

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. 8,177,382
Filing Date: March 11, 2008
Issue Date: May 15, 2012
Title: APPARATUS AND METHODS FOR MULTIPLANAR OPTICAL
DIFFUSERS AND DISPLAY PANELS FOR USING THE SAME

Inter Partes Review No. IPR2023-01311

**Ex. 1019 – Declaration of P. Morgan Pattison, Ph.D. in Response to
Patent Owner’s Contingent Motion to Amend**

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I, P. Morgan Pattison, declare as follows:

I. Introduction

1. I am an independent consultant. I am over eighteen years of age, and I would otherwise be competent to testify as to the matters set forth herein if I am called upon to do so.

2. I have prepared this Declaration for consideration by the Patent Trial and Appeal Board in the *Inter Partes* Review of U.S. Patent No. 8,177,382 (“the ‘382 Patent”) and the Contingent Motion to Amend (the “Motion”) Filed by Patent Owner in that *Inter Partes* Review Proceeding.

3. I provide this Declaration at the request of and have been retained by Kilpatrick Townsend & Stockton, LLP, which represents Hisense USA Corporation (“Hisense”) in connection with the above-captioned *Inter Partes* Review. I have been informed and understand that Hisense contends that substitute claims 21-22 submitted by the Patent Owner in the Motion are invalid.

4. I am being compensated at an hourly rate of \$550 per hour. My compensation is not dependent on the outcome of or any issue in relation to the above-captioned *Inter Partes* Review, and I have no interest in either party.

5. In forming my opinions, I relied on my knowledge, education, experience, and training in the field and on documents and information referenced in this Declaration.

6. My qualifications are summarized in Ex. 1003, which is my prior declaration in this proceeding and my CV, which was submitted as Ex. 1004. *See* Ex. 1003, ¶¶6-15. I am not a lawyer, however, my understanding of the legal issues, in particular with respect to obviousness are summarized in my prior declaration. *See* Ex. 1003, ¶¶16-23. My prior declaration also provides my opinion on the appropriate level of experience for a person to be a person of ordinary skill in the art. *See* Ex. 1003, ¶¶25-28.

II. Materials Considered

7. In addition to the materials identified in my prior declaration (*see* Ex. 1003, ¶30) in forming my opinions, in addition to my knowledge and experience, I have considered the following documents and things that I have obtained, or that have been provided to me:

Exhibit	Description
1021	Oliver Dross, William Parkyn, Julio Chaves, Waqidi Falicoff, Juan Miñano, Pablo Benitez, & Roberto Alvarez, <u>A superior architecture of brightness enhancement for display backlighting</u> , 6338 Proc. of SPIE 63380G-1 (2006).
1022	Chao-Heng Chien & Zhi-Peng Chen, <u>Fabrication of concentric light guiding plate with SiO₂ reflective film</u> , 6376 Proc. of SPIE 63760E-1 (2006).
1023	Ji-Young Lee, Kie-Bong Nahm, Jae-Hyeon Ko, & Joong Hyun Kim, <u>Effects of Reshaping Micro-pyramids and Prisms on the Optical Performances of Light Collimating Films in the Field of LCD Backlight</u> (2006).
1024	US 7,072,096 to Holman (“Holman ’096”)
1025	Ching-Cherng Sun, Ivan Moreno, Shih-Hsun Chung, Wei-Ting Chien, Chih-To Hsieh, Tsung-Hsun Yang, <u>Brightness Management in a Direct LED Backlight for LCD TVs</u> (2007)

1028	Data Sheet for Surface Mount Type by Nichia 2015-1
1029	Technical Data Sheet DS23 Luxeon Star
2003	Bohannon Declaration

8. In addition to the documents above, in forming the opinions expressed below, I have also considered my own knowledge and experience based upon my education, research and work in the fields of optics, LEDs, and display technology, as described above and in my *curriculum vitae* (Ex. 1004).

