

UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE PATENT TRIAL AND APPEAL BOARD

QUASAR SCIENCE, LLC
Petitioner,

v.

COLT INTERNATIONAL CLOTHING, INC. d/b/a COLT LED
Patent Owner

Case: IPR2023-00611

U.S. Patent No. 10,197,224

PETITIONER REPLY TO PATENT OWNER RESPONSE

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TABLE OF EXHIBITS

Exhibit	Description
1001	U.S. Patent No. 10,197,224 to Macias <i>et al.</i> (“the ’224 Patent”)
1002	File History of the U.S. Patent No. 10,197,224 (“the File History”)
1003	Declaration of Fred Holmes (“Holmes Decl.”)
1004	U.S. Patent No. 7,507,001 to Kit (“Kit”)
1005	U.S. Patent No. 7,350,936 to Ducharme <i>et al.</i> (“Ducharme”)
1006	U.S. Patent Publication 2005/0047134 to Mueller (“Mueller”)
1007	U.S. Patent No. 8,026,532 to Ansems (“Ansems”)
1008	U.S. Publication No. 2010/0102960 to Ivey <i>et al.</i> (“Ivey”)
1009	U.S. Patent No. 8,668,361 to Hasnain (“Hasnain”)
1010	U.S. Publication No. 2010/0102729 to Katzir <i>et al.</i> (“Katzir”)
1011	“When white light isn’t white” by Mike Wood, 2008
1012	U.S. Publication No. 2004/0052076 to Mueller <i>et al.</i> (“Mueller ’076”)
1013	International Publication No. 2005/012997 to Morgan <i>et al.</i> (“Morgan”)
1014	U.S. Publication No. 2010/0315001 to Domagala <i>et al.</i> (“Domagala”)
1015	U.S. Patent. No. 7,049,761 to Timmermans <i>et al.</i> (“Timmermans”)
1016	Astera LED-Technology User Manual Wireless Pixel Tube (AL1) v.3.2.20 (July 23, 2010)
1017	Declaration of Mr. Kyle G. Gottuso in support of Petitioner’s Motion for Pro Hac Vice Admission
1018	October 26, 2023 email from David Hoffman to MBGW Law and Craig Bailey
1019	November 2023 email thread between Petitioner and Patent Owner
1020	Proposed Modified Protective Order (Redlined)
1021	Proposed Modified Protective Order (Clean)
1022	Laysion, LLC v. Macias, No. B319551, California Court of Appeals, Second District, Third Division, Jul 28, 2023
1023	Deposition Transcript of Guillermo Macias [CONFIDENTIAL – PROTECTIVE ORDER]
1024	Box, Harry C., “ <i>Set Lighting Technician's Handbook: Film Lighting Equipment, Practice, and Electrical Distribution</i> ,” Butterworth-Heinemann, ISBN 0-240-80161-X (1993), pp. 92-104 and 135-144.
1025	Declaration of Ray Gonzales

I. Introduction

The Board instituted trial in this matter based on the prior art of Ground 2. (Decision at 19-25.) Nothing in Patent Owner’s Response (POR, Paper 30) justifies a contrary decision. Indeed, except for unsupported secondary considerations arguments, the POR arguments are essentially identical to those presented in the Patent Owner Preliminary Response (POPR, Paper 8). Patent Owner also did not cross-examine Petitioner’s expert, Patent Owner has no expert of its own, and Patent Owner’s secondary considerations evidence is based on mere attorney argument and a false declaration of a Chinese national who was not made available for cross-examination. Patent Owner cannot possibly carry its burden to show secondary considerations and the prior art renders all Challenged Claims¹ unpatentable.

II. Claim Construction

Patent Owner argues all claim terms should be given their plain and ordinary meaning except the preamble term “[a]n LED lighting device configured for providing light suitable for a commercial image recording,” which is used in all independent claims. (POR at 13-15.) Here, Patent Owner appears to argue the preamble is limiting. (*Id.* at 14-15.) Patent Owner further argues the preamble should be limited to LED devices that are “suitable for TV and studio image

¹ The Challenged Claims are 1, 3-4, 7-13, 23, 25-26, 28-39, 41-45.

recording.” (*Id.* at 15.) The Board need not resolve this issue as the prior art discloses the preamble irrespective of whether it is limiting and under Patent Owner’s proposed construction of LED devices “suitable for TV and studio image recording.”

