

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

HISENSE USA CORPORATION,
Petitioner,

v.

BRIGHTPLUS VENTURES LLC,
Patent Owner.

IPR2023-01311
Patent 8,177,382 B2

Before MICHELLE N. WORMMEESTER, KEVIN C. TROCK, and
JOHN D. HAMANN, *Administrative Patent Judges*.

WORMMEESTER, *Administrative Patent Judge*.

PRELIMINARY GUIDANCE
PATENT OWNER'S MOTION TO AMEND

I. INTRODUCTION

On February 27, 2024, we instituted trial as to claims 1–20 (the “challenged claims”) of U.S. Patent No. 8,177,382 B2 (Ex. 1001, “the ’382 patent”). Paper 7 (“Inst. Dec.”). After institution, Patent Owner filed a Contingent Motion to Amend (Paper 13, “Mot.” or “Motion”) requesting that, “if claim 1 is found to be unpatentable, substitute proposed amended claim 21,” and “if claim 17 is found to be unpatentable, substitute proposed amended claim 22.”¹ Mot. 2, 4, App. A (Substitute Claims Listing). Petitioner filed an Opposition on September 13, 2024. Paper 19 (“Opp.”). In support of its Opposition, Petitioner submitted a Declaration of P. Morgan Pattison, Ph.D. (Ex. 1019).

In the Motion, Patent Owner requested that we provide preliminary guidance concerning the Motion in accordance with the Board’s pilot program on motion to amend practice and procedures. Mot. 4, 21; *see also* Notice Regarding a New Pilot Program Concerning Motion to Amend Practice and Procedures in Trial Proceedings Under the America Invents Act Before the Patent Trial and Appeal Board, 84 Fed. Reg. 9,497 (Mar. 15, 2019) (hereinafter, “Notice”) (providing a patent owner with the option to receive preliminary guidance from the Board on its

¹ In the Contingent Motion to Amend, Patent Owner states that it “submits that this Motion is contingent upon a finding in a final written decision that challenged claim 1 is unpatentable.” Mot. 4 (emphasis added); *see also id.* at 21 (“Patent Owner submits that proposed substitute claims 21 and 22 satisfy all of the statutory requirements for a motion to amend . . . and respectfully requests the Motion be granted contingent upon a finding that the challenged claim 1 is unpatentable.” (emphasis added)). Because Patent Owner also refers to a contingency relating to claim 17 elsewhere in the Motion (*see id.* at 4), however, we treat Patent Owner’s request that we grant its Motion as covering any contingency relating to claim 17 as well. Thus, if we determine claim 17 to be unpatentable, we will replace it with proposed substitute claim 22 (whether or not we determine claim 1 to be unpatentable).

motion to amend). We have considered Patent Owner's Contingent Motion and Petitioner's Opposition.

In this Preliminary Guidance, we provide information indicating our initial, preliminary, non-binding views on whether Patent Owner has shown a reasonable likelihood that it has satisfied the statutory and regulatory requirements associated with filing a motion to amend in an *inter partes* review and whether Petitioner (or the record) establishes a reasonable likelihood that the substitute claims are unpatentable. *See* Notice, 84 Fed. Reg. at 9,497 (“The preliminary guidance . . . provides preliminary, non-binding guidance from the Board to the parties about the [motion to amend]”); *see also* 35 U.S.C. § 316(d) (statutory requirements for a motion to amend); 37 C.F.R. § 42.121 (regulatory requirements and burdens for a motion to amend); *Lectrosonics, Inc. v Zaxcom, Inc.*, IPR2018-01129, Paper 15 (PTAB Feb. 25, 2019) (precedential) (providing information and guidance regarding motions to amend).

For purposes of this Preliminary Guidance, we focus on the proposed substitute claims, and specifically on the amendments proposed in the Motion. *See* Notice, 84 Fed. Reg. at 9,497. We do not address the patentability of the originally challenged claims. *Id.* Moreover, in formulating our preliminary views on the Motion and Opposition, we have not considered the parties' other substantive papers on the underlying merits of Petitioner's challenges. We emphasize that the views expressed in this Preliminary Guidance are subject to change upon consideration of the complete record, including any revisions to the Motion filed by Patent Owner. Thus, this Preliminary Guidance is not binding on the Board when rendering a final written decision. *See id.* at 9,500.

II. PRELIMINARY GUIDANCE

A. Statutory and Regulatory Requirements

For the reasons discussed below, at this stage of the proceeding, and based on the current record, it appears that Patent Owner *has not shown* a reasonable likelihood that it has satisfied the statutory and regulatory requirements associated with filing a motion to amend regarding proposed substitute claims 21 and 22.

1. Reasonable Number of Substitute Claims

Does Patent Owner propose a reasonable number of substitute claims? (35 U.S.C. § 316(d)(1)(B))

Yes.

Patent Owner proposes two substitute claims (21 and 22) for two originally challenged claims (1 and 17), thereby satisfying the “reasonable number” requirement of 37 C.F.R. § 42.121. *See* 37 C.F.R. § 42.121(a)(3) (“A motion to amend may cancel a challenged claim or propose a reasonable number of substitute claims. The presumption is that only one substitute claim would be needed to replace each challenged claim, and it may be rebutted by a demonstration of need.”); Mot. 4–5.

