

Filed on behalf of: Signify Holdings B.V.

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

LUMINEX INTERNATIONAL COMPANY LTD.,
Petitioner,
v.
SIGNIFY HOLDINGS B.V.,
Patent Owner.

Case IPR2024-00101
U.S. Patent No. 10,299,336

PATENT OWNER RESPONSE



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<i>DePuy Spine, Inc. v. Medtronic Sofamor Danek, Inc.</i> , 567 F.3d 1314 (Fed. Cir. 2009)	51, 55
<i>Graham v. John Deere Co.</i> , 383 U.S. 1, 35-36 (1966)	9
<i>Hybritech Inc. v. Monoclonal Antibodies, Inc.</i> , 802 F.2d 1367 (Fed. Cir. 1986)	11
<i>In re Fine</i> , 837 F.2d 1071 (Fed. Cir. 1988)	56, 59, 61
<i>In re Robertson</i> , 169 F.3d 743 (Fed. Cir. 1999)	43
<i>Regents of Univ. of Cal. v. Broad Inst., Inc.</i> , 903 F.3d 1286 (Fed. Cir. 2018)	56
<i>Samsung Elecs. Co., Ltd. v. Imperium (IP) Holdings</i> , IPR2015-01233, Paper 14 (PTAB Dec. 1, 2015)	71
<i>Streck, Inc. v. Research & Diagnostic Sys., Inc.</i> , 665 F.3d 1269 (Fed. Cir. 2012)	10

Statutes

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PATENT OWNER'S EXHIBIT LIST

Exhibit No.	Description
2001	Menard's Third-Party Complaint (10/27/2022)
2002	Luminex's Answer to the Third-Party Complaint and Crossclaim (2/27/2023)
2003	Signify's Complaint for Patent Infringement (8/12/2022)
2004	Proof of Service for Signify's Complaint
2005	Order Granting Motion to Transfer (12/9/2022)
2006	Signify's Infringement Contentions (8/31/2022)
2007	Luminex's Opposition to Motion to Transfer (5/15/2023)
2008	Order on Motion to Sever (8/31/2023)
2009	District Court Scheduling Order (10/2/2023)
2010	Black's Law Dictionary
2011	Joint Invalidity Contentions (Appendix F) (11/22/2023)
2012	U.S. District Court Caseload Statistics
2013	Amended Luminex's Answer to the Third-Party Complaint and Crossclaim (11/16/2023)
2014	Canarm's Answer and Affirmative Defenses to the Third-Party Complaint (1/25/2024)
2015	Signify's letter to Menard (2/8/2021)
2016	Luminex's letter to Signify (3/15/2021)
2017	Luminex's letter to Signify (4/26/2021)
2018	Menard's letter to Signify (2/24/2021)
2019	Luminex's letter to Signify (4/18/2024)

Exhibit No.	Description
2020	Luminex's letter to Signify (5/10/2024)
2021	Luminex's email to Signify (10/29/2024)
2022	R Mark Halligan's (Luminex counsel) email to Signify (4/1/2021)
2023	Menard's email to Signify (11/8/2024)
2024	Opening expert report of Dr. J. Gary Eden
2025	Rebuttal expert report of Dr. J. Gary Eden
2026	Protective Order in parallel district court litigation
2027	Menard's Amended Answer to Signify's Complaint (10/19/2023)
2028	Yoshi Ohno, Calculation of CCT and Duv and Practical Conversion Formulae, CORM 2011 Conference, Gaithersburg, MD (May 3-5, 2011) (Eden Deposition Ex.2028)
2029	Tyco Electronics, Switches Core Program (March 2008) (Eden Deposition Ex.2029)
2030	Transcript of the Deposition of Dr. J. Gary Eden, taken on December 5, 2024
2031	Declaration of Dr. Michael Krames
2032	Website Printout of TE Connectivity ALCOSWITCH Switches 1571999-1, https://www.digikey.com/en/products/detail/te-connectivity-alcoswitch-switches/1571999-1/969165
2033	DIP Switch ADE, ADF & ADP Series Datasheet
2034	Excerpt from McGraw-Hill Dictionary of Electronics and Computer Technology (3d Ed. 1984)
2035	Taru Oksala, "Why the Same Color Temperatures Look Different?" (Apr. 13, 2016), https://light.fi/why-same-color-temperatures-look-different/

Exhibit No.	Description
2036	PR8 HALO Commercial Brochure, Eaton (2017)
2037	HALO Canless Recessed Lighting, Cooper
2038	Signify Press Release (2020)
2039	HALO Spec Sheet (2018)
2040	“Home Depot Announces 2018 Innovation Award Winners,” Builder Magazine (2018)
2041	ADEX Award (2019)
2042	HALO Commercial Spec Sheet (2017)
2043	“Please Explain the Term ‘Black Body Curve,’” X-Rite (2024)
2044	Light-Emitting Diodes, 2 nd Ed., Schubert, Cambridge University Press (2006)
2045	Excerpt from McGraw-Hill Dictionary of Scientific and Technical Terms (5th Ed. 1994)
2046	Emails Between Menard and Luminex (August 17, 2021)
2047	Menard Letter (September 12, 2022)
2048	Proposed Stipulate Protective Order
2049	Website Printout for “Patriot Lighting® 5070 Lumen 47-3/4” LED Back-Lit Flat Panel Light”
2050	CIE Technical Note 013:2022 (2022)
2051	U.S. Dep’t of Energy, Solid State Lighting Technology Fact Sheet (April 2016)

I. Introduction

Luminex's Petition ignores key differences between the two independent claims of the '336 Patent—thus misjudging the priority date to which certain claims are entitled—and mischaracterizes the teachings of the applied references.

The '336 Patent describes improved lighting devices that have a switch that allows a user/installer to select between different CCT outputs of the emitted light. Ex.1001, 1:50-2:4. This results in a configurable lighting device that avoids having to stock and otherwise maintain “a relatively large or cumbersome inventory” of multiple single-CCT options for users Ex.1001, 1:45-49; Ex.2031, ¶¶43-51.

As detailed below, the '336 Patent issued from a continuation-in-part application that further added novel designs allowing access to the CCT selection switch separate from the luminaire housing. Ex.1001, 14:31-45. That design is claimed in independent claim 1, which requires a switch “disposed remotely from” the housing.

However, independent claim 13 is not so limited, and is fully supported by the '336 Patent's earliest provisional application describing a switch mounted on or in the housing. On cross, Luminex's expert confirmed that the provisional demonstrates possession and enablement of claim 13's invention. That priority date dispatches the primary references in Grounds 1a/1b and 2 (Chaimberg and Halliwell) as to independent claim 13 (and certain dependents).

Remaining Ground 3 (challenging only claims 13 and 15) is based on a reference (Reiff) that does not describe correlated color temperature (“CCT”) at all, and confuses “color” with “correlated color temperature.” Separately, Luminex’s expert conceded that his identification of a purported switch “body” in Reiff was incorrect. Ex.2030, 139:21-141:23 (“an oversight”). For these and other reasons, Ground 3 fails.

Regarding claim 1 and its dependent claims, Luminex’s mischaracterizations of the prior art continue. For example, in Grounds 1a/b, Luminex’s primary reference (Chaimberg) is directed at ensuring its switch is remote from the ceiling-mounted **junction box** (“not recommended for safety reasons”).¹ Ex.1003, 1:50-67. Accordingly, Chaimberg fails to describe a switch remotely located from the **housing** (as required by claim 1), and certainly does not disclose a switch located on or within the junction box (claims 7-8).

Regarding Halliwell (Ground 2), the Petition relies on a modification that cross-examination confirmed would simply not function without a device-located switch (i.e., one that is **not** “disposed remotely from” that housing). Ex.2030, 182:20-184:7 (“it won’t switch otherwise”).

For these and other reasons addressed below, Luminex’s Petition fails.

¹ Emphasis and annotation added throughout.

II. **Background**

At the time of the invention, existing incandescent and fluorescent lighting devices provided some flexibility with respect to customizing color temperature through, e.g., fluorescent tubes having different associated CCTs, such that a different tube could be swapped to generate a different effect. Ex.1001, 1:31-62. However, conventional LED luminaires did not have such customizability, as the LEDs were often permanently attached and emitted a specific CCT. *Id.* This required retailers to stock multiple otherwise identical lighting devices, each having different CCT outputs. *Id.*; Ex.2031, ¶¶43-45.

The '336 Patent addressed the need for a single LED lighting device adaptable for multiple applications/customers by, e.g., delivering multiple, configurable CCT options. Ex.1001, 1:50-2:57, 3:47-4:10. This was achieved by enabling a switch to control the CCT of light emitted by a luminaire (e.g., claim 13), as disclosed via example switch 131 (a known DIP switch with switches 210), shown in Figures 1E, 1I, 2 and 4:

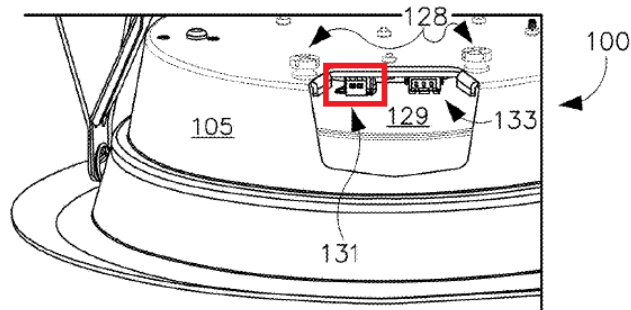
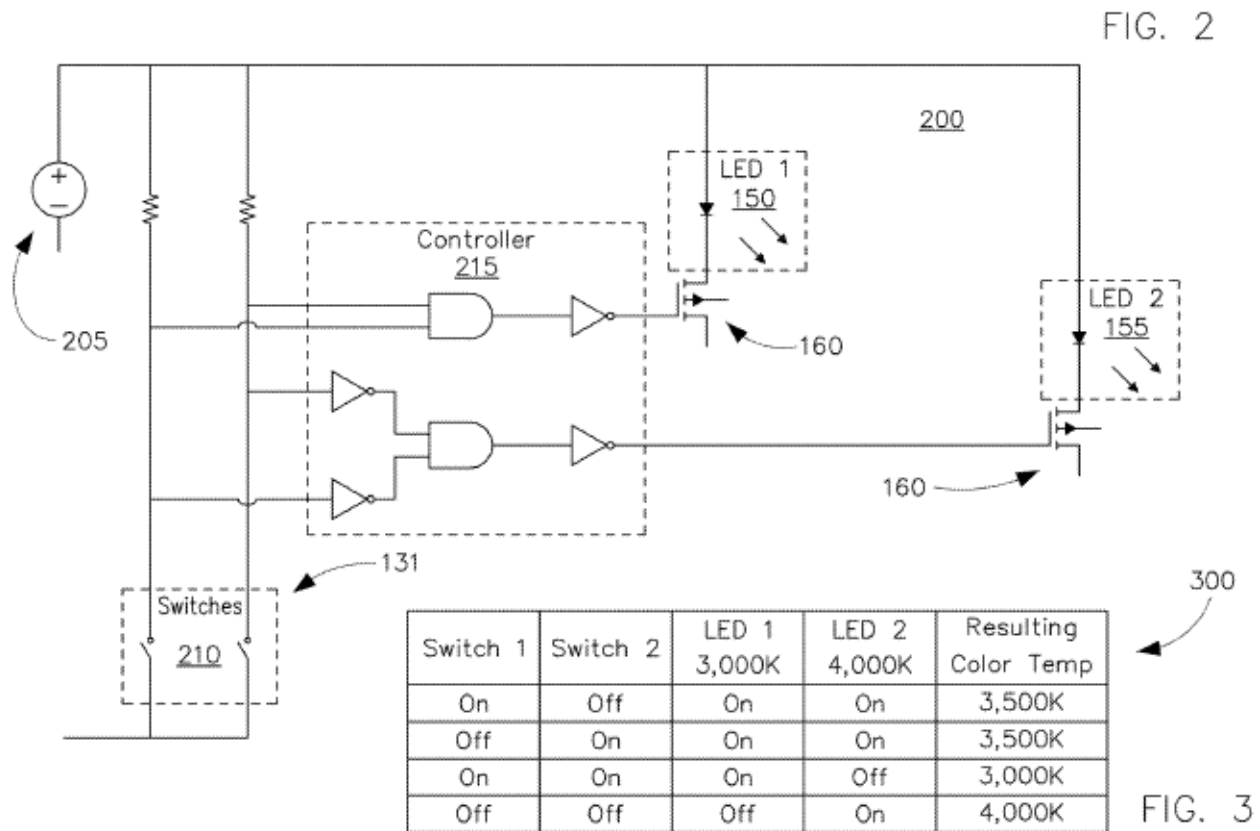


FIG. 1I



Ex.2031, ¶¶46, 77.

As Luminex's expert confirmed, DIP switches of the type described were known examples in the art of switches having a body, coupling features, and an actuator. Ex.2030, 59:22-60:7, 223:24-224:5; Ex.2031, ¶¶75-99. The disclosed design provided a simple way to adjust color temperature, thus reducing stock and

keeping costs down while maintaining the appearance of a traditional “can” light when installed.

The '336 Patent also claims (e.g., claim 1) a luminaire in which the switch is disposed remotely from the housing, illustrated through, e.g., switch 1031 positioned relative to the luminaire's junction box 1090 (below).

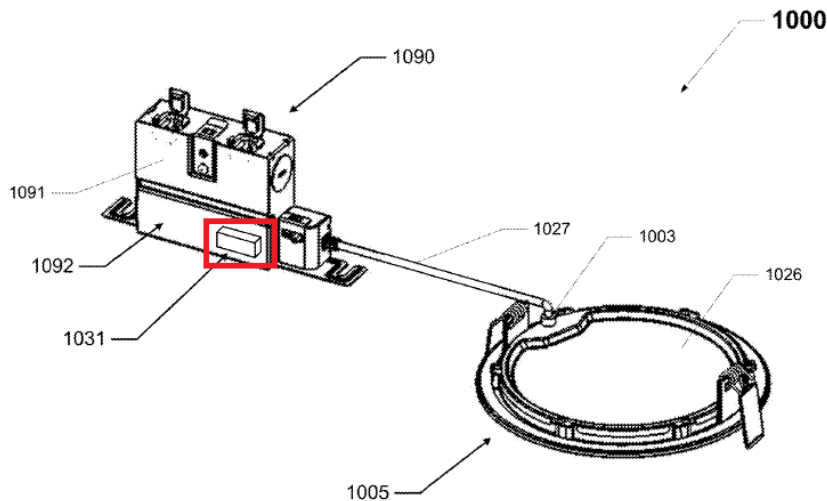


FIG. 10

Id., Figure 10, 12:40-13:19; 14:31-45. Thus, the claimed CCT-selectable switch addressed specific drawbacks in the field in a simple and elegant manner, solving a real-world problem.

The Petition argues that the invention shown in, e.g., Figure 9 of the '336 Patent is, aside from the location of CCT-selectable switch, “otherwise indistinguishable” from the depicted prior art design in Figure 8. Petition, 11-12. That argument misses the point—the prior art in Figure 8 did not have a CCT-selectable switch ***at all***, and the applicants added Figure 8 ***after*** disclosing the

invention in claim 13 in a provisional years before. Indeed, Figure 8 is provided to highlight the advantage of **adding** CCT-selectable switches to otherwise unmodified, conventional designs. Ex.1001, 12:40-55, 10:66-11:41; Ex.2031, ¶52.²

The '336 Patent's novel device-based CCT switch was introduced in the Halo Commercial PR8 family of products with SelecCCTable™ technology initially offered by Eaton (the original assignee of the '336 Patent). See Ex.1001, Ex.2036, Ex. 2042; Ex.2031, ¶59. The PR8 implemented a DIP switch for CCT selection, as disclosed in the '336 Patent:



² The Petition also cites a Luminex patent application to allege that Luminex previously achieved the invention. Petition, 7-8. Tellingly, however, the discussion lacks any articulation of the switch design claimed. More tellingly, the cited document appears nowhere in the grounds.

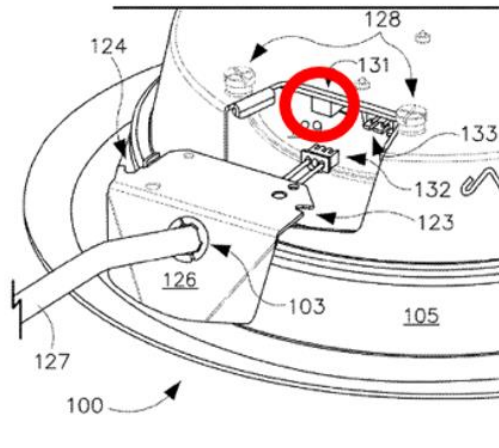


FIG. 1J

Ex.2036, 2; Ex.1001, Figure 1J; Ex.2031, ¶¶60-65.

Later products introduced a CCT switch located in the luminaire's junction box disposed remotely from the actual luminaire, consistent with the design recited in claim 1, as shown below.



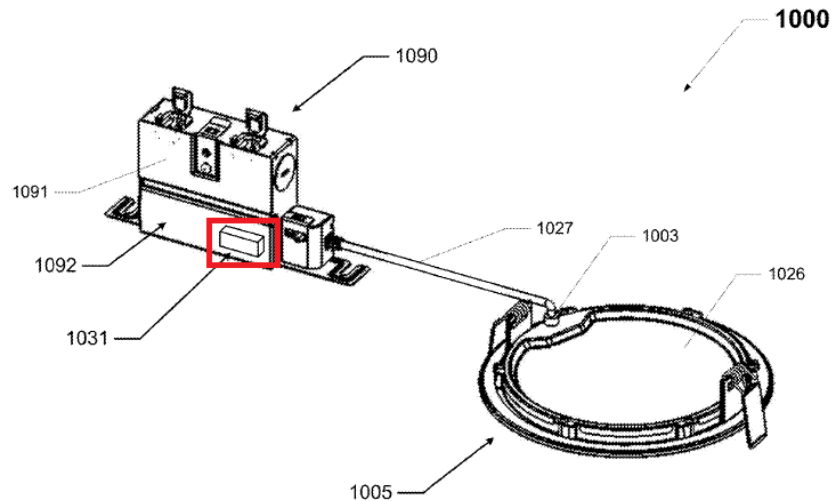


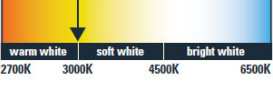
FIG. 10

Ex.2037, 3; Ex.1001, Figure 10; see Ex.2038.

