

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Videndum Production Solutions, Inc.,
Petitioner,

v.

Rotolight Limited,
Patent Owner.

Case IPR2023-01220
U.S. Patent No. 10,197,257

**PATENT OWNER'S PRELIMINARY RESPONSE TO PETITION FOR
INTER PARTES REVIEW OF U.S. PATENT NO. 10,197,257**

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EXHIBIT LIST

Exhibits for Currently Filed Patent Owner’s Preliminary Response

Exhibit No.	Description
2001	Complaint for Patent Infringement, <i>Rotolight Ltd. v. Videndum PLC et al.</i> , Case No. 1:22-cv-00928-UNA (D. Del. July 12, 2022).
2002	Declaration of Eric Bretschneider from IPR2021-01496
2003	Vitec Group PLC Name Change to Videndum PLC, Certificate of Incorporation on Name Change
2004	IPR2021-01496, Paper 1, Petition for <i>Inter Partes</i> Review of U.S. Patent No. 10,197,257 filed by Arnold & Richter Cine Technik GmbH & Co. Betriebs KG (“ARRI”)
2005	IPR2022-00261, Paper 1, Petition for <i>Inter Partes</i> Review of U.S. Patent No. 10,197,257 filed by Vitec Production Solutions, Inc.

CLAIM LISTING U.S. PATENT NO. 10,197,257

No.	Description
Claim 1	
1[pre]	1. A method for controlling a lighting device to produce a user customisable lighting effect, the method comprising:
1[a]	calculating, using an effect simulator, a time varying lighting value based on at least one simulation parameter;
1[b]	wherein said at least one simulation parameter characterises a user customisable lighting effect selected from a range of different user customisable lighting effects for at least one of: videography, broadcasting, cinematography, studio filming, and location filming;
1[c]	wherein said at least one simulation parameter is at least one of: a random brightness; a random duration; and a random interval;
1[d]	said simulation parameter depending on the user customisable lighting effect being simulated; and
1[e]	outputting, from said effect simulator, said time varying lighting value thereby to simulate the user customisable lighting effect.
Claim 2	
2[pre]	The method according to claim 1
2[a]	wherein the random brightness comprises a random peak brightness.
Claim 3	
3[pre]	The method according to claim 1
3[a]	wherein the random interval comprises at least one of a random interval between flashes, a random interval between groups of flashes, and a random frequency.
Claim 4	
4[pre]	The method according to any claim 1
4[a]	wherein the random duration comprises at least one of a random ramp-up time to peak brightness, a random fade-down time from peak brightness, and a random number of pulses.
Claim 5	
5[pre]	The method according to claim 1
5[a]	wherein said at least one simulation parameter is random within predefined boundaries and wherein the predefined boundaries comprise at least one of an upper and lower duration; a number of flashes in a burst; an interval between bursts; an amplitude; and a ramp-up or fade-down time.
Claim 6	

6[pre]	The method according to claim 1
6[a]	wherein the at least one of: a random brightness; a random duration; and a random interval is determined in dependence on one or more user-selectable simulation parameters.
Claim 7	
7[pre]	The method according to claim 1,
7[a]	wherein the simulation parameter is related to one or more of: a rate of increase of brightness; a rate of decrease of brightness; a rate of change of colour; a brightness; a local maximal brightness; a local minimal brightness; a brightness fluctuation period; and a colour fluctuation period.
Claim 8	
8[pre]	The method according to claim 1
9[a]	further comprising receiving a user input of one or more user-selectable simulation parameters and adapting the simulation in dependence on the one or more user-selectable simulation parameters.
Claim 9	
9[pre]	The method according to claim 1
9[a]	wherein the simulation parameter comprises at least one of: a maximum brightness; a minimum brightness; a colour; and a trigger.
Claim 10	
10[pre]	The method according to claim 1
10[a]	wherein the simulation iterates through repeated cycles of calculating a time varying lighting value based on at least one random simulation parameter and simulating the user customisable lighting effect.
Claim 11	
11[pre]	The method according to claim 1
11[a]	wherein the user customisable lighting effect is designed to mimic at least one of fire flickering; police light; television; lightning flashing; electrical sparking; fireworks; a neon flickering sign; a gunshot; welding; a scan; a propeller; a (nuclear) explosion; a wormhole; paparazzi flashes; flashes (strobe).
Claim 12	
12[pre]	The method according to claim 1
12[a]	further comprising selecting a definition of a trigger event, said trigger event initiating said output of the time varying lighting value thereby to simulate the user customisable lighting effect.
Claim 13	
13[pre]	The method according to claim 1

13[a]	further comprising storing the at least one simulation parameter corresponding to said user customisable lighting effect.
Claim 14	
14[pre]	The method according to claim 1
14[a]	comprising controlling a plurality of lights in dependence on the output.
Claim 15	
15[pre]	A controller adapted to control at least one lighting device to produce a user customisable lighting effect, the controller comprising:
15[a]	an effect simulator adapted to calculate a time varying lighting value based on at least one simulation parameter;
15[b]	wherein said at least one simulation parameter characterises a user customisable lighting effect selected from a range of different user customisable lighting effects for at least one of: videography, broadcasting, cinematography, studio filming, and location filming;
15[c]	wherein the at least one simulation parameter is at least one of: a random brightness; a random duration; and a random interval;
15[d]	said simulation parameter depending on the user customisable lighting effect being simulated; and
15[e]	wherein an output of the effect simulator is adapted to control a lighting device according to the calculated variation of lighting over time.
Claim 16	
16[pre]	The controller according to claim 15
16[a]	wherein the controller comprises a wired or wireless communication interface adapted for communication with one or more lighting devices.
Claim 17	
17[pre]	The controller according to claim 15,
17[a]	wherein the controller comprises an input interface adapted to receive a user input.
Claim 18	
18[pre]	A lighting system comprising the controller according to claim 15 and at least one lighting device;
18[a]	said lighting device comprising at least one light emitting diode.
Claim 19	
19[pre]	The lighting system according to claim 18
19[a]	wherein said controller and said lighting device are integrated in a combined unit.
Claim 20	

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20[pre]	A computer program comprising software code for controlling a lighting device to produce a user customisable lighting effect, the computer program adapted to perform, when executed, the steps of:
20[a]	calculating using an effect simulator a time varying lighting value based on at least one simulation parameter;
20[b]	wherein said at least one simulation parameter for characterises a user customisable lighting effect selected from a range of different user customisable lighting effects for at least one of: videography, broadcasting, cinematography, studio filming, and location filming;
20[c]	wherein the at least one simulation parameter is at least one of: a random brightness; a random duration; and a random interval;
20[d]	said simulation parameter depending on the user customisable lighting effect being simulated; and
20[e]	outputting, from said effect simulator, said time varying lighting value thereby to simulate the user customisable lighting effect.
Claim 21	
21[pre]	The method according to claim 13
21[a]	further comprising recalling said stored at least one simulation parameter from a memory.

I. INTRODUCTION

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 (“third petition”) was filed more than 19 months after its first IPR Petition challenging the same claims of the ‘257 Patent (“second petition”). Even more concerning is that the currently-filed third petition is a copycat petition of a petition filed 22 months ago (“first petition”) by another related petitioner. 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 currently-filed third 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 claims of the ’257 patent on two references in four grounds. Grounds 1 and 2 are based on a user manual of the Astera AX10 SpotMax product (the

“Astera Manual”). Grounds 3 and 4 are based on U.S. Patent Application Publication No. US2012/0044374 to Pohlert et al. (“Pohlert”).

