

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Hisense USA Corporation
Petitioner

v.

Brightplus Ventures LLC
Patent Owner

Patent No. 9,605,835
Filing Date: February 2, 2015
Issue Date: March 28, 2017
Title: SOLID-STATE LUMINAIRES FOR GENERAL ILLUMINATION

Inter Partes Review No. IPR2023-01168

PETITIONER'S REPLY TO PATENT OWNERS' RESPONSE

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1003	Declaration of Morgan Pattison, Ph.D.
1004	Curriculum Vitae of Morgan Pattison, Ph.D.
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1006	WO 03/056876 to Holman <i>et al.</i> (“Holman”)
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I. Introduction

The '835 Patent is invalid. The independent claim recites little more than a plurality of Light Emitting Diodes (“LEDs”) on a panel including a reflector with a diffuser sheet and a Brightness Enhancement Film (“BEF”). The PO Response (“Response”) ignores the actual disclosure of the prior art detailed in the Petition. Instead, PO misdirects the Board to non-relevant disclosures or attempts to limit the prior art to single embodiments. Further, PO submits no credible expert testimony, instead relying on a declaration that largely parrots the Response, which confirms the futility of PO’s flawed arguments.

Each of the claim elements was well-known in the art. The challenged claims should all be cancelled as obvious.

II. The Response Parrots Arguments from the Preliminary Response, which the Board Already Rejected.

Large swaths of the Response are nearly a word-for-word copy of the Preliminary Response.

For example, with respect to the construction of “on” *Compare* Response at § III *with* Paper 6 at § III. Similarly, with respect to Ground I, *Compare* Response at § V.B *with* Paper 6 at 12-13; Response at § V.D *with* Paper 6 at § V.B; Response at § V.F *with* Paper 6 at § V.C; Response at § V.G *with* Paper 6 at § V.D; and Response at § V.H *with* Paper 6 at § V.E.

And with respect to Ground II, *Compare* Response at § VI.A with Paper 6 at § VI.A; Response at § VI.B with Paper 6 at § VI.B; Response at § VI.D with Paper 6 at § VI.C; Response at § VI.E with Paper 6 at § VI.D; Response at § VI.F with Paper 6 at § VI.E; and Response at § VI.G with Paper 6 at § VI.F. The Board rejected these arguments and should not reconsider them, especially where PO’s expert “testimony” is largely a word-for-word copy of the Response. *See infra* § V.

III. Ground 1 - Claims 1-5 and 7-14 are Obvious Over the Combination of Mok, Holman, and Lamb in view of the Knowledge of a POSITA.

A. Mok Discloses a BEF “on” the Reflector.

PO first argues that Mok fails to disclose a BEF “on” a reflector. Response at 11-13. PO ignores Mok’s explicit teachings and common sense.

As the ’835 Patent explains, “on” means directly on or with intervening elements in between. *See* ’835 Patent, 6:66-7:12. For this reason, the Institution Decision explained that air gaps can be intervening elements. *See* Paper 7 at 9.

Despite the Board’s considered view, PO ignores it and analyzes Mok as if the term “on” requires direct contact. Response, 13. Even so, Mok is explicit that “the brightness enhancer 18 is *preferably stacked directly on (or applied to) the diffuser* 16, thereby minimizing or eliminating the distance 54.” Ex. 1005, [0025] (emphasis added). Similarly, Mok discloses that the diffuser can be spaced apart from the reflector or not. Ex. 1005, [0032] (“diffuser 16 is about 50 mm *or less*”) (emphasis added). Thus, Mok’s BEF can be “on” the reflector without air gaps.

PO's new argument is that "even if Mok taught a diffuser in direct contact with the base panel 12, the diffuser would not be in contact with reflective surface 50, as the protrusions from the light emitting elements 14 would still prevent direct contact" This ignores that Mok explicitly discloses in Figure 3 a lighting element recessed in the base panel. *Id.* at Fig. 3. Moreover, the claim does not require "direct contact," but rather that the BEF be "on" the reflector. Thus, even if there are protruding structures, whether supports, light elements, or lenses, the claimed layers are still "on" each other with those structures being intervening elements. *See* '835 Patent, 6:66-7:12.

Finally, PO never analyzes Mok under the Institution Decision's construction of "on," in which an air gap is an intervening element. Under this construction, Mok's BEF is "on" the reflector and, even where there is an air gap, the optical layers are supported by supports, which further shows the layers as being "on" one another. Because PO fails to address this argument it has waived its right to contest it under this understanding of the term.