III. Patent Owner's Substitute Claims.

9. I am informed and understand that Patent Owner has proposed to substitute original claims 1 and 17 of the '382 Patent with the following substitute claims (the "Substitute Claims"):

21. (proposed substitute for Claim 1) A solid state lighting panel, comprising:

a plurality of solid state light emitters that are configured to emit light;
and

a multiplane light diffuser including a first diffusion plane that is a first distance from the plurality of solid state emitters and a second diffusion plane that is a second distance from the plurality of solid state emitters that is different from the first distance, the multiplane light diffuser including first side that corresponds to the first plane and that is configured to receive the light emitted from the plurality of solid state light emitters and a second side that corresponds to the second plane and that is configured to transmit diffused light,

wherein the multiplane light diffuser comprises a diffuser plate that includes the first side of the multiplane light, the diffuser plate configured to define the first diffusion plane, and

wherein the plurality of solid state emitters comprise a third distance between adjacent ones of the plurality of solid state light emitters, and wherein the first distance is a function of the third distance, and wherein the second distance comprises a distance in [sic] greater than the third distance and less than 1.5 times the third distance.

22. (proposed substitute for Claim 17) A solid state lighting panel, comprising:

a plurality of solid state light emitters that are configured to emit light; and

a multiplane light diffuser including 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, the multiplane light diffuser including first side that corresponds to the first plane and that is configured to receive the light emitted from the plurality of solid state light emitters and a second side that corresponds to the second plane and that is configured to transmit diffused light,

wherein the multiplane light diffuser comprises a diffuser plate that includes the first side of the multiplane light, the diffuser plate configured to define the first diffusion plane, and

wherein the plurality of solid state emitters comprise a third distance between adjacent ones of the plurality of solid state light emitters, and wherein the first distance is a function of the third distance.

IV. The Prior Art Addressed in My Prior Declaration Renders Every Element of Substitute Claims 21-22 Obvious.

10. In my prior declaration I broke down the elements of claims 1 and 17 and demonstrated that each of the elements of those claims were known in the art before the March 11, 2008 priority date of the '382 Patent. *See* Ex. 1003, ¶¶4-146. In the analysis below I address the new elements of Substitute Claims 21 and 22

and demonstrate that each of these elements was also known in the art before the March 11, 2008 priority date of the '382 Patent.

A. Wherein the second distance comprises a distance greater than the third distance and less than 1.5 times the third distance

11. As discussed in my prior declaration, the combination of Kobayashi in view of the knowledge of a POSITA (Ground I), Kobayashi and Tabito (Ground IV), Schiavoni and Lim (Ground VII), Schiavoni, Lim and Kobayashi (Ground VIII), and Schiavoni, Lim and Tabito (Ground X) discloses or renders obvious each element of original claim 1, 9, and original claim 17 among others.

12. Patent Owner's proposed substitute claim 21 adds the limitation from dependent claim 9 and modifies that limitation to exclude the end-point "a second distance" or "1" from the originally claimed range "between the third distance and 1.5 times the third distance". PO's substitute claim now recites that the second distance is "**greater than** the third distance and less than 1.5 times the third distance." (emphasis added).

13. I discuss this claim limitation in the context of a ratio, meaning the ratio of the second distance to the third distance, which according to the claim is greater than 1 to less than 1.5.

1. Kobayashi explicitly discloses ratios greater than 1 and less than 1.5

14. In my opinion Kobayashi already discloses this ratio or distance.

15. First, Kobayashi discloses a second distance, “a” in Kobayahsi, that is defined by the distance between the solid state light emitters and the second diffusion plane. Ex. 1006 at [0019]-[0020]. This is the claim’s “second distance.”

16. Kobayashi discloses its second distance “a” can be 10 mm or more. *Id.* There is no other limit on Kobayashi’s disclosure, although Kobayashi does express a “preferred” ratio, which I address below.

17. Kobayashi also discloses a third distance, “b” in Kobayashi, that is the distance between two solid state light emitters. Ex. 1006 at [0020]. This is the claim’s “third distance.”