However, for the record, it is noted that, as a general rule, preamble language is not treated as limiting.² *Arctic Cat Inc. v. GEP Power Prod., Inc.*, 919 F.3d 1320, 1327-1328 (Fed. Cir. 2019). Preamble language may be limiting if it “recites essential structure or steps, or if it is necessary to give life, meaning, and vitality to the claim.” *Id.* “When limitations in the body of the claim rely upon and derive antecedent basis from the preamble, then the preamble may act as a necessary component of the claimed invention.” *Pacing Techs., LLC v. Garmin Int’l, Inc.*, 778 F.3d 1021, 1024-1025 (Fed. Cir. 2015), citing *Eaton Corp. v. Rockwell Int’l Corp.*, 323 F.3d 1332, 1339 (Fed. Cir. 2003).”

Conversely, preamble language that merely states the purpose or intended use of an invention is generally not treated as limiting the scope of the claim.” *Bicon, Inc. v. Straumann Co.*, 441 F.3d 945, 952 (Fed. Cir. 2006). If the body of the claim sets out the complete invention, the preamble is not ordinarily treated as limiting. *Id.*

² Emphasis added herein unless otherwise noted.

The present situation falls squarely within the types of cases where preamble language has *not* been considered limiting. The '224 patent's preamble language merely sets forth an intended use of the LED device. Moreover, the body of the independent claims appear to set out what Patent Owner believes to be the complete invention. The term “commercial image recording” is also not recited in the body of the claim. For at least these reasons, the preamble of the independent claims is not limiting.

III. Ground 2 – Independent Claims

A. Patent Owner recycles its unpersuasive POPR arguments

For Ground 2, Patent Owner simply cuts-and-pastes its POPR arguments into its POR. (*Compare* POPR at 37-47 with POR at 27-37.) Patent Owner's arguments surrounding the independent claims have all been considered and previously rejected by the Board. (Decision at 19-25.) Patent Owner offers no new evidence, offers no expert testimony of its own, and Patent Owner did not cross-examine Petitioner's expert. In short, there is nothing in the record that justifies the Board deviating from its initial determination.

B. Mueller discloses lighting systems for “commercial image recording”

As noted above, Patent Owner incorrectly argues that the preamble is limiting and the language “light suitable for a commercial image recording” should be construed as “light suitable for TV and studio image recording.” (§II, *supra*.)

Nonetheless, Mueller discloses LED lighting units (lamps) for commercial applications, such as “studio, theatre, TV and video lamps.” (Petition at 52, citing Ex-1006 at ¶0295.) Thus, irrespective of whether the preamble is limiting, Mueller discloses it.

C. Mueller discloses “broad spectrum white light” and the use of five different colored LEDs in a lighting device

Patent Owner’s first argument is that Mueller fails to teach “broad spectrum white light LEDs.” (POR at 29.) This argument was presented in the POPR and nothing new has been provided. (Compare POPR at 39 (bottom) with POR at 29.) Patent Owner offers no construction for the term “broad spectrum” and offers no evidence in support of its assertion.

The term “broad-spectrum” or “wide spectrum” is used in the ’224 patent generically. No specific requirements for “broad-spectrum white light” are provided in the claims or specification of the ’224 patent. Indeed, as explained in the Background of the ’224 patent, “broad-spectrum white light” was already known and at least includes the use of phosphors to convert blue or ultraviolet LED light into white light:

“Alternatively, LED (light emitting diode) lighting *has been developed* and *has recently gained popularity*. ... There are two primary types of LED lighting used to create white light. ... The other is to use a phosphor material to convert monochromatic light from a blue or

ultraviolet LED to broad-spectrum white light, also referred to as phosphor based LEDs.” (Ex-1001 at 2:44-50.)

Because the above statements are in the Background of the ’224 patent, Patentee admits that broad-spectrum white light was already known. *PharmaStem Therapeutics, Inc. v. ViaCell, Inc.*, 491 F.3d 1342, 1362 (Fed. Cir. 2007) (“Admissions in the specification regarding the prior art are binding on the patentee for purposes of a later inquiry into obviousness.”); *In re Cohen*, 767 Fed. Appx. 985, 987-89 (Fed. Cir. 2019) (affirming an examiner’s reliance on the disclosure of a “typical” technique in the “Background” section of a patent as applicant-admitted prior art); *I/P Engine, Inc. v. AOL Inc.*, 576 Fed. Appx. 982, 987 (Fed. Cir. 2014) (determining that a patent’s background description of a technique as “conventional” is a binding admission that the technique is prior art).

