

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Hisense USA Corporation

Petitioner,

v.

Brightplus Ventures LLC,

Patent Owner

Case No. IPR2023-01401

U.S. Patent No. 8,941,331

**PATENT OWNER'S CONTINGENT MOTION TO AMEND UNDER 37
C.F.R. § 42.121**

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I. INTRODUCTION

Patent Owner Brightplus Ventures LLC (“Brightplus” or “Patent Owner”) respectfully submits this contingent request to substitute challenged claims 17 and 22 of U.S. Patent No. 8,941,331 (the “’331 Patent”). In the instituted trial, the Petitioner Hisense USA Corporation (“Hisense” or “Petitioner”) has challenged the patentability of claims 17-18 and 20-25 as obvious under 35 U.S.C. § 103, as follows:

- Claim 17 is obvious over the combination of Lys and Grootes in view of the Knowledge of a POSITA (Ground 1);
- Claims 18-20, and 22-25 are obvious over the combination of Lys, Grootes, and Xu in view of the Knowledge of a POSITA (Ground 2);
- Claim 21 is obvious over the combination of Lys, Grootes, Xu, and Blum in view of the Knowledge of a POSITA (Ground 3);
- Claim 17 is obvious over the combination of Muller and Grootes in view of the Knowledge of a POSITA (Ground 4);
- Claims 18 and 20 are obvious over the combination of Muller, Grootes, and Xu in view of the Knowledge of a POSITA (Ground 5);
- Claim 21 is obvious over the combination of Mueller, Grootes, Xu, and Blum in view of the Knowledge of a POSITA (Ground 6).

Patent Owner submits that this Motion satisfies the statutory and regulatory requirements for a motion to amend the claims under 35 U.S.C. § 316(d) and 37

C.F.R. § 42.121 because the proposed amendments: (i) do not enlarge the scope of the claims or introduce new subject matter; (ii) are responsive to at least one ground of unpatentability instituted in this proceeding; (iii) are supported by the disclosure of the originally-filed application; and (iv) are patentable over the closest known prior art Lys, Grootes, Xu, Blum, and Mueller references asserted in the Petition.

II. MOTION TO AMEND IS CONTINGENT

Patent Owner submits that this Motion is contingent upon a finding in a final written decision that challenged claims 17 and 22 are unpatentable. Specifically, Patent Owner requests the following contingencies:

- if claim 17 is found to be unpatentable, substitute proposed amended claim 26.
- if claim 22 is found to be unpatentable, substitute proposed amended claim 27.

III. MOTION TO AMEND PILOT PROGRAM

Patent Owner requests that this Motion be subject to the MTA Pilot Program (84 F.R. 9497). This proceeding was instituted on Mar 14, 2024, *see* Paper 7, and thus qualifies for the MTA Pilot Program effective on March 15, 2019. Patent Owner requests preliminary guidance from the Board on this Motion and whether to file a revised motion to amend. Patent Owner reserves its right to file a revised motion to amend subject to the Board's preliminary guidance.

IV. A REASONABLE NUMBER OF CLAIMS IS AMENDED

Under 37 C.F.R. §42.121(a)(3), a motion to amend may propose a reasonable

number of substitute claims for each challenged claim. Generally, it is presumed “that only one substitute claim would be needed to replace each challenged claim,” but that presumption may be rebutted upon a showing of need. 37 C.F.R. § 42.121(a)(3); *Lectrosonics, Inc. v. Zaxcom, Inc.*, IPR2018-01129, Paper 15 at 4-5 (PTAB Feb. 25, 2019). “An amendment under this subsection may not enlarge the scope of the claims of the patent or introduce new matter.” 35 U.S.C. § 316(d)(3); *Pulse Elecs., Inc. v. U.D. Elec. Corp.*, No. 3:20-cv-01676-BEN-DEB, 2021 U.S. Dist. LEXIS 69938, at *22 (S.D. Cal. 2021). Patent Owner submits that this Motion complies with the requirement because Patent Owner proposes 2 substitute claims for 2 original claims. None of the proposed substitute claims include new matter.

