of claim 18, wherein the first modular lighting apparatus comprises a first connector configured to couple to a second connector part of the second modular lighting apparatus, wherein the first connector and second connector are configured to transmit data between the first modular light apparatus and the second modular lighting apparatus.

20. The linear LED system of claim 18, wherein a first ratio of the one of the second plurality of currents to the one of the first plurality of currents matches a second ratio of a first number of LEDs in the first plurality of LEDs to a second number of LEDs in the third plurality of LEDs.

Patent Owner’s Response (Paper 12) does not refute the unpatentability of claims 1-20 of the ’302 Patent. Patent Owner’s arguments rest on unduly narrow claim constructions, manufactured incompatibilities between cited references, and an exaggerated ‘change of principle of operation’ defense that ignores the routine nature of the proposed combinations.

I. LISTING OF ARGUMENTS

To avoid repetition, the Reply analyzes common limitations together as summarized below.

Limitation	Numbered elements	Sections
“a first plurality of LEDs configured to produce a first light having a first color temperature ... [and] a second plurality of LEDs configured to produce a second light having a second color temperature” (claim 1); each LED “associated with a ... color temperature” (claims 10, 18)	1[b], 1[c]; 10[b]; 10[i], 18[c], 18[d] (also third/fourth pluralities 18[o], 18[p])	IV.A (incl. IV.A.1–IV.A.2)
“a switch assembly configured to couple to the driver circuit”	1[e]; 10[d]; 18[g]	VI.A (incl. VI.A.1–VI.A.2)
“a driver circuit configured to output a plurality of currents” and “a ... switch configured to cause the one of the plurality of currents to couple to the first plurality of LEDs, the second plurality of LEDs, or both”	1[c]–1[g]; 10[c]–10[g] (10[f]); 18[f]–18[i] (18[i]–18[k]); fourth switch 18[t]–18[w]	IV.B (Edwards/Sadwick); VI.B (May/Jeswani)

Limitation	Numbered elements	Sections
“cause half of the ... portion of the one of the ... currents to couple to each LED of the first plurality of LEDs and each LED of the second plurality of LEDs” (equal split)	18[l], 18[w]	IV.B.1; VI.B.1
“the linear LED lighting apparatus is configured to electrically couple to an additional linear LED lighting apparatus having a second length different than the first length by a scale factor” (additional apparatus producing the same color temperatures)	1[h]; 10[i]; 18[m]	IV.C (Edwards/Sadwick); VI.C (May/Jeswani)
“the one of the second plurality of currents is greater than the one of the first plurality of currents by the scale factor” (claim 10[m]); “a first ratio ... matches a second ratio of [the number of LEDs]” (claim 20)	10[m]; claim 20	IV.F (Edwards/Sadwick); VI.D (May/Jeswani)
<i>Dependent-claim limitations</i>		
“the second switch comprises a plurality of selectable positions” (claim 2) and the settings of those positions (claim 3); switch assembly seated in a receptacle and flush with the housing (claim 8)	claims 2, 3, 8	IV.D (claim 2, Edwards/Sadwick); V (claims 2, 3, 8, + Jeswani)
“the first color temperature corresponds to 3000 Kelvin and the second color temperature corresponds to 4000 Kelvin”	claim 4	IV.E

Limitation	Numbered elements	Sections
“the first driver circuit comprise[s] a current regulator”	claim 15	IV.G (Edwards/Sadwick); VII. (May/Jeswani/Sadwick)

II. THE BOARD SHOULD REJECT PATENT OWNER’S ATTEMPT TO REWRITE THE CLAIMS TO REQUIRE LEDS IN WHICH THE PHOSPHORS ARE LOCATED ON THE DIE

Claim 1 recites a “first plurality of LEDs configured to **produce** a first light having a first color temperature” and a “second plurality of LEDs configured to **produce** a second light having a second color temperature” and does not restrict the claims to a particular mechanism for “producing.” Claims 10 and 18 are broader and only require that the LEDs be “associated” with the color temperatures.

Patent Owner seeks to rewrite the claims to recite “a plurality of LEDs having a phosphor on the surface of the LED which causes the light emitted from the surface of the LED to have a particular color temperature.” The language of the claims is silent as to how the “first” and “second” lights are provided. The claims do not require that the light as emitted through the surface of the LED has the first color temperature. They do not require that the LEDs be white LEDs. They do not require that the LEDs directly emit white light. They do not require the absence of any intervening optical component. Ex.1002¶¶120-124.

The claims only require that the LEDs be “configured to produce” lights having the first and second color temperatures or have been “associated with” those color temperatures. *See INVT SPE LLC v. ITC*, 46 F.4th 1361, 1372-1373 (Fed. Cir. 2022) (components configured to perform certain functions meet functional limitations even if they work in tandem with other components); *Silicon Graphics, Inc. v. ATI Techs., Inc.*, 607 F.3d 784, 788, 794 (Fed. Cir. 2010) (same).

A POSA would understand that both (a) phosphor-converted white LEDs (where the phosphor is applied directly to the LED die) and (b) blue LEDs with remote phosphor are standard approaches to producing white light at a specific color temperature. Ex.1002¶¶76-77. The only difference is the location of the phosphor. In both cases, the LED is configured to produce light at a color temperature. Ex.1028¶10.