B. The Combination of Mok and Holman Discloses "A Brightness Enhancement Film On the Reflector."

PO next attacks the Petition's combination of Mok and Holman, which teaches a BEF on a reflector. Response 14-18. This argument fails.

First, PO attacks Holman's disclosure of a BEF arguing that "the prism sheets 58 and 60 are not BEFs as used in the '835 Patent." Response at 14. PO never

explains this reasoning, instead pointing to a statement in Holman that “prism sheets 58 and 60 ... do not have to exhibit the extreme standards in cosmetic perfection that have been associated with 3M’s BEF....” *Id.* (quoting Ex. 1006 at 121). This does not distinguish Holman, which discloses BEFs. *First*, the statement PO quotes is non-limiting. Rather, it explains that the prism sheets “do not have to” have the same high-quality level required by 3M’s BEF. Ex. 1006 at 121. Moreover, the claim does not require any specific quality level. *Second*, Holman explicitly identifies 3M’s BEF films. Ex. 1006 at 10-11. Even PO’s own expert admits that Holman states that 3M’s BEFs were one of the “[t]he most common prism sheets used to enhance backlighting brightness.” Ex. 1028 at 119:2-6.

Second, PO attacks the Mok and Holman combination arguing that they would not be combined because they discuss different and allegedly contradictory goals. PO’s argument is based on a Federal Circuit decision cited in the Institution Decision to reject PO’s argument about motivation to combine. This decision explains that “[t]he fact that the motivating benefit comes at the expense of another benefit, however, should not nullify its use as a basis to modify the disclosure of one reference with the teachings of another.” *Winner Int’l Royalty Corp. v. Wang*, 202 F.3d 1340, 1349 n.8 (Fed. Cir. 2000). PO relies on a narrow statement that these tradeoffs must be considered. But simply because there are tradeoffs, *i.e.*, that not every aspect of a combination is beneficial, does not mean there is a teaching away.

Dome Patent L.P. v. Lee, 799 F.3d 1372, 1381 (Fed. Cir. 2015) (concluding that there was no teaching away even where a prior art reference “disclose[d] potential disadvantages”); *Medichem, S.A. v. Rolabo, S.L.*, 437 F.3d 1157, 1165 (Fed. Cir. 2006) (similar). And although PO cites a recent decision in IPR2022-01544, Paper 37, the Response fails to articulate *in this case* the necessary factual or evidentiary basis for reaching the conclusion that any design benefits would be outweighed by the potential drawbacks.

With respect to these design tradeoffs, PO points to a statement in Mok that “larger spaced-distances 48 will improve the uniformity of the light produced by the panel, but at the expense of panel thickness and some loss of efficiency.” Response at 15 (quoting Ex. 1005, [0023]). This simply teaches that there is a tradeoff between spacing and light uniformity. Even assuming this is correct, the spacing Mok suggests is only “a distance 48 of about 50 millimeters (mm) or less.” Ex. 1005, [0023]. Thus, Mok does not disclose a significant separation, and in fact, “or less” includes zero (*i.e.*, direct contact). Critically, the proposed motivations provided by the Petition included other bases, including providing better light diffusion and thus a better display quality as well as improved efficiency, and this would have provided a motivation to make the combination. Ex. 1003, ¶132. PO does not address these improvements, instead criticizing Mok for including an air gap, which as the Board already found, is not excluded by the claim. *See* Paper 7 at 9.