V. THE PROPOSED AMENDMENTS RESPOND TO A GROUND OF UNPATENTABILITY INVOLVED IN THIS TRIAL

Under 37 C.F.R. § 42.121(a)(2)(i), the amendment(s) to the claims must be responsive to at least one ground of unpatentability involved in the trial. In the Institution Decision, the Board determined—in regard to each respective Ground—that:

- (i) “In summary, based on the current record, and for purposes of this institution decision, we determine that Petitioner shows a reasonable likelihood that it would prevail in showing that claim 17 would have been obvious to one of ordinary skill in the art in view of Lys and Grootes.” (Institution Decision at 23)

- (ii) “We have reviewed the parties’ arguments regarding the combination of Lys, Grootes, and Xu rendering claims 18–20 and 22–25 obvious, and, on the current record, we find Petitioner’s arguments persuasive for purposes of institution.” (Institution Decision at 27-28)
- (iii) “Petitioner argues that the combination of Mueller and Grootes renders claim 17 obvious. Pet. 45–55. In order to provide guidance to the parties, we address the disputed issues for this ground. CTPG 6.” (Institution Decision at 28). In summary, the board agreed with the Petitioner that the combination of Mueller and Grootes renders claim 17 obvious at this stage in proceeding.

As set forth below, the amendments recited in proposed substitute claims 26 and 27 add further new limitations that render the claim patentable over the closest known prior art — The combination of Lys with Grootes; Lys and Grootes with Xu; Mueller with Grootes; and Blum cited in the Petition. Therefore, Patent Owner submits that the amendments recited in proposed substitute claims 26 and 27 are directly responsive to the grounds of unpatentability involved in the trial.

VI. THE PROPOSED AMENDMENTS DO NOT SEEK TO ENLARGE THE SCOPE OF THE CHALLENGED CLAIMS

The proposed amendments to the challenged claims of the ’331 Patent are listed in Appendix A below. The proposed amendments are indicated with underlining for the additional limitations that have been added and strikethroughs

for deletions. Under 35 U.S.C. § 316(d)(3) and 37 C.F.R. § 42.121(a)(2)(ii), a motion to amend may not seek to enlarge the scope of the challenged claims. This Motion satisfies the requirement because the amendments recited in proposed substitute claims 26 and 27 add further new limitations to the challenged claims and, thus, further narrow the scope of these claims.

With respect to substitute claim 26, independent claim 17 has been rewritten to include the addition of the claim limitation “a lighting bar assembly containing at least two rectangular tiles configured into a two-dimensional array” which further limits the claim’s scope to require a lighting bar assembly containing at least two rectangular tiles configured into a two-dimensional array.

With respect to substitute claim 27, original claim 22 has been substituted with original claim 17 and includes the following limitation “wherein the first and second strings of solid state lighting devices are covered with a wavelength conversion phosphor containing element and are configured to emit the first light that includes a combined light including a dominant wavelength corresponding to a blue color, said blue light interacting with the wavelength conversion phosphor containing element to produce a dominant wavelength corresponding to a yellow color” which further limits the scope of original claim 17 to the require a backlighting unit for a LCD display panel, and the first and second strings of solid state lighting devices being covered with a wavelength conversion phosphor containing element and are configured to emit the first light that includes a combined

light including a dominant wavelength corresponding to a blue color, where said blue light interacting with the wavelength interacts with the wavelength conversion phosphor containing element to produce a dominant wavelength corresponding to a yellow color.

Patent Owner submits that the proposed amendments recited in substitute claims 26 and 27 further narrow the scope of original challenged claims 17 and 22, and therefore comply with the statutory and regulatory requirements of 35 U.S.C. § 316(d)(3) and 37 C.F.R. § 42.121(a)(2)(ii)

VII. THE PROPOSED AMENDMENTS DO NOT INTRODUCE NEW SUBJECT MATTER

Under 35 U.S.C. § 316(d)(3) and 37 C.F.R. § 42.121(a)(2)(ii), a motion to amend may not introduce new subject matter. Patent Owner submits this requirement is satisfied because the claim limitations recited in proposed substitute claims 26 and 27 find support in the specification of the '331 Patent.

