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SEOUL SEMICONDUCTOR CO., LTD.,
SEOUL VIOSYS CO., LTD.

UNITED STATES DISTRICT COURT

NORTHERN DISTRICT OF CALIFORNIA

SEOUL SEMICONDUCTOR CO., LTD., a Korean corporation, SEOUL VIOSYS CO., LTD., a Korean corporation,

Plaintiffs,

v.

FINELITE, INC.,

Defendant.

Case No. 3:22-cv-2869

COMPLAINT FOR PATENT INFRINGEMENT

DEMAND FOR JURY TRIAL

Plaintiffs Seoul Semiconductor Co., Ltd. ("Seoul Semiconductor") and Seoul Viosys Co., Ltd. ("Seoul Viosys"), (collectively the "Seoul Plaintiffs") for their Complaint against Defendant Finelite, Inc. ("Finelite") allege as follows:

INTRODUCTION

1. The Seoul Plaintiffs bring this patent infringement action to protect their valuable patented technology relating to light emitting diodes ("LEDs") and LED lighting. An LED is a semiconductor device that converts electrical energy into light. LEDs have many advantages over conventional light sources, including lower energy consumption, longer lifetime, and smaller size.

2. Seoul Semiconductor was founded in 1992 with approximately 30 employees in a small space of a commercial building in Bongchen-dong, Seoul, Korea. From those initial 30 employees, Seoul Semiconductor has grown into one of the largest manufacturers of LEDs in the world. It's subsidiary, Seoul Viosys, is also a leading company in the LED industry.

3. The Seoul Plaintiffs' success is in large part due to their significant investment in innovation and respect for intellectual property. Seoul Semiconductor has invested in research and development ("R&D") for decades. Seoul Semiconductor invests over 10% of sales revenue into R&D and owns one of the largest LED patent portfolios in the world, which includes more than 10,000 patents worldwide.

THE PARTIES

4. Plaintiff Seoul Semiconductor is a company organized and existing under the laws of the Republic of Korea, with its principal place of business at 1B-25, 727, Wonsi-dong, Danwon-gu, Ansan-city, Gyeonggi-do, Korea 425-851.

5. Plaintiff Seoul Viosys is a company organized and existing under the laws of the Republic of Korea, with its principal place of business at 65-16, Sandan-ro 163 beon-gil, Danwon-gu, Ansan-city, Gyeonggi-do, Korea 425-851. Seoul Viosys is a subsidiary of Seoul Semiconductor.

6. Defendant Finelite, Inc. is a California corporation with its headquarters at 30500 Whipple Road Union City, California 94587-1530.

7. As alleged in below, upon information and belief, Finelite markets and sells the

Finelite HPR-A-2X2-S-835-DCO-LED-3500K-277V-SC-C1-OBO products to consumers located in the California and other areas of the United States. An image of the Finelite HPR-A-2X2-S-835-DCO-LED-3500K-277V-SC-C1-OBO LED panel is provided below.

JURISDICTION AND VENUE

8. This Court has jurisdiction over the subject matter of this action under 28 U.S.C. §§ 1331 and 1338(a) because, at the very least, this action arises under the patent laws of the United States, including 35 U.S.C. § 271 et seq.

9. This Court has personal jurisdiction over Finelite because, upon information and belief, it maintains a principal place of business in California.

10. Venue is proper within this judicial district under 28 U.S.C. § 1400(b) because, on information and belief, Finelite resides in this district. Venue is also proper because, on information and belief, Finelite has committed acts of infringement and have a regular and established place of business in this district.

PATENTS-IN-SUIT

11. Seoul Semiconductor is the lawful owner of all right, title, and interest in United States Patent No. 7,397,069 entitled "Semiconductor Device" ("the '069 patent"), including the right to sue and to recover for infringement thereof. The '069 patent was duly and legally issued on July 8, 2008, by the United States Patent and Trademark Office to Tachibana et al. A copy of the

'069 patent is attached hereto as Exhibit 1.

12. Seoul Semiconductor is the lawful owner of all right, title, and interest in United States Patent No. 9,269,868 entitled "Semiconductor Light Emitting Element and Method For Manufacturing Semiconductor Light Emitting Element" ("the '868 patent"), including the right to sue and to recover for infringement thereof. The '868 patent was duly and legally issued on February 23, 2016, by the United States Patent and Trademark Office to Kushibe et al. A copy of the '868 patent is attached hereto as Exhibit 2.

13. Seoul Viosys is the lawful owner of all right, title, and interest in United States Patent No. 9,799,800 entitled "Light Emitting Device and Method of Fabricating the Same" ("the '800 patent"), including the right to sue and to recover for infringement thereof. The '800 patent was duly and legally issued on October 24, 2017, by the United States Patent and Trademark Office to Jang et al. A copy of the '800 patent is attached hereto as Exhibit 3.

14. Seoul Semiconductor is the lawful owner of all right, title, and interest in United States Patent No. 7,667,225 entitled "Light Emitting Device" ("the '225 patent"), including the right to sue and to recover for infringement thereof. The '225 patent was duly and legally issued on February 23, 2010, by the United States Patent and Trademark Office to Lee et al. A copy of the '225 patent is attached hereto as Exhibit 4.

15. Seoul Viosys is the lawful owner of all right, title, and interest in United States Patent No. 8,664,638 entitled "Light-Emitting Diode Having an Interlayer with High Voltage Density and Method for Manufacturing the Same" ("the '638 patent"), including the right to sue and to recover for infringement thereof. The '638 patent was duly and legally issued on March 4, 2014, by the United States Patent and Trademark Office to Yoo et al. A copy of the '638 patent is attached hereto as Exhibit 5.

16. Seoul Viosys is the lawful owner of all right, title, and interest in United States Patent No. 9,716,210 entitled "Light Emitting Diode and Method of Fabricating the Same" ("the '210 patent"), including the right to sue and to recover for infringement thereof. The '210 patent was duly and legally issued on July 25, 2017, by the United States Patent and Trademark Office to Kim et al. A copy of the '210 patent is attached hereto as Exhibit 6.

