

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. IPR2023-01385

U.S. Patent No. 7,690,812

**PATENT OWNER'S REVISED 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 revised contingent request to substitute challenged claims 1, 12, 15, and 18 of U.S. Patent No. 7,690,812 (the “’812 Patent”). Petitioner Hisense USA Corporation (“Hisense” or “Petitioner”) has challenged the patentability of claims 1-7, 10-12, 14-21, and 23 as obvious under 35 U.S.C. § 103, as follows:

- Claims 25-28 are obvious over Kim in view of Sharp.
- Claims 25-28 are obvious over Tabito alone or by Chou in view of Tabito.
- Claims 25-28 are obvious over Liu alone or by Chou in view of Liu
- Claims 25-28 are obvious over Lee in view of Sharp and the knowledge of a POSITA
- Claims 25-28 are obvious over Chou in view of the knowledge of a POSITA

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 prior art.

II. MOTION TO AMEND IS CONTINGENT

Patent Owner submits that this revised Motion is contingent upon a finding in a final written decision that challenged claims 1, 12, 15, and 18 are unpatentable. Specifically, Patent Owner requests the following contingencies:

- if claims 1 and 12 are found to be unpatentable, substitute proposed amended claims 25 and 26.
- if claims 15 and 18 are found to be unpatentable, substitute proposed amended claims 27 and 28.

III. A REASONABLE NUMBER OF CLAIMS ARE 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). In this Revised Motion to Amend, Patent Owner proposes no more than 1 substitute claim for each challenged claim 1-7, 10-12, 16-17, and 19. Hence, patent Owner proposes a reasonable number of substitute claims. See Prelim. Guidance at 4.

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

While Patent Owner submits new and additional limitations in Claims 25, as well as additional amendments 26-37, the Board's Preliminary Guidance is still applicable to this Revised Motion to Amend. For example, the Board recognized that "proposed substitute claims 25-28 recite new limitations, and new combinations of limitations, that directly respond to the grounds of unpatentability involved in the trial" (see, Paper 18 pg. 4). Similarly, Patent Owner has incorporated into this Revised Motion to Amend arguments as to why the art cited in Petitioner's original grounds¹ and the additional art cited in Petitioner Opposition to Patent Owner Contingent Motion to Amend does not teach the limitations in proposed substitute claims 25-37. Additionally, all of the proposed substitute claims are to modify the claims included in Petitioner's original grounds, namely claims 1-7, 10-12, 16-17, and 19.

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

While Claims 25-37 include new limitations not previously presented, Patent Owner submits the commentary provided in the Board's Preliminary Guidance is still applicable to this Revised Motion to Amend. For example, proposed substitute independent claim 25 retains all limitations of corresponding original claim 1,

¹ Petitioner did not submit original prior art reference Starry (Ex. 1006) in its opposition to PO's MTA, therefore Patent Owner is not addressing that particular reference in this Revised MTA.

respectively, and further includes additional limitations as compared to the original claim. As the Board stated in its Preliminary Guidance, the additional limitations narrow the original claim and do not enlarge the scope of the claims of the challenge patent. (See, Paper 18 at pgs. 4-5). Consequently, even though proposed dependent claims 26-37 may have certain limitations removed, proposed dependent claims 26-37 do not enlarge the scope of the challenged patent. (See, Paper 18 at pg. 5). Also, See *Lectrosonics v. Zaxcom*, IPR2018-01129, Paper 15 at 6–7 (PTAB, Feb. 25, 2019) (“A substitute claim will meet the requirements of § 42.121(a)(2)(i) and (ii) if it narrows the scope of at least one claim of the patent, for example, the challenged claim it replaces, in a way that is responsive to a ground of unpatentability involved in the trial.” (emphasis added)).

VI. THE PROPOSED AMENDMENTS DO NOT INTRODUCE NEW SUBJECT MATTER

VII. THE SUBSTITUTE CLAIMS DO NOT INTRODUCE NEW SUBJECT MATTER

All of the substitute claims are supported by the disclosure of the ‘812 Patent.

