

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

LUMINEX INTERNATIONAL CO., LTD.
and MENARD, INC.,
*Petitioners**

v.

SIGNIFY HOLDINGS B.V.,
Patent Owner

Case IPR2024-00101

U.S. Patent No. 10,299,336

**PETITIONER REPLY TO
PATENT OWNER RESPONSE**

* Menard, Inc. filed a petition and a motion for joinder in IPR2024-01469 and has been joined as a petitioner in this proceeding.

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Petitioner's Updated Exhibit List

Ex. No.	Description
1001	USP 10,299,336
1002	USP 7,014,336
1003	USP 10,234,091
1004	Eden Declaration
1005	CCT, Understanding the Basics
1006	USP 9,345,112
1007	FH of '336 Patent
1008	FH of '424 Provisional
1009	USP 9,820,350
1010	'336 Claim Charts
1011	USP 7,178,941
1012	USP 9,801,250
1013	USP 7,192,160
1014	Kay 2023
1015	USP 2,828,393
1016	USP 3,502,825
1017	'941 Patent Assignment
1018	3-17-23 Order setting status conference
1019	10-2-23 Scheduling Order
1020	9-26-23 Joint preliminary pretrial conference report
1021	FH of '062 Application
1022	FH of '141 Application
1023	USP 10,299,335
1024	Messing Declaration
1025	Order Granting Motion to Stay Pending IPR
1026	Signify's 10-25-23 RFPs to Luminex
1027	Eden Declaration
1028	EH Series DPDT Toggle Switch
1029	Slide Switch 3 Position Locking
1030	USP 9,232,602
1031	3-13-25 Deposition Transcript of Dr. Michael Krames
1032	Globe Patent List
1033	US Publication 2010/0289044
1034	USP 8,933,644
1035	2-20-15 Osram Lightify Starter Kit Review
1036	Philips Lighting Catalogue 2015/16

Ex. No.	Description
1037	Advanced Lighting Technologies 2015/2016 LED Lighting Catalog
1038	Krames Teardown, SIGNIFYMNRD0018750
1039	Chromaticity Diagrams
1040	CIE 1931 color space
1041	Blackbody radiation for various temperatures
1042	IES Method for Determining Correlated Color Temperature (CCT) and Distance from the Planckian Locus of Light Sources
1043	Wien's displacement law
1044	Home Depot Website Listing for Globe Product No. 91479
1045	Home Depot Website Listing for Globe Product No. 91477

I. INTRODUCTION

Patent Owner (“PO”) fought to avoid the Petition’s merits, making numerous procedural arguments that the Director rejected. Papers 12, 20. With these procedural arguments disposed of, the Board had no trouble recognizing the ’336 patent’s unpatentability. In a detailed, well-reasoned Institution Decision (“DI”), the Board correctly concluded that the Petition¹ demonstrates a reasonable likelihood of proving the unpatentability of all challenged claims (1-20).

PO Response (“POR”) uses a shotgun approach, seeking to overwhelm the Board with excessive arguments. But the ’336 patent’s purported inventions—locating a well-known CCT switch “remotely from [the luminaire’s] housing” (claim 1), or having that switch be “electrically coupled to” any “electrical cable” of the luminaire (claim 13)—were known in the art and obvious, elementary design choices. Pet., 29, 41-42, 67-68, 77-78, 86-87. Claims 1-20 should be canceled.

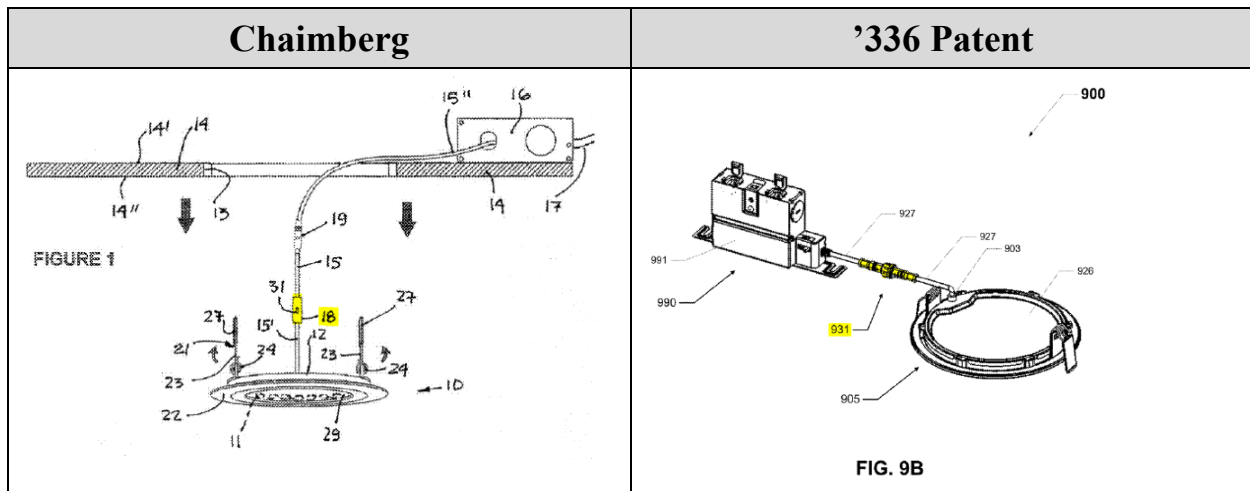
II. CLAIMS 1-12 ARE UNPATENTABLE

A. Claimed Switch Locations Are Anticipated And/Or Obvious

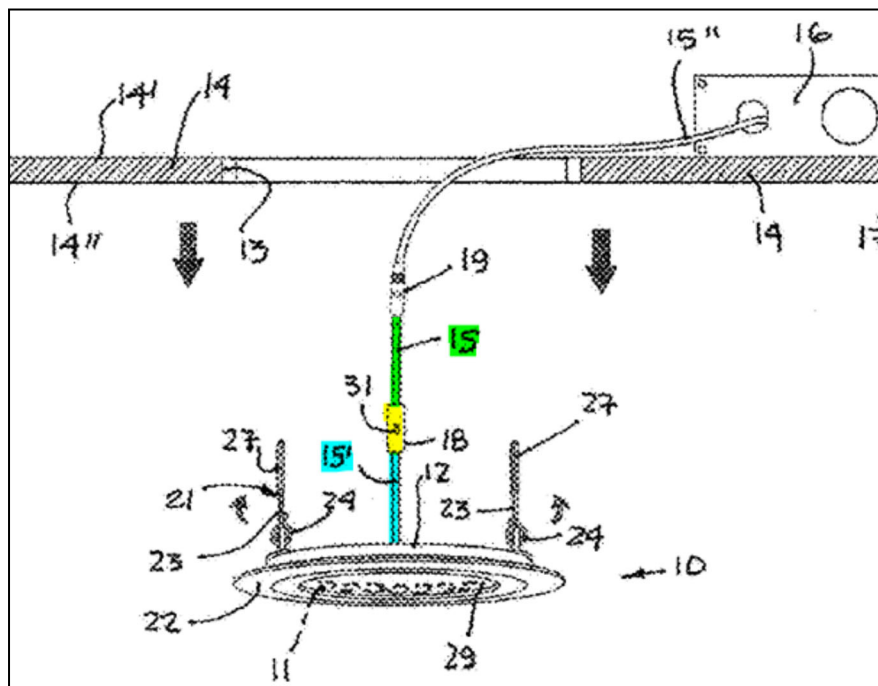
1. Chaimberg

Claim 1: Petition (11-12, 29) established that Chaimberg’s CCT switch disposed “remotely from the housing” is nearly identical to the ’336 patent’s:

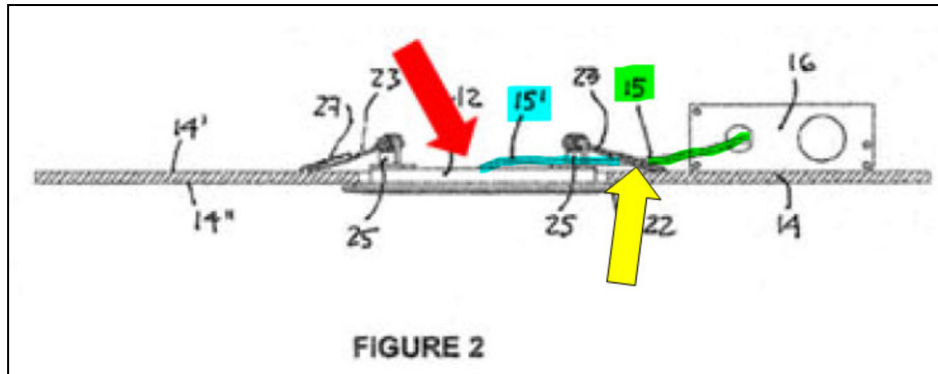
¹ Luminex, Inc. files this Reply. **Menard had no involvement in it.**