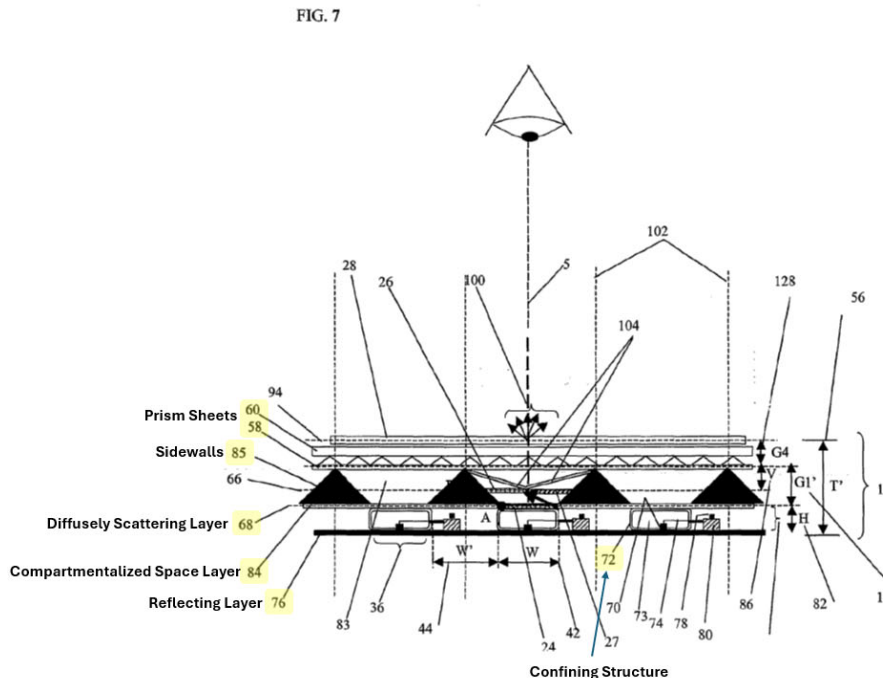
Next, PO mischaracterizes Holman in support of its argument. PO claims that Holman would not result in a BEF on the reflector because there would still be empty space. Response at 18 (citing “gaps ‘G1, G2, G3.’”). However, Holman explicitly describes intervening elements, such as G1, can comprise dielectric layers, which would put Holman’s BEF on the reflector even under PO’s construction. Ex. 1006 at 40. Holman further explains that optically coupling such media “increases the amount of output light”. *Id.* Thus, contrary to PO’s assertion, Holman and Mok both teach the benefit and utility of eliminating distance between the various optical layers.

C. Holman Teaches a BEF “on” a Reflector.

PO next argues that Holman does not disclose a BEF “on” a reflector, arguing that one of the intervening elements in Holman, “confining structure 72”, is not an intervening element because it is a lighting element. Response at 18-19. PO does not explain how a lighting element precludes the BEF from being “on the reflector.” Nor does its expert provide any additional insight. *See* Ex. 2006, ¶41. In any event, there is no limitation in the ’835 Patent about what is or is not an “intervening element”.

Thus, even if air gaps were excluded, Holman still shows a BEF on a reflector because prism sheets 58 and 60 are on the reflector (*i.e.*, “reflecting layer 76”) via intervening elements that include “confining structure 72” (*see* Ex. 1006 at 37-38), “diffusely scattering layer 68” (*id.* at 44), “compartmentalized spacer layer 84” and

“sidewalls 85” (*id.* 16). *See also id.*, FIG. 7 showing a “stacked” arrangement where the BEF (58) is “on” the reflector (76). *See also, id.*, FIG. 7 below (annotated):



Finally, PO even goes so far as to argue that “no other figures or description in Holman describes a BEF directly on the reflector or on with intervening layers.” Response at 19. PO here swaps “layers” for “elements” to circumvent Holman’s disclosures. But even if “elements” had to be “layers” as PO now argues, Holman is replete with disclosures showing a diffuser that directly contacts the reflector, and reflectors that directly contact a BEF. For example, Holman teaches that FIG. 15 is “one possible set of fully integrated two-dimensional light source panels...”.¹

¹ FIG. 15 is explicitly linked by Holman to its teachings in Figures 7 and 13 where it provides that the integration of Holman’s teachings regarding Figure 13 is the “same type of integration [that] applies to the arrangements of FIG. 14 and FIG. 7, and also to the light sources of either FIG. 13

Holman goes on to explain that in some cases optically coupling “all media boundaries between the LED 70 and lower prism sheet layer 58” increases light output. Ex. 1006 at 40. During deposition PO’s own expert acknowledged these disclosures in Holman. Ex. 1028 at 122:4-11. And as shown by Holman in Figures 13 and 15, the various media layers are in direct contact and stacked upon each other. Holman even discusses the tradeoffs between light uniformity, brightness, power transfer, and efficiency – all features one of skill in the art would understand in designing the arrangement of the various lighting panel components. Thus, even under PO’s more constrictive understanding of “elements” as “layers,” Holman discloses this element.

D. Mok Discloses a BEF that Recycles Light.

PO next argues that Mok’s Brightness Enhancer 18 is not a BEF because it does not recycle light. Response at 19-20. To reach this conclusion, PO inserts new language into claim 1, suggesting that a BEF must, by itself, recycle light. And although the term “recycling” is not in claim 1, recycling is exactly what is performed by Mok’s BEF. Mok explains that “[t]he brightness enhancer 18 collects diffused light from the diffuser 16 and directs it out of a front surface 52 of the brightness enhancer 18 to maximize the on-axis brightness of the light emitting panel

or FIG. 14 and the system of FIG. 8.” In other words, all of these configurations are explicitly linked in Holman.