17. Seoul Viosys is the lawful owner of all right, title, and interest in United States Patent No. 10,418,514 entitled "Light Emitting Diode and Method of Fabricating the Same" ("the '514 patent"), including the right to sue and to recover for infringement thereof. The '514 patent was duly and legally issued on September 17, 2019, by the United States Patent and Trademark Office to Kim et al. A copy of the '514 patent is attached hereto as Exhibit 7.

18. Seoul Semiconductor is the lawful owner of all right, title, and interest in United States Patent No. 8,604,496 entitled "Optical Semiconductor Device" ("the '496 patent"), including the right to sue and to recover for infringement thereof. The '496 patent was duly and legally issued on December 10, 2013, by the United States Patent and Trademark Office to Shioda et al. A copy of the '496 patent is attached hereto as Exhibit 8.

19. Seoul Viosys is the lawful owner of all right, title, and interest in United States Patent No. 7,982,207 entitled "Light Emitting Diode" ("the '207 patent"), including the right to sue and to recover for infringement thereof. The '207 patent was duly and legally issued on July 19, 2011, by the United States Patent and Trademark Office to Kim et al. A copy of the '496 patent is attached hereto as Exhibit 9.

20. Seoul Viosys is the lawful owner of all right, title, and interest in United States Patent No. 10,672,952 entitled "Light Emitting Diode for Surface Mount Technology, Method of Manufacturing the Same, And Method of Manufacturing Light Emitting Diode Module" ("the '952 Patent"), including the right to sue and to recover for infringement thereof. The '952 patent was duly and legally issued on June 2, 2020, by the United States Patent and Trademark Office to Chae et al. A copy of the '952 patent is attached hereto as Exhibit 10.

21. Seoul Semiconductor is the lawful owner of all right, title, and interest in United States Patent No. 8,981,410 entitled "Distributed Bragg Reflector for Reflecting Light of Multiple Wavelengths from an LED" ("the '410 patent"), including the right to sue and to recover for infringement thereof. The '410 patent was duly and legally issued on March 17, 2015, by the United States Patent and Trademark Office to Lin. A copy of the '410 patent is attached hereto as Exhibit 11.

22. Seoul Viosys is the lawful owner of all right, title, and interest in United States

Patent No. 9,577,157 entitled "Light Emitting Diode Chip Having Distributed Bragg Reflector and Method of Fabricating the Same" ("the '157 patent"), including the right to sue and to recover for infringement thereof. The '157 patent was duly and legally issued on February 21, 2017, by the United States Patent and Trademark Office to Lee at al. A copy of the '157 patent is attached hereto as Exhibit 12.

23. Seoul Semiconductor is the lawful owner of all right, title, and interest in United States Patent No. 10,134,967 entitled "Light Emitting Device" ("the '967 patent"), including the right to sue and to recover for infringement thereof. The '967 patent was duly and legally issued on November 20, 2018, by the United States Patent and Trademark Office to Seo at al. A copy of the '967 patent is attached hereto as Exhibit 13.

24. Seoul Semiconductor is the lawful owner of all right, title, and interest in United States Patent No. 10,510,933 entitled "Light Emitting Diode Package and Manufacturing Method Thereof" ("the '933 patent"), including the right to sue and to recover for infringement thereof. The '933 patent was duly and legally issued on December 17, 2019, by the United States Patent and Trademark Office to Oh et al. A copy of the '933 patent is attached hereto as Exhibit 14.

WILLFULNESS

25. On March 24, 2020, Seoul Semiconductor sent a letter to Finelite's Chief Executive Officer notifying him that Finelite was selling products that were infringing Seoul Semiconductor's patents. Seoul Semiconductor specifically pointed out that the below identified product was infringing at least the '210 patent, '157 patent, and '514 patent. Seoul Semiconductor also urged Finelite to "review SSC's LED related patents carefully, because unauthorized use of SSC's patents can constitute direct, contributory and/or induced patent infringement . . ." Seoul Semiconductor asked that Finelite confirm in writing that it would stop selling products that infringe Seoul Semiconductor's patent rights.

26. On April 6, 2020, Finelite's corporate attorney responded and said that he was "not clear" how the product "relates to Finelite." He asked Seoul Semiconductor to provide detailed claim charts for each claim of each patent.

27. On April 20, 2020, Seoul Semiconductor provided Finelite with pictures of the packaging for the product and an invoice specifically showing that the product appeared to be manufactured and supplied in the United States by Finelite. Below are pictures provided by Seoul Semiconductor to Finelite. In addition, Seoul Semiconductor pointed out that it had already provided Finelite with specific patents and the product that was infringing and asked again that Finelite confirm that it would stop selling products infringing Seoul Semiconductor's patents. Seoul Semiconductor did not receive any response to this letter.

Line	Ordered	Shipped	Part No & Description	Unit Cost	Amount
1	1		FINELITE HPR LED - A - 2x2 - DCO - S - 835 - 277V - SC - C1 - OBO LED 2X2 TROFFER ANGLED DOOR STYLE DIFFUSE CENTER OPTIC STANDARD OUTPUT 29W 3397LUMS 3500K 277V SINGLE CIRCUIT FOR T-BAR INSTALLATION INCLUDES OCCUPANCY SENSOR	484.69	484.69T

28. On May 28, 2020, having received no response from Finelite, Seoul Semiconductor sent another letter to Finelite, reminding both its corporate counsel and its Senior Vice President and General Counsel, of its prior warning letters. Seoul Semiconductor again asked Finelite to stop

selling products that were infringing Seoul Semiconductor's patents.

29. On June 1, 2020, Finelite sent a response to Seoul Semiconductor, refusing to stop selling the products. Finelite stated that it "rejects" the "significant self-disruption of its business" based on Seoul Semiconductor's patent infringement allegations. Finelite also stated that it may not infringe patents because it was not the maker of certain LED components that it incorporates in its products.

30. On June 19, 2020, Seoul Semiconductor responded to Finelite and explained that U.S. patent laws hold someone responsible for infringing when it sells products that infringe someone else's patent, even if "that company is not the end maker." Seoul Semiconductor offered to provide claim charts to Finelite in exchange for Finelite providing the names of its suppliers that Finelite contends were manufacturing the infringing components. Seoul Semiconductor did not receive any response to this letter.

31. On July 29, 2020, having received no response, Seoul Semiconductor again contacted Finelite and agreed to provide claim charts subject to a non-disclosure agreement and Finelite's provision of supplier information so that the parties could resolve the matter amicably. Seoul Semiconductor did not receive any response to this letter.