A. Proposed Substitute Claim 26 Is Supported By the Specification of the '331 Patent

Support for the amendment in this proposed substitute claim can be found in the '331 Patent at FIG 2; 7:34-42; 8:19-34; 8:53-67; 9:60-67. The '331 Patent's invention describes a backlight unit for an LCD display panel that comprises at least two-rectangular tiles configured into a two-dimensional array. For example, the specification states that "tiles 10 could be connected in a two-dimensional array in which tiles 10 are all located in the same plane". *Id.* at 8:53-60. The specification also notes that the tiles can be rectangular. *See id.* at 8:58-60 ("Furthermore the tiles

10 *need not be rectangular or square*”) (emphasis added). In addition, the specification shows that the tiles 10 may be assembled to form a larger lighting bar assembly 30”. *id.* at 8:19-20.

B. Proposed Substitute Claim 27 Is Supported By the Specification of the '331 Patent

Support for the amendment in claim 27 can be found in the '331 Patent at FIG 2; 7:34-42; 8:53-67. Specifically, the '331 Patent demonstrates a backlighting unit for a LCD display panel, and the first and second strings of solid state lighting devices being covered with a wavelength conversion phosphor containing element and are configured to emit the first light that includes a combined light including a dominant wavelength corresponding to a blue color, where said blue light interacting with the wavelength interacts with the wavelength conversion phosphor containing element to produce a dominant wavelength corresponding to a yellow color. For example, the specification states that “LEDs 16A-16D may be covered by an encapsulant 14, which may be clear and/or may include light scattering particles, phosphors, and/or other elements to achieve a desired emission pattern, color and/or intensity.” *Id.* at 7:34-38.

VIII. THE PROPOSED SUBSTITUTE CLAIMS 26-27 ARE PATENTABLE

A. Claim 26 Compared to Lys, Grootes, Xu, Mueller, and Blum

Lys is a published international application titled “Methods and Systems for Providing Lighting Systems.” Lys is directed to “high output linear lighting

systems” and “power systems for driving light sources in high-voltage environments” Lys, Abstract.