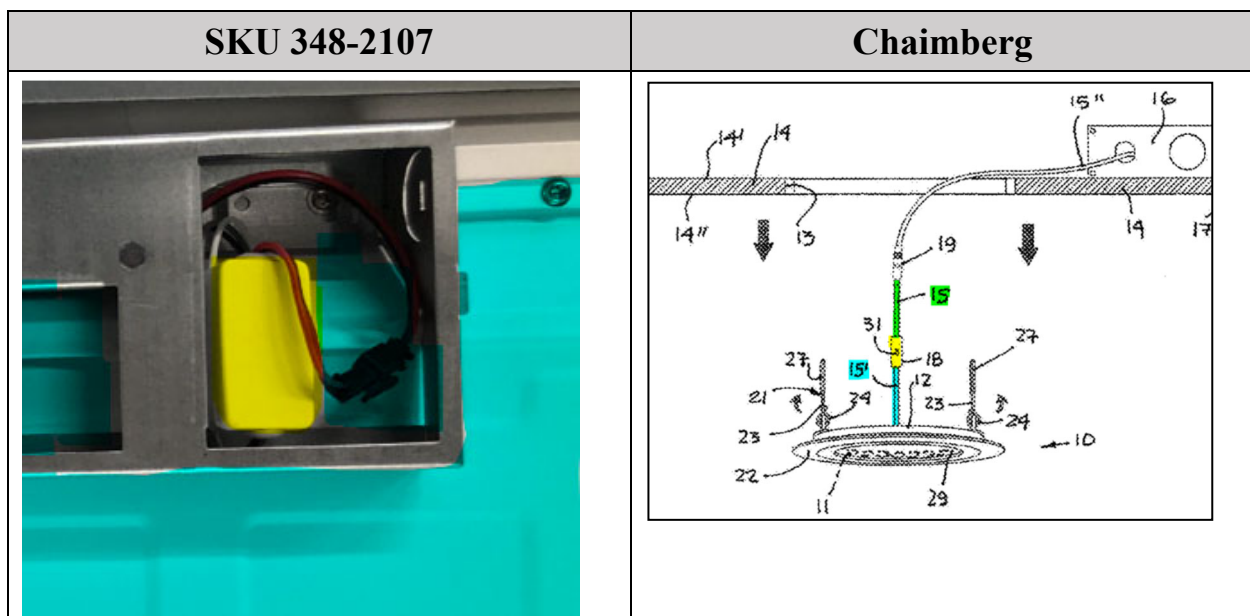
POR (48-50) argues that “[switch] 18 is *not* designed to be ‘disposed remotely from the housing.’” But Chaimberg is clear; CCT “selector switch 18 [yellow] is mounted on the cable 15” remotely from housing 12 (Figure 1):



Chaimberg’s Figure 2 confirms that switch 18 is remote because switch 18 is hidden from view behind support 23, *outside the luminaire housing* (yellow arrow) (EX1027, ¶¶8-11):



Dr. Krames admitted that “an external [switch]”—even if “touching the light fixture housing”—“would be remote.” EX1031, 69:17-20. Chaimberg’s switch 18 is indisputably external from housing 12 and therefore *must* be remote. PO cannot claim that the switch on the left (yellow) below is remote from the housing it touches (blue), yet argue that Chaimberg’s switch is not. EX1031, 69:17-20; EX1027, ¶¶16-17.



POR (51) also argues that Chaimberg disparages “a switch disposed remotely from a luminaire housing.” Nonsense. EX1027, ¶22. PO cites Chaimberg

disclosures (EX1003, 1:48-2:12, 3:29-48) related to the *conventional technique* of mounting a CCT switch on a *driver housing*. These citations confirm remote switches were well-known, and say nothing about CCT switches remote from a *luminaire housing*, much less disparage this.²

Claim 7: Petition (32-35, 38) established that Chaimberg renders obvious a CCT switch within a junction box's cavity. EX1004, ¶¶121-129.³ Dr. Krames agrees that Chaimberg describes the *conventional technique* where “a selector switch is mounted on a driver housing 16,” *i.e.*—junction box. EX1031, 36:9-18; EX1003, 1:44-50. Dr. Krames further conceded that “[i]f the switch is on driver housing 16...of Chaimberg, that switch would be remote from the light fixture because the driver housing 16 is remote from Chaimberg's light fixture.” EX1031,

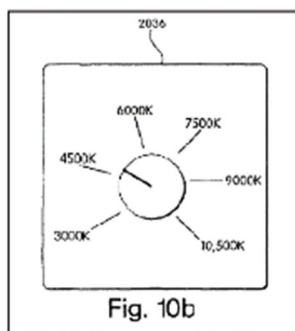
² Dr. Krames raised alleged “deficiencies” in Chaimberg Figure 3. EX1031, 187:3-189:11. These alleged “deficiencies” are inconsequential. Drs. Eden and Krames agree that CCT tuning techniques employed by Chaimberg were well-known in the art **years** before Chaimberg. Dr. Krames himself disclosed an LED lighting device with adjustable CCT (3000K/4000K/5000K) in 2014 “that can output a few specific spectra and be controlled by a simple mechanical switch” using the same tuning method of the '336 patent. EX1031, 127:17-19; EX1027, ¶70. POSA's toolkit would have included Dr. Krames's teachings (and others like it) in February 2016, confirming the '336 patent's obviousness. EX1027, ¶¶70-83. Thus, POSA would have had no issues implementing Chaimberg's invention. *ABT Sys., v. Emerson Elec.*, 797 F.3d 1350, 1360 (Fed. Cir. 2015) (“even an inoperative device...is prior art for all that it teaches”) (citations omitted). Moreover, any such arguments were not raised in POR, and therefore, are waived.

³ POR's claim 7 and 19 arguments (48) are identical; thus, claim 19 arguments fail for the same reasons as claim 7.

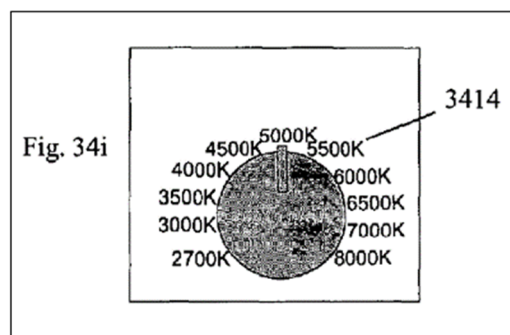
38:25-39:4. Because Chaimberg discloses mounting the switch on the driver housing, Dr. Krames agrees that Chaimberg discloses a remote (claim 1), junction box-mounted switch (claim 7).

POR (52-55) argues that because Chaimberg allegedly disparages the conventional junction box-mounted CCT switch, the conventional technique is somehow patentable. That defies logic. *In re Gurley*, 27 F.3d 551, 553 (Fed. Cir. 1994). POR agrees that Chaimberg describes claim 7's structural features ("housing," "electrical component," "electrical cable," "CCT switch") as well as the conventional technique of locating a switch on a junction box. POR, 48-55. These disclosures establish the obviousness of claim 7. *Merck v. Biocraft Lab'ys.*, 874 F.2d 804, 807 (Fed. Cir. 1989).

Moreover, switches for controlling a luminaire's CCT had been known for **more than 17 years** before the '336 patent was filed.



EX1002 (2000)



EX1011 (2004)

In fact, Dr. Krames himself disclosed LED lighting devices with adjustable CCT (3000K/4000K/5000K) **in 2014** "that can output a few specific spectra and be

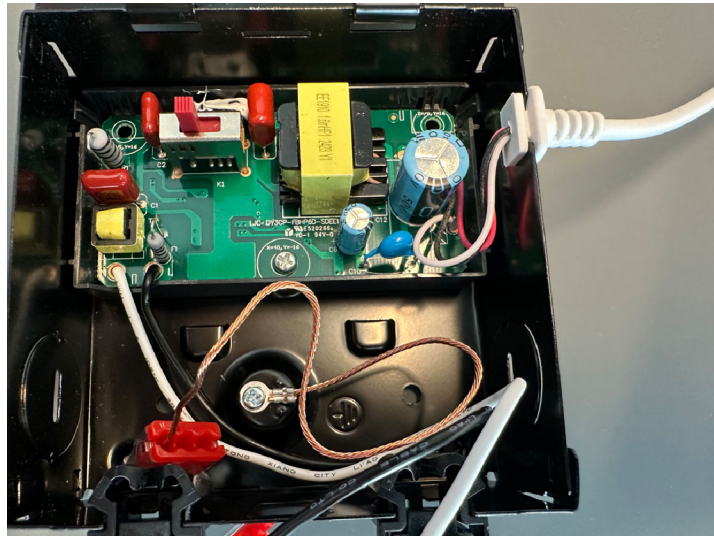
controlled by a simple mechanical switch” **using the same tuning methods of the ’336 patent and Chaimberg**. EX1031, 26:15-17; EX1027, ¶¶70-74. The location of a well-known CCT switch amounts to an elementary, obvious design choice. Pet., 12. In *KSR Int’l Co. v Teleflex Inc.*, SCOTUS held a patent relating to a pedal-assembly and a sensor attached to a fixed pivot point to be obvious because both the pedal-assembly and the sensor were known, and mounting the sensor on a fixed pivot point was a design step well within POSA’s grasp. 550 U.S. 398, 427-28 (2007). Here as well, placing a switch remotely from the housing, or within a junction box are obvious design steps well within POSA’s grasp, guided by practical considerations like application and accessibility. EX1027, ¶¶6-7.

