

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

VIDENDUM PRODUCTION SOLUTIONS, INC.,
Petitioner,

v.

ROTOLIGHT LIMITED,
Patent Owner.

Case IPR2023-01219
Patent 10,197,258

**PATENT OWNER'S PRELIMINARY RESPONSE TO PETITION FOR
INTER PARTES REVIEW OF U.S. PATENT NO. 10,197,258**

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EXHIBIT LIST

Exhibits for Currently Filed Patent Owner's Preliminary Response

Exhibit No.	Description
2001	
2002	
2003	

CLAIM LISTING '258 PATENT

No.	Description
Claim 1	
1[pre]	A lighting system comprising:
1[a]	a lighting device; and
1[b]	a controller adapted to control the lighting device to produce a user customisable cinematic lighting special effect selected from a range of different user customisable cinematic lighting special effects, the controller comprising:
1[c]	an input interface for receiving user input to enable a user to select user customisable cinematic lighting special effect from said range of different user customisable cinematic lighting special effects; and
1[d]	an effect simulator adapted to calculate a time varying lighting value based on at least one simulation parameter,
1[e]	said at least one simulation parameter depending on the selected user customisable cinematic lighting special effect being simulated, and
1[f]	adapted to output said time varying lighting value to said lighting device so as to simulate the selected user customisable cinematic lighting special effect;
1[g]	wherein said lighting device and said controller are integrated in a combined unit.
Claim 2	
	The lighting system according to claim 1, wherein the input interface is adapted to receive user input to enable a user to customise said user customisable cinematic lighting special effect.
Claim 3	
	The lighting system according to claim 1, wherein the lighting device comprises at least one LED.
Claim 4	
	The lighting system according to claim 3, wherein the lighting device comprises multiple different coloured LEDs.
Claim 5	
	The lighting system according to claim 4, wherein the multiple different coloured LEDs comprise at least one of a RGB LED, and a RGB+W LED.
Claim 6	
	The lighting system according to claim 3, wherein the controller is adapted to control the colour or colour temperature of said LEDs in dependence on a user input received via the input interface.

Claim 7	
	The lighting system according to claim 3, wherein the lighting device comprises at least one 'warm' white and at least one 'cool' white LED.
Claim 9	
9[pre]	The method for uplink control signal transmission of claim 5,
9[a]	wherein the uplink control information comprises an ACK and an NACK; wherein the ACK corresponds to a bit "1" and the NACK corresponds to a bit "0", when the ACK or the NACK is sent, the ACK or the NACK is respectively indicated by the predefined sequences being mapped to different frequency domain subcarrier positions on the transmission symbols.
Claim 14	
14[pre]	The method for uplink control signal transmission of claim 1,
14[a]	wherein the uplink control information comprises a scheduling Request (SR), an ACK and an NACK; and when the user terminal sends the SR, K=1, 2 or 4.
Claim 20	
20[pre]	A device for uplink control signal transmission, comprising:
20[a]	a memory storing processor-executable instructions; and a processor arranged to execute the stored processor-executable instructions to perform steps of:
20[b]	sending K predefined sequences on M transmission symbols in a Transmission Time Interval (TTI) to send B-bit uplink control information,
20[c]	wherein M is a positive integer, K is an integer, $1 \leq K \leq 2^B$, B is an integer greater than or equal to 1,
20[d]	on each of the M transmission symbols, one of the K predefined sequences is sent, and
20[e]	each of the K predefined sequences has a length of N and is mapped to N subcarriers of the corresponding transmission symbols corresponding to the each of the K predefined sequences,
20[f]	wherein $N=2n$ with n being a positive integer.

I. INTRODUCTION

Pursuant to 37 C.F.R. § 42.107(a), Patent Owner Rotolight Limited (“Patent Owner” or “Rotolight”) respectfully requests that the Board deny institution of the Petition for numerous independent reasons. First, the Board should exercise its discretion and deny the Petition under 35 U.S.C § 314(a) because all of the factors that the Board considers when exercising its discretion weigh against institution.

Petitioner Videndum Production Solutions, Inc.’s (“Petitioner’s”) current IPR Petition (“2nd Petition”) was filed more than 19 months after its first IPR Petition challenging the same claims of the ’258 Patent (“1st Petition”). Even more concerning is that Petitioner’s 2nd Petition is a copycat petition of a Petition filed 22 months before the filing of this 2nd Petition. Petitioner was aware of the art and the petition that it copied for at least 19 months and therefore has had multiple opportunities to tailor its arguments for the 2nd Petition based on Patent Owner’s past responses to validity challenges and did in fact make modifications after seeing Patent Owner’s arguments and decisions from the Board.

Second, the Board should deny institution based upon the merits. Petitioner challenges the ’258 Patent mainly based on four separate pieces of art, the first of which is the Showline Manual. The Showline Manual is an Installation & User’s Manual for the Showline SL PAR 155 Zoom RGBW LED Luminaire product that includes a LED lighting fixture (i.e., the SL PAR 155) and an LCD Display / Menu

System. The LCD Display and Menu System is built into the SL PAR 155 Luminaire and allows users “local control for accessing” certain features, including “Presets (Standard and User Defined),” and “Effects (Chases – preloaded and user defined).” EX1004.

There are at least three reasons that the Showline Manual fails to anticipate the claims of the '258 Patent. First, Petitioner fails to demonstrate that Showline is prior art. Second, Petitioner fails to demonstrate that Showline discloses “a controller comprising ... an effect simulator” as recited in claim 1 of the '258 Patent. Third, and perhaps most significantly, the Showline Manual fails to disclose “an effect simulator adapted to calculate a time varying lighting value based on at least one simulation parameter” as defined in claim 1. Regarding the “calculate” limitation, the Showline Manual only discloses executing stored “presets” or stored “chases.” While these stored lighting sequences are modifiable by a user, a POSITA would have understood that the stored sequences do not involve *calculating* a time varying lighting value as required in claim 1. Further, Petitioner does not demonstrate to a preponderance of the evidence standard that the Showline Manual in view of either U.S. Patent No. 8,632,208 to Choong (“Choong”) or U.S. Patent No. 8,581,513 to Reinoso (“Reinoso”) render the '258 Patent obvious.

The fifth and sixth challenges to the '258 Patent claims are based on Pohlert. Similar to the Showline Manual, Pohlert describes pre-defined light patterns

illuminated in pre-defined or pseudo-random “sequences.” Executing pre-defined light patterns in a pseudo-random sequence does not involve *calculating* a lighting value, and particularly does not involve calculating a “time varying” lighting value. Nor does Pohlert calculate a time varying lighting value “based on at least one simulation parameter” as recited in claim 1 of the '258 Patent. Pohlert discloses directly controlling the lighting schemes using manual input means, such as a switch, button, or knob, but fails to tie *calculating* a time varying lighting value to being *based on* a simulation parameter.

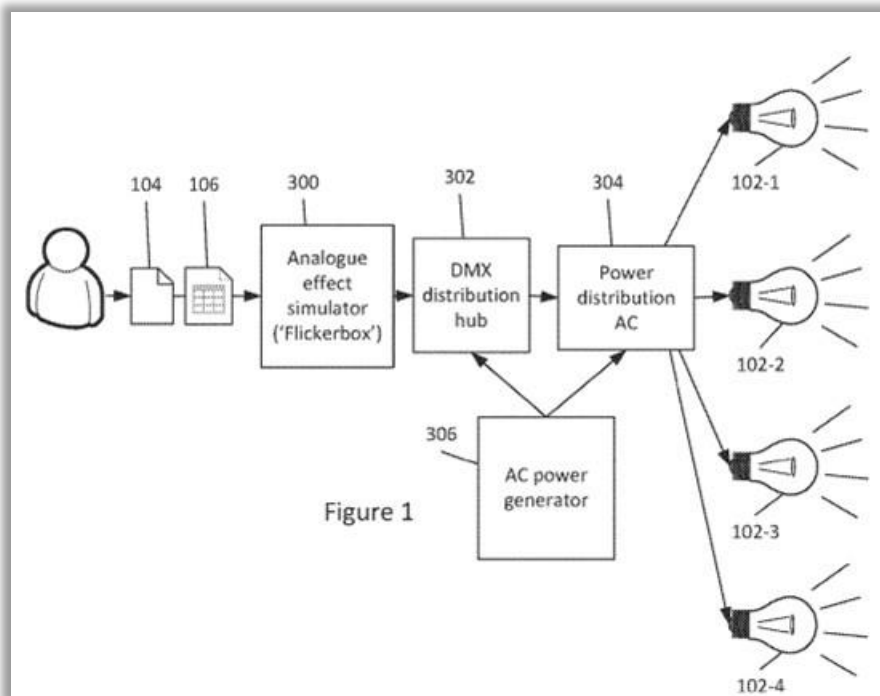
Without “an effect simulator adapted to calculate a time varying lighting value” as expressly described in claim 1, each of the Showline Manual and Pohlert grounds fail to anticipate or render obvious the '258 Patent claims. For example, Petitioner has also not articulated a single reason for modifying either of the underlying references in order to arrive at the claimed invention, or providing any evidence beyond conclusory statements regarding how any limitation not taught in the references would have been obvious from the references. Thus, Petitioner has not properly presented an obviousness challenge, so the '258 Patent claims are not rendered obvious over the Showline Manual or Pohlert.

II. OVERVIEW OF THE '258 PATENT

The '258 Patent generally describes a lighting system and a method of controlling the lighting device. *See* EX1001, Abstract. The lighting system and

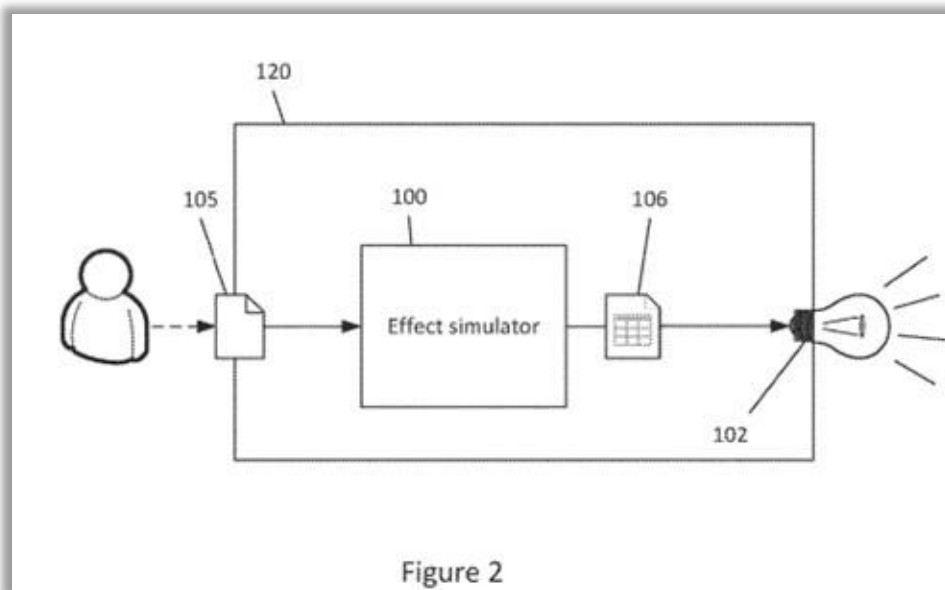
method are directed to “a lighting system for videography, broadcasting and cinematography.” EX1001, 1:17-20. The '258 Patent explains that in the film, broadcast and TV industry, there is an apparatus called a “flicker box” which is provided independently of the lighting device(s) to mimic flickering light such as a fire place, candle, electrical spark or lightning. EX1001, 1:21-26. Use of a flicker box is a “complex, costly and time consuming process that requires the setup, connection and control of multiple pieces of hardware typically including external Digital Multiplex (DMX) and power distribution devices.” EX1001, 1:30-35.

Flicker boxes also require specialists. EX1001, 1:36-44. FIG. 1 of the '258 Patent shows this conventional arrangement:



EX1001, FIG. 1. EX2002, ¶58.¹

The '258 Patent discloses an improved lighting system that involves controlling the lighting device to produce a user customizable lighting effect that is time varying. EX1001, 1:46-50. As shown in FIG. 2, the '258 Patent provides a single studio lamp device 120 with an integrated light 102 and a lighting effect simulator 100. EX1001, 5:61-63, FIG. 2; EX2002, ¶59.



EX1001, FIG. 2.

¹ The Declaration of Eric Bretschneider, Ph.D. (EX2002) (“Bretschneider Decl.”) was originally filed in support of the Patent Owner Response in IPR2022-01497. *See* EX2002, Bretschneider Decl., ¶¶1-127. The arguments presented here do not deviate from the arguments from that proceeding.

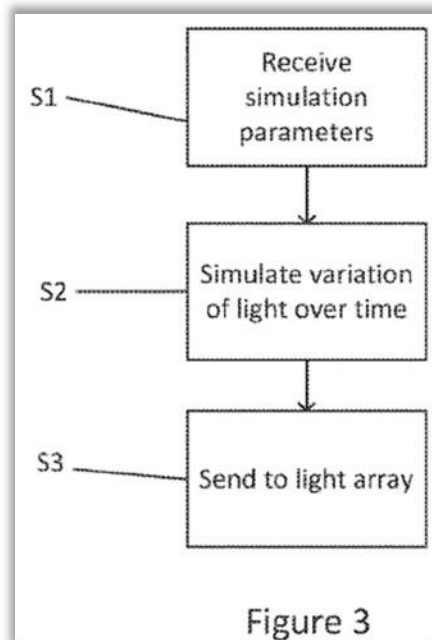
This arrangement allows for the DMX distribution hub and more complex circuitry associated with a “flicker box” to be dispensed with, and yet also provides more flexibility in producing lighting effects. EX1001, 5:61-6:3; EX2002, ¶60.