Petitioner argues that claim 21 “contains the non-sensical phrase ‘wherein the second distance comprises a distance *in* greater than the third distance’” where “[t]he recitation of the word ‘in’ is grammatically incorrect and prevents an understanding of the claim.” Opp. 1. Petitioner submits that such “[a] non-sensical claim is not a reasonable substitution.” *Id.*

We disagree that proposed substitute claim 21 is “non-sensical”; rather, we consider the word “in” as recited in claim 21 to be a typographical error, given Patent Owner’s explanations in the Motion that proposed claim 21 has been drafted to recite “wherein the second distance comprises a distance greater than the third distance and less than 1.5 times the third distance.” *See* Mot. 7–8. The recitation of “wherein the second distance comprises a distance greater than the third distance and less than 1.5 times the third distance” in claim 21 has clear meaning and represents an added narrowing limitation with respect to original

claim 1. Accordingly, Petitioner’s argument that claim 21 “is not a reasonable substitution” is unavailing. *See* Opp. 1.

On this record, we are persuaded that Patent Owner proposes a reasonable number of substitute claims.

2. Respond to Ground of Unpatentability

Does the Motion respond to a ground of unpatentability involved in the trial?
(37 C.F.R. § 42.121(a)(2)(i))

Yes.

Patent Owner responds to the grounds of unpatentability on which we instituted trial. Mot. 5–6, 9–20. Upon review of Patent Owner’s arguments, we agree that proposed substitute claims 21 and 22 recite new limitations and new combinations of limitations, that directly respond to the grounds of unpatentability involved in the trial. *See* Mot. 5–6, 9–20, App. A (Substitute Claims Listing).

We are unpersuaded by Petitioner’s arguments that Patent Owner’s Motion does not respond to a ground of unpatentability. *See* Opp. 1–3. For example, Petitioner’s argument—that the Motion does not respond to a ground of unpatentability in the trial because the “motion fails to address that Kobayashi, a prior art reference part of the original grounds, already discloses ratios greater than 1” (*see* Opp. 2)—is factually incorrect. Patent Owner’s Motion presents good faith arguments as to why Patent Owner believes that the art cited in the Petition’s original grounds (including Kobayashi) does not teach the limitations added in the proposed substitute claims (*see* Mot. 5–6, 9–20).

Petitioner’s additional arguments that the Motion is unresponsive to the original grounds because “proposed substitute claim 22 recites a limitation that is also already disclosed in Kobayashi and Holman ’096” (*see* Opp. 2) and “PO’s motion never addresses . . . well-known design princip[le]s” (such as those discussed in Dr. Pattison’s declaration (Ex. 1019)) (*see* Opp. 2–3) are also unpersuasive. These arguments are inapposite to the question of “responsiveness” and pertain to Petitioner’s obviousness grounds (which include newly-asserted Holman ’096 that was not part of the original grounds). Moreover, as noted *supra*, Patent Owner’s Motion has submitted good faith arguments as to why Patent Owner believes that the art cited in the Petition’s original grounds does not teach the limitations added in the proposed substitute

claims. *See* Mot. 5–6, 9–20. And whether the proposed substitute claims are ultimately unpatentable over the grounds proposed in the Opposition is not the criterion for judging the question of “responsiveness.”

For purposes of this preliminary guidance and based on the current record, we are persuaded that Patent Owner’s amendments in proposed substitute claims 21 and 22 respond to the grounds of unpatentability that were instituted by the Board in the Decision to Institute. *See* Mot. 5–6, 9–20; Inst. Dec. 6, 11–65.

3. Scope of Amended Claims

Does the amendment seek to enlarge the scope of the claims? (35 U.S.C. § 316(d)(3); 37 C.F.R. § 42.121(a)(2)(ii))

Yes.

On the current record, we observe that proposed substitute claims 21 and 22 appear to enlarge the scope of the claims in violation of 35 U.S.C. § 316(d)(3) and 37 C.F.R. § 42.121(a)(2)(ii).

At the outset, we acknowledge that each of claims 21 and 22 includes some narrowing limitations with respect to original claim 1. For example, proposed substitute claim 21 (which tracks the language of original claim 1) includes the narrowing limitation “the second distance comprises a distance [] greater than the third distance and less than 1.5 times the third distance.” *See* Mot. App. A (Substitute Claims Listing). And proposed substitute claim 22 (which similarly tracks the language of original claim 1) includes the narrowing limitations “a first diffusion plane” being “a first distance from the bottom of the plurality of solid state emitters” and “a second diffusion plane” being “a second distance from the bottom of the plurality of solid state emitters.” *See id.*

However, both claims 21 and 22 recite that they are directed to “[a] solid state lighting *panel*,” while original claim 1 recites “[a] solid state lighting *device*.” *See* Mot. App. A (Substitute Claims Listing) (emphasis added); Ex. 1001, 8:51 (emphasis added). Because a *panel* may not necessarily be a *device* and a *device* may not necessarily be a *panel*, the scope of proposed claims 21 and 22 (encompassing solid state lighting *panels*) is not necessarily narrower than the scope of claim 1 (encompassing a solid state lighting *device*). Moreover, Patent Owner’s Motion has not (i) clearly shown the change (e.g., by underlining) from “*device*” (of claim 1) to “*panel*” in proposed substitute claims 21 and 22 (as required by 37 C.F.R. § 42.121(b) (“A motion to amend claims must include a

claim listing, which claim listing may be contained in an appendix to the motion, *show the changes clearly . . .*” (emphasis added))), or (ii) explained why changing claim 1’s “solid state lighting *device*” to a “solid state lighting *panel*” in proposed substitute claims 21 and 22 would not enlarge the scope of claims 21 and 22 with respect to claim 1.