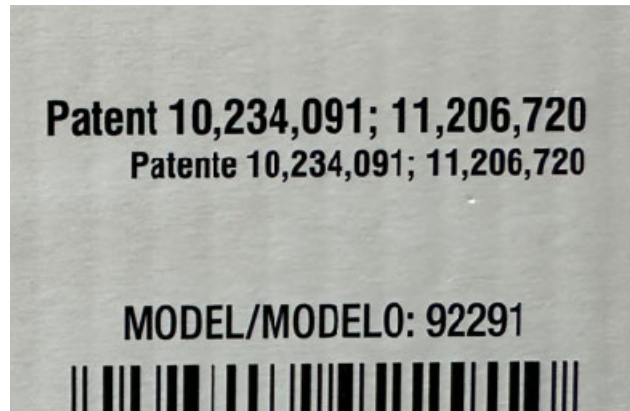
Contrary to POR (53-54), Dr. Eden did not testify that POSA would have rejected a junction box mounted switch based on Chaimberg. Dr. Eden instead clarified that engineering involves trade-offs, and Chaimberg merely identifies “issues that one must consider regardless of where one mounts [the switch].” EX2030, 203:18-205:24; EX1027, ¶21. Moreover, Dr. Krames “do[es]n’t see the difficulty with” POSA mounting a switch in the junction box. EX1031, 164:10-12.

Finally, Dr. Eden explains, Globe (Chaimberg’s assignee) manufactures luminaires embodying, and marked with, Chaimberg. These products include a cable-mounted CCT switch that is **remote during installation** and a junction box-

mounted lumen switch with the structural requirements of claim 7—confirming that simple modifications of the '336 Patent were obvious. EX1027, ¶¶12-15, 23.

Globe No.92291



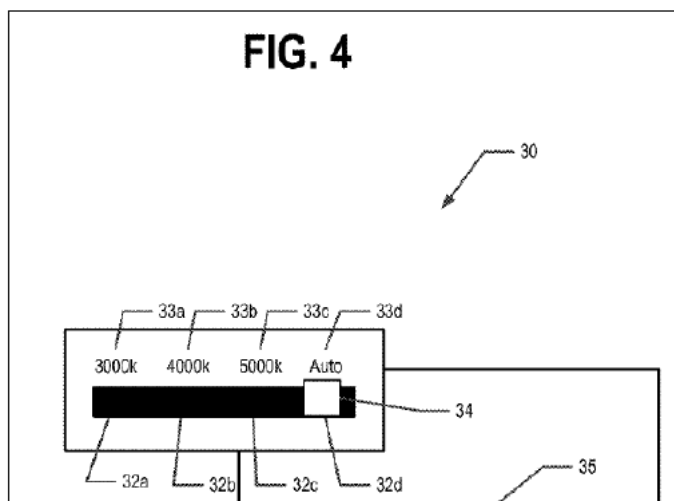


2. Halliwell

Halliwell likewise discloses and/or renders obvious the switch locations of claims 1, 7, and 11. Pet., 64-69, 72-73, 75. Halliwell discloses configurable lighting systems with: (i) switch 30 located on a luminaire's housing, and (ii) "remote

switch 40” located remotely from the luminaire’s housing. EX1012, 5:37-6:1.

Petition explained that Halliwell’s remote switch 40 controls the luminaire’s CCT using a sliding actuator, in embodiments, like that in Halliwell’s Figure 4 with a plurality of positions (first, second, third) corresponding to discrete CCTs (3000K/4000K/5000K, respectively):⁴



EX1012.

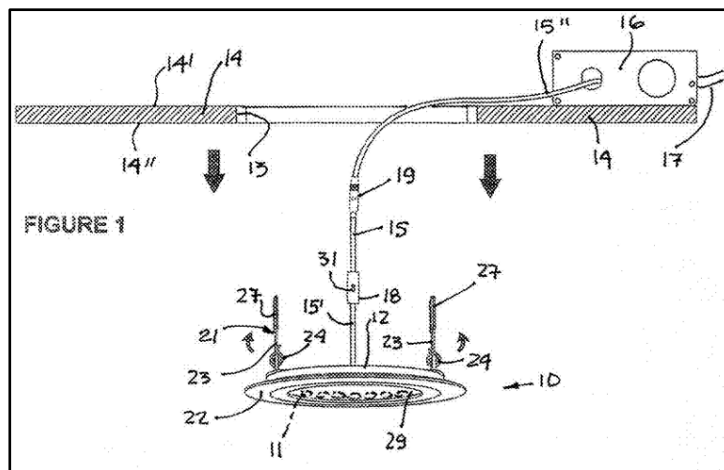
POR (71-74) argues Petition’s unpatentability showing requires the removal of Halliwell’s housing-mounted switch 30, thus rendering Halliwell inoperable. Not so. Pet., 62 (Halliwell’s remote switch 40 used “in addition to” switch 30 renders obvious claims 1, 7, and 11.).

⁴ Dr. Krames agrees these positions are “a plurality of positions,” “correspond[ing] to a discrete correlated color temperature.” EX1031, 170:17-172:2; 62:8-16. The presence of an additional (“Auto”) position does not change this. Claim 1 uses the transitional phrase “comprising,” which “permits the *inclusion* of other steps, elements, or materials.” *In re Baxter*, 656 F.2d 679, 686 (C.C.P.A. 1981).

POR (73) argues POSA would not have implemented remote switch 40 as a slide switch (like Figure 4) because of their supposed “incompatible functions.” But Halliwell states switches 30 and 40 are both used for controlling CCT, confirming their functional similarity. EX1012, 17:56-60. Halliwell’s remote switch 40 could be “a wall switch, remote control, mobile computing device, and/or the like,” or even a “junction box mounted toggle switch”—demonstrating that Halliwell contemplated switch 40 to be implemented with various well-known switch types, including slide switches. *Id.*, 1:60-67, 17:39-42. Halliwell further explains that remote switch 40 includes a “remote selector 44 [that] may be a slide...button,” like that in Figure 4. *Id.*, 18:31-32.

B. Ground 1A, Other Limitations

For claim 7, POR (54-55) argues Chaimberg does not disclose or render obvious “the second end of the electrical cable is coupled to the switch.” Not so. Chaimberg’s “cable 15 is secured at one end 15’[] to the light housing 12,” and “at a far end 15" to a driver circuit 20,” which is mounted in driver housing 16 (junction box). EX1003, 3:18-23.



Id. Since cable 15 terminates in the junction box, POSA would understand that if the switch is inside the junction box, it must be coupled to the second end of the cable to function. EX1004, ¶¶128-129.

POR's argument (54) that "Chaimberg's design receives power from live wire 17 not cable 15" is misleading. Live wire 17 provides line voltage to driver circuit 20, but cable 15 connects driver circuit 20 to LEDs 11. EX1003, 3:23-25, Fig. 1. Dr. Krames agrees. EX1031, 77:21-25 ("cable 15 supplies driving current to each of the sets of LEDs"). POSA would recognize that when the switch is inside the junction box, it must be connected to the second end of cable 15 to be integrated into the circuit. Pet., 35. Without this connection, the switch would not be connected to the circuit, and unable to control the flow of current to the LEDs. *See* EX1003, 4:30-5:10.

C. PO's Ground 1B Arguments Fail

1. Motivation To Combine Chaimberg And Roberge With A Reasonable Expectation Of Success

POR (57) argues that Petition's "sole basis" for "why a POSITA [would] modify Chaimberg in view of Roberge" is that Chaimberg's LED light fixture can include "***at least*** two sets of LED's of different [CCT]." Not so; Petition (49-52) included a fulsome motivation-to-combine analysis, first explaining the similarities between Chaimberg and Roberge as supporting the combination. *In re Inland Steel Co.*, 265 F.3d 1354, 1362 (Fed. Cir. 2001); *In re Johnston*, 435 F.3d 1381, 1385 (Fed. Cir. 2006). Dr. Krames, recognizing these similarities (EX1031, 29:6-30:15, 81:17-82:1), conceded that Roberge's LED lighting units with housings "would be considered luminaires" (*id.*, 86:20-88:7). Petition (49-52) also established POSA's motivation to modify Chaimberg to include additional CCT outputs, further supporting the proposed modification.

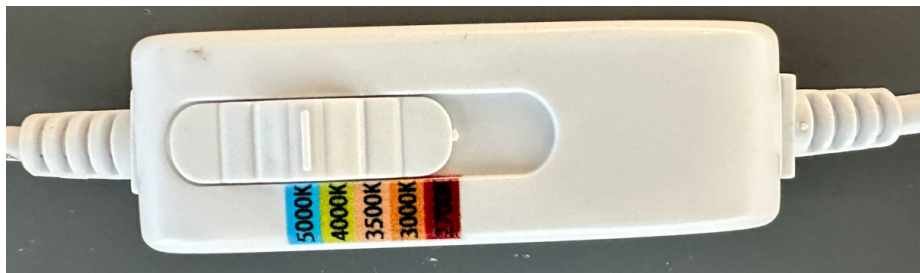
POR (57) argues "Chaimberg never mentions, much less suggest[s], the inclusion of CCT settings beyond the three expressly disclosed therein." However, Chaimberg repeatedly describes its LED light fixture as including ***two or more*** sets of LEDs of different CCTs ("***at least two sets*** of LED's of different [CCT]"), and POSA would have understood that having more than two sets of LEDs would advantageously enable more than the three CCT settings explicitly discussed in Chaimberg (3000K/4000K/5000K). EX1003, Abstract, 1:7-14, 2:29-32, 2:38-45,

5:16-39. Indeed, the Globe products embodying Chaimberg include CCT switches with five positions (2700K/3000K/3500K/4000K/5000K). EX1027, ¶53:

No.92291



No.91458



POR also argues that Roberge’s CCT switch is incompatible with Chaimberg because the switch is not intended to be “accessible for further configuration after

device installation.” POR, 58. False: POSA would have understood Roberge’s switch as providing a simple and effective means of selecting from among the different available CCTs in Chaimberg (Pet., 52; EX1004, ¶¶187-199), and Roberge’s recognition that its switch *may* be made inaccessible in some applications would not have dissuaded POSA from using this switch in Chaimberg.