These lighting products included a housing, an electrical component disposed in the housing (LEDs), an electrical cable where the first end is coupled to the electrical component (the cable between the junction box and the housing above), and a switch coupled to the cable and disposed remotely from the housing (which switch had positions corresponding to CCT outputs, circled in the image above (“5 selectable colors”)). Ex.2031, ¶¶67-70.

The lights allowed “Field Selectable CCT,” with color temperatures 2700K, 3000K, 3500K, 4000K and 5000K.

	CCT	Lumens	Power (W)	LPW
6in HLB	2700K	1037.3	16	64.8
	3000K	1061	16	66.3
	3500K	1078.9	16	67.4
	4000K	1094.9	16	68.4
	5000K	1103.4	16	69

PRODUCT SPECIFICATIONS	
Lumens	1061
Watts	16
Lumens Per Watt (Efficacy)	66.3
Color Accuracy (CRI)	92
Light Color (CCT)	3000K
Correlated Color Temperature (CCT)	
	
2700K	3000K
4500K	6500K

Id.; Ex.2039, 2.

These products received industry awards and praise from market leaders, including Home Depot. Ex.2040, 2 (“Eaton’s Halo Color Selectable LED Downlights allow users to change the light’s color temperature with a flick of a switch, bypassing the need for professionals to carry different lighting products for different color temperatures.”); Ex.2041; *see* Ex.2037; Ex.2031, ¶66. Home Depot called the design “a **great, huge, awesome innovation, and a great value for our customers.**” Ex.2040, 2 “The commercial response to an invention is significant to determinations of obviousness, and is entitled to fair weight.” *Demaco Corp. v. F. Von Langsdorff Licensing Ltd.*, 851 F.2d 1387, 1391 (Fed. Cir. 1988) (citing *Graham v. John Deere Co.*, 383 U.S. 1, 35-36 (1966)).

This understanding of the advancement in the field provided by the ’336 Patent informs the arguments below and the deficiencies of the applied references.

III. POSITA

The Petition sets for a POSITA standard that Signify adopts for purposes of this proceeding only. Petition, 14.

IV. Claim Construction

Signify does not believe any specific constructions are necessary to render a decision. However, where needed, Signify identifies Luminex's misunderstanding of the plain and ordinary meaning of certain terms.

V. Claims 13, 15 and 16 Have a February 19, 2016 Priority Date

The Petition wrongly assumes that all claims in the '336 Patent have the same 2018 priority date. Petition, 18-23. But independent claims 1 and 13 have different scope and different priority dates. Claim 13 does not require a switch "disposed remotely from the housing" and the Petition's efforts to shoehorn that requirement into claim 13 (purportedly breaking priority) fail.

As shown below, claims 13, 15 and 16 are fully supported and enabled by the '424 Provisional (Ex.1008) to which the '336 Patent claims priority—especially considering what was known in the art—and therefore are entitled to a February 19, 2016 priority date. Ex.2031, Section VI. *See Bradford Co. v. Conteyor N. Am.*, 603 F.3d 1262, 1269 (Fed. Cir. 2010); *Streck, Inc. v. Research & Diagnostic Sys., Inc.*, 665 F.3d 1269, 1285 (Fed. Cir. 2012) ("a patentee can rely on information that is 'well-known in the art' to satisfy written description");

Hybritech Inc. v. Monoclonal Antibodies, Inc., 802 F.2d 1367, 1384 (Fed. Cir. 1986) (for a “patent [to] enable[] one skilled in the art to make and use the claimed invention” it “need not teach, and preferably omits, what is well known in the art”). In particular, Luminex’s expert (Dr. Eden) confirmed that a DIP switch “[i]n the configuration shown in the ’336 patent” (and disclosed in the ’424 Provisional) “would have the limitations of claim 13.” Ex.2030, 225:15-226:8. Dr. Eden further testified that the DIP switch’s actuator can be moved to discrete positions to change the CCT setting. *Id.*, 58:12-23, 67:8-68:12, 73:8-16, 80:2-12.

A. Claim 13

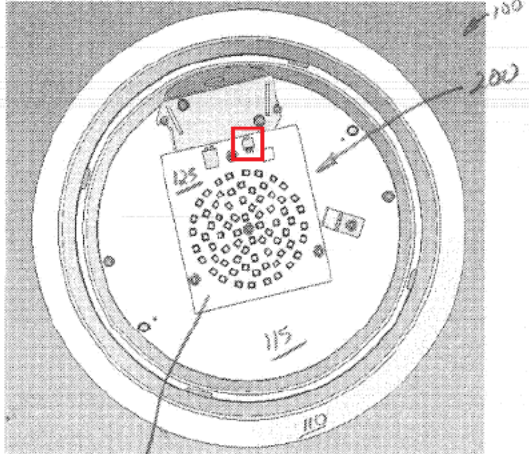
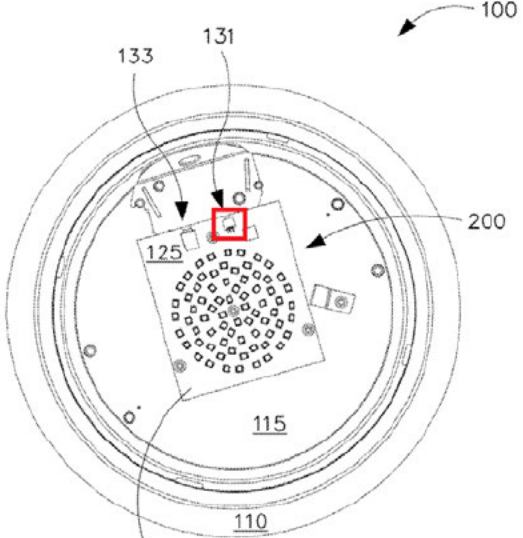
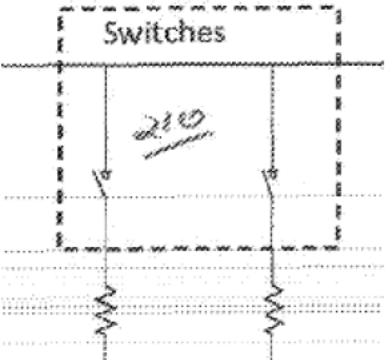
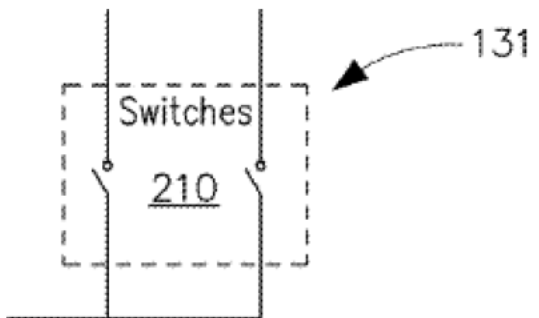
1. Preamble: “A switch for controlling a correlated color temperature (CCT) of light emitted by a luminaire, the switch comprising:”

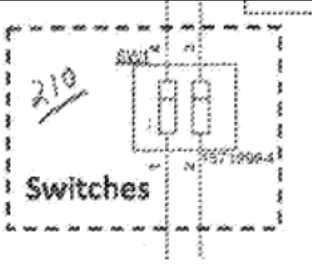
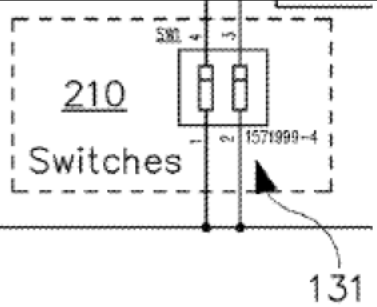
The ’424 Provisional discloses switches 210 of a “dual inline pin” or “DIP” switch located on or within the housing of a luminaire, where the state of switches 210 configure the luminaire to emit certain correlated color temperatures.

Specifically, “[s]witches 210” of a DIP switch “provide an input for configuring the luminaire 100 to operate at a selected correlated color temperature.” Ex.1008, 4:2-25, 5:12-28³; Ex.2031, ¶¶75-81. The DIP switch embodiment is also illustrated in Figures 1E, 2 and 4 of the ’424 Provisional,

³ Citations to pages in Ex.1008 refer to the page number of the application as filed.

which substantially match corresponding figures in the '336 Patent, as illustrated below:

'424 Provisional	'336 Patent
Figure 1E (red annotation identifying DIP switch):  FIG. 1E	Figure 1E (red annotation identifying DIP switch 131):  FIG. 1E
Excerpt of Figure 2: 	Excerpt of Figure 2: 
Excerpt of Figure 4:	Excerpt of Figure 4:

'424 Provisional	'336 Patent
	

Ex.1008, 3:25-4:1, Figs. 1E, 2, 4; Ex.1001, Figs. 1E, 2, 4; Ex.2031, ¶¶77-78. The DIP switch in the '424 Provisional's Figure 4 is labeled with a part number "1571999-4," which corresponds to a DIP switch manufactured by Tyco Electronics that is consistent with the disclosure of the '424 Provisional, illustrated below.



Ex.2032; Ex.2033; Ex.2031, ¶78.

The '424 Provisional details how the DIP switch controls the correlated color temperature of light emitted by a luminaire, including how switches 210 of the DIP switch can be set to achieve CCT outputs of, e.g., 3,000K, 4,000K, or 3,500K. Ex.1008, 2:7-16, 6:4-21; Ex.2031, ¶¶79-80. This operation is also

illustrated in the '424 Provisional's Figure 3, which substantially matches the corresponding figure in the '336 Patent, as demonstrated below:

'424 Provisional				
Figure 3:				
Switch 1	Switch 2	LED 1 3,000 K	LED 2 4,000K	Resulting Color Temp
On	Off	On	On	3,500 K
Off	On	On	On	3,500 K
On	On	On	Off	3,000 K
Off	Off	Off	On	4,000 K

300
↙

FIG. 3

'336 Patent				
Figure 3:				
Switch 1	Switch 2	LED 1 3,000K	LED 2 4,000K	Resulting Color Temp
On	Off	On	On	3,500K
Off	On	On	On	3,500K
On	On	On	Off	3,000K
Off	Off	Off	On	4,000K

300
↙

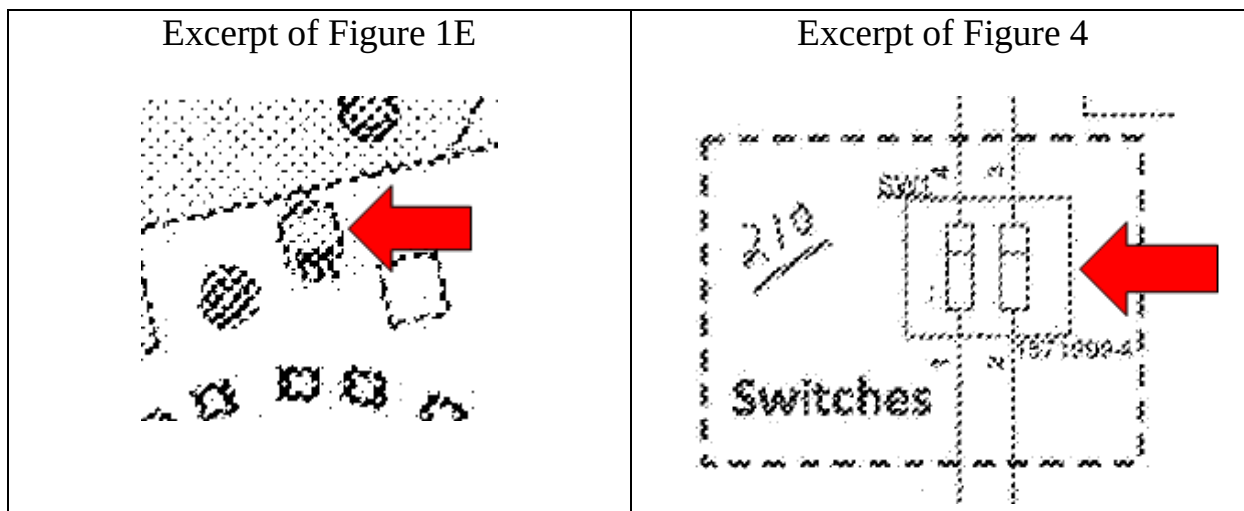
FIG. 3

Ex.1008, Fig. 3; Ex.2031, ¶80.

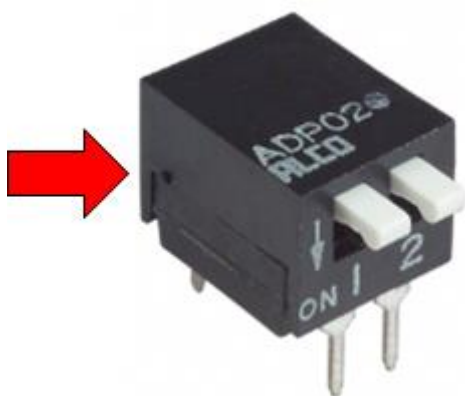
Luminex's expert confirmed that actuating switches 210 of the disclosed DIP switch changes the luminaire's CCT output. Ex.2030, 58:12-23, 62:14-63:8, 67:8-68:12.

2. Element 13(a): "a body"

The '424 Provisional's DIP switch includes a "body." For example, Figures 1E and 4 illustrate the square body of the DIP switch.



Ex.1008, Figs. 1E, 4; Ex.2031, ¶¶82-83. Further, the DIP switch corresponding to part number “1571999-4” in Figure 4 has a square body, consistent with Figures 1E and 4.



Ex.2032, Ex.2033; Ex.2031, ¶82.

Luminex’s expert confirmed that the disclosed DIP switch includes a body.
 Ex.2030, 55:20-56:1(“Q. And that’s the ... square body of the DIP switch we see from a top view in Figure 1E, correct? A. Yes.”), 82:24-83:4, 222:1-12.

3. Element 13(b): “at least one first coupling feature disposed on the body, wherein the at least one first coupling feature is configured to electrically couple to an electrical cable of the luminaire”

The DIP switch in the '424 Provisional includes a first coupling feature disposed on the switch body. A POSITA would have understood that the disclosed DIP switch has a coupling feature (e.g., pins). Ex.2031, ¶¶84-93. Such pins can be seen, e.g., in the DIP switch corresponding to part number “1571999-4” (labeled in Figure 4):



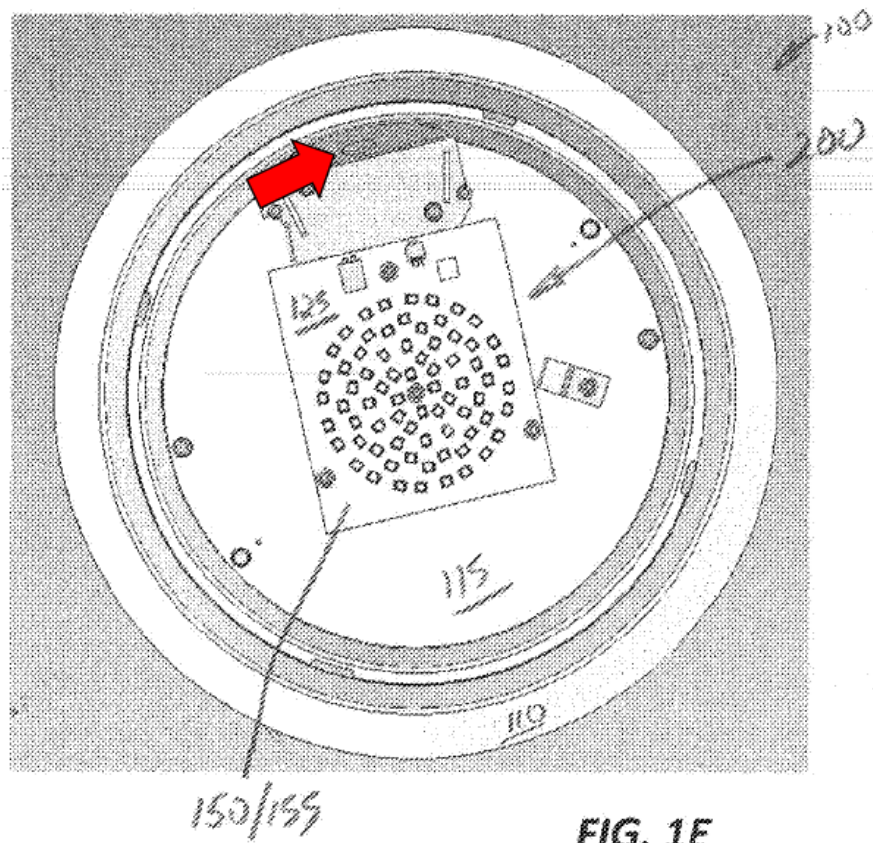
Ex.2032, Ex.2033; Ex.2031, ¶¶85-86. The '424 Provisional describes mounting the disclosed DIP switch on substrate 125 of luminaire 100 (see Figure 1E).

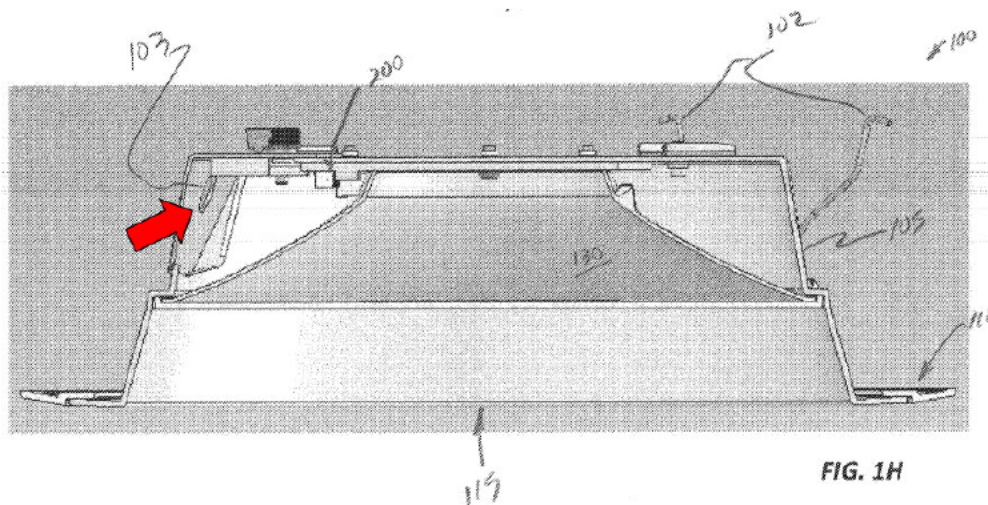
Ex.1008, 5:15-18. Luminex's expert confirmed that inserting the disclosed DIP switch into substrate 125 using “pins on the DIP switch body” is “normally how it's done.” Ex.2030, 59:22-60:7, 117:7-118:1, 109:6-21; Ex.1008, 5:12-18, claim 24, Fig. 1E.