This flexibility is provided in the lighting system by providing a control panel 104 that includes, *e.g.*, buttons, knobs, sliders or a digital interface for user input of parameters for simulating an effect. EX1001, 6:4-8. The lighting system includes an effect simulator integrated into the lamp device 120 for performing calculations such as how the lighting changes over time in order to produce the desired lighting effect. EX1001, 5:61-6:3, 7:42-53, 10:4-8, FIG. 4. This combination of a user interface, effect simulator (which calculates the time varying lighting value), and lighting device introduces a simpler, less expensive, and more flexible system. See EX1001, 6:18-46; EX2002, ¶61.

The effect simulator described in the '258 Patent calculates time varying lighting values using simulation parameters. See EX1001, 6:4-8; 7:29-38; 10:27-11:39. The simulation parameters may be input by a user via a user interface. See EX1001, 7:17-20, 10:9-12. To generate the effects described, the '258 Patent discloses calculating (*e.g.*, using an algorithm) time varying lighting values to generate the lighting effects, with simulation parameters representing inputs into the calculation, and time varying lighting values representing the output therefrom. EX1001, 10:13-61; EX2002, ¶62.

A. The Calculating Limitation in the '258 Patent

The sole independent claim of the '258 Patent, independent claim 1, requires “an effect simulator adapted to calculate a time varying lighting value based on at least one simulation parameter.” EX1001, cl. 1. The specification of the '258 Patent describes the calculating step, stating that “[t]he simulation calculates how the lighting changes over time in order to produce the desired lighting effect.” EX1001, 7:42-47. This calculating step is further embodied in the flow chart in FIG. 3:

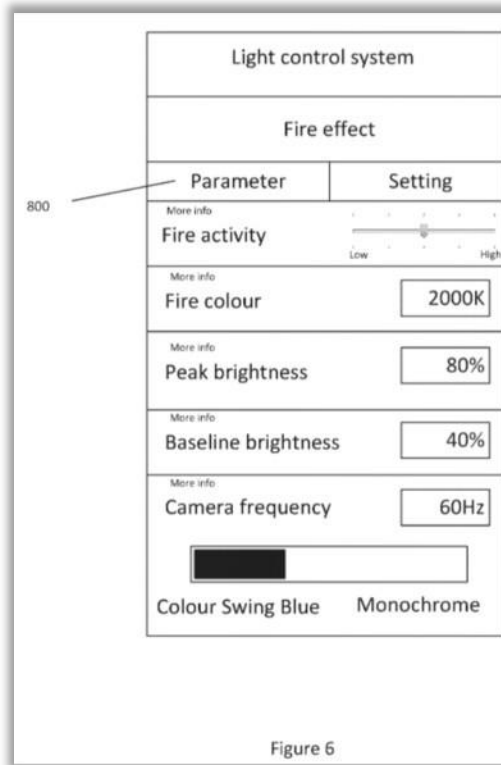


EX1001, FIG. 3; EX2002, ¶¶86-89.

As shown above, the lighting device first receives simulation parameters, and simulates the variation of light over time by “calculat[ing] a time varying lighting value based on at least one simulation parameter.” EX1001, cl. 1; *see also id.*, 6:1-3, 8:41-43, 10:4-8. Critically, this ties the claimed “calculating” step directly to input

of a received simulation parameter (i.e., the calculating is “based on at least one simulation parameter”) and to the output of the claimed “time varying” lighting value. EX2002, ¶90.

Figure 6 of the '258 Patent illustrates an embodiment of a control panel that receives user input of a parameter to customize a lighting effect, which is helpful to illustrate the meaning of the “calculating” limitation of independent claim 1:



EX1001, FIG. 6; EX2002, ¶91.

In the example shown in Figure 6, the customized lighting effect is a “Fire effect.” The user is able to input a “simulation parameter,” such as fire color or peak brightness. The “time varying lighting value” is calculated by the lighting effect

simulator 100 based on at least that simulation parameter. EX1001, 8:26-50; EX2002, ¶92.

The '258 Patent discloses and claims an effect simulator adapted to calculate a time varying lighting value based at least on a simulation parameter. EX1001, 8:26-50, cl. 1. In the context of the above, as an example, assume that the “simulation parameter” is “peak brightness” and the user input is “80%.” This means that the effect simulator must use the simulation parameter to calculate a time varying lighting value, i.e., use the “80% brightness” as a simulation parameter input to a calculation that outputs a time varying lighting value. Notably, recalling a pre-stored lighting pattern or replaying a pre-defined lighting effect does not satisfy this claim language. EX2002, ¶93.

Figure 7 demonstrates an example with the brightness varying over time generated algorithmically by the effect simulator disclosed in the '258 Patent. EX1001, 10:44-61. The '258 Patent provides an example of a fire-effect-generating algorithm that calculates such a brightness-over-time pattern. EX1001, 9:56-67; EX2002, ¶94.

A series of sparks is generated sequentially to produce a realistic fire simulation, according to an algorithm like the one described below:

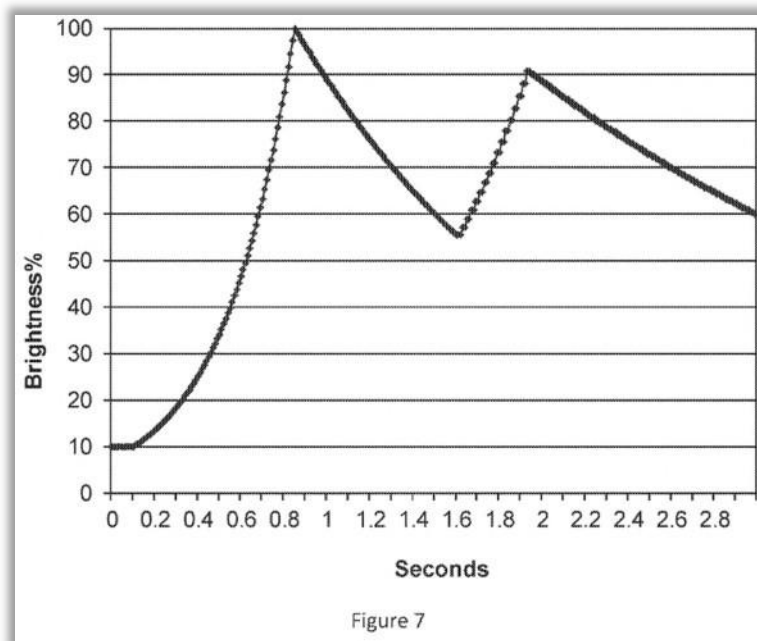
At the end of a spark up and down period:

Reset duration for next spark to between 2.5 s to 5 s

- Generate new brightness targets for the next spark between 12.5% and 100% of current maximum brightness setting.
- Offset the random brightness targets by the requested brightness floor value
- Set the new peak brightness target for the new spark
- Ensure the new targets are greater than the existing faded brightness value to prevent downward jumps
- Set the fade direction to UP
- Start new animation frame:
 - Calculate brightness fade step sizes:
 - Fade up fast, progressively larger fade step sizes
 - Change fade direction at peak
 - Fade down slow, progressively smaller fade step sizes
 - Set the frame rate for the new spark to a random value
 - prevent the curtailment of a long fade by a new short pulse: if the faded brightness is still >25% of max then don't allow new FramePeriod to be less than old.

EX1001, 10:23-43; EX2002, ¶95.

In the above algorithm, the effect simulator calculates a time varying lighting value based on the various simulation parameters, including any simulation parameters input by the user. The '258 Patent provides an example of a time varying lighting value, calculated by the effect simulator, in Figure 7:



EX1001, FIG. 7; EX2002, ¶95.

The '258 Patent further explains “[t]he lighting effect simulator typically cycles round a loop calculating new lamp brightness and colour values.” EX1001, 10:4-5; EX2002, ¶97. This calculation is repeated several times and is “typically performed every 250 μ s.” EX1001, 10:6-7.

Performing a calculation in this manner using an algorithm generates more controllable and realistic-looking fire effects than replaying a pre-recorded set of values chosen to mimic a fire. In particular, “[g]enerating the light output with the simulation provides a greater level of user adjustment and control than that produced by simply sampling the intensity of a real flame and replaying it at different speeds.” EX1001, 10:17-20. An effect generated by the algorithm described in the '258 Patent is characterized by a continuous stream of sparks, where “each spark has a

different speed, duration, and peak – simulating the look of a real flame.” EX1001, 10:14-16; EX2002, ¶¶98.

The ’258 Patent is not simply recalling a stored lighting value or set of stored lighting values and adjusting them to create variations of effects. When the effect simulator disclosed in the ’258 Patent generates a lighting effect, it does so by actively calculating time varying lighting value based on a simulation parameter, not by passively replaying an existing lighting effect stored in memory. EX2002, ¶¶99.

The ’258 Patent further explicitly describes the advantages of an actively simulated fire effect over a passively replayed fire effect: controllability and realism. EX1001, 10:17-20. Here, the ’258 Patent contrasts the disclosed fire effect algorithm with “sampling the intensity of a real flame and replaying it at different speeds.” *Id.*; EX2002, ¶¶100-106.

III. GROUNDS

Petitioner proffers two grounds for attacking the Challenged Claims:

Ground	Claims	Basis	Prior Art References
1	1-6, 8-14, 16-22	§ 102	Showline Manual
2	1-6, 8-14, 16-22	§ 103	Showline Manual
3	7	§ 103	Showline Manual in view of Choong
4	15	§ 103	Showline Manual in view of Reinoso
5	1-22	§ 102	Pohlert
6	1-22	§ 103	Pohlert

See Petition, 3. Each ground except for grounds 3 and 4 addresses independent claim 1 and various dependent claims (“Challenged Claims”). EX2002, ¶¶65-66.

As discussed below, Petitioner has failed to meet its burden to show a reasonable likelihood that at least one of the Challenged Claims is unpatentable under any of the above asserted grounds.

IV. THE BOARD SHOULD DENY INSTITUTION OF THIS PETITION UNDER 35 U.S.C. § 314(A)

A. Background

In September and October 2021, Arnold & Richter Cine Technik GmbH & Co. (“ARRI”) had filed four IPR petitions that challenged four patents owned by Patent Owner as shown in the chart below:

Case	Claims at Issue	Filing Date	Prior Art Asserted	Status
IPR2021-01496 (’257 patent)	1-21	Sept 3, 2021	Astera and Pohlert	Terminated – Settlement Jan 30, 2023
IPR2021-01497 (’258 patent)	1-22	Sept 3, 2021	Showline Manual, Choong, Reinoso, and Pohlert	Terminated – Settlement Jan 30, 2023
IPR2021-01498 (’101 patent)	1-21	Sept 3, 2021	Astera and Edwards	Terminated – Settlement Jan 30, 2023
IPR2022-00099 (’044 patent)	1-19	Oct 25, 2021	Astera and Edwards	Terminated – Settlement Jan 30, 2023

A few months after the ARRI petitions were filed, Petitioner filed their first set of two petitions challenging the ’258 patent (“1st Petition”) and U.S. Patent No.

10,197,257 (“’257 patent”), which were the subject of two ARRI IPRs (IPR2021-01496 (’257 patent) and -01497 (’258 patent)).²

Case	Claims at Issue	Filing Date	Prior Art Asserted	Status
IPR2022-00261 (’257 patent)	1-21	Dec 3, 2021	Morgan and Julio	Institution Denied Mar 16, 2022
IPR2022-00262 (’258 patent)	1-22	Dec 3, 2021	Hinrichs, Morgan, and Pohlert	Institution Denied Mar 16, 2022

Petitioner cited to the ARRI petitions in these petitions and elected to primarily assert different prior art than ARRI. *See, e.g.*, IPR2021-00262, Paper 1 at 1 (PTAB Dec. 3, 2021) (“The following currently pending matters relate to the challenged ’258 Patent: IPR2021–01497.”). The Board instituted proceedings in the ARRI IPRs but not Petitioner’s petitions. *See, e.g.*, EX1009 (Decision to Institute IPR2021-01497); IPR2022-00262, Paper 7 (PTAB June 8, 2022) (Decision Denying Institution).

Three ARRI IPRs proceeded through oral hearings; however, before the final written decision was issued, the parties terminated the four proceedings due to settlement on January 30, 2023. *See* EX1013 (IPR2021-01496, Paper 40, Decision to Terminate Due to Settlement After Institution of Trial)). Petitioner never sought

² Petitioner changed its name from “Vitec Production Solutions, Inc.” to “Videndum Production Solutions, Inc.” in May 2022. *See* EX2003.

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to join any of the four IPRs but emailed the Board to oppose the termination the day after the parties filed joint motions to terminate. EX1012 (attempting “to inform the Board that termination of these proceedings is not appropriate and contrary to the public interest”); EX1013, 1, 6 (“[Videndum] does not explain why it could not have filed copy-cat petitions along with motions for joinder in one or all of the instant proceedings, to serve as a back-up or understudy petitioner in the event of a settlement between the parties.”).

Six months after the ARRI IPRs were terminated, Petitioner filed the current petitions on July 17, 2023, challenging the ’257 patent, the ’258 patent (“the 2nd Petition”), and the ’044 patent as shown in the chart below. The three petitions are copy-cat or road-mapped petitions of three of ARRI’s now-terminated petitions challenging the same claims of the same patents with the same references. *Compare, e.g.,* Petition *with* EX2004 (IPR2022-00262 ARRI’s Petition for IPR of U.S. Patent No. 10,197,238).