Mueller discloses “broad spectrum white light.” As explained in the Petition, Mueller discloses:

“Methods and systems disclosed herein include methods and systems for a lighting system that includes a plurality of LEDs selected from the group consisting of red, green, blue, amber, white, orange and UV LEDs....”

(Petition at 58, citing Ex-1006 at ¶0043; *see also* Petition at 57-58, citing Ex-1006 at ¶0194.) The white LEDs of Mueller are phosphor-based LEDs that produce broad spectrum white light:

“In another implementation, a white light LED may be associated with a phosphor material that converts luminescence having a first spectrum to a different second spectrum. In one example of this implementation, luminescence having a relatively short wavelength and narrow bandwidth spectrum “pumps” the phosphor material, which in turn radiates longer wavelength radiation having a somewhat broader spectrum.”

(Ex-1006 at ¶0056.) Thus, Mueller discloses and renders obvious the “broad-spectrum white light” requirements of the claims.

Patent Owner appears to argue Mueller fails to disclose the use of five LEDs in a lighting system. (POR at 28-29.) Not so. As shown above, Mueller specifically discloses that its lighting system can include multiple LEDs, including “red, green, blue, amber, white, orange and UV LEDs.” Mueller further discloses:

“Lighting units 100 can also include a wide variety of colors of LED, in various mixtures, including red, green, and blue LEDs to produce a color mix, as well as one or more other LEDs to create varying colors and color temperatures of white light. For example, red, green and blue can be mixed with amber, white, UV, orange, IR or other colors of LED. Amber and white LEDs can be mixed to offer varying colors and color temperatures of white. Any combination of LED colors can produce a gamut of colors, whether the LEDs are red, green, blue, amber, white, orange, UV, or other colors.”

(Petition at 58, citing Ex-1006 at ¶0194.) Thus, Mueller discloses and renders obvious the use five different colored LEDs in its lighting devices.

Patent Owner argues it would not be obvious to try an LED light with five different colored LEDs in view of Mueller, citing *Bayer Schering Pharma AG v. Barr Labs., Inc.*, 575 F.3d 1341, 1347 (Fed. Cir. 2009)(“*Bayer*”). Patent Owner is wrong. The present circumstances are not comparable to those of *Bayer* where there was no guidance in the art as to which of a large number of possible solutions were likely to be successful. Instead, Mueller expressly guides the POSITA to use RGB LEDs with one or more of amber, white, UV, orange, and IR LEDs, i.e., Mueller does not disclose “numerous possible choices.” *Bayer* at 1347. This is also not a situation “where vague prior art does not guide an inventor toward a particular solution.” *Bayer* at 1347. Mueller expressly describes the use of multiple LEDs in as much detail as that of the ’224 patent. As noted in *KSR*:

“When there is a . . . problem and there are a finite number of identified, predictable solutions, a person of ordinary skill has good reason to pursue the known options. . . . If this leads to the anticipated success, it is likely the product not of innovation but of ordinary skill and common sense.”

KSR, 550 U.S. at 421 (2007). The Supreme Court’s logic from *KSR* applies here. Patent Owner has done nothing more than combine a plurality of known elements in

a known fashion to create a predictable device. Such combinations are unpatentable.

Id.

D. The claims do not require an “onboard” LED driver which is nonetheless obvious

Patent Owner next argues Mueller fails to disclose an “LED driver...configured to selectively provide electrical power to the array of LED emitting devices.” (POR at 29.) Again, this argument was presented in the POPR and nothing new has been provided. (*Compare* POPR at 40-41 with POR at 29-31.) Here, Patent Owner essentially argues a POSITA might find it difficult to include an “onboard” LED driver in the T8/T12 tube disclosed by Mueller. (POR at 30 (“there is nothing disclosing that the lighting source has all components onboard a T12 or T8 tubular format” and “designing such a luminaire with an onboard LED driver in the form factor of T12 or T8 would not have been obvious due to limited space”).) Patent Owner’s arguments are defective for several reasons.

First, the claims do not require an “onboard” LED driver. As Patent Owner recognizes, limitation 1[e] includes the LED driver limitation. Nothing in limitation 1[e] demands an “onboard” LED driver, which Petitioner interprets as requiring the LED driver be located within the housing of the LED system of claim 1. Limitations 1[b] and 1[f]-1[g] recite the housing requirements of claim 1, and these limitations are devoid of any LED driver requirement other than it be in “electrical

communication” with the LED driver. Thus, the claims do not include any “onboard” LED driver requirement, so it is irrelevant whether the prior art discloses an LED driver within the housing of a T12 tube.