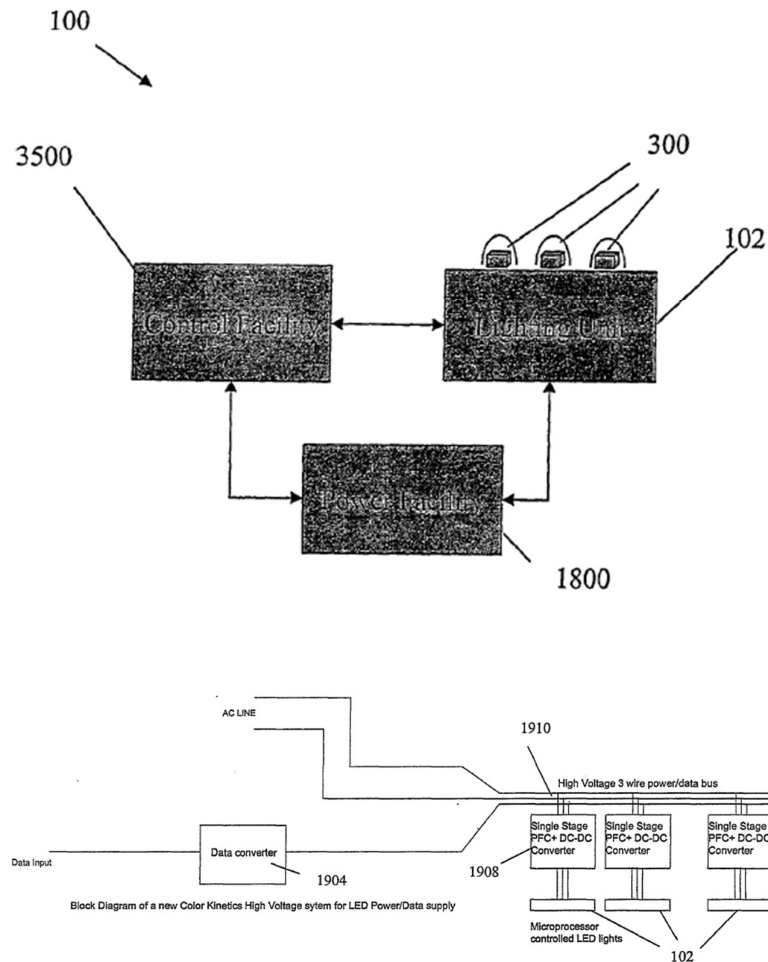


Fig. 17

As shown in Figs. 1 and 17 above, Lys discloses a Lighting Unit 102 and Power facility 1800 or 1908.

Lys is silent about a backlighting unit for an LCD display panel. As described in the abstract Lys is directed to high output linear systems and not backlighting units designed for LCD display panels. *Id.* In addition, Lys is silent about a

backlighting unit comprising a lighting bar assembly containing two rectangular tiles configured into a two-dimensional array.

This is the exact opposite of the invention of the '331 Patent, wherein the backlighting unit for the LCD display panel comprises at least two rectangular tiles configured in a two-dimensional array. *Id.*

Patent Owner submits that Lys, by being wholly silent on a backlighting unit for an LCD display panel comprising a lighting bar assembly containing at least two rectangular tiles configured into a two-dimensional array, does not render obvious proposed substitute claim 26, which specifically recites those elements.

Grootes is a published U.S. application titled “LED Light Source For Backlighting With Integrated Electronics.” Grootes is directed to an LED backlight structure and technique for setting the voltages and currents for the LEDs. Grootes, Abstract.

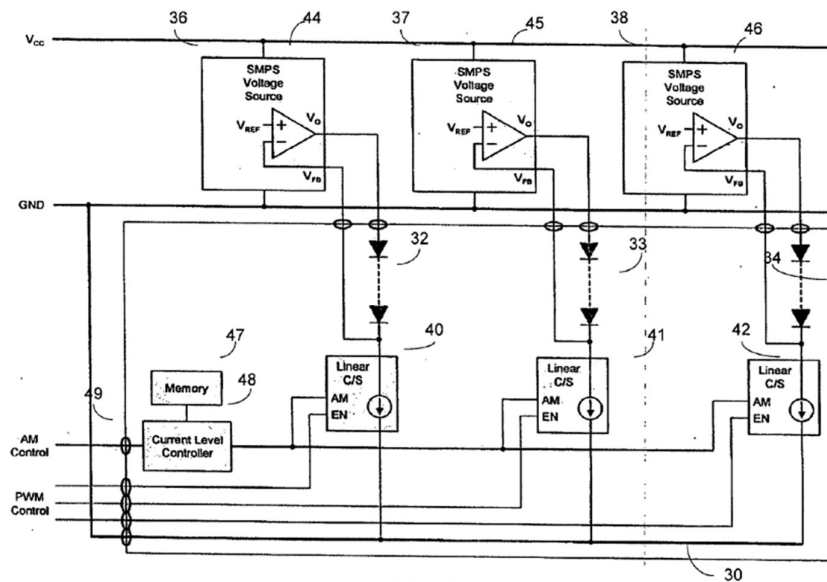


Fig. 4

As shown in Fig. 4 above, Grootes discloses “LEDs and current sources [] mounted on a single printed board.” Grootes, ¶0035.

Grootes is silent about a lighting bar assembly containing at least two rectangular tiles configured into a two-dimensional array. As shown above, Grootes only discloses a single PCB to which all the elements are mounted. This is the exact opposite of the invention of the '331 Patent, which contemplates multiple tiles arranged into a two-dimensional array wherein each tile comprises first and second strings of solid state lights configured to emit at least a first light and a second light. *Id.*

Patent Owner submits that Grootes, by being wholly silent on multiple rectangular tiles configured into a two-dimensional array, does not render obvious proposed substitute claim 26, which specifically recites those elements.