POR (56) further argues “the words ‘expectation’ or ‘success’ appear nowhere in the Petition.” But “[a] party does not need to use the phrase ‘reasonable expectation of success,’ ‘likelihood of success,’ or some other set of magic words, to establish a reasonable expectation of success.” *Juniper Networks v. Correct Transmission, LLC*, 2024 WL 3517862, at *4 (Fed. Cir. 2024). A reasonable expectation of success analysis “can be implicit.” *Elekta Ltd. v. ZAP Surgical Sys., Inc.*, 81 F.4th 1368, 1376 (Fed. Cir. 2023). Here, Petition established, *inter alia*, the similarity and compatibility of Chaimberg and Roberge, and the proposed modification’s trivial nature. Pet., 14, 49-52; EX1004, ¶¶128, 187-199. These arguments and evidence are “intertwined” with Petition’s showing on motivation to combine, and establish that the proposed combination is a routine engineering task with a reasonable expectation of success. *Elekta*, 81 F.4th at 1376.

2. Claims 4/5’s Trivial Features Do Not Distinguish The Prior Art

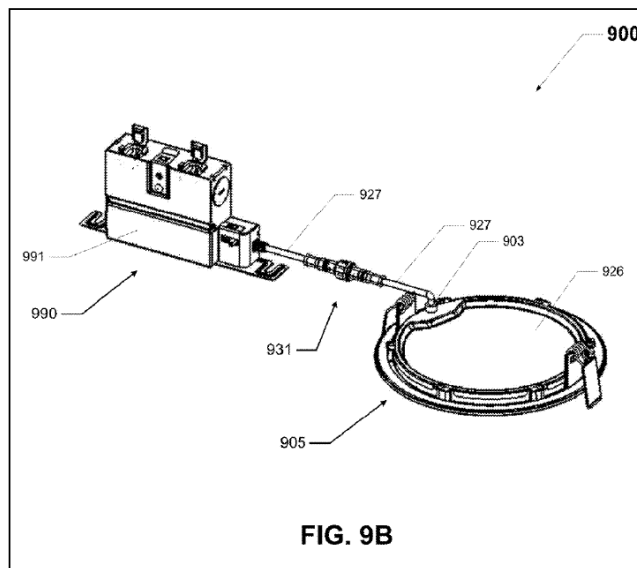
For claims 4/5, POR argues that Petition employs hindsight. POR, 59-62. False. Chaimberg is clear; its luminaire can be modified to add switch positions and

CCT values, including those in claim 5. EX1004, ¶¶205-220. Dr. Krames and the '336 patent agree that the claimed CCTs were known in the art. EX1031, 90:3-6. In fact, Dr. Krames himself disclosed in 2009 that a “color temperature of between 2700 and 3000K is considered the most pleasing for living spaces.” *Id.*, 92:2-12. It would have been routine and obvious for POSA to purchase switch with claim 4/5's positions and CCTs. EX1004, ¶¶203-220. Indeed, such switches were disclosed in Roberge and readily available for purchase off-the-shelf. EX1027, ¶¶49-51.

III. CLAIMS 13-20 ARE UNPATENTABLE

A. Claims 13, 15, And 16 Are Not Entitled To The '424 Provisional's Priority Date

PO claims priority to the '424 Provisional for claims 13, 15, and 16 to avoid Chaimberg and Halliwell. PO is both technically and legally wrong. The '336 patent issued from a continuation-in-part (CIP) application; Petition established that claim 13's switch with “at least one first coupling feature...configured to electrically couple to an electrical cable of the luminaire” was first described in the CIP's newly added disclosures (e.g., Fig. 9B). Pet., 18. Thus, claims 13, 15, and 16 are entitled to a priority date no earlier than June 2018 (CIP's filing). *Id.*, 18-23.



POR (17-20) argues that the DIP switch identified in the '424 Provisional is the claimed switch, but nowhere does the Provisional describe an “electrical cable” electrically coupled to the DIP switch. Instead, POR (17-20) claims the '424 Provisional’s isolated mention of “[e]lectrical wiring (not illustrated),” is the claimed “electrical cable that connects and provides power to the substrate into which the pins of the disclosed [switches 210] are inserted.” This argument is technically and legally wrong for several reasons.

1. PO is Technically Wrong

First, '424 Provisional’s “electrical wiring”, **mentioned just once in passing** and not shown in the figures, is not necessarily the claimed “electrical cable *of the luminaire*”—it may be existing wiring, outside the scope of the claims (e.g.—house wiring). PO concedes that “existing house wiring that is wired directly into a lighting device [would not] constitute ‘an electrical cable *of the luminaire*.’” EX2031, ¶233;

EX1031, 97:1-3. Dr. Krames further explained that LED “light fixtures are powered by typically DC current...from the output of the driver” and the “drivers receive their power from **existing wiring** in the house.” EX1031, 99:17-100:2. The ’424 Provisional’s LED driver is located in the luminaire housing. Thus, in implementations of the ’424 Provisional using the “[e]lectrical wiring (not illustrated),” this refers to “existing wiring in the house” that *could* provide power to the LED driver, and such house wiring is not a cable of the luminaire. EX1027, ¶¶57-60; EX1031, 96:8-20.

Second, the ’424 Provisional’s luminaire does not even need an electrical cable (“of the luminaire” or otherwise) electrically coupled to a switch. Dr. Krames conceded that the ’424 Provisional’s luminaire could be battery powered, such that switches 210 would not be electrically coupled to **any** electrical cable. EX1031, 100:8-10. In fact, the ’424 Provisional describes and depicts its luminaire as being powered via a “DC power supply 205,” *i.e.*, a battery. EX1008, 019:8-10, Figs. 2, 4. Dr. Eden confirmed the known use of powering a luminaire via a battery, without the need for an electrical cable coupled to the switch. EX2030, 89:4-15. And the ’424 Provisional never references AC power (*e.g.*, wall outlet) or any type of electrical cable for powering the substrate (or light fixtures generally).⁵ Dr. Krames

⁵ Contrary to POR’s suggestion (42), Petitioner and Dr. Eden agree the claims encompass indirect electrical coupling. EX2030, 159:13-160:6. But the ’424 Provisional discloses no electrical coupling (direct or indirect) between switches 210

agreed that “light fixtures are powered by typically DC current...from the output of the driver” which could be battery powered (EX1031, 99:22-100:10), and further conceded that DIP switches (referenced in ’424 Provisional) do not require a cable, admitting that “in many cases there are no cables and so there is no cable to connect to.” *Id.*, 109:2-10.

Third, POR’s citations (11-14) to the ’424 Provisional’s Figures 2, 4 likewise do not support “coupling feature...configured to electrically couple to an electrical cable of the luminaire.” These figures show switches 210 receiving power from “a DC power supply 205.” EX1008, 019, 039-040. But, Dr. Eden and Dr. Krames agree, Figures 2, 4 are “schematic diagram[s],” and the lines shown as connecting components do not represent “electrical cable[s].” EX2030, 71:22-72:6 (Eden); EX1031, 101:15-21 (Krames). For example, the line between switches 210 and DC power supply 205 could represent a circuit trace, *i.e.*-an electrical connection via a thin layer of metal disposed on substrate 125, *not* an electrical cable. EX1027, ¶66.

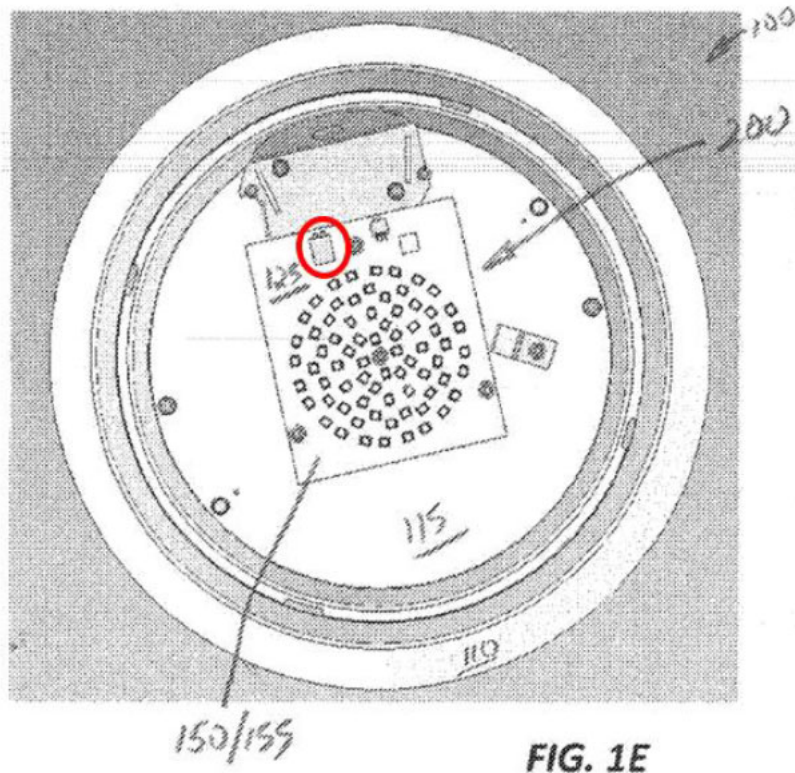
and any “electrical cable of the luminaire.” EX1027, ¶69. Dr. Eden simply recognized the overbreadth of claim 13 (EX2030, 223:24-226:8), but maintains that even if the ’424 Provisional’s DIP switches have coupling features, they are not described as electrically coupled to an electrical cable of the luminaire (or any cable). EX1004, ¶¶59-66; EX1027, ¶69.