Accordingly, based on the current record and for the reasons given, proposed substitute claims 21 and 22 appear to enlarge the scope of original claim 1 and therefore do not comply with the statutory and regulatory requirement of not “enlarg[ing] the scope of the claims of the patent” (see 37 C.F.R. § 42.121(a)(2)).

4. New Matter

Does the amendment seek to add new subject matter? (35 U.S.C. § 316(d)(3); 37 C.F.R. § 42.121(a)(2)(ii))

No.

Having considered Petitioner’s contrary arguments regarding proposed substitute claims 21 and 22 (see Opp. 4–7), on this record, we find Patent Owner has set forth sufficient written-description support for proposed claims 21 and 22. See Mot. 8–9 (citing Ex. 1001, 2:10–12, 2:52–59, 6:28–30, 8:41–43, Figs. 3, 5A).

Proposed Substitute Claim 21

Proposed substitute claim 21 amends original claim 1 to additionally recite that “the second distance comprises a distance [] greater than the third distance and less than 1.5 times the third distance.” See Mot. App. A (Substitute Claims Listing). With respect to Patent Owner’s cited support for the added limitations in proposed substitute claim 21, we observe that the specification and drawings of the ’382 patent provide the following with respect to “a first distance” (pertaining to “a diffuser plate that includes the first side of the multiplane light diffuser and is positioned a first distance from the solid state light emitters”), “a second distance” (pertaining to “a diffuser sheet that includes the second side of the multiplane light diffuser and is positioned a second distance from the solid state light emitters”), and “a third distance” (“between adjacent ones of the plurality of solid state light emitters”):

[T]he solid state emitters include a third distance between adjacent ones of the solid state light emitters and *the second distance includes a distance in a range between the third distance and 1.5 times the third distance.*

....

[T]he solid state light emitters include a third distance between adjacent ones of the solid state light emitters such that the first distance is about one half of the third distance, and *the second distance includes a value in a range between substantially the third distance value and substantially 1.5 times the third distance value.*

....

The first diffusion plane that includes the first side of the multiplane light diffuser may include a diffuser plate 140. The diffuser plate 140 may be positioned a first distance 147 from a surface defined by the solid state light emitters 113.

....

The second diffusion plane that includes the second side of the multiplane light diffuser 120 may include a diffuser sheet 142. The diffuser sheet 142 may be positioned a second distance 148 from the surface defined by the solid state light emitters 113, such that the second distance 148 is greater than the first distance 147.

....

[T]he first distance 147 and the second distance 148 may be determined as a function of a third distance 149, which may be the distance between adjacent ones of the solid state light emitters 113. Some embodiments provide that the first distance 147 may be approximately $\frac{1}{2}$ the third distance 149. In some embodiments, *the second distance 148 may be in a range including and the third distance 149 and 1.5 times the third distance 149.*

....

[T]he solid state light emitters are positioned such that adjacent ones of the solid state light emitters are a third distance from one another. In some embodiments, the first distance may be approximately $\frac{1}{2}$ of the third distance. In some embodiments, *the second distance may be in a range including approximately 1.0 to 1.5 times the third distance value.*

See Ex. 1001, 1:42–51, 2:5–12, 2:53–59, 5:61–64, 6:13–20, 6:23–30, 8:37–43 (emphases added), Fig. 3.

In view of the description in the '382 patent, we are persuaded by Patent Owner's argument that the '382 patent discloses a "second distance [that] comprises a distance greater than the third distance and less than 1.5 times the third distance" (as recited in proposed substitute claim 21). *See* Mot. 8–9. In particular, the '382 patent discloses that the ratio of the second distance to the third distance covers the entire range from 1.0 to 1.5, such that the '382 patent supports the ratio of the second distance to the third distance being greater than 1 and less than 1.5 (as recited in proposed substitute claim 21). *See id.*; Ex. 1001, 1:42–51, 2:5–12, 2:53–59, 5:61–64, 6:13–20, 6:23–30, 8:37–43.

We are therefore unpersuaded by Petitioner's arguments that "[s]ubstitute claim 21 lacks written description for 'greater than'" because "[n]one of the figures in the '382 patent, nor the prosecution history, provide any . . . support, description, depiction, or differing information [for the claimed 'greater than' limitation]," or because "[t]he '382 patent contains no data, empirical or theoretical, that would explain or provide support for the precise range [claimed in claim 21]," or because the Motion "lack[s] . . . any explanation, or indeed citation to evidence (expert or otherwise), as to how or why 'greater than' provides a meaningfully distinct limitation" (*see* Opp. 4–5). Petitioner's arguments disregard that (i) the '382 patent discloses that the ratio of the second distance to the third distance covers the entire range from 1.0 to 1.5 *including a range of "greater than" 1 and "less than" 1.5* (as required in proposed substitute claim 21), and (ii) Patent Owner's Motion has provided detailed explanations as to where the specification of the '382 patent provides written description support for the limitations added in proposed substitute claim 21.

Thus, based on the current record, Patent Owner has shown that there is adequate support in the original disclosure of the '382 patent for "the second distance comprises a distance [] greater than the third distance and less than 1.5 times the third distance" (as recited in proposed substitute claim 21).

Proposed Substitute Claim 22

Proposed substitute claim 22 amends original claim 1 to additionally recite that the "first diffusion plane [of the multiplane light diffuser] . . . is a first distance from the bottom of the plurality of solid state emitters" and the "second diffusion plane [of the multiplane light diffuser] . . . is a second distance from the bottom of the plurality of solid state emitters." *See* Mot. App. A (Substitute Claims Listing).