A POSITA would have also understood that the pins of the DIP switch disclosed in the '424 Provisional are configured to electrically couple to an

electrical cable of the luminaire. As described below, the '424 Provisional discloses an electrical cable that connects and provides power to the substrate into which the pins of the disclosed DIP switch are inserted, thereby electrically coupling the pins to the electrical cable. Ex.2031, ¶87.

The electrical cable is described first with respect to aperture 103, which is illustrated in Figures 1E and 1H.

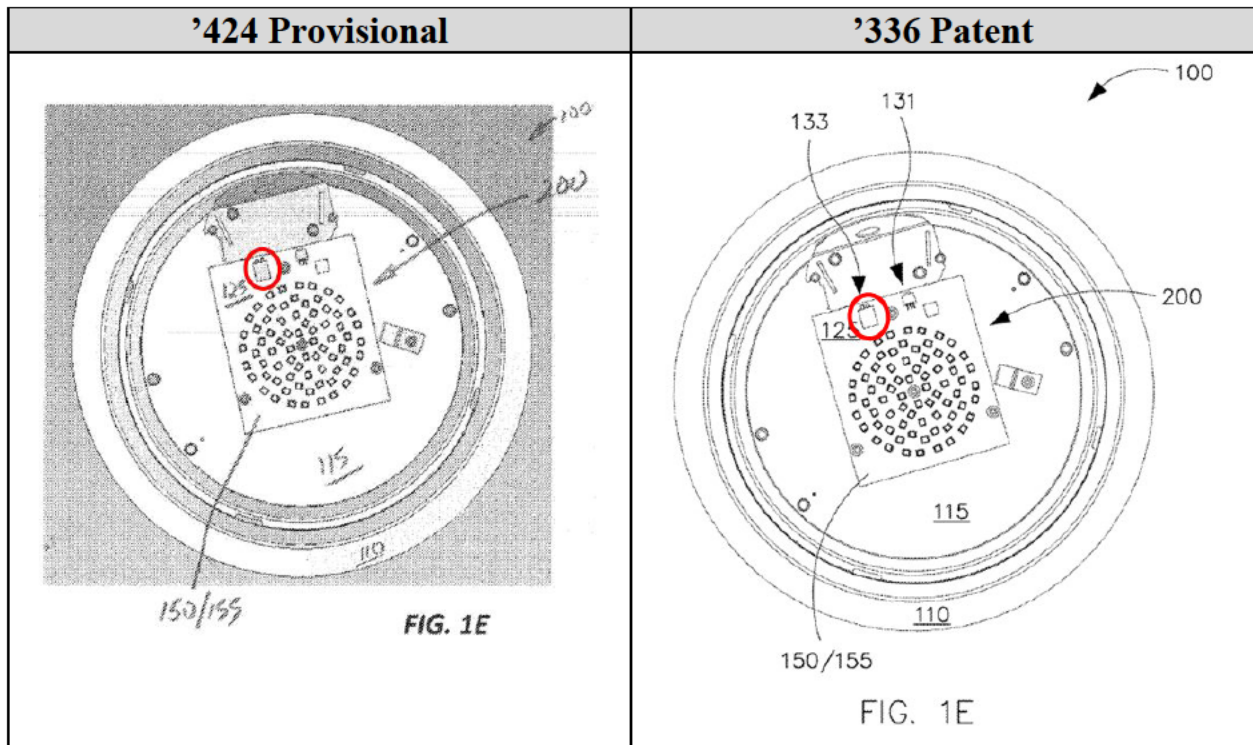




Ex.1008, Figures 1E, 1H; Ex.2031, ¶¶88-89. This aperture allows the electrical cable (or “wiring”)—which is not illustrated—to power the circuit board in the housing and on which LEDs and the DIP switch are mounted. *Id.*; Ex.1008, 2:7-16 (“The power supply can utilize a switching scheme that can turn each group of [LEDs] on and off to change the color temperature of the luminaire.”), 4:24-25 (“Electrical wiring (not illustrated) extends through a wiring aperture 103 in the housing 105.”), 5:1-28, Figs. 1E, 1H, claims 29, 33 (requiring “a wiring port disposed on a side of the housing”); Ex.2030, 107:9-22.

Figure 1E of the ’424 Provisional discloses a receptacle (labeled “133” in the ’336 Patent’s corresponding figure) on substrate 125 near aperture 103 for receiving power from the electrical cable:

'424 Provisional	'336 Patent
Figure 1E (red annotation identifying cable receptacle):	Figure 1E (red annotation identifying cable receptacle):



Ex.1008, Fig. 1E; Ex.1001, Fig 1E, 6:11-16 (“The electrical cable 127 terminates in a plug 132 that mates with a receptacle 133 that is mounted inside the housing 105 adjacent the access aperture 129 for convenient field access.”); Ex.2031, ¶90.

Similarly, Figures 2 and 4 depict a functional block diagram and schematic of a circuit (200) comprising a DC power supply (205) for supplying electrical energy to the LEDs (150/155). Ex.1008, 3:27-4:1. Both figures disclose switches 210 of the DIP switch coupled to power supply 205. *Id.*, 5:7-11, Figs. 2, 4; Ex.2031, ¶91.

A POSITA would have understood from these disclosures that an electrical cable (“wiring”)⁴ passes through aperture 103 and connects to substrate 125 to power the electrical circuit on the substrate, such that the pins disposed on the body of the DIP switch are electrically coupled to the electrical cable via substrate 125 on which the DIP switch is mounted. Ex.2031, ¶¶92-93; Ex.2030, 70:25-72:1. Indeed, the DIP switch would clearly be electrically coupled to the power source of the substrate (here, the disclosed electrical cable) in order to operate as described; as Luminex’s expert testified, “the sole function of switches 210 [of the DIP switch] is to apply power to the controller 215,” which controls the LEDs according to the DIP switch settings. Ex.2030, 68:13-70:5 (“Q. And so to do that, the DIP switch must receive power that is connected to the exemplar luminaire in Figure 1, correct? A. Yes, that’s shown in circuit diagram Figure 4”); see Ex.1001, 9:64-10:16 (“electrically coupled”).

Luminex’s expert also confirmed that the disclosed DIP switch includes the “coupling feature” and associated requirements recited in element 13(b). Ex.2030, 223:24-224:5 (“Every switch that’s ever been devised has what the patent refers to as coupling features. ... And they can all couple to an electrical cable, every one of them.”); 125:8-18; 226:3-8 (“Q. In that scenario, a DIP switch, in your opinion,

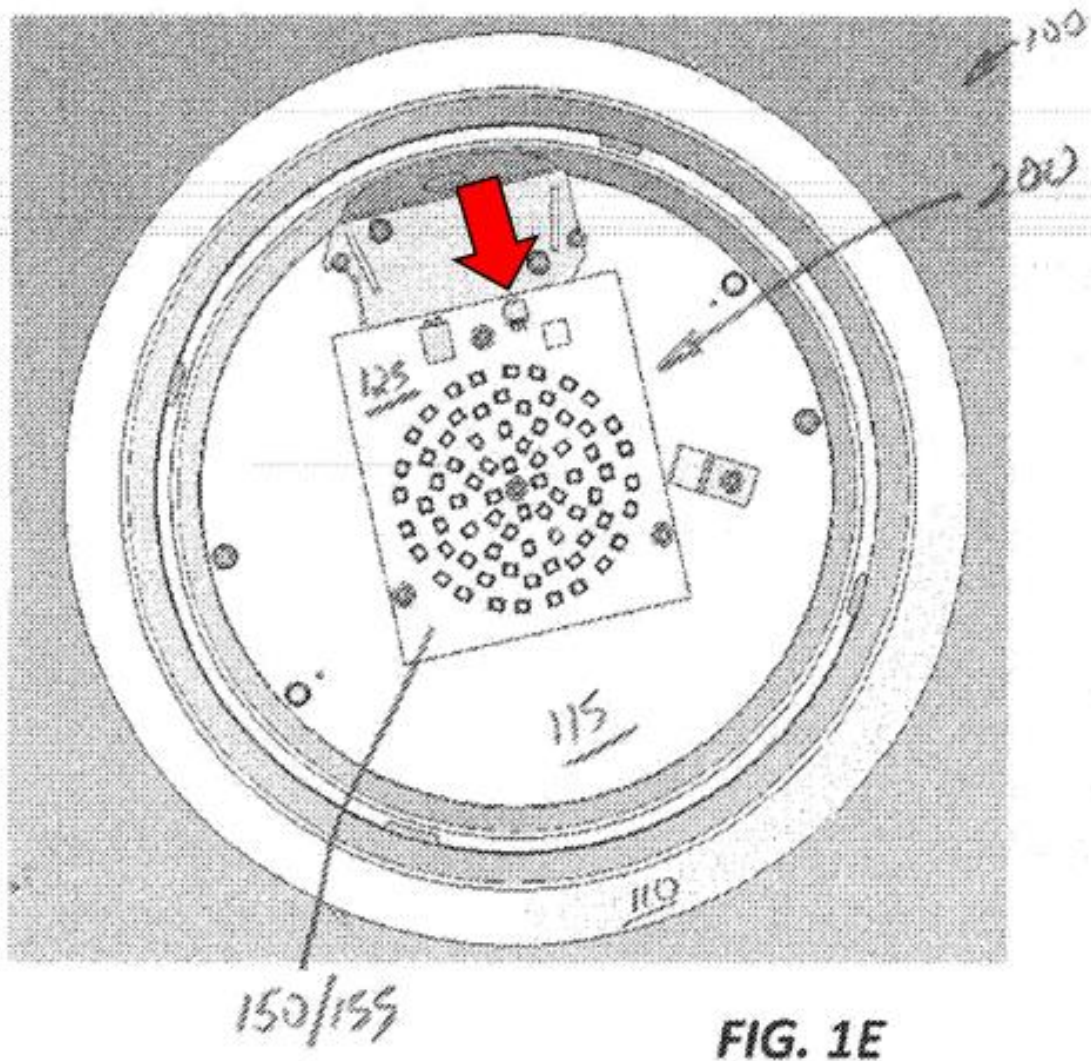
⁴ Luminex’s expert testified that he was not aware of any “structural requirements” for the recited electrical cable, and that “an electrical cable, as recited in the patent claims, [could] be a single wire.” Ex.2030, 107:9-22.

would have the limitations of claim 13, like the other switches you mentioned? A. Yes. In the configuration shown in the '336 patent, but not in others.”); Ex.2031, ¶¶103-106.

4. Element 13(c): “an actuator disposed on the body, wherein the actuator has a range of positions”

The '424 Provisional’s DIP switch includes an actuator (actuating switches 210) disposed on the body that has a range of positions. The actuator is illustrated in Figures 1E and 4, and can also be seen in the DIP switch corresponding to part number “1571999-4” (Figure 4):





Ex.2031, ¶¶94-97; Ex.1008, Figs. 1E, 4; Ex.2033, 1 (“piano actuators”).

The ’424 Provisional describes the actuator as being capable of selecting four discrete positions, each position corresponding to discrete CCT outputs of 3,500K, 3,000K, or 4,000K. Ex.1008, 2:7-16, 6:4-21, Fig. 3; Ex.2031, ¶96.

Furthermore, claim 13 contains the transitional phrase “comprising” and requires “*an* actuator” that “has a range of positions.” Thus, claim 13 is met by “one or more” actuators that have a range of positions, which is disclosed by switches 210.

See Baldwin Graphic Sys., Inc. v. Siebert, Inc., 512 F.3d 1338, 1342 (Fed. Cir. 2008) (“That ‘a’ or ‘an’ can mean ‘one or more’ is best described as a rule”).

Regardless, Luminex’s expert confirmed that DIP switches could include a rotary DIP switch, which were available at the time and would perform the same functionality with a single rotating actuator. Ex.2030, 74:19-75:2 (“a person of ordinary skill would have understood that a DIP switch could have a rotary actuator”), 76:6-8, 76:23-77:6, 78:11-22 (discussing Ex.2029); Ex.2031, ¶97.

Luminex’s expert further acknowledged that, for the DIP switch disclosed in the ’424 Provisional, “a technician would ... move *the actuator* to change the settings.” Ex.2030, 67:8-68:12, 58:12-23, 72:16-73:7. He also confirmed that the disclosed DIP switch includes an actuator having a range of positions as recited in element 13(c). *Id.*, 224:6-13, 125:8-18, 226:3-8 (“Q. In that scenario, a DIP switch, in your opinion, would have the limitations of claim 13, like the other switches you mentioned? A. Yes. In the configuration shown in the ’336 patent, but not in others.”).

5. Element 13(d): “wherein each position of the range of positions of the actuator corresponds to a CCT of the light emitted by the luminaire”

The ’424 Provisional’s DIP switch includes an actuator, wherein each position of the range of positions corresponds to a CCT of light (e.g., 3,500K, 3,000K, or 4,000K) emitted by the luminaire. The ’424 Provisional details how the

DIP switch controls the correlated color temperature of light emitted by a luminaire, including how configuring switches 210 can cause CCT outputs of, e.g., 3,000K, 4,000K, and 3,500K. Ex.1008, 2:7-16, 5:29-6:21, claim 4; Ex.2031, ¶¶98-99; Ex.2033, 1. This correspondence is illustrated in Figure 3:

Switch 1	Switch 2	LED 1 3,000 K	LED 2 4,000K	Resulting Color Temp
On	Off	On	On	3,500 K
Off	On	On	On	3,500 K
On	On	On	Off	3,000 K
Off	Off	Off	On	4,000 K

300
4

FIG. 3

Ex.1008, Fig. 3; Ex.2031, ¶98. And Luminex’s expert confirmed that “each different configuration of switches 210 of the DIP switch 131 results in a particular CCT output of light.” Ex.2030, 62:14-63:8, 58:12-23, 67:8-68:12.

B. Claim 15: “The switch of claim 13, wherein each position is discrete within the range of positions”

The ’424 Provisional’s DIP switch includes an actuator where each position of the actuator is discrete within the range of positions. For example, the ’424 Provisional details how switches 210 are actuated to achieve four different CCT outputs, as shown below. Ex.1008, 2:7-16, 5:29-6:21, claim 4; Ex.2031, ¶100.

Switch 1	Switch 2	LED 1 3,000 K	LED 2 4,000K	Resulting Color Temp
On	Off	On	On	3,500 K
Off	On	On	On	3,500 K
On	On	On	Off	3,000 K
Off	Off	Off	On	4,000 K

300
↙

FIG. 3

Ex.1008, Fig. 3.

- C. **Claim 16: “The switch of claim 15, wherein the range of positions comprises a first position, a second position, a third position, a fourth position, and a fifth position”**

A POSITA would have readily understood from the '424 Provisional that the exemplary DIP switch could include a range of positions that comprises five positions, and such configuration was within the possession of the applicants.

Ex.2031, ¶¶101-102. First, the DIP switch corresponding to part number “1571999-4” in Figure 4 is part of the ADP series, which offered configurations with various numbers of positions. Ex.2029, 15; Ex.2033, 2.

ADP Series 	Product key	Positions	Mounting	Packaging	Part number
	ADP0204	2	THT	tube	1571999-1
	ADP02STR04		SMT	tape and reel	1571999-4
	ADP0404	4	THT	tube	1571999-6
	ADP04STR04		SMT	tape and reel	1571999-9
	ADP0604	6	THT	tube	1-1571999-6
	ADP06STR04		SMT	tape and reel	1-1571999-9
	ADP0804	8	THT	tube	2-1571999-6
	ADP08STR04		SMT	tape and reel	2-1571999-9
	ADP1004	10	THT	tube	3-1571999-6
	ADP10STR04		SMT	tape and reel	3-1571999-9

↖

Second, both experts agree that a POSITA would have known that DIP switches (including of the type in the '424 Provisional) included various configurations of positions. *Id.* Luminex’s expert admitted that “DIP switches

with three, four, five switches were available prior to February 2016,” and that the 2008 catalog (with the ADP series) offered DIP switches with “six positions.” Ex.2030, 73:8-16, 74:19-75:2, 76:6-8, 76:23-77:6, 80:2-12; Ex. 2029, 2-4, 15; Ex.2031, ¶101.

A POSITA considering Figures 2, 3 and 4 and their associated descriptions, including the options of the ADP series identified in the ’424 Provisional, would have understood that the depicted DIP switch is illustrative and, when using more than two LEDs (LEDs 150 and 155), would use a DIP switch having at least five positions, for additional CCT outputs. Ex.2031, ¶102. And, Luminex’s expert does not dispute that a POSITA understood that the ’424 Provisional discloses a DIP switch that could include a range of positions, meeting claim 16. Ex.2030, 232:18-234:7, 235:10-19.

D. The Petition’s Priority Analysis Fails

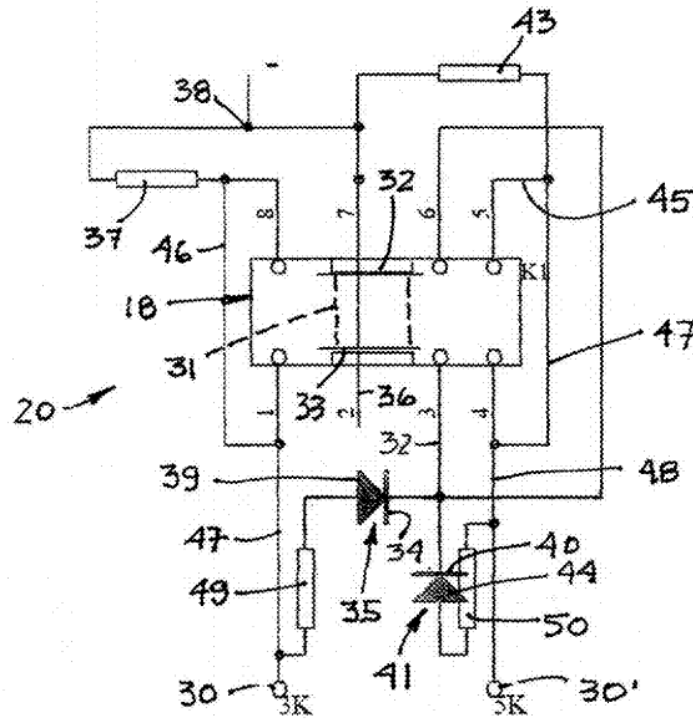
As demonstrated above, the ’424 Provisional fully supports and enables ’336 Patent claims 13, 15 and 16, as confirmed by both parties’ experts. Therefore, those claims are entitled to a February 19, 2016, priority date.