Case	Claims at Issue	Filing Date	Prior Art Asserted	Status
IPR2021-01220 (’257 patent)	1-21	July 17, 2023	Astera and Pohlert	Currently pending
IPR2021-01219 (’258 patent)	1-22	July 17, 2023	Showline Manual, Choong, Reinoso, and Pohlert	Currently pending
IPR2022-01218 (’044 patent)	1-19	July 17, 2023	Astera and Edwards	Currently pending

B. General Plastic Factors

Under § 314(a) and 37 C.F.R. § 42.108(a), the Director has discretion to deny institution. *Gen. Plastic Indus. Co., Ltd. v. Canon Kabushiki Kaisha*, Case IPR2016–01357, Paper 19 at § II.B.4.i. (PTAB September 6, 2016) (*General Plastic*). In exercising its discretion to deny institution, the Board considers the seven *General Plastic* factors:

1. whether the same petitioner previously filed a petition directed to the same claims of the same patent;
2. whether at the time of filing of the first petition the petitioner knew of the prior art asserted in the second petition or should have known of it;
3. whether at the time of filing of the second petition the petitioner already received the patent owner's preliminary response to the first petition or received the Board's decision on whether to institute review in the first petition;
4. the length of time that elapsed between the time the petitioner learned of the prior art asserted in the second petition and the filing of the second petition;
5. whether the petitioner provides adequate explanation for the time elapsed between the filings of multiple petitions directed to the same claims of the same patent;
6. the finite resources of the Board; and
7. the requirement under 35 U.S.C. § 316(a)(11) to issue a final determination not later than 1 year after the date on which the Director notices institution of review.

General Plastic, IPR2016–01357, Paper 19, at 8-10. As explained in detail below, at least six of the seven *General Plastic* factors weigh in favor of denying institution

and the last factor is neutral. The Board should thus deny institution of this petition under 35 U.S.C. § 314(a).

1. Factor 1 on “same petitioner previously filed a petition directed to the same claims of the same patent” favors denying institution

As shown above, Petitioner filed the 1st Petition on December 3, 2021, challenging the same claims as the 2nd Petition. *Compare* Petition with EX2005. Though based on different references from the 2nd Petition, the Board denied institution of Petitioner’s 1st Petition. *See generally* IPR2022-00262, Paper 7. This weighs in favor of denying institution of the 2nd Petition under factor 1. *See General Plastic*, IPR2016-01357, Paper 19 at 10 (finding that factor 1 favored denying institution when the same claims of the same patent were at issue in the second petition as in the first petition and institution of first petition was denied).

Factor 1 also favors denying institution when there is a “significant relationship” between the parties that have filed the IPR petitions and the IPR petitions challenge the same claims of the same patent. *Valve Corp. v. Elec. Scripting Prods., Inc.*, IPR2019-00062, Paper 11 at 9–10 (P.T.A.B. Apr. 2, 2019) (precedential). As Petitioner asserts, ARRI and itself were both “industry participants” and defendants in the District of Delaware accused of infringing the same patents. *See* EX1012 at 1. Further, Petitioner’s decision to copy the viable portions of ARRI’s petition but to drop and reinforce those portions that were

criticized by Patent Owner further ties the current petition to ARRI’s petition.

Ericsson Inc. v. Uniloc 2017, LLC, IPR2019-01550, Paper 8 at 11-12 (P.T.A.B. Mar. 17, 2020) (“The instant Petitioner’s decision to use the prior petitions as a roadmap for its own petition ties the interests of all of the petitioners together.”); *see also infra*, Section V.B.3.

2. Factor 2 “whether at the time of filing of the first petition the petitioner knew of the prior art asserted in the second petition” favors denying institution

Factor 2 also weighs in favor of denying institution because at the time of the 1st Petition, Petitioner already knew of the prior art asserted in the 2nd Petition. When filing the 1st Petition on December 3, 2021, Petitioner knew of the asserted Astera, Showline Manual, Choong, Reinoso, and Pohlert references because ARRI’s petitions challenging the same patents were pending at the time Petitioner filed the 1st Petition. EX2004, 3-4. There is no question that Petitioner knew of the pending IPR2021-01497 petition and its asserted references because Petitioner noticed the related IPR2021-01497 matter in the Mandatory Notice section of its 1st Petition. EX2005, 1. Furthermore, Petitioner, by its own admission to the Board, was monitoring the infringement cases against ARRI and the IPRs challenging the asserted patents. *See* EX1012.

Thus, factor 2 weighs in favor of denying institution.

3. Factor 3 on “whether at the time of filing of the second petition the petitioner already received the patent owner's preliminary response to the first petition or received the Board's decision on whether to institute review in the first petition” favors denying institution

Factor 3 also favors denying institution because at the time of filing of the 2nd Petition, Petitioner already received Patent Owner's Preliminary Response and the Board's Decision Denying Institution of the 1st Petition over a year prior to filing the 2nd Petition. The 1st Petition was filed on December 3, 2021, and Patent Owner filed its Patent Owner's Preliminary Response to the 1st Petition on March 14, 2022. *See, e.g.*, IPR2022-00262, Paper 6. The Board then issued its decision denying institution of the 1st Petition on June 8, 2022. *See, e.g.*, IPR2022-00262, Paper 7. A 16- and 13-month difference, respectively, between receiving each paper and submitting the 2nd Petition is a significant amount of time for Petitioner to consider the Patent Owner's Preliminary Response and the Board's Decision Denying Institution. *See General Plastic*, Paper 19, at 10. Additionally, Petitioner had the benefit of receiving the Board's Decision on Institution (Paper 8, Mar. 16, 2022), Patent Owner's Response (Paper 17, June 17, 2022), Patent Owner's Sur-reply (Paper 27, Oct. 21, 2022), and the Oral Hearing Transcript (Paper 33, Dec. 28, 2022) in IPR2022-01497 before filing the 2nd Petition. Thus, Petitioner was able to monitor how arguments were evolving and adjust the 2nd petition accordingly.

Indeed, Petitioner appears to have taken advantage of this long period of time to modify its 2nd Petition to in view of the Board's decision to deny institution of the 1st Petition. In the current Petition, Petitioner takes the position that the claims should be given their ordinary and customary meaning despite arguing that the terms "cinematic lighting special effect" and "effect simulator" should have been specifically construed in its 1st Petition. *Compare, e.g.,* Petition, 11 *with* EX2005, 3-6. This modification in its position appears to be in response to Board's Decision Denying Institution, which found that "cinematic lighting special effect" and "effect simulator" need not be specifically construed because resolution of the IPR could be achieved without any particular claim construction. IPR2022-00262, Paper 7 at 9. As the Board has noted, "the filing of sequential attacks against the same claims, with the opportunity to morph positions along the way, imposes inequities on Patent Owner." *General Plastic*, Paper 19, at 11. Petitioner, noting the Board's decision to deny institution without using Petitioner's advanced constructions, used the decision as a roadmap and morphed its position for the 2nd Petition. This is inequitable to Patent Owner and the very type of conduct that factor 3 seeks to protect against.

Petitioner further engaged in "road-mapping" by copying the IPR2022-00262 petition asserted by ARRI and bolstered arguments based on the proceedings. *See Code200, UAB v. Bright Data, Ltd.*, IPR2022-00861, -00862, Paper 18 at 5 (PTAB Aug. 23, 2022) ("Indeed, 'road-mapping' concerns are minimized when, as in this

case, a petitioner files a later petition that raises unpatentability challenges substantially overlapping with those in the previously-filed petition and the later petition is not refined based on lessons learned from later developments.”). For example, Petitioner adding extra analysis to establish that the Showline Manual is a printed publication, which Patent Owner contested in the ARRI IPR. *Compare* Petition, 6-7 *with* EX2004, 11. Additionally, a large point of contention in IPR2022-00262 was whether petitioner had met its burden in asserting that the prior art disclosed the ability “to calculate a time varying lighting value.” In an attempt to refine the ARRI’s petition based on lessons learned from later developments, the current Petitioner has taken the liberty of using the ARRI petition as a roadmap to substantially expand on how the prior art allegedly meets this limitation. *Compare* Petition, 17-21, 38-39 *with* EX2004, 21-23 (adding additional obviousness analysis into current petition from ARRI’s petition for Ground 2); Petition, 35-36, 40 *with* EX2004, 45-47 (same for Ground 6); *see also* Petition, 20-21 (adding argument regarding construction in infringement allegations).

Hence, factor 3 weighs in favor of denying institution.

4. Factor 4 on “the length of time that elapsed between the time the petitioner learned of the prior art asserted in the second petition and the filing of the second petition” favors denying institution

The long length of time—1 year and 10 months—that has elapsed since Petitioner learned of the prior art and the filing of the 2nd Petition favors denying

institution under factor 4, particularly when Petitioner knew of the prior art asserted but chose not to raise it in its 1st Petition. Where the Petitioner knows of the asserted prior art at the time it filed its 1st Petition and chose not to raise that art, but brings that art now in a 2nd Petition, the Board has found that factor 4 weighs in favor of denying institution. *See T-Mobile USA, Inc. v. VoIP-Pal.com, Inc.*, IPR2023-00638, Paper 11 at 9-10 (July 28, 2023). Here, Petitioner knew of the Showline Manual reference that ARRI asserted, but instead chose to raise the Hinrichs and Morgan references in addition to Pohlert in its 1st Petition. EX2005, 3-4. And when the 1st Petition was not instituted, it now brings a 2nd Petition nearly two years later asserting the very references that it chose not to raise. Further, Petitioner did not adequately explain why it delayed until nearly the last day of statutory bar to file a nearly verbatim petition. *See Apple Inc. v. Uniloc 2017 LLC*, IPR2020-00854, Paper 9 at 11 (P.T.A.B. Oct. 28, 2020) (precedential) (“Because of the lack of explanation, we conclude that this fourth *General Plastic* factor weighs in favor of denying institution of the proceeding.”). This is exactly the type of conduct that weighs in favor of denial of institution under factor 4. *See T-Mobile*, Paper 11 at 9-10.

5. Factor 5 on “adequate explanation for the time elapsed between the filings of multiple petitions” favors denying institution

The Petitioner also fails to provide an adequate explanation for the lengthy elapsed time of 1 year and 7 months between the filing of the 1st and 2nd Petition.

The Petitioner waited until nearly the very last day, July 17, 2023, to file the 2nd Petition before it became time-barred under 35 U.S.C. § 315(b). *See* EX2001, Complaint *Rotolight Ltd. v. Videndum PLC et al*, Case No. 1:22-cv-00928-MN-JLH, Dkt. No. 1 (D. Del. July 12, 2022). Petitioner provides no explanation as to why it waited so close to the deadline to file. This weighs in favor of denial under factor 5. *Apple*, IPR2020-00854, Paper 9 at 11 (“For the same reasons stated above, for instance, Apple’s lack of explanation, we conclude that this fifth General Plastic factor also weighs in favor of denying institution.”).

Indeed, Petitioner’s sole (albeit indirect) explanation for the delay was that it “was not time-barred from filing its own Petition challenging the ’258 Patent using the same prior art,” which is a gross misinterpretation of the Board’s order in another IPR. *See* Petition, 2. Petitioner asserts that the Board itself noted that Petitioner can bring another challenge against the same patent and same claims as long as the challenge is not time-barred. *See id.* (citing EX1013 (IPR2021-01497, Paper 40, Decision to Terminate Due to Settlement After Institution of Trial)). But Petitioner grossly misconstrues the Board’s statement. Despite what Petitioner asserts, the Board did not state that Petitioner could later file its own Petition challenging the ’258 Patent using the same prior art as long as it was not time-barred. *See* EX1013, 6-7. Rather, the Board questioned why Petitioner “could not have filed copy-cat petitions along with motions for joinder in one or all of the instant

proceedings, to serve as a back-up or understudy petitioner in the event of a settlement between the parties.”³ *See id.* at 6. Petitioner also incorrectly attributes the Board’s statement about what the Petitioner said as the Board’s own statement. *See id.* at 7. The Board wrote in its decision that “[*Videndum*] *also indicates that* it is not time-barred and may file its own petitions in the future.” *Id.* (emphasis added). Thus, the Board merely noted what Videndum said, but did not concur with their statement.

The Board explained in *T-Mobile* that if a Petitioner wishes to challenge the claims of the patents at issue in a second petition based on the art it already knew about, it should have done so no later than when it filed its first Petition. *See T-Mobile*, Paper 11 at 10. In that case, the Board noted that factor 5 weighed against institution when the Petitioner chose not to challenge claims based on prior art known to that Petitioner. *See id.* Here, Petitioner clearly knew of the asserted references but chose to instead raise different references from its 1st Petition. Hence, factor 5 weighs in favor of denying institution.

³ It appears that the panel was unaware of Petitioner’s prior failed challenge against the same patents as the Board discourages allowing joinder in cases where Petitioner separately challenged a patent, was denied institution, and then sought to join a different already instituted proceeding after filing a follow-on copycat petition. *See Apple*, IPR2020-00854, Paper 9.

More critically, Petitioner has had multiple opportunities to file a second petition without delaying almost two years until nearly the final day before it would have been time-barred. Petitioner had ample time and the ability to file copy-cat petitions asserting the same references as ARRI after institution of its 1st Petition was denied but chose not to do so. Indeed, the Board chastised Petitioner for not doing so in addition to not filing for a motion for joinder to join the ARRI petitions to serve as a back-up or understudy petitioner. *See* EX1013, 6. Petitioner was also able to file a copy-cat petition asserting the same references even after the Board granted termination of IPR2021-01497, but again, Petitioner opted not to do so, and waited almost seven months to bring the 2nd Petition.