With respect to Patent Owner's cited support for the added limitations in proposed substitute claim 22, we observe that the specification and drawings of

the '382 patent disclose a multiplane light diffuser 120 (Fig. 3) diffusing light from “multiple solid-state light emitters 113 . . . supported by a support structure 114. . . [that] includes a *substantially planar geometry*” on which the “light emitters [are] arranged in a *substantially planar configuration*,” where a “diffuser plate 140 [of a first diffusion plane of multiplane light diffuser 120] may be *positioned a first distance 147 from a surface defined by the solid state light emitters 113*” and a “diffuser sheet 142 [of a second diffusion plane of multiplane light diffuser 120] may be *positioned a second distance 148 from the surface defined by the solid state light emitters 113*, such that the second distance 148 is greater than the first distance 147” and “the edges of the diffuser plate 140 . . . [are] supported at the first distance 147 (FIG. 3) from the multiple solid-state light emitters 113” and “the edges of the diffuser sheet 142 . . . [are] supported at the second distance 148 (FIG. 3) from the multiple solid-state lighting emitters 113.” See Ex. 1001, 2:25–37, 2:60–3:5, 4:41–46, 5:23–27, 5:61–65, 6:14–20, 6:60–67, 8:17–20, Fig. 3; Mot. 8–9.

In view of the description in the '382 patent, we are persuaded by Patent Owner's argument that the '382 patent discloses a “first diffusion plane [of the multiplane light diffuser] that is a first distance from the bottom of the plurality of solid state emitters” and a “second diffusion plane [of the multiplane light diffuser] that is a second distance from the bottom of the plurality of solid state emitters” (as recited in proposed substitute claim 22). See Mot. 8–9. In particular, the '382 patent discloses a first diffusion plane of multiplane light diffuser 120 at a first distance 147 from *the bottom of the plurality* of solid state emitters 113, and a second diffusion plane of diffuser 120 at a second distance 148 from *the bottom of the plurality* of emitters 113. See Ex. 1001, Fig. 3.

We are therefore unpersuaded by Petitioner's arguments that “claim 22 lacks written description for measuring from the bottom of the LED” because (i) the “bottom” limitation “finds no support in the specification,” which “only ever describes the distance from the emitters **generally**” but “never defines which ‘surface’ the measurement is being taken from,” or, alternatively, because (ii) the '382 patent provides an “internally contradictory” and “conflicting description” of “distances from an LED ‘surface’” and of “[t]he ‘surface’ of the solid state emitter [that] is shown as element 113, which points to a surface location of the solid state emitter that is different than the point from which the distance 148 is shown [in Fig. 3]. . . [with] the surface of the solid state emitter shown at 113 [being] different than the point shown by 148.” See Opp. 5–7. Petitioner's arguments disregard the disclosure in the '382 patent of first and second

distances 147 and 148 measured from the *bottom of the plurality of solid state emitters 113* (as discussed *supra*, see Ex. 1001, 2:25–37, 2:60–3:5, 4:41–46, 5:23–27, 5:61–65, 6:14–20, 6:60–67, 8:17–20, Fig. 3). Additionally, Petitioner’s argument regarding an allegedly “internally contradictory” and “conflicting description” in the ’382 patent of “distances from an LED ‘surface’” (see Opp. 6–7) disregards the language in proposed claim 22 which requires distances *from the bottom of the plurality of solid state emitters*—that is, the claimed *bottom* is defined by *the plurality of solid state emitters*, not by the morphology and surface of *one* solid state emitter (e.g., not by the domed surface of one LED 113 referenced by the Petitioner, see Opp. 7). We do not see any contradiction or conflicting description in the ’382 patent with respect to the endpoints of the claimed distances. As shown in Fig. 3 and described at, e.g., column 5, lines 25–27 and 60–65, and column 6, lines 13–18 of the ’382 patent, the first and second distances (147, 148) are measured from *a surface defined by light emitters 113, which forms the bottom of the plurality of light emitters 113*.

Thus, based on the current record, Patent Owner has shown that there is adequate support in the original disclosure of the ’382 patent for a first diffusion plane at “a first distance from the bottom of the plurality of solid state emitters” and a second diffusion plane at “a second distance from the bottom of the plurality of solid state emitters” (as claimed in proposed substitute claim 22).

B. Patentability

For the reasons discussed below, at this stage of the proceeding, and based on the current record,² it appears that Petitioner (or the record) has shown a reasonable likelihood that proposed substitute claims 21 and 22 are unpatentable.

² We express no view on the patentability of original claims 1–20 in this Preliminary Guidance. Instead, we focus on limitations added to the challenged claims in the Patent Owner’s Motion to Amend.

Does the record establish a reasonable likelihood that the proposed substitute claims are unpatentable?

I. Indefiniteness

No.

The phrases “bottom of” recited in proposed substitute claim 22 do not appear to be indefinite under 35 U.S.C. § 112 ¶ 2.

Petitioner argues “[i]n light of the specification’s conflicting description, the lack of textual support in the specification for ‘bottom of,’ and the lack of any explanation as to how or why such a precise point is meaningful, PO’s proposed amendment . . . is indefinite.” Opp. 6–7.