32. On September 2, 2020, Seoul Semiconductor sent another reminder letter to Finelite and requested again that Finelite stop selling products that infringe Seoul Semiconductor's patents.

33. On September 15, 2020, Finelite sent a letter refusing to provide any supplier information, claiming that it had "potential confidentiality obligations" that would prevent it from disclosing any such information.

34. On September 17, 2020, Seoul Semiconductor sent a letter to Finelite attaching a draft non-disclosure agreement and requesting again that it provide supplier information in exchange for claim charts, given that Seoul Semiconductor was under no legal obligation to provide claim charts to Finelite, since Finelite could conduct its own infringement analysis with the information that Seoul Semiconductor had already provided to Finelite.

35. On October 2, 2020, Finelite continued to refuse to provide any supplier information, claiming it was "sensitive, business-related information," despite Seoul

Semiconductor's agreement to make such information subject to a non-disclosure confidentiality agreement ("NDA").

36. On November 19, 2020, Seoul Semiconductor sent Finelite another letter because Seoul Semiconductor had still not received a signed NDA from Finelite. Seoul Semiconductor noted that it had now provided notice to Finelite for more than six months of patent infringement, and yet it appeared that Finelite was not only continuing to sell the infringing products, but had not conducted any infringement analysis of its own related to Seoul Semiconductor's patents.

37. On December 10, 2020, Finelite signed the NDA, and on December 14, 2020, Seoul Semiconductor promptly sent it an eight-page claim chart showing an example of its product infringing Seoul Semiconductor's patents. The claim chart showed cross-section images from a transmission electron microscope of Finelite's product, as well as secondary ion mass spectrometry data for the epitaxial structure of the LED chip contained in Finelite's product.

38. On February 2, 2021, Seoul Semiconductor wrote again to Finelite to follow up and request again that Finelite would stop selling products that infringe Seoul Semiconductor's patents.

39. On February 15, 2021, Finelite wrote back and claimed that the information provided in the claim charts still was not enough for Finelite to "meaningfully assess" whether its product was infringing Seoul Semiconductor's patents.

40. On March 8, 2021, Seoul Semiconductor sent another letter to Finelite and noted that Finelite had still not stopped selling the products and appeared to have taken no steps of its own to conduct an infringement analysis or provide any supplier information. Seoul Semiconductor stated "It is clear to us that no matter what information we provided you, you would claim that it was somehow 'unclear' as an excuse to continue selling products that infringe SSC's patents." Seoul Semiconductor again requested that Finelite stop selling products that infringe Seoul Semiconductor's patents. Finelite did not respond to this letter.

41. On April 21, 2021, Seoul Semiconductor sent another letter to Finelite, again requesting that it stop selling products that infringe Seoul Semiconductor's patents. Seoul Semiconductor stated that turning "a blind eye to infringement and feigning ignorance will not resolve this matter" and warned that continuing to infringe Seoul Semiconductor's patents could

constitute willful infringement in a patent litigation. Finelite did not respond to this letter.

42. On May 25, 2021, Seoul Semiconductor sent another letter to Finelite, again requesting that it stop selling products that infringe Seoul Semiconductor's patents.

43. On June 3, 2021, Finelite sent a letter to Seoul Semiconductor demanding that it respond to various litigation-style questions to "assess the substance" of Seoul Semiconductor's infringement allegations. Finelite repeated that it was unwilling to "self-disrupt its business" and stop selling products that Seoul Semiconductor had told it were infringing Seoul's patents. Finelite did not, to Seoul Semiconductor's information and belief, ever stop selling the products that Seoul Semiconductor had identified numerous times as infringing its patents.

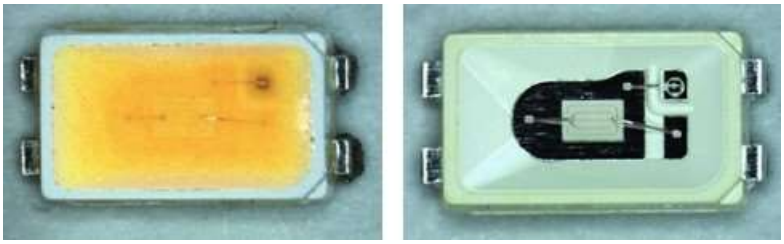
COUNT 1

INFRINGEMENT OF U.S. PATENT NO. 7,397,069

EXEMPLARY CLAIM 1

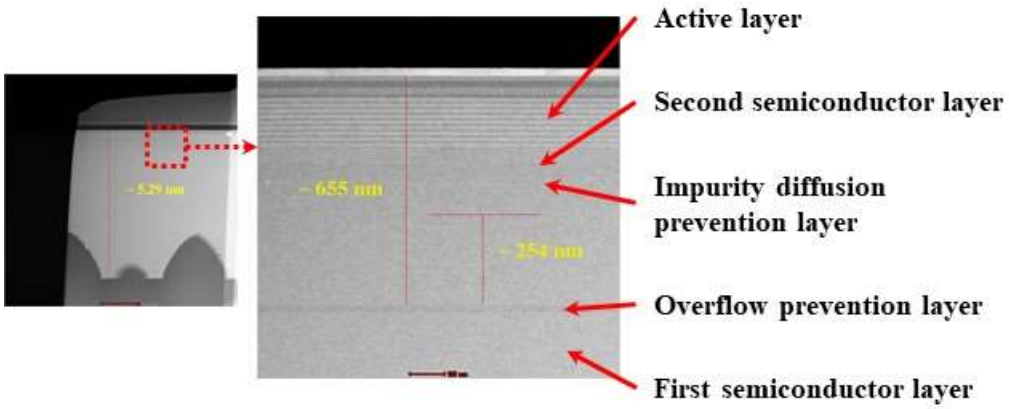
44. Finelite has infringed and continues to infringe one or more claims of the '069 patent, including but not limited to exemplary claim 1, in violation of 35 U.S.C. § 271(a), at least by without authority making, using, offering to sell and/or selling the Finelite HPR-A-2X2-S-835-DCO-LED-3500K-277V-SC-C1-OBO LED panel within the United States.