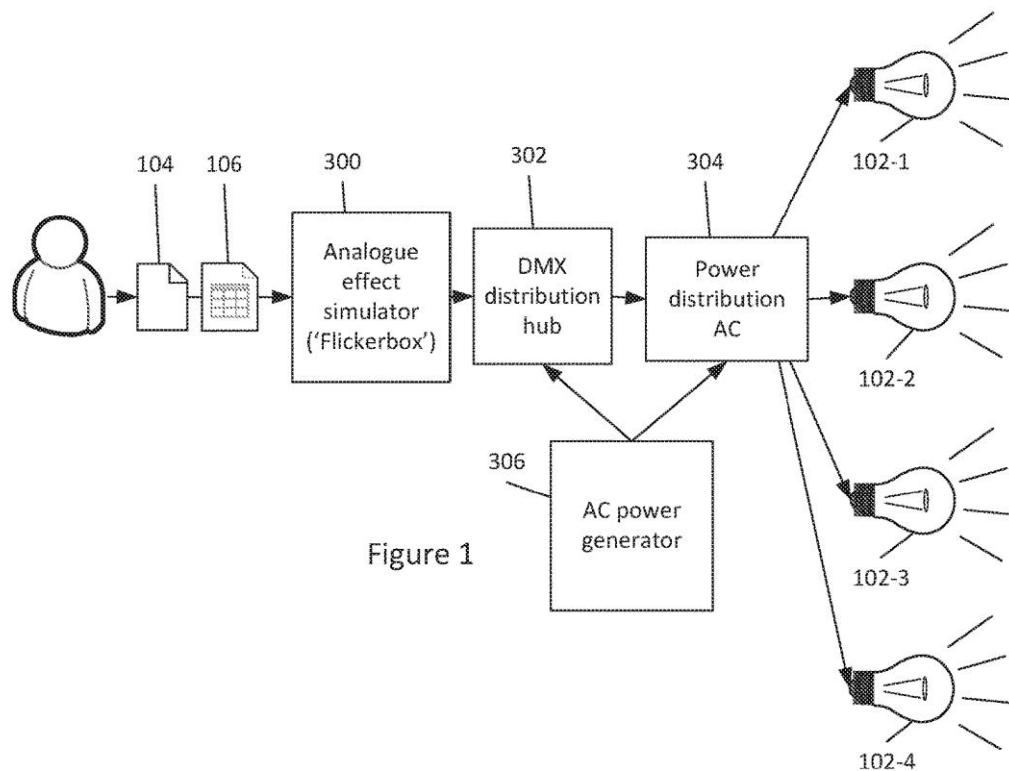
Petitioner has not established a reasonable likelihood that it will prevail on any Ground presented in the Petition. Both the Astera Manual and Pohlert fail to anticipate or render obvious the claims of the '257 patent because neither of these references discloses “calculating” a time varying lighting value as is required by each of the independent claims. The Astera Manual only discloses replaying pre-defined lighting values. Replaying pre-defined patterns is distinct from, and does not anticipate the required calculation of a time varying lighting value as claimed in the '257 patent. The Astera Manual merely recalls and replays pre-defined effects, or time varying lighting values, rather than *calculating* those time varying lighting values.

Likewise, 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.” 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 a calculation step, each of the Astera and Pohlert grounds fail to anticipate or render obvious the '257 patent claims.

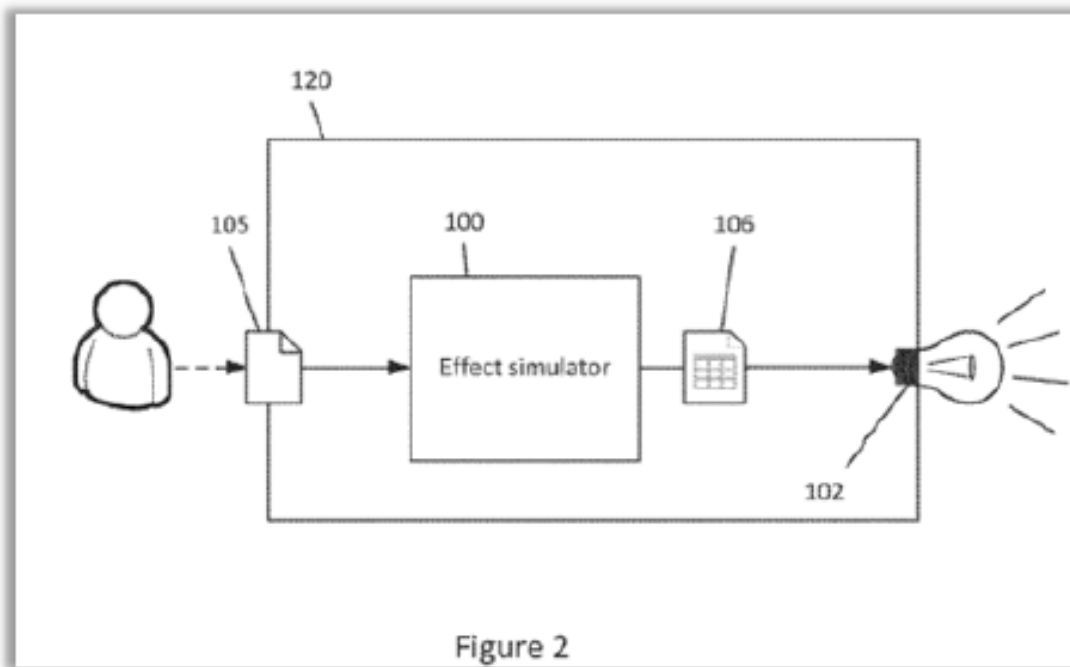
II. OVERVIEW OF THE '257 PATENT

The '257 patent was filed on November 22, 2017, and claims priority to U.S. Provisional Application 62/319,809, filed April 8, 2016. (Ex. 1001, '257 patent, cover, 1:6-12.) The '257 patent describes a lighting system and method for controlling the lighting system, such as a lighting system used for videography, broadcasting and cinematography. (See '257 patent, Abstract, 1:17-20; Ex. 2002, ¶¶52-53, 59.) The '257 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. ('257 patent, 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.” ('257 patent, 1:31-35.) Flicker boxes also require specialists. ('257 patent, 1:37-39.) Figure 1 of the '257 patent shows this conventional arrangement:



'257 patent, Fig. 1

The '257 patent discloses an improved lighting system that involves controlling the lighting device to produce a user-customizable lighting effect that is time varying. ('257 patent, 1:46-51.) As shown in Figure 2, the '257 patent provides a single studio lamp device 120 with an integrated light 102 and a lighting effect simulator 100. ('257 patent, 5:58-67, Figure 2.)



'257 patent, Fig. 2.

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. (*Id.* Ex. 2002, ¶56.)

This flexibility is provided in the lighting system by providing a control panel 104 that includes, *e.g.*, buttons, knobs, or a digital interface for user input of parameters for simulating an effect. ('257 patent, 6:1-5.) 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. ('257 patent, 5:65-67, 7:34-44, 9:49-65, 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* '257 patent, 6:11-46; Ex. 2002, ¶57.)

The effect simulator described in the '257 patent is characterized by its use of random, or pseudo random, simulation parameters. (*See* '257 patent, 7:17-20, 7:25-44, 10:4-11.) These random simulation parameters are inputs into the effect simulator that allow for the generation of effects with increased realism. (*See* '257 patent, 7:17-20; 10:10-12.) To generate the effects described, the '257 patent discloses calculating (e.g., using an algorithm) time varying lighting values to generate lighting effects, with simulation parameters representing inputs into the calculation, and time varying lighting values representing the output therefrom. ('257 patent, 10:13-56; Ex. 2002, ¶58.)

A. The '257 Patent Calculating Limitation

Each of independent claims 1, 15, and 20 of the '257 patent require a variation of “calculating, using an effects simulator, a time varying lighting value.” ('257 patent, Cl. 1; *see also id.*, Cl. 15 (“an effect simulator adapted to calculate a time varying lighting value”); *id.*, Cl. 20 (“calculating using an effect simulator a time varying lighting value.”).) The specification of the '257 patent describes the requisite calculating step, stating that “the simulation calculates how the lighting changes over time in order to produce the desired lighting effect.” ('257 patent, 7:39-40; Ex. 2002,

¶¶83-86.) This calculating step is further embodied in the flow charts in Figures 3a and 3b, recreated below:

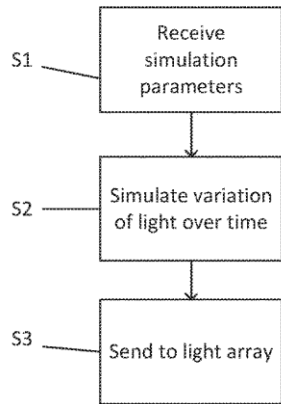


Figure 3a

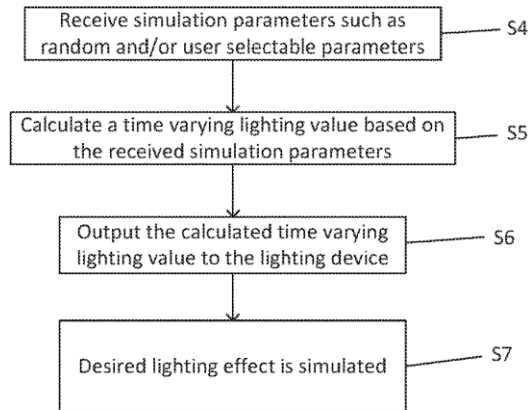


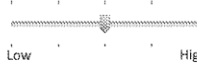
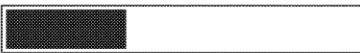
Figure 3b

'257 patent, Figs 3a-3b.

Here, the lighting device first receives simulation parameters, including user selectable parameters and/or random parameters, and simulates the variation of light over time by “calculate[ing] a time varying lighting value based on the received simulation parameters.” (*Id.*) Critically, this ties the “calculating” step and claimed “calculating” requirement directly to input of a received simulation parameter and to the output of a “time varying” lighting value. (Ex. 2002, ¶87.)

Figure 6 of the '257 patent illustrates an embodiment of a control panel that receives user input of a parameter to customize a lighting effect:

800

Light control system	
Fire effect	
Parameter	Setting
More info Fire activity	
More info Fire colour	2000K
More info Peak brightness	80%
More info Baseline brightness	40%
More info Camera frequency	60Hz
	
Colour Swing Blue	Monochrome

'257 patent, Fig. 6.