We are unpersuaded by Petitioner’s argument. As discussed *supra* (in connection with Petitioner’s new matter arguments relying on the same assertions for proposed claim 22), we find that Petitioner’s argument disregards the disclosure in the ’382 patent of first and second distances (e.g., 147 and 148 in Fig. 3) measured from the *bottom of a plurality* of solid state emitters 113 (see Ex. 1001, 2:25–37, 2:60–3:5, 4:41–46, 5:23–27, 5:61–65, 6:14–20, 6:60–67, 8:17–20, Fig. 3). Petitioner’s argument regarding an allegedly “internally contradictory” and “conflicting description” in the ’382 patent of “distances from an LED ‘surface,’” which would represent the claimed “bottom” (see Opp. 6–7), disregards the language in proposed claim 22 that requires the distances to be *from the bottom of the plurality of solid state emitters*—that is, the claimed *bottom* is defined by *the plurality of* solid state emitters, not by the morphology and surface of *one* solid state emitter (e.g., not by the domed surface of one LED 113 referenced by the Petitioner, see Opp. 7). We do not see any contradiction or conflicting description in the ’382 patent with respect to the endpoints of the claimed distances. As shown in Fig. 3 and described at, e.g., column 5, lines 25–27 and 60–65, and column 6, lines 13–18 of the ’382 patent, first and second distances (147, 148) are measured from *a surface defined by light emitters 113, which forms the “bottom” of the plurality of light emitters 113*.

Petitioner insists that “one of skill in the art would not understand the point within . . . display panels from which one would define the distance – the bottom of a packaged light emitting device or the bottom of the LED emitter chips.” See Opp. 8. Petitioner asserts the claimed “bottom of the solid state light emitters” is “indefinite because a POSITA would not know exactly what point of the solid state light emitter is the bottom for the purposes of defining the distances.” *Id.*

Petitioner's argument, again, disregards the language in claim 22 which requires the distances to be *from the bottom of the plurality of solid state emitters*—that is, the claimed *bottom* is defined by *the plurality of* solid state emitters, not by the morphology and surface of *one* solid state emitter. As discussed *supra*, the description in the '382 patent with respect to the endpoints of the claimed distances is clear that those distances (first and second distances, e.g., 147 and 148 in Fig. 3) are measured from *a surface defined by the collection of light emitters (e.g., emitters 113), the surface forming the "bottom" of the plurality of light emitters*.

Thus, we do not find the "bottom" limitation in claim 22 indefinite; rather, we consider the meaning of claim 22's "first diffusion plane . . . [at] a first distance from the bottom of the plurality of solid state emitters" and "second diffusion plane . . . [at] a second distance from the bottom of the plurality of solid state emitters" to be clear to one having ordinary skill in the art. That is because "from the bottom of the plurality of solid state emitters" as recited in proposed claim 22 and as described in the '382 patent clearly indicates that the endpoints of the claimed distances are at a level defined by the bottom portions of the plurality (of the collection) of solid state emitters, and one having ordinary skill in the art would, in light of the Specification, have understood how distances can be defined from the bottom of a plurality of solid state emitters. See Ex. 1001, 2:25–37, 2:60–3:5, 4:41–46, 5:23–27, 5:61–65, 6:14–20, 6:60–67, 8:17–20, Fig. 3.

Thus, we are unpersuaded by Petitioner's contention that the scope of the subject matter embraced by claim 22 is unclear. On this record, Petitioner has not established a reasonable likelihood that the phrase "distance from the bottom of the plurality of solid state emitters" recited in proposed substitute claim 22 renders the claim indefinite.

Thus, Petitioner has not shown a reasonable likelihood that proposed substitute claim 22 fails to comply with the definiteness requirement.

II. Obviousness

Yes, as to proposed substitute claims 21 and 22.

Petitioner has asserted the following obviousness challenges against the following substitute claims:

- Ground asserting Kobayashi (Ex. 1006) as rendering obvious proposed substitute claims 21 and 22;

- Ground asserting Kobayashi and Lim (Ex. 1013) against proposed substitute claim 21; and
- Ground asserting Kobayashi and newly cited Holman '096 (Ex. 1024)³ against proposed substitute claim 22.

Opp. 9–25.

On this record, it appears that Petitioner has shown a reasonable likelihood that each of Petitioner's challenges renders the respective proposed substitute claims unpatentable.

Proposed Substitute Claim 21

Proposed substitute independent claim 21 replaces original independent claim 1 and adds new limitations. See Mot. 4, App. A (claim 21). In particular, proposed substitute claim 21 amends original claim 1 to further recite that "the second distance comprises a distance [] greater than the third distance and less than 1.5 times the third distance." Mot. App. A (Substitute Claims Listing).

Petitioner contends the added limitation in claim 21 is taught or suggested by Kobayashi. Opp. 9, 15–16. In particular, Petitioner contends,

Kobayashi's ($a + H$) becomes the claimed second distance, with H being the height of the LED.

PO's proposed substitute claim recites a second distance that is from the diffuser to the bottom of the LED. Accordingly, one would have to add the height of the LED, H , to Kobayashi's distance " a ." The '382 Patent and Kobayashi both disclose using LEDs as the solid state emitters. Ex. 1001 at 4:47-63; Ex. 1006 at [0002]-[0003]. *As explained by Dr. Pattison, conventional LEDs used in displays at the relevant time would typically have heights of around 1 mm. Ex. 1019, ¶44. Thus, adding height H of conventional LEDs in use at the time of both Kobayashi and the '382 patent to Kobayashi's preferred embodiment means that even Kobayashi's preferred ratio a/b of 0.2 to 1 discloses a ratio of $0.2+H/b$ to $1+H/b$. And $1+H/b$ is greater than 1 and less than 1.5, especially given the typically values of H being 1 mm and b being 10 to 100 mm. See Ex. 1006, [0020]; Ex. 1019, ¶41-44.*

Opp. 15–16.