45. The Finelite HPR-A-2X2-S-835-DCO-LED-3500K-277V-SC-C1-OBO LED panel includes a plurality of LED packages. Optical microscope images of an LED package from the Finelite HPR-A-2X2-S-835-DCO-LED-3500K-277V-SC-C1-OBO LED panel are reproduced below before and after removal of an encapsulant.



46. The below images were created using a transmission electron microscope (TEM) of a semiconductor device (light emitting diode) after removal from the package. The TEM images indicate the presence of a plurality of gallium-nitride-based layers. Those layers include, in relevant part, from top to bottom: an active layer comprising a multi-quantum well, a second semiconductor

layer doped with the negative dopant silicon, an impurity diffusion prevention layer having a relatively high indium concentration and relatively low concentration of aluminum, an overflow prevention layer having the negative dopant silicon and a relatively high concentration of aluminum, and first semiconductor layer containing the negative dopant silicon. The indium and aluminum concentrations of the impurity prevention layer, which respectively correlate directly and indirectly with the brightness of the layers, indicate a band gap smaller than those of the overflow prevention layer, the first semiconductor layer and the second semiconductor layer.



47. Finelite's infringement has caused and is continuing to cause damage and irreparable injury to Plaintiffs. Plaintiffs will continue to suffer damage and irreparable injury unless and until that infringement is enjoined by this Court, as a remedy at law alone would be inadequate.

48. Plaintiffs are entitled to injunctive relief and damages in accordance with 35 U.S.C. §§ 271, 281, 283, and 284.

COUNT 2

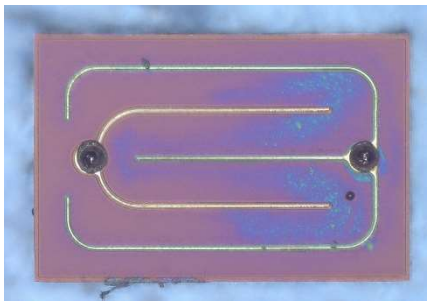
INFRINGEMENT OF U.S. PATENT NO. 9,269,868

EXEMPLARY CLAIM 1

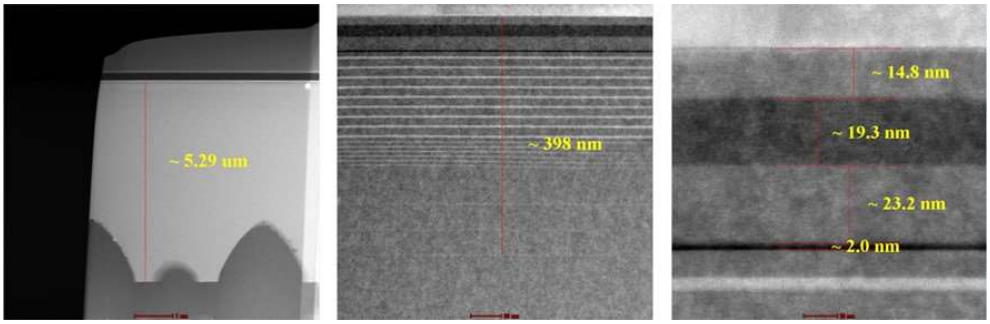
49. Finelite has infringed and continues to infringe one or more claims of the '868 patent, including but not limited to exemplary claim 1, in violation of 35 U.S.C. § 271(a), at least by without authority making, using, offering to sell and/or selling the Finelite HPR-A-2X2-S-835-DCO-LED-3500K-277V-SC-C1-OBO LED panel within the United States.

50. The Finelite HPR-A-2X2-S-835-DCO-LED-3500K-277V-SC-C1-OBO LED panel

includes a plurality of semiconductor light emitting elements. An optical image of an example light emitting element is reproduced below.



51. Three TEM images of the light emitting element are reproduced below. The image below left shows the full epitaxial structure above a patterned sapphire substrate. The center image indicates a plurality of layers including from bottom to top an n-type semiconductor layer, a light emitting unit, and a p-type semiconductor layer. The image below right focusses in on the p-type semiconductor layer. As the image shows, a number of layers as described above are located below the p-type semiconductor layer, with the relative brightness of each layer correlating with the dopant concentration. From bottom to top, the layers include a first layer, a second layer, and a third layer, each of which has different levels of the magnesium doping, the first layer with relatively low magnesium doping, the second layer with relatively high magnesium doping, and the third layer with relatively intermediate magnesium doping.



52. Finelite's infringement has caused and is continuing to cause damage and irreparable injury to Plaintiffs. Plaintiffs will continue to suffer damage and irreparable injury unless and until that infringement is enjoined by this Court, as a remedy at law alone would be inadequate.

53. Plaintiffs are entitled to injunctive relief and damages in accordance with 35 U.S.C. §§ 271, 281, 283, and 284.

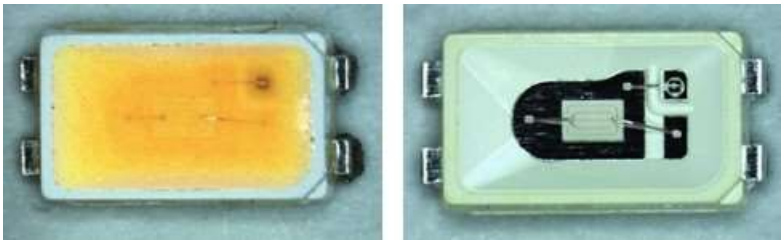
COUNT 3

INFRINGEMENT OF U.S. PATENT NO. 9,799,800

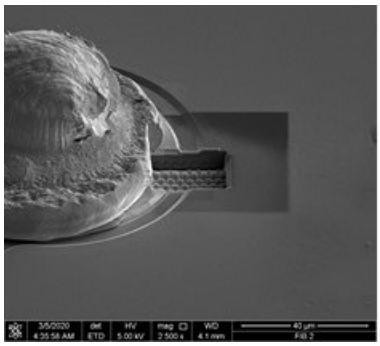
EXEMPLARY CLAIM 1

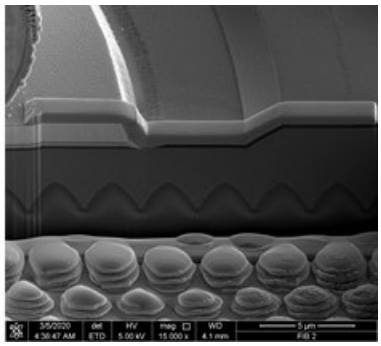
54. Finelite has infringed and continues to infringe one or more claims of the '800 patent, including but not limited to exemplary claim 1, in violation of 35 U.S.C. § 271(a), at least by without authority making, using, offering to sell and/or selling the Finelite HPR-A-2X2-S-835-DCO-LED-3500K-277V-SC-C1-OBO LED panel within the United States.