10.” Ex. 1005, [0015]. Further, Dr. Pattison’s unrebutted testimony confirms, that BEFs *in general*, including 3M’s BEFs, are known films whose basic function is to “encourage light recycling and diffusion of light outside of the desired emission angle.” Ex. 1003, ¶¶ 68, 71, and 98; *see also* Ex. 1005, [0024] (explicitly disclosing 3M’s BEF). Thus, although Mok does not explicitly describe recycling light, its BEF unquestionably emits light of a first angle (*i.e.*, light directed out the front surface) and reflects light of a second angle (*i.e.*, light outside of the desired angle).

E. Lamb Discloses a BEF that Recycles Light.

The Response misconstrues Petitioner’s use of Lamb to avoid invalidity.

Petitioner uses Lamb to explain how one of skill in the art would understand that BEFs, including 3M’s BEF, recycle light. PO appears to acknowledge that Lamb describes the same BEF used in Mok. Response at 21 (“Mok equally describes the 3M product to enable the invention.”). And Lamb explicitly describes 3M’s BEF as one that “recycles” light. Ex. 1007, [0035] (“The enhancement film 14 [“Vikuiti™ Brightness Enhancement Film BEF, available from 3M Company”] refracts light within a certain angle toward the viewer. Light outside that angle is ‘recycled,’ *i.e.*, reflected back into the backlight 10, where it travels within the system until reaching the proper angle for exiting the system.”). This disclosure in Lamb explicitly describes emitting light having a first orientation and reflecting light having a second orientation. And despite not knowing how 3M’s BEFs work, even PO’s expert

eventually confirmed Lamb's disclosure of this element. Ex. 1028 at 84:7-21; 116:10-117:8.

PO's argument that Lamb's BEF "would not operate properly" if it was placed directly on or in Mok's system lacks any credible reasoning and is directly contradicted by the evidence. First, Mok explicitly describes eliminating the distance between the diffuser and BEF. Ex. 1005, [0023], [0032]. Second, PO's argument cites only its expert, who merely parrots the Response without any technical reasoning or evidentiary basis. Ex. 2006 at ¶46. Third, Lamb discusses direct-lit backlighting systems, just as in Mok. Ex. 1007, Fig. 1.

F. A Person of Ordinary Skill in the Art Would Be Motivated to Combine Lamb with Mok and Holman.

PO next argues that a Person of Ordinary Skill in the Art would not combine Lamb with Mok or Holman because Lamb relates to edge-lit displays. PO's analysis is fundamentally flawed.

As discussed above, Lamb explicitly describes a known property of 3M's BEFs, namely light recycling. Lamb describes the same 3M BEF as disclosed by both Mok and Holman. To the extent that PO's argument is that the Lamb's 3M's BEF is different from Mok's 3M's BEF, that is simply wrong.

Further, 3M's BEFs are well-known and repeatedly identified throughout the prior art. Moreover, as Dr. Pattison explains, "Lamb explicitly describes that which is implicitly disclosed in Mok, a brightness enhancement films will reflect some

amount of light, which is in turn recycled in the below diffuser sheet layer.” Ex. 1003, ¶115.

PO also attempts to distinguish Lamb by arguing that Lamb is limited to edge-lit displays using CCFL light sources. This is also incorrect. Lamb explicitly describes direct-lit backlight systems. *See, e.g.*, Ex. 1007, Fig. 1, [0034]. Moreover, Lamb explicitly describes using 3M’s BEF in both “traditional direct-lit backlight” displays (Fig. 1) and edge-lit display (Fig. 2). *Id.*, [0034]-[0035]. Similarly, with respect to lighting sources, Lamb repeatedly describes using LEDs instead of CCFLs. *See id.*, [0039].

PO also highlights its intentional misreading of Lamb by next suggesting that the combination would require mounting Mok’s LED substrate on top of Lamb’s light guide and that doing so would render the device inoperable. Response at 24. To reach this conclusion PO distorts the combination to bodily incorporate Lamb’s entire structure and sandwich it between Mok’s structure. PO’s argument entirely misses the point, *i.e.*, that one of skill in the art would know that the BEFs described in Mok, Lamb, and Holman, all function similarly. Ex. 1003, ¶¶ 71, 98, and 115. Further, and contrary to PO’s erroneous suggestion, “[t]he test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference[.]” *Allied Erecting & Dismantling Co. v. Genesis*

Attachments, LLC, 825 F.3d 1373, 1381 (Fed. Cir. 2016) (quoting *In re Keller*, 642 F.2d 413, 425 (C.C.P.A. 1981)).

