

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

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Shenzhen TCL New Technology Co., Ltd.
TCL Optoelectronics Technology (Huizhou) Co., Ltd.
TCL Overseas Marketing Ltd.
TCL Technology Group Corporation (f/k/a TCL Corp.),
Petitioners,

v.

LG Electronics Inc.,
Patent Owner.

Case No. IPR2023-00239
Patent No. 9,080,740

PATENT OWNER'S PRELIMINARY RESPONSE

LIST OF EXHIBITS	
Exhibit	Document
2001	Excerpts of the prosecution history of U.S. Patent No. 9,551,899 (stemming from the same specification as the '740 Patent)

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I. INTRODUCTION

The Board should deny institution of *inter partes* review because Petitioner has not established that a POSITA would be motivated to combine the prior art references.

The Petition challenges Claims 1-31 as unpatentable under 35 U.S.C. § 103 in view of U.S. Patent Publication No. 2012/0069248 (“Yokota”) (EX1004), U.S. Patent Publication No. 2012/0277347 (“Matsumoto”) (EX1005), U.S. Patent Publication No. 2011/0013119 (“Ha”) (EX1006), and U.S. Patent No. 7,275,852 (“Kim”) (EX1008). Paper 1 (“Pet.”) at 4. In particular, Petitioner challenges independent claims 1, 22, and 31 using Yokota modified by Matsumoto. However, Matsumoto solves the opposite problem from that of Yokota. Whereas Yokota solves the problem of a **bright** region in a peripheral part (using a large number of small through holes of the same size to **decrease** brightness), Matsumoto solves the problem of a **dark** region in a peripheral part (using reflective dots to affect brightness). Additionally, the physical differences between Yokota and Matsumoto would discourage a POSITA from taking features from Matsumoto and using them in Yokota. For example, replacing the reflective dots of Matsumoto with dark holes would worsen the problem that Matsumoto attempts to solve. Holes and dots have different reflective properties, especially as the size of the holes and dots increases. And, while Yokota alternatively describes using dark-colored dots, Matsumoto

describes using white-colored dots to achieve its different purpose.

For at least these reasons, and as further described below, Patent Owner respectfully requests that the Board deny institution of the Petition.

II. BACKGROUND

A. Overview of the '740 Patent

The '740 Patent is directed to an apparatus for improving the luminance uniformity of a planar lighting device; i.e., making the lighting for a television appear more uniform. EX1001 at 1:62-64. The planar lighting device, e.g., a television, includes a light source and a reflection layer which reflects light towards an LCD panel. *See generally, id.* at Fig. 1. The location of the light sources inside the television can cause the edges of the display to appear brighter due to light being reflected in the edge portion. *Id.* at 9:16-21. As seen in Figure 2 below, the '740 Patent recognized that luminance varies based on the distance between the edge 26 and the light sources 22. *See id.* at 6:1-9 (stating “luminance is high at the position close to the light source 22 and luminance is low at the position far from the light source 22.”). Accordingly, certain portions of the edge are brighter than others — portions close to the light source have a higher luminance than portions farther from the light source.

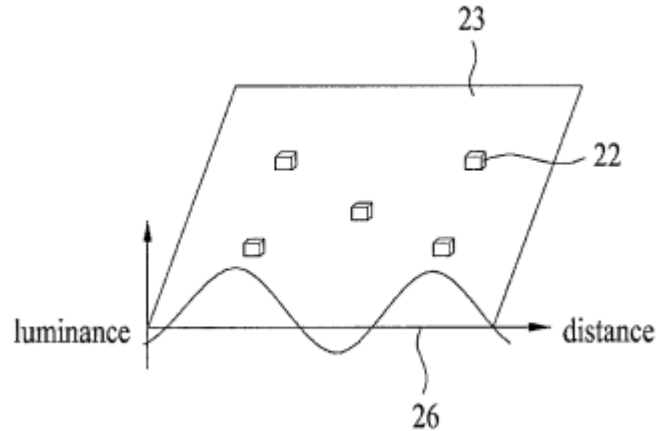


Fig. 2 of '740 Patent

Thus, the inventors of the '740 Patent recognized it was necessary to consider the location of the light source relative to the edge in order to regulate the light reflection on the reflection layer to achieve luminance uniformity. The '740 Patent accomplishes this by using a plurality of through holes (labeled 33), as depicted in Figure 19 below.

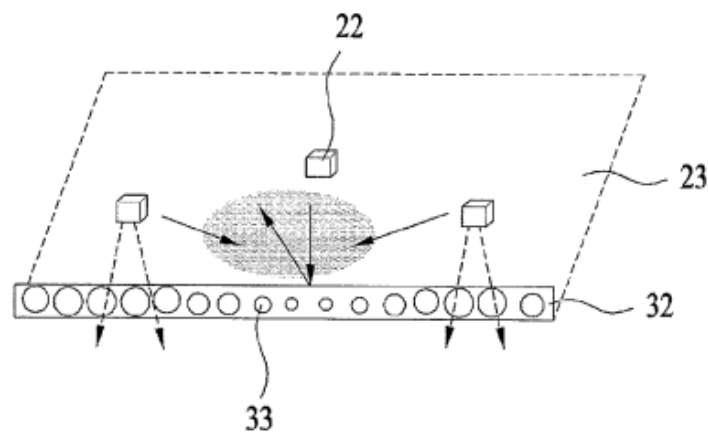


Fig. 19 of '740 Patent

The through holes are located on an inclined portion of the reflection layer and are formed in a pattern comprising through holes of different sizes to regulate the amount of light reflected by the reflection layer. *Id.* at 9:22-39. The through holes change in size in accordance to positions relative to the light sources. *Id.* at 9:9-21. For example, some of the holes are large. *Id.* at 9:16-18 (“a reflection layer 32 having large through holes 33 is disposed in a portion of the edge 26 close to the light source 22”). This design allows the apparatus to regulate the light reflectance in accordance to the different amounts of light which reach different portions of the reflection layer.