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 at least on that simulation parameter. ('257 patent, 8:38-40, Fig. 3b; Ex. 2002, ¶89.) Thus, the '257 patent discloses and claims an effect simulator that *calculates a time varying lighting value* based at least on a simulation parameter. ('257 patent, 8:24-45, Cls. 1, 15, 20; Ex. 2002, ¶90 (discussing an example in the context of Figure 6).)

Figure 7 demonstrates an example with the brightness varying over time generated algorithmically by the effect simulator disclosed in the '257 patent. ('257 patent, 10:40-56.) In particular, the '257 patent provides an example of a fire-effect-generating algorithm that calculates such a brightness-over-time pattern. (See '257 patent, 9:51-63; Ex. 2002, ¶¶91.) In this example, a series of sparks is generated sequentially to produce a realistic fire simulation, according to an algorithm. See, e.g., ('257 patent, 10:19-39; Ex. 2002, ¶¶92.) Such an algorithm provides an example demonstrating how the effect simulator calculates a time varying lighting value based on the various simulation parameters. The '257 patent also depicts an example of time varying lighting values, calculated by the effect simulator, in Figure 7. ('257 patent, Fig. 7; Ex. 2002, ¶¶91-93.)

The '257 patent further explains “[t]he lighting effect simulator 100 typically cycles round a loop calculating new lamp brightness and color values.” ('257 patent, 9:66-67; Ex. 2002, ¶¶94.) 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. (Ex. 2002, ¶¶95.)

The '257 patent is not simply recalling a stored lighting value or set of stored lighting values and adjusting them to create variations of effects. (Ex. 2002, ¶¶96-103.) When the effect simulator disclosed in the '257 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. (Ex. 2002, ¶96.) Further, the '257 patent explicitly describes the advantages of an actively simulated fire effect over a passively replayed fire effect: controllability and realism. ('257 patent, 10:10-15.) Here, the '257 patent contrasts the disclosed calculated fire effect with “sampling the intensity of a real flame and replaying it at different speeds.” (*Id.*; Ex. 2002, ¶97.)

III. LEVEL OF ORDINARY SKILL IN THE ART AND CLAIM CONSTRUCTION

A. Level of Person Having Ordinary Skill in the Art

Petitioner asserts that a hypothetical person of ordinary skill in the field of the '257 patent (a “POSITA”) “would have had at least a Bachelor of Science degree in electrical engineering, or a closely related field, along with at least two years of experience in the design of entertaining lighting systems, and the design and use of LED lights.” (Pet. at 10.)

Patent Owner asserts that the hypothetical POSITA in the art as of April 8, 2016 would have had the equivalent of a Bachelor's degree in electrical or chemical engineering with 2-5 years of working experience in the design of entertainment lighting systems. (Ex. 2002 at ¶¶45-49.) Additional education, such as a Master's degree in electrical or chemical engineering, could substitute for some of the work experience, and similarly, extensive experience in the field could serve as a substitute for formal education. (*Id.*)

B. Claim Construction

In an *inter partes* review, claims are to be construed under the claim construction standard articulated in *Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed Cir. 2005) (*en banc*). See 37 C.F.R. §42.100(b). Under *Phillips*, claim terms are afforded “their ordinary and customary meaning.” *Phillips*, 415 F.3d at 1312 (citation omitted). “[T]he ordinary and customary meaning of a claim term is the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention” (*Id.* at 1313.)

Petitioner takes the position that no claim constructions are necessary. (Pet., 10.)

Without waiver of Patent Owner’s right to propose claim constructions in other proceedings as may be warranted and applicable and to respond to any claim constructions proposed by the Petitioner in the future, Patent Owner believes that express claim constructions are not necessary to respond to the arguments presented by Petitioner in its Petition.

IV. OVERVIEW OF THE ALLEGED PRIOR ART

A. The Astera Manual (Ex. 1004)

The Astera Manual is a user manual for the Astera AX10 SpotMax™ _LED spotlight. (Ex. 1004, cover.) The Astera Manual discloses that the AX10 can be controlled using a local control panel, the included “infrared remote control,” the AsteraApp™, or “wireless DMX.” (Ex. 1004, 9-11.) The Astera Manual discloses

that the AX10 can be controlled using a local control panel, an ARC1 infrared remote control, the AsteraApp™, or CRMX wireless DMX. (*Id.*) The local control panel includes a simple interface for selecting between menus:

6.6 CONTROL PANEL

LEGEND			
			
BACK TO PREVIOUS MENU	SCROLL DOWN	SCROLL UP	CHOOSE/ CONFIRM
FROM THE STATUS SCREEN, PRESS THE ABOVE BUTTONS TO:			
ENTER THE MAIN MENU	FACTORY RESET	ENTER THE MAIN MENU	ENTER THE DMX MENU
HOLD THE ABOVE BUTTON FOR 2SECS TO:			
STANDALONE MENU	ADJUST SPEED	ADJUST BRIGHTNESS	CHANGE PROGRAM

Ex. 1004, 11.

The local control panel includes an interface for selecting between menus that will allow a user to input basic parameters, such as increased brightness or to select a “predefined program[]” for a single lighting device. (Ex. 1004, 11, 20-21.) The pre-defined programs in the Astera Manual are shown on page 21:

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6.16.1 Predefined Programs

The predefined programs may use more than one pixel. To display these effects properly with your light, it is first necessary to group them into Flow-Sets and control them by the AsteraApp™ (see chapter 7.4).

If several lights are grouped into a Flow-Set, they form a virtual big light with several pixels.

Name	Pattern
ONE COLOR STATIC	A static color is displayed on the whole virtual light.
TWO COLOR STATIC	The virtual light is split into two halves and two colors are displayed.
THREE COLOR STATIC	The virtual light is split into three parts and three colors are displayed.
FOUR COLOR STATIC	The virtual light is split into four parts and four colors are displayed.
ONE COLOR FADE	For all FADE programs, the whole color palette of four colors is used. Those colors are faded in and out one by one. Here, the whole virtual light shows the same color.
TWO COLOR FADE	The virtual light is split and shows two colors at a time.
THREE COLOR FADE	The virtual light is split and shows three colors at a time.
FOUR COLOR FADE	The virtual light is split and shows four colors at a time.
SIMPLE RUNNING	A running light; the background and the running pixels color can be set.
DOUBLE RUNNING	Two pixels are running in opposite direction.
TWO COL RUNNING	The two pixels are of different color even.
FLAG RUNNING	A three color flag is running over the background color.
DOUBLE FLAG RUNNING	Two flags are running over background in opposite direction.
SPIRAL 4 COLORS	The color is changed pixel by pixel. All four colors are used one after the other.
SPIRAL 2 COLORS	The color changes between color 1 and 2 from the outside to the inside, pixel by pixel.
RAINBOW	A rainbow effect is displayed.
FIRE	The fire effect is a random flicker between two colors, background and flickering color.

Ex. 1004, 21.

The Astera Manual explains that “[y]our light has a built in standalone engine. It can display static colors or replay a number of predefined effect patterns with a customizable color palette.” (Ex. 1004, 24.) The “standalone engine” is within the lighting device, although no further details of its components or functionality are disclosed by the Astera Manual. (Ex. 2002, ¶66.)

Using the AsteraApp™ (which runs from a mobile device, such as a smart phone or tablet), expands the functionality. (Ex. 1004, 23 (“[t]he buttons of the AX10 only allow a basic operation of the light. To gain full control over all features, the AsteraApp™ should be used.”)) Specifically, the Astera Manual discloses that lighting “effects can be created and be sent to the light.” (Ex. 1004, 24.) Once

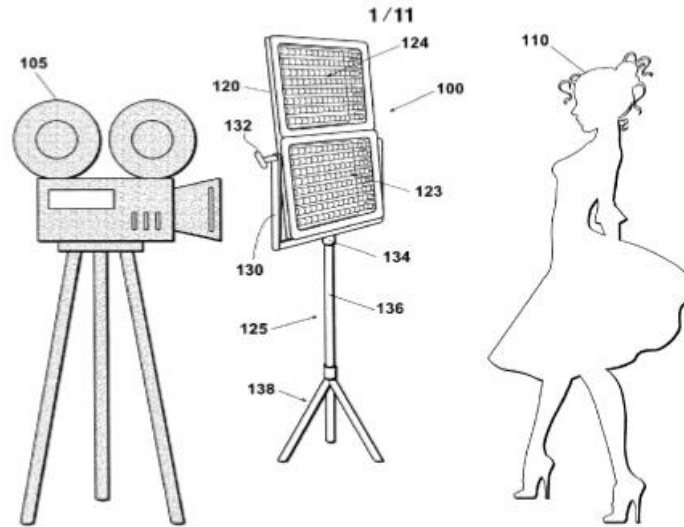
selected, “[t]he effects are ... triggered and then each light replays them autonomously until a new effect is sent.” (*Id.*; Ex. 2002, ¶67.)

The Astera Manual discloses customizability of the effects within the AsteraApp™. (Ex. 1004, 27.) Specifically, aspects of the effect like “speed”, “crossfade”, and “brightness” can be adjusted to customize the lighting effect. (*Id.*; Ex. 2002, ¶68.)