6. Factor 6 “the finite resources of the Board” favor denying institution

Factor 6 weighs in favor of denying institution because the finite resources of the Board should not be squandered for Petitioner, which had several chances to challenge the ’258 patent with the asserted references in its 1st Petition, which was subsequently denied institution, or to join the ARRI IPRs. *See T-Mobile*, Paper 11 at 10-11.

But even more concerning is *how* the Petitioner has brought this 2nd Petition—with its attempt at two bites of the apple and outright lying behind the log—that exhausts the Board’s finite resources. Instead of filing its own petition (or even copy-

cat petitions) also asserting the Showline Manual, Choong, and Reinoso references at the time of its 1st Petition, Petitioner opted to file its 1st Petition asserting the Hinrichs and Morgan references instead. The clear implications are that Petitioner believed that the Hinrichs and Morgan references to also be strong references, and Petitioner wanted two bites at the proverbial apple. Thus, the two petitions asserting different sets of references immediately consume more of the Board's finite resources.

Instead of attempting to join the ARRI IPR proceedings, Petitioner opted to "lie behind the log" while ARRI advanced its petition. When ARRI and Patent Owner settled and moved to terminate, Petitioner suddenly jumped out from behind the log and argued strenuously that the Board should not grant termination. *See* EX1012, 1. In the Board's decision granting termination, the Board questioned why Petitioner did not file its own copy-cat petitions along with motions for joinder and chastised the non-party Petitioner for its "late-asserted interests." *See* EX1013, 6.

It is exactly this type of conduct that exhausts the Board's finite resources that Factor 7 seeks to protect against. The Board concurred on how the petitioner's "two bites at the apple"-type conduct in *T-Mobile* drained its resources. *See T-Mobile*, Paper 11 at 12. But at least the petitioner in *T-Mobile* filed copy-cat petitions and a motion for joinder while the other instituted IPR was still pending. Here, Petitioner's conduct is that much more egregious because despite the Board's cautionary note, it

did nothing for nearly seven months after termination. Bringing the copy-cat petitions now, likely before a whole new panel (or even the same panel) will be forced to learn (or re-learn) the patent and the references, creates a significant drain on finite Board resources.

Thus, Factor 6 weighs in favor of denying institution.

7. Factor 7 “the requirement under 35 U.S.C. § 316(a)(11) to issue a final determination not later than 1 year after the date on which the Director notices institution of review” is neutral

The seventh factor, “the requirement under 35 U.S.C. § 316(a)(11) to issue a final determination not later than 1 year after the date on which the Director notices institution of review,” implicates an efficiency consideration. *See T-Mobile*, Paper 11 at 13. In a joinder scenario, the one-year deadline for entering a Final Written Decision may be removed under 35 U.S.C. § 315(c). *See id.* But because the current petition is an entirely new trial and not joinder, factor 7 neither favors nor disfavors denying institution.

V. LEGAL STANDARDS

A. Institution of an IPR

Under 35 U.S.C. § 314(a), Petitioner carries the burden of showing a reasonable likelihood that it would prevail with respect to at least one of the claims challenged in the Petition. Petitioner must prove unpatentability by a preponderance

of the evidence. 35 U.S.C. § 316(e); *In re Magnum Oil Tools Int’l, Ltd.*, 829 F.3d 1364, 1375-77 (Fed. Cir. 2016).

A Petition cannot support institution unless it “identifies, in writing and with particularity, each claim challenged, the grounds on which the challenge to each claim is based, and the evidence that supports the grounds for the challenge to each claim.” 35 U.S.C. § 312(a)(3). The Petition must explain “[h]ow the construed claim is unpatentable” and “must specify where each element of the claim is found in the prior art patents or printed publications relied upon.” 37 C.F.R. § 42.104(b)(4); *Google Inc. v. EveryMD.com LLC*, IPR2014-00347, Paper 9, at *9 (PTAB May 22, 2014). “The Board may exclude or give no weight to the evidence where a party has failed to state its relevance or to identify specific portions of the evidence that support the challenge.” 37 C.F.R. § 42.104(b)(5).

B. Petitions Based on Obviousness

A petition based on obviousness, which all Grounds raised by petitioner are, must “meaningfully” address the first two *Graham* factors: (i) the scope and content of the prior art, and (ii) any differences between the claimed subject matter and the prior art. *Graham v. John Deere Co. of Kansas City*, 383 U.S. 1, 17-18 (1966). It is not the Board’s (or Patent Owner’s) role to “sift through the information” provided with a petition to identify the differences between a challenged claim and the prior art. *Google*, IPR2014-00347 at 9. As part of that analysis, the Petition must show

that a skilled artisan would have been motivated to combine the prior art references with a reasonable expectation of success. *Apotex Inc. v. Wyeth LLC*, IPR2014-00115, Paper 94, at 11 (PTAB Apr. 20, 2015) (citations omitted). An articulated reason with a rational underpinning to combine specific teachings in the references in a particular manner to arrive at the claimed invention is required for a showing of obviousness. *KSR Int'l Co. v. Teleflex, Inc.*, 550 U.S. 398, 418 (2007). Moreover, when an expert declaration is relied on to support such reasoning, the “[l]ack of factual support for expert opinion going to factual determinations . . . may render the testimony of little probative value in a validity determination.” *Ashland Oil v. Delta Resins & Refractories*, 776 F.2d 281, 294 (Fed. Cir. 1985).

“The evaluation of the choices made by a skilled scientist, when such choices lead to the desired result, is a challenge to judicial understanding of how technical advance is achieved in the particular field of science or technology.” *Abbott Labs. v. Sandoz, Inc.*, 544 F.3d 1341, 1352 (Fed. Cir. 2008). An obviousness inquiry based on an obvious-to-try rationale must always be undertaken in the context of the subject matter in question, “including the characteristics of the science or technology, its state of advance, the nature of the known choices, the specificity or generality of the prior art, and the predictability of results in the area of interest.” *Id.*

To show that a particular design could have been obvious to try, Petitioner must present credible evidence to support its assertion that one of ordinary skill in

the art would have understood that there are a limited number of possibilities for meeting a known design need. *See Bayer Schering Pharma AG v. Barr Labs., Inc.*, 575 F.3d 1341, 1347 (Fed. Cir. 2009) (“[A]n invention would not have been obvious to try when the inventor would have had to try all possibilities in a field unreduced by direction of the prior art.”). In addition, “an invention is not obvious to try where vague prior art does not guide an inventor toward a particular solution.” *Bayer Schering Pharma AG v. Barr Lab'ys, Inc.*, 575 F.3d 1341, 1347 (Fed. Cir. 2009).

Objective indicia of non-obviousness cannot be ignored. *Fox Factory, Inc. v. SRAM, LLC*, IPR2016-01876, Paper 59, at 9 (PTAB Apr. 2, 2018) (“Objective evidence of non-obviousness may often be the most probative and cogent evidence in the record and may often establish that an invention appearing to have been obvious in light of the prior art was not.”); *NuVasive, Inc. v. Iancu*, 752 F. App'x 985, 996 (Fed. Cir. 2018) (“On remand, the Board should reevaluate *NuVasive*'s objective evidence of non-obviousness such as long-felt need . . .”). A necessary safeguard and, like here, a required aspect of a petition based exclusively on obviousness is a forthright discussion of the objective indicia of non-obviousness. *Plantronics, Inc. v. Aliph, Inc.*, 724 F.3d 1343, 1354-55 (Fed. Cir. 2013) (“Failure to give proper consideration to such evidence, as in this case, can be fatal . . .”). Tellingly, the Petition makes no attempt to address any indicia of non-obviousness.

VI. GROUNDS 1 AND 2: THE '258 PATENT IS NOT ANTICIPATED BY THE SHOWLINE MANUAL, OR OBVIOUS OVER THE SHOWLINE MANUAL ALONE OR IN COMBINATION

Petitioner has failed to establish that the Showline Manual anticipates or renders obvious the Challenged Claims of the '258 Patent. Nor does the Showline Manual in combination with Choong render claim 7 obvious. And, finally, the Showline Manual in combination with Reinoso does not render claim 15 obvious.

A. Overview of the Showline Manual

The Showline Manual is an Installation & User's Manual for the Showline SL PAR 155 Zoom RGBW LED Luminaire. EX1004, cover. The Showline Manual discloses a LED lighting fixture (*i.e.*, the SL PAR 155) and an LCD Display/Menu System. EX1004, 7. The LCD Display and Menu System is built into the SL PAR 155 Luminaire and allows users "local control for accessing" certain features, including "Presets (Standard and User Defined)," and "Effects (Chases – preloaded and user defined)." EX1004, 14; EX2002, ¶68.

The Showline Manual defines "Presets" as "stored values of the luminaire's LED settings that can be recalled via the menu system or DMX." EX1004, 15. The Showline Manual defines "Effects" as: "Effects are chases stored values of the luminaire's LED settings that can be recalled via the menu system or DMX." EX1004, 16. Accordingly, "Presets" and "Effects" are both pre-recorded lighting sequences that are stored in the Showline SL PAR 155 and recalled and replayed as

desired. EX2002, ¶69.

The Showline Manual further discloses parameters of the “Presets” and “Effects” that can be adjusted to “customize” the effect produced. EX1004, 15. The adjustable parameters of the effects are “master intensity, speed, and fade values,” as well as color. EX1004, 16-17; EX2002, ¶70.

B. Overview of Choong

Choong generally discloses a method of creating lighting of white color with the intended correlated color temperature (“CCT”). EX1006, Abstract. Choong utilizes different groups of lights that fall in different CCT ranges. *Id.*; EX2002, ¶71.

C. Overview of Reinoso

Reinoso generally discloses a DMX based wireless lighting system with multiple modules. EX1007, Abstract. Reinoso discloses that a processor “can independently control [] *pre-selected* lighting effects, channels, addresses, programs and other light effect features.” *Id.*⁴; EX2002, ¶72.

D. The Showline Manual Does Not Anticipate Claim 1

Even if the Showline Manual were prior art to the ’258 Patent (which it is not), Petitioner fails to establish that it anticipates claim 1.

⁴ Unless otherwise noted, any emphasis in quotations has been added.

1. The Showline Manual Does Not Disclose “an effect simulator adapted to calculate a time varying lighting value based on at least one simulation parameter”

As described above in detail, the '258 Patent requires that the effect simulator calculate a time varying lighting value. *See* Section III.A. The Petition fails to demonstrate that the Showline Manual anticipates the “effect simulator” limitation of independent claim 1 of the '258 Patent because the Showline Manual only discloses stored presets or stored chases. EX1004, 14. While these stored lighting effects are modifiable by a user, the Showline Manual's stored presets or stored chases do not involve “an effect simulator adapted to *calculate* a time varying lighting value based on at least one simulation parameter” as recited in claim 1, and a POSITA would not have understood it to do so. EX2002, ¶115.

The Smith Declaration describes the '258 Patent as disclosing an “effect simulator” as a component of a controller that “creates data 106 characterizing a lighting effect.” EX1003, ¶78. In so describing, Mr. Smith admits the difference between the Showline Manual's disclosure of pre-set lighting effects and the “effect simulator” limitation of the '258 Patent. Specifically, the effect simulator, in being “adapted to calculate a time varying lighting value,” creates data that is later output to generate a lighting effect. The Showline Manual, on the other hand, merely discloses recalling and replaying “[p]resets,” which are “stored values of the luminaire's LED settings that can be recalled.” EX1004, 15. The Showline Manual

does not disclose “creating” data, let alone *calculating* time varying lighting values. EX2002, ¶116.

Petitioner attempts to argue that “[n]othing in the ’258 Patent discloses *how* the lighting values are ‘calculated,’ only that a user adjusts parameters and the lighting effect is created or generated by adjusting parameters,” but fails to address the significant portion of the ’258 specification dedicated to specifically describing the calculation. Petition, 18. As described in more detail Section III.A., the ’298 Patent provides different algorithm examples that demonstrate how the calculations are performed and how often. *See, e.g.*, EX1001, 10:21-44, 11:6-23; *see also* Section III.A.

Petitioner appears to make two arguments regarding how the Showline Manual purportedly satisfies their misunderstanding of this limitation. Petition, 17-21; *see also* EX1003 ¶¶65-69 (same arguments in Mr. Smith’s declaration). First, Petitioner argues the Showline Manual discloses the claimed “effect simulator” because Showline Manual describes an interactive system that “adjusts and stores data in the form of ‘values of the luminaire’s LED settings’ for the presets and chases.” Petition, 19; *see also* EX1003, ¶65; EX1004, 15. Relying solely on the conclusory statements of their expert, Petitioner asserts that when a user “adjusts the customizable parameters for a preset or chase,” “the processor in the SL PAR[] calculates new data values for the LED settings to match the adjustments.” Petition,

19; *see also* EX1003 ¶¶ 67-68. Petitioner then asserts that “[t]he data values for the LED settings calculated and set by the device are based on adjustable simulation parameters, including ‘intensity’ (or brightness), ‘speed,’ ‘fade,’ ‘duration,’ ‘strobe rate,’ and ‘color timing’” and cites to the Showline Manual, despite the Showline Manual’s silence on how any “data values” for the LED settings are considered when outputting light effects. *See* Petition, 19 (citing EX1004, 16-17).

Second, Petitioner argues that because the Showline Manual allows the user to “adjust[] the customizable parameters for a preset” (or chase) this adjustment of pre-recorded lighting values anticipates the claim limitation because the setting of the pre-set (or chase) values involves calculating a time varying lighting value based on an input from a user. Petition, 19-20; *see also* EX1003, ¶¶ 67-68. However, again, in the Showline Manual, there is no “calculating” by an effect simulator, let alone a calculation “based on” at least one simulation parameter. EX2002, ¶ 117.