B. Challenged Claims

The Petition challenges Claims 1-31 of the '740 Patent. Independent Claims 1, 22, and 31 as follows:

Claim 1	Claim 22	Claim 31
1. A planar lighting device comprising:	22. A display device comprising: [22.1] a lighting device including: [22.1(a)] a lower cover;	31. A direct-type lighting device comprising: [31.1] a lower cover;

[1.1] a circuit substrate;	[22.1(b)] a circuit substrate disposed on the lower cover;	[31.2] a plurality of circuit substrates disposed on the lower cover and spaced apart by a predetermined distance;
[1.2] a plurality of light sources disposed on the circuit substrate;	[22.1(c)] a plurality of light sources disposed on the circuit substrate;	[31.3] a plurality of light sources mounted on each of the circuit substrates such that the light sources are spaced apart by a predetermined distance;
[1.3] a reflection layer disposed on the circuit substrate, the reflection layer comprising	[22.1(d)] a reflection layer disposed on the circuit substrate, the reflection layer comprising	[31.4] a reflection layer disposed on the circuit substrates, the reflection layer comprising

[1.3(a)] a first surface having a plurality of openings where the respective light sources are located,	[22.1(d)(i)] a first surface having a plurality of openings where the respective light sources are located,	[31.4(a)] a first surface having a plurality of openings where the respective light sources are located,
[1.3(b)] a second surface connected to the first surface, wherein the second surface has an inclination with respect to the first surface, and	[22.1(d)(ii)] a second surface connected to the first surface, wherein the second surface has an inclination with respect to the first surface, and	[31.4(b)] a second surface connected to the first surface, wherein the second surface has an inclination with respect to the first surface, and
[1.3(c)] a hole pattern having a plurality of through holes provided in the second surface of the reflection layer, wherein at least two through holes of the hole pattern are different in size; and	[22.1(e)] a hole pattern having a plurality of through holes provided in the second surface of the reflection layer, wherein at least two through holes of the hole pattern are different in size;	[31.5] a hole pattern having a plurality of through holes provided in the second surface of the reflection layer, wherein at least two through holes of the hole pattern are different in size;

[1.4] an optical sheet disposed on the light sources.	[22.1(f)] an optical sheet disposed on the light sources; and	[31.6] an optical sheet disposed on the light sources; and
	[22.1(g)] a spacer disposed between the lower cover and the optical sheet; and	[31.7] a spacer disposed between the lower cover and the optical sheet.
	[22.2] a liquid crystal panel on the lighting device.	

The claimed hole pattern in the second surface of the reflection layer is illustrated in the annotated Figure 19 below:

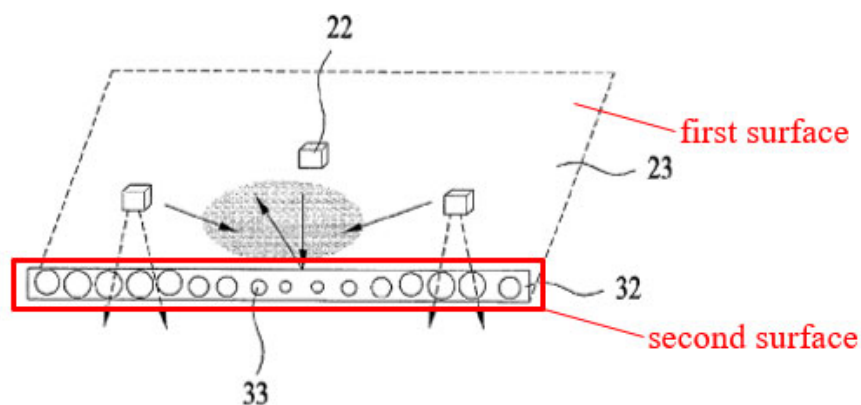


Fig. 19 (annotated) of '740 Patent

Claims 1, 22, and 31 require that at least two of the through holes in the hole pattern are different in size, as illustrated below in the annotated Figure 19:

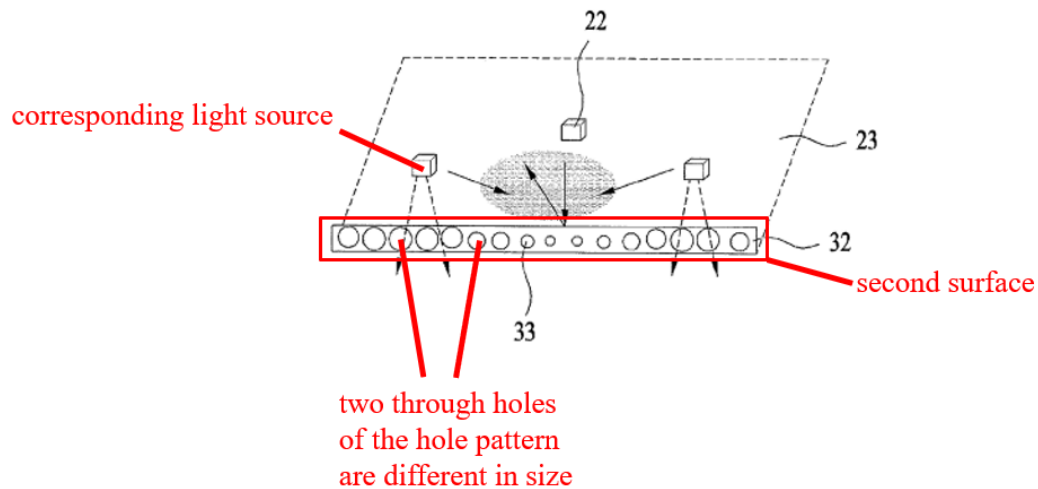


Fig. 19 (annotated) of '740 Patent

III. LEVEL OF SKILL IN THE ART

For the limited purpose of this Preliminary Response, Patent Owner does not contest Petitioner's definition of a person of ordinary skill in the art ("POSITA"), but reserves the right to do so in the event that trial is instituted.

IV. CLAIM CONSTRUCTION

Petitioner submitted that the terms in the challenged claims of the '740 Patent should be given their plain and ordinary meaning. Pet. at 4. For the limited purpose of this preliminary response, Patent Owner agrees that the Board does not need to construe any claims.

V. SUMMARY OF THE PRIOR ART REFERENCES

Ground 1 of the Petition relies on the combination of Yokota (EX1004) and Matsumoto (EX1005) to teach the limitations of independent claims 1, 22, and 31, and dependent claims 2–3, 7–21, and 23–29. Ground 2 of the Petition relies on the combination of Yokota (EX1004), Matsumoto (EX1005), and Ha (EX1006) to teach the limitations of dependent claim 30. Ground 3 of the Petition relies on the combination of Yokota (EX1004), Matsumoto (EX1005), and Kim (EX1008) to teach the limitations of dependent claims 4–6.

A. Primary Reference

Yokota is directed to solving the problem of a *brighter* region in the peripheral part of a diffusive plate as result of “light emanating from a number of light sources concentrating in the peripheral part.” EX1004, ¶11 (“This may result in, as shown in FIG. 13 [reproduced below], higher luminance only in a peripheral part of a diffusive plate. . . . such uneven luminance needs to be overcome.”).