2. PO is Legally Wrong

First, PO applies the wrong legal standard. PO uses obviousness to argue that the '424 Provisional's undescribed "electrical wiring" is electrically coupled to switches 210—going well beyond the four corners of the '424 Provisional to support its priority claims. *Lockwood v. Am. Airlines*, 107 F.3d 1565, 1571-72 (Fed. Cir. 1997). "It is the disclosures of the ['424 Provisional] that count. Entitlement to a filing date...extends only to that which is disclosed." *Id.*, at 1571-72. Alleged "knowledge in the art" (POR, 10-11) cannot fill the '424 Provisional's gaps. *Lockwood*, 107 F.3d at 1572. PO also employs obviousness to support claim 16's "range of positions" comprising first, second, third, fourth, and fifth positions. Dr. Krames agrees that the '424 Provisional describes switches 210 having only four positions. EX1031, 105:6-9; EX1008, Fig. 3 (two switches, **four** positions). PO's proposal, replacing switches 210 with a five-position switch (selecting from five CCTs), is an obviousness modification that cannot establish written description support. *Lockwood*, 107 F.3d at 1571-72.

Second, PO employs impermissible hindsight-based arguments beyond the "four corners" of the '424 Provisional. *Ariad Pharms., Inc. v. Eli Lilly & Co.*, 598 F.3d 1336, 1351 (Fed. Cir. 2010) (en banc). POR relies on the '336 patent's receptacle disclosure to backfill the '424 Provisional. POR (18-19) argues "the '424 Provisional discloses a receptacle...on substrate 125...for receiving power from [an]

electrical cable.” But ’424 Provisional **does not disclose any receptacle**; POSA would not have understood the grainy, unlabeled shape identified by PO as a receptacle.

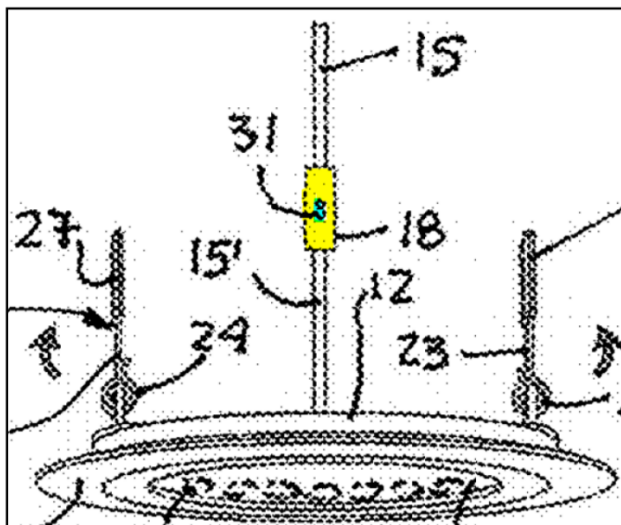


Id. (PO’s annotations).

B. Claim 13’s “Body” And “At Least One Coupling Feature” Would Have Been Obvious

1. Chaimberg

Petition established that Chaimberg’s switch 18, which is “a toggle switch provided with a slide button,” includes a slide button actuator (blue) and a structure (yellow) on which the actuator is disposed:

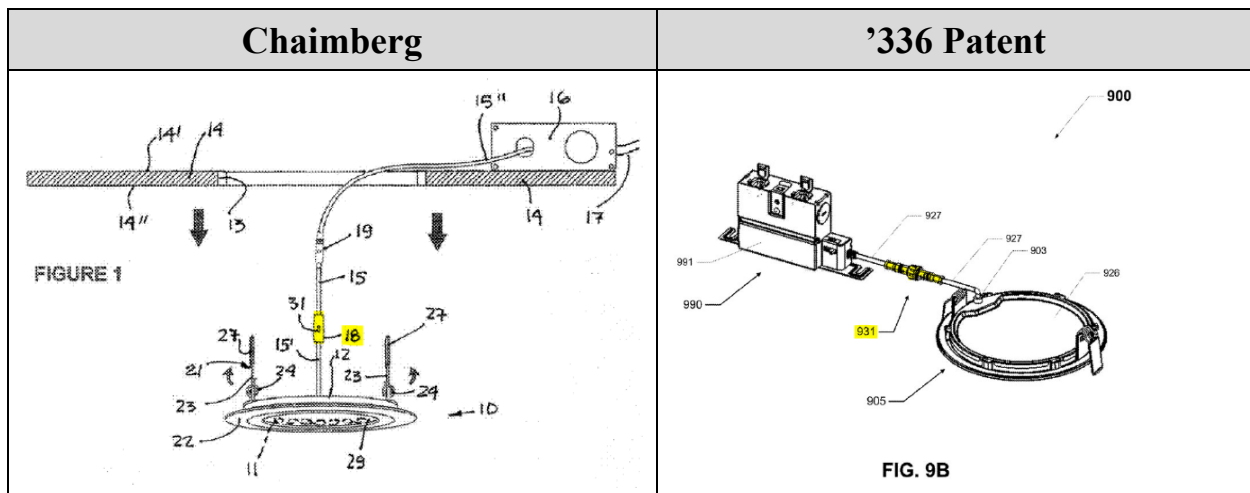


Pet., 41.

Petition (40-41) established that the structure (highlighted yellow) on which the slide button actuator is disposed corresponds to the claimed “body.” EX1027, ¶¶84-90 (in the ’336 Patent, switch “body” encompasses a structure on which “actuator” and “at least one first coupling feature” are disposed). Petition (41-42) also established that POSA would have understood that Chaimberg’s switch 18 included the claimed “coupling feature.”

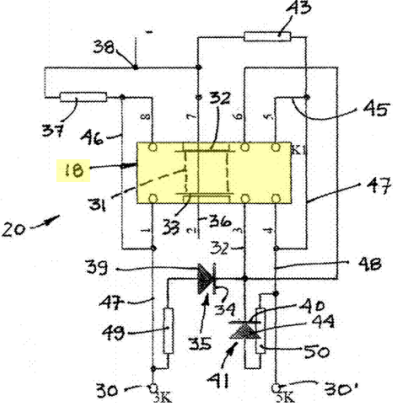
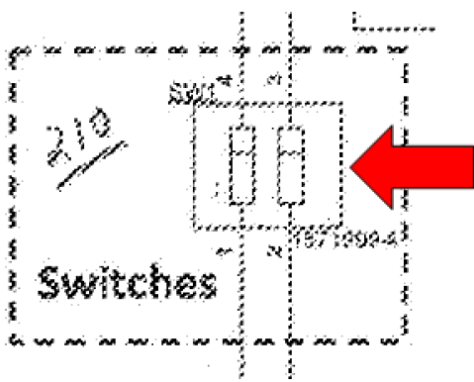
POR (48) argues Chaimberg’s switch 18 could be a wireless switch without coupling feature(s). POSA would not have understood so. EX2030, 211:3-17. Chaimberg never mentions wireless transmission (much less a wireless switch), and Chaimberg does not include the hardware required to implement a wireless switch (*e.g.*, -wireless receiver and transmitter). EX2030, 212:17-213:3, 209:18-211:13.

Instead, POSA would have understood Chaimberg's switch 18 as a wired switch having coupling features for electrically coupling to electrical cable 15 *in which* switch 18 is disposed. Chaimberg's switch 18 is "mounted in the cable" (EX1003, 2:38-45), and Dr. Eden testified that Chaimberg "shows...switch [18] between two sections of cable," so POSA would have understood that "there must be an interconnect [coupling feature]" for electrically coupling switch 18 to both sections of the cable. EX2030, 210:1-5. POSA thus would have understood Chaimberg's switch 18 as a wired, in-line switch, just like the '336 patent's switch 931:



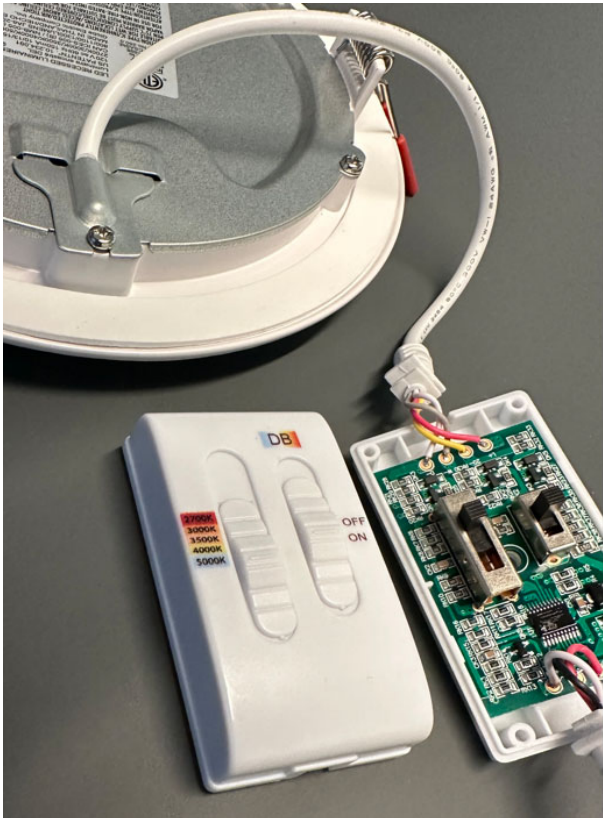
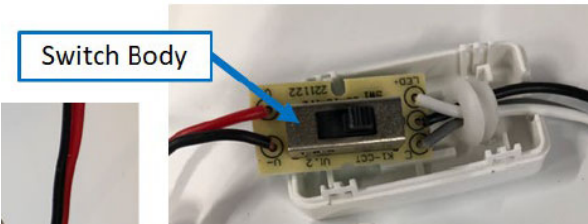
EX1001, 12:21-23 ("[S]witch 931 [of '336 patent] is in-line with the electrical cable 927"). Chaimberg's switch 18 is a wired, in-line toggle switch used to control the flow of current to different sets of LEDs. EX1003, 4:30-5:10 (conductor arms 32, 33 move based on slide button 31, controllably directing current to Chaimberg's LEDs and achieving a desired CCT).