Xu is a published Chinese application titled “Driving Devices for Light-emitting Diode Series.” Xu is directed to a driving device for a light-emitting diode series comprising a direct current-direct current converter, a switch and a feedback circuit. Xu, Abstract.

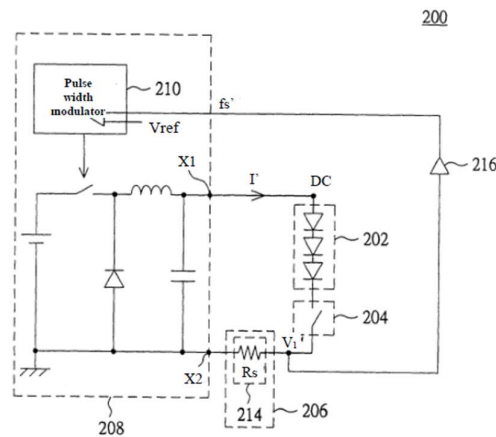


Figure 3

As shown in Fig 3 above, Xu discloses a circuit diagram for driving a light-emitting diode series. EX 1008, pgs. 8-9.

Xu is silent on a lighting bar assembly containing at least two rectangular tiles configured into a two-dimensional array. As shown above in Fig. 3, Xu recites the circuit diagram with no mention of a lighting bar or rectangular tiles comprises first and second strings of light emitting elements. This is the exact opposite of the invention of the ‘331 Patent, wherein the backlight unit comprises a lighting bar assembly containing at least two rectangular tiles configured into a two-dimensional array.

Patent Owner submits that Xu, by being wholly silent on a lighting bar assembly comprises at least two rectangular tiles configured into a two-dimensional array, does not render obvious proposed claim 26, which specifically recites those elements.

Mueller is a published U.S. Patent application titled “Controlled Lighting Methods and Apparatus.” Mueller is directed to a method and system for providing controlled lighting. Mueller, Abstract.

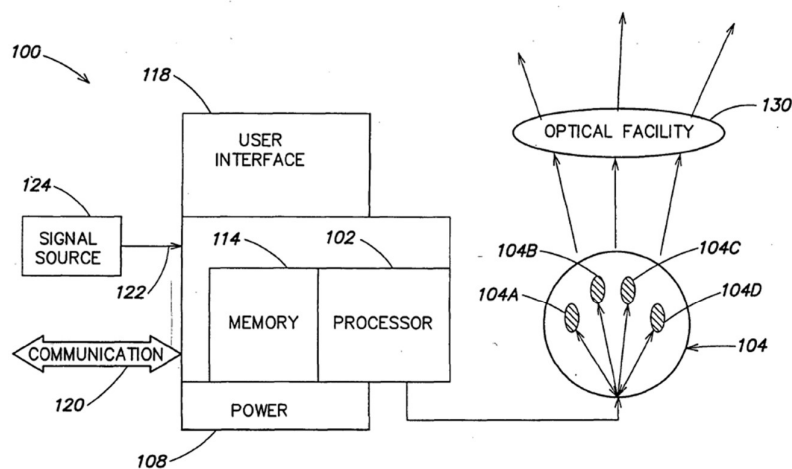


FIG. 1

As shown in Fig 1 above, Mueller discloses a lighting unit 100 comprising light sources 104, power sources 108, and processor 102. Mueller, ¶¶0180-0184.

Mueller is silent about a backlighting unit for an LCD display comprising a lighting bar assembly containing at least two rectangular tiles configured in a two-

dimensional array. Mueller makes one mention of an LCD display, however Mueller discloses a lighting unit that illuminates the LCD display from the front, “A lighting system 4208 with lighting units 100 can supply white and non-white color illumination of various colors, color temperatures, and intensities, to produce aesthetic, entertainment... to complement entertainment presentations on the display 4202”. Mueller, ¶0264. Mueller does not describe a system for backlighting an LCD display. Additionally, Mueller does not disclose two rectangular tiles configured into a two-dimensional array. This is the exact opposite of the invention of the ’331 Patent, wherein the backlight unit comprises a lighting bar assembly containing at least two rectangular tiles configured into a two-dimensional array. Patent Owner submits that Mueller, by being wholly silent on a backlighting unit for an LCD display comprising a lighting bar assembly containing at least two rectangular tiles configured in a two-dimensional array, does not render obvious proposed substitute claim 26, which specifically recites those elements.