A. Substitute Claim 25:

Substitute Claim 25 is amended as follows:

- i. a support member comprising a first surface and a second surface and a substrate comprising a first surface and a second surface mounted on the first surface of the support member such that the second surface of the substrate is in direct contact with the first surface of the support member and

the second surface of the substrate faces away from the first surface of the support member; a plurality of solid state lighting elements mounted on a the second surface of the substrate;

These amendments find support in Figs. 3 and 4; 5:36-37.

- ii. a reflector sheet on and in direct contact with the second surface of the substrate and configured to overlap in part with a second reflector sheet and configured to conform to a shape of a plurality of protruding features on the solid state lighting tile;

These amendments find support in 2:20-22; 7:18-21; Figs. 5A and 5B;
7:64-8:3.

- iii. wherein the protruding features are separate from and not in contact with the solid state lighting elements;

These amendments find support in Figs. 3 and 4

- iv. wherein the reflector sheet comprises a plurality of circular apertures; wherein each of the plurality of apertures is configured to surround a corresponding one of the solid state lighting elements; wherein the reflector sheet does not contact the solid state lighting elements; and

These amendments find support in Fig. 6; 7:25-29, as well as original claims 12 and 18, Prelim. Guidance at 5,

- v. wherein the reflector sheet comprises a plurality of perforation apertures, the perforation apertures being separate and distinct from the apertures configured to surround the solid state lighting elements.

These amendments find support in Fig. 6; 7:29-32.

B. Substitute Claims 26 and 34:

- i. Claim 26: wherein each of the solid state lighting elements includes a plurality of LED emitter chips configured to emit a single wavelength.

These amendments find support in Figs. 3 and 4; 4:56–58; 5:54–56.

- ii. Claim 34: wherein each of the solid state lighting elements comprises a dome shaped element disposed over the plurality of LED emitter chips.

These amendments find support in Figs. 3, 4, 5A, and 5B.

C. Substitute Claims 27-30, and 32-33:

- i. Claim 27: the plurality of perforation apertures are disposed distally from the solid state lighting elements and protruding features.
- ii. Claim 28: the plurality of perforation apertures are circular in shape.
- iii. Claim 29: the plurality of perforation apertures are configured to reduce distortion of the reflector sheet.
- iv. Claim 30: the plurality of perforation apertures are configured to provide thermal expansion zones for the reflector sheet.

- v. Claim 32: the plurality of perforation apertures are configured to reduce distortion of the reflector sheet due to thermal expansion.

These amendments find support in 7:25-38 and Fig. 6.

- vi. Claim 33: the plurality of perforation apertures are configured to ensure that the reflector sheet conforms to the shape of the support member.

These amendments find support in the citations above as well as 5:63-65.

D. Substitute Claims 31:

- i. comprising a mechanical fastening device configured to pass through the reflector sheet and the first surface of the support member and thereby attach the reflector sheet to ~~the surface of the substrate~~ the support member.

These amendments find support in Fig. 5A; 2:13-16; 6:12-17.

E. Substitute Claim 35 and 36:

- i. Claim 35: the solid state lighting tile comprises a second and third reflector sheet mounted on and in direct contact with the second surface of the substrate.
- i. Claim 36: the third reflector sheet overlaps in part with the second reflector sheet.

These amendments find support in Figures 5A and 5B, which refer to reflector sheets 24C and 24D, indicating more than one reflector

sheet. The reflector sheets overlap at edge 36 and adjacent edge 38.

Also, see 1:63-2:3.

F. Substitute Claim 37:

- i. wherein the reflector sheet is flexible.

These amendments find support at 6:18-21; 6:25-36; Fig. 4

VIII. THE PROPOSED SUBSTITUTE CLAIMS ARE PATENTABLE

G. Kim in view of Sharp is not Invalidating

Proposed substitute claims 25-37 address Petitioner's opposition to Patent Owner's Motion to Amend, the additional prior art references submitted therein, and the deficiencies identified by the Board in its Preliminary Guidance. As illustrated below, the combination of Kim and Sharp does not include each and every limitation of proposed substitute claims 25-37.