POR (44-48) also argues Chaimberg's switch 18 lacks the claimed "body" and "at least one first coupling feature." Not so. Chaimberg describes switch 18 as a three-position toggle switch with a slide button (Pet., 40; EX1003, 4:30-63), and POSA understood such toggle switches as including both a "body" and "at least one first coupling feature disposed on the body." EX1027, ¶¶89-90. Indeed, Dr. Eden testified *all* switches include a body and at least one coupling feature disposed on the body. EX2030, 223:24-224:5. PO cannot assert that the '424 Provisional's schematics provide written description for the "body" while arguing that Chaimberg's similar schematics are inadequate under obviousness:

Chaimberg – Figure 3	'424 Provisional – Figure 4 (excerpt)
	 POR, 15 (red arrow added by PO).

To avoid the merits, POR (44-47) builds a strawman, contending that Petition identified the "outer surface" or "outer casing" of "box labeled 18" in Chaimberg as disclosing the claimed "body." POR, 44-47. However, Petition never equates an "outer casing" of Chaimberg's switch 18 with "body." Pet., 40-41. Neither did the Board understand Petition to be making this argument. DI, 29-30.

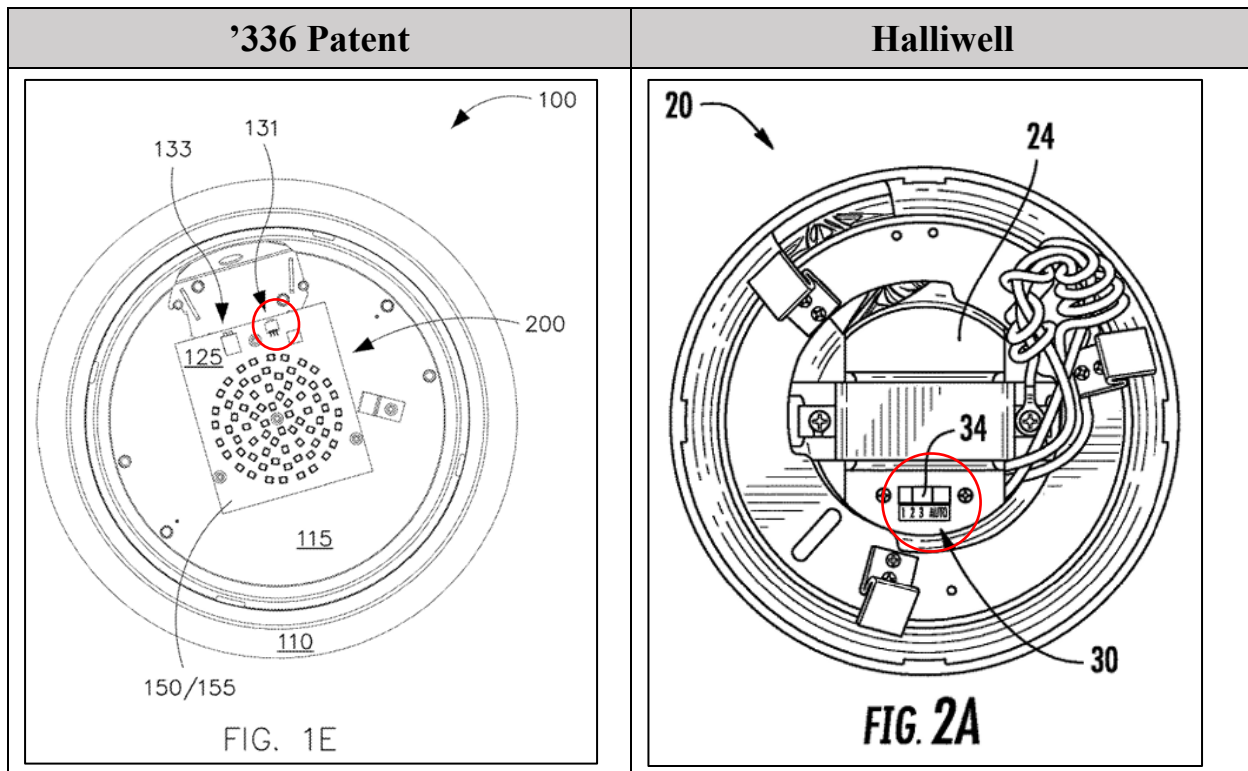
Finally, Globe’s products embodying Chaimberg included a wired, in-line CCT switch with the claimed body, coupling feature, electrical cable, and actuator as shown below (EX1027, ¶¶93-94):

Globe No.92291	Dr. Krames’s declaration (EX2031, ¶154 (annotation original))
	

2. Halliwell

Halliwell discloses and/or renders obvious claim 13’s “body” and “at least one first coupling feature.” PO’s argument that Halliwell does not disclose a “body” because switch 30 is “integrated into the lighting device housing” is unsupported. POR, 64-65. Nowhere does Halliwell state that switch 30 is “integrated” into the housing. EX1027, ¶97. Rather, Halliwell repeatedly describes switch 30 as being

“mounted.” *E.g.*, EX1012, 6:63-65 (“switch 30 may be mounted on an exterior surface of the LED lighting device 20”). Like Halliwell, the ’336 Patent describes its switches as being “mounted”. EX1001, 6:6-10. POR’s figures (65-66), allegedly showing switch 30 integrated into the housing, are the same as the ’336 Patent’s depiction of its board mounted switches:



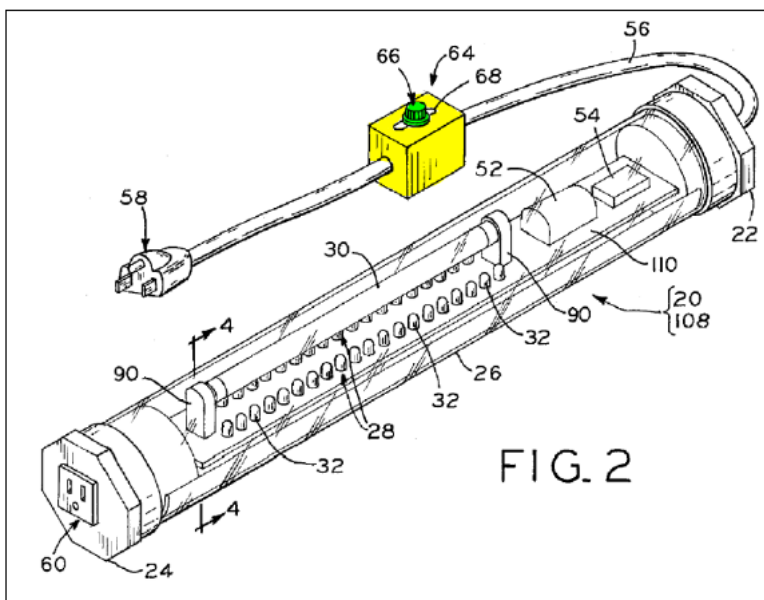
Additionally, Dr. Eden testified that switches disclosed in Halliwell as examples of switch 30, such as a “slide switch” like the ’336 Patent’s switch 631, all have a body. EX1027, ¶¶98-99; EX1012, 11:46-48; EX1001, 9:64-65. POR’s argument (64-67) that Halliwell does not disclose a switch body is wrong. If mounting alone eliminated a switch from having a “body,” then the ’336 Patent’s switches would not have a body either. Relatedly, PO’s arguments that switch 30’s

“indicators are located on the device housing itself, not on any ‘body’ of switch 30” (POR, 67) are similarly misplaced. EX1027, ¶97.

POR (29-30) argues Petition’s application of Halliwell for the “at least one coupling feature” contradicts its position that the ’424 Provisional lacks written description. But Halliwell describes its junction box mounted switch 40 as being in “*wired*” connection with switch control unit 35. EX1012, 7:8-19. Switch 40 therefore includes a coupling feature for electrically coupling to *the wire* (*i.e.*, electrical cable) that connects remote switch 40 to switch control unit 35 (which may be located in the luminaire housing). EX1012, 6:51-56. It would have been obvious for a POSA to use “a cable of the luminaire” for the wired connection. Whereas, the ’424 Provisional lacks **any** disclosure of an electrical cable electrically coupled to switches 210. Halliwell further discloses that its electrical components (including switch control unit 35 to which remote switch 40 is in wired connection) are “directly wired to line voltage.” EX1012, 7:8-19. Petition explained that this means junction box mounted switch 40 is also electrically coupled to an electrical cable providing the line voltage, confirming that the junction box mounted switch would direct power to the luminaire and it would have been obvious for a POSA to use a cable of the luminaire between the remote switch 40 and luminaire housing. Pet., 77-78; EX1004, ¶¶310-313.