Finally, to the extent PO argues that Lamb’s BEF (or even Holman’s BEFs for that matter) are different or somehow do not relate to the same brightness enhancement films generically disclosed in the ’835 Patent, PO is wrong. Lamb specifically discusses emitting light of a first orientation, *i.e.* first angle, and reflecting light of a second orientation, *i.e.* second angle. Holman also explicitly teaches that its prism sheets, which can include 3M’s BEF films, are optical layers that recycle light. In fact, Holman explicitly describes that the “hallmark” of 3M’s BEFs is recycling light. Ex. 1006 at 125. And that such films are the “most common” films used in displays. *Id.* at 118. PO’s attempt to distance itself from these common, well-known optical films and their well characterized and understood uses should fail.

G. The Combination of Mok, Holman, and Lamb Discloses Limiting “direct emissions from the lighting panel...to thereby encourage light recycling/diffusion in the lighting panel.”

Next, PO rehashes its prior argument that Mok does not discuss recycling light. Response at 25. As discussed above, Mok expressly discloses a BEF and expressly discloses the 3M BEF. Ex. 1005, [0024]. And as explained before, to the extent Mok does not explicitly detail recycling light (as confirmed by Dr. Pattison’s un rebutted testimony), a person of skill in the art would have looked to Lamb, which

does. Ex. 1007, [0034]. There could not be a clearer description of how BEFs work, *i.e.*, by directing emission of light of a first angle and reflecting light of a second angle. *Id.*

H. The Combination of Mok, Holman, and Lamb Discloses “a heatsink panel on a second side of the at least one substrate.”

PO argues that Mok does not disclose a heat sink because its printed circuit board is “not designed, intended or functional to draw heat away from the LEDs without substantially more than being simply a printed circuit board.” Response at 26. Regardless of whether Mok itself discloses a heat-sink, heat sinks were well known in the art, as demonstrated by Holman. Holman, like Mok, recognizes the need for heat extraction from LEDs which emit light. Ex. 1006 at 8, 33, and 39. To solve this issue, Holman mentions a need for “adequate heat sinking.” *Id.* at 31. Holman describes a base layer 220 that functions as part of a heat sink. *Id.* at 40. In Holman, the LEDs 70 are mounted to the base layer 220. *Id.*, Figs. 7 and 13. Light is emitted from the LEDs 70 in a direction away from the base layer 220 and the base layer draws heat away from the LEDs 70 in the direction opposite the direction of light emission. *Id.* This is all well-known in the art and even PO’s own expert agrees with this. Ex. 1028 at 173:20-21.

To combat this express disclosure, PO suggests that “Holman does not teach or suggest that the base layer is considered by itself a heatsink panel....” Response at 26. But this is not required by the claim. To the contrary, the claim only requires

that “a heatsink panel on a second side of the at least one substrate opposite to the first side and configured to draw heat away from the at least one substrate”. Such a heat-sink panel is either expressly disclosed or obvious in view of the combined disclosure of Mok and Holman. Ex. 1003, ¶¶ 126 and 139, Claim 14.

I. Claims 4 and 8 Are Invalid.

As explained in the Petition Claims 4 and 8 are unpatentable over the combination of Mok and Lamb (claim 4) and Mok (claim 8). *See* Paper 1 at 26-29.

Regarding claim 4, the Board criticized the lack of motivation to combine Mok and Lamb to provide an “additional layer.” *See* Paper 7 at 30. However, Mok is not limited to single optical components and in fact teaches “one or more light conditioners”. Ex. 1005, [0015]. Lamb’s teachings regarding the use of a “diffuse extractor” were known to improve light uniformity and brightness. Ex. 1007, [0058]; Ex. 1003, ¶121. And improving light uniformity and brightness are goals explicitly identified by Mok. Ex. 1005, [0006]-[0007]; Ex. 1003, ¶121. Thus, there was a motivation to use Mok’s teachings of multiple light conditioners, *i.e.* additional layers, to improve lighting.

Similarly, to the extent PO argues that claim 8 requires multiple diffuser sheets, that would also have been obvious. Nothing in Mok suggests that its disclosures are limited to a single diffuser sheet. In fact, Mok explicitly describes using “one or more light conditioners.” Ex. 1005, [0015]. Moreover, Dr. Pattison

explains that the use of “multiple diffusers” was common, and diffusers were off-the-shelf components, well understood, and could be readily combined based on “[s]tandard optical engineering” principles. Ex. 1003, ¶34.

IV. Ground 2 – Claims 1-5 and 7-14 are Obvious Over the Combination of Epstein, Holman, and Lamb in view of the Knowledge of a POSITA.