The mere ability to recall and replay pre-recorded lighting patterns does not disclose the effect simulator claimed in the ’258 Patent because replaying pre-recorded lighting patterns does not *create* data, which is how Petitioner’s expert, Mr. Smith, has characterized the “calculating” of the ’258 Patent. *See* EX1003, ¶¶ 67-68. The ability to modify or adjust the pre-recorded lighting patterns does not anticipate the effect simulator limitation for the same reason—*i.e.*, there is no calculation. EX2002, ¶ 118.

a. Storing and outputting pre-recorded lighting patterns does not disclose “an effect simulator adapted to calculate a time varying lighting value.”

The effects disclosed by the Showline Manual alone (*i.e.* without user customization) are not sufficient to anticipate the effect simulator element. Petitioner merely states that “[the] Showline Manual discloses Claim 1d” and cites to Mr. Smith’s testimony that “that the LCD Display and Menu System includes an ‘effect simulator,’ as the interactive LCD Display and Menu System adjusts and stores data in the form of ‘values of the luminaire’s LED settings’ for the presets and chases.” Petition, 19 (citing EX1004, 14-17). While Petitioner explains that the “LED setting values are time varying data values that characterize the desired effect,” Petitioner fails to provide any analysis showing that the Showline device *calculates* those values. Petition, 18; *see also* EX1003 ¶¶67-68. The “effect simulator” element of the ’258 Patent requires more than just stores and outputs “time varying data values;” the “effect simulator” must be adapted to “calculate” those values. EX1001, cl. 1; EX1003 ¶¶67-68; EX2002, ¶119.

The Showline Manual describes two types of effects: “Presets,” which can be “Standard and User Defined” and “Effects,” also known as “Chases,” which can be “preloaded and user defined.” EX1004, 14. The Showline Manual defines “Presets,” “Effects,” and “Chases” using identical language, and Petitioner refers to “Presets,” “Effects,” and “Chases” interchangeably. *See, e.g.*, EX1004, 15 (defining Preset);

16-17 (defining Chases and Effect); *see* Petition, 19; *see also* EX1003 ¶¶67-68; EX2002, ¶120.

Notably, the Showline Manual defines presets as “**stored values** of the luminaire’s LED settings that can be recalled via the menu system or DMX.” EX1004, 15. The Showline Manual defines effects and chases with the same phrase used to define presets: “**stored values** of the luminaire’s LED settings that can be recalled via the menu system or DMX.” EX1004, 16-17; EX2002, ¶121.

Each of these disclosed effects are pre-recorded lighting sequences capable of being recalled and replayed by the controller. *See* EX1004, 15, 19. While the effects can be either “preloaded” or “user defined,” nothing in the Showline Manual indicates an effect simulator that calculates time varying lighting values. EX1004, 14; *see also*, EX1001, cl. 1. Nor does Petitioner cite any evidence from the Showline Manual that the pre-recorded effects are “calculated.”

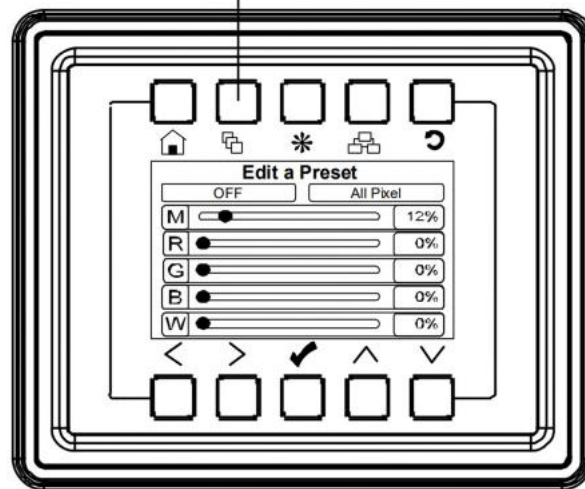
Petitioner’s argument asserting that the effects described in the Showline Manual are calculated by an effect simulator is conclusory and unsupported by the reference. A POSITA would have understood that replaying of stored presets or chases in the Showline Manual does not involve “calculating” a time varying lighting value based on at least one simulation parameter. EX2002, ¶122.

b. Adjusting parameters of a pre-recorded lighting pattern does not disclose “an effect simulator adapted to calculate a time varying lighting value.”

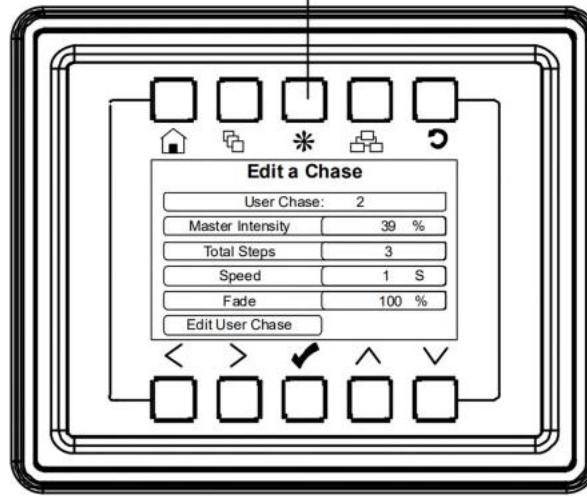
Adjusting parameters of a pre-recorded pattern does not constitute “calculating” as claimed and described in the '258 Patent. Specifically, adjusting parameters like intensity, timing, and fade of a pre-recorded pattern does not calculate time varying lighting values. EX2002, ¶123.

The Showline Manual discloses the ability to edit effects by adjusting various parameters like color, intensity, speed, and fade. EX1004, 15-16. The figures below illustrate the menus available for adjusting these parameters:

Edit a Preset



Edit a Chase



EX1004, 15, 17; EX2002, ¶124.

The first of the above images shows the option to set the color of a preset, (or of a preset defining a single step of an effect) by setting specific values for each of the red, green, blue, and white color channels (the Showline Manual uses RGBW LEDs) as well as the master intensity. EX1004, 15. The second image shows the ability to adjust the master intensity, speed, and fade values (“Total Steps” is not an editable field). EX1004, 16. Table 3 describes these parameters:

Table 3: Effects Parameters

Parameter	Description
User Chase / Built-in Chase	Select from the 18 different chases.
Master Intensity	Adjust the master intensity for ALL chases.
Total Steps	Displays the total steps used by the chase. This field is not editable.
Speed	The total time each step of the chase will be recalled.
Fade	The percentage of the time assigned by the speed that is crossfaded between steps.

EX1004, 16. Notably, “Master Intensity” and “Speed” require the user to input a hardcoded value for those parameters (*i.e.* a playback value to be applied to each step

of the effect, without calculation.) “Fade” simply adjusts the transition between steps according to pre-defined dimming curves. EX1004, 22; EX2002, ¶125.

As a preliminary matter, Petitioner’s discussion of why adjusting parameters involves an effect simulator configured to calculate is again formed around conclusory assertions. For example, Petitioner claims that based on the user selections, “the LCD Display and Menu System calculates” data values. Petition, 19; *see also* EX1003, ¶67. However, this sentence is unsupported in the reference, and the Smith Declaration does not explain why or how the LCD Display and Menu System “calculates, sets, and stores” the new data values. EX1003 ¶67. The next sentence appears to contain the same general assertion (again using the “Display and Menu System calculates, sets, and stores” language), but cites only to Mr. Smith’s declaration regarding elements 1(b) and 1(c) and to page 16-17 of the Showline Manual. Petition, 19-20, (citing EX1003, ¶67); EX2002, ¶126.

Petitioner’s brief arguments regarding this element rely heavily on Mr. Smith’s declaration, which in turn relies on earlier paragraphs of the same declaration. However, the relied upon analysis, found in paragraphs 54-64 of the Smith Declaration (EX1003), does not contain any references to any “calculation” performed by the Showline device nor do they explain in any detail how the “Display and Menu System calculates, sets, and stores” new data values. *See* EX1003, ¶¶54-64. Similarly, pages 16-17 of the Showline Manual lack any disclosure that indicates

that a calculation is occurring. *See* EX1004, 16-17. Instead, these pages only show that the Showline device allows users to adjust parameters. EX1003, ¶¶54-64; EX1004, 16-17. There is no evidence that adjusting parameters using an LCD display constitutes an effect simulator *adapted to calculate* time varying lighting values. EX2002, ¶127.

The specification of the '258 Patent draws a distinction between the effect simulator that calculates time varying lighting values and simply replaying pre-recorded effects after adjusting for user inputs when it explains:

Generating the light output with the simulation provides a greater level of user adjustment and control than that produced by simply sampling the intensity of a real flame and **replaying it at *different speeds***.

EX1001, 10:17-20; EX2002, ¶128.

Even where a device includes the option to customize or modify a pre-recorded set of lighting values, a POSITA would have understood that parametrizing or customizing those pre-recorded values does not involve a “calculation.” EX2002, ¶¶102, 129. Parameterizing a pre-recorded lighting scheme does not require calculating anything; it simply involves adjusting the pre-recorded parameters. For example, if a fire special effect is pre-recorded and the playback speed is increased, there is no “calculating” within the meaning of the '258 Patent claims—the pre-recorded lighting effect is simply played slower or faster. The same holds true for a brightness adjustment, *i.e.*, pre-recorded time varying lighting values for the fire are

replayed and the overall brightness may change, but there is no “calculating” of the time varying lighting values (nor a calculation “based on” the adjusted brightness). EX2002, ¶¶102-104, 129-130.

A POSITA would have understood that a recording created by “sampling the intensity of a real flame” is a pre-recorded pattern, and outputting that pattern at “different speeds” involves adjusting the parameters of that pre-recorded pattern. While adjusting the playback speed modifies the effect, it does not involve a “calculation” as claimed. Thus, Petitioner fails to meet its burden of showing that the Showline Manual anticipates the “calculate” limitation of independent claim 1. EX2002, ¶¶115-131.

2. The Showline Manual Not Disclosing the “Calculate” Limitation Does Not Contradict the Infringement Allegations

Petitioner claims that by denying that the Showline Manual does not disclose the “calculate” limitation, Patent Owner is contradicting their infringement allegations because “Patent Owner asserted in litigation that ‘calculating’ in Claim 1 is satisfied by the inputting of ‘parameters’ into a lighting device via a user interface.” Petition, 20-21 (citing EX1011, 41). Petitioner alleges that Patent Owner believes “[w]ith an intuitive UI for fast menu selections and customizable pre-set buttons for quick recall of your favorite scenes and settings....” (EX1011, 41) is “near-identical” to “the Showline Manual of adjusting parameters through an

interface, which in turn produces a lighting effect based on those parameters.”
Petition, 21. Petitioner is mistaken as Patent Owner is clearly asserting the
“controller” limitation and not the “calculate” limitation. *See* EX1011, 40-41
 (“The ’258 Accused Products include *a controller* adapted to control the lighting
device to produce a user customizable cinematic lighting special effect selected from
a range of different user customizable cinematic lighting special effects, *the*
controller comprising: [list of quoted attributes from product guides].”) (emphasis
added).

Petitioner has not presented more than conclusory or completely mistaken
arguments and simply has not met its burden of showing that the Showline Manual
anticipates independent claim 1. EX2002, ¶¶115-131.

E. The Showline Manual Not Render Claim 1 Obvious

Petitioner claims that “[i]f the Board finds that Claim limitation 1[d] is not
expressly disclosed in the Showline Manual, Petitioner asserts that it would have
been obvious to a POSITA.” Petition, 38. Petitioner relies on its mistaken assertion
that Exhibit 1001 does not “provide *any* specifics regarding how the ‘calculation’ is
purportedly performed” and that Patent Owner’s expert previously noted “that the
‘calculating’ limitation—the heart of what Rotolight says it invented—is something
‘routine’ that would ‘be within the knowledge’ of a POSITA.” Petition, 38-39 (citing
EX1010 at 149:11-153:9, 153:19-154:18, 155:4-6, 165:9-11, 176:16-19).

As discussed above in Section III.A, the '258 Patent does indeed describe how the calculations are performed. Even without that disclosure, Petitioner is focused on the wrong test. The obviousness analysis requires considering whether “the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains” and not just what a POSITA would understand the inner mechanics of an invention would be. *See* 35 U.S.C. § 103. It does not matter what a POSITA would or would not understand the calculations in the '258 Patent to be, only that a POSITA would not find it obvious to reconfigure the teachings of the Showline Manual in view of their knowledge to include “an effect simulator adapted to calculate a time varying lighting value based on at least one simulation parameter.” *See* EX1001, 12:3-5.

Regardless, Petitioner fails to allege that a POSITA would find it obvious to modify the Showline Manual. Petitioner only argues that in the Showline Manual, “[n]ew lighting values would have to be created (i.e., ‘calculated’) each time a user adjusts the parameters of an effect, adds a new step to a Chase with new parameters, or adds Strobe/Timing parameter adjustments to an active effect.” Petition, 39 (citing EX1004 at 14-18; EX1003, ¶ 159). This is an argument that a POSITA would supposedly understand that the Showline Manual *inherently* disclosed calculations

(which, as explained above, it does not) and not an assertion that a POSITA would find it obvious to modify the Showline Manual to include these calculations. Additionally, Petitioner does not offer any motivation as to why a POSITA would modify the Showline Manual to arrive at the present invention, nor does Petitioner explain why a POSITA would have a reasonable expectation of success in doing so. *See DSS Tech. Mgmt., Inc. v. Apple Inc.*, 885 F.3d 1367, 1374-77 (Fed. Cir. 2018) (reversing a finding of obviousness where Petitioner failed to provide reasoned explanation for motivation to modify reference); *Lindsay Corp. v. Valmont Indus., Inc.*, IPR2016-01387, Paper 7 at 9-11 (PTAB Jan. 9, 2017) (denying institution where Petitioner failed to “allege [the] reference does not disclose a limitation, but it would have been obvious to modify [the reference], or provide other analysis that bears the hallmarks of an obviousness analysis”).