The combination of Sharp and Kim does not disclose:

- 1) A plurality of reflector sheets that overlap and conform to surface protrusions (claims 25, and 35-37);

While, per the Board's Preliminary Guidance, "Kim's reflector sheet 226 is configured to conform to a shape of the protruding feature 238" it is not described in the disclosure of Kim as a plurality of overlapping reflector sheets per claim 25, and 35-37. Both Sharp and Kim teach a single, rigid film. Both refer throughout to a "reflection sheet" and a "reflective sheet" respectively in the singular throughout

their disclosures; none of their figures depict multiple reflector sheets. Therefore, the combination does not teach a plurality of reflector sheets.

- 2) A plurality of perforations in the reflector sheet that are distinct from the apertures and do not surround the solid state emitters (claims 25-37);

Kim only discloses holes that act as apertures for LEDs (See Figs. 1, 2, 3, 4A, and 2:2-8, 4:33-38). Similarly, Sharp only discloses apertures for the LEDs (See Figs. 2, 3, and 6; ¶0046). Neither Kim nor Sharp disclose a plurality of perforations that are distinct from the solid-state lighting apertures in their reflector sheet or reflection sheet, respectively. Kim does not address the issues of thermal expansion or distortion of the reflection sheet in its disclosure. Sharp only discloses that the light emitting diode through holes 31 are larger than the LED to accommodate thermal expansion, not separate perforations that handle distortion in the reflector or provide thermal expansions zones. Additionally, a POSITA would not find the combination to teach an element that does not exist in either reference, specifically perforations that are separate from the LED apertures. Thus, the combination of Sharp and Kim does not disclose the limitations of claims 25-37.

- 3) A plurality of LED emitter chips configured to emit a single wavelength and a dome shaped element disposed over the plurality LED emitter chips (claims 26 and 34);

Neither Kim nor Sharp disclose a plurality of LED emitter chips or a dome

shaped element disposed over the plurality of LED emitter chips. Kim and Sharp are generally silent as to the structure of their light emitting elements.

- 4) The plurality of perforations being circular and being configured to accommodate thermal expansion on the part of the reflector sheet or the shape of the supporting member (claims 27, 28, 29, 30, 32, and 33).

Neither Kim nor Sharp disclose a plurality of perforations intended to provide thermal expansion zones for the reflective elements. While the elliptical through holes of Sharp are disclosed to provide areas for thermal expansion, they are surrounding the diodes as opposed to being located distally from the diodes as per claim 27. A POSITA would not be motivated to adjust the elliptical shape of Sharp to a circular shape. Sharp is directed to either an “elliptical, rectangular, or oval” through hole. (See ¶0012) and teaches away from using round through holes, “if the through-hole 31 is completely round in shape, the circumferential surface of the through-hole 31 into which the displaced light emitting diode 1 is inserted come into contact with the circumferential surface of the displaced light emitting diode 1... and creased appear on the reflection sheet... Note that if the through-hole is completely round in shape and the dimension between the circumferential surface of the through-hole and the circumferential surface of the light emitting diode 1 is relatively large... the light reflection efficiency is poor.” (See ¶0058). Sharp teaches away from circular through holes that are close to or far away from the circumferential surface of the LEDs. It can be appreciated that the perforations in

the '812 Patent allow for the LED apertures to not experience thermal expansion, which allows for improved reflector design and better lighting efficiency over the combination of Sharp and Kim.

- 5) The solid state lighting tile comprising second and third flexible reflector sheets (Claims 35-37)

Kim and Sharp only describe a single reflective sheet and do not refer to multiple reflective sheets (see Kim at 2:2-7, 2:15-16, 4:33-43 and Sharp at Figs. 2, 3, and 6; ¶0051). Kim's does not disclose a flexible sheet and the cutout/concave portion 224 of Figure 3 would lead one to believe that it is rigid. Sharp discloses that its reflection sheet 3 is composed of "one sheet of synthetic resin." (Sharp 0051). Synthetic resins are generally understood to be viscous substances that convert into rigid polymers through the process of curing. Thermal expansion occurs in rigid materials such as synthetic resins or metals (See Sharp at ¶0062), as well as thin mutable materials and is not a measure of the flexibility of a sheet. While Sharp discloses that the reflector undergoes thermal expansion, it does not teach the reflector to be flexible. One example of a flexible reflector is shown in Fig. 4 of the '812, wherein the reflector conforms to the shape of a protruding feature and in Figures 5A and 5B wherein edge 36 conforms to be overlapped by adjacent edge 36; this disclosure indicates a certain amount of pliability in the reflector sheet. Thus, the combination does not disclose multiple flexible reflector sheets as recited in claims 35 and 37 or overlapping reflector sheets as recited in claim 36.