While the effects may be customized, the lighting effects are based on pre-defined patterns. In particular, the Astera Manual discloses that “[t]he effects’ patterns are *pre-defined and cannot be modified by the user*. They are pre-programmed inside of each light. Still they can be parameterized.” (Ex. 1004, 28 (emphasis added).) Essentially, the Astera Manual discloses two capabilities: (1) the ability to replay, on a loop, a series of pre-programmed effect patterns, and (2) the ability to modify the playback parameters of the effect pattern, e.g., the playback speed. However, this modification of the playback parameters of the Astera Manual’s effects does not change the underlying effect pattern and it does not involve a calculation, as further explained below. (Ex. 2002, ¶69.)

B. Pohlert (Ex. 1006)

Pohlert discloses a lighting apparatus with a panel light frame. (*See* Ex. 1006, Pohlert, Abstract). FIG. 1 shows an embodiment of the “inventive” light 100:



Pohlert, Fig. 1.

As shown in FIG. 1, “a video camera 105 might be directed towards a subject 110 that is being illuminated by inventive light 100.” (Ex. 1006, ¶[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.” (Ex. 1006, FIG. 1, ¶[0052]; Ex. 2002, ¶71.)

Pohlert discloses the inventive light 100 preferably utilizes a panel light frame 120 that includes LED lights or other light elements. (See Ex. 1006, Abstract, ¶¶[0050], [0052].) This “panel-type arrangement” of lighting elements is preferred to provide even lighting on the subject. (See Ex. 1006, ¶[0056] (explaining the relatively even lighting in the context of FIG. 4, which is preferred to uneven lighting); Ex. 2002, ¶¶72-73.)

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. (Ex. 1006, ¶[0057].) FIGS. 5A and 5B of Pohlert provide additional details of two types of power controllers. (Ex. 1006, ¶[0058]. Ex. 2002, ¶74.)

Pohlert explains that FIG. 5A shows one type of power controller. (Ex. 1006, ¶[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.” (Ex. 1006, ¶¶[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.*) For example, a manual input such as a knob could select between different groups of light segments 325, 330, 335, 340, 345, 350, 360. *See id.*; *see also id.*, FIG. 3B (showing the LED light segments). (Ex. 2002, ¶75.)

Pohlert discloses an effects generator 543 may optionally be included, along with an effects selector 533, which is part of the manual interface. (Ex. 1006, ¶[0061].) The effects generator 543 can provide various lighting defects such as dimming, strobing, or pattern generation. (Ex. 1006, ¶[0061]; Ex. 2002, ¶76.)

Pohlert explains that dimming may be accomplished using a manual control knob or a multi-position switch on the effects selector 533. (Ex. 1006, ¶[0061].) Pohlert then 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.” (Ex. 1006, ¶[0062].) The frequency of oscillation may be selectable via a manual knob as part of the effects selector 533. (*Id.*; Ex. 2002, ¶¶77-78.)

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.” (Ex. 1006, ¶[0063].) Patterns may include strobing or flashing different groups of light segments 325-360 in a predefined sequence or a pseudo-random sequence. (*Id.*; Ex. 2002, ¶79.)

FIG. 5B of Pohlert shows “another embodiment” of a power controller 552 that may be used in Pohlert's lighting system. (Ex. 1006, ¶[0065].) 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. (Ex. 1006, FIGS. 5A-5B, ¶¶[0065]-[0066].) The processor 574 interfaces with memory 575 to access programming instructions. (Ex. 1006, ¶[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 the controls the switch selector 572 and ultimately the downstream lights. (Ex. 1006, ¶[0067]; Ex. 2002, ¶¶80-81.)

Notably, Pohlert describes that the processor 574 is specifically pre-programmed to provide dimming, strobing, or pattern generation based on pre-defined or pseudo random sequences. (Ex. 1006, ¶[0067]; Ex. 2002, ¶82.)

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 Anticipation

A petition based on anticipation requires a showing that “each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.” *Verdegaal Bros., Inc. v. Union Oil Co.*, 814 F.2d 628, 631 (Fed. Cir. 1987). “If the prior art reference does not expressly set forth a particular element of the claim, that reference still may anticipate if that element is ‘inherent’ in its disclosure.” *In re Robertson*, 169 F.3d 743, 745 (Fed. Cir. 1999). “To establish inherency, the extrinsic evidence ‘must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill.’” *Id.* (quoting *Continental Can Co. v. Monsanto Co.*, 948 F.2d 1264, 1268 (Fed. Cir. 1991)). “Inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient.” *Continental Can*, 948 F.2d at 1269 (quotation omitted).

It is well-understood that for an anticipation argument, “there must be a teaching with respect to the entirety of the claimed invention” or the argument fails as a matter of law. *Structural Rubber Prods. Co. v. Park Rubber Co.*, 749 F.2d 707,

716 (Fed. Cir. 1984); *Eli Lilly & Co. v. Sicor Pharms., Inc.*, 705 F. Supp. 2d 971, 992 (S.D. Ind. 2010) (“In showing that all elements of an invention were anticipated, the challenging party may not rely upon the knowledge of one skilled in the art . . . to supply missing elements.”).

C. 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).

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

A. Background

On September 3, 2021, Arnold & Richter Cine Technik GmbH & Co. (“ARRI”) filed four petitions challenging four patents owned by Patent Owner as shown in the chart below, of which one challenged the ’257 patent. All four of ARRI’s petitions terminated due to settlement on January 30, 2023.

Case	Claims at Issue	Filing Date	Prior Art Asserted	Status
IPR2021-01496 (’257 patent) (“the first petition”)	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

Rotolight Ltd. Patent Owner's Preliminary Response
IPR2023-01220 to U.S. Patent No. 10,197,257

Petitioner subsequently filed a set of two petitions on December 3, 2021, challenging the '257 patent and U.S. Patent No. 10,197,258 ("258 patent"). Institution of both petitions were denied on March 16, 2022.¹

Case	Claims at Issue	Filing Date	Prior Art Asserted	Status
IPR2022-00261 ('257 patent) ("the second petition")	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 filed the current petitions on July 17, 2023 challenging the '257 patent ("the third petition"), the '258 patent, and the '044 patent, on July 17, 2023 as shown in the chart below. The three petitions are copy-cat petitions of three of ARRI's now terminated petitions challenging the same claims of the same patents with the same references.

Case	Claims at Issue	Filing Date	Prior Art Asserted	Status
IPR2021-01220 ('257 patent)	1-21	July 17, 2023	Astera and Pohlert	Currently pending

¹ IPR2022-00261 and IPR2022-00262 were filed by Vitec Production Solutions, Inc. Vitec Production Solutions, Inc. is Videndum Production Solutions, Inc., having officially changed its name on May 23, 2002. (See Ex. 2003.)

Rotolight Ltd. Patent Owner’s Preliminary Response
IPR2023-01220 to U.S. Patent No. 10,197,257

(“the third petition”)				
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 Plastics Factors

Under § 314(a) 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 et al., Paper 19 at § II.B.4.i. (PTAB September 6, 2016). In exercising its discretion to deny institution, the Board considers the seven *General Plastics* 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.

Gen. Plastic Indus. Co., Ltd. v. Canon Kabushiki Kaisha, IPR2016–01357 et al., Paper 19, 8-10. As explained in detail below, at least six of the seven *General Plastics* factors weigh in favor of denying institution and one other 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

Petitioner Videndum Production Solutions filed IPR2022-00261, the second petition, on December 3, 2021, challenging the same claims 1-21 as challenged in the currently-filed Petition, the third petition. (*See* Ex. 2005, IPR2022-00261, Paper 1, 3.) Institution of Petitioner's second petition—based on different references as the currently-filed third petition—was also denied. (*See* IPR2022-00261, Paper 8.) This weighs in favor of denying institution of the currently-filed third petition under factor 1. *See Gen. Plastic Indus. Co., Ltd.*, IPR2016-01357 et al, Paper 19 at 10 (finding that factor 1 favored denying institution when the same claims of the same patent were at issue in the then filed petition as in the prior-filed petition and institution of the prior-filed petition was denied).

Factor 1 also favors denying institution when the currently-filed third petition challenges the same claims as the first petition even though the first petition was not

filed by Videndum Production Solutions, but a different petitioner ARRI, where Videndum and ARRI are related. As the Board has found, even if petitioners are not the same, Factor 1 also weighs against 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 Videndum asserts, ARRI and itself were both “industry participants” and defendants in the District of Delaware accused of infringing the same patents. (*See* Ex. 1010, at 1.) Further, Videndum’s decision to copy the viable portions of ARRI’s first petition but to drop and reinforce those portions that were criticized by Patent Owner further ties Videndum’s third petition to ARRI’s first petition. *See 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.”)

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 second petition, Petitioner already knew of the prior art in the first petition. When filing the second petition on December 3, 2021, Petitioner knew of the Astera and Pohlert references because it is the same art asserted in the first petition, filed by

ARRI on September 3, 2021, challenging the '257 patent. (*See* Ex. 2004, IPR2021-01496, Paper 1, 3-4.) There is no question that Petitioner knew of the pending IPR2021-01496 first petition and its asserted references because Petitioner noticed it in the Mandatory Notice section of the second petition. (*See* IPR2022-00261, Paper 1, 1.)