Second, Mueller indisputably discloses a T12 LED lighting unit. (Petition at 55, citing Ex-1006 at ¶0295.) Mueller further discloses that its lighting unit “may be associated with (e.g., *include*, be coupled to and/or packaged together with) various other components (e.g., control circuitry) relating to the operation of the light source(s).” (Petition at 58, citing Ex-1006 at ¶0064.) Thus, Mueller expressly discloses including any necessary circuitry within its lighting unit, which lighting unit may be a T12 lighting unit. Ivey supports Mueller and teaches a POSITA to use all necessary components, including circuitry, in the T12 lighting unit. (Petition at 57, citing Ex-1008 at FIG. 6, [0006] (“A circuit board extends longitudinally within the housing.”), [0016]–[0018].) As Ivey explains:

“As shown in FIG. 1, the light 10 includes a housing 14, a circuit board 16, a pair of end caps 18, multiple LEDs 20, and a controller 22 in a single package defined by the housing 14 and end caps 18.” (Ex-1008 at [0016].)

Thus, in view of Mueller and Ivey, a POSITA would have found it obvious to include all necessary components within a single T12 LED lighting unit, especially circuitry and/or drivers, which are software and/or small electrical components suited for fitting within small spaces.

Third, Patent Owner's arguments are unsupported by any expert testimony and are therefore mere attorney argument that should be given no weight. *Gemtron Corp. v. Saint-Gobain Corp.*, 572 F.3d 1371, 1380 (Fed. Cir. 2009) (“[U]nsworn attorney argument...is not evidence and cannot rebut...other admitted evidence...”). *Icon Health & Fitness, Inc. v. Strava, Inc.*, 849 F.3d 1034, 1043 (Fed. Cir. 2017) (vacating PTAB decision relying on attorney argument that was unsupported by evidence).

Fourth, Patent Owner's mere attorney argument includes a teaching away argument based on Exhibits 2001-2003. (POR at 6, 22, 30.) Nothing in these exhibits rises to the level of a teaching away. *Meiresonne v. Google, Inc.*, 849 F.3d 1379, 1382 (Fed. Cir. 2017) (“A reference teaches away ‘when a person of ordinary skill, upon reading the reference, would be discouraged from following the path set out in the reference, or would be led in a direction divergent from the path that was taken’ in the claim; *Galderma Labs., L.P. v. Tolmar, Inc.*, 737 F.3d 731, 738 (Fed. Cir. 2013) (“A reference that ‘merely expresses a general preference for an alternative invention but does not criticize, discredit, or otherwise discourage investigation into’ the claimed invention does not teach away.”) Exhibits 2001-02 are Mac Tech product brochures that simply say some of their products produce a single color, while others produce multiple colors. (Ex-2002 at 1 (“Most of our product line is a single color for higher output, either 3200k or 5600k. However,

our *Arist Series Flat Panels* are available in a bi-color configuration.”).) As for Exhibit 2003, there is nothing in the Abstract or ¶0012 of this reference that constitutes a teach away.

E. Independent Claims Conclusion

The above arguments are the entirety of Patent Owner’s Ground 2 arguments in favor of its independent claims. (POR at 36 (referring the reader to the claim 1 arguments for independent claims 13, 23, and 35).) Because none of these arguments have merit, they should be rejected and the independent claims should be found unpatentable in view of the Ground 2 prior art.

IV. Ground 2 – Dependent Claims

For Ground 2, Patent Owner only raises a few arguments with respect to the dependent claims of the ’224 patent, none of which have merit. Again, these arguments were already raised in the POPR and a trial was instituted over these arguments.

A. Mueller renders obvious the use of 255 colors, which are the colors of the standard color wheel (Claims 3-4, 25-26, 37-39)

Patent Owner argues Mueller fails to disclose an “LED driver []adapted for selectively driving each of the first [through] fifth sets of LED emitting elements in increments of about 1/255 to selectively produce at least 255 different colors from the lighting device,” as required by claim 3. Patent Owner further argues that Mueller fails to disclose an LED driver that “selectively produce[s] the at least 255

different colors of [a] color wheel,” as required by claim 4. (POR at 31-33.) Identical arguments were made in the POPR and nothing new has been presented. (*Compare* POPR at 41-44 with POR at 31-33.)