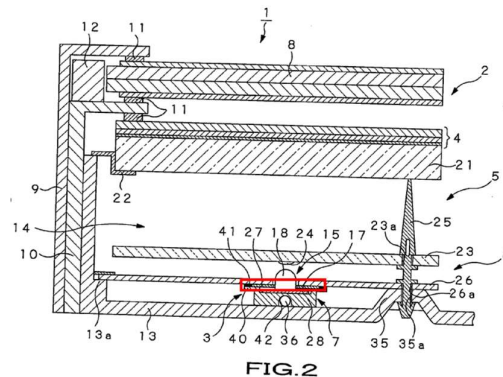
For the foregoing reasons, the combination of Kim and Sharp does not render obvious claims 25 – 37.

H. Tabito, Alone or in Combination with Chou, is Not Invalidating

First, as the Board recognized, “Tabito’s reflecting plate 26 does not appear to be a ‘reflector sheet configured *to conform to a shape* of a protruding feature’ as recited in claim 25”, specifically that “Tabito’s flat and rigid reflecting plate 26 covers the stacked layers of the liquid crystal display apparatus... such that the *shape of Tabito’s reflecting plate 26 is not adjusted or manipulated in any way to fit, accommodate, or be married in some shape to Petitioner’s alleged protruding features.*” (Prelim. Guidance at 16-17). Second, the set screw 39 is not a protruding feature positioned on the solid state lighting tile as required by claim 25. As stated in PO’s Responsive Claim Construction brief, the term “conforms”, under either a plain and ordinary construction, or alternatively, “to provide cover and relief” means that the reflector accommodates, in some way, a shape of the protruding feature. (See, Paper 22 at 1-2). The reflecting plate 26 in Tabito rests above the set screw 39 and does not accommodate a shape of the set screw 39. Petitioner offers that “Tabito’s reflector sheet 26 is configured to conform in the same way as the reflector sheet in FIG. 3 of the ’812 Patent.” (*Id.* at pg. 11). This is incorrect as the reflector in the ’812 conforms to a shape of a protruding feature as illustrates in Figs. 3 and 4, which is distinct from the flat, rigid reflector taught by Tabito.

Tabito teaches that “the reflecting section 6 is made up by a large-sized

reflecting plate 26 and a large number of reflective sheet pieces 27, provided from one light emitting 15 to another.” (Tabito at [0067]) Tabito’s teaches a single reflecting plate 26 that covers the entire display apparatus and contains six rows of guide openings 31 (*Id.* at [0069]). Therefore, Tabito’s reflecting plate 26 element, does not meet the limitations in claims 25, and 35-37 which require multiple reflector sheets. With respect to the reflective sheet pieces 27, they are not directly on a first surface of the back panel 13 (as shown in Fig. 2 below). Instead, the reflective sheet pieces 27 are mounted on the reflecting plate supports 40 (*Id.* at [0105]). Thus, the reflective sheet pieces 27 do not meet the requirements of proposed substitute claims 35-37, which ultimately depend on claim 25 and include the limitation that the multiple reflectors directly contact the second surface of the substrate. Additionally, Tabito does not disclose that the reflective sheet pieces 27 overlap the adjacent edge of different reflective sheet piece as required by proposed substitute claim 36.



Petitioner equates “[the] back panel 13” of Tabito to the “substrate” of the ‘812 Patent (Paper 19 at pg. 9). As explained by Petitioner, the LED is “mounted on an interconnection substrate (17) and is mounted in this state on a heat dissipating plate (28)” (*Id.* at pg. 10) Therefore, Tabito does not anticipate an LED mounted to the second surface of the substrate as described in claim 25.