We have reviewed the disclosure of Kobayashi and Petitioner's submitted evidence, and observe that Kobayashi appears to support Petitioner's assertions.

³ US 7,072,096 B2, issued July 4, 2006.

For example, Kobayashi explains that “*b* is the distance between the center of two adjacent LEDs 1, *a* is the distance from the surface of the LED 1 to the light emitting surface of the diffusing plate [(top diffusing plate 5)] at the most exiting side,” and,

[p]referably, a is 10 mm or more and b is 10 to 100 mm. If a is less than 10 mm, the eye-catching lamp image is unlikely to disappear and is undesirable. In addition, if b is less than 10 mm, the number of LEDs 1 becomes excessive, and if b is more than 100 mm, even if the number of diffusing plates 4 with lenses is increased, it is difficult to eliminate luminance unevenness, which is not preferable. Also, the ratio of a/b is preferably in the range of 0.2 to 1.0.

See Ex. 1006 ¶¶ 19–20 (emphases added), Fig. 1. As shown in Kobayashi’s Figure 1, the distance “*a*” is from the top diffusing plate 5, to the top of an LED 1. See *id.* at Fig. 1. Since Kobayashi teaches that “the ratio of *a/b* is preferably in the range of 0.2 to 1.0” (see *id.* ¶ 20), Kobayashi envisions that the ratio of *a/b* may be 1.0, that is, *a=b*. Thus, if the height (which Petitioner calls *H*, see *supra*) of LED 1 is added to distance *a* in Kobayashi, *then distance a+H will become greater than distance b* (when *a=b*). See Opp. 15–16. Therefore, Kobayashi teaches, or at least suggests, *a second diffusion plane* (e.g., the plane of Kobayashi’s diffusing plate 5) *that is a second distance* (Kobayashi’s distance “*a*” plus height “*H*” of LED 1) *from the plurality of solid state emitters* (in fact, from the bottom of the plurality of LEDs 1 in Kobayashi), *wherein the second distance (a+H in Kobayashi) comprises a distance that is greater than the third distance* (Kobayashi’s distance *b* which is between adjacent LEDs 1), as required by proposed substitute claim 21.

We additionally note that we do not find it necessary (as Petitioner alternatively suggests, see Opp. 16) *to subtract the thickness of Kobayashi’s diffusing plate 5 from Kobayashi’s distance a in order to obtain the claimed second distance* between the second diffusion plane (of the multiplane light diffuser) and the plurality of solid state emitters (as claimed in claim 21). Proposed substitute claim 21 does not require the “second distance” to be measured from *a lower surface* of a top diffuser of the multiplane light diffuser (e.g., proposed claim 21 does not require the “second diffusion plane” to be *the lower surface* of a top diffuser). Rather, proposed claim 21 recites that the “*multiplane light diffuser include[s] . . . a second diffusion plane that is a second distance from the plurality of solid state emitters*” and that “the multiplane light diffuser includ[es] . . . a second side that corresponds to the second plane and that is configured to transmit diffused light”; and the ’382 patent contemplates that the second

diffusion plane and second side may be at locations from (i) the lower surface (of a top diffuser) from which the second distance is measured (see Ex. 1001, 5:9–15 and Fig. 2 (second diffusion plane 124), Fig. 3 (showing a second distance 148 measured from the lower surface of top diffuser sheet 142)) to (ii) the upper surface (of the top diffuser) (see id. at 5:9–15 and Fig. 2 (second diffusion plane 124), 5:51–55 (describing “a second diffusion plane that includes the [multiplane light diffuser’s] second side 143” which, as shown in Fig. 3, is the upper surface of top diffuser sheet 142)).

We are also persuaded by Petitioner’s contention (supported by Dr. Pattison’s testimony) that “conventional LEDs used in displays at the relevant time would typically have heights of around 1 mm.” See Opp. 15–16 (citing Ex. 1019 ¶¶ 41–44). In particular, Dr. Pattison testifies,

As for typical heights of solid state emitters, at the time of the ’382 patent filings there were a number of off the shelf components available. And although there is some variation in heights, they typically would range from 1 to 7.5 mm. See, e.g., Ex. 1028 (LED height of 2 mm); Ex. 1029 (LED height of 5.-7.5

mm). In direct backlight operations one of skill in the art would typically employ low-profile solid state emitters, typically in the range of 1 to 4 mm to allow other optical components to be placed within the system, and thus reduce the thickness of the panel.

See Ex. 1019 ¶¶ 43–44 (emphasis added).

Since distance $a+H$ (“second distance”) in Kobayashi would be *less than 1.5 times the distance b* (“third distance”) when (i) *the height H of the LED is around 1 mm* (see Ex. 1019 ¶¶ 43–44, Opp. 15–16) and (ii) “ a is 10 mm or more and b is 10 to 100 mm” and “the ratio of a/b is . . . 1.0” (see Ex. 1006 ¶ 20), we are persuaded by Petitioner’s contentions that

Kobayashi’s $(a + H)$ becomes the claimed second distance, with H being the height of the LED.