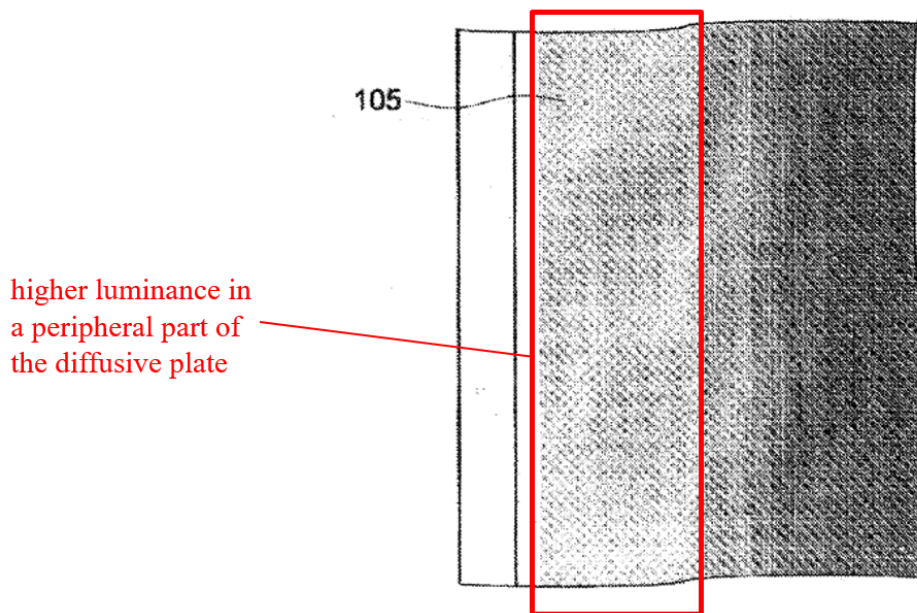


Fig. 13 (annotated) of Yokota

Yokota solves the problem of brighter regions in the peripheral part by placing a large number of small, uniform through holes on the inclined portion of a reflection layer. *See id.* ¶81 & Fig. 3 (below). Further, Yokota describes an efficient manufacturing technique of incorporating through holes in the reflection layer, stating, “[a] large number of small apertures 46A can be punched all at once in the molding process of the reflective sheet 42.” *Id.* ¶81.

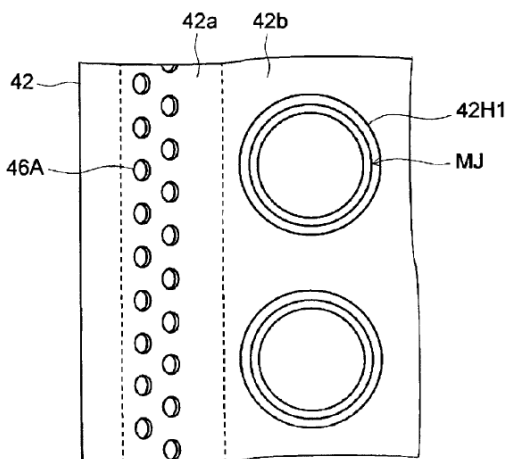


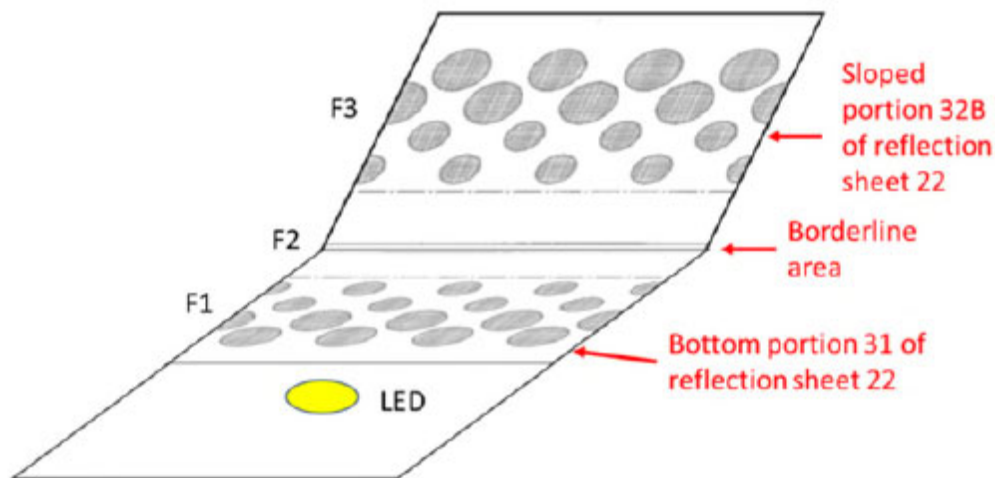
Fig. 3 of Yokota

The through holes absorb light and reduce the amount of light reflected by the reflective sheet, thereby reducing the bright region in the peripheral part and achieving uniform illumination of the display. *Id.* ¶80. Yokota notably contemplates that the “size [singular], intervals [plural], positions [plural] in the inclined surface 42a, etc. of the small apertures 46A are preferably optimized through experiments.” *Id.* ¶81. Thus, in contrast to the **multiple** “intervals” and “positions,” Yokota teaches only a **single** aperture size should be used—not apertures of **different** sizes. *Id.* ¶81. Consistent with this teaching, Figures 3 and 5 in Yokota depict holes of the same size.

Lastly, Yokota also describes that using dark-colored dots is another method to reduce reflection in the peripheral part of the reflection layer. *Id.* ¶90.

B. Secondary Reference

Contrary to Yokota, Matsumoto is directed to solving the problem of a *darker* region in the peripheral part of a diffusive plate as result of light emanating from light sources near the peripheral part. EX1005, ¶4. The dark region occurs because of two reasons. First, the distance from the light source to the border is relatively large such that “the amount of light reaching from the light source is relatively small in the portion adjacent to the border.” *Id.* ¶¶5-8; *see, e.g.*, Figs. 7-9 of EX1005. Second, light exiting from the LED is strongest at the vertical axis directly above the LED, and light intensity decreases as the angle from the vertical axis increases. *Id.*



Petitioner's modified Figs. 7, 8, and 9 of Matsumoto

Matsumoto solves the problem of darker regions in the peripheral part by placing dots formed by a white paste on both the flat and inclined portions of the reflection layer. *See id.* ¶77; *see also* Fig. 9 (reproduced below).