Tabito does not disclose a plurality of LED emitter chips that emit a single wavelength, or a dome shaped element disposed over those LED emitter chips, therefore, Tabito does not disclose the limitations required by claims 26 or 34. Tabito does not disclose a plurality of perforations that are distinct from the LED apertures in the reflector that are configured to reduce distortion or provide thermal expansion zones for the reflector sheet as required by claims 25, 29-30, and 32.

Chou does not teach the reflector as recited in claims 25 (As discussed *infra*). As the Board described, “Petitioner also has not shown how its reliance on Chou would remedy the above-noted deficiencies of Tabito” (Prelim. Guidance at 18). Additionally, Chou, as discussed *infra*, does not teach the reflector sheet as recited in claim 25.

I. Liu Alone or in Combination with Chou

Liu teaches a flat reflective board 27 that is located over the entire backlight module 2 (See, Fig. 2A). As stated by the Board, “All of Petitioner’s identified ‘protruding features’ (Liu’s rigid metal board 23 and fasteners 241 and 242) are in backlight module 2, which is then covered by the flat reflective board 27 – such that

the shape of the reflective board 27 is not adjusted or manipulated in any way to fit, accommodate, or be married in some shape to, the alleged protruding features.” (Prelim. Guidance at 19). Additionally, Liu does not teach a plurality of perforation apertures. Accordingly, the disclosure of Liu does not render proposed substitute claims 25-37 obvious. Chou does not teach the reflector as recited in claim 25 (As discussed *infra*).

The combination of Liu and Chou does not teach claims 25-37. As stated by the Board, neither Liu or Chou disclose the reflector sheet as recited in claim 25. (Prelim. Guidance at 20).

J. Lee in view of Sharp is not Invalidating

A POSITA would not combine Lee and Sharp. As recognized by the Board, Petitioner has not explained “why a skilled artisan would cut *apertures* into Lee’s underlying continuous reflecting plate 223... why a skilled artisan would consider the extra effort of cutting such apertures to be worthwhile in Lee’s Figure 2 arrangement... why a skilled artisan would further modify Lee’s reflecting 222 *to not contact* lamps 221a.” (Prelim. Guidance at 21).

Lee discloses a reflecting plate 223 that is a continuous layer under and contacting all lamps 221a (see Fig. 1 and 2). Petitioner has not offered convincing evidence as to why a POSITA would be motivated to modify Lee’s reflecting plate 223 to include apertures, to not contact the reflecting plate 223 or what such a modification would accomplish. The Board makes a similar observation stating that,

“Petitioner’s proposed modifications of Lee... are significant modifications that are not justified by- and in fact appear to frustrate- Lee’s disclosed arrangement of ‘reflecting plate 223 for reflecting light towards the liquid crystal display panel assembly 210’.” (Prelim. Guidance at 21).

Petitioner argues that the reflective sheet 226 of Kim should be modified by Sharp to prevent it from contacting the pointlike LEDs, but then argues that the reflective plate 223 of Lee should be modified by Sharp to prevent it from contacting elongated tubular lamps. Sharp itself only pertains to reflector surrounding pointlike LEDs. Petitioner has not offered any explanation as to why a POSITA would look to modify Lee with Sharp’s apertures. (Prelim. Guidance at 21).

As discussed below the references, independently, do not disclose the limitations in claims 25-37. Therefore, even if a POSITA combined the two references, the resulting combination would not render the amended claims obvious.

Also, Petitioner states that the LCD panel contains a “light source such as an LED” and equates the bottom chassis 224 of Lee to the substrate in claim 25 (Paper. 16 at 21). Petitioner provides two citations that support Lee’s disclosure of LEDs, Ex. 1018 at [0015] which does not mention an LED, and Ex. 1015 at ¶40 which relies on unsubstantiated expert testimony. Neither citation provides credible evidence as to how or why Lee discloses a solid state light emitter. On the contrary, Fig. 1 of Lee illustrates a plurality of lamps 221a (*Id.* at [0048]). The lamps in Lee are akin to cathode fluorescent lamps, “A relatively high voltage is applied to the

hot electrode of the lamp, and a relatively low voltage is applied to the cold electrode of the lamp... [a]n electromagnetic noise is radiated in all directions due to the high voltage applied to the lamp.” (*Id.* at [0102]-[0104]). LEDs do not require high voltages or have cold/hot electrodes; thus, Lee does not disclose that the lamps are LEDs. Thus, Lee does not disclose the plurality of LED emitter chips element described by claims 26 and 34.