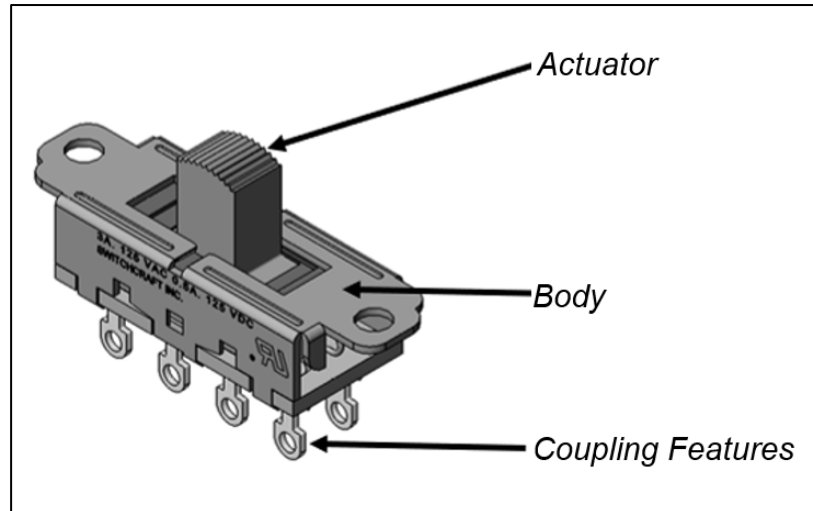
3. Reiff

Petition showed that Reiff's "control box 64 [includes a] switch 66 which is...linearly slideable in slot 68." Pet., 84 (citing EX1013, 4:28-36). Reiff's switch includes an actuator (green), and control box 64 (yellow) includes switch 66 with a body for supporting the actuator:



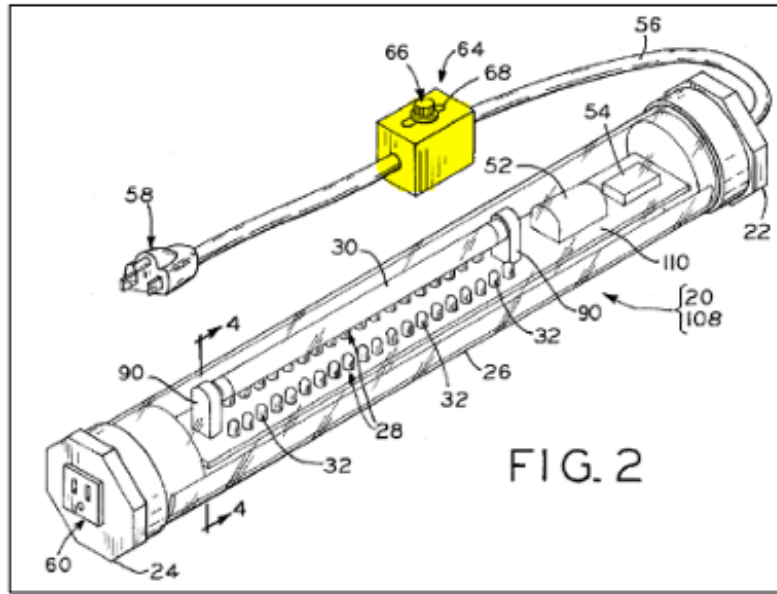
Pet., 84-86. Dr. Eden further testified that POSA would have understood Reiff's switch as including the claimed "coupling feature." EX1027, ¶¶103-107.

POR (38-43) argues Reiff's switch lacks a "body" and "at least one first coupling feature." But Reiff describes a three-position switch with an actuator (identified as switch 66) that is "linearly slideable in slot 68." EX1013, 4:33-36. Thus, POSA would have understood Reiff's switch as a slide switch with a body and at least one coupling feature, as was well-known before the '424 Provisional:



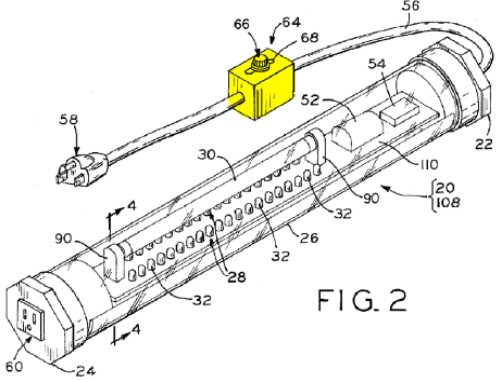
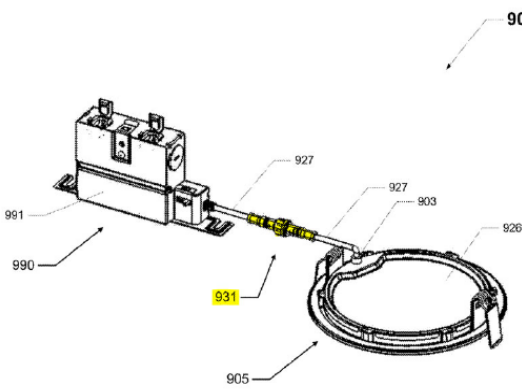
EX1029. Dr. Krames also confirmed that the image above “looks like a standard slide switch,” with an actuator, body, and coupling features “such as identified...in the '336 Patent.” EX1031, 155:17-156:20.

POR (32, 40) misrepresents that Dr. Eden recanted his opinion that Reiff’s switch has a body. But Dr. Eden simply clarified, as stated in his declaration, that the yellow-highlighted portion of Figure 2 below represents “[t]he control box, *including* the switch” having a body:



EX1004, ¶338; EX2030, 139:1-140:11; 142:1-10. As stated in both the Petition and Dr. Eden’s declaration, “control box 64 (highlighted yellow) provides and necessarily includes a body for the switch.” Pet., 85; EX1004, ¶¶337-342. Dr. Eden’s deposition merely reiterated this opinion. EX2030, 139:1-140:11.

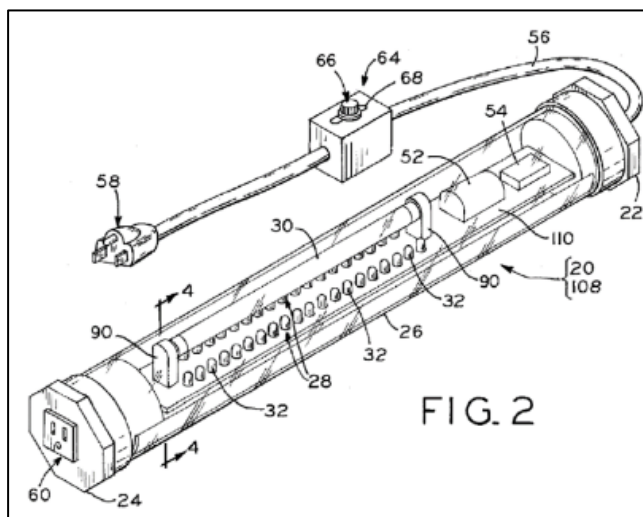
POR (42) argues Reiff’s switch 66 could be a “wireless switch that is not configured to couple with the cable at all.” Not so. Reiff describes an “in line” switch located between two sections of an electrical cable, just like the ’336 patent’s “in-line” switch 931:

Reiff	'336 Patent
 FIG. 2 EX1013, 1:6-10, 1:50-55 (“in line switch”)	 FIG. 9B EX1001, 11:65-66 (“[S]witch 931 is <i>in-line</i> with the electrical cable 927”)

POSA understood Reiff’s “in line switch” includes coupling features “configured to electrically couple to an electrical cable of the luminaire,” exactly like the ’336 patent. EX1027, ¶107. POSA also understood that in-line switches are not wireless. *Id.* Further, Reiff never mentions wireless switching, and lacks hardware required to implement a wireless switch. EX2030, 153:14-25. Instead, POSA would have understood Reiff’s switch 66 as having coupling features for electrically coupling to upstream and downstream sections of cable 56 so switch 66 receives “conventional 120-volt power” from “a conventional electrical outlet” and appropriately directs electrical current to a desired light source (the fluorescent or LED light source). EX2030, 158:7-12; EX1004, ¶344.