18. Kobayashi discloses that the third distance “b” can 10 or 100 mm.

19. Thus, Kobayashi discloses multiple values that would lead to a ratio of a/b that would be greater than 1 and less than 1.5. One of skill in the art would immediately recognize that Kobayashi discloses these distances that lead to claimed ratios.

20. There any number of different examples, that work within Kobayashi’s system, that one of skill in the art would understand fall within the range greater than 1 and less than 1.5. Such examples include those set forth in the table below:

Second Distance (where a is 10 or more)	Third Distance (where b is 10 to 100)	Ratio
22 mm	16 mm	1.375
24 mm	17 mm	1.41

25 mm	18 mm	1.39
26 mm	19 mm	1.37

21. Not only are these valid values from ranges explicitly disclosed in Kobayashi, these values work in the context of Kobayashi's display system. In other words, these values would result in displays with appropriate thickness and spacings that are consistent with optical film spacing and solid state emitter spacings. There is nothing unusual about the relative distances between these components and one of skill in the art would understand that Kobayashi discloses these distances.

22. Moreover, all of these values, and many more, are explicitly disclosed in Kobayashi.

2. Kobayashi's "preferred" ratios do not discourage one of skill in the art from modifying or going beyond Kobayashi's "preferred" ratio

23. I understand Patent Owner may argue that Kobayashi is limited to its preferred embodiment where it discloses that the ratio of a to b is preferably between 0.2 and 1.

24. One of skill in the art would not read Kobayashi as so limited. In fact, Kobayashi's overall teaching would lead one to modify and/or tweak Kobayashi's system to include spacing of components at or around those ratios for the reasons explained below.

25. As a matter of background and context, one of skill in the art at the time of the '382 patent when designing a display system would understand that there are two basic considerations important to component selection and spacing include: (1) brightness of the display and (2) desired thickness of the panel.

26. Brightness of the display is based on the display application or purpose. Desired overall thickness of the display panel involves both aesthetic and practical considerations.

27. Both of these factors also involve choices regarding costs and efficiency. Depending on a designer's particular objectives, some factors may be more important in some applications than others. Additionally, commercial and retail considerations may impact these choices. Thus, when designing a system there are multiple variables that interact with one other that might impact the overall design choice.

28. Kobayashi discloses using LEDs that are "highly directional." Ex. 1006, at [0007]-[0008, [0020]. Because of this directionality, these LEDs in direct backlight operation can lead to uneven brightness and "hot spots". *Id.* Thus there is pressure to place LEDs in close proximity to each other to cancel out this uneven brightness. *Id.*

29. On the other hand, placing the LEDs in close proximity increases the number of LEDs, which can increase costs. *Id.*

30. Moreover, outside these basic considerations, it had been well known by a POSITA that, besides brightness uniformity, energy consumption and cost, there are other parameters to calibrate to achieve the overall goal of Kobayashi, i.e. configuring “a display device with excellent display characteristics,” such as, luminance/brightness, reliability, heat dissipation, and other such display factors. Ex. 1006 at [0020]; *see also*, Ex. 1025 at 1.

31. These display characteristics are also impacted by things like screen size, the number and availability of LEDs, LED array configuration, and luminous flux, radiation pattern, and input power of individual LEDs, among others. Ex. 1025, Abstract.

32. In fact, one skill in the art would understand that designing a lighting device with “excellent display characteristics” involves a multi-factor calibration or balance of these different parameters. Moreover, different use cases/applications have different standards or definitions of “excellent display characteristics.” For example, in the case of an outdoor display or a display for bright room environments, high brightness and good heat dissipation may be more desirable than cost saving. In dedicated home theater environments, cost may not be a factor and the number of LEDs (which tends towards brighter displays) may be more important to reduce hot spots.