Recognizing that two of its three primary references were filed after that date, the Petition asserts that “Claims 13-20 ... require a CCT switch that is configured to couple⁵ to an electrical cable of the luminaire,” and that the ’424

⁵ The claim 13 language actually reads “to electrically couple.”

Provisional lacks this feature. Petition, 18. The Petition acknowledges that the '424 Provisional discloses switches that could be “mounted on the substrate 125,” but reads out this embodiment from the scope of “electrically couple[d] to an electrical cable” for purposes of priority. *Id.*, 19-21 (describing switches “mounted to the substrate, circuit board, or housing” as failing to disclose any coupling to “an electrical cable of the luminaire”). However, the Petition’s application of the references contradicts this position.

For example, the Petition asserts that Chaimberg discloses an “electrical cable ... wherein the first end is coupled to the at least one electrical component.” Petition, 28. For support, the Petition argues that “[b]ecause cable 15 is secured to and supplies current to the LEDs 11 (i.e., the ‘at least one electrical component’), cable 15 is an electrical cable with ‘a first end ... coupled to the at least one electrical component.’” *Id.* The current supplied by cable 15 in Chaimberg is supplied to LEDs 11 through a circuit with intervening components depicted in Figure 3 (below).



Ex.1003, Figure 3, 4:41-46 (“The resistance 37 is provided to lower the input current at terminal 38 to prevent a high current impact on the leads of the 3000 Kelvin LED’s 30.”).

Similarly, the '424 Provisional depicts the electrical wiring being secured to a circuit (*see* Figures 2 and 4) to which a switch and LEDs are mounted, in order to supply current to the LEDs, as discussed above. Thus, Petitioner's priority argument is wholly inconsistent with its application of Chaimberg to the claimed coupling. *See* Petition, 35 (for claim 7, arguing that because a switch must be connected to a power source "to have a complete circuit," and power is provided

“through cable 15,” then “the switch would have been coupled to the second end of cable 15”).

Petitioner’s double standard with respect to Halliwell is even more revealing. Petitioner contends that Halliwell discloses limitation 13(b) because Halliwell explains that “electrical components of the LED lighting device 20 (e.g., the driver circuitry 19, switch control unit 35, and/or the like) may be configured to be directly wired to line voltage (e.g., through a junction box).” Petition, 77-78 (quoting Ex.1012, 7:13–17). From this one statement, Luminex contends that “the LED lighting device would **necessarily** include an electrical cable that is coupled to the luminaire and junction box,” and even further that if “Halliwell’s CCT switch is mounted in the junction box, and the ‘electrical components’ are ‘directly wired to line voltage,’” then “the ‘junction box mounted’ CCT switch would **necessarily** be coupled to the electrical cable.” *Id.* (citing Ex.1004, ¶312).

This analysis cannot be squared with the Petition’s priority analysis regarding the disclosures in the ’424 Provisional which has a much greater level of disclosure on these points than Halliwell, as established above.

To be clear, claim 13 requires neither a switch being “remotely located from the housing” nor “coupled to an electrical cable of the luminaire.” Claim 13 requires the switch to have a coupling feature configured to “**electrically** couple to an electrical cable of the luminaire” (element 13(b)). “Electrically couple” cannot

be interpreted as reading out the '424 Provisional's disclosed embodiments whereby the switch is mounted on a common substrate with, and powered by, the electrical wiring providing power to the whole circuitry depicted in Figures 2 and 4. This interpretation is directly contradicted by the patent's use of the term—namely, using “electrically coupled” to encompass components mounted on a common substrate (Ex.1001, 9:64-10:16)—and the Petition's assertions about what components must “necessarily” be electrically coupled based on minimal disclosures. *See also* Ex.2034, at 108 (“coupling 1. A mutual relation between two circuits that permits energy transfer from one to another, through a wire, resistor, transformer, capacitor, or other device.”)

The Petition's attempt to remove those embodiments from the scope of “couple to” or “electrically couple to” for the purposes of priority, but then rely on less in Chaimberg and Halliwell as meeting the claims, should be rejected.

E. Conclusion

Grounds 1a through 2 apply Chaimberg and Halliwell against claims 13, 15 and 16. Both Chaimberg and Halliwell post-date those claims' February 19, 2016, priority date. *See* Ex.1003 (filed April 27, 2018); Ex.1012 (filed September 23, 2016). Chaimberg and Halliwell do not qualify as prior art under 35 U.S.C. § 102,

and therefore Grounds 1a through 2 fail against those claims.⁶ If the '424 Provisional does not support priority for these claims, then the Petition's analysis for Grounds 1 and 2 must fail for the same reasons—because Chaimberg and Halliwell contain less disclosure than does the '424 Provisional. In either case, these grounds fail for claims 13, 15 and 16.

Luminex's only remaining ground against claims 13, 15 and 16 is Ground 3, which Patent Owner addresses next for continuity.

VI. Ground 3: Petitioner Fails to Show that Claims 13 or 15 Are Unpatentable Over Reiff

Unlike the '336 Patent, Reiff is not concerned with the concept of correlated color temperature at all. Ex.2031, ¶¶109-133. Reiff does not even mention “correlated color temperature” or “CCT,” much less state that its switch for different sources would correspond to different CCT values. Ex.2030, 148:5-23 (“Q. Now, the term ‘correlated color temperature’ does not appear in Reiff, correct? A. That is correct.”); 148:24-150:2 (“Q. And Reiff doesn't provide the CCT values of the light outputted by those sources, correct? A. He does not.”).

Reiff describes a power switch to turn on one of two different light sources: fluorescent or colored LED. Ex.2030, 143:11-17. However, CCT refers to hues of *white* light, making the concept inapplicable to Reiff's “colored” light source.

⁶ Ground 1b combines Chaimberg with Roberge to arrive at claim 16, but still relies on Chaimberg for base claim 13.

Ex.2044, 306-311; Ex.2031, ¶¶120-132. Further, the parties' experts agree that two different light sources, "one LED and one non-LED," could output light at the same color temperature. *Id.*; Ex.2030, 48:19-49:1. Thus, Reiff does not teach a switch where "each position of the range of positions of the actuator corresponds to a CCT of the light emitted by the luminaire," as claimed.

Additionally, Reiff does not disclose any details regarding the structure of its power switch. Ex.2031, ¶142. Luminex's expert admitted that his identification of a purported switch "body" was "an oversight" and "not [his] intent," such that there can be no anticipation of that element. Ex.2030, 139:21-141:23. Similarly, Luminex's expert acknowledged that Reiff does **not** disclose any "first coupling feature disposed on the body" that "is configured to electrically couple to an electrical cable of the luminaire," as detailed below. Ex.2030, 150:14-20, 151:12-25, 153:2-6, 154:10-16, 159:7-12.

Luminex's listing of the grounds states anticipation and/or obviousness for Reiff, but the heading for Ground 3 lists only anticipation. Petition, 15, 82. In any event, the Petition fails to articulate obviousness positions, as discussed below. Luminex has therefore failed to meet its burden to demonstrate that Reiff teaches claims 13 or 15.

A. Reiff Does Not Disclose a CCT Selection Switch

Element 13(d) requires that “each position of the range of positions of the actuator corresponds to a CCT of the light emitted by the luminaire.” Ex.1001, 16:3-5. Luminex presents no obviousness analysis for this limitation. Petition, 88-89.

Reiff is silent on the concept of CCT in general, let alone on a switch for making a CCT selection. Instead, Reiff describes a lighting device that allows a user to toggle between three options: “off,” fluorescent light, and “colored” LED light. Ex.1013, 4:28-32, Fig. 2; Ex.2031, ¶¶111-115, 118-119; Ex.2030, 143:11-17. Reiff’s device is used in “specialized industrial and military applications,” where “conventional fluorescent lamps [are] used to illuminate tents,” but “red or blue light” may be used to avoid “detect[ion].” Ex.1013, 1:6-49.

Reiff uses “color” to describe perceived color (e.g., “blue”), which is not correlated color **temperature**. The term “color temperature” is used in the field to describe how warm or cool a **white** light source appears to the human eye. Ex.2031, ¶¶120-122; Ex.2030, 27:9-16; Ex.2051, 2-3. Specifically, “color temperature” describes the hue “of a white light source, given in units of kelvin,” which units correspond to the hue emitted from a black-body radiator heated to that temperature. Ex.2044, 309, 306-311. “Color temperature” is defined by the Planckian locus—a curve corresponding the emissions from the heated black body.

Id., 307-308. “Correlated color temperature” describes a range of white light hues which may not fall precisely on the Planckian locus. *Id.*, 309; Ex.2043, 1 (“Technically, a color temperature designation can apply to an incandescent lamp only, and for those sources that adhere to the Planckian Curve. However, ... Correlated Color Temperature [is] often used **to specify a degree of the whiteness** of fluorescent ... lamps.”); Ex.2031, ¶¶120-127. Luminex confirms this understanding. Ex.1004, ¶¶31 (comparing “warm white” to “cool white”), 32, 33 (depicting various white lights); see Ex.1014, (“Tunable white technology enables the independent control of color temperature.”); Ex.1001, 1:31-41.

A POSITA would not understand CCT to describe saturated or monochromatic colors. Ex.2031, ¶127; Ex.2050, 6 (“CCT ... applies **only to white light stimuli** and **should not be used for coloured light sources.**”), Fig. 1. Instead, CCT is used to characterize the nuances of white light. *Id.* Luminex misapprehends this term, and hence Reiff.

First, Reiff does not address the concept of CCT selection. Ex.2031, ¶¶131-132. As Luminex’s expert acknowledged, the terms “correlated color temperature” or “CCT” do not appear anywhere in Reiff. Ex.2030, 148:5-23. Reiff is thus silent concerning any specific CCT values. *Id.*, 148:24-150:2. In fact, Luminex’s expert testified that Reiff “might not be familiar with a CCT.” *Id.*, 150:3-13.

Second, while Reiff discloses two light sources, that does not suggest (let alone require) any difference in CCT associated with those sources. Ex.2031, ¶¶123-126, 132. Moreover, both experts agree that “two different types of light sources, one LED and one non-LED [can] output light at the same color temperature,”⁷ such that, even if a CCT value could be ascribed to Reiff’s second light source, it would not necessarily be different than that of the first light source. Ex.2030, 48:22-49:1; Ex.2031, ¶128. Thus, there can be no real dispute that Reiff does not disclose a switch having positions that correspond to the CCT of light emitted from a luminaire. Notably, other than a conclusory catch-all statement (“anticipated and/or obvious”), the Petition presents no obviousness analysis for element 13(d). Petition, 88-89.

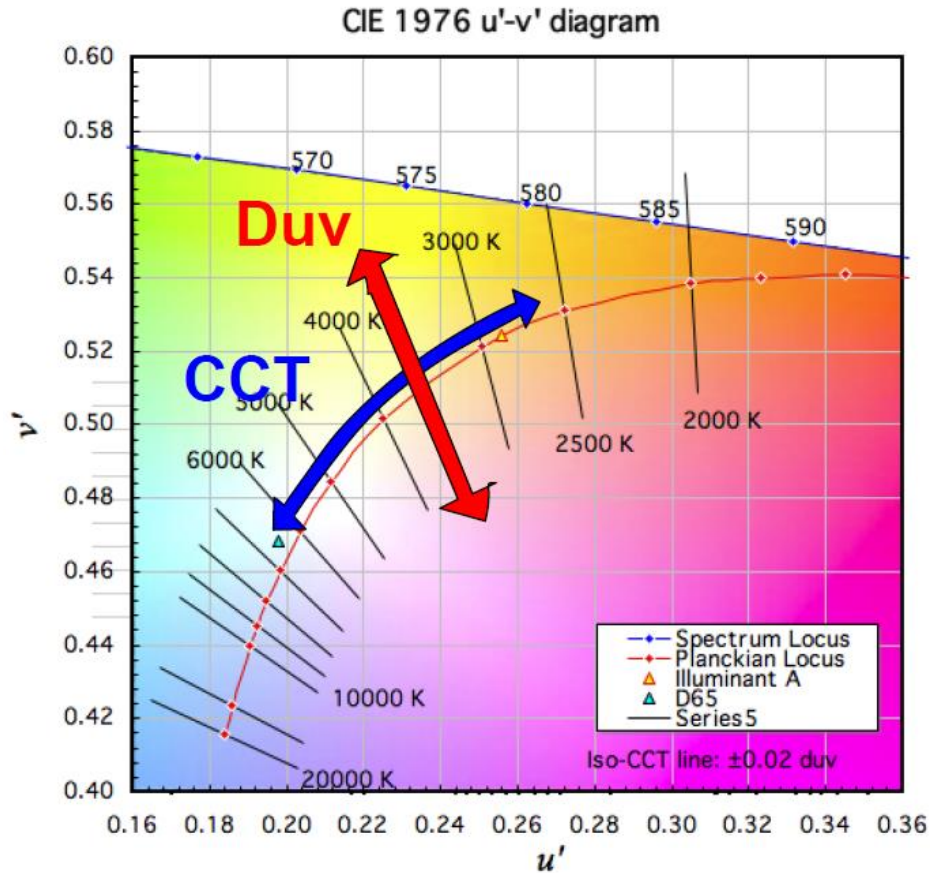
Third, Reiff describes using a white light source and a “colored” light source. Ex. 1013 at 4:28-32 (“white light fluorescent light source ... or a **‘colored’ LED light source**”), 5:62-66. Thus, the concept of CCT would not even apply to Reiff’s “colored” light source. Ex.2031, ¶¶127, 131; Ex.2050, 6. However, the Petition assumes (incorrectly) that Reiff’s two different light sources would necessarily have different color temperatures because they purportedly emit different colors. Petition, 88. For support, Luminex relies solely on its expert, who

⁷ For example, a fluorescent light and an LED light may emit light having the same CCT.

in turn assumes that Reiff's light source would use different colors and those different colors must have "different CCT value[s]." Ex.1004, ¶350. His assumption incorrectly conflates "color" and "color temperature."

As discussed above, CCT is used to differentiate types of white light (e.g., warmer and cooler hues). Ex. 2044, 306. However, even two different hues (or colors) of white light often have the same CCT value because CCT captures hues around the Planckian locus. Ex.2031, ¶¶123-126. This has been well known since at least 1976, when the International Commission on Illumination ("CIE") published the well-known chromaticity diagram. *See id.*; Ex.2030, 33:3-21 ("the chromaticity diagram is well known"). As illustrated in the annotated chromaticity diagram below (presented at a 2011 CORM⁸ conference), each discrete CCT value is associated with a range of perceived colors, as indicated by black lines (labeled with CCT in Kelvin) that extend across different hues.

⁸ "Council for Optical Radiation Measurements." Ex. 2031, ¶123 n.7.



Ex.2031, ¶¶123-125; Ex.2028 at 1-2; Ex.2030, 39:19-40:13 (acknowledging that the colored portion of the diagram corresponds to color perceived by the human eye). Two light sources may output light at the exact same CCT (e.g., 4000 K), even though one outputs white light that leans yellow/green, while the other outputs white light that leans pink/red. The diagram's red line indicates the Planckian locus. *Id.*; Ex. 2044, 1518.

Thus, a POSITA would have readily understood that while two different light sources may emit light of different perceived hues, that does **not** mean that those light sources emit light at different CCTs. Ex.2031, ¶¶124-126, 132.

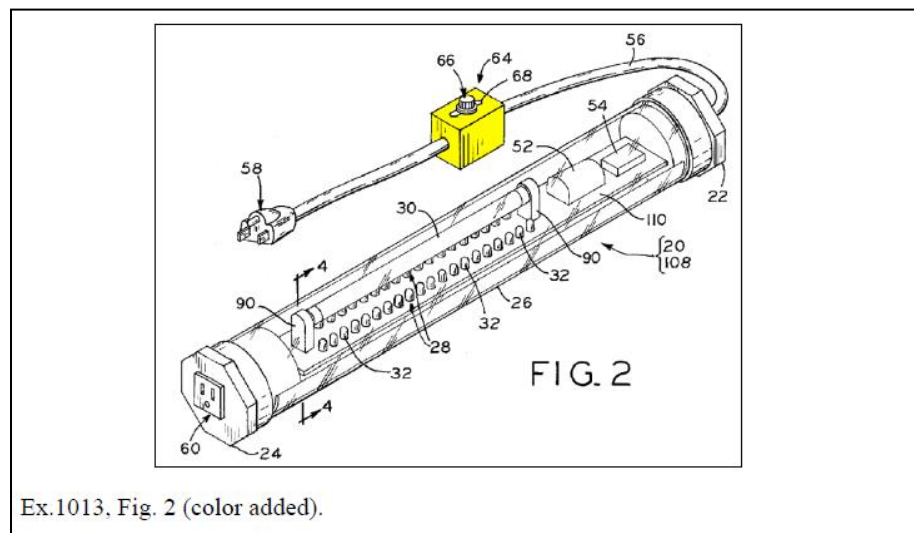
Luminex’s expert simply does not grasp this concept, repeatedly stating “I don’t know” or “I don’t recall.” Ex.2030, 35:20-37:1. He was also unfamiliar with important concepts relating to the 1976 CIE diagram, including the meaning of lines depicted above. *Id.*, 32:14-21, 42:10-23 (“Referring to the diagram on the right, any point on the line labeled 4000k would correspond to a CCT value of 4000k, correct? ... A. I don’t know.”), 43:15-44:6. Despite his lack of understanding, Luminex’s expert asserted, without support, that two different colors of light **cannot** have the same CCT. *Id.*, 45:22-46:4, 48:4-7, 244:1-3 (“I do not believe so.”). His assumption is incorrect. Ex.2031, ¶¶129-130, 132; Ex.2028 at 1-2; Ex.2035, 1-3.