55. The Finelite HPR-A-2X2-S-835-DCO-LED-3500K-277V-SC-C1-OBO LED panel includes a plurality of LED packages, each of which comprises a light emitting diode. Optical microscope images of the LED package from the Finelite HPR-A-2X2-S-835-DCO-LED-3500K-277V-SC-C1-OBO LED panel are reproduced below before and after removal of an encapsulant. As shown in the image below right, the LED package includes a light emitting diode (LED) chip.



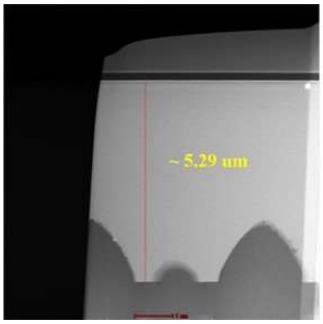
56. Below are two Scanning Electron Microscope (SEM) images of an LED chip from the Finelite HPR-A-2X2-S-835-DCO-LED-3500K-277V-SC-C1-OBO LED panel. The images were created after the creation of a hole in the LED using a focused ion beam (FIB). The structure shown on the left side of the first image is an n-pad, which sits on top of and in contact with an n-type semiconductor layer. Above the n-type semiconductor layer are an active layer, an electron blocking layer and a p-type semiconductor layer. The active layer comprises a multi-quantum well, with the layers distinguishable by differing indium concentrations. Between the active layer and the p-type layer is an electron blocking layer, which is distinguishable by being relatively free of both magnesium and indium.

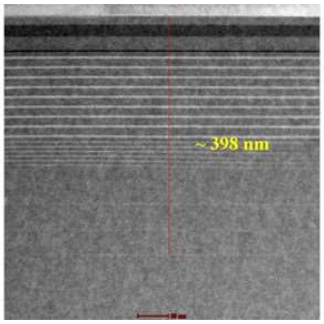


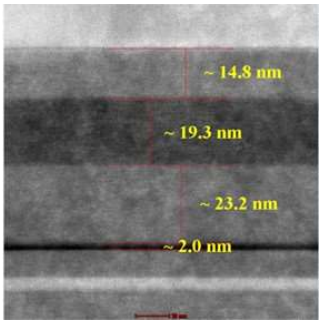


57. The p-type semiconductor layer of the LED chip comprises a number of layers. From top to bottom, the layers include a p-type contact layer, a hole transport layer, and a hole injection layer. The p-type contact layer is distinguishable by a relatively high level of magnesium doping near the surface of the LED chip. Next, a hole transport layer has varying levels of the magnesium doping, a first layer with relatively low magnesium doping, an intermediate layer with relatively high magnesium doping, and second layer with relatively low magnesium doping. The level of magnesium within the first layer with relatively low level doping increases at both ends and decreases toward the middle. The hole injection layer is again distinguishable based on its level of magnesium doping.

58. Three transmission electron microscope images of the LED chip are reproduced below. The image below left shows the full epi-structure above a patterned sapphire substrate. The center image indicates a plurality of layers including from bottom to top an n-type semiconductor layer, a multi-quantum well active layer, and a p-type semiconductor layer. The image below right focusses in on the p-type semiconductor layer and a portion of the multi-quantum well active layer. As the image shows, the p-type semiconductor layer includes a number of layers as described above, with the relative brightness of each layer correlating with the dopant concentration.







59. Finelite's infringement has caused and is continuing to cause damage and irreparable injury to Plaintiffs. Plaintiffs will continue to suffer damage and irreparable injury unless and until that infringement is enjoined by this Court, as a remedy at law alone would be inadequate.

60. Plaintiffs are entitled to injunctive relief and damages in accordance with 35 U.S.C. §§ 271, 281, 283, and 284.

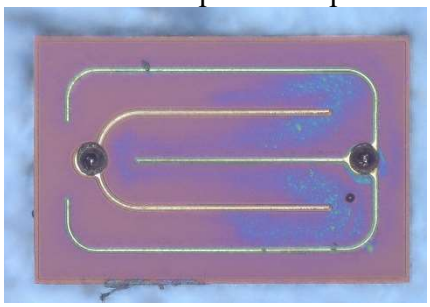
COUNT 4

INFRINGEMENT OF U.S. PATENT NO. 7,667,225

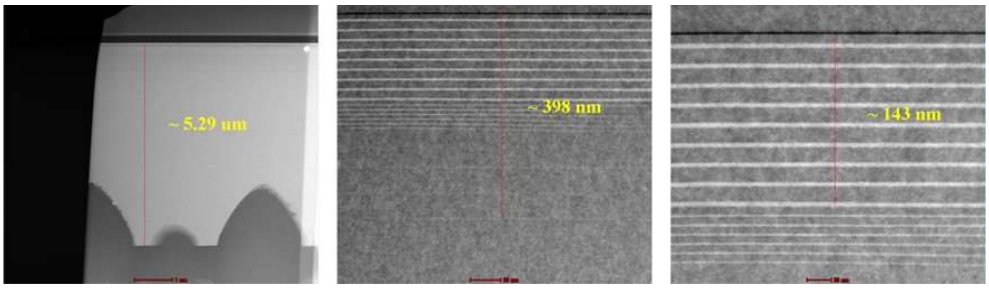
EXEMPLARY CLAIM 1

61. Finelite has infringed and continues to infringe one or more claims of the '225 patent, including but not limited to exemplary claim 1, in violation of 35 U.S.C. § 271(a), at least by without authority making, using, offering to sell and/or selling the Finelite HPR-A-2X2-S-835-DCO-LED-3500K-277V-SC-C1-OBO LED panel within the United States.