33. In other words, it would be obvious to a POSITA starting with Kobayashi's disclosed "preferred" ratio to use more of LEDs and/or increase the second distance within the display panel because of the general principles that (1) the more number of LEDs, the brighter/higher the luminance, and (2) the larger the second distance between the LED source and the diffuser plate, the more uniform the output light, and the better heat dissipation within the system. *See* Ex. 1025 at 1; FIG. 5. In fact, such calibration and optimization – and the relationship between the various components and their spacing – was well known and understood in the art. *See* Ex. 1025.

34. Accordingly, a POSITA would have found it obvious to calibrate Kobayashi's system to slightly increase the second distance, decrease the third distance (by decreasing the spacing between LEDs), or both. Thus, when starting with Kobayashi's preferred system, it would have been obvious to modify it slightly for the reasons explained above and the ratio would result in a second distance that was greater than the third distance to less than 1.5 the third distance.

35. In fact, one of skill in the art would have been motivated to at least specifically decrease the spacing between the LEDs while maintaining the optical film distance disclosed in Kobayashi because that is one of the simplest ways to improve brightness luminance and uniformity at only the expense of a slight increase in costs yet maintain the relatively thin display thickness.

36. This is particularly true since one of skill in the art would recognize that the ratio a/b should not be too large due to one fundamental design goal in the art to reduce panel thickness. As such, one of skill in the art would understand that Kobayashi teaches ratios of around 1, that slightly increasing the ratio allows the use of efficient diffusers to manage the light output, and that at ratios greater than 1.5 the system becomes both too thick and leads to reduced brightness. Based on these considerations, one of skill in the art would recognize that Kobayashi teaches ratios between 1 and 1.5.

3. One of skill in the art would be motivated to modify and tweak Kobayashi's second distance

37. As discussed above, well known and understood principles govern the relationship between solid state emitter spacing and positioning of the optical films.

38. It would have been obvious to adjust Kobayashi's second distance to increase "a" such that the ratio of a to b would be greater than Kobayashi's "preferred" ratio of 1 because increasing the distance "a" can provide more vertical space for light mixing. This is an obvious variable often used in designing panels and can increase the quality of the light.

39. Increasing the second distance, "a", does increase the thickness of the panel, but that is just one characteristic of a panel design, and depending on the application, a designer may wish to trade off a slightly thicker display panel for

better light quality. Considering that the amount of change to Kobayashi's system would be small, such a design change is both obvious and realistic and one of skill in the art would immediately recognize such.

40. Finally, Kobayashi implements its design with very specific diffusion plates that have specific diffusion characteristics. But one of skill in the art understands that there were a variety of diffusion plates with different characteristics, some of which had varying price points (i.e. cheaper) and different levels of light transmittance or light diffusivity. Thus, one of skill in the art could have selected different diffusers for use in Kobayashi's system, particularly if modifying Kobayashi's spacing to "dial in" to the desired brightness and uniformity characteristics. Even Kobayashi's data reveals and in fact teaches one of skill in the art that modifications to the diffusers impacts the light output in Kobayashi's system. *See, e.g.*, Ex. 1006, Table 1 and 2, and more particularly examples 22 to 24 and comparative examples. These examples also show how increasing the second distance, the light conditions can change and in some instances create more uniform light. *Id.*

4. Kobayashi discloses the required distances regardless of where one defines the reference points

41. Even Kobayashi's disclosed "preferred" embodiment can be understood as disclosing a ratio greater than 1 because (1) the distance claimed by the substitute claim can actually be defined by the top of the second diffusion plane

(and thus the thickness of the diffuser does not have to be subtracted) and (2) the claim allows the distance to be measured from the bottom of the LED, which in Kobayashi's system would necessarily add height to the measurement.

42. As to the first point, the claim simply recites a measuring point of the diffusion plane. The claim is not limited to a particular point on the diffusion plane. And although figure 3 of the '382 patent shows the distance as being measured from the bottom surface of the diffusion plane, there is no reason to limit the claim language or its interpretation to the figure. Moreover, the claims recite that the second diffusion plane includes a second side (a light emitting side) and thus one of skill in the art would readily appreciate that the second distance can be measured from the second side. When one does not subtract the thickness of the diffuser, then Kobayashi's system discloses a ratio of 1.