For these reasons, Reiff’s reference to “different color[s]” does not relate to different CCTs. Thus, Reiff does not anticipate (or suggest) claim 13’s requirement that “each position ... of the actuator corresponds to a CCT of the light emitted by the luminaire.” Luminex has not advanced any obviousness theory inasmuch as the analysis is premised on different color lights inherently having different color temperatures, which is false. Accordingly, Ground 3 fails.

B. Petitioner Failed to Identify Element 13(a)’s Switch “Body”

Element 13(a) requires a switch “body.” Ex.1001, 15:24. Luminex presents no obviousness analysis for this limitation. Petition, 85.

As described in the '336 Patent, a POSITA would have understood the plain and ordinary meaning of a switch “body” to be part of the switch itself, on which the recited “first coupling feature” and “actuator” are disposed, as further recited in Element 13(b). Ex.1001, 15:21-16:; Ex.2031, ¶135. For example, the experts agree that the DIP switch depicted in Figure 1 of both the '336 Patent and the '424 Provisional includes a square “body” on which the “first coupling feature” and “actuator” are disposed. *See supra* at Section V.A.



(exemplary switch casing); Ex.1013, 4:28-39 (“control box 64 may include switch 66”).

During his deposition, Luminex’s expert recognized this flaw, and testified that his identification of a switch body in Reiff (on which the Petition relies) was “an oversight,” and that it was “not [his] intent to associate the body with the exterior surface of the control box.” Ex.2030, 139:21-141:23. He further acknowledged that Reiff did not disclose or depict any switch “body,” and instead the switch configuration “depends on the -- on the particular switch product that is chosen.” *Id.* Per his further testimony, Reiff would need to be combined with an (unidentified) extrinsic switch, at which point he could determine “the nature of the switch and the way it was manufactured” to identify any switch body. *Id.*, 140:12-141:14. This suggests an obviousness theory that is not advanced in the Petition and, in any event, is admittedly incomplete. Petition, 85-86. Indeed, the Petition relies solely on the outer surfaces of control box 64, which Luminex’s expert unequivocally conceded is **not** a switch body.

Again, Luminex has failed to meet its burden.

C. Petitioner Failed to Identify in Reiff Element 13(b)’s “First Coupling Feature”

Element 13(b) requires “at least one first coupling feature disposed on the body, wherein the at least one first coupling feature is configured to electrically couple to an electrical cable of the luminaire.” Reiff does not disclose a “coupling

feature disposed on the body.” Luminex provides no obviousness analysis for this limitation. Petition, 86-87. While the Board treated Luminex’s “necessarily” argument under obviousness, for preliminary purposes, the Board already acknowledged that the Petition does not establish a first coupling feature disposed on the body. Inst. Dec., 60-61.

Both parties’ experts agree that Reiff is *silent* on the contents of control box 64 and does not provide any details concerning the construction of switch 66. Ex.2031, ¶¶141-142; Ex.2030, 150:14-20 (“Reiff doesn’t describe what component may be inside control box 64, correct? A. No, he does not ...”); 154:17-156:3 (“A. ... And so Reiff tells me that I can choose the switch. ... Q. But that’s not described in Reiff, that’s something that you know yourself and teach, correct? A. Yes.”). Luminex’s experts’ theories about what might be achieved when combining Reiff with an unidentified extrinsic switch is irrelevant to the ground presented.

Of note, the Petition invokes an inherency theory by asserting that “[b]ecause the *control box 64* is located on the electrical cable 56, it is *necessarily* electrically coupled to electrical cable 56, and therefore must include at least one coupling feature.” Petition, 86. That argument misses the point. First, as explained above, Luminex’s expert conceded that the control box is *not* a switch body (see *supra* at Section VI.B), and therefore whether that control box could be coupled to

anything is irrelevant. And, given the box's lack of function, it need not be electrically coupled to anything.

Second, with respect to any switch contained within control box 64, Luminex's expert further conceded that such switch does **not** necessarily need to be coupled with to electrical cable 56 to operate, and it could instead be, for example, a wireless switch that is not configured to couple with the cable at all. Ex.2030, 150:14-20, 151:12-25, 153:2-6, 154:1-16 ("It's possible, but as I said a moment ago, there are many things that are possible when a POSITA looks at Reiff."), 159:7-12; *see also* Ex.2031, ¶¶143-146; Ex.2030, 136:9-137:14. These points preclude any inherency argument.

Additionally, cross-examination confirmed the Petition's lack of any coherent theory regarding the scope of "electrically couple" in element 13(b). The Petition already applies conflicting scopes of the term when analyzing priority compared to analyzing its Grounds. *Supra* Section V.D. Then on cross, Luminex's expert testified that the term "electrically couple" in element 13(b) purportedly requires a "direct physical connection," such that the presence of any "intervening components" (e.g., a circuit board between the switch and the cable) cannot satisfy the claim. Ex.2030, 132:24-133:3 ("Q. So just put simply, in your opinion, claim 13B does not allow for intervening components between the switch and the electrical cable; is that fair? A. That's a fair way of saying it."), 109:6-21, 101:7-12.

Then as to Reiff, Luminex's expert provided yet another interpretation, stating "in order to meet, in my opinion, the requirements of claim 13 of the '336 patent, anything intervening between the cable and the switch must be -- have the conductivity -- very high conductivity similar to that of a wire. ... it's possible there could be other [intervening] components [in Reiff]. I don't know what function they would serve, but anything is possible." *Id.*, 160:7-161:2.

To be clear, Signify does not adopt Luminex's expert's narrow understanding of the term "electrically couple," inasmuch as the plain meaning does not require, e.g., the exclusion of intervening components. Ex.1001, 9:64-10:6. Instead, Signify notes the lack of a coherent invalidity position in the Petition and Petitioner's expert's analysis.

For all of these reasons, Luminex's inherency theory fails. *In re Robertson*, 169 F.3d 743, 745 (Fed. Cir. 1999) ("Inherency, however, may not be established by probabilities or possibilities."); Ex.2030, 150:14-20, 154:17-156:3 (Luminex's expert explaining that his opinion is based on what he would have done, which is not taught by the reference or addressed in the Petition).

VII. Ground 1A: The Challenged Claims Are Not Unpatentable Over Chaimberg

Chaimberg was filed on April 27, 2018 (years after the '424 Provisional), and discloses a ceiling mountable LED fixture that includes a toggle switch mounted in a cable "in close proximity to the light fixture." Ex.1003, Abstract.

Chaimberg is concerned with ensuring that the switch is remote from a driver housing (i.e., junction box), thereby avoiding safety issues like damage to the periphery of the mounting hole, and physical harm or fire due to live wires. *Id.*; Ex.1003, 1:48-2:12, 3:29-53; Ex.2030, 202:21-203:1, 203:13-204:9, 205:25-206:3; Ex.2031, ¶¶170, 173.

Chaimberg’s late filing date, sparse details, and different goals when compared to the challenged claims demonstrate that the challenged claims are not unpatentable under Ground 1.

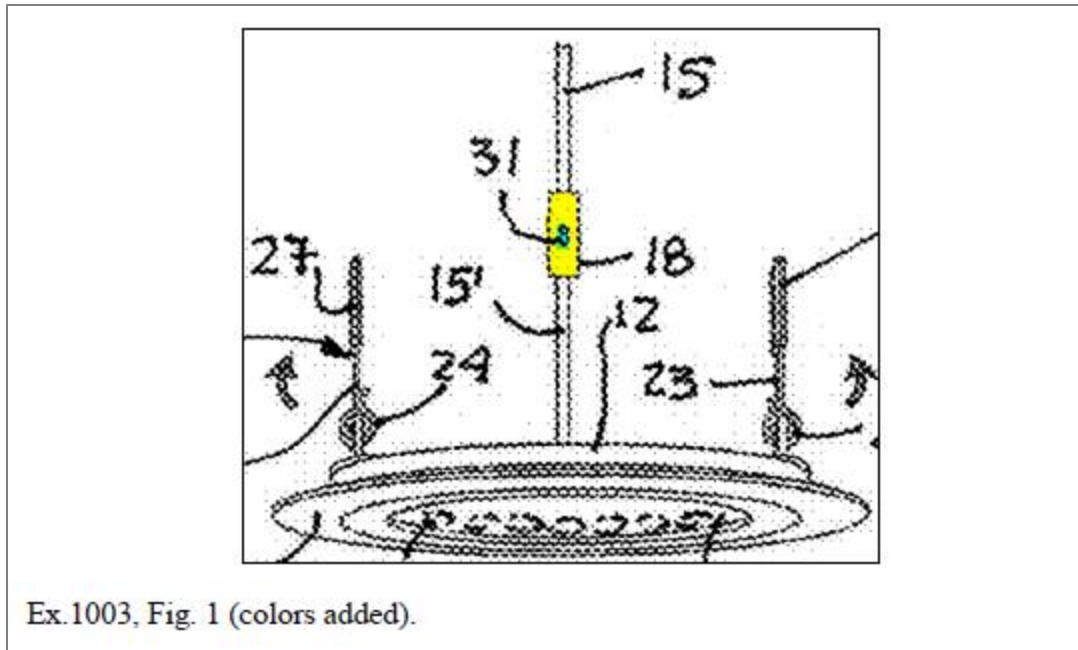
A. Claims 13, 15, and 17-19

1. Chaimberg Is Not Prior Art to Claims 13 or 15

Claims 13 and 15 are entitled to a February 19, 2016 priority date. *See supra*, Section V. Thus, Chaimberg cannot qualify as prior art under 35 U.S.C. § 102. Consequently, Ground 1a fails against claims 13 and 15. Further, the Petition fails to establish that Chaimberg discloses certain elements of claims 13 and 15.

2. Element 13(a): Petitioner Failed to Identify a Switch “Body” in Chaimberg

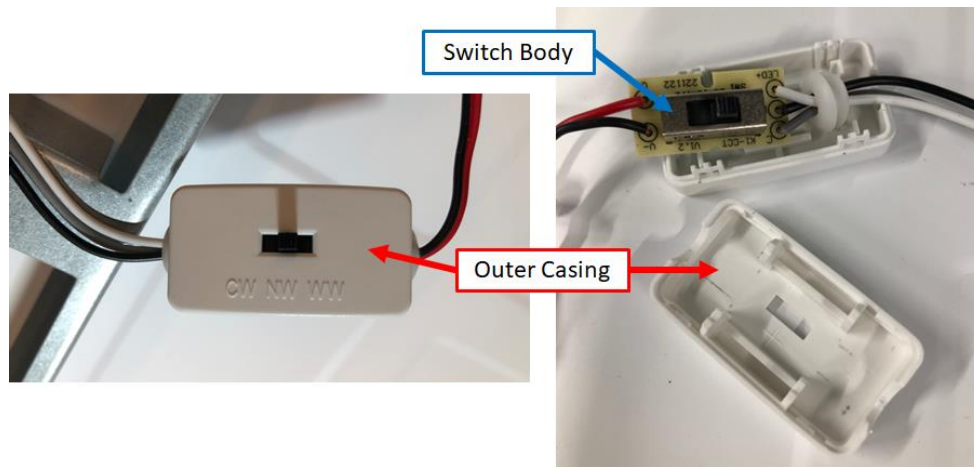
The Petition identifies the switch “body” in Chaimberg as the outer surface of the “dashed rectangular box” labeled 18, highlighted yellow below:



Petition, 40-41; Ex.1004, ¶¶154-155; Ex.2030, 208:6-11. However, box 18 is **not** a switch body.

Claim 13’s switch “body” must be part of the switch itself, on which the recited “first coupling feature” and “actuator” are disposed. *See supra*, Section VI.B. By contrast, box 18 depicts an outer casing **within which** a switch and/or other components may or may not exist. Ex.2031, ¶¶153-156.

Signify’s expert, Dr. Krames, provides an example of such an outer casing similarly located along an electrical cable of a luminaire, where that particular CCT switch is contained **within** the outer casing.



MOUNTING

1. Using the toggle switch located in the driver compartment, select to the desired color temperature.



CW = Daylight
NW = Bright White
WW = Soft White

Ex.2031, ¶¶154-155. The outer casing itself is not a switch “body” on which switch features are disposed, and it does not “electrically couple” to anything. *Id.* Similarly, a POSITA would not have understood box 18 in Chaimberg’s Figure 1 to constitute a switch “body” as claimed. *Id.* Chaimberg does not provide any disclosure concerning what is inside box 18, or any details concerning the structure of the disclosed switch.

On cross, Luminex’s expert agreed that Chaimberg does not disclose details regarding its purported switch, and that his identification of the highlighted portion of Figure 1 above as the switch “body” was because “that’s what [he] would do if

[he] were inserting a switch into a cable,” not due to any disclosure in Chaimberg. Ex.2030, 208:6-209:11, 214:8-11, 218:16-24. Thus, Luminex’s expert uses his own design preferences to presume the presence of features that are not actually described by the reference. This does not establish that the relied-upon element is a switch “body” as claimed, and Luminex has not advanced any obviousness argument for limitation 13(a). Accordingly, Ground 1a fails for claims 13 and its dependencies.

3. Element 13(b): Petitioner Failed to Identify a “First Coupling Feature” in Chaimberg

The Petition assumes that the “first coupling feature” recited in element 13(b) is present in Chaimberg with little analysis. Petition, 41-42. However, Luminex’s expert admitted that Chaimberg does not describe any such feature, and it need not be present according to Chaimberg’s design. Ex.2030, 209:6-11, 214:8-11 (“Q. Now, Chaimberg doesn’t disclose any image or description of coupling features, correct? A. Right.”), 218:16-24, 220:18-221:1 (“There could be a pot of gold inside [dashed box 18]. I have no idea.”). In fact, Luminex’s expert opined that it does not matter how the disclosed switch is designed with respect to element 13(b) because “it gets in the way.” Ex.2030, 215:25-218:4 (“Q. So you don’t believe the references need to describe how the switch works in order to read on claim [13] -- ... A. Not at all.”). Potential switch designs that Luminex’s expert assumed Chaimberg might look like are irrelevant to anticipation.

Further, Chaimberg's box 18 is simply an outer casing, **not** a switch body (*supra*, Section VII.A.2), and thus would not be understood to "electrically couple" to anything. Ex.2031, ¶159.

Notably, the Petition limits its analysis to asserting that the feature is present because the switch is allegedly located on the cable and can adjust CCT output. Petition, 41-42. However, Luminex's expert confirmed that Chaimberg's switch could be "implement[ed] ... as a wireless witch," in which case one could operate the switch "without coupling [it] to the cable." Ex.2030, 212:8-213:2, 218:25-219:21, 220:18-221:1; *see* Ex.2031, ¶¶160-161.

Furthermore, the Petition and Dr. Eden have failed to present any coherent theory regarding this claim term. *See supra*, Section VI.C.

Luminex therefore failed to demonstrate that Chaimberg discloses element 13(b) (and claim 13's dependencies).

4. Claim 19: Chaimberg Criticizes a Switch Body Configured to be Disposed "Within a Junction Box"

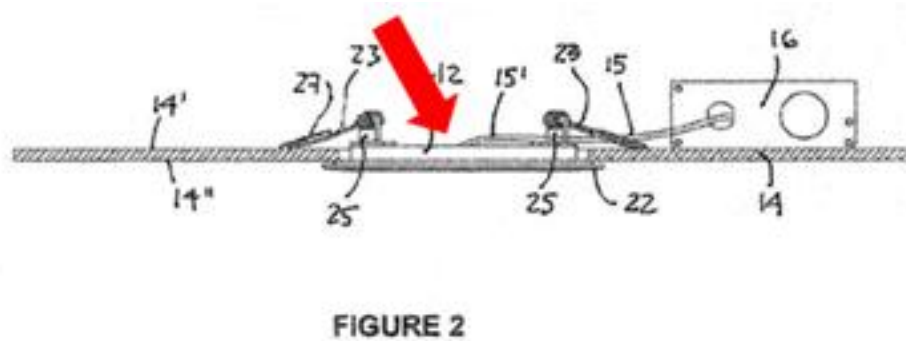
This argument fails for the reasons explained below for claim 7. *See infra*, Section VII.B.2; Ex.2031, ¶163.

B. Claims 1, 3, 6-9, and 11-12

1. Element 1(d): Chaimberg's Switch Is Not "Disposed Remotely from the Housing"

Element 1(d) requires "a switch coupled to the electrical cable, wherein the switch is disposed remotely from the housing." Ex.1001, 14:39-40. The Petition

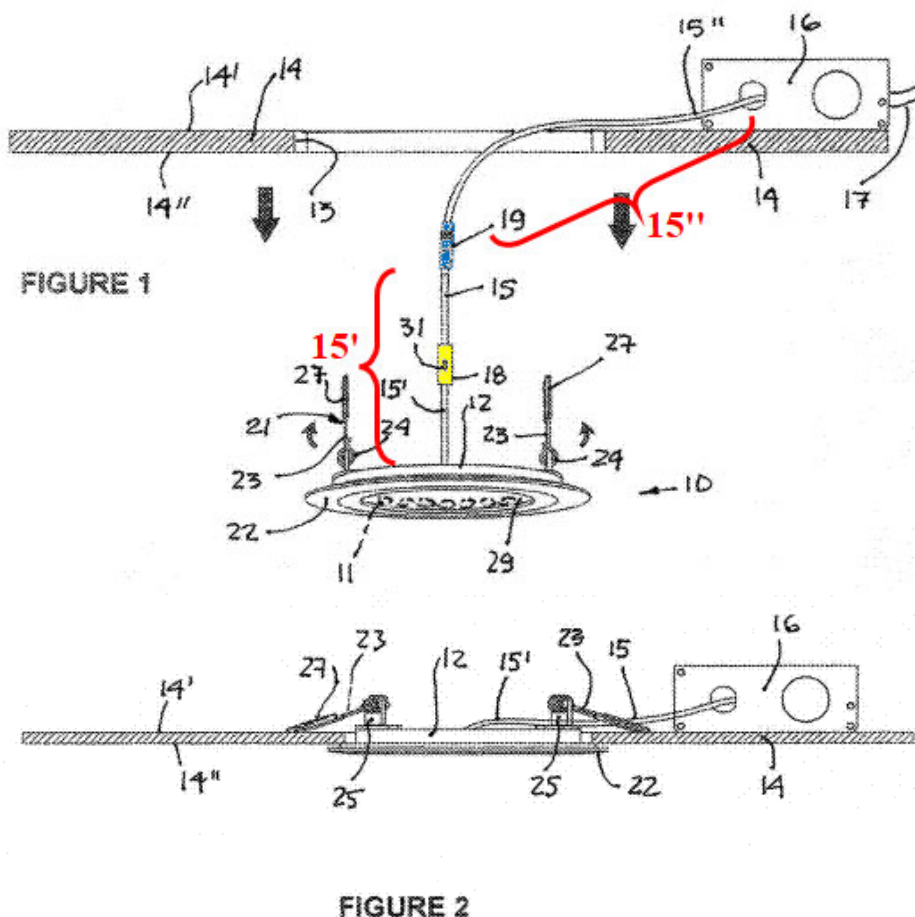
FIGURE 1



This is further confirmed with reference to “cable 15.” In particular, the indication 15' on “cable 15” indicates a “lower end section” of cable 15 that can be

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disconnected from the separate “far end” section of cable 15 labeled 15'' via “connector 19,” where “far end” section 15'' is secured to a driver circuit 20 within driver housing 16.