The specification provides no support for Patent Owner’s narrow construction. The ’302 Patent is silent about how the phosphors are positioned and how those LEDs emit light at a particular color temperature. The word “phosphor” does not appear in the ’302 Patent. Patent Owner’s construction should be rejected.

III. THE PETITION PROPERLY GROUPS COMMON CLAIM ELEMENTS

Patent Owner challenges the grouping of similar claims in the Petition but such grouping is entirely proper. *See Comcast Cable Commc'n, LLC v. Entropic*

Commc'n, LLC, IPR2024-00438, Paper 14 at 21 (P.T.A.B. Oct. 4, 2024)

(“Petitioner relies primarily on its analysis for claim 1”); *Amazon.com, Inc. et al v.*

NL Giken Inc., IPR2024-01345, Paper 14 at 22 (P.T.A.B. Mar. 26, 2025)

(“Petitioner relies on the same evidence and arguments as discussed above with

claim 1”). See *id.* at Paper 1, Amazon.com Petition at 27-28. Patent Owner does

not identify claim limitations that were improperly grouped together. Patent

Owner notes that claim element 10[m] includes additional subject matter (POR-

16,17) but fails to acknowledge that the additional subject matter of claim element

10[m] is expressly addressed. Petition-40-41,84-85.

IV. EDWARDS IN VIEW OF SADWICK RENDERS OBVIOUS CLAIMS 1, 2, 4-7, AND 9-20

- A. Edwards in View of Sadwick Renders Obvious the “first plurality of LEDs configured to produce a first light having a first color temperature” and a “second plurality of LEDs configured to produce a second light having a second color temperature” (claim 1) and “associated with... color temperature” (claims 10 and 18)**

These limitations appear in 1[b]-1[c], 10[b], 10[i], 18[c]-18[d]. Patent

Owner incorrectly alleges that the first and second pluralities of LEDs with

respective first and second color temperatures would not have been obvious. This

limitation is disclosed by Edwards and would alternatively have been obvious to

combine from Sadwick.

1. Edwards Discloses The Claimed First And Second Pluralities Of LEDs

Patent Owner alleges that Edwards does not disclose this limitation based on its inaccurate construction, arguing that Edwards' LEDs do not satisfy the claimed "first plurality of LEDs configured to produce a first light having a first color temperature" (claim 1) or "be associated with... color temperature" (claims 10 and 18) because Edwards uses blue LEDs in combination with a remote phosphor. POR-14–19. As set forth above, this construction is incorrect.

Edwards discloses that its first set of LEDs 21a corresponds to the first portion 20a of the wavelength conversion component, and sets of LEDs 21b-1 and 21b-2 correspond to portions 20b-1 and 20b-2. Ex.1005, 11:1–5. Edwards states that "[t]he CCT of the emission product from the device is a combination of the CCT of the light generated by the LED (λ_1), the CCT of the light (α_2) generated by the first region, and the CCT of the light (α_3) generated by the second region." Ex.1005, 11:13–24. The LEDs are arranged with specific regions of the wavelength conversion component 10, and are connected to a control circuit 217 that drives them to produce light at these color temperatures. Ex.1005, Figs. 1B, 3A–3B; 5:55–6:5. Accordingly the LEDs are "configured to produce" light at first and second color temperatures and "associated with" those temperatures.

Additionally, as noted in the Petition and Dr. Eden, even without the remote phosphor, the red and blue LEDs of Edwards have first and second color

temperatures. Petition-15, 16; Ex.1002¶¶125. While Patent Owner’s expert, Dr. Katona, *now* alleges that red and blue dies do not have a color temperature, he has previously testified that disclosure of colored LEDs meets color temperature limitations, noting “Additionally, Figures 5 and 58 disclose using a red LED arm... very warm color temperatures in the 1000K-1500K range would appear red.. a person of ordinary skill in the art would understand that the red LED arm would output light having a color temperature.” Ex.1030¶¶106,101.

2. A POSA Would be Motivated to Modify Edwards with the On-Die Phosphors of Sadwick with a Reasonable Expectation of Success to Render Obvious 1[b]-1[c], 10[b] and 10[i], and 18[c] and 18[d]

Patent Owner argues that a POSA would not combine Edwards with Sadwick because it would remove the purported benefits of Edwards’ remote wavelength conversion component. Patent Owner’s argument is incorrectly premised on a requirement that any modification must be better in all circumstances for all users. Dr. Eden explained that manufacturing white LEDs by printing phosphors directly on the die is cheaper and easier at commercial scale than manufacturing a separate wavelength conversion component. Ex.1002¶¶130-132; Ex.1028¶¶6-12. A POSA would have recognized these cost and supply-chain advantages as reasons to adopt the conventional white LED package format disclosed in Sadwick. Ex.1002¶¶130–132; Ex.1028¶¶8-12. The commercial reality of the LED lighting industry further supports this motivation. Ex.1002¶¶76-77;

Ex.1028¶¶9-12; Ex.1029-53:4-20, 27:5-18,29:23-30:4,42:11-20. As of the priority date of the '302 Patent, phosphor-coated white LEDs were the dominant form of wavelength conversion in LED lighting products. Ex.1002¶76; Ex.1028¶9. Despite the availability of remote phosphors, the industry continued to favor on-die phosphor LEDs because of lower cost, simpler supply chain, and established manufacturing infrastructure. Ex.1002¶77; Ex.1028¶¶11-12.