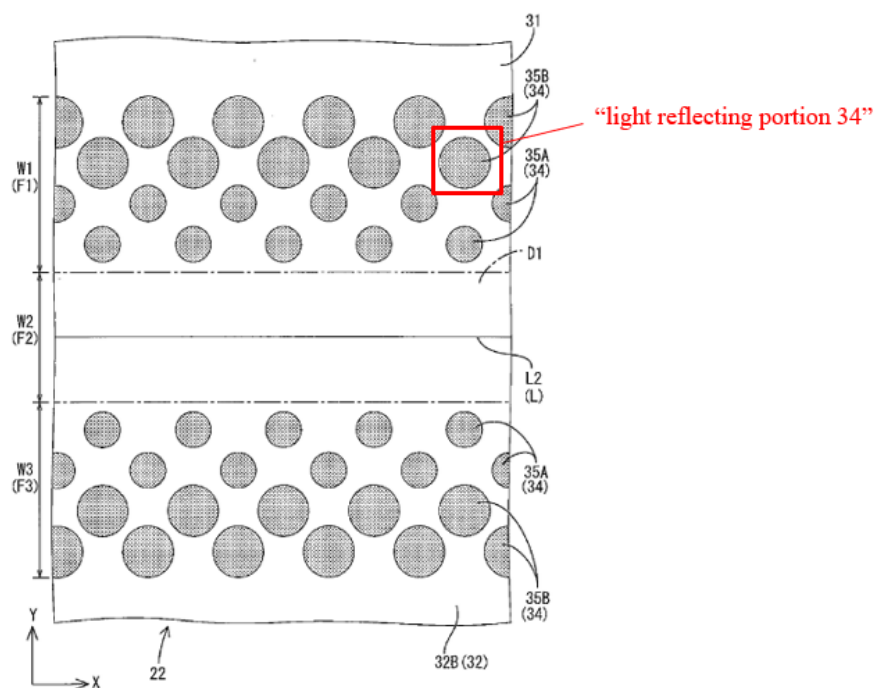
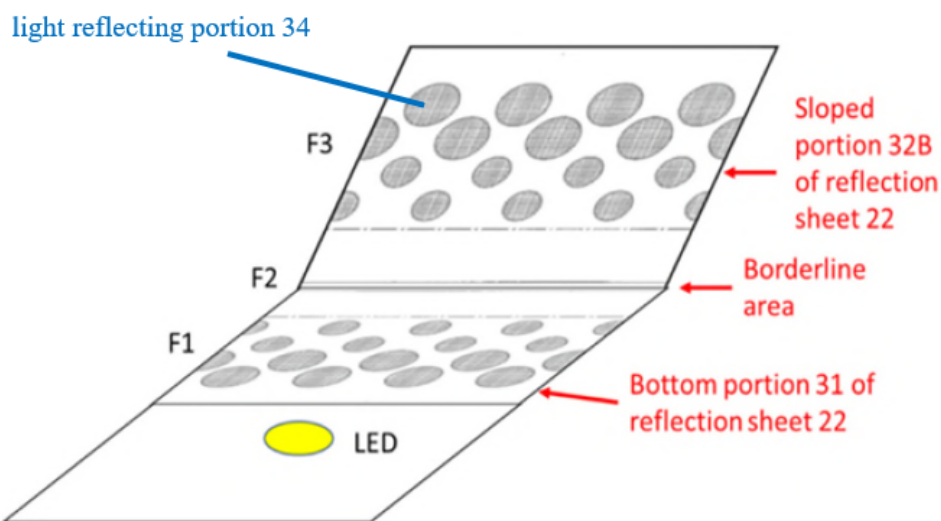


Fig. 9 (annotated) of Matsumoto

Matsumoto describes the disclosed dots as “light reflecting portion[s].” *Id.* ¶77 (“As illustrated in FIG. 9, a light reflecting portion 34 of a dot pattern is formed in the adjacent portions F1, F3 on a front surface (the light exit side) of the chassis reflection sheet 22.”); *Id.* ¶79 (“An area of each dot 35 of the light reflecting portion 34 is varied to control the light reflectance in the adjacent portions F1, F3.”). The reflective property of the dot is further apparent given that “each dot 35 is formed by printing white paste on a surface of the chassis light reflection sheet 22.” *Id.* ¶77. Thus, while the white dots in Matsumoto are less reflective than adjacent areas, the dots are intentionally designed to reflect light.

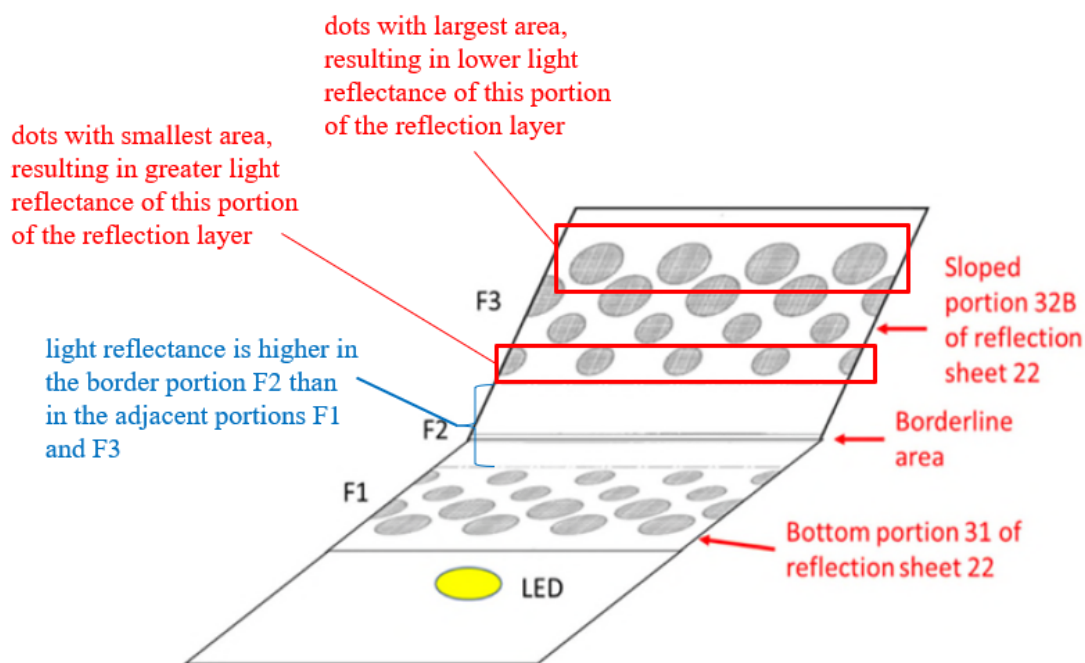
Matsumoto also teaches that “an area of each dot increases in a stepwise manner as is farther away from the borderline L.” *Id.* ¶80; *see also id.* at Fig. 9. Thus, on examination of the inclined portion of Petitioner's modified Figs. 7, 8, and 9 of Matsumoto (recreated below with further annotations in blue), the smallest dot is closest to the light source, and the largest dot is farthest from the light source, as shown by Figure 9 of Matsumoto.