Blum is a published U.S. Patent titled “Switched Leading Edge Replacement For Current Sense Signal” Blum is directed to a method and circuit for reducing the leading edge spike in a current sense signal. Blum, Abstract.

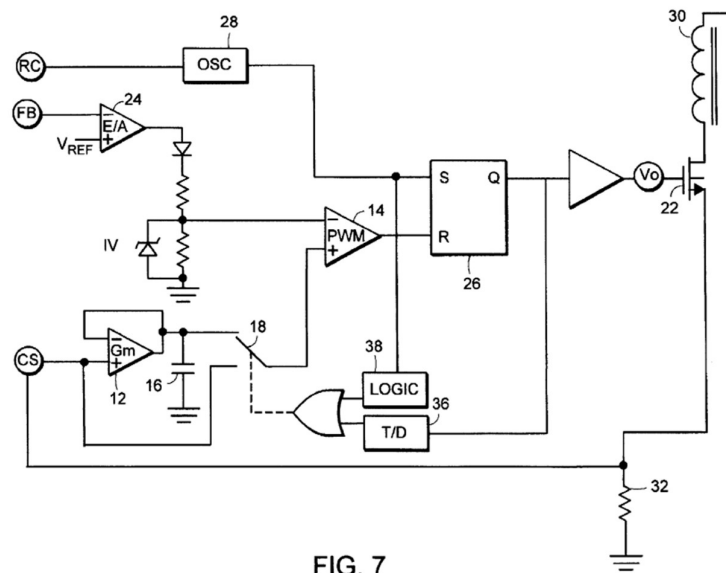


FIG. 7

As shown in Fig 7 above, Blum discloses a current mode controller circuit that reduces the leading edge spike in a current sense signal. Blum, 3:64-4:22.

Blum is silent about a backlighting unit for an LCD display comprising a lighting bar assembly containing at least two rectangular tiles configured in a two-dimensional array. This is the exact opposite of the invention of the '331 Patent, wherein the backlight unit comprises a lighting bar assembly containing at least two rectangular tiles configured into a two-dimensional array. Patent Owner submits that Blum, by being wholly silent on a backlighting unit for an LCD display comprising a lighting bar assembly containing at least two rectangular tiles configured in a two-dimensional array, does not render obvious proposed substitute claim 26, which specifically recites those elements.

B. Claim 27 Compared to Lys, Grootes, Xu, Mueller, and Blum

Lys is discussed above, and the summary provided is incorporated by

reference. Lys does not explicitly describe solid state lighting devices emitting a dominant wavelength corresponding to a blue color, where the blue light interacts with a conversion phosphor containing element to produce a dominant wavelength corresponding to a yellow color, nor does Lys describe a backlighting unit for an LCD display panel as stated above. Lys describes “blue LEDs” and “yellow LEDs”, but not a conversion phosphor containing element to produce a dominant wavelength corresponding to a yellow color from the blue light. Lys, pg. 37:14-24.

Patent Owner submits that Lys, by not disclosing solid state lighting devices emitting a dominant wavelength corresponding to a blue color, where the blue light interacts with a conversion phosphor containing element to produce a dominant wavelength corresponding to a yellow color or a backlighting unit for an LCD display panel, does not render obvious proposed substitute claim 27, which specifically recites those elements.

Grootes is discussed above, and the summary provided is incorporated by reference. Grootes is silent about solid state lighting devices emitting a dominant wavelength corresponding to a blue color, where the blue light interacts with a conversion phosphor containing element to produce a dominant wavelength corresponding to a yellow color. Grootes specifically discloses “[s]eries of strings of red LEDs 32, green LEDs 33, and blue LEDs 34”, but not a conversion phosphor containing element to produce a dominant wavelength corresponding to a yellow color from the blue light.