Patent Owner's premise, that no POSA would have been motivated to make the combination because it trades one set of advantages for another, is incorrect. Motivation to combine does not require that the proposed modification be the best option or the optimal design. *PAR Pharm., Inc. v. TWI Pharms., Inc.*, 773 F.3d 1186, 1197–98 (Fed. Cir. 2014) (“Our precedent, however, does not require that the motivation be the *best* option, only that it be a *suitable* option...”)(emphasis in original); *Bayer Pharma AG v. Watson Labs., Inc.*, 874 F.3d 1316, 1327 (Fed. Cir. 2017) (“that better alternatives exist in the prior art does not mean that an inferior combination is inapt for obviousness purpose”) (internal citations removed). The combination of Edwards and Sadwick is more than a “suitable” option: it produces a tunable-color-temperature linear LED fixture using commodity components at lower cost. Ex.1028¶12. Teaching away requires more than one option be “favored” but rather that the alternative be inapt and “so flawed” that it is unusable. *Id.* (rejecting “teaching away”).

Patent Owner and its expert allege technical challenges with the combination of Edwards and Sadwick. POR-21-22. However, as Dr. Eden explains, each of these is a routine design issue regularly addressed. Ex.1002¶¶76-77. Ex.1028¶¶13-15. Thermal issues are routinely addressed through fixture design and uniformity can be addressed through a diffuser. Ex.1028¶¶14-15; Ex.1029-53:21-54:20. Similarly the use of multiple bins of LEDs is a standard arrangement in CCT adjustable devices. Ex.1028¶13. Were these actually significant problems, on-die phosphors would not be the preferred solution for LED luminaires. Ex.1028¶11.

Patent Owner argues that Petitioner has not shown a reasonable expectation of success. POR-24–25. Edwards’ fixture controls color temperature by selectively powering different LED strings. A fixture using Sadwick’s white LEDs in Edwards’ string arrangement would control color temperature by selectively powering strings of white LEDs of different color temperatures. Ex.1002¶¶128–132. The expectation of success follows from the fact that both references use the same approach: mixing light from warm and cool LED strings to achieve a target CCT. Ex.1002¶¶128–132; Ex.1028¶¶17, 21.

Patent Owner also challenges whether the number of LEDs would be proportional to the scale factor, but as Dr. Eden explains a frame twice as large would have twice as many LEDs. Ex.1002¶229.

B. Edwards and Sadwick render obvious a second switch that is configured to “cause the one of the plurality of currents to couple to the first plurality of LEDs, the second plurality of LEDs, or both.”

Patent Owner inaccurately argues that this limitation, present in elements 1[g], 10[f] and 18[i]-18[l], 18[t]-[w]¹ is not met because Patent Owner alleges Edwards allows some current to go to both pluralities of LEDs at all times. First, the language of the claims does not require that current is going to *only* the first plurality or second plurality and Patent Owner offers no support for it. Even were this construction correct, Patent Owner’s argument fails.

As set forth in the Petition (p. 26), Dr. Eden, and admitted by Dr. Katona, the brightness of each string of LEDs is controlled by the current and either of the strings of LEDs may be turned off. Ex.1002¶¶163-165 citing Ex.1005-12:6-20. *Id.* Ex.1029-59:16-60:14. As Dr. Eden explains, this “turning off” is a result of current supplied to the LED being turned off. Ex.1002¶164. Accordingly, the claimed switch “cause[s] the one of the plurality of currents to couple to the first plurality

¹ Depending on how the claim is parsed this limitation may incorporate the driver circuit and thus relate to claim elements 1[d]–1[g]; 10[c]–10[g] (10[f]); 18[f]–18[i] (18[i]–18[k]). Petitioner has attempted to focus on the disputed legal/factual issues as presented by Patent Owner.

of LEDs, the second plurality of LEDs, or both” as Dr. Katona also admits.

Ex.1002¶¶164-165; Ex.1028¶23; Ex.1029-59:16-60:14. The claims do not speak to physical connections, but rather whether current is coupled to the first and second pluralities of LEDs. *Id.*

Patent Owner alleges that the Petition does not disclose the specific mechanism through which current is coupled but the Petition quotes Edwards, which describes how the resistor 31 controls the relative currents to each bank of LEDs and Dr. Eden expounds on it. Petition-26 citing Ex.1005-14:17-19; Ex.1002¶¶167-168.

Patent Owner also argues that Sadwick does not meet this limitation because it uses a time-divided current. POR-30,31. The current of Sadwick are timeslotted to each bank of LEDs over very small (ms) periods of time such that both appear to be on and thus current is provided to both concurrently over any reasonable period of time. Ex.1002¶172; Ex.1028¶26; Ex.1029-64:4-65:4. Accordingly Edwards and Sadwick additionally render this limitation obvious through Sadwick’s disclosure. Patent Owner’s claim that the Petition does not establish motivation to combine Sadwick’s control circuit is incorrect. Petition-29 citing Ex.1002¶¶153-154.