Claim 3 merely claims well-known technology. The term “DMX” stands for “digital multiplexer.” (Ex-1001 at 24:20.) This technology was admittedly well-known prior to the ’224 patent:

“DMX512 (or currently DMX-512A) standard is maintained by ESTA (Entertainment Services and Technology Association), now Plasa. This standard is for digital communications networks used to control stage lighting (entertainment industry lighting) i.e., controllers such as lighting consoles and dimmers.” (Ex-1001 at 18:67-19:5.)

“DMX 512 is of particular applicability, since the DMX512 standard is a well-known standard in the art used for controlling set or stage lighting and set or stage effects.” (Ex-1001 at 20:24-27.)

The ’224 patent further explains that its LED device uses a DMX signal with an RGBAW array (red, green, blue, amber, and white) to increment the color from zero (off) and 255 (full on). (Ex-1001 at 7:14–26.) This disclosure is the standard use of a DMX signal to control RGBAW LEDs. (Ex-1003 at ¶0420.)

Using DMX with RBGWA LEDs was well-known prior to the ’224 patent. As the Petition notes, Mueller discloses the use of DMX to control its LEDs.

(Petition at 65.) As Mueller explains, standard DMX protocols may be used with standard pulse-width modulation signaling:

“As shown in the embodiment of FIG. 2, the lighting system 200 may include one or more lighting unit controllers (hereinafter “LUCs”) 208A, 208B, 208C and 208D, wherein each LUC is responsible for communicating with and generally controlling one or more lighting units 100 coupled to it. ... When a given LUC receives such a command, it may then interpret the command so as to generate the appropriate lighting control signals which it then communicates using a DMX protocol via any of a variety of signaling techniques (e.g., PWM) to one or more lighting units that it controls.” (Ex-1006 at ¶¶0190, 0192.)

As it relates to PWM, Mueller explains:

“Pulse width modulation (PWM) involves supplying a substantially constant current to the LEDs for particular periods of time.... The PWM technique is considered [one] of the preferred techniques for driving LEDs.... In an embodiment, three colors of LEDs are presented (e.g., red, green and blue) and each of the colors is driven with PWM to vary its apparent intensity. This system allows for the generation of millions of colors (e.g., 16.7 million colors when 8-bit control is used on each of the PWM channels).” (Ex-1006 at ¶0158; Petition at 64.)

Thus, Mueller discloses use of the standard DMX protocol in combination with PWM using 8-bit control to generate millions of colors. Mueller’s disclosures are indistinct from that of the ’224 patent:

“Typically, in certain lighting systems there could be up to 255 settings (with 8-bit control per channel) and 512 channels, although even more are available with the variations now available in the lighting systems.”
(Ex-1001 at 22:35-39.)

Thus, Mueller discloses and renders obvious claim 3 to a POSITA.³ (Petition at 63-64; Ex-1003 at ¶¶419-423.)

Claim 4 depends from claim 3 and further requires the use of “an external computer or lighting control board to selectively produce the at least 255 different colors.” Claim 4 further requires “an entertainment industry color wheel.” Mueller discloses and renders obvious these requirements.

As explained in the Petition, Mueller discloses the use of remote DMX. (Petition at 64, citing Ex-1006 at ¶0183 (“the processor 102 of a given lighting unit, whether or not coupled to a network, may be configured to interpret lighting instructions/data that are received in a DMX protocol...”).) Mueller further discloses the use of a “central controller,” which “may be configured to implement Ethernet-based communications with the LUCs, and in turn the LUCs may be configured to implement DMX-based communications with the lighting units 100.” (Ex-1006 at ¶0191.) Thus, Mueller discloses or renders obvious the external computer/lighting board requirements of claim 4.

³ Patent Owner does not dispute Petitioner’s POSITA definition. (POR at 15-16.)

As it relates to “an entertainment industry color wheel,” the DMX protocol was well-known, especially for use in the entertainment industry, as the ’224 patent admits. (Ex-1001 at 18:67-19:5; 20:24-27.) Accordingly, Mueller’s disclosure of DMX and “8-bit control...on each of the PWM channels” as well as its disclosure that its lighting units may be used in “studio, theatre, TV and video” applications discloses and renders obvious a standard entertainment industry color wheel. (Ex-1006 at ¶¶0158, 295; Petition at 52, 64.)