Further, circumstantial evidence exists that Petitioner knew of the Astera and Pohlert references as early as September 3, 2021, three months before it filed the second petition, when the first petition, IPR2021-01496, was filed by ARRI. (*See* Ex. 1010, Videndum's Email to the Board of January 14, 2023, 1.) Petitioner, by its own admission, was monitoring the infringement cases against ARRI and others and the IPRs challenging the asserted patents. (*See id.*) 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 weighs in favor of denying institution because at the time of filing of the currently-filed third petition, Petitioner was already in receipt of the terminated first petition and institution denied second petition. Petitioner was in receipt of the complete record of the first petition that included a Patent Owner's Preliminary Response, the Board's Decision Granting Institution, and subsequent

post-institution patent owner's response, petitioner's reply, and patent owner's sur-reply. (*See* IPR2021-01496.) The currently-filed third petition challenges the same patent and the same claims with the same references as the first petition, and is a near copy-cat of the first petition. The availability of the complete record of the first petition all the way to just before oral argument gives Petitioner a full roadmap to prepare its positions for the currently-filed third petition.

Petitioner was also already in receipt of the complete record for the second petition that includes a Patent Owner's Preliminary Response and the Board's Decision Denying Institution. (*See* IPR2022-00261.) The second petition was filed December 3, 2021 and Patent Owner filed its Patent Owner's Preliminary Response to the first petition on March 14, 2022. (*See* IPR2022-00261, Paper 7.) The Board then issued its decision denying institution of the first petition on June 8, 2022. (*See* IPR2022-00261, Paper 8.) The 13 months that has elapsed since the Board denied institution is a significant time for Petitioner to consider the Patent Owner's Preliminary Response and the Board's Decision denying institution. (*See General Plastics*, Paper 19, 10.)

Indeed, Petitioner appears to have taken advantage of the first petition and the second petition to morph its currently-filed third petition to unfairly bolster its case. 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.” (*Gen. Plastics*, Paper 19, 11.)

For example, in the first petition, petitioner ARRI does not explicitly explain its basis under the case law and the applicable facts why the Astera Manual qualifies as prior art. (*See* Ex. 2004, IPR2021-01496, Paper 1, 8.) Patent Owner challenged petitioner ARRI for failing to demonstrate a publication date and public availability of the Astera Manual prior to the priority date of the '257 patent. (*See* IPR2021-01496, Paper 21, 19-23.) But in the current-filed third petition, Petitioner Videndum includes case law and argues facts under the case law regarding the publication date and public availability of the Astera Manual. (*See* Pet. at 6-8.)

In yet another striking example, in the currently-filed third 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,” “effect simulator,” and “random,” should have been specifically construed in its second petition. (*Compare* Pet. at 10, *with* IPR2022-00261, Paper 1, 6-8.) This modification in its position appears to be in response to Board's Decision Denying Institution, which found that “cinematic lighting special effect,” “effect simulator,” and “random,” need not be specifically construed because resolution of the IPR could be achieved without any particular claim construction. (*See* IPR2022-00261, Paper 8, 9.) Petitioner, noting the Board's prior decision to deny institution without

using Petitioner's advanced constructions, used the decision as a roadmap and morphed its position for the currently-filed third petition.

Petitioner's use of Patent Owner's arguments and the Board's decisions in the first and second petitions as a roadmap to morph its arguments for this third petition is highly inequitable to Patent Owner and the very type of conduct that the factor 3 seeks to protect against. Hence, factor 3 weighs in favor of denying institution.

Petitioner's access to the proceedings in IPR2021-01496, including the Board's institution decision (Paper 8), Patent Owner's Response (Paper 21), Patent Owner's Sur-reply (Paper 31), and the Oral Hearing (Paper 37) provided Petitioner with ample opportunity to tailor its arguments in the currently-filed third petition. *General Plastic* states that "factor 3 is directed to Petitioner's potential benefit from receiving and having the opportunity to study Patent Owner's Preliminary Response, as well as our institution decisions on the first-filed petitions, prior to its filing of follow-on petitions." (*Gen. Plastic*, IPR2016-01357, Paper 19 at 17.) This factor reflects the Board's determination that a petitioner should not be permitted to use an institution decision or preliminary response in a prior proceeding as a guide to tailor the arguments in a subsequent petition. *See, e.g., Valve*, IPR2019-00064, Paper 10 at 13 (citing *Gen. Plastic*, IPR2016-01357, Paper 19 at 17-18). Here, Petitioner could have filed this currently-filed third petition at the same time as its second petition, or joined the ARRI IPR Proceeding. (*See Ex. 1011, 6.*)

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 7 months—that has elapsed since Petitioner learned of the prior art and the filing of the currently-filed third petition favors denying institution under factor 4. This is particularly true where Petitioner knew of the asserted prior art at the time it filed the second petition and chose not to raise that art, but now chooses to bring that art in the currently-filed third petition. *See T-Mobile USA, Inc. v. VoIP-Pal.com, Inc.*, IPR2023-00638 et al., Paper 11, 9-10. Like in *T-Mobile USA, Inc.*, here Petitioner knew of the Astera and Pohlert references, but chose to raise the Morgan and Julio references instead in the second petition. (*See* IPR2022-00261, Paper 1, 3-4.) And when the second petition was not instituted, it now brings the currently-filed third petition 1 year and 7 months later asserting the very references that it chose not to raise. This is the type of conduct that weighs in favor of denial of institution under factor 4. (*See T-Mobile USA, Inc.*, Paper 11, 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 explanation, much less an adequate explanation, for the lengthy elapsed time of 1 year and 7 months between the filing of second and third petitions. In fact, Petitioner doesn't address the General Plastics

factors at all. Notably, Petitioner waited until near to the very last day to file the third petition before it became time-barred under 35 U.S.C. § 315(b). *See* Ex. 2001, 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 provided no explanation why it waited nearly until the the last day to file. This weighs in favor of denial under factor 5. *Apple Inc. v. Uniloc 2017 LLC*, IPR2020-00854, Paper 9 at 11 (P.T.A.B. Oct. 28, 2020) (“Because of the lack of explanation, we conclude that this fourth *General Plastic* factor weighs in favor of denying institution of the proceeding.”)

Petitioner doesn't provide any explanation for the delay. (*See* Pet. at 2.) But if Petitioner's assertion that it “was not time-barred from filing its own Petition challenging the '257 Patent using the same prior art” can be understood as some sort of indirect explanation, it's a gross misinterpretation of the Board's order in IPR2021-01496. (*See* Pet. at 2 (citing Ex. 1011 (IPR2021-01496, Paper 40, Decision to Terminate Due to Settlement After Institution of Trial))). The Board did not note that Petitioner could later file its own Petition challenging the '257 patent using the same prior art as long as it was not time-barred as Petitioner asserts. (*See* Ex. 1011, 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.” (*See id.*, 6.) Petitioner also incorrectly attributes the Board's statement

about what the Petitioner said as the Board's own statement. (*See* Ex. 1011, 7.) The Board wrote in its decision that “***VPS also indicates that*** it is not time-barred and may file its own petitions in the future.” (*Id.* at 7 (emphasis added).) Thus, the Board merely noted what VPS said, but did not concur with VPS's statement.

The Board explained in *T-Mobile USA* 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 USA, Inc.*, Paper 11, 10.) That the Petitioner chose not to do so despite knowing about the prior art weighed in favor of denying institution. (*See id.*) Here, Petitioner clearly knew of the Astera and Pohlert references but chose to instead raise different references from the first petition. Hence, factor 5 weighs in favor of denying institution.

More critically, Petitioner has had multiple opportunities to file the third petition without delaying 1 year and 7 months until the final day before it would have been time-barred. Petitioner was able to file copy-cat petitions asserting the Astera and Pohlert references after institution of the second petition was denied but chose not to do so. Indeed, the Board called out Petitioner for not filing a copy-cat petition and a motion for joinder to join the ARRI petitions to serve as a back-up or understudy petitioner. (*See* Ex. 1011, 6.) Petitioner was also able to file a copy-cat petition asserting the Astera and Pohlert references even after the Board granted

termination of IPR2021-01496 filed by ARRI on January 30, 2023. But again, Petitioner opted not to do so, waiting for more than 6.5 months to bring the currently-filed third 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 the chance to challenge the ’257 patent with the asserted references in the second petition, which was subsequently denied institution. (*See T-Mobile USA, Inc.*, Paper 11, 10-11.)