1. The Additional Subject Matter of Claim Limitations 18[l] and 18[w] is Rendered Obvious

The additional subject matter of 18[l] and 18[w] (half the current to each plurality of LEDs) is rendered obvious by Edwards and Sadwick. Petition-47,

Ex.1002¶¶243-245. Edwards discloses varying over the full range of currents from all to one or all to the other and would necessarily split in half. Edwards also discloses providing maximum current to both pluralities of LEDs, which would necessarily entail equal current to both pluralities. Petition-47, Ex.1002¶¶243-245.

C. Edwards discloses that “the linear LED lighting apparatus is configured to electrically couple to an additional linear LED lighting apparatus having a second length different than the first length by a scale factor” as recited in claims 1[h], 10[i], and 18[m].

Patent Owner incorrectly contends that Edwards does not disclose connecting fixtures of different lengths (and thus the claimed scale factor) as recited in claims 1[h], 10[i], and 18[m]. POR-33.

Edwards discloses an arrangement that allows “several linear lamps 1300 to be connected in series to cover a desired area.” Ex.1005-15:55–60; Ex.1002¶¶177–178. Immediately after that, Edwards states that “[i]ndividual linear lamps 1300 may range from 1 foot to 6 feet in length.” Ex.1005-15:58–60. Edwards thus discloses that arrangements of multiple lamps can include individual lamps of different sizes. As Dr. Eden explains, these disclosures together teach a POSA that fixtures of different sizes would be used together, particularly in view of the stated need to cover a specific area. Ex.1002¶178. Any area that is not an even multiple of a lamp size would need multiple lamps of different sizes assembled. Ex.1028¶¶34–36.

Patent Owner's argument that the color temperatures would not match between fixtures is unsupported. POR-33. Each Edwards lamp 1300 has the same internal structure. Ex.1005-16:1–35. Ex.1028¶¶28-30. Two Edwards lamps 1300—whether one foot or six feet—produce light at the same first and second color temperatures because they use the same LED arrays. *Id.* Ex.1028¶¶44-46.

D. Edwards Discloses a Plurality of Selectable Positions Per Claim 2

As acknowledged by Patent Owner, Edwards discloses a dial for controlling the color temperature. POR-38-39. Any position on the dial will necessarily be selectable. There is no requirement that the positions be discrete or labeled.

E. Edwards Renders Obvious the Color Temperatures of Claim 4

As described in the Petition at 31-32 and Dr. Eden the color temperatures of claim 4 are described as standard color temperatures and are well known in the art as desirable ranges that would be obvious to implement as choices for color temperatures, either from Edwards or Sadwick. Petition-31-32; Ex.1002¶¶186-191. Patent Owner does not dispute that these color temperatures were widely used and offers no reason why a POSA would not use them with a reasonable expectation of success.

F. The Current Relationships of Claim Elements 10[m] and 20 are Rendered Obvious by Edwards in view of Sadwick

Patent Owner contends that the Petition fails to show element 10[m] and claim 20, which recite that the ratio of currents is proportional to the scale factor, *i.e.* a

fixture twice as long receives twice as much current. Patent Owner incorrectly alleges that Petitioner's expert relies on references outside of Sadwick and Edwards.

The Petition's analysis of element 10[m] is based on the disclosures of Edwards and Sadwick, combined with the knowledge of a POSA. Edwards discloses that connected fixtures may vary in length by a scale factor. Ex.1005-15:58-60; Petition-38; Ex.1002¶205. Edwards shows LEDs evenly spaced a fixed distance apart. Ex.1002¶205. A POSA would understand that the number of LEDs in each fixture scales with the length of the fixture and that a longer fixture contains proportionally more LEDs. Ex.1002¶¶206–209.

For a given brightness level, the current sent to each LED fixture is proportional to the number of LEDs, and accordingly the second current (sent to the LEDs of the second, larger fixture) would be greater than the current sent to the LEDs of the first fixture by the scale factor. Ex.1002¶¶211, 230. A POSA extending a fixture of Edwards would be motivated to arrange the LEDs as multiple strings arranged serially but connected in parallel. *Id.*

Patent Owner alleges circuit modifications “without any support from the references.” POR-27. Edwards and Sadwick both disclose the use of parallel-connected LEDs and/or strings of LEDs. Ex.1002¶¶224–226, citing Ex.1005, Fig. 6; Ex.1006¶0340, Figs. 5–7, 35, 36, 38–40.

The linear fixtures disclosed in Edwards would include multiple strings of LEDs arranged serially but connected in parallel, because this was the standard approach to designing linear fixtures and was required by safety standards. Ex.1002¶¶216–223. As shown in the references and standards cited by Dr. Eden, a POSA would design the number of parallel-connected strings to scale with the fixture length, and the current necessary to drive those additional strings would scale according to the scale factor. Ex.1002¶¶228-230.