. . . . [A]dding height H of conventional LEDs in use at the time of both Kobayashi and the ’382 patent to Kobayashi’s preferred embodiment means that even Kobayashi’s preferred ratio a/b of 0.2 to 1 discloses a ratio of $0.2+H/b$ to $1+H/b$. And $1+H/b$ is greater than 1 and less than 1.5, especially given the typically values of H being 1 mm and b being 10 to 100 mm. See Ex. 1006, [0020]; Ex. 1019, ¶¶ 41-44.

Opp. 15–16 (emphases added).

Thus, Petitioner appears to have shown that Kobayashi (alone or in combination with Lim, as alternatively asserted by Petitioner, see Opp. 19) teaches or at least suggests a lighting panel in which “the second distance [between a second diffusion plane of a multiplane light diffuser and a plurality of light emitters] comprises a distance [] greater than the third distance [between adjacent ones of the plurality of light emitters] and less than 1.5 times the third distance” (as recited in proposed substitute claim 21).

Based on the current record, at this stage of the proceeding, it appears that Petitioner has shown a reasonable likelihood that proposed substitute claim 21 is rendered obvious by Kobayashi (alone or in combination with Lim).

We acknowledge that Patent Owner has not yet had the opportunity to address Petitioner’s discussion of Kobayashi (e.g., Petitioner’s discussion at pages 15–16 in the Opposition) and respond to Petitioner’s asserted grounds against proposed claim 21 based on Kobayashi. Patent Owner will have the opportunity to do so in its Reply to Petitioner’s Opposition (or in a revised motion to amend) in this proceeding. See Notice, *passim*.

Proposed Substitute Claim 22

Proposed substitute independent claim 22 includes the following additional limitations with respect to original claim 1: “a first diffusion plane that is a first distance from the bottom of the plurality of solid state emitters” and “a second diffusion plane that is a second distance from the bottom of the plurality of solid state emitters.” See Mot. App. A (Substitute Claims Listing).

Petitioner contends the added limitations in proposed claim 22 are taught or suggested by Kobayashi. Opp. 18–19. In particular, Petitioner contends,

Kobayashi’s embodiments and descriptions already disclose substitute claim 22’s limitation of the first distance being a function of the third distance when the first distance is measured from the bottom of the LED.

First, none of the amendments change the fact that the first distance is a function of the third distance. . . . Kobayashi discloses that b and c are related and thus no matter the specific location from which a measurement is defined, the functional relationship exists.

Second, changing or amending one of the two end-points that define the first and second distances does not change the fact that Kobayashi

also discloses that same end point. Kobayashi, like the amended claim, also discloses an LED that has a bottom.

Id.

We have reviewed the disclosure of Kobayashi and observe that Kobayashi appears to support Petitioner's assertions. For example, Kobayashi illustrates, in Figure 1, a multiplane light diffuser that includes a first diffusion plane (Kobayashi's diffusing plate 4) that is *a first distance from the bottom* of the plurality of solid state emitters (e.g., a distance $c + \text{height of LED 1}$ in Fig. 1), and a second diffusion plane (Kobayashi's diffusing plate 5) that is *a second distance from the bottom* of the plurality of solid state emitters (e.g., distance $a + \text{height of LED 1}$ in Fig. 1), and the second distance is different from the first distance ($\text{distance } a + \text{height of LED}$ is different from $c + \text{height of LED}$, see Fig. 1). Thus, Kobayashi appears to teach (or at least suggest) "a multiplane light diffuser" that includes "a first diffusion plane that is a first distance from the bottom of the plurality of solid state emitters and a second diffusion plane that is a second distance from the bottom of the plurality of solid state emitters that is different from the first distance" as recited in proposed substitute claim 22.

Kobayashi also appears to teach, or at least suggest, that the first distance ($c + \text{height of LED}$ in Kobayashi's Fig. 1) is a function of the third distance that is between adjacent solid state light emitters (distance b in Kobayashi). See Opp. 18–19; Ex. 1006, Fig. 1. In particular, Kobayashi teaches that

The ratio of c/b is preferably in the range of 2×10^{-3} to 0.4. Less than 2×10^{-3} is undesirable because the eye-catching lamp image is unlikely to disappear, causing uneven brightness, which is not preferable. More preferably, it is in the range of 0.02 to 0.2, and considering the balance of the units, this range is particularly good.

See Ex. 1006 ¶ 20 (emphasis added). Because Kobayashi discloses that c/b is in a particular range (c is a function of the b distance), Kobayashi also discloses that $c + \text{height of LED}$ (claimed "first distance from the bottom of the plurality of solid state emitters") is *a function of the third distance* (Kobayashi's distance b) because the ratio of $c + \text{height of LED}$ to b would have to be in a particular range that is translated (with respect to Kobayashi's referenced "range of 2×10^{-3} to 0.4," see *supra*) by a value of $\text{height of LED}/b$.

Thus, Petitioner appears to have shown that Kobayashi (alone or in combination with Holman '096, as alternatively asserted by Petitioner, see Opp. 21–22) teaches or at least suggests a lighting panel in which "a first diffusion plane [of a multiplane light diffuser] . . . is a first distance from the bottom of the plurality of

solid state emitters,” “a second diffusion plane [of the multiplane light diffuser] . . . is a second distance from the bottom of the plurality of solid state emitters that is different from the first distance,” and “the first distance is a function of the third distance [between adjacent ones of the plurality of solid state light emitters]” (as recited in proposed substitute claim 22).

Based on the current record, at this stage of the proceeding, it appears that Petitioner has shown a reasonable likelihood that proposed substitute claim 22 is rendered obvious by Kobayashi (alone or in combination with Holman ’096).