Petitioner's modified Figs. 7, 8, and 9 of Matsumoto (annotated further in blue)

The area of the dots is varied to control the amount of light reflected towards the LCD panel. *See* EX1005, ¶¶79-80. A larger area of the dot results in a lower light reflectance. *Id.* Thus, the dotted portion closest to the borderline (indicated by L in Fig. 9) has a greater amount of light reflectance than a dotted portion farther from the borderline. The dot pattern results in “the light reflectance [to be] higher in the border portion F2 than in the adjacent portions F1, F3.” *Id.* ¶77. In other

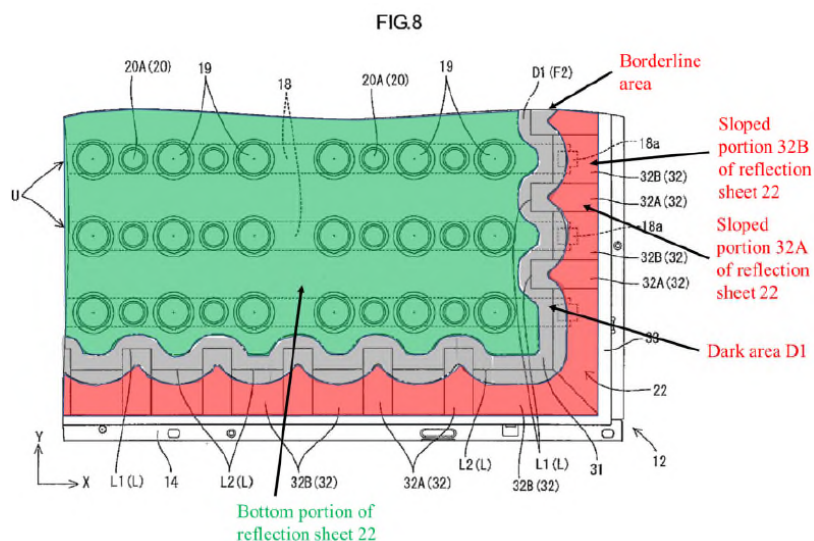
words, the purpose of the dot pattern is to **increase** the light reflectance in the border portion F2 relative to the peripheral part (e.g., portion F3). This particular design makes the border region F2 (the dark region) appear less dark relative to the parts adjacent to the border region, thereby resulting in a uniform brightness of the display.



Modified Figs. 7, 8, and 9 of Matsumoto (annotated)

Matsumoto further describes having a non-linear (i.e., wavy) borderline region (F2) in order to make the dark portion less noticeable. EX1005, ¶89 (“If the dark portion D2 is linear . . . a border between the dark portion D2 and its surrounding portions is clear and this easily causes uneven brightness”); EX1005, ¶91 (“in a configuration that the dark portion D1 is not formed in a linear shape . . . the border between the dark portion D1 and its surrounding portions is unclear and

uneven brightness is less likely to be caused.”). This wavy pattern is created by Matsumoto having “a first sheet sloped portion 32A and a second sheet sloped portion 32B each of which is lifted up from a different position.” EX1005, ¶71. The two sloped inclined portions, 32A and 32B, are depicted in Petitioner's Expert Declaration as modified Figure 8, reproduced below. EX1003, ¶130.



Petitioner's modified Fig. 8 of Matsumoto

C. Tertiary References

Ha is directed to a backlight assembly comprising a plurality of optical members. EX1006, ¶38 (“The first optical member 100 is disposed above the light sources 50 to diffuse the light emitted from the light sources 5”); *id.* ¶43 (“The second optical member 180 is disposed on the first optical member 100. The second optical member 180 may include a plurality of optical films.”). In particular, Ha is

directed to improving the diffusion of light from the point light sources. *Id.* ¶¶13-14.

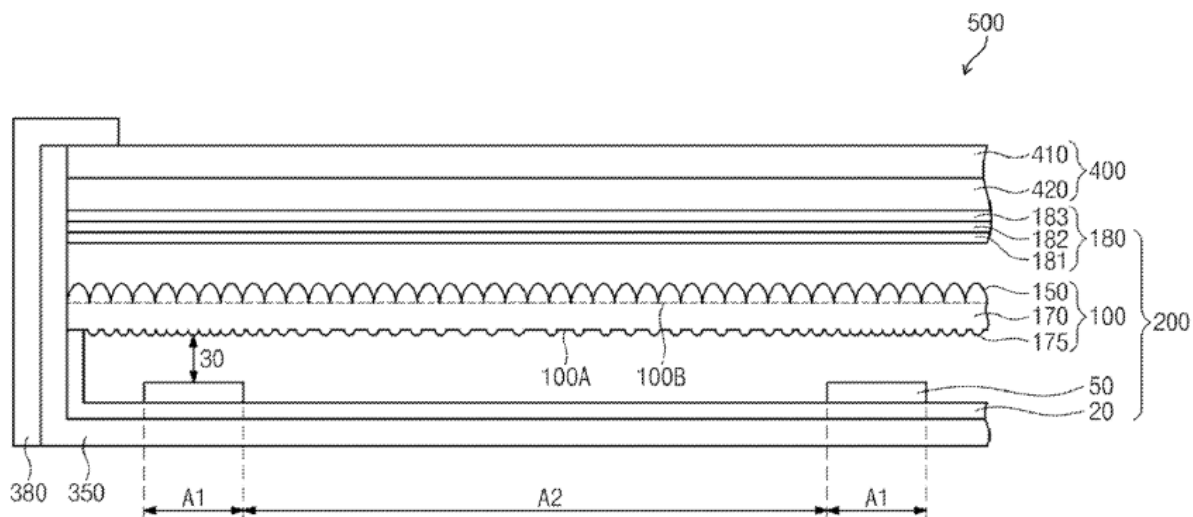


Fig. 2 of Ha

Next, Kim is directed to a structure of a backlight unit including an LED module. EX1008 at 1:50-61. In particular, the structure includes “a module supporter placed on a back of the LED module and supporting the LED module; a chassis assembly supporting the module supporter and the diffusion sheet; and a plurality of support pins supporting the diffusion sheet and the optical sheet against the chassis assembly.” *Id.*

VI. THE PETITION DOES NOT ESTABLISH A REASONABLE LIKELIHOOD OF SUCCESS

The Board should deny institution because Petitioner fails to show that there is a reasonable likelihood that it would prevail with respect to at least one of the challenged claims. 35 U.S.C. § 314(a). As discussed below, Petitioner has not met

its burden of establishing a reasonable likelihood of success at least because the Petition fails to show that a POSITA would be motivated to combine the cited prior art references in the manner of independent Claims 1, 22, and 31. Consequently, the Board should deny the Petition and decline to institute the *inter partes* review.