B. Mueller renders obvious the use of RGB with white and amber (Claims 10, 32)

Patent Owner unpersuasively argues Mueller fails to disclose “wherein the first, second, third and fourth LEDs are red, green, blue and amber, respectively” as required by claim 10. (POR at 34.) Again, this identical argument was made in the POPR and nothing new has been presented. (*Compare* POPR at 44 with POR at 34.) This argument should be rejected. As explained above in §III.C, Mueller discloses:

“Methods and systems disclosed herein include methods and systems for a lighting system that includes a plurality of LEDs selected from the group consisting of red, green, blue, amber, white, orange and UV LEDs....” (Ex-1006 at ¶0043.)

“Lighting units 100 can also include a wide variety of colors of LED, in various mixtures, including red, green, and blue LEDs to produce a color mix, as well as one or more other LEDs to create varying colors and color temperatures of white light. For example, red, green and blue

can be mixed with amber, white, UV, orange, IR or other colors of LED.

Amber and white LEDs can be mixed to offer varying colors and color temperatures of white. Any combination of LED colors can produce a gamut of colors, whether the LEDs are red, green, blue, amber, white, orange, UV, or other colors.” (Ex-1006 at ¶0194.)

Thus, one express combination contemplated by Mueller is the use of RGB with white and amber, rendering claim 10 unpatentable. For the same reason, claim 32 is also unpatentable. (POR at 37 (referring the reader to Patent Owner’s claim 10 analysis).)

C. Mueller renders obvious the use of daylight and tungsten white light (Claims 11, 33, 44)

Patent Owner unpersuasively argues Mueller fails to disclose “wherein among the colors the driver is configured to selectively produce are white light in each of daylight and tungsten temperature ranges,” as required by claim 11. (POR at 34-35.) Again, this identical argument was made in the POPR and nothing new has been presented. (Compare POPR at 45 with POR at 34-35.) This argument should be rejected.

First, Patentee admits that “[t]hese two ranges are very commonly used in the entertainment industry.” (POR at 35.) The ’224 patent makes the same admission. (Ex-1001 at 2:7-11 (“The two most frequently used and desired color temperature ranges in the lighting industry for stage and set lighting have been found to be, for example, 3050 to 3300 K for tungsten (warm white), and, for example, 5400 to 5600

K for daylight (cool white).”); *see also* Exhibit 1024 at 135 (“Color rendition is always relative to the color balance of film stock; either tungsten (3200K) or daylight (5600K).”).) The inventor agrees these color temperatures were well known in the industry. (Ex-1023 at 102:1-18; 155:21-156:22.)

Second, as explained in the Petition, Mueller discloses that its LED devices can selectively change temperature to produce any desired color temperature from approximately 700 to over 10,000 degrees Kelvin. (Petition at 66, citing Ex-1006 at ¶¶0062-63, 0194.) As shown above, tungsten and daylight fall within the range of 700-10,000°K and are the “two most frequently used and desired color temperature ranges in the lighting industry for stage and set lighting.” It is *prima facie* obvious to operate Mueller’s devices at any suitable color temperature within the 700-10,000°K color temperature range disclosed by Mueller, and it is especially obvious to operate at the “two most frequently used and desired color temperature ranges” of daylight and tungsten when Mueller’s device is used in “studio, theatre, TV [or] video” applications, as expressly contemplated by Mueller. (Ex-1006 at ¶0296.) “In the case where the claimed ranges ‘overlap or lie inside ranges disclosed by the prior art’ a *prima facie* case of obviousness exists.” MPEP § 2144.01, citing *In re Wertheim*, 541 F.2d 257 (CCPA 1976); *see also In re Peterson*, 315 F.3d 1325, 1330 (Fed. Cir. 2003)(“a prior art reference that discloses a range encompassing a somewhat narrower claimed range is sufficient to establish a *prima facie* case of

obviousness.”). For at least these reasons, claim 11 is unpatentable. For the same reason, claims 33 and 44 are also unpatentable.

V. Ground 1

A. Kit discloses the multiple colors limitation of the claim

Patent Owner argues that Kit fails to disclose limitation [1c] of claim 1 and related limitations of the other independent claims. (POR at 17-19, 23.) Specifically, Patent Owner argues that Kit fails to disclose the use of red, green, and blue LEDs in combination with a white LED. (*Id.* at 18-19.) Petitioner disagrees as it is clear Kit discloses and renders obvious a variety of LED color arrangements to a POSITA, one of which is the use of a white LED in combination with colored LEDs. (Petition at 18, citing Ex-1004-Kit at 20:50-63.) Nonetheless, the Board need not resolve this dispute as the Ground 2 prior art renders all Challenged Claims obvious.