Thus, Petitioner has not met its burden of showing that the Showline Manual renders independent claim 1 obvious.

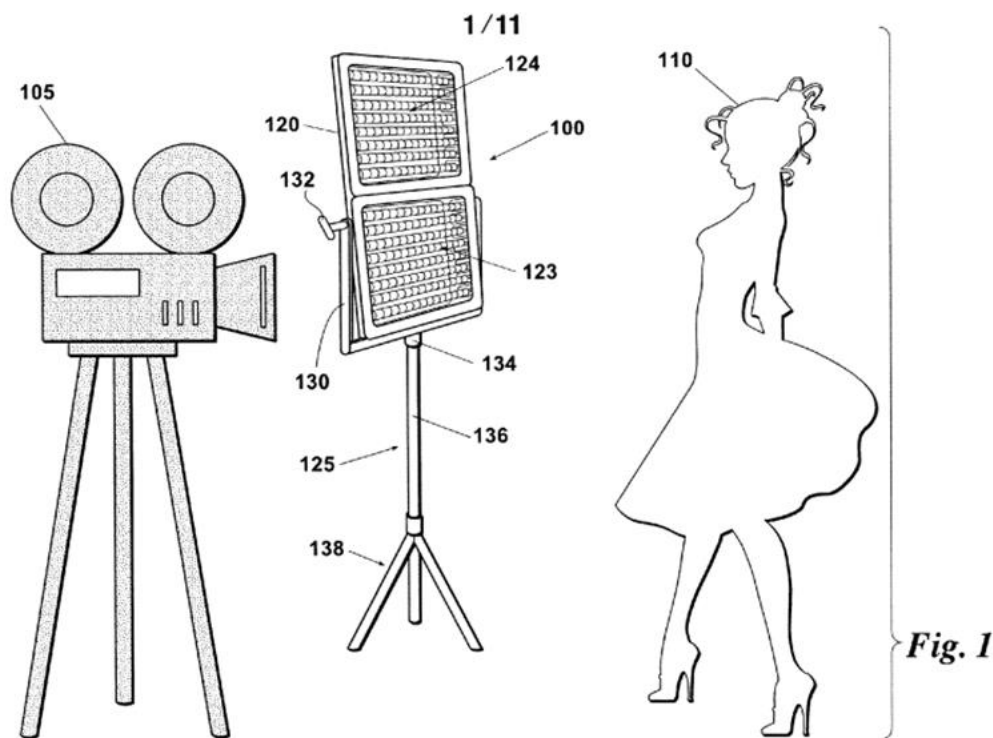
VII. GROUNDS 3 AND 4: THE '258 PATENT IS NOT OBVIOUS OVER THE SHOWLINE MANUAL IN COMBINATION WITH CHOONG OR REINOSO

Claims 7 and 15 are distinguishable over combinations of the Showline Manual and Choong (EX1006), or Showline and Reinoso (EX1007), at least due to their dependence from claim 1 as discussed above. Claims 7 and 15 are valid at least because claim 1 is valid. EX2002, ¶144.

VIII. GROUNDS 5 AND 6: CLAIMS 1-22 WOULD NOT HAVE BEEN OBVIOUS OVER POHLERT

A. Overview of Pohlert

Pohlert discloses a lighting apparatus with a panel light frame. *See* EX1008, Abstract. FIG. 1 shows an embodiment of the “inventive” light 100:



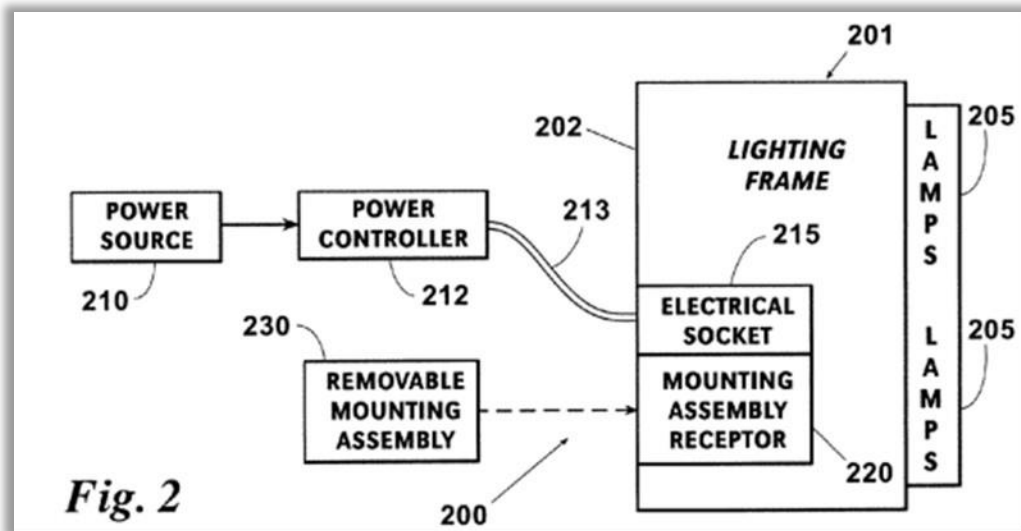
EX1008, FIG. 1 (annotated), ¶¶[0052]; EX2002, ¶73.

As shown in FIG. 1, “a video camera 105 might be directed towards a subject 110 that is being illuminated by inventive light 100.” EX1008, ¶¶[0052]. “[T]he camera 105 might use film, video tape, or solid-state image capture circuitry (e.g., CCDs) and may be a still photography camera, a motion picture camera, or some

combination of the two.” *Id.*; EX2002, ¶74.

Pohlert discloses the inventive light 100 preferably utilizes a panel light frame 120 that includes LED lights or other light elements. *See* EX1008, Abstract, ¶¶[0050], [0052]. This “panel-type arrangement” of lighting elements is preferred to provide even lighting on the subject. *See* EX1008, ¶[0055] (explaining the relative even lighting in the context of FIG. 4, which is preferred to uneven lighting). EX2002, ¶75.

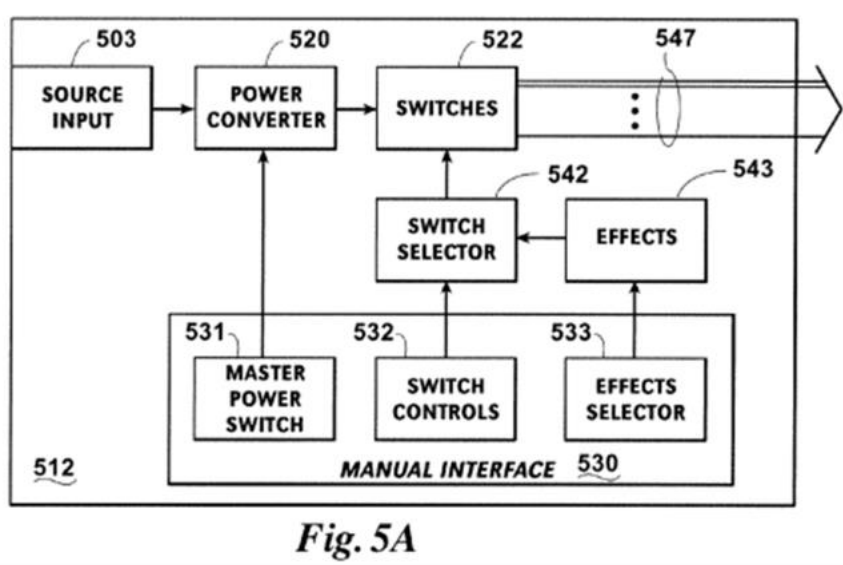
FIG. 2 provides the general diagram of the lighting effects system 201:



EX1008, FIG. 2; EX2002, ¶76.

Pohlert provides “the LEDs or other low power lamps 205 may be...powered by a power source 210 controlled by a power controller 212” as shown in FIG. 2. EX1008, ¶[0057]. FIGS. 5A and 5B of Pohlert provide additional details of two types of power controllers. EX1008, ¶[0058]. FIG. 5A is reproduced here for convenience

of explanation:



EX1008, FIG. 5A; EX2002, ¶77.

Pohlert explains that FIG. 5A shows one type of power controller. EX1008, ¶[0058]. This controller includes a power source input 503, power converter 520, and a plurality of switches 522, “which may be solid state devices (e.g., transistors) or analog devices (e.g., relays)” to control the power output via wires 547. “A switch selector 542 controls the on/off state [of] each switch (or group) in the set of switches 522,” and “[a] manual interface 530 is provided to allow operation of the switches.” EX1008, ¶¶[0058]-[0059]. The manual interface may include manual switches, buttons, knobs, or other manual input means for controlling each switch or groups of switches. *See id.*, ¶[0059]. For example, a manual input such as a knob could select between different groups of light segments 325, 330, 335, 340, 345, 350, 355, 360. *See id.*; *see also id.*, FIG. 3B (showing the LED light segments); EX2002, ¶78.

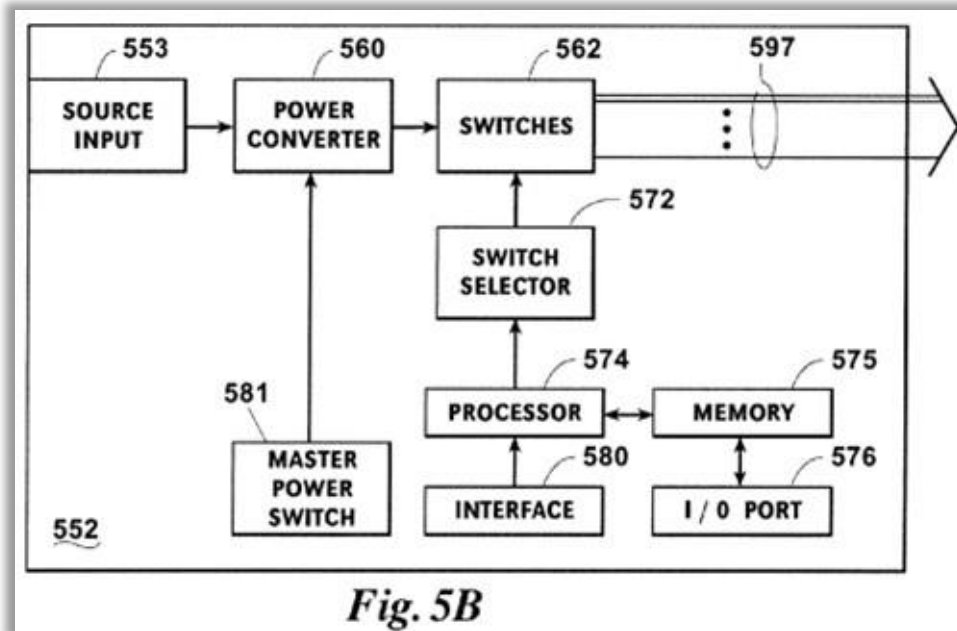
Pohlert discloses an effects generator 543 that may optionally be included along with an effects selector 533, which is part of the manual interface. EX1008, ¶[0061]. The effects generator 543 can provide various lighting effects such as dimming, strobing, or pattern generation. *Id.*; EX2002, ¶79.

Pohlert explains that dimming may be accomplished using a manual control knob or a multi-position switch on the effects selector 533. EX1008, ¶[0061]; EX2002, ¶80.

Pohlert explains that strobing may be accomplished “by generating an oscillating signal and applying it as a control signal either upstream or downstream from the switch selector 542.” EX1008, ¶[0062]. The frequency of oscillation may be selectable via a manual knob as part of the effects selector 533. *Id.*; EX2002, ¶81.

Pohlert explains pattern generation “may be accomplished by, e.g., manual selection from a number of predefined patterns or else through an interface allowing different pattern sequencing.” EX1008, ¶[0063]. Patterns may include strobing or flashing different groups of light segments 325-360 in a pre-defined sequence or a pseudo-random sequence. *Id.*; EX2002, ¶82.

FIG. 5B of Pohlert shows “another example” of a power controller 552 that may be used in Pohlert’s lighting system. EX1008, ¶[0065].



EX1008, FIG. 5B; EX2002, ¶83.

The FIG. 5B embodiment does not include the effects simulator 533 or effects generator 543, but instead includes a processor 574 and a switch selector 572. EX1008, FIG. 5A-5B, ¶[0065]. The processor 574 interfaces with memory 575 to access programming instructions. EX1008, ¶[0066]. An interface 580 is provided for programming or otherwise interfacing with the processor, or manually selecting various lighting effects. *Id.* The processor 574 “reads instructions from the memory 575 and executes them in a conventional manner,” which controls the switch selector 572 and ultimately the downstream lights. EX1008, ¶[0067]. EX2002, ¶84.

Notably, Pohlert describes that the processor 574 is specifically pre-

programmed to provide dimming, strobing, or pattern generation using pre-defined or pseudo random sequences. EX1008, ¶[0067]; EX2002, ¶85.

B. Independent Claim 1 is Not Anticipated or Rendered Obvious by Pohlert

Pohlert does not anticipate independent claim 1 of the '258 Patent for at least two reasons. EX2002, ¶145.

First, Pohlert does not “calculate” a time varying lighting value. Instead, Pohlert describes pre-defined light patterns illuminated in pre-defined or pseudo-random “sequences.” *See* EX1008, ¶¶[0063], [0067]. Executing pre-defined light patterns (even in a pseudo-random sequence) does not involve *calculating* a lighting value, and particularly does not involve calculating a “time varying” lighting value. The reliance on manual inputs being converted to power control signals or the generation of special effects such as strobing and pattern generation do not show calculating a time varying lighting value. EX2002, ¶146.