But even more concerning is *how* the Petitioner has brought the currently-filed third petition—with its attempt at multiple 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 Astera and Pohlert references at the time of the second petition, it filed the second petition asserting the Morgan and Julio references. The clear implications are that Petitioner believed that the Morgan and Julio references to be just as strong or stronger references, and that Petitioner wanted multiple bites at the proverbial apple. Thus, the first petition and the second petition asserting different sets of references that were concurrently pending consumed the Board’s finite resources. But the second petition was eventually denied institution, at which point Petitioner could have filed a motion for joinder to join the then instituted ARRI first petitions that asserted the Astera and

Pohlert references. Petitioner opted not to, and decided to “lie behind the log” while ARRI advanced the first 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* Ex. 1010, 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* Ex. 1011, 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 USA Inc.* drained its resources. (*See T-Mobile USA, Inc.*, Paper 11, 12.) But at least the petitioner in *T-Mobile USA Inc.* filed copy-cat petitions and a motion for joinder while the other instituted IPR was still pending. Here, Petitioner Videndum's conduct is that much more concerning where despite the Board's cautionary note, it did nothing for 6.5 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, creating 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 USA, Inc.*, Paper 11, 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 in the current-filed third petition, an entirely new trial, and not joinder, is sought, factor 7 neither favors nor disfavors denying institution.

**VII. PETITIONER’S GROUNDS OF INVALIDITY DO NOT SHOW A
REASONABLE LIKELIHOOD OF SUCCESS**

**A. The Astera Manual fails to anticipate or render obvious claims 1-
21 under Grounds 1 and 2**

The Astera Manual fails to anticipate or render obvious claims 1-21 at least because it fails to disclose the following claim elements alone or in view of the general knowledge of a POSITA:

- Claim element 1[a] + 1[c]: “calculating, using an effect simulator, a time varying lighting value based on at least one simulation parameter ... wherein said at least one simulation parameter is at least one of: a random brightness; a random duration; and a random interval”
- Claim element 15[a] + 15[c]: “an effect simulator adapted to calculate a time varying lighting value based on at least one simulation parameter ... wherein the at least one simulation parameter is at least one of: a random brightness; a random duration; and a random interval”

- Claim element 20[a] + 20[c]: “calculating using an effect simulator a time varying lighting value based on at least one simulation parameter ... wherein the at least one simulation parameter is at least one of: a random brightness; a random duration; and a random interval”

1. The Astera Manual does not anticipate “calculating, using an effect simulator, a time varying lighting value”

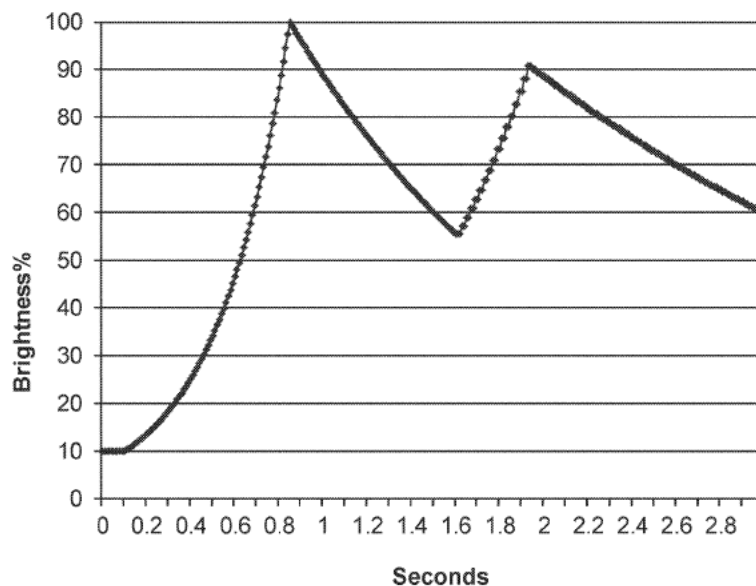
a. Petitioner mischaracterizes the Astera Manual’s pre-recorded effects as “calculating.”

The Astera Manual does not disclose the “calculating” limitations because the Astera Manual only discloses replaying pre-defined lighting values. Replaying pre-defined patterns is distinct from “calculating ... a time varying lighting value.” (’257 patent, cl. 1.) The Astera Manual discloses a lighting system capable of “display[ing] static colors or replay[ing] a number of predefined effect patterns with a customizable color palette.” (Ex. 1004, 24.) The Astera Manual also discloses customizing the available lighting effects using the AsteraApp™, but customizing does not alter the underlying pattern, and is therefore distinguishable from the “calculating” limitation required by the claims of the (’257 patent. *Id.*, 27; Ex. 2002, ¶132.)

The Astera Manual explains there are limitations on the effects generation functionality by stating that “[t]he effects’ patterns are pre-defined and cannot be modified by the user. They are pre-programmed inside of each light.” (Ex. 1004, 28.) The Astera Manual merely discloses recalling and replaying pre-defined effects, or time varying lighting values, rather than calculating those time varying lighting

values. (Ex. 2002, ¶133.) On the other hand, the '257 patent's effect simulator, in "calculating ... a time varying lighting value," creates data that is later output as a lighting effect. ('257 patent, 7:45-50; Ex. 2002, ¶¶133-134.)

In the '257 patent, as an example, assume that FIG. 7, reproduced below, shows the time varying brightness output of a lighting device simulating a fire effect:



'257 patent, Fig. 7.

When the Astera Manual discloses outputting the fire effect, a POSITA would have understood that each of the points on the above graph (disclosing a brightness percentage output at a time) are pre-programmed into the controller (Ex. 1004, 27), and merely sequentially recalled to simulate fire. (Ex. 2002, ¶139.) That is, 0.9 seconds into the fire simulation, the Astera controller retrieves from memory the appropriate brightness percentage for that time – here, 100%. (*Id.*) Conversely, the '257 patent discloses "calculating" that lighting value. (*Id.*) When a device

according to the '257 patent outputs a fire effect, the effects simulator uses an algorithm to create the data point (0.9s, 100% brightness). (*Id.*) That algorithm is differentiated in the specification of the '257 patent from prior art systems that merely replay pre-recorded patterns. (*See* '257 patent, 9:39-10:51.) In particular, the algorithm disclosed in the '257 patent is distinct from systems, like that disclosed in the Astera Manual, that “simply sampl[e] the intensity of a real flame and replay[] it.” ('257 patent, 10:13-16; *see also* Ex. 2002, ¶¶83-103, 136-139.)

With the device disclosed in the Astera Manual, that data point already exists – it was selected or recorded ahead of time and loaded into the Astera lighting device's memory. With a device according to the '257 patent, that data point did not exist until it was calculated by the effect simulator. That effect simulator functionality is not disclosed in the Astera Manual. (Ex. 2002, ¶¶135-139.)

Petitioner cannot and does not provide any citation to the Astera Manual that supports that the Astera Control Panel and the AsteraApp “calculate values,” despite making that contention. (*See, e.g.,* Petition, 14; Ex. 2002, ¶140.) At most, the AsteraApp selects a “predefined effects, and then adjust parameters of the effect” (Petition, 14.) These adjustments are not the creation of data. Nothing in the Astera Manual suggests a Control Panel that “creates data” or otherwise calculates a time varying lighting value. Recalling and replaying pre-defined effects does not

anticipate “calculating, using an effect simulator, a time varying lighting value.” (Ex. 2002, ¶¶140-141.)

Instead, page 17 of the Astera Manual discusses different modes for controlling the color output of the lighting device. (Ex. 1004, 17.) Pages 20 and 21 discuss the functionality of the “predefined patters [sic]” and “predefined programs,” for example, how to group multiple lights together to form a “virtual big light” for outputting effects. (*Id.*, 20-21.)

The Astera Manual discloses a pre-defined pattern that looks random to a user, but not a random pattern that involves a calculation within the meaning of the '257 patent's claims. (Ex. 2002, ¶142 (explaining a POSITA would have understood the “fire effect” simply appears random to a user because it is in the “predefined pattern” table and the Astera Manual does not provide any further description).) Moreover, the fire effect that has a “random flicker” only allows the background color and the flickering color to be adjusted by a user. (Ex. 1004, 21, 27.) The independent claims of the '257 patent expressly require “calculating...based on at least one simulation parameter” which “is at least one of: a random brightness; a random duration; and a random interval.” ('257 patent, cls. 1, 15, 20.) The Astera Manual's user-selected background and flickering color of the fire effect are not any of these “random” parameters—the colors are neither “random” nor a “brightness,” “duration,” or “interval.” (Ex. 2002, ¶142.)

Petitioner's assertions of the Astera Manual's disclosure as it relates to the calculating limitation are fundamentally incorrect. (Petition, 12-15.) A POSITA would have understood that the Astera Manual's effects are pre-defined, because that is how the manual expressly and repeatedly discusses the lighting effects. See Ex. 1004, 10 (the "standalone engine...can display static colors or replay a number of predefined effect patterns), 24 (same), 20 ("Select one of the predefined pattern[s]"), 21 ("The predefined programs may use more than one pixel"), 28 ("effect patterns are pre-defined and cannot be modified"). A POSITA would understand these descriptions to disclose simply recalling and replaying predefined patterns, not "calculating." (Ex. 2002, ¶144.)