43. As to the second point, although Kobayashi's preferred ratio of 1 is not "greater than [1]", Kobayashi is not measuring from the bottom of the solid state light emitter, but rather the top. Accordingly, Kobayashi's second distance in this scenarios would actually be $1 + h$. This would result in Kobayashi's "preferred" ratio of being greater than 1 and less than 1.5.

44. 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.

45. These additional considerations do not impact my conclusion that Kobayashi discloses the claimed ratio. For example, I note that the thickness of the diffuser in Kobayashi is 1 to 5 mm. This is also approximately the range of heights of the solid state light transmitter. Thus, the precise measuring point to the second diffuser plane and the bottom or top of the LED does not change that Kobayashi discloses the claimed range because Kobayashi's disclosed ranges for "a" and "b" are large ranges and provide for a large disclosure of valid values that would disclose the claimed ratio range.

46. Finally, all of these distances are objectively disclosed by Kobayashi. The claims do not recite "measuring from" and one of skill in the art would simply understand the claims reciting distances defined by or referenced by points within the system. Kobayashi discloses such points explicitly by showing those structures in the figures as one skill in the art would readily identify.

B. Lim discloses third distance's that would lead, in combination with Kobayashi, to the claimed ratios

47. As discussed above one of skill in the art would have been motivated to modify Kobayashi's preferred embodiment to arrive at a spacing where the second distance was greater than the third distance and less than 1.5 times the third distance.

48. Lim in combination with Kobayashi provides further evidence that one of skill in the art would have found the claimed distance range to be obvious. Lim as discussed in my original Declaration (Ex. 1003) Lim teaches that closer spacing between solid state light emitters can lead to better brightness and uniformity. Ex. 1003, ¶41.

49. Lim also explains that keeping the LED spacing to 10 mm or below is good for brightness and providing a thin backlight. Ex. 1013, [0047]-[0048]. Moreover, Lim discusses how keeping a certain distance between the LED and diffuser helps to maintain brightness and uniformity. This teaching is consistent with some of the principles I expressed above in relation to Kobayashi.

50. Thus, with Lim teaching one of skill in the art to keep the distance between the LEDs narrow or below 10 mm and the advantages associated with that narrow spacing and maintaining the distance to the light diffuser to create sufficient mixing space to condition the light, one of skill in the art would have been motivated to modify Kobayashi in light of Lim's teaching.

51. Under such ordinary design pressures, one of skill in the art would have been motivated to use a smaller preferred range of values in Kobayashi's system, such as keeping the spacing between LEDs at 9 mm, while maintaining Kobayashi's second distance at or above 10 mm. Such spacing would be near Kobayashi's preferred embodiment but also result in a ratio slightly above 1.

C. Holman 096 discloses distances defined by the bottom of the solid state light emitter

52. Holman 096 is another example of how skilled artisan in the field understood the basic relationship between the spacing of solid state emitters and optical components and the various possibilities and configurations that could be adjusted to achieve desired lighting conditions.

53. Holman 096, like much of the prior art in this space, is directed to optimizing lighting conditions for displays particularly those using an "array of discrete emitters". Ex. 1024 at 1:12-17.

54. Holman 096 contains multiple teachings, examples, and variations that adjust the solid state light emitter spacing and optical component spacing. Holman thus reflects what one of skill in the art understood at the time, namely, that all of these spacing considerations were relevant to achieving a designer's objectives, whether that was a cheap, thick display or an ultra-high end cinephile display with high brightness, and corresponding cost.