Patent Owner submits that Grootes, by being wholly silent on solid state lighting devices emitting a dominant wavelength corresponding to a blue color, where the blue light interacts with a conversion phosphor containing element to produce a dominant wavelength corresponding to a yellow color, does not render obvious proposed substitute claim 27, which specifically recites those elements.

Xu is discussed above, and the summary provided is incorporated by reference. Xu only discloses a circuit for driving a light-emitting diode series and is silent on solid state lighting devices emitting a dominant wavelength corresponding to a blue color, where the blue light interacts with a conversion phosphor containing element to produce a dominant wavelength corresponding to a yellow color, nor does Xu describe a backlighting unit for an LCD display panel as stated above.

Patent Owner submits that Xu, by being wholly silent on solid state lighting devices emitting a dominant wavelength corresponding to a blue color, where the blue light interacts with a conversion phosphor containing element to produce a dominant wavelength corresponding to a yellow color or a backlighting unit for an LCD display panel, does not render obvious proposed claim 27, which specifically recites those elements.

Mueller is discussed above, and the summary provided is incorporated by reference. Mueller is silent about a backlighting unit for an LCD display as stated above. Additionally, Mueller does not explicitly describe solid state lighting devices emitting a dominant wavelength corresponding to a blue color, where the blue light

interacts with a conversion phosphor containing element to produce a dominant wavelength corresponding to a yellow color. Mueller describes “blue LEDs” and “yellow LEDs”, but not a conversion phosphor containing element to produce a dominant wavelength corresponding to a yellow color from the blue light. Mueller, ¶0055.

Patent Owner submits that Mueller, by not disclosing solid state lighting devices emitting a dominant wavelength corresponding to a blue color, where the blue light interacts with a conversion phosphor containing element to produce a dominant wavelength corresponding to a yellow color or a backlighting unit for an LCD display panel, does not render obvious proposed substitute claim 27, which specifically recites those elements.

Blum is discussed above, and the summary provided is incorporated by reference. Blum discloses a current mode controller circuit and is silent about solid state lighting devices emitting a dominant wavelength corresponding to a blue color, where the blue light interacts with a conversion phosphor containing element to produce a dominant wavelength corresponding to a yellow color, nor does Blum describe a backlighting unit for an LCD display panel as stated above.

Patent Owner submits that Blum, by being wholly silent on solid state lighting devices emitting a dominant wavelength corresponding to a blue color, where the blue light interacts with a conversion phosphor containing element to produce a dominant wavelength corresponding to a yellow color or a backlighting unit for an

LCD display panel, does not render obvious proposed substitute claim 27, which specifically recites those elements.

C. The Advantages of the Amendments Recited in Proposed Substitute Claims 26 and 27

There are many advantages to the features recited in the amendments set forth in this Motion.

- One significant advantage of the amendment recited in claim 26 is that using multiple tiles with the current supply circuits allows for better operation of the light emitters resulting in improved light quality and better heat dissipation. (See, ‘331 Patent at 2:1-63; 6:34-49)
- One significant advantage of the amendments recited in claim 27 is that wavelength conversion phosphor containing element can improve the light quality of the first light and can help accommodate for differences of wavelength output by the string (*see*, ‘331 Patent at 9:24-42) and to achieve a desired emission patten, color and/or intensity (*id.* at 7:34-38).

IX. PRIORITY

All of the proposed substitute claims contain subject matter included in and supported by the original disclosure of the ‘331 Patent and, therefore, claim priority to the original disclosure.

X. REQUEST FOR PRELIMINARY GUIDANCE

As discussed in the call with the Board, Patent Owner requests preliminary guidance from the Board. Patent Owner understands this will be provided by a date

four weeks after Due Date 2.

XI. CONCLUSION

For the reasons set forth herein, Patent Owner submits that proposed substitute claims 26 and 27 satisfy all of the statutory requirements for a motion to amend set forth in paragraphs (1) and (3) of 35 U.S.C. § 316(d) and paragraphs (a)(1), (a)(2), (a)(3), (b)(1) and (b)(2) of 37 C.F.R. § 42.121 and respectfully requests the Motion be granted contingent upon a finding that the challenged claims 17 and 22 are unpatentable.