62. The Finelite HPR-A-2X2-S-835-DCO-LED-3500K-277V-SC-C1-OBO LED panel includes a plurality of LED chips. An optical image of an LED chip from the Finelite HPR-A-2X2-S-835-DCO-LED-3500K-277V-SC-C1-OBO LED panel is reproduced below.



63. Below are three TEM images of the epitaxial structure of the LED chip. The image to the left shows the entire epitaxial structure above a patterned sapphire substrate. The image below middle enlarges the region of the epitaxial structure around the multi-quantum well active layer. The image below right enlarges the multi-quantum well. The LED chip includes from bottom to top in relevant part a substrate, an n-type semiconductor layer, a multi-quantum well structure, and a p-type semiconductor layer. The multi-quantum well structure comprises brightly colored wells separated by darker barriers.



64. The well layers within the multi-quantum well include indium. In addition, the concentration of indium varies across the layer, with areas of relatively high indium concentration transitioning to areas of lower indium concentration. The regions of relatively higher indium concentration correspond to carrier trap portions. And the transition from relatively lower to relatively higher indium concentration corresponds to a related drop in the band-gap energy.

65. Finelite's infringement has caused and is continuing to cause damage and irreparable injury to Plaintiffs. Plaintiffs will continue to suffer damage and irreparable injury unless and until that infringement is enjoined by this Court, as a remedy at law alone would be inadequate.

66. Plaintiffs are entitled to injunctive relief and damages in accordance with 35 U.S.C. §§ 271, 281, 283, and 284.

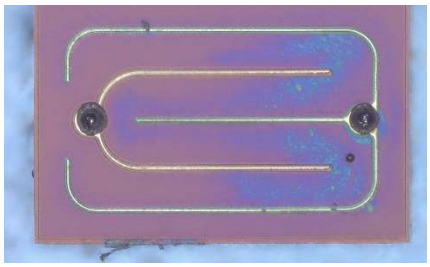
COUNT 5

INFRINGEMENT OF U.S. PATENT NO. 8,664,638

EXEMPLARY CLAIM 1

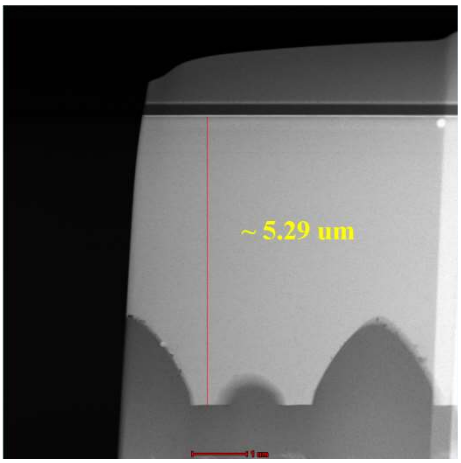
67. Finelite has infringed and continues to infringe one or more claims of the '638 patent, including but not limited to exemplary claim 1, in violation of 35 U.S.C. § 271(a), at least by without authority making, using, offering to sell and/or selling the Finelite HPR-A-2X2-S-835-DCO-LED-3500K-277V-SC-C1-OBO LED panel within the United States.

68. The Finelite HPR-A-2X2-S-835-DCO-LED-3500K-277V-SC-C1-OBO LED panel includes a plurality of LED chips. An optical image of an LED chip from the Finelite HPR-A-2X2-S-835-DCO-LED-3500K-277V-SC-C1-OBO LED panel is reproduced below.



69. The above image depicts two pads. The right side of the chip includes a p-pad, which is electrically connected to a p-type contact layer. The left side of the chip includes an n-pad, which is electrically connected to an n-type contact layer.

70. A TEM image depicting the cross section of the epitaxial layers of the chip from the Finelite HPR-A-2X2-S-835-DCO-LED-3500K-277V-SC-C1-OBO LED panel is reproduced below.



71. The chip from the Finelite HPR-A-2X2-S-835-DCO-LED-3500K-277V-SC-C1-OBO LED panel includes a plurality of different semiconductor layers formed over a substrate. Among the layers included are, from bottom to top, a buffer layer, a gallium nitride-based first lower semiconductor layer, a gallium nitride-based first interlayer that comprises a single composition, a gallium nitride-based second interlayer, a gallium nitride-based n-type contact layer, an active layer, and a gallium nitride-based p-type contact layer. The first interlayer comprises the same composition as the n-type contact layer.

72. Upon information and belief, the second interlayer has a higher dislocation density than the first lower semiconductor layer and the second interlayer has a dislocation density different from that of the first interlayer. Upon information and belief, the first interlayer has a lower

dislocation density than the buffer layer, and has higher dislocation density than the first lower semiconductor layer.

73. Finelite's infringement has caused and is continuing to cause damage and irreparable injury to Plaintiffs. Plaintiffs will continue to suffer damage and irreparable injury unless and until that infringement is enjoined by this Court, as a remedy at law alone would be inadequate.

74. Plaintiffs are entitled to injunctive relief and damages in accordance with 35 U.S.C. §§ 271, 281, 283, and 284.

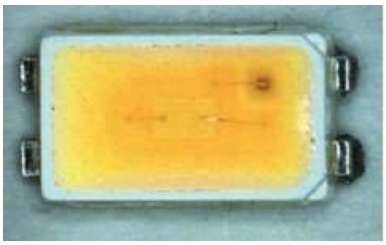
COUNT 6

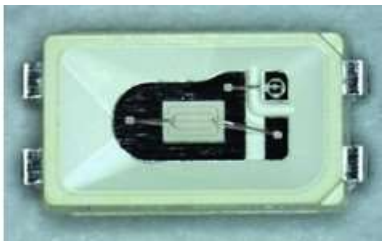
INFRINGEMENT OF U.S. PATENT NO. 9,716,210

EXEMPLARY CLAIM 1

75. Finelite has infringed and continues to infringe one or more claims of the '210 patent, including but not limited to exemplary claim 1, in violation of 35 U.S.C. § 271(a), at least by without authority making, using, offering to sell and/or selling the Finelite HPR-A-2X2-S-835-DCO-LED-3500K-277V-SC-C1-OBO LED panel within the United States.