A. Lamb Is Not Limited to Edge Lighting Using CCFL As PO Incorrectly States.

PO argues Lamb is limited to edge-lit backlight displays using Cold Cathode Florescent Lighting (CCFL), and thus would not be combined with LED based backlights described in Epstein and Holman. Response at 28. This is simply wrong. As explained above, Lamb describes a backlighting system, including direct-lit backlighting systems. Ex. 1007, Fig. 1, [0034] (“FIG. 1 illustrates the structure and components of a traditional direct-lit backlight 10”). Similarly, Lamb describes using LEDs instead of CCFLs. *Id.* [0039].

Further, the Petition relies on Lamb as a secondary reference, to the extent Epstein does not explicitly describe the property of light recycling in its BEF, which Lamb expressly discloses in its description of both edge-lit and direct-lit backlight systems. Ex. 1007 at [0035].

B. The Combination of References Discloses “a Brightness Enhancement Film on the Reflector.”

PO argues the BEF 662 disclosed by Epstein is not “on” the guiding layer 610, but instead there is an “empty space” between the layers. Response at 28-29. Similar

to the incorrect argument PO presents regarding Ground 1, PO ignores that the Institution Decision found “that the term ‘on’ does not exclude air gaps between layers, as proposed by PO.” Paper 7 at 10. The Response ignores this finding, and thus neither contests it nor applies it. Under this construction of “on,” this element is met by Epstein.²

PO further ignores that Holman, which is used in this combination, expressly discloses a direct or stacked arrangement as described above. *See also*, Ex. 1006, at 8-11, 37-38; Figures 7, 8, 13, 14, and 15 and accompanying disclosures. Further, Holman discloses the claimed BEF, again contrary to PO’s assertion. *Id.* at 8-9 (disclosing 3M’s BEF).

C. A Person of Ordinary Skill in the Art Would Be Motivated to Combine Epstein with Holman and Lamb.

PO argues that a POSITA would not combine Holman with Epstein because light produced through this combination would not be sufficiently uniform. Response at 29. PO does not provide any explanation based on the disclosures of Epstein or Holman as to why there would be a loss of uniformity if the two references were combined. Rather, the only authority cited is PO’s expert at paragraph 61, which is nearly a word-for-word copy of the Response. As the Board has consistently

² PO states a construction that “empty space is not an intervening layer as claimed *and agreed to*.” Response at 28 (emphasis added). Petitioner has not agreed to anything. Petitioner does not take a position on whether empty space is an intervening layer or not. Petitioner’s position is that *under either construction*, the prior art discloses the “on” limitation.

recognized, a declaration that repeats the arguments *verbatim* “is conclusory and unsupported, adds little to the conclusory assertion for which it is offered to support, and is entitled to little weight.” *Xerox Corp. v. Bytemark, Inc.*, IPR2022-00624, Paper 9, at 15 (P.T.A.B. Aug. 24, 2022) (precedential).

Here, the suggestion that there would be no uniformity is conclusory and unsupported, in particular because both Epstein and Holman expressly disclose improving light uniformity. *See, e.g.*, Ex. 1008, [0088] and Ex. 1006 at Abstract. Moreover, Holman specifically discloses compact uniform illumination designs, contrary to PO’s argument. Ex. 1006 at 44 (describing compact arrangement in Fig. 15 with diffuse reflecting layer 68 optically coupled to diffuse scattering medium 217, which is in turn coupled to prism layer 58, as improving light uniformity, *i.e.*, randomization).

D. Epstein Discloses a BEF Configured to “preferentially reflect light having a second orientation, different from the first orientation, back into the lighting panel.”

PO next argues that if Epstein discloses a BEF it refracts light and does not reflect light back into the lighting panel. Response at 31. This is again incorrect. Epstein expressly discloses how optical films may be used to reflect light back into the lighting panel. Ex. 1008, [0075] (describing recycling in relation to polarizing BEFs.) However, Epstein also explicitly discloses regular BEFs, including 3M’s BEF. Ex. 1008, [0074]. And although Epstein focuses on the emitting properties of

the BEF, as discussed above and by Dr. Pattison, BEFs, including 3M's BEF, reflect light. Ex. 1003, ¶¶ 72-73, 98-102, 117, 121-122. And in Epstein's system, as described in relation to Figure 10B, Epstein's BEF reflects light back into diffuser/guiding layer 610. *Id.* PO's myopic focus on whether Epstein explicitly describes reflection is misplaced, and irrelevant to the standard for obviousness. Those of skill in the art would readily understand Epstein's disclosed BEF as one that reflects light back into the diffuser. *Id.*

PO also criticizes Lamb, claiming the positioning of Lamb's BEF only works due to the positioning of the BEF in Lamb. *See* Response at 31. PO offers no support for this conclusion beyond the testimony of its expert; however the cited testimony is nearly identical to the Response and offers no additional explanation for why Lamb's BEF would not function. *Compare* Response at 31 *with* Ex. 2006, ¶42. Moreover, for the reasons already explained, Lamb explicitly describes recycling light and using the same BEF as disclosed in Epstein.