Ex.1003, 3:18-25, 3:49-60, Figs. 1, 2; Ex.2031, ¶¶168-169.

Box 18 is located well below connector 19 (i.e., the disconnection point), and is not visible at all in Figure 2, because it is located **within** the device housing. *Id.* As Luminex’s expert conceded at his deposition, “a CCT switch that is physically part of the housing or on the housing is not disposed remotely from the housing,” as recited in claim 1. Ex.2030, 93:11-21.

In fact, Chaimberg raises numerous concerns relating to disposing a switch in a remote position (e.g., mounted on a driver housing). Ex.1003, 1:48-2:12, 3:29-48; Ex.2031, ¶170. As Luminex’s expert recognized, Chaimberg’s concerns with remote positioning include, e.g., causing damage to the periphery of the mounting hole, and physical harm or fire due to live wires, such that, in Chaimberg’s view, CCT selection would become difficult and dangerous. *Id.*; Ex.2030, 202:21-203:1, 203:13-204:9, 205:25-206:3.

Thus, if anything, Chaimberg teaches that the switch should **not** be disposed remotely from the housing. Ex.2031, ¶170. A POSITA would have understood that Chaimberg is concerned with ensuring that the switch is remote from a **driver housing** (i.e., junction box), **not** from the lighting device housing, as there are many places in which Chaimberg discusses the need to ensure that one can access the switch “without having to withdraw the driver housing 16 from the fixture mounting hole.” *Id.*; Ex.1003, 3:49-53. Chaimberg’s disparagement of remotely located switches makes clear that Chaimberg does not contemplate a switch disposed remotely from a luminaire housing as required by claim 1, and in fact dissuades from the same. *See DePuy Spine, Inc. v. Medtronic Sofamor Danek, Inc.*, 567 F.3d 1314, 1327 (Fed. Cir. 2009) (explaining “[a] reference may be said to teach away when a person of ordinary skill, upon reading the reference, would be discouraged from following the path set out in the reference”).

Thus, Chaimberg fails with respect to limitation 1(d)'s requirement that "the switch is disposed remotely from the housing" (and for claim 1's dependencies)

2. Claim 7: Chaimberg Does Not Suggest—and in Fact Criticizes—a Switch Disposed Within a Junction Box

Claim 7 depends from claim 1 (and all arguments asserted for that claim apply equally to claim 7), and further requires "a junction box comprising at least one wall that forms a second cavity, *wherein the switch is disposed within the second cavity*, wherein the second end of the electrical cable is coupled to the switch." Ex.1001, 14:65-15:2. The Petition asserts that Chaimberg "discloses or at least would have rendered obvious" this claim, based on Chaimberg's disparagement and warnings against a switch mounted "on the driver housing." Petition, 32-35.

Indeed, Chaimberg warns against locating a switch in a junction box (or "driver housing"). *See supra*, Section VII.B.1; Ex.2031, ¶173. Specifically, Chaimberg criticizes designs that would allow wiring near the driver housing based on both safety and convenience. Ex.1003, 1:44-2:12 ("not a task suitable for many people and damage can be caused Still further, there is a hazard presented by the live wire"), 3:29-48.

The Petition concedes that "Chaimberg does not expressly describe locating the switch 18 *inside* the driver housing." Petition, 34. Instead, the Petition cites the general statement preceding Chaimberg's specific warnings that "[u]sually, a

selector switch is mounted on the driver housing.” *See id.* (citing Ex.1003, 1:44-50). However, the cited language is used to distinguish a problematic design from Chaimberg’s solution, and specifically cautions against modifying any configuration of Chaimberg’s luminaire to contain the requirements of claim 7. Ex.2031, ¶173; Ex.1003, 1:44-2:12.

Aside from specifically teaching a POSITA **not** to locate a switch on a driver box, Chaimberg is silent as to how such a configuration would be carried out, much less, e.g., how such a switch would be “coupled to [an] electrical cable” of the luminaire. *Id.*; Ex.2031, ¶¶173 n.10, 174-178. The Petition does not address these issues, and simply argues that Chaimberg describes enclosing “other” components (i.e., **not** the switch) inside the driver housing. Petition, 34. The Petition also concedes that Chaimberg desires “increas[ing] accessibility” to the switch, but in the same sentence argues that a POSITA would have somehow understood the opposite—that “it would have been desirable to make the switch *less* accessible to the user”. *Id.* (emphasis in Petition). Luminex cites to its expert for support, but Dr. Eden merely parrots the same “desire” with no supporting evidence or explanation. Ex.1004, ¶284.

Luminex’s other purported “motivations” for modifying Chaimberg are likewise contradictory and based on hindsight. Luminex asserts its proposed modification would be “obvious” due to a ceiling environment, including

“elements (*e.g.*, dust, debris, insects, rodents, etc.) that could detrimentally affect the operation of the switch 18.” Petition, 34. But this mirrors the reasons described in Chaimberg for **not** locating the switch on or within the driver housing, as Luminex’s expert confirmed. Ex.2030, 203:18-204:1 (listing additional hazards involving the driver housing that would steer a POSITA away from the modification, including “fire” due to “debris build up.”). Neither Luminex nor its expert propose any further modification to Chaimberg’s driver housing 16 to address any purported “elements,” nor how any other of Chaimberg’s safety concerns are addressed by the Petition’s purportedly “obvious” combination. See Petition, 34-35; Ex.2031, ¶¶174-175.

Chaimberg also contains no disclosure concerning the portion of the claim requiring “the second end of the electrical cable is coupled to the switch,” and the Petition fails to describe where or how Chaimberg’s cable 15 “ends in the driver housing” according to its vague modification with a switch also “disposed in the junction box.” Petition, 35. At most, the Petition assumes the claim would be met because the switch must connect “to the power source (through cable 15).” *Id.* But Chaimberg’s design receives power from “live wire 17” not cable 15, and the Petition never explains why it assumes the contrary. Ex.1003, 3:21-25, claim 1. At bottom, Chaimberg does not disclose any details concerning coupling features of its disclosed switch. Ex.2030, 209:6-11 (“Q. There is no coupling feature of

switch 18 described in Chaimberg, correct? A. Right.”), 214:8-11, 218:16-24. The Petition does not fill in these gaps, and fails to describe how its proposed modification would meet the claims, let alone why a POSITA would be motivated to do so given Chaimberg’s express caution against attempting any such arrangement (“*not recommended for safety reasons*”). Ex.1003, 1:50-67; Ex.2031, ¶¶173-178; *see DePuy Spine*, 567 F.3d at 1327.

VIII. Ground 1B: The Challenged Claims Are Not Unpatentable in View of Chaimberg and Roberge

In “Ground 1b,” Luminex purports to combine Chaimberg with Roberge to arrive at claims 2, 4-5, 10, 14, 16 and 20.

Roberge is directed to the issue of separate power supplies for LED fixtures, stating that “[a] need exists for lighting systems that provide the benefits of other LED lighting systems but provide for more convenient installation and maintenance, particularly with respect to power supplies.” Ex.1011, 1:14-24. Roberge discusses certain conceptual ideas for lighting applications, including, e.g., a “machine vision system” for camera imaging, lighting effect shows, networked lighting and networked lighting effects, and heat dissipation concepts. *Id.*, 11:23-40, 13:55-14:12, 22:12-43, 34:19-38:26; Ex.2031, ¶¶180-183. Roberge also discusses certain control interfaces for controlling a lighting system, including “simple user interfaces [that] can be used to trigger control signals,” some of which

are illustrated in Figure 34. Ex.1011, 38:27-48; 40:15-48; 42:11-44:34, Fig. 34; Ex.2031, ¶183.

As shown below, Luminex’s purported “motivations to combine” Chaimberg and Roberge rely on a misreading of Chaimberg’s disclosure, and generalities concerning use of LED technology and color selection that do not motivate the modifications proposed. Petition, 49-52; Ex.2031, ¶¶184-195. Luminex largely ignores significant differences in the “switches” and lighting devices disclosed in the references, which are not merely interchangeable as the Petition assumes. Instead, Luminex uses improper hindsight to arrive at the claims. *In re Fine*, 837 F.2d 1071, 1075 (Fed. Cir. 1988) (“One cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior art.”).

The Petition also fails to show why a POSITA would have had a reasonable expectation of success in carrying out any proposed combination of Chaimberg and Roberge. *Regents of Univ. of Cal. v. Broad Inst., Inc.*, 903 F.3d 1286, 1291 (Fed. Cir. 2018) (“An obviousness determination **requires** finding that a person of ordinary skill in the art ... would have had a reasonable expectation of success in doing so.”); MPEP § 2143.02 (“Reasonable Expectation of Success ***Is Required***”). Indeed, the words “expectation” or “success” appear nowhere in the Petition or supporting declaration.

A. Petitioner Fails to Demonstrate a Motivation or Reasonable Expectation of Success in Combining Chaimberg and Roberge

The Petition supports its purported combination by first citing a statement in Chaimberg’s “Abstract” that its design includes “*at least two sets* of LED’s of different correlated color temperatures.” Petition, 50 (citing Ex.1003, Abstract). The reference to “at least two sets of LED’s” concerns the number of LEDs necessary to carry out Chaimberg’s disclosed design, which involves selectively energizing two sets of LEDs (30 and 30’). Ex.1003, 4:30-5:10, Fig. 3; Ex.2031, ¶¶184-186. Chaimberg never mentions, much less suggest, the inclusion of CCT settings beyond the three expressly disclosed therein, and never describes additional CCT settings that could be achieved (e.g., through use of an undisclosed third set of LEDs or otherwise). Ex.2031, ¶185.

Notably, Luminex’s incorrect reading of Chaimberg’s Abstract is the sole basis offered for why a POSITA modify Chaimberg in view of Roberge. See Petition, 50-51. The Petition jumps from the mention of “at least two sets of LED’s” in Chaimberg, to including “additional positions” in its purported switch (for claims 4, 5 and 16), to using a different CCT switch entirely (for claims 2, 10, 14 and 20), with no real explanations for combinations or modifications. See *id.*; Ex.2031, ¶186. This is pure hindsight. Absent this mischaracterization of Chaimberg’s disclosure, Luminex fails to identify a “motivation to combine” Chaimberg and Roberge, and therefore Ground 1b fails.

Moreover, the Petition concludes that a “POSA would have been motivated to combine Chaimberg and Roberge” based on generalities that Roberge purportedly discloses use of multiple light sources to achieve different color temperatures and switches that allow for selection of color temperature (among other lighting effects). Petition, 51-52. This ignores significant differences between the concepts disclosed in Chaimberg and Roberge. Ex.2031, ¶¶187-193.

For example, the user interface depicted in Figure 34i of Roberge (on which Luminex relies in its proposed combination) is not described as being part of a luminaire at all. *Id.*, ¶¶190-192. Instead, Roberge discloses Figure 34i for use in the context where “it may be desirable to **limit** user control,” and thus a desire to set a particular lighting environment and “wish to have it remain that way over time.” Ex.1011, 42:39-50. Roberge thereafter describes using the Figure 34i dial in the following manner: “the designer can specify a particular setting, and the installer can set it according to the design plan.” *Id.*, 42:60-65. Thus, a POSITA would have understood that the Figure 34i embodiment is intended to set a specific CCT value for a device (e.g., by networked communication), but not remain part of the luminaire or otherwise accessible for further configuration after device installation. Ex.2031, ¶¶190-192. By contrast, Chaimberg is directed to addressing the problem where “the end user desires to later change the color,” which requires **continued** user access. Ex. 1003, 2:8-13. Luminex does not address

these significant differences at all, or explain why a POSITA would look to an independent interface for permanent pre-set CCT selection when considering Chaimberg's device-located switch. Ex.2031, ¶¶192-193. Luminex fails to address these significant differences and instead improperly picks and chooses features based on hindsight. *See Fine*, 837 F.2d at 1075.

Therefore, Luminex has failed to demonstrate that any of claims 2, 4-5, 10, 14, 16 or 20 would have been obvious in view of Chaimberg alone or combined with Roberge. The Petition further fails to demonstrate obviousness for specific claims for the reasons set forth below.

B. Claim 4: Petitioner Fails to Demonstrate It Would Be Obvious to Modify Chaimberg to Include the Five Recited Switch Positions

Claim 4 depends from claim 3 (which depends from claim 1), and requires that the plurality of positions of the recited switch have five positions. Chaimberg only discloses three switch positions (to control two sets of LEDs), yet the Petition asserts it would have been obvious to modify Chaimberg to incorporate “additional LEDs” and “more than three positions,” based solely on Chaimberg's reference to a fixture “having *at least* two sets of LED's of different correlated color temperature (CCT).” Petition, 52 (citing Ex.1003, 1:9-11). As discussed above, Luminex misinterprets Chaimberg, and reads into the reference concepts that are simply not there. *Supra*, Section VIII.A; Ex.2031, ¶¶197-198. Further, for claim 4, Luminex fails to identify any actual reference in Chaimberg to additional CCT

settings beyond the three disclosed, or to how using additional “sets” of LEDs could be used to achieve any such settings. *Id.* Thus, Luminex fails to demonstrate that claim 4 is obvious in view of Chaimberg.

The proposed combination of Chaimberg and Roberge fails for the same reason. The Petition relies on its proposed “motivation to combine” section as demonstrating why it “would have been obvious to implement Chaimberg’s switch 18 consistent with the switch disclosed in Fig. 34i of Roberge” (Petition at 54-55), but as discussed above, that purported motivation is based on the same misreading of Chaimberg’s disclosure. *Supra*, Section VIII.A. Moreover, the Petition fails to explain how a POSITA would modify Chaimberg to couple the switch shown in Figure 34i of Roberge with some undisclosed arrangement of additional sets of LEDs, particularly when that embodiment of Roberge is **not** a device-located switch (coupled to a cable of the luminaire or otherwise), and is not intended for user access and selection of CCT settings. *See id.*; Ex.2031, ¶¶199-202. Indeed, it is readily apparent that the two switches are designed in a significantly different manner, and Luminex fails to explain how the Figure 34i concept would be implemented in Chaimberg.

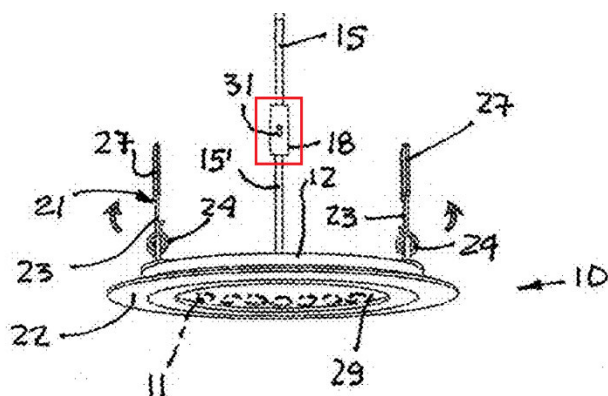
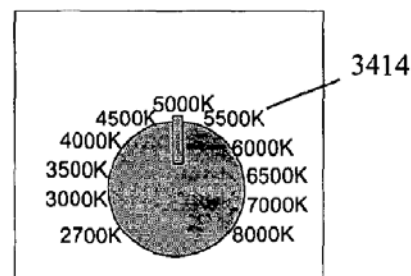


Fig. 34i



Ex.1003, Fig. 1 (excerpt); Ex.1011, Fig. 34i; Ex.2031, ¶201.

On cross, Luminex’s expert confirmed that he was **not** opining that a POSITA would have modified Chaimberg based on a specific disclosure of Roberge—instead, he believes that “the technology introduced by Roberge makes **any** CCT value available to a user.” Ex.2030, 234:15-235:14. This broad admission demonstrates that the Petition simply uses Roberge as a magic wand to reconstruct Chaimberg however hindsight requires to align it with claim 4. *See Fine*, 837 F.2d at 1075.

C. Claim 5: Petitioner Fails to Demonstrate It Would Be Obvious to Modify Chaimberg to Include the Five Recited CCT Values

Claim 5 depends from claim 4 (such that the claim 4 arguments above apply), and further requires that each of the five recited positions correspond to specific CCT values. Ex.1001, 14:53-62.

Luminex’s argument for claim 5 is premised on the same misreading of Chaimberg to suggest some undisclosed use of additional LEDs to achieve similarly undisclosed CCT values. Petition, 56; Ex.2031, ¶204. Luminex does not

attempt to argue that these specific values are obvious in view of Chaimberg alone, and instead relies on the general disclosure of CCT values in Roberge's Figure 34i embodiment to conclude that a POSITA would have simply selected the five values corresponding to the five positions recited in claim 5. Petition, 56-57. On cross, Luminex's expert agreed that "Roberge doesn't disclose the five specific CCT settings in claim 5 in [the] five positions" claimed, and that his opinion was that one could select the different, claimed values based on Roberge's disclosure—again using pure hindsight to generate the requirements of claim 5. Ex.2030, 236:2-19; Ex.2031, ¶¶205-207.