55. More specifically, various parts of Holman 096 show how one of skill in the art would have taken the height of the solid state light emitter into account when designing a system, including when making decisions about the spacing of the optical components. For example, Holman 096 specifically calls out the height “H” of the solid state light emitters. *See* Ex. 1024 at Fig. 7, 8A, 13A, 14, 15A-15D (and corresponding description). Holman 096 also explains how the total thickness of the system T is relevant to light quality and “suppressing visibility of the discontinuous nature of the light source”, i.e. bright spots or unevenness. Ex. At 15:55-58. Holman 096 also explains that there are a number of variables that go into deciding component spacing. *Id.* at 90:18-91:14.

56. Accordingly, it would have been obvious to “measure from the bottom” of the solid state emitter – to the extent the substitute claims require such as Holman discloses how people of skill in the art understood that the height of the solid state light emitter should factor into component spacing and optical film design and placement.

V. Motivations to Combine

57. As I have explained, it would have been obvious to modify Kobayashi’s system outside its “preferred” embodiment. In fact, Kobayashi itself recognizes that the ratio greater than 1 exists and only states that at greater ratios than 1, *its* benefits may be more difficult to realize. But as explained there are other

benefits and costs associated with modifying Kobayashi and nothing in Kobayashi would prevent, or dissuade, one of skill in the art from such modifications in pursuit of other benefits. These are simple design trade-offs that every engineer makes when designing systems.

58. Moreover, Lim provides evidence how and why one would have been motivated to modify Kobayashi's system. As Lim teaches the benefits of tighter LED spacing, it is a simple recognition of what Kobayashi alludes to and one of skill in the art would have been motivated to apply Lim's teachings to Kobayashi in search of better light uniformity and brightness.

59. Similarly, Holman is readily combinable with Kobayashi and/or Lim. Holman is directed to similar systems, provides detailed information about the same types of lighting sources, optical films, and other structures in direct backlight displays. Finally, Holman 096 is concerned with the same things the other prior art is concerned with – designing systems with good light output, high brightness, and good light uniformity.

VI. Additional Views

60. I previously provided a discussion relating to Tabito and Schiavoni and their relevance to the original claims. I have been asked to expand on my previous discussion. In doing so, I have not relied on any new embodiment or

combination but simply wish to provide additional detail in response to Patent Owner's and their expert's arguments.

61. First, as to Tabito, I understand Mr. Bohannon argues that one of skill in the art would not be motivated to use Tabito's supports in Kobayashi's system because doing so would impact the amount of light entering the diffusing plates to change and further impact the diffuser plates optical characteristics. I disagree.

62. Diffuser supports are commonly used in the field. They are either implicit in the prior art or explicitly described. In fact, Kobayashi's test system only looked at two LEDs in its experiments. It is clear that Kobayashi is concerned with the interplay of adjacent LEDs and is not a qualitative study across a large array.

63. Tabito on the other hand, simply reflects the commonly used support structure and provides some details to mitigate any impact those structures may have on light transmittance. In fact, Tabito shows how the support structures are spaced intermittently amongst many LEDs. See, e.g.

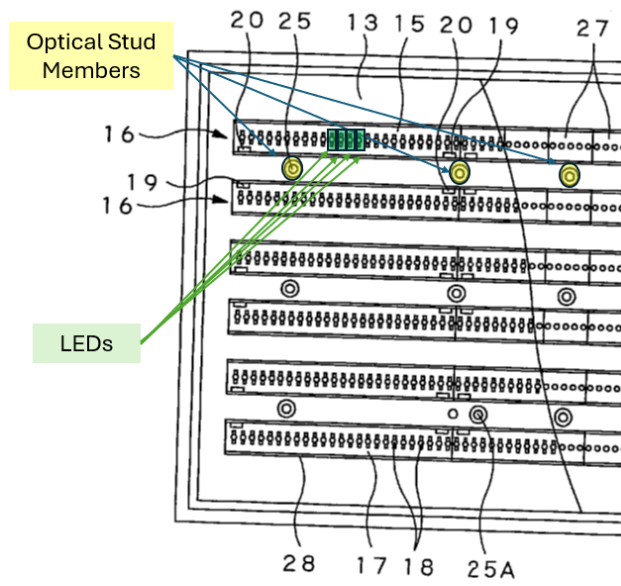


FIG. 3

64. As shown above, the number of supports relative to the LEDs is not significant and one of skill in the art would understand that Tabito's support would not materially impact Kobayashi's system.