E. The Combination of Epstein and Lamb Teaches “wherein the light having the second orientation is reflected back into the lighting panel is recycled within at least the diffuser sheet.”

PO argues that Epstein does not disclose a BEF that reflects light back into the diffuser sheet. And further that Lamb does not teach reflecting light back into the diffuser sheet. Response at 32. This is again wrong. As discussed above, Epstein discloses both a BEF and DBEF in consecutive paragraphs. *See* Ex. 1008, [0074]-

[0075]. And although Epstein describes light recycling in conjunction with the DBEF, one of skill in the art would recognize that Epstein's BEF also recycles light for the same reasons discussed above. Further, Lamb explicitly describes "[t]he enhancement film 14 refracts light within a certain angle toward the viewer. Light outside that angle is 'recycled,' *i.e.*, reflected back into the backlight 10, where it travels within the system until reaching the proper angle for exiting the system." Ex. 1007, [0035]. And Lamb also discloses DBEFs as "first recycling enhancement structures" that are optically coupled to the surface face of the lightguide and recycle light within the diffuser. *Id.*, [0042]-[0043]. Thus, Lamb discloses optical components that reflect light back into a diffuser.

F. Epstein Discloses "the light extraction features are random features" of Claim 10.

With respect to claim 10, PO argues that there is no description in Epstein of randomizing light, and that a POSITA would not modify the Epstein design because doing so would be inefficient. Response at 33. PO provides no support for its position that modifying Epstein would be inefficient. PO's only cite is to its expert who adds no explanation or citation to the references and instead merely repeats the same conclusion as the Response. Ex. 2006, ¶67. Second, Dr. Pattison provides a detailed explanation of how randomization reduces Moire patterns, which neither PO nor its expert address. *See* Ex. 1003, ¶¶92-95. Third, Lamb, describes the

“randomization” of the polarization and direction of light. Ex. 1007, [0042]. Neither PO nor its expert address this disclosure.

G. Epstein Discloses the BEF is “configured to limit direct emission...to thereby encourage light recycling/diffusion in the lighting panel” of Claim 11.

PO argues that the polarization layer of Epstein is not a BEF and its only purpose is to re-orient light. However, Epstein expressly discloses BEFs, including 3M BEFs. Ex. 1008, [0074]. As discussed above, to the extent Epstein does not explicitly discuss recycling in connection with the BEF (vs. Epstein’s explicit discussion of recycling in connection with DBEF), one of skill in the art would understand recycling is a “hallmark” property of BEF films. Ex. 1003, ¶¶ 72-73, 98-102, 117, 121-122. Second, as discussed above, PO’s efforts to limit Lamb to edge-lit embodiments are simply wrong. Lamb’s disclosures apply to direct-lit backlighting systems similar to the ones discussed in Epstein. And again, PO relies on a specific embodiment (*i.e.*, Lamb’s edge-lit embodiment) in arguing that Lamb’s BEF would not be a suitable option for Epstein’s direct-lit backlight display. But PO ignores Lamb’s explicit teachings that BEFs improve light output, including in direct-lit backlight displays, which is one of Epstein’s goals.

V. PO’s Purported Expert is Entitled to No Weight.

PO submits a declaration from its expert, Mr. Bohannon. *See* Ex. 2006, (the “Bohannon Declaration”). The Bohannon Declaration is fundamentally suspect

because Mr. Bohannon simply parrots the Response. Indeed, rather than providing any insightful expert opinions and analysis, Mr. Bohannon simply repeats almost exactly the same text stated in the Response. As such, the Bohannon Declaration should not be entitled any weight.