C. Reiff Discloses A CCT Switch

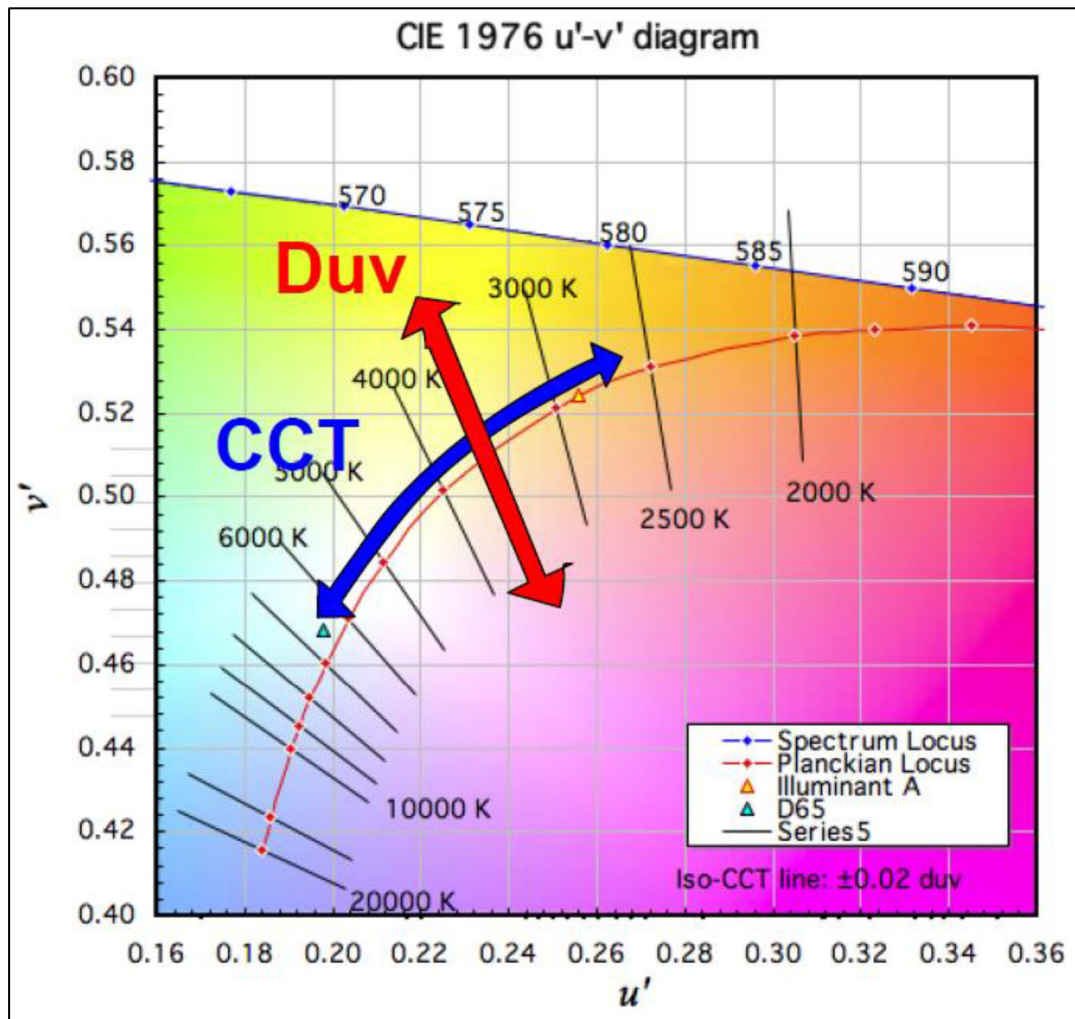
POR (33-38) argues Reiff does not disclose a CCT switch. That's false. Petition established Reiff's light fixture includes a fluorescent light source 30 and an LED light source 32, and "each [of them] emits a different color of light" (EX1013, 2:19-20):



Pet., 83-84. Dr. Eden established Reiff's different-colored light sources emit light of different CCTs. EX1004, ¶¶108-124. Dr. Eden showed, for example, different colors of light have different CCT values, *e.g.*, red light has a CCT of less than or equal to 1000K, whereas blue light has a CCT of more than 10,000K. *Id.*, ¶¶108-115; EX1030, 2:28-47. Because Reiff's light sources emit light at different colors, using Reiff's switch 64 to select between the sources effectively enables a selection of CCT. Pet., 88-89.

POR's counters are meritless. *First*, PO argues Reiff doesn't relate to CCT because Reiff refers to "colored" LEDs. EX1013, 4:28-32. But light emitted by a

red or blue LED *does* have a CCT, which would necessarily be different from a fluorescent white light's CCT. *See, e.g.,* EX1030, 5:65-6:14. Dr. Eden explained that the CIE 1976 diagram, cited by POR (37) itself, illustrates that red and blue lights emit spectra aligning with less than 1000K (right) and more than 10,000K (left), respectively. EX1027, ¶115.



POR, 37.

Regardless, PO's argument misunderstands Reiff, which uses "color" in referring to white light, not just "monochromatic colors." For example, Reiff

describes an LED that “emits a first color, red or white for example,” confirming that Reiff’s use of “color” encompasses white light. EX1013, 3:67-4:3; 3:41-49, 6:43-45, 7:45-58. PO’s attorneys recognize this. EX2030, 143:22-25; EX1013, 3:41-49. Thus, Reiff’s disclosure of selecting between light sources with different “colors” encompasses selecting between fluorescent light source 30 (white light) and LED light source 32 (also white, though a different color than fluorescent light source 30). EX1013, Abstract (“switching between [fluorescent and LED] light sources” to “easily...switch[]” the “color of the emitted light,” where “[t]he light sources may provide white light”). Reiff not using the term “CCT” (POR, 33-34) is of no moment.

Second, POR cites the CIE 1976 diagram above, arguing that different colors can have the same CCT. Not so. Dr. Eden clarified that the vertical lines POR relies on to allegedly show “[t]wo light sources may output light at the exact same CCT” actually illustrate a completely different metric: D_{UV} , as clearly labeled in the figure itself. EX1027, ¶119. D_{UV} measures distance from the Planckian locus (red curve), not CCT. **Only** the Planckian locus indicates CCT. *Id.* Even if two colors of white light *could* have the same CCT in theory, that is not so in Reiff. Reiff discloses white light sources (30,32) generating “different colors,” e.g., warm white, cool white, etc., meaning they have different CCTs.

IV. PETITION IS NOT TIME BARRED

Both the then-Director and the Board have rejected PO's RPI arguments; yet, PO rehashes them, relying on evidence already deemed insufficient by the Board. The Director detailed why PO's RPI arguments lack merit. Paper 20, 8-21. To undermine the Director, PO claims its "supplemented record" contains new supporting evidence. POR, 78. The Board already reviewed this evidence, finding it insufficient in its Decision Denying Additional Discovery. Paper 26, 13-21 (analyzing EX2015, EX2016, EX2017). Applying the *Garmin* factors, the Board held that this evidence does not "tend[]to show beyond speculation that...Petitioner 'filed the IPR *because of or in response to* any request by Menard to do so' or that Menard is 'controlling, funding, or directing' this proceeding." Paper 26, 18.

PO mischaracterizes the Luminex-Menard business relationship as "exclusive," asserting that the accused Luminex products in the litigation are "limited to Menard's *private label* products." POR, 78-80. The Director has already correctly determined that the Luminex-Menard relationship is not similar to the exclusive relationship in *Ventex*. Paper 20, 13 (citing *Ventex Co., Ltd. v. Columbia Sportswear North America, Inc.*, IPR2017-00651, Paper 152 (PTAB Jan. 24, 2019) (precedential)).

As the Director aptly summarized, the *Ventex* relationship was an exclusive manufacturer-customer relationship because of "an 'Exclusive Manufacturing

Agreement,’ whereby Ventex agreed to only manufacture fabric for [the alleged RPI], in exchange for...‘an exclusivity fee.’” *Id.* In *Ventex*, the PTAB also found “an inextricable link” between the exclusivity fees and the IPR. *Ventex*, Paper 152, 14-15. There is no such exclusive relationship here. Luminex manufactures products, some of which are labeled with Menard’s brand as part of a standard business practice—producing goods according to Menard’s (or a customer’s) specification, including branding. Unlike *Ventex*, where the fabric at issue was manufactured solely for the alleged RPI, Luminex’s products are not exclusive to Menard. Luminex’s products can be sold to other customers without Menard’s branding. There is no exclusivity agreement or fee here.

PO also asserts “Luminex was aware of the litigation” more than a year before filing this Petition. POR, 80. However, § 315(b) sets the time bar at “1 year after the date on which the petitioner, real party in interest, or privy of the petitioner is *served* with a complaint.” Mere awareness of litigation is irrelevant.

PO’s reliance on the pre-suit communications (POR, 80-81) is also misguided. As previously explained in Luminex’s Opposition to Additional Discovery, these communications show that PO first emailed Menard almost three years before this IPR, asserting 19 patents against 12 products. Paper 23, 3. Because Luminex manufactured some of those products, Menard relayed PO’s allegations to Luminex. Naturally, as manufacturer, Luminex responded to PO seeking to understand PO’s

allegations and handle license-related discussions—standard responsibilities that are squarely within a manufacturer’s role. Menard, as customer, had no reason to engage in discussions about products it did not manufacture. These pre-suit communications are simply routine business communications that never contemplated an IPR.

As reiterated by both the Director and the Board, “the heart of the inquiry” concerning an RPI relationship is “whether a petition has been filed at a party’s behest.” *Uniloc 2017 LLC v. Facebook Inc.*, 989 F.3d 1018, 1027–28 (Fed. Cir. 2021). The Board already explained in denying Additional Discovery that PO has presented no evidence that “Petitioner filed the IPR *because of or in response to* any request by Menard to do so or that Menard is controlling, funding, or directing this proceeding.” Paper 26, 18. In fact, Luminex repeatedly demonstrated that Menard did not fund, direct, or control this IPR (Paper 8, 2-6; Paper 11, 13, Paper 23, 4-5); yet PO recycles these desperate arguments, relying on procedural tactics to hide its meritless “substantive” arguments.

V. CONCLUSION

The Board should cancel claims 1-20 of the ’336 patent.

Respectfully submitted,

Dated: March 24, 2025

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CERTIFICATE OF SERVICE

Pursuant to 37 C.F.R. § 42.6(e), the undersigned certifies that on March 24, 2025, a complete and entire copy of **PETITIONER'S REPLY TO PATENT OWNER'S RESPONSE** has been served in its entirety by e-mail to Patent Owner's counsel of record:

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Counsel for Patent Owner

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Dated: March 24, 2025

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CERTIFICATE OF WORD COUNT UNDER 37 C.F.R. § 42.24(a)

I, the undersigned, do hereby certify that the attached petition contains 5,593 words, as measured by the Word Count function of Microsoft Word 2016. This is less than the limit of 5,600 words as specified by 37 C.F.R. § 42.24(c)(i).

Respectfully submitted,

Dated: March 24, 2025

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