The Petition also assumes that a POSITA would have been motivated to include "2700K and 3500K CCT outputs" because they are "common." Petition, 57. But Luminex's expert provides no evidence that a POSITA would select those specific settings without the benefit of having the '336 Patent. Ex.1004, ¶220. Moreover, Luminex's expert confirmed his belief that "500 kelvin increments is standard," which fails to account for 2700 K (which is not such an increment). Ex.2030, 235:10-19. Thus, Luminex and its expert fail to offer anything other than unsupported, conclusory assertions to modify Chaimberg. Ex.2031, ¶¶205-207.

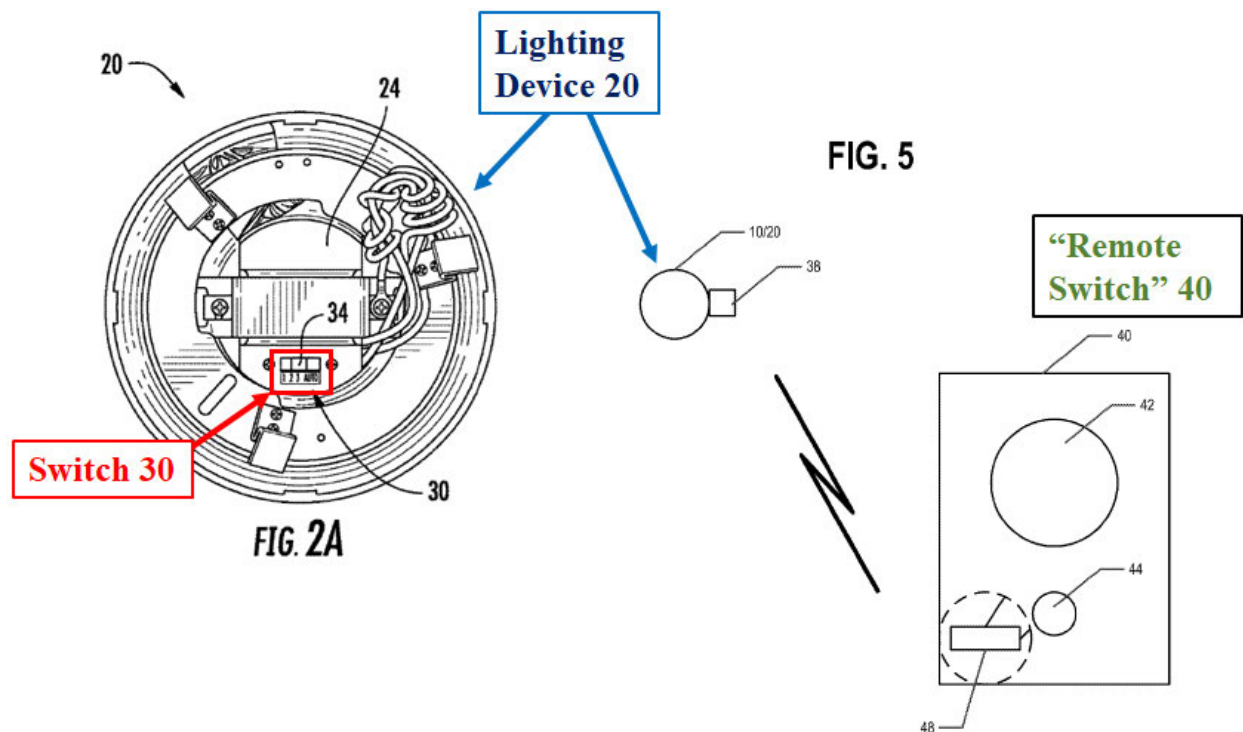
D. Claim 16

Chaimberg cannot qualify as prior art against claim 16. *Supra*, Section V. Furthermore, for claim 16 the Petition relies on its claim 4, and fails for the same

reasons discussed for claim 4. *See supra*, Section VIII.B; Petition, 59; Ex.2031, ¶210.

IX. Ground 2: The Challenged Claims Are Not Unpatentable Over Halliwell

Halliwell was filed on September 23, 2016 (months after the '424 Provisional), and discloses an LED lighting device “for which one or more aspects of the light emitted from the LED [device] (e.g., color temperature [...]) is configurable and/or adjustable.” Ex.1012, 1:40-45. Halliwell’s device has switch 30, which is located at lighting device 20, as well as a “remote switch 40” that may send a signal to “switch control unit 35” (not shown), as illustrated below using Halliwell’s figures:



Ex.1012, 11:35-39, 11:62-12:15, 12:60-1349, Figs. 2A, 4, 5; Ex.2031, ¶217; Ex.2030, 172:15-175:18.

As shown below, Halliwell's late filing date, its vague details regarding its switch 30, and Luminex's fundamental misunderstandings regarding remote switch 40 (confirmed through cross-examination) demonstrate that the challenged claims are not unpatentable under Ground 2.

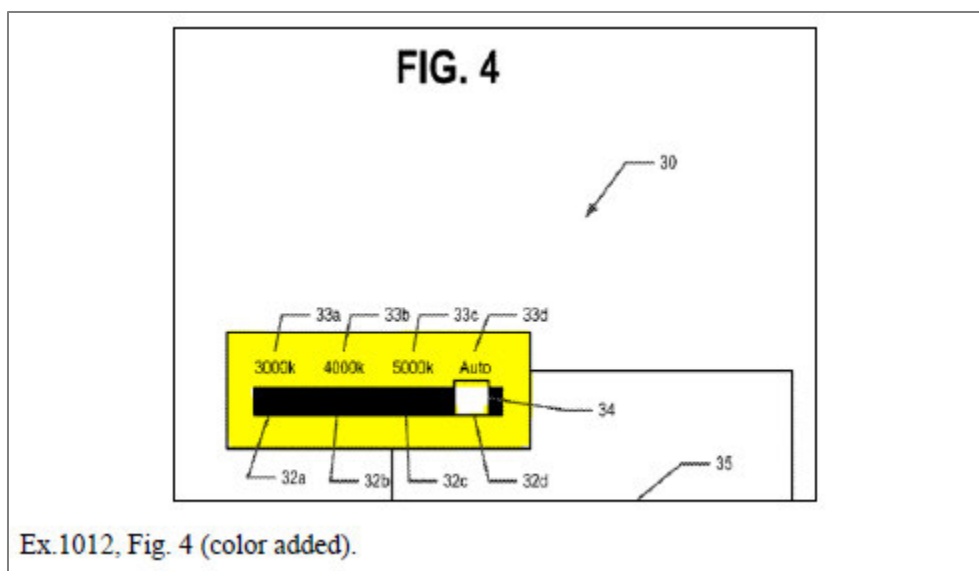
A. Claims 13, 15-16, and 19-20

1. Halliwell Is Not Prior Art for Claims 13, 15-16

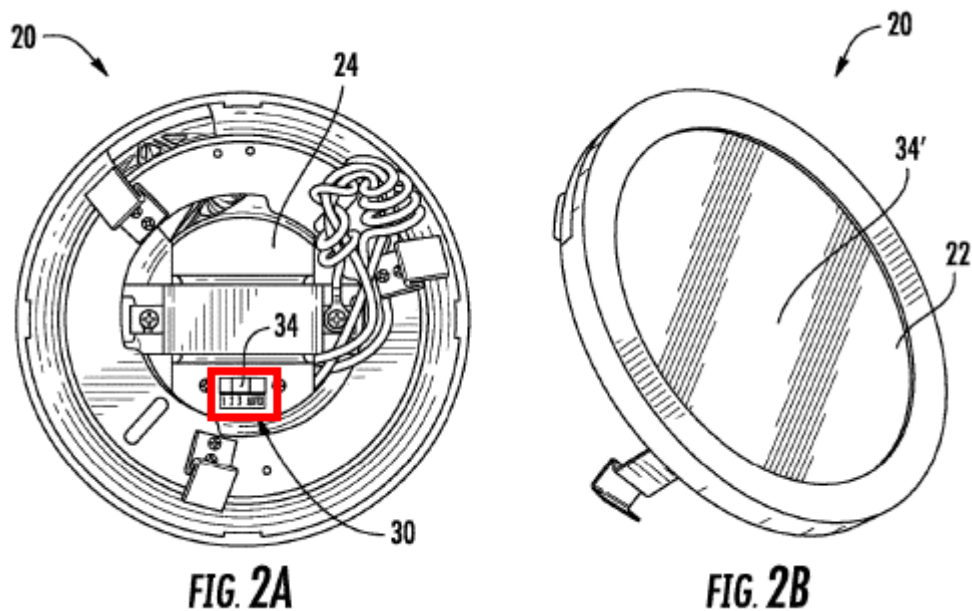
Claims 13, 15 and 16 are entitled to a February 19, 2016. *Supra*, Section V. Thus, Halliwell cannot qualify as prior art under 35 U.S.C. § 102. *See* Ex.1012. Consequently, Ground 2 fails against these claims. Further, the Petition fails to establish that Halliwell discloses certain claim elements.

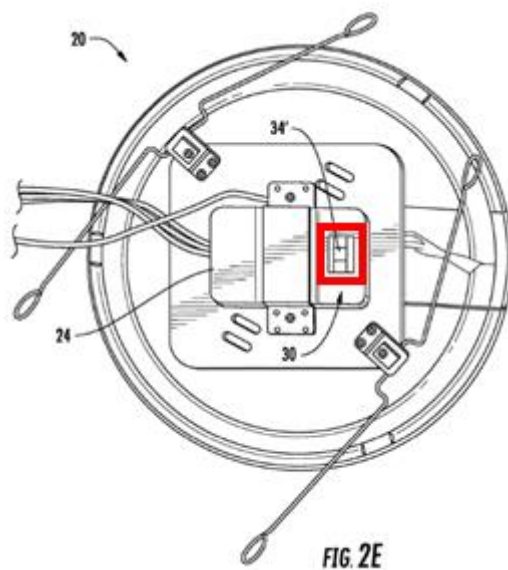
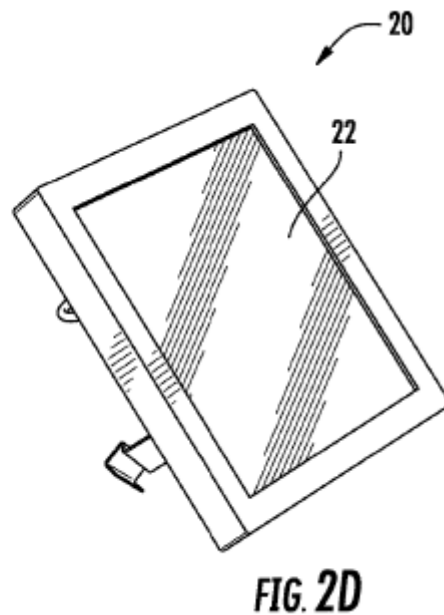
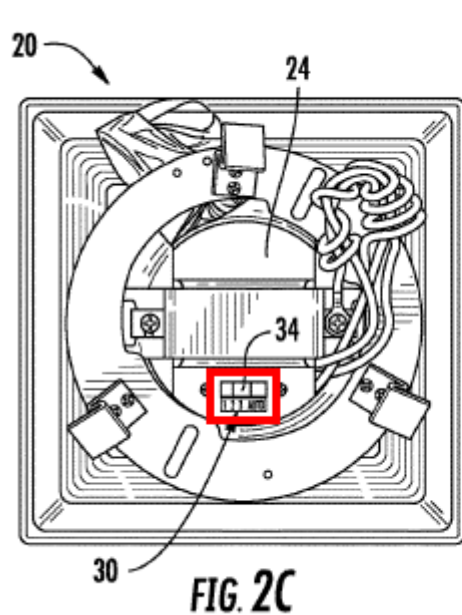
2. Element 13(a): Luminex Failed to Identify a Switch "Body" in Halliwell

The Petition identifies the highlighted box representing "switch 30" in Halliwell's Figure 4 as the claimed switch "body":



Petition, 77; Ex.1004, ¶¶309. However, rather than having a physical “box” such as the one highlighted in the Petition, switch 30 is consistently depicted as being integrated into the lighting device housing:

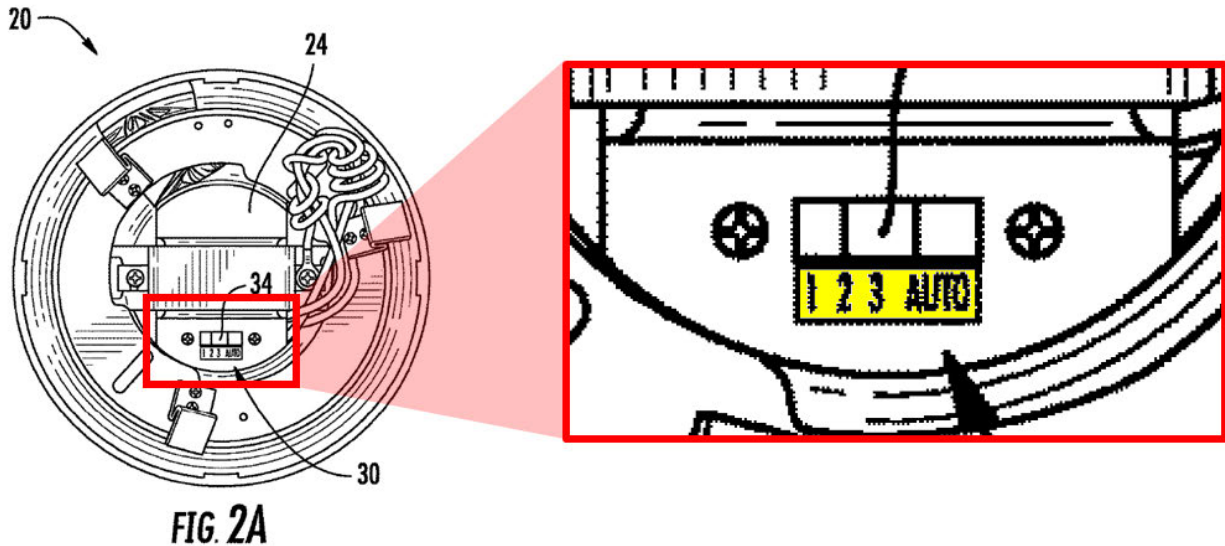




Ex.1012, Figs. 1-2E; Ex.2030, 163:2-6 (“Q. And each of these figures, 1 through 2E, depict a switch 30 -- **switch 30 that is integrated with the housing or the bulb**, depending on what’s depicted, correct? A. Yes, I believe that’s correct.”).

Ex.2031, ¶¶220-223.

Notably, the “box” highlighted in the Petition includes “switch position indicators 33 (e.g., 33a, 33b, 33c, 33d).” Ex.1012, 11:55-58, 7:65-8:3, 12:60-13:17, Figs. 4, 4A; Ex.2031, ¶224. Figure 2A shows that these indicators are located on the device housing itself, not on any “body” of switch 30:



Ex.2031, ¶224; Ex.1012, Fig. 2A.

In fact, Luminex’s expert conceded that “Halliwell *doesn’t* depict or describe [a] switch body,” and that instead his opinion was based on his “understanding.” Ex.2030, 193:21-194:20. Accordingly, the “box” highlighted in the Petition is not part of the switch at all, let alone the claimed “body” of the switch. Ex.2031, ¶221-222, 225. Moreover, the Petition does not rely on such “understanding” from Dr. Eden, or otherwise advance any inherency or obviousness theory concerning this limitation. Petition, 77.

Therefore, Ground 2 fails for claim 13 and its dependencies.

3. Element 13(b): Halliwell Does Not Teach or Suggest a “First Coupling Feature”

For element 13(b), the Petition assumes that Halliwell would use a switch “like the switch disclosed in Fig. 4, as the ‘junction box mounted’ CCT switch.” Petition, 62-63, 77-78 (for claim 13, stating “[a]s discussed above, a POSA would have understood that Halliwell’s LED luminaire would use a switch ... as the ‘junction box mounted’ CCT switch”); Ex.1012, 17:39-42. Luminex’s argument fails for several reasons.

First, element 13(b) requires a first coupling feature “disposed on the body” of the switch. As explained above, Luminex failed to identify any switch body, and instead mistakenly relies on a depiction of the lighting device housing. *Supra*, Section IX.A.2. Because Luminex continues to misrely on the same “body” for element 13(b), Luminex has likewise failed to demonstrate the presence of any coupling feature “disposed on the body.” Ex.2031, ¶228.

Second, Luminex’s argument rests on the false notion that switch 30 in Fig. 4 could be implemented as the “junction box mounted” remote switch 40. As described below with respect to claim 1, Luminex’s expert admitted that Halliwell would not work without switch 30 being located at the device (contrary to the Petition’s proposed modification). *See infra*, Section IX.B.1; Ex.2030, 182:20-184:7 (“Q. ... [A]re you aware of any passage in Halliwell that describes using remote switch 40 without or completely in place of device located switch 30? A.

I'm not aware of such an option ... *you need to have switch 30* on the -- the reason that you're not seeing an embodiment that eliminates switch 30 is that *the actual switching process is conducted at the luminaire ... So I don't think you want to do away with switch 30.*")166:9-19, 190:19-192:19; Ex.2031, ¶¶214-218, 229.

Third, even assuming the replacement of a remote switch with switch 30, Halliwell does not disclose a "first coupling feature." Ex.2031, ¶230. Indeed, similar to his admissions regarding the "body" limitation, Luminex's expert conceded that Halliwell does not disclose *any* coupling feature for *any* switch. Ex, 2030, 195:1-4 ("Q. Now, Halliwell also doesn't disclose or depict a coupling feature associated with a switch, correct? A. *That's correct.*"), 192:20-194:20; 132:24-133:3, 195:16-197:5.

Fourth, even with regards to "remote switch 40," Halliwell does not disclose it being configured to electrically couple to an "electrical cable *of the luminaire*," as required. Ex.2031, ¶¶231-235. Luminex's expert conceded that "Halliwell doesn't say that it's switch [is] coupled to a cable of luminaire." Ex.2030, 196:16-197:5.

Accordingly, the Petition relies on an inherency theory purportedly based on Halliwell's statement that "electrical components of the LED lighting device 20 (*e.g.*, the driver circuitry 19, switch control unit 35, and/or the like) may be configured to be directly wired to line voltage (*e.g.* through a junction box)."