The Board has consistently recognized that a declaration that repeats a Paper *verbatim* “is conclusory and unsupported, adds little to the conclusory assertion for which it is offered to support, and is entitled to little weight.” *Xerox Corp. v. Bytemark, Inc.*, IPR2022-00624, Paper 9, at 15 (P.T.A.B. Aug. 24, 2022) (precedential) (listing cases). Simply put, an expert declaration that “merely parrots the [Response]” is entitled to “little to no weight.” *E.g., MarkForged Inc. v. Continuous Composites, Inc.*, IPR2022-01431, Paper 7, at 14 (P.T.A.B. Jan. 18, 2023); *LG Elecs. Inc. v. Jawbone Innovations, LLC*, IPR2023-01111, Paper 10, at 15 (P.T.A.B. Jan. 9, 2024) (“Petitioner’s expert merely parrots the Petition. ... Thus, Petitioner’s conclusory assertion is unpersuasive.”); *see Content Square SAS v. Medallia Inc.*, IPR2022-00316, Paper, at 38 (P.T.A.B. July 14, 2022) (similar); *Man Wah Holdings Ltd. v. Rafeel Sys., LLC*, IPR2019-00616, Paper 7, at 15–16 (P.T.A.B. Aug. 21, 2019) (same).

For example, compare Paragraph 48 of the Bohannon declaration to pages 14–15 of the PO response, purporting to provide “expert opinion”:

Response at 14-15	Ex. 2006, ¶ 48
Recognizing the fallacy of this argument, Petitioner then claims that “Holman discloses a BEF 131 that rests on a transparent dielectric material 144.” Petition at 19. Petitioner then claims it would’ve been obvious to modify Mok’s layer arrangement using Holman’s teachings because <i>there is a general pressure in the art to reduce the thickness of panels</i>. Petition, at 20. (emphasis added) However, Mok specifically teaches away from this reasoning as Mok states “Generally speaking, <i>larger spaced-distances 48 will improve the uniformity of the light produced by the panel, but at the expense of panel thickness and some loss of efficiency</i>.”	Recognizing the fallacy of this argument, Petitioner then claims that “Holman discloses a BEF 131 that rests on a transparent dielectric material 144.” Petition, at 19. Petition then claims it would’ve been obvious to modify Mok’s layer arrangement using Holman’s teachings because <i>there is a general pressure in the art to reduce the thickness of panels</i>. Petition, at 20 (emphasis added) However, Mok specifically teaches away from this reasoning as Mok states “Generally speaking, <i>larger spaced-distances 48 will improve the uniformity of the light produced by the panel, but at the expense of panel thickness and some loss of efficiency</i>. By way of example, in one embodiment, the diffuser 16 is separated from the base panel 12 by a distance 48 of about 50 millimeters (mm) or less.” Mok, [0023](emphasis added)

As demonstrated above, Mr. Bohannon merely “repeats ... the conclusory assertion for which it is offered to support,” and thus “adds little to the conclusory assertion for which it is offered to support, and is entitled to little weight.” *Xerox*, IPR2022-00624, Paper 9, at 15. Indeed, a purported expert parroting the PO cannot give any insight into what a POSITA may understand and/or be motivated to do. *See LG Elecs.*, IPR2023-01111, Paper 10, at 15; *Content Square*, IPR2022-00316, Paper, at 38.

There are numerous other instances where the Bohannon Declaration is a near exact copy of the Response, and the Response purports to rely on those conclusory arguments to give the mindset of a POSITA. *Compare* Response at 16 *with* Ex 2006, ¶48; *Compare* Response at 22 *with* Ex 2006, ¶51. Indeed, the last forty-six paragraphs of the declaration are nearly an identical copy of pages 24-48 of the Response. *Compare* Response at 24-48 with Ex 2006, ¶¶53-99.

Overall, Mr. Bohannon's declaration is effectively nothing more than a copy of the Response itself. And "merely repeating conclusory arguments does not help the Board, the trier of fact in this proceeding, understand the evidence or to determine a fact in issue." *Man Wah*, IPR2019-00616, Paper 7, at 15–16. Mr. Bohannon's unhelpful declaration should therefore be given no weight.

VI. Conclusion

Claims 1-5 and 7-14 of the '835 Patent are invalid.

Respectfully submitted,

By: /s/ Matias Ferrario
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CERTIFICATE OF WORD COUNT

The undersigned certifies pursuant to 37 C.F.R. § 42.24(d) that the foregoing **PETITIONER'S REPLY TO PATENT OWNER'S RESPONSE** excluding any table of contents, mandatory notices, certificates of service or word count, or appendix of exhibits or claim listing, contains 5572 words according to the word-processing program used to prepare this paper (Microsoft Word). The foregoing word count complies with the 5,600 word type-volume limit specified by 37 C.F.R. § 42.24(c)(1).

Dated: July 19, 2024

By: /s/ Matias Ferrario
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CERTIFICATE OF SERVICE

The undersigned hereby certifies that on the date below a copy of this
PETITIONER'S REPLY TO PATENT OWNER'S RESPONSE has been
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