Petitioner ignores this distinction and instead submits conclusory statements about how an anticipatory prior art reference would have to work in order to anticipate the '257 patent. However, the Astera Manual is not an anticipatory reference, specifically because the Astera Manual effects are pre-defined. The '257 patent describes effects where each next value is actively calculated, without relying on a pre-recorded pattern, and thus distinguishes over the Astera Manual. (Ex. 2002, ¶145.)

b. Petitioner mischaracterizes Astera's ability to adjust parameters of pre-recorded effects as "calculating," which it is not.

Petitioner argues that the ability to customize the Astera Manual's pre-defined effects patterns constitutes "calculating," stating that "[t]he Astera Manual discloses that selected effects from the AsteraApp can then 'be highly customized', to change certain parameters of the effect." (Ex. 1006, ¶60.) The Astera Manual's customization of pre-recorded effects, however, does not involve "calculating" time varying lighting values as described in the '257 patent. (Ex. 2002, ¶146; *see also* Section II.A., *supra* (explaining "calculating" in the '257 patent).)

Petitioner fails to point to any explicit disclosures in the Astera Manual that teach or describe "calculating." Petitioner also fails to explain why a POSITA would have understood the Astera Manual to necessarily disclose "calculating."

While Petitioner cites to the Astera Manual's statement that "with the AsteraApp™ these effects can be created and be sent to the light by the built in UHF receiver" (Ex. 1004, 24), the Astera Manual makes clear that no "calculation" is performed to create the effects—they are merely parameterized. (Ex. 1004, 28 ("[t]he effects' patterns are pre-defined and cannot be modified by the user. They are pre-programmed inside of each light. Still they can be parameterized."); Ex. 2002, ¶148.)

The specification of the '257 patent distinguishes its algorithmic generation capabilities from prior art systems (like the Astera Manual), because they merely allow for customization of pre-recorded patterns. (Ex. 2002, ¶149.) For example, the specification of the '257 patent states “[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.” ('257 patent, 10:13-16.) Customization of pre-recorded values (as disclosed in the Astera Manual) does not anticipate “calculating, using an effect simulator, a time varying lighting value.” While a user may adjust the playback speed, color, or overall intensity of a pattern in the Astera Manual, the underlying pattern is not actually changed – thus, further demonstrating no calculation is performed. Claims 1, 15 and 20 of the '257 patent are distinct over the Astera Manual. (Ex. 2002, ¶¶150-152.)

2. The Astera Manual does not anticipate “wherein said at least one simulation parameter is at least one of: a random brightness; a random duration; and a random interval”

The Astera Manual fails to anticipate the “random” limitation of the independent claims. (Ex. 2002, ¶153.) As described in the '257 patent, a “simulation parameter” is an input received by the “effect simulator” and used to calculate the “time varying lighting value.” (Ex. 2002, ¶154.) This relationship between simulation inputs and outputs is illustrated in FIGS. 3a and 3b, reproduced below:

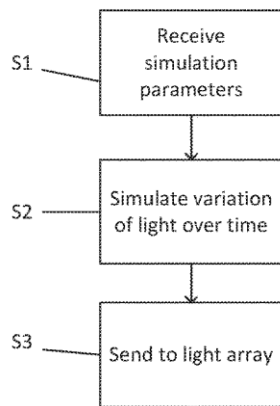


Figure 3a

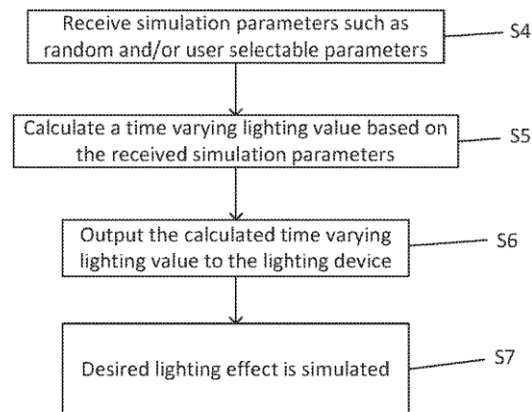


Figure 3b

'257 patent, Figs. 3a and 3b.

As illustrated in FIGS. 3a and 3b, a simulation parameter is an *input* into the effect simulator. (See also '257 patent, 7:27-29 (“In a first step S1 simulation parameters are received, such as random parameters and/or user-selectable parameters as shown in step S4”).) Conversely, the time varying lighting value is an *output* of the effect simulator. (See '257 patent, Cls. 1, 15, 20 (reciting calculating the time varying lighting value and “outputting” the time varying lighting value); see also '257 patent, 7:38-44 (“As shown in S5, the simulation calculates how the lighting changes over time in order to produce the desired lighting effect. Following simulation in a third step S3 the lighting information determined by the simulation is output, for example to a lighting device, as shown in step S6, in order to produce the desired lighting effect as shown in step S7”); Ex. 2002, ¶154.)

The Astera Manual does not anticipate a device or method “wherein said at least one simulation parameter is at least one of: a random brightness; a random duration; and a random interval” because the effects in the Astera Manual relied upon by Petitioner are all outputs rather than inputs. (Ex. 2002, ¶155.) The Petition, fails to identify any random parameters that can be considered inputs for a purported calculation disclosed in the Astera Manual.

Petitioner advances three examples that Petitioner argues disclose various types of random simulation parameters. However, each example describes a random light **output**, not a simulation parameter. (Ex. 2002, ¶157 (emphasis in original).)

First, Petitioner discusses the Astera Manual’s “fire effect,” which the Astera Manual describes as “a random flicker between two colors.” (Petition, 17; Ex. 1004, 21, 28.) Petitioner states that the “‘flicker’ characteristic” of the fire effect has a ‘random brightness.’” (Petition, 17.) The Astera Manual discloses a fire effect characterized by “a random flicker between two colors.” (Ex. 1004, 21, 28.) However, that “random flicker between two colors” describes the output of the lighting device, not the input into the effects simulator. Claim 1[c] requires that “at least one simulation parameter is” a random duration, brightness, or interval. The effect simulator calculates the time varying lighting value based on the at least one simulation parameter—i.e., based on the claim language it is an input into the effect simulator, not an output thereof. (See ’257 patent, cls. 1, 15, 20.) The Astera Manual

does not disclose that the fire effect is generated “based on” a random brightness. Even the suggestion of allowing a user to input background and flickering colors (*see* Ex. 1004, 27) does not suggest a “random” brightness. A user input color value is not necessarily a brightness value and it is certainly not “random.” Accordingly, the Astera Manual’s disclosure of a fire effect characterized by a random flicker does not demonstrate that any simulation parameter is a random value. (Ex. 2002, ¶158.)

Petitioner further argues that the fire effect has a “random duration and a random interval’, because the amount of time each background and flicker color is active is random. Petition, 18. However, this argument fails for the same reason as the random brightness argument. Even where the fire effect outputs a random brightness, duration, and interval, each of those characteristics are outputs from the effect simulator, not inputs into the effect simulator as required by claim 1[c]. (Ex. 2002, ¶159.)

Petitioner’s second example, the “chaser effect,” fails to disclose a random simulation parameter for the same reasons. The “chaser effect” is characterized by colors that are “randomly chosen.” (Petition, 17; Ex. 1004, 28.) Here, as with the fire effect, the random characteristic of the chaser effect is an output, i.e., the color. Nothing in the Petition explains how the random color output anticipates the claimed calculating a time varying lighting value, using an effect simulator, based on a random simulation parameter (i.e., an input). Further, in the Astera Manual, the color

is directly output in sequential LEDs to create the chaser effect; there is no “calculating, using an effect simulator, a time varying lighting value based on” the color (let alone based on a random brightness as actually required by the claim). (*See* cls. 1, 15, 20; Ex. 1004, 28; Ex. 2002, ¶160.)

Petitioner's third example, a strobe effect which includes a “‘random’ settings option” also fails to disclose a random duration, random brightness, or random interval, because the parameters defining the effect are “slow,” “medium,” or “fast,” not random durations or intervals. (Petition, 18; Ex. 1004, 17, 21, 27.) Petitioner further argues that the option to have a “random strobe” constitutes a random simulation parameter. (Petition, 18.) However, by selecting a random strobe, the user is simply selecting which pre-recorded effect pattern the Astera device will replay. (*See* Ex. 1004, 28 (“the effects’ patterns are pre-defined and cannot be modified by the user. They are pre-programmed inside of each light. Still they can be parameterized.”)) Accordingly, the selection of a “random strobe” is merely the selection of a pre-programmed effect pattern, not an input into a calculation by the effect simulator. Further, the speed of that random strobe – one of the customizable features – is not a “random” parameter. Accordingly, the strobe effect fails to disclose a random simulation parameter, as required by claim 1[c] (as well as the same claim limitation appearing in claims 15 and 20). (Ex. 2002, ¶161.)

Petitioner has not met its burden of showing that the Astera Manual anticipates the at least one simulation parameter being “at least one of: a random brightness; a random duration; and a random interval” as recited in each of claims 1, 15, and 20. Ex. 2002, ¶163.