Dr. Eden cited Ex.1010, 1012, and 1020 to demonstrate that a POSA would be motivated to modify Edwards and Sadwick. Ex.1002¶¶219–222. In *Koninklijke Philips N.V. v. Google LLC*, the petition relied on a reference (SMIL) missing the claimed pipelining arrangement. 948 F.3d 1330, 1333 (Fed. Cir. 2020). The Petitioner relied on a reference outside the ground (Hua) to demonstrate the knowledge of a POSA and that a POSA would be aware of pipelining and modify SMIL to include pipelining. The Federal Circuit held that “a skilled artisan would have known about pipelining [as demonstrated by Hua] and been motivated to combine pipelining with SMIL 1.0.” *Id.* at 1337.

Petitioner relies on the knowledge of a POSA regarding LED string arrangements in linear fixtures, and Exs.1010,1012, and 1020 document that knowledge. *See also Yeda Research & Development Co. v. Mylan Pharmaceuticals Inc.*, 906 F.3d 1031, 1040-1041 (Fed. Cir. 2018) (non-statutory art used to show that

a POSA was aware of benefits of reduced dosing be motivated to incorporate claimed dosing regimen into prior art); *Ariosa Diagnostics, Inc. v. Verinata Health, Inc.*, 805 F.3d 1359, 1364-1366 (Fed. Cir. 2015) (non-ground art relied upon to show that a POSA would add claim element). Patent Owner alleges that the Petition’s modification would add complexity, but it was clearly an arrangement artisans chose. Ex.1002¶¶216–223.

Patent Owner’s argument that a POSA would not be motivated to scale current also fails. A POSA connecting fixtures of different lengths to provide continuous illumination would be motivated to ensure uniform brightness—and understand that doing so requires scaling the drive current in proportion to the number of LEDs. Ex.1002¶¶206–209, 211, 230.

G. Edwards in view of Sadwick Renders Obvious Claim 15

Claim 15 recites that the “first driver circuit comprise[s] a current regulator,” a feature disclosed by Sadwick through its disclosure that the current source “can comprise . . . a constant current driver and/or . . . a variable constant current driver.” Petition-43 citing Ex.1006¶0049. Patent Owner raises the standard for inherency, but inherency is limited to disclosures where then-unknown or hidden characteristics of a feature were at issue, not where the disclosure teaches a POSA that the feature is present. Dr. Eden explains, and neither Patent Owner nor its expert dispute, a constant or variable constant current driver “would necessarily include a current

regulator to control the current as this would be a standard and necessary component for those drivers.” Ex.1002¶237. See also Ex.1031. *See Kennametal Inc. v. Ingersoll Cutting Tool Co.*, 780 F.3d 1376, 1381 (Fed. Cir. 2015) (limitation is disclosed if a POSA “would ‘at once envisage’ the claimed arrangement or combination.”); *see also Blue Calypso, LLC v. Groupon, Inc.*, 815 F.3d 1331, 1344 (Fed. Cir. 2016) (express disclosure of every detail not required).

The current regulator of Sadwick “allows for better and more stable regulation of electrical operation and avoidance of damage to the LEDs.” Ex.1002¶237. Patent Owner demands a specific description of how the circuits of Sadwick and Edwards would be combined but obviousness does not require that the prior art references be “bodily incorporated” into another. *Allied Erecting & Dismantling Co. v. Genesis Attachments, LLC*, 825 F.3d 1373, 1381 (Fed. Cir. 2016).

V. EDWARDS IN VIEW OF SADWICK AND FURTHER IN VIEW OF JESWANI RENDERS OBVIOUS CLAIMS 2, 3, AND 8

Patent Owner argues that the “selectable positions” of claim 2 and the “additional settings” of claim 3 could not be implemented from Jeswani, effectively arguing that Edwards’s switch could not be wholesale replaced with that of Jeswani. *Allied Erecting v. Genesis Attachments*, 825 F.3d at 1381 (*Obviousness* does not require “bodily incorporation” rather whether “a skilled artisan would have been motivated to combine the teachings of the prior art references to achieve the claimed invention”). A POSA would see the benefits of labeled and selectable positions,

with settings including sending all currents to either plurality of LEDs or currents to both as customers may have a preference for certain discrete settings. Ex.1002¶¶255-256, 261; Ex.1028¶38; Ex.1029-34:13-37:23. A POSA could provide this with the dial of Jeswani allowing for additional convenience of pre-set temperatures rather than requiring a user to gradually adjust until they were satisfied. Ex.1028¶38.

VI. MAY IN VIEW OF JESWANI RENDERS OBVIOUS CLAIMS 1-14 AND 16-20

A. A POSA Would Combine May and Jeswani to Render Obvious Claim Elements 1[e], 10[d], and 18[g]

1. A POSA Would be Motivated to Combine May and Jeswani

Patent Owner contends that elements 1[e], 10[d], and 18[g] are not obvious because a POSA would not have been motivated to combine May with Jeswani. Patent Owner alleges that incorporating Jeswani's physical switches would change the "principle of operation" of May's system. POR-48–51. However, the proposed combination does not replace May's network control with Jeswani's switches. Rather, it supplements May's with an additional input mechanism. Ex.1002¶¶273–276; Ex.1028¶¶42-45.