For brevity, Patent Owner addresses only those arguments that are necessary for the Board to determine whether to institute trial at this stage and makes no admission or waiver with respect to arguments not addressed herein. Further, to avoid confusion and facilitate the Board's review, Patent Owner adopts the Petition's labeling of claim elements of the '740 Patent for this Response without accepting the substance of the Petition's arguments or any substantive implications of such labeling.

A. Legal Standard

To prove obviousness, Petitioner must show that the asserted combination of prior art teaches all elements of the challenged claims. *See Pers. Web Techs., LLC v. Apple, Inc.*, 848 F.3d 987, 989 (Fed. Cir. 2017). An obviousness determination requires finding “both ‘that a skilled artisan would have been motivated to combine the teachings of the prior art references to achieve the claimed invention, and that the skilled artisan would have had a reasonable expectation of success in doing so.’” *Intelligent Bio-Sys., Inc. v. Illumina Cambridge Ltd.*, 821 F.3d 1359, 1367–68 (Fed. Cir. 2016) (internal citations omitted). Petitioner must offer “a sufficient

explanation of how the references may be combined, from the perspective of one with ordinary skill in the art, to arrive at the claimed invention, and why the proffered combination accounts for all the features of each claim.” *Dominion Dealer Sols., LLC v. AutoAlert, Inc.*, IPR2013-00223, Paper 9 at 19 (PTAB Aug. 15, 2013). Further, “[o]bviousness may not be established using hindsight or in view of the teachings or suggestions of the inventor.” *Para-Ordnance Mfg., Inc. v. SGS Imps. Int’l, Inc.*, 73 F.3d 1085, 1087 (Fed. Cir. 1995).

B. Petitioner has not shown that a POSITA would combine the dot-pattern in Matsumoto with the through-hole structure in Yokota

Petitioner bears the “burden to demonstrate both ‘that a skilled artisan would have been motivated to combine the teachings of the prior art references to achieve the claimed invention, and that the skilled artisan would have had a reasonable expectation of success in doing so.’” *Intelligent Bio-Sys., Inc.*, 821 F.3d at 1367–68 (internal citations omitted). “Identifying a motivation to combine the prior art is important because ‘inventions in most, if not all, instances rely on building blocks long since uncovered, and claimed discoveries almost of necessity will be combinations of what, in some sense, is already known.’” *TQ Delta, LLC v. Cisco Sys., Inc.*, 942 F.3d 1352, 1357 (Fed. Cir. 2019) (internal citations omitted). The Board has recognized that a motivation to combine does not exist when the primary reference supports an opposite inference from what the secondary reference

describes. *See Motorola Mobility LLC v. Largan Precision Co., Ltd.*, IPR2022-01023, Paper 9 at 26 (PTAB Jan. 4, 2023) (“We agree with Patent Owner that such changes would create a very different lens system than the one disclosed in [the primary reference]. Indeed, in light of the statements describing the refractive powers of its lenses as crucial to reducing aberrations, we determine that the opposite inference would be reached by a POSITA.”). In other cases, the Board has determined that a motivation to combine does not exist when the prior art references “address very different problems and solve these problems in very different ways.” *Well Master Corp. v. Flowco Prod. Sols., LLC*, IPR2022-01384, Paper 7 at 16 (PTAB Jan. 20, 2023) (Decision Denying Institution).

1. Petitioner's conclusory motivations to combine are inadequate

Petitioner bears the burden to show a motivation to combine prior art references. *See Intelligent Bio-Sys., Inc.*, 821 F.3d at 1367–68. Petitioner's conclusory arguments are insufficient to show that a POSITA would combine the hole structure of Yokota with the dot pattern of Matsumoto to achieve a result “wherein at least two through holes of the hole pattern are different in size.” Nor does Petitioner's conclusory expert opinion, which merely repeats the Petition, suffice. *See* 37 C.F.R. §42.65(a); *Xerox Corp. v. Bytemark, Inc.*, IPR2022-00624, Paper 12, at 5 (PTAB Feb. 10, 2023) (Decision by the Director) (determining “the Board was correct in giving little weight to Petitioner's expert because the expert

declaration merely offered conclusory assertions without underlying factual support and repeated, *verbatim*, Petitioner's conclusory arguments"); *Content Square SAS v. Medallia*, IPR2022-00316, Paper 13 at 37-38 (PTAB July 14, 2022) (similar).

First, Petitioner assumes that the solution presented in Yokota would have a problem further requiring modifications to achieve "uniformity of illumination of a diffuser sheet in a backlight assembly." Pet. at 47. But Petitioner provides no basis to support its conclusion that the solution presented in Yokota would be inadequate or otherwise have this problem. *See Meridian Wildlife Servs., LLC v. Safe Haven Wildlife Removal & Prop. Mgmt. Experts, LLC*, IPR2022-01340, Paper 9 at 44 (PTAB Jan. 10, 2023) ("[Petitioner's expert]'s reasoning that a skilled artisan would have placed the net 'in response to observing flight patterns' *presumes* that birds fly along the perimeter of a building's interior, *yet the evidence does not adequately support such a finding.*") (emphasis added). For instance, Petitioner states, "from this disclosure in Yokota a POSITA would have been motivated to use different size holes in the inclined portions of the reflection sheet to optimize the uniformity of illumination by the backlight." Pet. at 40. Petitioner's only support is a citation to its Expert Declaration which repeats, nearly *verbatim*, the same conclusory statements as its Petition. EX1003, ¶136. Neither Petitioner nor their Expert point to excerpts of Yokota, Matsumoto, or other sources to support their conclusory opinion that the small apertures taught in Yokota result in non-uniform illumination

such that further modifications are necessary. Petitioner may not presume a problem in the primary reference simply to use a secondary reference to solve that non-existent problem.