65. Second, I understand Mr. Bohannon has argued that the supports would interfere with Kobayashi's Fresnel lenses. Again, I disagree.

66. As an initial matter, Kobayashi is not limited to Fresnel lenses and in fact discloses a number of structured diffusers, including those with R type and prismatic lenses. Thus, to the extent Mr. Bohannon is relying on the fact that Fresnel lenses would operate differently near the occasional structure support, one of skill in the art would understand via spacing and the small amount of area the supports occupy that such would not impact the overall purpose and function of the lenses.

67. More importantly, just as the '382 patent claims structured diffuser, Kobayashi discloses such that include prismatic structures or other structures. And the '382 patent also discloses the use of supports, which are commonly placed through holes or openings in the diffuser plates. There is not engineering or optical principle that would caution a person of ordinary skill from not using what was then commonly available supports to maintain diffuser plate distances and Mr. Bohannon's testimony to the contrary is incorrect.

68. I further understand that Mr. Bohannon has testified that one would not combine Schiavoni and Lim because Schiavoni employs LEDs that make white light whereas Lim's RGB LEDs are "used for R-G-B separately, line by line in a field sequential type of LCD system which Schiavoni (and the '382 Patent) does not." Mr. Bohannon's testimony reflects a technical lack of understanding of LED technology and a misinterpretation of the '382 patent.

69. First, the '382 patent is not limited to one type of solid state emitter. In fact, the '382 patent explains that blue LED (with yellow phosphor) to make white light is only one type of LED contemplated by the '382 patent. *See* Ex. 1001 at 4:47-62.

70. Second, RGB LED are used to make white light. This is well known and has been used for decades. Thus, Mr. Bohannon is wrong that one would not think to apply the teachings of Lim to Kobayashi and/or Schiavoni. Moreover,

RGB and Blue LEDs contain the same types of light uniformity concerns as evidence by the fact that each of Lim, Kobayashi, and Schiavoni discuss the same uniformity issues, use similar components, including optical films, reflectors, heat sinks, etc.

71. I also understand Mr. Bohannon testified that Schiavoni is directed to sectorizing light so the light from the light sources do not “significantly mix”. Ex. 2003, ¶47-48, ¶71. However, Mr. Bohannon’s interpretation of Schiavoni is incorrect. In fact, Mr. Bohannon only cites one portion of Schiavoni (regarding sectorization) when reaching his conclusion that Schiavoni’s purpose is “antithetical to the purpose of a diffuser of the ’382 patent which is to spread out the light from the light sources to achieve an even luminance profile.” *Id.*

72. Rather Schiavoni teaches that the disclosed optical element has a “double function” whose purpose is to also reinforce the “homogenization of the luminance.” This is diffusing light. Thus, one of skill in the art would understand Schiavoni’s optical elements as diffusers used to diffuse, i.e., homogenize, i.e. achieve an even luminance profile, which directly contradicts Mr. Bohannon’s testimony. And Schiavoni’s sectorization is simply a method of controlling diffusion and brightness/contrast within sectors of the display.

73. Finally, I understand Mr. Bohannon testified that a prism collection film is not a BEF. Ex. 2003, ¶46. Mr. Bohannon is wrong. Both prism collection

films and a BEF are films. Prism collection refers to the use of prismatic structures on top of films. Such structures refract and collimate light, depending on their specific configuration, design, and prism arrangement. *See, e.g.*, Ex. 1021 and 1023.

I hereby declare that statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true. Should further information become available to me as this matter proceeds, I may revise my opinions accordingly as necessary. I declare under penalty of perjury that the foregoing Declaration is true and correct.

9/13/2024

Date



Dr. P. Morgan Pattison