Patent Owner does not dispute that (a) May does not discourage or teach away from using physical switches; (b) the prior art teaches benefits of combining physical and network controls; and (c) motivation to combine is not cabined by the specific goals of May.

Patent Owner alleges that May's disclosure of network-based control teaches away from manual controls. On the contrary, May itself describes networking manually-operated light switches into its system. Ex.1008-¶0215.

Patent Owner also ignores **that Jeswani itself discloses that its fixture may also include the ability to be both remotely and manually controlled.** Ex.1007-14:32–59. Jeswani teaches a POSA that in-fixture switches and remote control are complementary, not exclusive. Ex.1002¶275; Ex.1028¶45.

Teaching away requires that the prior art criticize, discredit, or otherwise discourage the claimed combination. *In re Mouttet*, 686 F.3d 1322, 1334 (Fed. Cir. 2012). The motivation to combine does not require that the proposed modification be the best option or the optimal design, only “suitable.” *PAR Pharm.*, 773 F.3d at 1197–98. That better alternatives may exist in the prior art does not mean that “an inferior combination is inapt for obviousness purposes.” *Bayer*, 874 F.3d at 1327.

Patent Owner's reliance on *In re Ratti*, 270 F.2d 810 (CCPA 1959), is misplaced. *Ratti* applies where a proposed modification would fundamentally alter the way the base reference operates, not where a modification merely adds a supplemental feature. Adding Jeswani's switches does not change May's operation but merely adds another control mechanism. Indeed, Dr. Katona designed lighting fixtures with both sensor-based and manual controls. Ex.1029-37:14-39:3.

Patent Owner's objections do not establish teaching away. Patent Owner argues that adding local controls would increase manufacturing costs and affect aesthetics (Ex.2018-¶131), but these are ordinary design tradeoffs that a POSA would weigh.

Patent Owner further argues that it is impractical to access local switches on ceiling-mounted fixtures (POR-49), but this argument ignores that many lighting installations are positioned in accessible positions and that switches can be set during installation or during a network failure and indeed, Jeswani itself is a ceiling-mounted light which combines both network and manual controls. Ex.1002¶¶273–276; Ex.1028¶47.

2. A POSA Could Combine the Switch of Jeswani with a Reasonable Expectation of Success

Patent Owner challenges the feasibility of combining the switches of Jeswani into the control system of May. As the Federal Circuit has held, interchangeability is not required; rather only whether the teachings of the secondary reference could be used with the primary reference. See, e.g., *Allied Erecting v. Genesis Attachments*, 825 F.3d at 1381 (citing cases).

A switch assembly such as from Jeswani could send control signals to the control module, which would control CCT and brightness based upon the settings. Petition-68; Ex.1002¶276; Ex.1028¶¶45-46. May already discloses wall-mounted switches and similarly a switch could be placed on on the lamp body.

B. The Combination of Jeswani and May Renders Obvious Claims 1[c]-1[g], 10[d]-10[g], and 18[f]-18[i].

For these limitations, Patent Owner appears to reiterate its argument that it would be unfeasible to combine Jeswani with May, which is rebutted above. As described above, the combination of May and Jeswani does not require complete physical incorporation of Jeswani's switch into May, only that a POSA be capable/motivated to incorporate a manual switch such as that of Jeswani into May. See, e.g., *Allied Erecting v. Genesis Attachments*, 825 F.3d at 1381 (citing cases). Such controls could easily control the control module of May, like May's disclosed wall switch. Petition-68; Ex.1002¶¶273–276; Ex.1028¶¶42-46.

Patent Owner also alleges that the combination of May and Jeswani does not teach elements 1[c]-1[g], 10[c]-10[g], and 18[f]-18[i] because May's driver sub-circuits independently provide current to respective LED emitter strings, and therefore one current output is never coupled to two pluralities of LEDs. POR-52–57; Ex.2018-¶¶135–142. However, the Petition identifies the control module as a whole as the driver circuit.

May's control module 1132 receives power delivered via a network cable and distributes that power to the LED emitter strings through driver sub-circuits. Ex.1008-¶0222. As Dr. Katona admits, the control module itself includes dedicated driver sub-circuits that independently control the magnitude of DC current provided to each string of emitters based on control instructions. Ex.1008-¶0231; Ex.1029-

68:7-22. The control module constitutes the “driver circuit” recited in claim 1[d] and can output a “plurality of currents” through its sub-circuits. Ex.1002¶¶268-270; Ex.1028¶¶48-50.

The claims do not require that a single wire output current to both pluralities of LEDs (Ex.1028¶51) only that the driver circuit be “configured to output a plurality of currents” (element 1[d]) and that a switch cause “the one of the plurality of currents to couple to the first plurality of LEDs, the second plurality of LEDs, or both” (element 1[g]).

In the combination, Jeswani’s CCT switch 15b provides an input to May’s control module specifying the desired color temperature and brightness. Ex.1002¶¶273–276. May discloses that the control module can allocate current to the first string only (producing 4500K), the second string only (producing 6500K), or both strings (producing a CCT between 4500K and 6500K). Ex.1008-¶0231. The CCT switch of Jeswani would cause the control module to allocate current accordingly—to one plurality, the other, or both. Ex.1002¶¶279–280.