Petition, 77-78 (quoting Ex.1012, 7:8-19). According to Luminex, this means that if the switch is “mounted in the junction box,” the modified device “would **necessarily** include an electrical cable that is coupled to the luminaire and junction box.” *Id.* However, the quoted statement from Halliwell pertains to the junction box for lighting device 20, **not** for remote switch 40, which may or may not be wired to the same junction box, let alone to lighting device 20. Ex.2030, 185:13-19 (“Q. ... [R]emote switch 40 would not be, for example, in a junction box of the luminaire up in the ceiling, for example. A. Right. ... it may be wall-mounted is one possibility”); Ex.1012, 17:39-42; Ex.2031, ¶¶232-234. Luminex’s expert also confirmed that, in any case, Halliwell is silent on the configuration of both switch 30 and remote switch 40. *Id.*, 192:20-193:20 (“Q. What would be the design of the switch 40, then, located in the junction box, according to Halliwell? A. Well, **I’m unable to answer that question** because there are many design choices of a wall-mounted switch”), 193:21-194:20, 195:1-4, 196:16-197:5.

Thus, it is not “necessarily” the case that remote switch relied upon in the Petition includes a coupling feature configured to electrically couple to an “electrical cable **of the luminaire**,” as claimed.

Although referencing obviousness, Luminex does not advance any obviousness theory for this element, instead stating that the reference “discloses” the limitation and then offering a conclusory obviousness statement. *Samsung*

Elecs. Co., Ltd. v. Imperium (IP) Holdings, IPR2015-01233, Paper 14 at 15-18 (PTAB Dec. 1, 2015) (rejecting “catch all” obviousness statements and explaining Petitioner must “identify with sufficient specificity what limitations are missing ... that a [POSITA] would have modified those references to supply”). Notably, the Board already indicated that the Petition did not establish that Halliwell taught a first coupling feature disposed on the body. Inst. Dec., 52-53. Furthermore, the Petition and Dr. Eden have failed to present any coherent theory regarding this claim term. *See supra*, Section VI.C. Therefore, Ground 2 fails for claim 13 and its dependencies.

B. Claims 1, 2-5, 7, and 9-12

1. Element 1(d): Halliwell Does Not Disclose a CCT Switch “Disposed Remotely from the Housing”

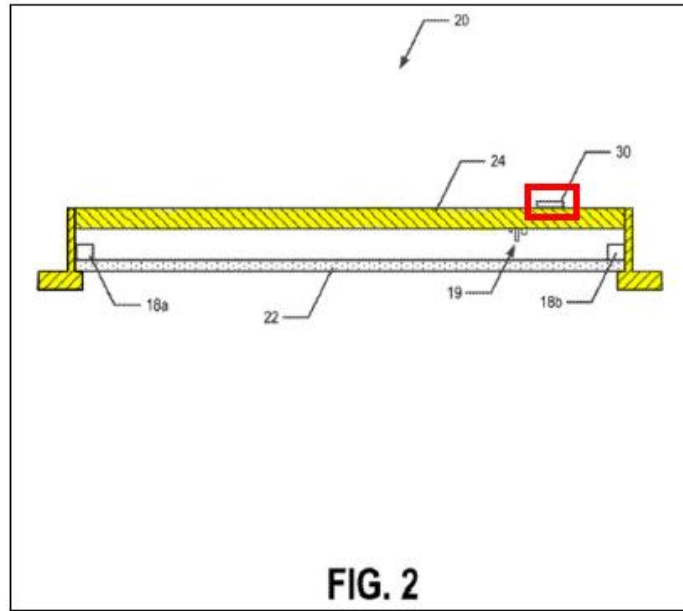
The Petition’s challenge to claim 1 under Ground 2 assumes that “remote switch 40” could be used “in place of [Halliwell’s] housing-mounted switch” (i.e., switch 30) and that switch 40 would then perform the functions of removed switch 30 (“would function as a ‘junction box mounted’ CCT switch”). Petition, 62-64. On cross-examination, Luminex’s expert made clear that the Petition misunderstands Halliwell’s disclosure, and relies on features that simply are not present in Halliwell. Ex.2031, ¶¶214-218, 238.

For example, if switch 30 were removed from the housing, it would be unable to actually perform the switching function instructed by “remote switch

40.” Ex.2030, 182:20-184:7 (“Q. ... [A]re you aware of any passage in Halliwell that describes using remote switch 40 without or completely in place of device located switch 30? A. I’m not aware of such an option ... ***you need to have switch 30*** on the -- the reason that you’re not seeing an embodiment that eliminates switch 30 is that ***the actual switching process is conducted at the luminaire*** ... So I don’t think you want to do away with switch 30... ***Because it won’t switch otherwise***”); Ex.2031, ¶248.

Accordingly, both experts agree that Halliwell’s lighting device 20 requires a CCT switch (“switch 30”) that is “***integrated*** with the housing” of the device. Ex.2031, ¶¶239-246; Ex.2030, 163:2-6, 164:11-16, 165:4-20, 182:20-184:7. Both experts further agree that “a CCT switch that is physically part of the housing or on the housing is ***not*** disposed remotely from the housing.” Ex.2030, 93:11-21 (“I do not believe that would be viewed as being remote.”); Ex.2031, ¶¶238-239.

Switch 30 can be seen integrated into housing 24 in the specific embodiment Luminex relies upon:



Ex.1012, Fig. 2 (color added).

Petition, 64-65; Ex.1004, ¶¶243-244; Ex.2030, 165:4-20; Ex.2031, ¶239. Luminex nevertheless asserts “a POSA would have understood that Halliwell’s LED luminaire would have used a switch like the one disclosed in **Fig. 4** as the ‘junction box mounted’ CCT switch,” which “would *necessarily* be coupled to the electrical cable and disposed remotely from the housing 24.” Petition, 67-68. Luminex’s argument fails for the reasons discussed above concerning element 13(b).

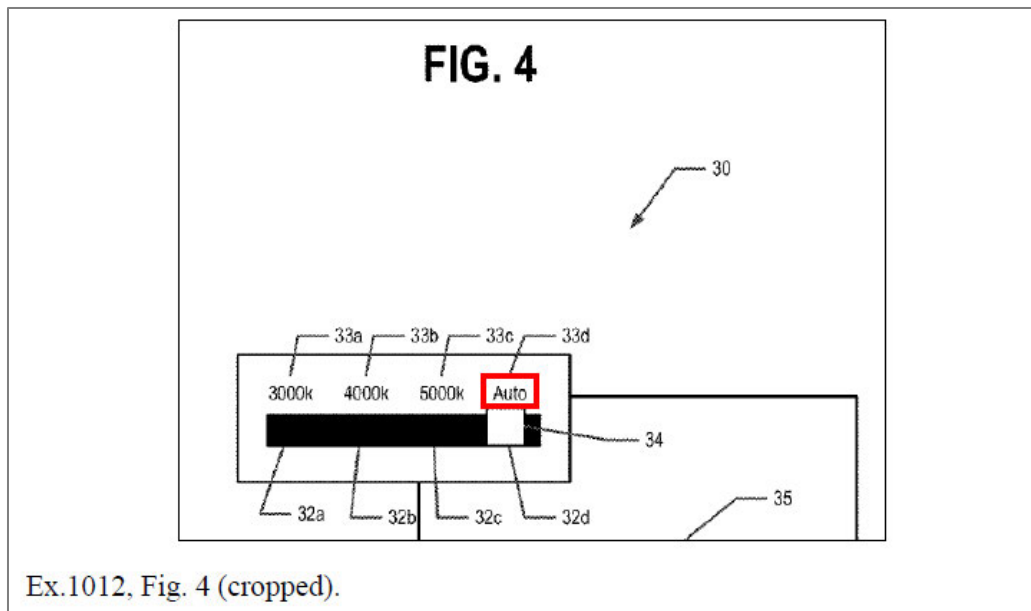
Furthermore, a POSITA would *not* have understood that wireless switch 40 could be implemented using switch 30 “in Fig. 4,” given their incompatible functions. Petition, 67-68; see Ex.2030, 166:9-19, 190:19-192:19; Ex.2031, ¶¶216-217, 240-247. Halliwell’s “switch” is switch 30, whereas remote device 40 is “*not a switch at all*” and “simply ... conveys instructions” to switch 30. Ex.2030,

182:20-184:7. Nor would a POSITA have understood switch 30 could simply be moved to Halliwell's remote junction box, as this argument again misunderstands that the "remote control" (remote switch 40) controls switch 30, such that making switch 30 remote makes no sense, as Luminex's expert agrees. *Id.*; Ex.2030, 190:19-192:19 ("It's not used as the remote switch. That's why it's labeled 30."); Ex.2031, ¶247. Further, Luminex misunderstand the "junction box" discussion, which pertains to a wall switch. *Id.*; Ex.2030 at 185:6-19. The experts agree that switch 30 (located at the luminaire) is necessary for Halliwell to operate, and there is no disclosure anywhere in Halliwell or the Petition describing how a modified luminaire would work without switch 30 located at the device. Ex.2030, 182:20-184:7 ("I don't think you want to do away with switch 30.").

Therefore, Ground 2 fails as to claim 1 and its dependencies.

2. Element 1(e): Halliwell Does Not Disclose an Actuator Wherein "Each Position" Corresponds to a Discrete CCT Output

Luminex asserts that "[t]he exemplary switch shown in Fig. 4 includes *four positions* that 'correspond to set operating color temperature modes with *each position* corresponding to a particular set operating color temperature.'" Petition, 68-69. However, as illustrated in Figure 4, one of those "four positions" is "Auto" (32d), which does *not* "correspond[] to a discrete [CCT] output" by the lighting device as claimed.



Petition, 69. The “Auto” position causes switch 30 to enter “configurable” mode, where switch 30 allows control through remote switch 40. Ex.1012, 5:37-48, 11:36-42, 11:62-12:15, 12:60-13:49; Ex.2031, ¶¶251-255. Thus, “each position” of the four disclosed switch positions relied upon by Luminex does **not** “correspond[] to a discrete [CCT] output,” as claimed. Luminex does not propose modifying or omitting any switch positions. Petition, 68-69. For this additional reason, Ground 2 fails against claim 1 and its dependencies.

3. Claim 7: Halliwell Does Not Suggest a Switch Within a Junction Box of the Luminaire

Claim 7 depends from claim 1 and requires that “[t]he luminaire” further comprise “a junction box ... wherein the switch is disposed within the second cavity” of the junction box. Ex.1001, 14:65-15:2. For this limitation, the Petition relies upon Halliwell’s statement that “the remote switch 40 may be a ... junction

box mounted toggle switch ... in wired communication with the switch control unit 35.” Petition, 72 (quoting Ex.1012, 17:39-42). Luminex further relies on Halliwell describing remote switch 40 being “mounted” on a junction box, and then asserts it would be “obvious” to “locat[e] the CCT switch *inside* the junction box.” *Id.* Luminex again misunderstands Halliwell.

As discussed above, both experts agree that the “junction box mounted toggle switch” that Halliwell describes for “remote switch 40” is **not** a junction box of the lighting device, but rather a separate junction box associated with, e.g., a “wall switch.” Ex.2031, ¶¶257-265; Ex.2030, 185:6-19. As Luminex’s expert recognized, “you would want that remote switch 40 to remain accessible at all times,” which would not be the case if you disposed the switch in a junction box **of the luminaire**, as disclosed in the ’336 Patent. Ex.2030, 187:22-188:21; Ex.2031, ¶¶261-262; Ex.1001, 11:30-60, 12:40-13:19, Figs. 9A, 9B, 10. For this reason, Luminex’s challenge to claim 7 fails.

Furthermore, for the reasons discussed above, Luminex fails to demonstrate that remote switch 40 “would necessarily be coupled to the electrical cable.” Petition, 73; *supra*, Section IX.A.3; Ex.2031, ¶264.

4. Claim 11: Halliwell’s Remote Switch is Not “Inaccessible”

Claim 11 depends from claim 1 and further requires that “the switch is inaccessible when the housing is installed.” Ex.1001, 15:16-17. Luminex again

asserts that remote switch 40 could be “mounted in the junction box” to be “inaccessible to the user when the LED housing is installed in the ceiling.”

Petition, 75. Again, the “junction box” for switch 40 is **not** the junction box for “the luminaire,” and is, for instance, a wall switch junction box, so as to allow the switch 40 to serve as a remote control. *Supra*, Section IX.B.3; Ex.2031, ¶267.

Luminex’s expert acknowledged the same at his deposition, admitting that remote switch 40 is “**by definition ... accessible at all times.**” Ex.2030, 185:6-19, 187:22-188:21. Indeed, it acts as a remote control.

Luminex also relies on Halliwell’s disclosure of selecting color temperature “before the ... LED lighting device is installed” (Petition, 75), but this language is in reference to device-located switch 30, not remote switch 40, as made clear by the sentence that follows Luminex’s cited language. Ex.1012, 4:31-37

(“Alternatively, the user may select to operate the LED lamp or LED lighting device in a configurable operating mode following installation.”); Ex.2031, ¶268.

As explained above, device-located switch 30 is not “disposed remotely from the housing” (*supra*, Section IX.B.1) and thus cannot satisfy claim 11. Thus, Ground 2 fails for that claim.

X. **The Petition Is Time Barred Due to an RPI and/or Privy Relationship with Menard**

Menard was served with an infringement complaint asserting the ’336 Patent on August 26, 2022. Ex.2003. Luminex filed its petition over one year later. While

the Board found that Menard was an RPI and, thus, Luminex was time-barred under 35 U.S.C. § 315(b), the Director reversed that decision. (Paper 20; “Decision”).

The Director held that a “standard, non-exclusive, manufacturer-customer indemnification agreement,” without more, does not establish a real party in interest. Decision, 11. The Director emphasized that her decision was limited by the record before her. Decision, 3, 8, 12, 14-17, 19-20. The supplemented record demonstrates that the interactions between Menard and Luminex did involve “more.”

A. Luminex’s Provision of Private Label Products to Menard Confirms an RPI Relationship Regarding the Accused Products

To determine the relationship between Menard and Luminex, the Director looked only at the indemnification language in the pre-existing contract between the parties, concluding this “standard language” suggests “a conventional supplier-distributor” relationship. Decision, 12; *id.*, 13 (finding “no evidence here of an exclusive, or similarly relevant, business relationship”).

The supplemented record confirms that there is a “similarly relevant” relationship between Luminex and Menard with respect to Signify’s allegations and Menard’s indemnification request. [REDACTED]

[REDACTED]

[REDACTED]

“Private label” products bear Menard-owned brands and are sold to customers ***exclusively*** by Menard such that Luminex cannot supply Menard-branded products for anyone other than Menard. The same indemnification language could apply to both private label (i.e., Menard-branded) products and Luminex-branded products sold by Menard—but there is no “cloud” over Luminex products to remove with respect to Menard or “other customers”—the only “cloud” to remove is exclusively over Menard. *See* Decision, 14.

The supplemental record also shows that the Director’s equitable and practical concerns were misplaced under the present facts. First, the Director cited potential “encouragement” of patentees suing retailers to “escape” the threat of an IPR from a manufacturer. Decision, 14. But where ***private label*** products are infringing, the ***only*** party known to the patentee to be infringing is the brand owner. The inequitable result regarding ***private label*** products results when the patentee sues the brand owner to stop the infringement, but then is denied § 315(b)’s protection against untimely IPRs because the brand owner—unbeknownst to the market—contracts with third-parties to supply the product. This result is especially inequitable where, as the Director held here, the patentee is further denied § 315(a)’s protection against IPRs filed subsequent to declaratory judgment claims for invalidity.

Second, as a practical matter—and contrary to the Director’s assumption (Decision, 14)—[REDACTED]

[REDACTED]

[REDACTED]

In sum, [REDACTED]

[REDACTED]—removes the Menard-Luminex relationship from a standard customer-distributor relationship, and towards the similarly “exclusive” relationship the Director attempted to distinguish.

B. Luminex’s Actions Were Not Limited to the Litigation

Based on the limited record, the Director viewed Luminex’s actions as limited solely to defense in the district court litigation, without any indication that Luminex acted as a “representative or at the behest of Menard” outside of the litigation. Decision, 13, 16 (“the evidence shows at most that Menard requested indemnification in district court”). But that is not the case.

Signify first reached out to Menard in connection with licensing options for the ’336 Patent in 2021. Ex.2015, 1-2. However, the response to that letter came from counsel for **Luminex**, who directed Signify **not to contact Menard** and instead negotiate any licensing of Menard through Luminex. Ex.2016, 1. Even after Signify stated that it wished to conduct licensing talks with Menard,

Luminex’s counsel again responded and stated that Luminex “request[s] that [Signify] allow [it] to accept *on behalf of Menard* your offer” for a meeting on the matter. Ex.2017, 1. Further, Luminex stated that *Luminex* would determine whether *Menard* would take a license and that any movement on the issue “must include a meeting with Luminex.” *Id.*, 1-2.

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

Thus, Luminex acted as Menard’s representative well before the litigation and well outside the bounds of the indemnification clause. *Applications in Internet Time, LLC v. RPX Corp.*, 897 F.3d 1336, 1351 (Fed. Cir. 2018) (“determining whether the non-party is a clear beneficiary that has a preexisting, established relationship with the petitioner”).

For all of these reasons, the supplemental record addresses that Director’s concerns and distinguishes Luminex’s provision of Signify-accused private label products for Menard from a standard customer-distributor relationship as the Director perceived. Instead, there is “‘more’ evidence” (Decision, 15) that shows

an RPI and/or privy relationship in which Menard instructed Luminex to act as its representative and Luminex complied.

XI. Conclusion

For the reasons above, the Petition fails.

Respectfully submitted,

December 23, 2024

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CERTIFICATE OF COMPLIANCE

Pursuant to 37 C.F.R. § 42.24(d), I hereby certify that the foregoing Patent Owner Response Under 37 C.F.R. § 42.107 contains 13,984 words as measured by the word processing software used to prepare the document, excluding the cover page, signature block, and portions exempted under 37 C.F.R. § 42.24(a).

Respectfully submitted,

December 23, 2024

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CERTIFICATE OF SERVICE

I certify that a copy of the Patent Owner Response Under 37 C.F.R. § 42.107, including the exhibits, was served to Petitioner by causing it to be sent by email to counsel for Petitioner at the following email address:

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Respectfully submitted,

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