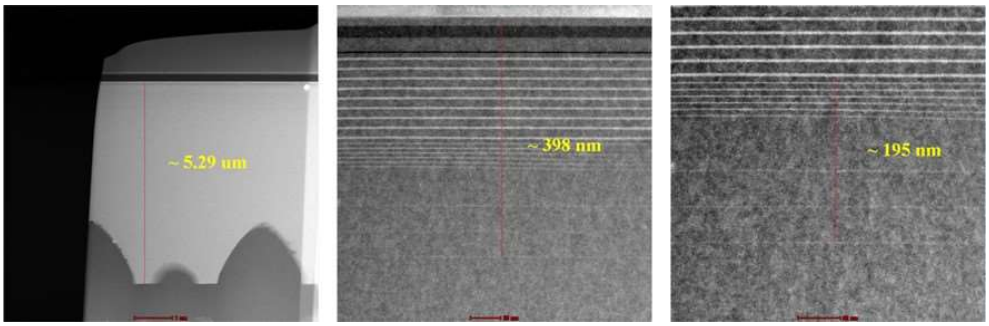
76. The Finelite HPR-A-2X2-S-835-DCO-LED-3500K-277V-SC-C1-OBO LED panel includes a plurality of LED packages, each of which includes a light emitting diode. The image of an LED package from the Finelite HPR-A-2X2-S-835-DCO-LED-3500K-277V-SC-C1-OBO LED panel is reproduced below left. The image below right shows an LED chip within the package.





77. Below are three TEM images of the epi-structure of the LED chip. The image to the left shows the entire epi-structure above a patterned sapphire substrate. The image below middle enlarges the region of the epi-structure around the multi-quantum well active layer. The image below right further enlarges the region under the active region. The epi-structure includes from top to bottom in relevant part a p-type contact layer, a multi-quantum well active region, and an n-type

contact layer. The active region, which appears as a relatively bright repeating pattern of indium doped layers separated by relatively dark barrier layers near the center of the center image below. Below the active region is a superlattice layer, which includes a plurality of layers, and appears as a relatively faint and closely spaced pattern. Below the superlattice is a spacer layer, which includes a plurality of layers, and appears as a relatively faint and widely spaced pattern.



78. Based on the level of indium doping in the active region, the superlattice layer, and the spacer layer, the spacer layer will have a bandgap smaller than the barrier layers of the multi-quantum well, but higher than the bandgap of the quantum well layers.

79. Finelite's infringement has caused and is continuing to cause damage and irreparable injury to Plaintiffs. Plaintiffs will continue to suffer damage and irreparable injury unless and until that infringement is enjoined by this Court, as a remedy at law alone would be inadequate.

80. Finelite's infringement has occurred with knowledge of the '210 patent and knowledge that its acts constitute infringement. Finelite's continuing conduct, therefore, is willful.

81. Plaintiffs are entitled to injunctive relief and damages in accordance with 35 U.S.C. §§ 271, 281, 283, and 284.

COUNT 7

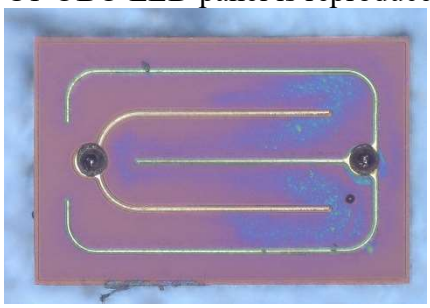
INFRINGEMENT OF U.S. PATENT NO. 10,418,514

EXEMPLARY CLAIM 1

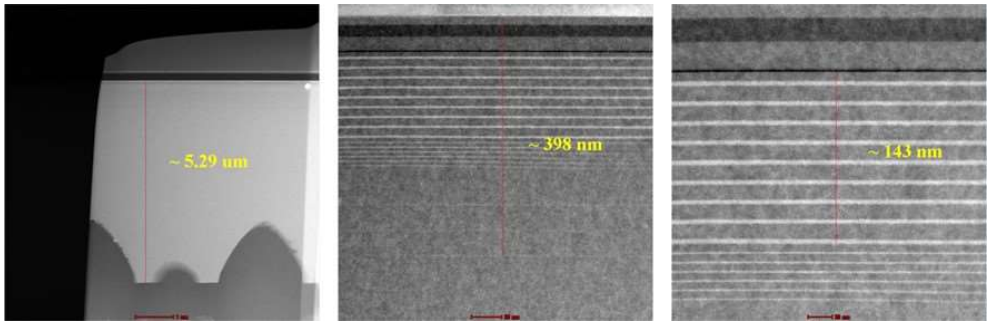
82. Finelite has infringed and continues to infringe one or more claims of the '514 patent, including but not limited to exemplary claim 1, in violation of 35 U.S.C. § 271(a), at least by without authority making, using, offering to sell and/or selling the Finelite HPR-A-2X2-S-835-

DCO-LED-3500K-277V-SC-C1-OBO LED panel within the United States.

83. The Finelite HPR-A-2X2-S-835-DCO-LED-3500K-277V-SC-C1-OBO LED panel includes a plurality of LED chips. An optical image of an LED chip from the Finelite HPR-A-2X2-S-835-DCO-LED-3500K-277V-SC-C1-OBO LED panel is reproduced below.



84. The images below are TEM images created from a slice of the lighting diode. The image below left includes the entire epitaxial structure above the substrate. The image below center enlarges the region above and below the active layer. The region below the active layer includes an n-type contact layer, the region above the active layer includes a p-type contact layer. The image below right enlarges the active layer, showing relatively thin and bright multi-quantum well layers.



85. A number of sublayers are depicted in the image above center both above and below the active layer. Those layers include a p-type clad layer, a superlattice layer that includes a plurality of layers disposed near active region, and a spacer layer between the superlattice layer and the n-type contact layer. The spacer layer has a bandgap smaller than the barrier layer and greater than the quantum well layer.

86. Finelite's infringement has caused and is continuing to cause damage and irreparable injury to Plaintiffs. Plaintiffs will continue to suffer damage and irreparable injury unless and until that infringement is enjoined by this Court, as a remedy at law alone would be

inadequate.

87. Finelite's infringement has occurred with knowledge of the '514 patent and knowledge that its acts constitute infringement. Finelite's continuing conduct, therefore, is willful.