Petitioner claims that the bottom chassis 224 of Lee is equivalent to the substrate limitation of claim 25, and that the reflecting plate 223 is equivalent to the reflector sheet of claims 25, 27-30, 32, and 35-37. Lee’s reflecting plate, however, is a continuous layer under lamps 221a (see Figs. 1 and 2). Accordingly, lamps 223 are mounted on top of the reflecting plate 223 and are not mounted on a second surface of chassis 224, which is required by claim 25.

In addition, Lee only discloses a single reflecting plate, rendering proposed substitute claims 25, and 35-37 not obvious.

Lee does not disclose any apertures or perforations that are distinct from the apertures in the reflecting plate 223, and, as discussed *infra*, nothing in Petitioner’s Opposition demonstrated why a POSITA would be motivated to include such elements. Thus, Lee does not disclose the limitations recited in claims 25, 27-30 and 32-33.

Sharp only discloses a gap between the reflecting plate and the LEDs and lacks written description of perforation apertures that are separate from the LED

apertures, LED apertures that are circular, a thin, flexible reflective sheet, a solid state light emitter comprising a plurality of emitter chips or a dome, and multiple reflectors. Sharp, therefore, does not make up for the deficiencies identified above with respect to Lee.

K. Chou is not Invalidating

As argued in Patent Owners’s original MTA, Chou is silent about an aperture not contacting the solid state lighting element or that the protruding feature is separate and positioned away from the lighting element. The Board agreed (Prelim. Guidance at 23). Both elements are included in claim 25. Petitioner, also argues that a “POSITA would be motivated to increase the angle θ such that the reflector sheet does not contact the solid state light element” (Paper 16 at 24). This argument departs from Chou’s disclosure that the reflector sheet is taught to contact/about the LEDs at the edge of the apertures formed above the LEDs (See, Ex. 1005, 3:31-36, 4:29-36, Figs. 3A-3B, 8). To make up for this deficiency, Petitioner relies on its expert’s argument that it would have been obvious to leave space between the reflector and the LED. As recognized by the Board, Petitioner’s expert testimony “provides an insufficient underlying factual basis for Petitioner’s obviousness contentions” (Prelim. Guidance at 24). Petitioner’s arguments contradict Chou’s stated goal of improving the covering area of the reflector sheet 300, that the reflector sheet is deformed when placed over the underlying light sources and that the reflector sheet should be positioned snug against the LEDs. (Prelim. Guidance

at 24-25). Patent Owner has addressed Petitioner's response to the Board's Preliminary Guidance with respect to Chou (See, Paper 22 at 3-9). Chou does not teach an aperture that does not contact a solid state emitter or a protruding feature that is separate and positioned away from the lighting element.

Chou's Fig. 1A does not teach the limitations of claim 25 since Fig. 1A discloses a flat sheet that is not configured to conform to the shape of any protruding feature. Petitioner does not offer an explanation as to why or how a POSITA would modify Fig. 3A based on Fig. 1A, especially since Fig. 1A is an undesirable reflector sheet that needs to be improved. (Prelim. Guidance at 25).

Chou does not teach the additional limitations found in proposed substitute claims 25-37. Chou does not disclose perforations apertures distinct from the LED apertures (claims 25, 27-30, and 32-33), each solid state light emitting element comprising a plurality of LED emitter chips configured to emit a single wavelength (claims 26 and 34), or multiple reflectors (claims 25 and 35-37).

IX. CONCLUSION

For the reasons set forth herein, Patent Owner submits that proposed substitute claims 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 1, 12, 15, and 18 are unpatentable.