B. A POSITA would have been motivated to combine the teachings of Kit and Ducharme

Patent Owner argues a POSITA would not combine the teachings of Kit and Ducharme, generically pointing out minor differences in their respective lighting goals. (POR at 20-22.) Patent Owner misapplies the law on obviousness. Specifically, “any need or problem known in the field of endeavor at the time of invention and addressed by the patent can provide a reason for combining the elements in the manner claimed.” *KSR*, 127 S.Ct. at 1742. Both Ducharme and Kit provide solutions for replacing fluorescent lighting technology with LED

technology, and a POSITA would have been motivated to combine their teachings. (Ex-1003-Holmes at ¶¶95-97.) Again, the Board need not resolve this dispute as the Ground 2 prior art renders all Challenged Claims obvious.

VI. Patentee’s objective indicia arguments are fundamentally lacking

Secondary indicia arguments require a nexus between the evidence and the claimed invention. *In re GPAC Inc.*, 57 F.3d 1573, 1580 (Fed. Cir. 1995). The evidence “must be tied to the novel elements of the claim at issue” and “reasonably commensurate with the scope of the claims.” *Institut Pasteur & Universite Pierre Et Marie Curie v. Focarino*, 738 F.3d 1337, 1347 (Fed. Cir. 2013). “The patentee bears the burden of showing that a nexus exists.” *WMS Gaming Inc. v. Int’l Game Tech.*, 184 F.3d 1339, 1359 (Fed. Cir. 1999). Here, Patentee failed to discharge that burden. Indeed, Patent Owner does not and cannot identify the “novel elements of the claim at issue” because no such novel elements exist.

Patent Owner asserts Quasar’s Rainbow products are co-extensive with the claims. (POR at 38.) The only evidence cited in support of this assertion are Patentee’s counsel’s (Mr. Hoffman) infringement contentions from the litigation. (POR at 38, citing Ex-2009 at ¶6 and Ex-2014.) Neither Mr. Hoffman’s Declaration nor his infringement contentions are sufficient to create a presumption of nexus at least because mere attorney argument cannot overcome the strong showing of obviousness presented by Petitioner. *Tokai Corp. v. Easton Enters., Inc.*, 632 F.3d

1358, 1370 (Fed. Cir. 2011); *Centripetal Networks, Inc. v. Cisco Sys., Inc.*, 847 Fed. Appx. 869, 880 (Fed. Cir. 2021) (nexus not established when patent owner’s “expert did not even create a claim-construction chart to map the products to each limitation”); *ZAP Surgical Systems, Inc. v. Elekta Ltd.*, Case IPR2019-01659, Paper 48 at 23 (PTAB Mar. 30, 2021) (“We are not prepared to accept Patent Owner’s conclusory assertions of nexus, which are: supported only by attorney arguments (not evidence); presented in the form of claim charts that are incorporated by reference rather than being included on Patent Owner’s Response; and dependent on hearsay descriptions....”). Mr. Hoffman’s analysis is also biased and lacks proper evidentiary basis.

The POR presents an analysis based on alleged marketing materials from Quasar. (POR at 39-42.) Again, this analysis is mere attorney argument, which is insufficient to show nexus, and Mr. Hoffman’s analysis is biased and lacks proper evidentiary basis.

The POR argues Quasar copied Colt’s RGBAW product based on testimony from one individual, Mr. Zhang (POR at 43, 48), who has admittedly lied under oath and with who Patent Owner does not even trust. Specifically, Patent Owner offers the testimony of a Mr. Zhang in the form of a Declaration allegedly signed in August 2018. (Ex-2015, the “Zhang Declaration.”) In the Zhang Declaration, Mr. Zhang swears, under oath, that “[i]n approximately 2013, I met a man named Ray

Gonzales....” (*Id.* at 2.)⁴ Less than two months later, Mr. Zhang was in the United States and was subject to sworn testimony in a deposition involving these same parties. (Ex-2023, the “Zhang Deposition.”) This time, Mr. Zhang testified the exact opposite:

“Q. Have you ever communicated with Steven Strong?

A. No.

Q. Have you ever communicated with a gentleman by the name of Ray Gonzalez?

A. No.” (Ex-2023 at 32:22:32:1.)⁵

Petitioner sought to cross-examine Mr. Zhang in these proceedings and Patent Owner failed to make Mr. Zhang available for cross-examination. This is apparently because Mr. Zhang and Mr. Macias (the alleged inventor) are embroiled in a legal

⁴ In addition to being false, the Zhang declaration also fails to identify the 224 patent, any specific claim limitations or any particular product that was copied.