B. Pohlert fails to anticipate or render obvious claims 1-21 under Grounds 3 and 4

Pohlert fails to anticipate or render obvious claims 1-21 at least because it fails to disclose the following claim elements alone or in view of general knowledge of a POSITA:

- Claim element 1[a] + 1[c]: “calculating, using an effect simulator, a time varying lighting value based on at least one simulation parameter ... wherein said at least one simulation parameter is at least one of: a random brightness; a random duration; and a random interval”
- Claim element 15[a] + 15[c]: “an effect simulator adapted to calculate a time varying lighting value based on at least one simulation parameter ... wherein the at least one simulation parameter is at least one of: a random brightness; a random duration; and a random interval”
- Claim element 20[a] + 20[c]: “calculating using an effect simulator a time varying lighting value based on at least one simulation parameter ... wherein the at least one simulation parameter is at least one of: a random brightness; a random duration; and a random interval”

1. Pohlert does not anticipate “calculating, using an effect simulator, a time varying lighting value”

Pohlert does not disclose “calculating[,] using an effect simulator[,] a time varying lighting value based on at least one simulation parameter” as recited in

claims 1 and 20. (Ex. 2002, ¶¶83-103, 178.) Pohlert also 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 15. (Ex. 2002, ¶¶176-177, 180.) Instead, Pohlert describes pre-defined light patterns illuminated in pre-defined or pseudo-random “sequences.” (Ex. 1006, ¶¶[0063], [0067].) 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. (Ex. 2002, ¶178; *see also* Section II.A., *supra*.)

Pohlert discloses controlling the lighting schemes using manual input means, such as a switch or knob. (Ex. 1006, ¶[0061].) However, these manual inputs are direct inputs used to control the light output (e.g., manual dimming). (Ex. 1006, ¶[0061].) There is not a calculation “based on” a simulation parameter. In other words, Pohlert does not tie calculating a time varying lighting value to being based on a simulation parameter. (Ex. 2002, ¶187.)

None of these embodiments involve an effect simulator that calculates anything, let alone “a time varying lighting value.” (Ex. 2002, ¶183.) 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.” (Ex. 1006, ¶[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.” (Ex. 1006, ¶¶[0067]; Ex. 2002, ¶¶183-185.)

The output of power control signals does not mean generating the power control signals themselves involves calculating a time varying lighting value as recited in the independent claims. In Pohlert, the effects simulator 543 generates the effects without “calculating” time varying lighting values. For example, Pohlert explains that dimming may be accomplished using a manual control knob or a multi-position switch on the effects selector 533. (Ex. 1006, ¶¶[0061].) Converting a manual input to an output power control signal for an LED does not involve “calculating...a time varying lighting value.” Indeed, Pohlert teaches the use of standard electrical components to regulate the LED output. (*See* Ex. 1006, ¶¶[0068]-[0071], [0119]-[0125], FIGS. 6, 19A, 19B; Ex. 2002, ¶¶186-187.)

The ’257 patent makes clear that the “calculating” 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 II.A., *supra*.) Further, the ’257 patent explicitly discloses a “converter” as a separate component than the effect simulator performing the calculation. (*See* ’257 patent, 8:36-48.) 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 does not

require a “calculation”, and the ’257 patent thus makes clear from its disclosure at lines 36 to 48 of column eight that the “effect simulator” has distinct functionality from mere signal conversion. (Ex. 2002, ¶188 (providing additional detail about how a POSITA would have understood Pohlert in this respect relative to the ’257 patent).)

Nor does oscillation signal generation meet the “calculating” limitation as alleged by Petitioner. (*See* Petition, 41; *see also* Ex. 1006, ¶140.) 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.” (Ex. 1006, ¶[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. (Ex. 1006, ¶[0062]; Ex. 2002, ¶¶189-190.)

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* Ex. 1006, ¶[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).) To the extent that a processor generates the oscillating signal, Pohlert is clear that the processor is merely executing “a predesignated pattern dictated by

programming instructions.” (Ex. 1006, ¶[0067].) There is no calculation as claimed. (Ex. 2002, ¶¶190-194 (providing additional detail about how a POSITA would have understood Pohlert).)

Pohlert's “pattern generation” special effect likewise fails to meet the “calculating” limitation. (Ex. 2002, ¶195.) Pohlert's lighting sequences, including the pseudo-random sequences, do not “requir[e] the controller to calculate signals that are time varying.” Rather, these paragraphs of Pohlert describe executing pre-defined lighting effects in particular sequences. (Ex. 1006, ¶¶[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.” (Ex. 1006, ¶[0063].) Patterns may include strobing or flashing different groups of light segments 325-360 in a pre-defined sequence or a pseudo-random sequence. (Ex. 1006, ¶[0063]; Ex. 2002, ¶¶196-197 (providing additional detail about how a POSITA would have understood Pohlert).)

Paragraph 67 of Pohlert makes this distinction particularly clear, as it explains that “the processor 574 reads instructions from the memory 575 and executes them in the conventional manner.” (Ex. 1006, ¶[0067].) 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. (Ex. 1006, ¶[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.”); Ex. 2002, ¶198.)

A processor executing pre-programmed instructions in this manner does not meet the claimed “calculating...a time varying lighting value.” Pohlert does not disclose that anything is calculated. (*See e.g.*, Ex. 1006, ¶[0067].) Further, Pohlert’s pattern generation disclosure does not anticipate “calculating, using an effect simulator, a time varying lighting value” as is recited in claim 1. (*See also* ’257 patent, cls. 15, 20 (using similar language). Ex. 2002, ¶199.)

Pohlert is equally deficient in explaining 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 claims of the ’257 patent. Pohlert discloses a pre-defined pseudo-random sequence and not a calculated pseudo-random sequence “based on at least one simulation parameter.” (Ex. 2002, ¶200.)

In yet another embodiment, Pohlert discloses an intensity control adjustment 1042 and ratio control adjustment 1041. (Ex. 1006, ¶¶[0088]-[0092]; Ex. 2002, ¶201.) This embodiment is shown in FIG. 10 and Pohlert explains “FIG. 10 is a block diagram of one embodiment of a lighting effects system 1000 having at least two different lamp colors.” (Ex. 1006, ¶[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.” (Ex. 1006, ¶[0088].) The ratio control adjustment 1041 and intensity control adjustment 1042 are a manual input means such as a manual control knob. (Ex. 1006, ¶¶[0088], [0090]; Ex. 2002, ¶202.)

The Petition offers no proofs that the 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 for why it would have been obvious to modify the embodiments of FIGS. 3A-3B and 5A-5B to include aspects of the embodiment of FIG. 10, which is unique and separate 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. (Ex. 2002, ¶204.)

Setting this improper combination of embodiments aside, the FIG. 10 embodiment still does not teach “calculating, using an effect simulator, a time varying lighting value” as required by the independent claims. (Ex. 2002, ¶205.)

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. *Id.* This involves a direct manual input to produce a particular illumination level or relative intensity of the respective LEDs. (See e.g., Ex. 1006, ¶[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”); Ex. 2002, ¶¶205-206.)

2. Pohlert does not anticipate “wherein said at least one simulation parameter is at least one of: a random brightness; a random duration; and a random interval”

Pohlert does not disclose calculating a time varying lighting value based on at least one simulation parameter, which is defined to be “at least one of: a random brightness; a random duration; and a random interval.” (Ex. 2002, ¶¶179, 207.) Petitioner relies on the pseudo-random sequence disclosure in Pohlert as allegedly satisfying this claim element. *See* Petition, 40-42.

A pseudo-random *sequence* (i.e., an order that particular LEDs are illuminated) is plainly not the same as a “random duration” or a “random interval.” (Ex. 2002, ¶209.) The duration a lighting device is illuminated and the interval between lighting

different lighting devices are not the same as the sequence of illuminating lighting devices. (*Id.*)

Regarding random brightness, Petitioner relies on the end result of Pohlert's pseudo-random sequencing, arguing that different groups of LEDs having a different number of LED bulbs may be randomly sequenced such that the output brightness varies because a different number of LEDs are illuminated. (Petition, 44-45; Ex. 2002, ¶210.)

Each of the independent claims recite that the simulation parameter is at least one of a random brightness, etc., and further recites that calculating the time varying lighting value is based on the simulation parameter. Therefore, as discussed above, the random brightness is an input to the calculation not merely an end result in brightness changes due only to a different number of lights sequentially being illuminated. (Ex. 2002, ¶211.) Pohlert discloses "pseudo-random" sequences as an alternative to pre-defined sequences. These pseudo-random sequences are outputs applied to special effects generated by the effects generator 543 or processor 574, rather than inputs to the effects generator 543 or processor 574. (Ex. 2002, ¶212.)

Nothing in Pohlert discloses calculating a time varying lighting value "based on" a simulation parameter that "is at least one of: a random brightness; a random duration; and a random interval." (Ex. 2002, ¶213.)

VIII. CONCLUSION

For the foregoing reasons, Patent Owner requests that the Board deny institution of the *inter partes* review of the '257 patent.

Rotolight Ltd. Patent Owner's Preliminary Response
IPR2023-01220 to U.S. Patent No. 10,197,257

Dated: October 30, 2023

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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 12,060 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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IPR2023-01220 to U.S. Patent No. 10,197,257

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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