Second, even if Yokota had the hypothesized problem, Petitioner merely provides conclusory statements that the dot pattern of Matsumoto would improve Yokota. And even if Yokota and Matsumoto were directed to the same problem, “the mere fact that two references may address the same or similar problems is not adequate to demonstrate motivation to combine, even at this stage of the proceeding.” *Well Master Corp.*, IPR2022-01384, Paper 7 at 16 (*supra*) (Decision Denying Institution). The Board has confirmed that “the *possibility* of improvement, which also allows that [the primary reference] would *not* be improved, fails to rise to the level of ‘articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.’” *Valve Corp. v. Ironberg Inventions Ltd.*, IPR2017-00858, Paper 87 at 17 (PTAB Jan. 26, 2023) (emphasis added). For instance, Yokota merely discloses a large number of *same-size* small holes, as depicted in Figure 3 of Yokota below. *See also* EX1004, ¶81 (“A large number of small apertures 46A can be punched all at once in the molding process of the reflective sheet 42, and thus reflection reduction treatment can be performed efficiently.”); *id.* at Abstract (“The reflectance reduction treatment involves forming a plurality of small holes (46A) in the inclined surface.”).

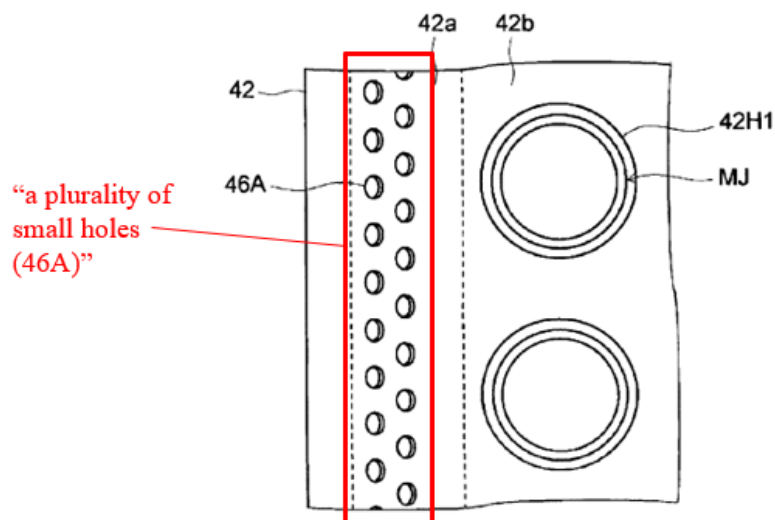


Fig. 3 of Yokota (annotated)

Then, Petitioner proposes modifying Yokota, which is directed to *reducing* brightness in a peripheral part, with Matsumoto, which is directed to *increasing* the brightness in the borderline region (i.e. the portion where the flat surface and the inclined surface of the reflection layer meet). *See, e.g.* EX1004, ¶11; *see also* EX1005, ¶¶80-81, 85 (describing Matsumoto's dot pattern wherein "an area of each dot increases in a stepwise manner as is farther away from the borderline" in order to achieve the highest light reflectance in the borderline region).

Third, without evidence, Petitioner also assumes that the specific solution provided in claims 1, 22, and 31 of the '740 Patent was well known: "from the teachings of Matsumoto a POSITA would have readily understood to apply patterns of different sized dots of reduced reflection material to areas of a reflection sheet to reduce the reflectance therefrom, and hence to lower the illumination from areas of

a reflection sheet” and “A POSITA would understand from the prior art teachings . . . that multiple sizes of holes when provided in inclined portions of a reflection sheet according to the design of the backlight assembly will assist in providing uniformity of illumination.” Pet. at 46-47. This appears to be nothing more than a hindsight modification of the cited art to reflect the claimed invention, which is prohibited. *See Para-Ordnance Mfg., Inc.* 73 F.3d at 1087 (“[o]bviousness may not be established using hindsight or in view of the teachings or suggestions of the inventor”); *TriVascular, Inc. v. Samuels*, 812 F.3d 1056, 1066 (Fed. Cir. 2016) (internal citations omitted) (“the Board ‘must still be careful not to allow hindsight reconstruction of references . . . without any explanation as to how or why the references would be combined to produce the claimed invention’”).

Lastly, Petitioner's expert declaration parrots, near verbatim, statements in the Petition, with no further analysis or support. *Compare* Pet. at 36-48 *with* EX1003, ¶¶119-138. Such testimony is entitled to no weight. *See* 37 C.F.R. §42.65(a); *Xerox Corp.*, IPR2022-00624, Paper 12 at 5; *Content Square SAS*, IPR2022-00316, Paper 13 at 37-38. Absent any evidence to support the conclusory arguments in the Petition, Petitioner has failed to carry its burden to show a motivation to combine Yokota and Matsumoto. Institution should therefore be denied.

2. *Because Matsumoto solves the opposite problem from that of Yokota, applying Matsumoto to Yokota results in the opposite effect of what Yokota tries to achieve*

Not only has Petitioner failed to provide an affirmative showing for a motivation to combine, but there are also reasons a POSITA would **not** be motivated to combine Yokota and Matsumoto. These references solve different problems in different ways. Yokota solves the problem of “disproportionality higher luminosity in a peripheral part” (i.e., **bright** regions) by using holes placed in the peripheral region of a reflective sheet to “reduce the amount of light that is reflected on the inclined surface.” See EX1004, ¶80; see also *id.* ¶12 (“The present invention [is directed to] preventing an inclined surface formed in a peripheral part of the reflective sheet from giving the diffusive plate unnecessarily high luminance”). In contrast, Matsumoto solves the problem of **dark** regions in the border region by using a dot pattern wherein the dots (described as “light reflecting portions”) are formed of a white paste to “control the light reflectance in the adjacent portions F1, F3.” EX1005, ¶80.

3. *The physical differences between Yokota and Matsumoto would discourage a POSITA from taking features from Matsumoto and using them in Yokota*

“The obviousness inquiry does not merely ask whether a skilled artisan could combine the references, but instead asks whether ‘they would have been motivated to do so.’ Fundamental differences between the references are central to this motivation to combine inquiry.” *Adidas AG v. Nike, Inc.*, 963 F.3d 1355, 1359 (Fed. Cir. 2020) (internal citations omitted) (affirming the Board's finding of no

motivation to combine where there were “fundamental differences in seaming techniques” such that modifying one reference in view of the other would “change the principles under which the [the primary reference] operates and the petitioner “failed to reconcile th[ose] differences”).