Second, Pohlert does not disclose a lighting system “wherein said lighting device and said controller are integrated in a combined unit.” The Petition and the Smith Declaration improperly rely on a misleading annotation to one of the figures of Pohlert to argue that the controller of Pohlert is integrated with the lighting device. In fact, Pohlert does not disclose an integrated controller and thus this element is not met. EX2002, ¶147.

1. Pohlert Does Not Anticipate “an effect simulator adapted to calculate a time varying lighting value based on at least one simulation parameter”

Pohlert does not disclose “an effect simulator adapted to calculate a time varying lighting value based on at least one simulation parameter” as recited in claim 1. EX2002, ¶148. The Petition seems to equate two separate components from two embodiments in Pohlert to the claimed “effect simulator”: (i) the effects selector 533 and effects generator 543 (FIG. 5A) and (ii) the processor 574 (FIG. 5B). Petition, 50; *see also* EX1003, ¶¶205-206.

The effects generator 543 (FIG. 5A) and the processor 574 (FIG. 5B) then appear to be relied on in the same way, in that the Petition focuses on either of these components generating certain “lighting effects” as allegedly meeting this limitation. Petition, 50-51; EX1003, ¶¶ 207-208. In particular, it appears that the Petition relies on the generation of “power control signals,” “strobing” and “light effect patterns” collectively or individually to anticipate this claim limitation. *See* Petition, 50-52; EX2002, ¶150.

None of the embodiments on which Petitioner relies involve an effect simulator adapted to calculate anything, let alone a time varying lighting value. EX2002, ¶151.

a. Power Control Signals.

The Petition begins its discussion of this element with some references to

Pohlert’s disclosure of an effects generator 543 or processor 574 that output “power control signals” to LEDs to produce particular special effects. Petition, 60; *see also* EX1003, ¶¶207-208; EX2002, ¶152. Pohlert discloses an effects generator 543 (FIG. 5A) that provides the ability to create various lighting effects such as “dimming, strobing, pulsation, or pattern generation.” EX1008, ¶[0061]. Pohlert’s processor 574 in Figure 5B executes “programming instructions [that] may also provide for various lighting effects, such as dimming, strobing, pulsation, or pattern generation.” EX1008, ¶[0067]; EX2002, ¶153.

However, the conversion of power control signals to “generate the desired [light output] patterns and effects” (Petition, 50) does not mean generating the power control signals themselves involves *calculating* a time varying lighting value as recited in independent claim 1. Therefore, Petitioner’s general allegation that the effects generator 543 or the processor 574 output power control signals to provide a time varying lighting effect does not show that this limitation is met. The critical issue here is whether any of these lighting effects are created by “an effect simulator adapted to calculate a time varying lighting value” (as Petitioner contends) or whether the effects generator 543 generates the effects without “calculating” time varying lighting values. A POSITA would have known Pohlert discloses the latter—the effects generator 543 is *not* calculating a time varying lighting value. EX2002, ¶154.

For example, Pohlert explains that dimming may be accomplished using a manual control knob or a multi-position switch on the effects selector 533. EX1008, ¶[0061]. A POSITA would have understood that no “calculation” of a time varying signal is required to transfer user input via a manual control knob to effectuate the desired dimming. Converting a manual input to an output power control signal for an LED does not involve “calculat[ing] a time varying lighting value.” Indeed, Pohlert itself teaches the use of standard electrical components to regulate the LED output. *See* EX1008, ¶¶[0068]-[0071], [0119]-[0125], FIGS. 6, 19A, 19B; EX2002, ¶155.

The ’258 Patent itself makes clear that the “calculat[ing]” of the time varying signal based on the simulation parameter is distinct from simply converting a manual input signal to a power control signal for an LED. *See* Section III.A. Further, the ’258 Patent explicitly discloses a “converter” as a separate component than the effect simulator performing the calculation. *See* EX1001, 8:41-53. It even claims the “converter” as a separate component of the lighting system than the controller (which includes the effect simulator). *See* EX1001, cl. 19; EX2002, ¶156.

A POSITA would have known that it is this type of component—*i.e.*, a converter—that would have been used in a conventional system to convert a manual input (*e.g.*, a brightness increase or decrease) to a pulse-width-modulation (PWM) output in the form that an LED would understand. *See id.* There is no “calculation”

in this type of conversion, and the '258 Patent thus makes clear from its disclosure at lines 41 to 53 of column eight that the “effect simulator” has a distinct functionality from mere signal conversion. EX1001, 8:41-53; EX2002, ¶157.

b. Strobing.

With respect to strobing, the Petition and Smith Declaration also seem to allege that the strobing special effect in Pohlert anticipates the “calculating” claim limitation. *See* Petition, 51; EX1003, ¶¶209-210. The Petition says Pohlert’s “controller generat[es] an oscillating signal (which is a time varying signal)” and thus appears to argue this oscillation signal generation meets the “effect simulator adapted to calculate a time varying lighting value” limitation. *See* Petition, 51. Strobing does not anticipate this limitation. EX2002, ¶158.

Pohlert explains that strobing may be accomplished “by generating an oscillating signal and applying it as a control signal either upstream or downstream from the switch selector 542.” EX1008, ¶[0062]. It does not provide any detail as to how the oscillation signal is “generated.” It does explain the frequency of oscillation may be selectable via a manual knob as part of the effects selector 533. EX1008, ¶[0062]; EX2002, ¶159.

A POSITA would have known that Pohlert’s effects generator 543 would use conventional electronic components to generate an oscillating signal for the strobe light effect or a processor executing a predesignated pattern. *See* EX1008, ¶[0062]

(explaining generating an oscillating signal), ¶[0067] (describing executing computer instructions “in a conventional manner”); *see also id.*, ¶¶[0068]-[0071], [0119]-[0125], FIGS. 6, 19A, 19B (collectively describing use of conventional electrical circuits to regulate LED output); EX2002, ¶160.

While there are lots of types and forms of sinusoidal signal generators (*e.g.*, a signal generator, an oscillator, a waveform generator, etc.), the electrical components used to create an oscillating signal are very well-known and have been around for many years (and thus, Pohlert likely did not include more details in ¶[0062] because someone in the lighting industry would have understood how the oscillating signal is generated). These signal generators use common electrical parts such as amplifiers, capacitors, resistors, and transistors in an integrated circuit to produce an oscillating (*e.g.*, sine wave type) output signal. Pohlert discloses these types of integrated circuits to control LEDs. EX1008, ¶¶[0068]-[0071], [0119]-[0125], FIGS. 6, 19A, 19B. The integrated circuit simply receives a voltage and generates an oscillating signal using the integrated circuit – there is no “calculating” relied upon to generate the signal. Further, to the extent that a processor generates the oscillating signal, Pohlert is quite clear that the processor is merely executing “a predesignated pattern dictated by programming instructions.” EX1008, ¶[0067]. There is no calculation. EX2002, ¶161.

A POSITA would have further understood that the manual knob providing a

frequency adjustment for the oscillating signal simply involves adjusting the voltage introduced to the integrated circuit which changes the frequency of the output or the direct adjustment of Pohlert's predesignated pattern dictated by programming instructions. Again, there is no "calculation" performed. It is just a standard electrical circuit at work to produce an oscillating signal or a change in the input frequency to the pre-coded programming instructions. EX2002, ¶162; *see also id.*; ¶163 (explaining that even if paragraph 51 of the Petition, (or paragraph 210 of EX1003 which has the same language), were assumed to be true, the statements fail to demonstrate "calculating").

c. Pattern generation.

The Petition and accompanying Smith Declaration also seem to rely on Pohlert's "pattern generation" special effect to satisfy the "calculating" limitation. *See* Petition, 51; EX1003, ¶211. In particular, the Petition provides:

Pohlert discloses generating light effect patterns where light segments are strobed, flashed, or dimmed in sequences, requiring the controller to calculate signals that are time varying, as some lights are on and some off at different times to generate the patterns.

Petition, 51; (citing EX1003 ¶211; EX1008 ¶¶[0063], [0067]); EX2002, ¶164.

Pohlert's lighting sequences, including the pseudo-random sequences, do not "requir[e] the controller to calculate signals that are time varying." Rather, Pohlert in these paragraphs is describing executing *pre-defined* lighting effects in particular

sequences. EX1008, ¶¶[0063], [0067]. Pohlert explains pattern generation is done by “e.g., manual selection from a number of predefined patterns or else through an interface allowing different pattern sequencing.” EX1008, ¶[0063]. Patterns may include strobing or flashing different groups of light segments 325-360 in a predefined sequence or a pseudo-random sequence. EX1008, ¶[0063]; EX2002, ¶165.

A POSITA would have known, however, that executing strobing or flashing in a pseudo-random *sequence* is not the same as “calculating...a time varying lighting value.” The sequence that lighting values are executed does not affect the *lighting value* itself. EX2002, ¶166. Paragraph [0067] of Pohlert makes this distinction particularly clear, as it explains that “the processor 574 reads instructions from the memory 575 and executes them in a conventional manner.” EX1008, ¶[0067]. FIG. 5B also clearly shows the arrangement, with the processor 574 connected to the memory 575 via an I/O port. *See id.*, FIG. 5B. A POSITA would have readily interpreted this figure, in light of paragraph [0067], as a clear indication that the processor is receiving information from the memory and is not “calculating” a time varying value. *See* EX2002, ¶167.

The processor 574 (which Petitioner views as interchangeable for this element with the effects generator 543) is simply executing pre-programmed software instructions to directly control the switches. EX1008, ¶[0067] (“The programming instructions may also provide for various lighting effects, such as dimming, strobing,

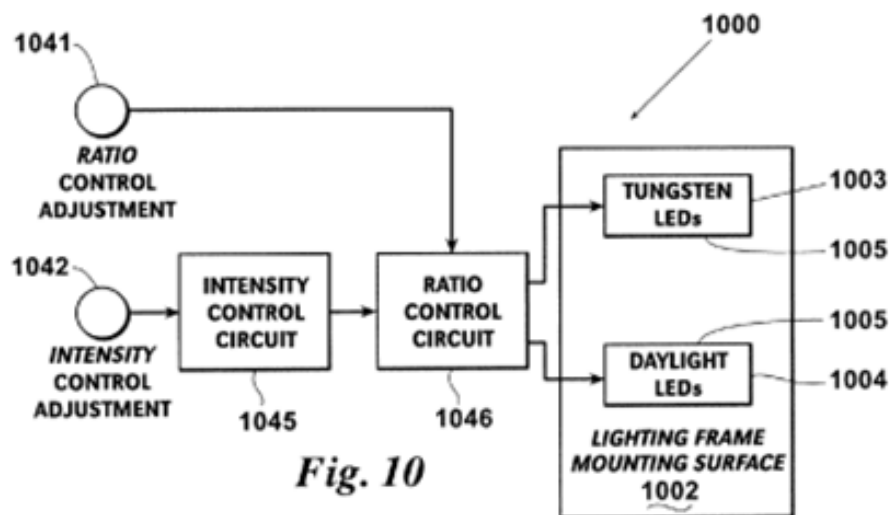
pulsation, or pattern generation. ... The instructions will generally cause the processor 574 to control the switch selector by, *e.g.*, setting various digital values in registers whose outputs control the switches 562. ... To accomplish dimming, the processor 574 may be ***programmed [to] select binary- encoded values*** to load into registers of the switch selector 572. ... To accomplish strobing, the processor 574 may be programmed to turn the switches 562 on and off according to a ***predesignated pattern*** dictated by the programming instructions.”); EX2002, ¶167.

A processor executing pre-programmed instructions in this manner does not require “calculating...a time varying lighting value.” Pohlert does not disclose that anything is calculated. *See e.g.*, EX1008, ¶[0067]. And nothing in the Petition addresses how Pohlert’s pattern generation disclosure anticipates “an effect simulator adapted to calculate a time varying lighting value” as recited in claim 1. EX2002, ¶168.

There is no description anywhere in Pohlert of how the pseudo-random sequence is generated, and so it cannot reasonably be “based on at least one simulation parameter” as required by the independent claim of the ’258 Patent. A POSITA would have understood Pohlert as disclosing a pre-defined pseudo- random sequence and not a calculated pseudo-random sequence “based on at least one simulation parameter.” EX2002, ¶169.

d. Intensity and Ratio Control.