Patent Owner’s assertion that May’s and Jeswani’s driver configurations are “incompatible” (POR-55; Ex.2018-¶139) is incorrect. The Petition adds Jeswani’s switches as an input to May’s existing control module in the same manner as for wall based switches in May. Petition-66–69; Ex.1002¶¶273–276. Adding Jeswani’s switches provides an additional source of instructions; it does not require modifying

the internal sub-circuit architecture of May's control module. Ex.1002¶¶279–280. Ex.1028¶¶42-46.

1. The Additional Subject Matter of Claim Limitations 18[l] and 18[w] is Rendered Obvious

The additional subject matter of 18[l] and 18[w] (half the current going to each plurality of LEDs) is rendered obvious by May and Jeswani. Petition-89-90, Ex.1002¶¶339-340. May discloses providing current through its sub-circuits, with the relative proportion of overall current dependent on the desired color temperature. Ex.1002¶339. May discloses varying over the full range of currents from all to one or all to the other and would necessarily split the current in half while varying in that range. *Id.*

C. The Combination of May and Jeswani Renders Obvious Fixtures Varying by a Scale Factor as Recited in Claims 1[h], 10[i] and 18[m]

Patent Owner argues that May does not teach connecting fixtures of different lengths. POR-57–58. Patent Owner does not dispute that May discloses lamps in standardized nominal lengths of 2, 3, 4, 6, and 8 feet and that May discloses connecting multiple lamps in series. Ex.1008-Claim 40; Ex.1008¶¶0113,0190–0191, 204, 205; Pet. at 70–71.

May's lamps are designed to replace existing linear light fixtures and particularly arranging multiple lamps in series to cover a desired area. Ex.1008-¶¶0190–0191, 0193. A POSA would understand that rooms and corridors do not

come in dimensions that are even multiples of a single lamp length and thus necessitate using lamps of different size. Ex.1002¶¶289–290. Ex.1028¶¶58-60. A ten-foot corridor could be covered by a six-foot lamp and a four-foot lamp, or by a combination of other available lengths. Ex.1002¶290; Ex.1028¶¶58-60.

Because the functionality of connecting multiple lamps is taught in May and utilizes conventional technology, a POSA could apply it to lamps of different lengths with a reasonable expectation of success. Ex.1002¶¶284–286.

Patent Owner argues that Petitioner has not shown color temperature matching would be a motivation or concern. POR-7. But, May’s lamps of different lengths use the same emitter board configuration with the same first and second strings of LED emitters with the same color temperature ranges (Ex.1008-¶0231) and would include the same LEDs. Ex.1028¶55.

D. The Current Relationship of Claim Element 10[m] and 20 is Rendered Obvious by May in view of Jeswani

Patent Owner repeats its arguments for element 10[m] with respect to May and Jeswani and for the same reason these arguments fail as set forth for Edwards and Sadwick. *See Section IV.F, supra*. As set forth therein, a POSA would understand that the number of LEDs in each fixture of May would similarly scale with the length of the fixture and that a longer fixture contains proportionally more LEDs. Ex.1002¶327.

As described in the Petition, by Dr. Eden and in Section IV.F, *supra*, a POSA would be motivated to modify a longer fixture of May as having multiple strings arranged serially but connected in parallel and that for such a fixture, the current for each LED fixture would be proportional to the number of LEDs, and accordingly the second current (sent to the LEDs of the second, larger fixture) would be greater than the current sent to the LEDs of the first fixture by the scale factor. Ex.1002¶¶319-327. As set forth in Section IV.F, Exs. 1010, 1012, and 1020 show that a POSA would be motivated to make this modification to May when making larger fixtures. *Koninklijke*, 948 F.3d at 1333; *Yeda*, 906 F.3d at 1040-1041; *Ariosa Diagnostics*, 805 F.3d at 1364-1366.

VII. MAY IN VIEW OF JESWANI AND SADWICK RENDERS OBVIOUS CLAIM 15

Claim 15 recites the use of a “current regulator.” Patent Owner repeats its previously stated arguments for claim 15. For the same reasons set forth in Section IV.G, a POSA would be motivated to combine May, Jeswani and Sadwick to improve the functionality of the claimed combination. A POSA would understand that Sadwick includes a current regulator and be motivated to include it with the combination of May and Jeswani. Ex.1002¶348.

VIII. CONCLUSION

For the reasons above, Petitioner respectfully requests that the Board find claims 1-20 of the '302 Patent unpatentable.