⁵ Mr. Gonzales has never met Mr. Zhang (Ex-1025), and Mr. Macias could not explain the falsehoods in the Zhang Declaration. (Ex-1023 at 278:1-282:8). The Zhang Deposition is also impermissible hearsay under the Federal Rules of Evidence, and Mr. Zhang’s testimony cannot be used against Petitioner given the different subject matter at issue in this proceeding and the current posture between the parties.

dispute in California over Mr. Macias’ alleged failure to pay Mr. Zhang for product provided by Mr. Zhang to Mr. Macias. *See* Ex-1018, *Laysion, LLC v. Macias*, No. B319551, California Court of Appeals, Second District, Third Division, Jul 28, 2023 at 1 (“Laysion sued defendants [Colt LED] for breach of contract, fraud, and other claims stemming from defendants’ alleged agreement to purchase stage lighting equipment from Laysion.”). In that proceeding, Mr. Zhang submitted a declaration stating that Mr. Macias special ordered lighting equipment, and verbally promised to pay cash in full against invoice upon delivery.⁶ *Id.* at 2. Mr. Macias disagreed and specifically argued that “Zhang’s Declaration was false.” *Id.* at 3. While it is unclear who is telling the truth between Mr. Zhang and Mr. Macias, if anyone, what is clear is that the Board cannot reasonably rely on any evidence from Mr. Zhang in this proceeding, whether that be in the form of Mr. Zhang’s August 2018 Declaration (Ex-2015) or his deposition testimony of October 2018 (Ex-2023).⁷

⁶ It appears to be more than a coincidence that the Zhang Declaration from August 2018 coincided with an alleged \$1 million order from Mr. Macias. (Ex-1022 at 2 (“According to Zhang, in ‘late 2018 [to] early 2019,’ Macias special ordered 500 units of lighting equipment, at a price of \$2,000 per unit....”).)

⁷ Mr. Macias’ testimony is likewise not credible, as the court found in *Laysion v. Macias*. (Ex-1022 at 3 (“Without examining the contents of the email, the court

The POR argues Quasar copied Colt's bi-color product. (POR at 44-46.) These arguments are irrelevant to this IPR because the claims of the '224 patent do not relate to mere bi-color products—Colt's bi-color products are allegedly disclosed by different patents, which are the subject of different IPR proceedings. *See* IPRs2023-00613, -00614. Those arguments also have no merit as they rely on the Zhang Declaration and the Zhang Deposition, neither of which are credible as shown above.

Patent Owner's final argument is that Quasar's products were commercially successful. Patent Owner's arguments here span two sentences and cannot possibly establish a *prima facie* case. There is also no evidence of the relevant market. *Ormco Corp. v. Align Technology, Inc.*, 463 F. 3d 1299, 1312 (Fed. Cir. 2006). There is also no evidence of nexus to any alleged novel elements of the claims. *Fox Factor, Inc. v. SRAM, LLC*, 944 F.3d 1366, 1373-74 (Fed. Cir. 2019) (patentees bear the burden of "prov[ing] nexus by showing that the evidence of secondary considerations is the 'direct result of the unique characteristics of the claimed invention.'"); *Asyst Techs., Inc. v. Emtrak, Inc.*, 544 F.3d 1310 (Fed. Cir. 2008) ("failure to link...commercial success to the features of its invention that were not

found 'the Zhang declaration specific and credible for purposes of establishing waiver . . . when weighed against the Macias declarations.'").)

disclosed in [the prior art] undermines the probative force of the evidence pertaining to the success of [patent owner's products]'").

VII. Conclusion

For the above reasons, none of Patent Owner's arguments in response to the Petition are persuasive. Accordingly, the Board should issue a final written decision cancelling all Challenged Claims of the '224 patent.

Respectfully submitted,
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Date: May 16, 2024

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CERTIFICATE OF SERVICE

In accordance with § 42.6(e)(1), the undersigned certifies that on this 16th day of May 2024, the above Petitioner Reply was served on Patent Owner via email at the following email addresses:

- David Hoffman: dhoffman@nolanheimann.com
- Robert Katz: rkatz@katzfirm.com

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

Petitioner certifies that the word count in this Petitioner Reply is 5396 words, as counted by the word-processing program (Microsoft Word for Office 365) used to generate this Reply, where such word count excludes the claims listing, table of contents, mandatory notices, certificate of service, appendix of exhibits, and this certificate of word count. This Reply is in compliance with the 5,600 word limit set forth in 37 C.F.R. §42.24.

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