Respectfully Submitted,

/Neal Massand /
Neal Massand (Reg. No.
54,296)
nmassand@nilawfirm.com
Ni, Wang & Massand, PLLC
8140 Walnut Hill Lane, Suite
500
Dallas, Texas 75231
(t) (972) 331-4600
(f) (972) 314-0900

CERTIFICATE OF SERVICE

Pursuant to 37 C.F.R. § 42.6(e), the undersigned certifies that the above-captioned Mandatory Notice was served on counsel of record for the Petitioner by filing this document through the Patent Review Processing System as well as by delivering a copy via electronic mail to:

MFerrario@kilpatricktownsend.com (Lead Counsel)
MMorlock@kilpatricktownsend.com (Back-Up Counsel)

Dated June 12, 2024

/Neal Massand/
Neal Massand (Reg. No. 54,296)

APPENDIX A

(Proposed Amendments)

17. (original) A lighting system, comprising:

a lighting panel including at least first and second strings of solid state lighting devices that are respectively configured to emit at least a first light and a second light, respectively;

at least first and second current supply circuits coupled to the at least first and second strings of solid state lighting devices, respectively, and configured to supply an on-state drive current to a respective one of the first and second strings of solid state lighting devices; and

a pulse width modulation (PWM) controller that is coupled to the first current supply circuit and the second current supply circuit and that is configured to generate, for each of the first current supply circuit and the second current supply circuit, a first PWM control signal and a second PWM control signal that are supplied to the each of the at least first and second strings.

22. (original) The lighting system according to claim 17,

wherein the first string of solid state lighting devices are coated with a wavelength conversion phosphor and are configured to emit the first light that includes a combined light including a dominant wavelength corresponding to a blue color and a dominant wavelength corresponding to a yellow color, and

wherein the second string of solid state lighting devices are configured to emit the second light that includes a dominant wavelength corresponding to a red color.

26. (proposed substitute for Claim 17) A lighting system, comprising:

a lighting panel including a lighting bar assembly containing at least two rectangular tiles configured into a two-dimensional array;

wherein each tile comprises at least first and second strings of solid state lighting devices that are respectively configured to emit at least a first light and a second light, respectively;

at least first and second current supply circuits coupled to the at least first and second strings of solid state lighting devices, respectively, and configured to supply an on-state drive current to a respective one of the first and second strings of solid state lighting devices; and

a pulse width modulation (PWM) controller that is coupled to the first current supply circuit and the second current supply circuit and that is configured to generate, for each of the first current supply circuit and the second current supply circuit, a first PWM control signal and a second PWM control signal that are supplied to the each of the at least first and second strings.

27. (propose substitute for Claim 22) ~~The lighting system according to claim 17,~~

~~wherein the first string of solid state lighting devices are coated with a wavelength conversion phosphor and are configured to emit the first light that includes a combined light including a dominant wavelength corresponding to a blue color and a dominant wavelength corresponding to a yellow color, and~~

~~wherein the second string of solid state lighting devices are configured to emit the second light that includes a dominant wavelength corresponding to a red color.~~

A lighting system, comprising:

at least first and second strings of solid state lighting devices that are respectively configured to emit at least a first light and a second light, respectively;

at least first and second current supply circuits coupled to the at least first and second strings of solid state lighting devices, respectively, and configured to supply an on-state drive current to a respective one of the first and second strings of solid state lighting devices;

wherein the first and second strings of solid state lighting devices are covered with a wavelength conversion phosphor containing element and are configured to emit the first light that includes a combined light including a dominant wavelength corresponding to a blue color, said blue light interacting with the wavelength conversion phosphor containing element to produce a dominant wavelength corresponding to a yellow color; and

a pulse width modulation (PWM) controller that is coupled to the first current supply circuit and the second current supply circuit and that is configured to generate, for each of the first current supply circuit and the second current supply circuit, a first PWM control signal and a second PWM control signal that are supplied to the each of the at least first and second strings.