Dated: July 13, 2026

Respectfully submitted,

/s/ David C Radulescu

David C. Radulescu, Lead Counsel
Reg. No. 36,250

EXHIBIT LIST

Exhibit No.	Description
EX1001	U.S. Patent No. 11,751,302
EX1002	Declaration of J. Gary Eden
EX1003	Curriculum Vitae of J. Gary Eden
EX1004	U.S. Patent No. 11,751,302 File History
EX1005	U.S. Patent No. 9,995,440B2 (“Edwards”)
EX1006	U.S. Patent Appln. 2019/0320515A1 (“Sadwick”)
EX1007	U.S. Patent No. 10,683,969B2 (“Jeswani”)
EX1008	U.S. Patent Appln. 2019/0041009A1 (“May”)
EX1009	Montes de Oca, Samantha, “CCT: Understanding the Basics”, Superbrightleds.com, dated Mar. 2, 2016, available at https://www.superbrightleds.com/blog/what-is-cct-understanding-the-basics.html
EX1010	U.S. Patent Publication 2017/0314743 to Del Castillo (“Del Castillo”)
EX1011	U.S. Patent Publication No. 2004/0062041 to Cross (“Cross”)
EX1012	U.S. Patent No. 9,345,112B2 (“112 Patent”)
EX1013	U.S. Patent No. 9,964,289B2 (“Pearson”)
EX1014	U.S. Patent No. 8,764,220B2 (“Chan”)
EX1015	Kay, Gregory, “Tunable white light and its benefits become more accessible”, Architectural Products, dated June 28, 2023, available at https://www.arch-products.com/architectural-lighting/article/55092734/tunable-white-light-and-its-benefits-for-commercial-offices-become-more-accessible .
EX1016	U.S. Patent No. 7,014,336B1 (“Ducharme”)
EX1017	U.S. Patent No. 8,207,821B2 (“Roberge”)
EX1018	“The Light Emitting Diode”, Electronics Tutorials, available at https://www.electronics-tutorials.ws/diode/diode_8.html
EX1019	“Tunable White technology At a Glance”, Tridonic, dated Mar. 2019
EX1020	ENERGY STAR® Program Requirements Product Specification for Decorative Light Strings Eligibility Criteria Version 1.5 downloaded from https://www.energystar.gov/sites/default/files/specs//private/spec_v1.5_draft.pdf

Exhibit No.	Description
EX1021	<i>“Decorative Light Strings Specification Version 1.5”</i> , Energy Star, available at https://www.energystar.gov/products/spec/decorative_light_strings_specification_version_1_5_pd .
EX1022	<i>AGS Lighting Management LLC v. Jesco Lighting Group, LLC</i> , 1:25-cv-00141-MN, Dkt. 16-1 (D.Del. April 17, 2025), Email correspondence, dated March, 7, 2024.
EX1023	<i>AGS Lighting Management LLC v. Jesco Lighting Group, LLC</i> , 1:25-cv-00141-MN, Motion hearing held July 24, 2025.
EX1024	<i>AGS Lighting Management LLC v. Jesco Lighting Group, LLC</i> , 1:25-cv-00141-MN, Dkt. 24 (D.Del. Aug. 25, 2025), Proposed Scheduling Order.
EX1025	<i>AGS Lighting Management LLC v. Jesco Lighting Group, LLC</i> , 1:25-cv-00141-MN, Dkt. 29 (D.Del. Sept. 17, 2025), Scheduling Order.
EX1026	Docket Navigator, Judge Maryellen Noreika Motion Success Report
EX1027	<i>AGS Lighting Management LLC v. Jesco Lighting Group, LLC</i> , 1:25-cv-00141-MN, Notice of Sotera Stipulation, dated November 3, 2025 (“ <i>Sotera</i> ”).
EX1028	Reply Declaration of J. Gary Eden
EX1029	Excerpts from the Deposition Transcript of Dr. Thomas Katona, taken on July 2, 2026.
EX1030	<i>Vaxcel International Co., Ltd., v. Heathco LLC</i> , C.A. No. 20-224-VAC, Dkt. 230-8, Expert Report of Thomas M. Katona, Ph.D. Concerning Invalidity of U.S. Patent Nos. 10,136,503; 9,326,362; 10,154,564; and 10,667,367, dated June 28, 2022.
EX1031	TPS61042 Constant Current LED Driver

CERTIFICATE OF COMPLIANCE

Pursuant to 37 C.F.R. § 42.24(d), I hereby certify that this Reply complies with the type-volume limitation of 37 C.F.R. § 42.24(c). The word count application of the word processing program used to prepare this Reply indicates that the Reply contains 5574 words, excluding the parts of the brief exempted by 37 C.F.R. § 42.24(a).

Dated: July 13, 2026

/s/ David C. Radulescu
David C. Radulescu, Lead Counsel
Reg. No. 36,250

CERTIFICATE OF SERVICE

The undersigned certifies that on July 13, 2026 the foregoing was served on counsel at the following electronic service addresses:

Bradley S. Bowling (Reg. # 52,641)
Lisa Thomas (Reg. # 60,913)
CADWELL CLONTS REEDER & THOMAS LLP
5373 W. Alabama St., Suite 457
Houston, TX 77056
Tel: (713) 360-1560
Fax: (940) 233-8587
bbowling@ccrtlaw.com
lthomas@ccrtlaw.com

Jim Thomas (Reg. # 71,611)
FLETCHER YODER
11450 Compaq Center W Dr #300
Houston, TX 77070
Tel: (281) 970-4545
Fax: (281) 970-4503

thomas@fyiplaw.com

/s/ David C. Radulescu
David C. Radulescu, Lead Counsel
Reg. No. 36,250