We acknowledge that Patent Owner has not yet had the opportunity to address Petitioner’s discussion of Kobayashi (e.g., Petitioner’s discussion at pages 18–19 in the Opposition) and respond to Petitioner’s asserted grounds against claim 22 based on Kobayashi. Patent Owner will have the opportunity to do so in its Reply to Petitioner’s Opposition (or in a revised motion to amend) in this proceeding. See Notice, *passim*.

Additional Guidance

In order to provide further guidance to the parties, we provide the following additional comments with respect to the additional or alternative rationales presented by Petitioner as part of its asserted obviousness grounds.

With respect to Petitioner’s obviousness arguments that rely on “specific distances and ratios” and “values for its second distance, ‘a’, and third distance ‘b’” in Kobayashi—such as “when ‘a’ is 22 mm and ‘b’ is 16 mm,” “when a is 24 mm and b is 17 mm,” or “when a is 25 mm and b is 18 mm,” “when a is 26 mm and b is 19 mm” (see Opp. 10–14, 17–18 (emphases added))—we note that Kobayashi *does not in fact disclose the specific value pairs for “a” and “b” that Petitioner presents*. Petitioner’s referenced value pairs for “a” and “b” are not “explicitly disclosed values from Kobayashi’s ranges” (as Petitioner asserts, see Opp. 18). Petitioner references Examples 2 and 3 of Kobayashi as support (see *id.* at 14), but those examples actually disclose (i) “a = 25 mm” and “the ratio of (a/b) was 0.5” (Example 2, see Ex. 1006 ¶ 51), meaning that b=50 mm, and (ii) “a = 35 mm” and “ratio of (a/b) was 0.7” (Example 3, see *id.* ¶ 52), meaning that b=50 mm. Moreover, Petitioner has not explained why an ordinarily skilled artisan would have selected the specific value pairs that Petitioner has put forward (i.e., a=22 mm and b=16 mm, a=24 mm and b=17 mm, a=25 mm and b=18 mm, and a=26 mm and b=19 mm (see Opp. 10–14, 17–18)), especially when (i) Kobayashi’s “a” and “b” value pairs for Examples 1–28 illustrated in Table 1 (see Ex. 1006 ¶¶ 46–77, 84) do not include Petitioner’s specific numerical examples, and (ii) Kobayashi seeks a “ratio of a/b . . . preferably in the

range of 0.2 to 1.0” (*see id.* ¶ 20). Thus, we are unpersuaded by Petitioner’s obviousness arguments that rely on Petitioner’s values of “a” and “b” not disclosed in Kobayashi (*see* Opp. 10–14, 17–18).

With respect to Petitioner’s reliance on Lim, we note that Lim does not appear to be particularly relevant to the added limitation in proposed substitute claim 21. Petitioner asserts,

Substitute claim 21 is unpatentable as Kobayashi discloses a second distance that is greater than the third distance and less than 1.5 times the third distance. *This limitation is also disclosed by Lim.*

....

Lim explains that it is desirable to maintain the LED spacing to below 10 mm. Ex. 1013 at [0047]. And Lim explains that when such LED spacing is below 10 mm, the display can maintain “a high brightness over 2000 nit and provide a thin backlight unit.” Ex. 1013 at [0048]. Moreover, as discussed in Lim, it had been known to one of skill in the art that a sufficient distance “a” between the LED and the diffuser helps ensure uniform brightness. Ex. 1019, ¶49.

Opp. 1, 19–20 (emphases added). Petitioner also references “Lim’s teachings to reduce the LED spacing to be less than 10mm, which might result in more LEDs but would also achieve higher brightness due to the additional light sources and the narrower spacing between the LEDs.” Opp. 20 (citing Ex. 1019 ¶ 50).

We have reviewed the cited portions of Lim and do not find them helpful to Petitioner’s case against claim 21. Lim states that its “invention enables high brightness over 2000 nit” for “a thin backlight unit” in which “a distance between the respective lamps or chips is designed to be within 10 mm, inclusive, and another distance between an LED lamp (or chip) and a diffusion plate is designed to be within 5 mm, inclusive.” See Ex. 1013 ¶¶ 47–49. The values of 5 mm from a light emitter to a diffusion plate, and 10 mm between adjacent light emitters in Lim, produce a ratio between *the distance from the diffuser plane to the light emitters (claimed “second distance”)* and *the distance between adjacent light emitters (claimed “third distance”)* of 0.5, which is outside the range of 1 to 1.5 required by proposed substitute claim 21.

III. CONCLUSION

This concludes the Preliminary Guidance, which is Patent Owner's first option under the Board's pilot program. Notice, 84 Fed. Reg. at 9,497. Patent Owner has an additional option under the Board's pilot program to file a revised MTA by DUE DATE 3. *See* Scheduling Order.

In addition to those two options under the Board's pilot program, Patent Owner is reminded that amendments of the challenged claims may also be pursued in a separate reissue or reexamination proceeding before, during, or after an AIA trial proceeding, including subsequent to the issuance of the Final Written Decision. We draw Patent Owner's attention to the April 2019 *Notice Regarding Options for Amendments by Patent Owner Through Reissue or Reexamination During a Pending AIA Trial Proceeding*. *See* 84 Fed. Reg. 16,654 (Apr. 22, 2019). If Patent Owner chooses to file a reissue application or a request for reexamination of the challenged patent, we remind Patent Owner of its continuing obligation to notify the Board of any such related matters in updated mandatory notices. *See* 37 C.F.R. § 42.8(a)(3), (b)(2).

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