Respectfully Submitted,

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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 November 1, 2024

/Neal Massand/

Neal Massand (Reg. No.
54,296)

APPENDIX A

(Proposed Amendments)

25. (proposed substitute for Claim 1) A solid state lighting tile, comprising:

a support member comprising a first surface and a second surface;

a substrate comprising a first surface and a second surface mounted on the first surface of the support member such that the second surface of the substrate is in direct contact with the first surface of the support member and the second surface of the substrate faces away from the first surface of the support member;

a plurality of solid state lighting elements mounted on a the second surface of the substrate; and

a reflector sheet on and in direct contact with the second surface of the substrate, the reflector sheet configured to overlap in part with a second reflector sheet and configured to conform to a shape of a plurality of protruding features on the solid state lighting tile;

wherein the protruding features are separate from and not in contact with the solid state lighting elements;

wherein the reflector sheet comprises a plurality of circular apertures;

wherein each of the plurality of apertures is configured to surround a corresponding one of the solid state lighting elements;

wherein the reflector sheet a thickness of less than 0.25mm;

wherein the reflector sheet does not contact the solid state lighting elements;

and

wherein the reflector sheet comprises a plurality of perforation apertures, the

perforation apertures being separate and distinct from the apertures

configured to surround the solid state lighting elements.

26. (proposed substitute for claim 2) The solid state lighting tile of claim 125,

~~wherein the reflector sheet comprises a diffuse reflector wherein each of the solid~~
state lighting elements includes a plurality of LED emitter chips configured to emit
a single wavelength.

27. (proposed substitute for claim 3) The solid state lighting tile of claim 125,

~~wherein the reflector sheet comprises a polymer-based porous material the~~
plurality of perforation apertures are disposed distally from the solid state lighting
elements and protruding features.

28. (proposed substitute for claim 4) The solid state lighting tile of claim 125,

~~wherein the reflector sheet comprises a thickness of less than approximately 1.0-~~
millimeter the plurality of perforation apertures are circular in shape.

29. (proposed substitute for claim 5) The solid state lighting tile of claim 125,

~~wherein the reflector sheet has a thickness of less than approximately 0.50-~~
millimeters the plurality of perforation apertures are configured to reduce
distortion of the reflector sheet.

30. (proposed substitute for claim 6) The tile of claim 125, wherein ~~the reflector-~~

~~sheet has a thickness of less than approximately 0.25 millimeters~~ the plurality of
perforation apertures are configured to provide thermal expansion zones for the

reflector sheet.

31 (proposed substitute for claim 7) The solid state lighting tile of claim 125, further comprising a mechanical fastening device configured to pass through the reflector sheet and the first surface of the support member and thereby attach the reflector sheet to the surface of the substrate the support member.

32. (proposed substitute for claim 16) ~~The method of claim 15, wherein positioning the reflector sheet comprises chemically bonding the reflector sheet to the surface of the substrate.~~ The solid state lighting tile of claim 25, wherein the plurality of perforation apertures are configured to reduce distortion of the reflector sheet due to thermal expansion.

33. (proposed substitute for claim 17) ~~The method of claim 15, wherein positioning the reflector sheet comprises mechanically attaching the reflector sheet to the surface of the substrate.~~ The solid state lighting tile of claim 25, wherein the plurality of perforation apertures are configured to ensure that the reflector sheet conforms to the shape of the support member.

34. (proposed substitute for claim 10) The solid state lighting tile of claim 126, further comprising a ~~chemical bonding component configured to attach the reflector sheet to the surface of the substrate.~~ wherein each of the solid state lighting elements comprises a dome shaped element disposed over the plurality of LED emitter chips.

35. (proposed substitute for claim 11) The solid state lighting tile of claim 1025, wherein ~~the chemical bonding component comprises glue and/or a pressure-sensitive adhesive compound~~ the solid state lighting tile comprises a third reflector

sheet mounted on and in direct contact with the second surface of the substrate.

36. (proposed substitute for claim 12) The solid state lighting tile of claim 135,
~~wherein the reflector sheet comprises an aperture configured to be positioned~~
~~proximate to the solid state lighting element, wherein the reflector sheet does not~~
~~contact the solid state lighting element~~ the third reflector sheet overlaps in part
with the second reflector sheet.

37. (proposed substitute for Claim 19) The luminaire of claim 18, wherein the
reflector comprises a coating on the substrate that is configured to reflect and
scatter light incident thereon. The solid state lighting tile of claim 18-35, wherein
the reflector sheets are flexible.