Physical differences between Yokota and Matsumoto would discourage a POSITA from combining the references. First, dark holes and white dots are not interchangeable. Yokota emphasizes the light **absorption** properties of dots and holes, and in particular, describes dots as being formed of **dark**-colored ink. EX1004, ¶90. In contrast, Matsumoto describes dots formed by printing **white** paste on the reflection sheet and describes the dots as a “light **reflecting** portion.” EX1005, ¶77 (emphasis added). Further, the Patent Office has previously recognized that Matsumoto only discloses dots—not through holes. During prosecution of US 9,551,899 (a patent stemming from the same specification as the ’740 Patent), the Examiner stated, “[Matsumoto] fails to further teach the light regulating patterns comprise through holes.” EX2001, 11 (May 26, 2016). Thus, for all these reasons, a POSITA would not have looked to Matsumoto’s white dots to solve the problem of bright regions described in Yokota.

Second, a POSITA would recognize that replacing the dots of Matsumoto with holes would result in an undesired bright portion because light would be reflected from the metal chassis. The chassis below the reflection layer is made of

metal, and metals are generally reflective. *See* EX1005, ¶42. As shown below in the Figure 4 of Matsumoto, the large dots are located relatively close to the metal chassis.

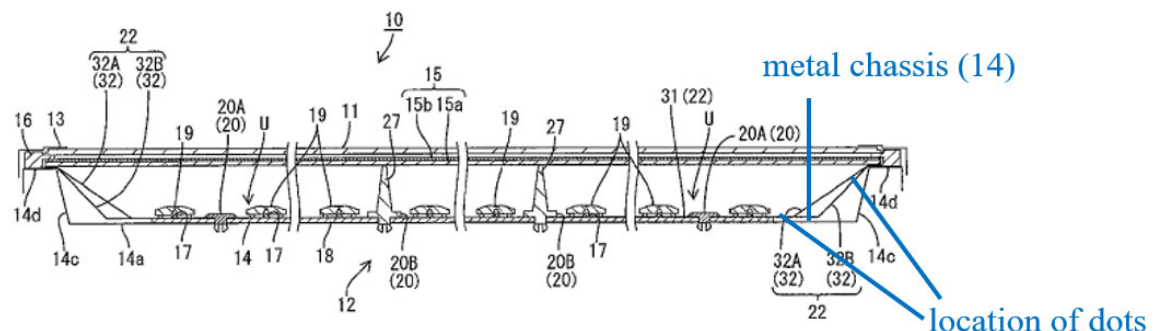
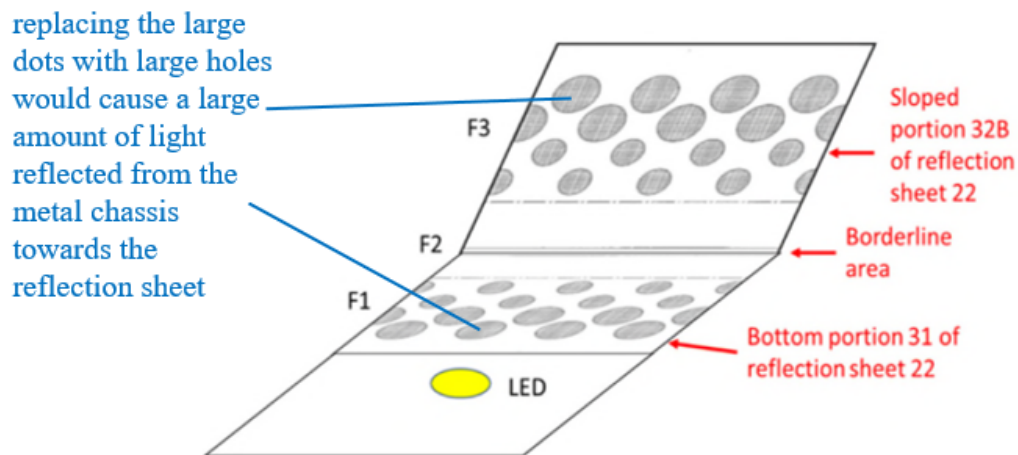


Fig. 4 of Matsumoto (annotated)

Replacing the dots with holes would result in a large amount of light going through the holes towards the metal chassis and being reflected by the metal chassis towards the LCD panel, thereby causing undesirable bright portions. In fact, replacing the large dots with large holes would result in a large amount of light being reflected from the metal chassis towards the reflection sheet, and make the dark borderline portion *more* noticeable.



Petitioner's modified Figs. 7, 8, and 9 of Matsumoto (with Patent Owner annotations in blue)

This is another reason a POSITA would not have looked to Matsumoto, which indicates holes as being unsuitable, to modify the holes of Yokota.

Lastly, a POSITA would not modify the small holes of Yokota to include large holes as proposed by Petitioner. Yokota emphasizes that the through holes be small, stating “with the small apertures 46A formed in the inclined surface 42a, light that has reached them penetrates the inclined surface 42a to its reverse side. The light that has penetrated the inclined surface 42a to its reverse side is then repeatedly reflected between the obverse surface of the chassis 41 and the reverse surface of the diffusive plate 43, and only a slight proportion of the light travels back through the small apertures 46A to the obverse side of the reflective sheet 42.” EX1004, ¶80. In other words, a POSITA would recognize that the through holes of Yokota need to be small, to prevent large amounts of light from being reflected from the obverse side of the metal chassis towards the LCD panel. Recognizing the differences

between changing the size of dots and changing the size of holes, a POSITA would not have looked to the large dots of Matsumoto to incorporate large through holes in Yokota because the large through holes would cause undesirable brightness in Yokota.

VII. CONCLUSION

For the reasons set forth herein, the Petition should be denied.

Date: March 20, 2023

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CERTIFICATE OF COMPLIANCE

Pursuant to 37 C.F.R. § 42.24(d), the undersigned certifies that the foregoing Patent Owner Preliminary Response, exclusive of the exempted portions as provided in 37 C.F.R. § 42.24(a), contains no more than 4,962 words and therefore complies with the type-volume limitations of 37 C.F.R. § 42.24(b).

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CERTIFICATE OF SERVICE

In accordance with 37 C.F.R. § 42.6(e), the undersigned certifies that on the 20th day of March, 2023, a complete and entire copy of the foregoing **PATENT OWNER'S PRELIMINARY RESPONSE** and **Exhibit 2001** were served by email on the following counsel for Petitioners:

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