Lastly, the Petition refers to a different embodiment that includes an intensity control adjustment 1042 and ratio control adjustment 1041. Petition, 52 (citing EX2008, ¶¶[0088]-[0092]); EX1003, ¶¶212-214; EX2002, ¶170. This particular embodiment is shown in FIG. 10:

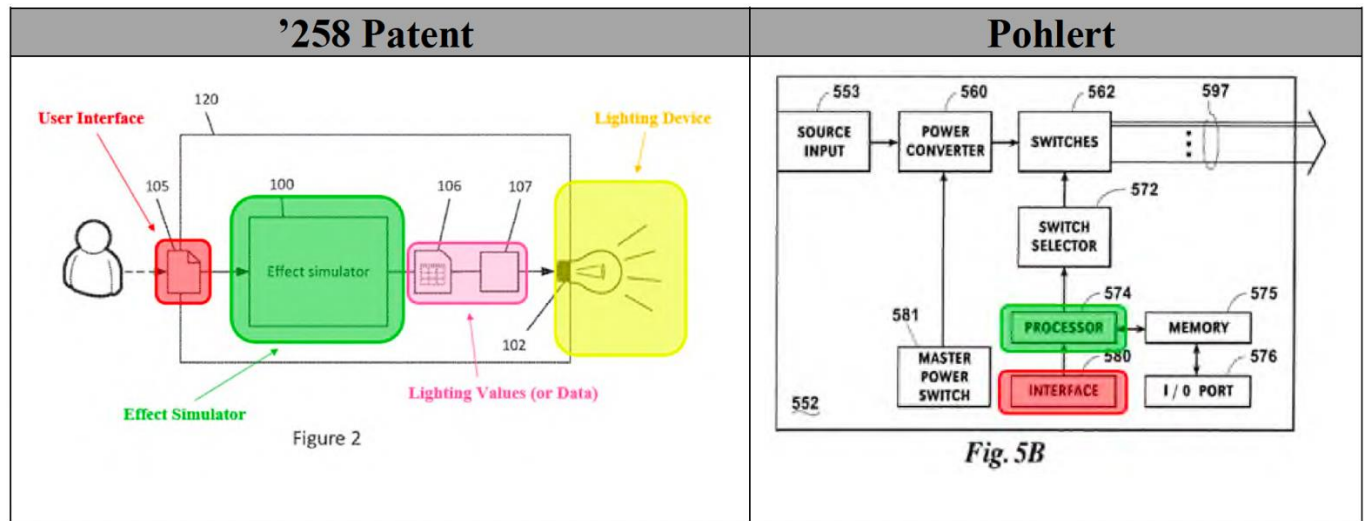


Pohlert explains “FIG. 10 is a block diagram of one embodiment of a lighting effects system 1000 having at least two different lamp colors.” EX1008, ¶[0088]. Pohlert further describes that “lighting effects system 1000 comprises an intensity control adjustment 1042, an intensity control circuit 1045, a ratio control adjustment 1041, and a ratio control circuit 1046.” EX1008, ¶[0088]. The ratio control adjustment 1041 and intensity control adjustment 1042 are a *manual input means* such as a manual control knob. EX1008, ¶¶[0088], [0090]; EX2002, ¶171.

For this argument, Petitioner improperly mixes and matches different embodiments from the same patent to manufacture an anticipation analysis. However, this type of approach is improper. *See Microsoft Corp. v. Biscotti, Inc.*, 878 F.3d 1052, 1068 (Fed. Cir. 2017) (“In order to anticipate the claimed invention, a prior art reference must ... disclose [the claim] elements arranged *as in the claim*.” (internal quotations omitted)). For other elements of claim 1 (at least elements 1a, 1b, 1c, 1e, 1f, and 1g) the Petition and Mr. Smith rely entirely on embodiments distinct from FIG. 10. Petition, 47-50, 53-56; EX1003, ¶¶185-204, 215-221; EX2002, ¶172.

Further, there is no discussion in the Petition as to how FIG. 10's ratio control adjustment 1041 and the intensity control adjustment 1042 are part of the embodiments in FIGS. 3A-3B and 5A-5B, nor is there any explanation of why it would have been obvious to modify the embodiments relied on for other elements to include aspects of the embodiment of FIG. 10, which is unique in that it particularly has two differently colored sets of LEDs and includes different circuitry from the other embodiments to control these two differently colored LED sets. EX2002, ¶173.

Petitioner attempts to cover their improper analysis by annotating Pohlert's FIG. 5B:



Petition, 53. Petitioner alleges that “[t]he generation and output of control signals, or time varying lighting values, representing the desired effect, as disclosed in Pohlert, is the same as the effect simulator and output lighting values disclosed in the ’258 Patent.” *Id.* at 52.

Nevertheless, neither embodiment teaches “an effect simulator adapted to calculate a time varying lighting value” as recited in claim 1. Using a manual control knob or other manual input to “select” the intensity of the two differently colored LEDs (the “tungsten LEDs” and the “daylight LEDs”) does not involve *calculating* a time varying lighting value. This involves a direct manual input to produce a particular illumination level or relative intensity of the respective LEDs. *See e.g.*, EX1008, ¶[0089] (“setting the intensity control adjustment 1042 *selects* the illumination level for the lamp elements 1005, while setting the ratio control adjustment 1041 *selects* the relative intensities between, in this example, the daylight

LEDs 1004 and the tungsten LEDs 1003”); EX2002, ¶174.

Setting this improper combination of embodiments aside, the FIG. 10 embodiment still does not teach “an effect simulator adapted to calculate a time varying lighting value” as recited in claim 1. Using a manual control knob or other manual input to “select” the intensity of the two differently colored LEDs (the “tungsten LEDs” and the “daylight LEDs”) does not involve calculating a time varying lighting value. Instead, it involves a direct manual input to produce a particular illumination level or relative intensity of the respective LEDs. *See e.g.*, EX1008, ¶[0089] (“setting the intensity control adjustment 1042 *selects* the illumination level for the lamp elements 1005, while setting the ratio control adjustment 1041 *selects* the relative intensities between, in this example, the daylight LEDs 1004 and the tungsten LEDs 1003”); EX2002, ¶175.

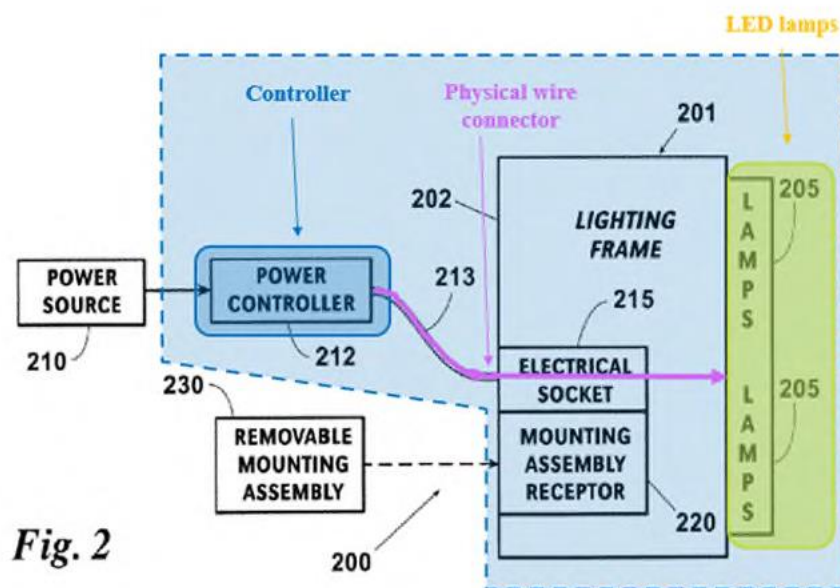
Controlling a light output with a manual knob does not require a calculation. A POSITA would have certainly understood that this is true throughout the various embodiments of Pohlert, regardless of the improper mixing and matching introduced by Petitioner. EX2002, ¶176.

2. Pohlert Does Not Anticipate or Render Obvious “wherein said lighting device and said controller are integrated in a combined unit” as Recited in Claim 1

In addressing this element, Petitioner first alleges that Pohlert’s power controller and LED lamps are physically connected “making them one combined

unit.” Petition, 55 (citing EX1008, ¶[0020], [0050]-[0051]). None of these Pohlert paragraphs actually state the controller and the LED lamps form a combined unit. Rather, these paragraphs discuss generally synchronizing the lighting device with a video camera (¶[0020]), providing a power support and control circuitry for the lights (¶[0050 – but *not* that they are integrated), and that the lights may be mounted on a frame with an opening for the camera (¶[0051]). None of these passages anticipate the lighting device and controller being integrated in a combined unit. EX2002, ¶177.

Petitioner then argues that Pohlert’s power controller “can be **physically connected by a cable** to the lighting elements on the lighting frame, making them one combined unit” and provides a marked-up Figure 2 from Pohlert:



Petition, 55; EX1003, ¶¶219-220; EX2002, ¶178.

A POSITA, having read the '258 Patent, would not believe that a wired cable connection satisfies the claim 1 language of “integrated in a combined unit.” Instead, the '258 Patent includes the following passage:

[I]t should be appreciated that the effect simulator 100 or the computing device 130 *may be separate* from any light 102, and connectable to lights 102 by either a *wired* or wireless connection.

EX1001, 11:44-47.

In contrast, the '258 Patent explains, in the context of the embodiment of Figure 2, that the “microcontroller or other computing unit is integrated in the lamp device 120 for performing calculations.” EX1001, 6:1-3.

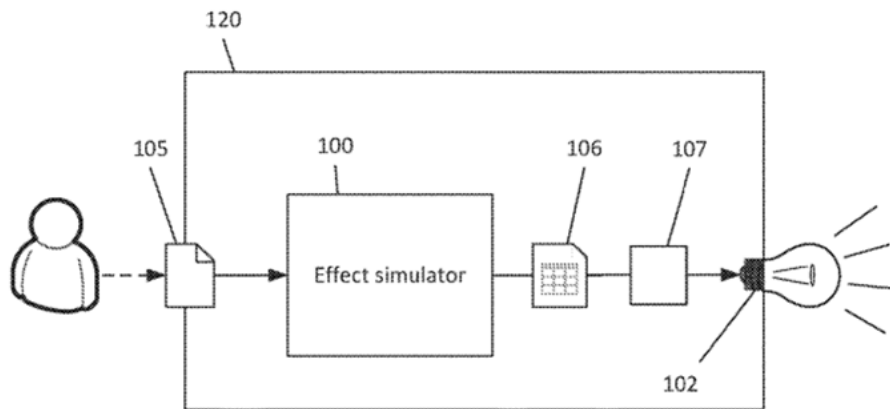


Figure 2

EX1001, FIG. 2 (showing the integrated effect simulator 100 and light 102 within the single studio lamp device 120); *see also id.*, 5:61-63 (describing the single integrated studio lamp device 120); EX2002, ¶181.

Therefore, the '258 Patent draws a clear distinction between the controller and

lighting device being “integrated in a combined unit” and the controller and lighting device being “separate,” which includes *a wired connection*. Petitioner’s positions that a wired connection satisfies claim 1 fails because they are not reflective of how a POSITA would have understood this claim language. EX2002, ¶182.

Petitioner then goes on to say that Pohlert’s power source 210 “may be either ‘a standard electrical outlet’ or ‘a battery having sufficient current to drive the LEDs’,” and then argues that disclosure of a self-contained battery unit satisfies claim 1. Petition, 55. However, as can be readily seen, even in Mr. Smith’s annotated version of Figure 2 above, the power source 210 (*e.g.*, a battery) is a distinct component from the power controller 212. EX1003, ¶¶220-221, FIG. 2 (annotated). Even if a *battery* may be self- contained with the lighting device, that does not disclose that the controller is self- contained.

Petitioner does not point to any disclosure in Pohlert that actually teaches the *controller* is part of what is shown in FIGS. 3A-3B. The reference to a “kit” suffers from the same deficiency, as the “kit” mentioned in Pohlert and does not include a controller. Petition, 56; *see also* EX1003, ¶221 (citing EX1008, ¶¶[0024], [0050]); EX2002, ¶184 (further explaining why paragraph [0094] of Pohlert does not disclose this limitation).

In at least these ways, Petitioner has not met its burden of showing that Pohlert discloses a lighting system “wherein said lighting device and said controller are

integrated in a combined unit” as recited in claim 1. EX2002, ¶¶184-185.

C. Pohlert Does Not Render Claim 1 Obvious

Like Ground 2, Petitioner fails to allege that a POSITA would find it obvious to modify the Pohlert. Petitioner only asserts that “a POSITA would understand that a “calculation” is needed for Pohlert’s “strobing” effect.” Again, this is an argument that a POSITA would supposedly understand that Pohlert *inherently* disclosed calculations (which, as explained above, it does not) and not an assertion that a POSITA would find it obvious to modify the Pohlert to include these calculations. Additionally, Petitioner does not offer any motivation as to why a POSITA would modify the Pohlert to arrive at the present invention, nor does Petitioner explain why a POSITA would have a reasonable expectation of success in doing so. *See DSS Tech.*, 885 F.3d at 1374-77; *Lindsay Corp.*, IPR2016-01387, Paper 7 at 9-11 (PTAB Jan. 9, 2017).

While Grounds 5 and 6 based on Pohlert for claims 1-22 as described in the Petition cited 35 U.S.C. §§102/103 (Petition 3), Petitioner does not set forth any proper obviousness analysis. Petitioner has not assessed or identified the differences between Pohlert and the claims of the ’258 Patent. Nor has Petitioner articulated any reason for modifying the Pohlert reference to arrive at the claimed invention.

The Petition, therefore, does not demonstrate that claim 1 would have been obvious based on Pohlert for the same reasons as explained above regarding

anticipation and because no further obviousness analysis was presented in the Petition. EX2002, ¶¶193-196 (further explaining a POSITA would not have found the independent claim of the '258 Patent obvious). *See DSS Tech. Mgmt., Inc.*, 885 F.3d at 1374-77; *Lindsay Corp.*, IPR2016-01387, Paper 7, 9-11.

Thus, Petitioner has not met its burden of showing that Pohlert renders independent claim 1 obvious.

IX. CONCLUSION

For the foregoing reasons, the Challenged Claims of the '258 Patent are patentable. EX2002, ¶197.

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Respectfully submitted,
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CERTIFICATE OF WORD COUNT UNDER 37 C.F.R. § 42.24(B)(1)

I, the undersigned, do hereby certify that the foregoing Patent Owner Preliminary Response, including footnotes, contains no more than 11,500 words, as measured by the Word Count function of Microsoft Word. This is less than the limit of 14,000 words as specified by 37 C.F.R. § 42.24(b)(1).

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Rotolight Ltd. Patent Owner's Preliminary Response
IPR2023-01220 to U.S. Patent No. 10,197,258

CERTIFICATE OF SERVICE

I hereby certify that on this 30th day of October 2023, a true and correct copy of the foregoing PATENT OWNER'S PRELIMINARY RESPONSE was served by electronic mail upon the following counsel of record for Petitioners:

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