88. Plaintiffs are entitled to injunctive relief and damages in accordance with 35 U.S.C. §§ 271, 281, 283, and 284.

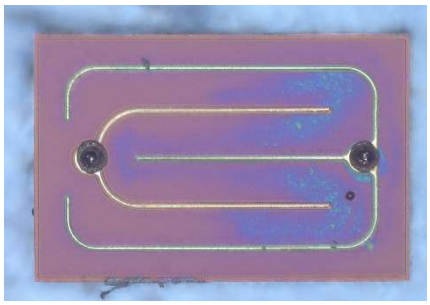
COUNT 8

INFRINGEMENT OF U.S. PATENT NO. 8,604,496

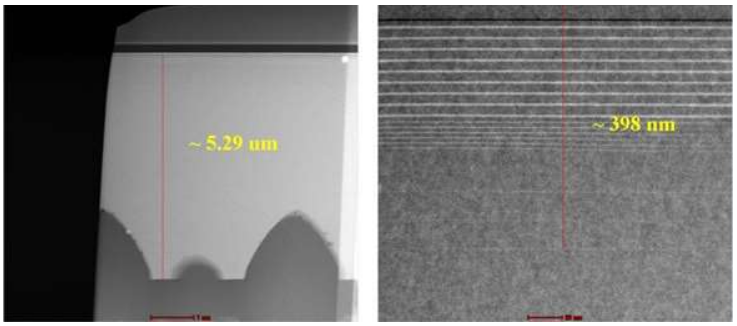
EXEMPLARY CLAIM 1

89. Finelite has infringed and continues to infringe one or more claims of the '496 patent, including but not limited to exemplary claim 1, in violation of 35 U.S.C. § 271(a), at least by without authority making, using, offering to sell and/or selling the Finelite HPR-A-2X2-S-835-DCO-LED-3500K-277V-SC-C1-OBO LED panel within the United States.

90. The Finelite HPR-A-2X2-S-835-DCO-LED-3500K-277V-SC-C1-OBO LED panel includes a plurality of LED chips. An optical image of an LED chip from the Finelite HPR-A-2X2-S-835-DCO-LED-3500K-277V-SC-C1-OBO LED panel is reproduced below.

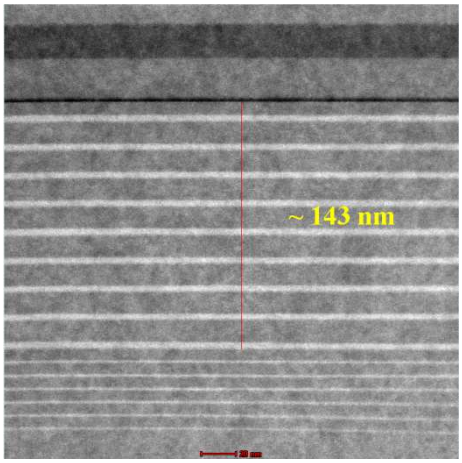


91. The images below are two TEM images created from a thin section taken from the LED chip. The image below left shows a substrate toward the bottom of the image. The image below right is a higher resolution image focused on the light emitting layer formed above the substrate.



92. The layer structure in the image above right includes, in relevant part from bottom to top, an n-type semiconductor layer, a functional part, and a p-type semiconductor layer.

93. The image below is a TEM image focused on the functional part, which includes a plurality of active layers stacked in a direction from the lower n-type semiconductor layer toward the upper p-type semiconductor layer.



94. The above depicted functional part includes multiple active layers that include a multilayer stacked body including a plurality of thick film layers and a plurality of thin film layers alternately stacked in the direction, a thickness of the thin film layers being not more than a thickness of the thick film layers. The thin film layers appear as relatively bright and thin layers (wells) separated by relatively thick dimmer layers (barriers). A multilayer stacked body can include, for example, a pair of wells and three surrounding barrier layers.

95. Within the overall structure, the active layer includes an n-side barrier layer provided between the multilayer stacked body and the p-type semiconductor layer, a well layer; and a p-side barrier layer provided between the well layer and the p-type semiconductor layer. With

that arrangement, the well layer is provided between the n-side barrier layer and the p-side barrier layer.

96. Finelite's infringement has caused and is continuing to cause damage and irreparable injury to Plaintiffs. Plaintiffs will continue to suffer damage and irreparable injury unless and until that infringement is enjoined by this Court, as a remedy at law alone would be inadequate.

97. Plaintiffs are entitled to injunctive relief and damages in accordance with 35 U.S.C. §§ 271, 281, 283, and 284.

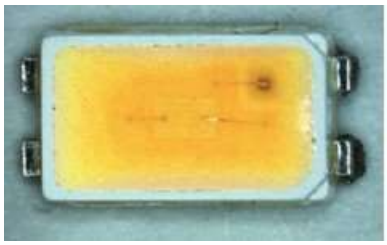
COUNT 9

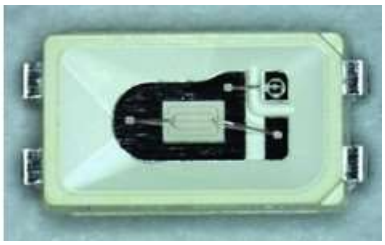
INFRINGEMENT OF U.S. PATENT NO. 7,982,207

EXEMPLARY CLAIM 7

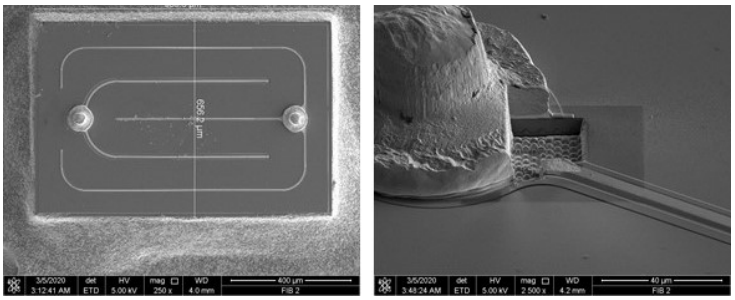
98. Finelite has infringed and continues to infringe one or more claims of the '207 patent, including but not limited to exemplary claim 7, in violation of 35 U.S.C. § 271(a), at least by without authority making, using, offering to sell and/or selling the Finelite HPR-A-2X2-S-835-DCO-LED-3500K-277V-SC-C1-OBO LED panel within the United States.

99. The Finelite HPR-A-2X2-S-835-DCO-LED-3500K-277V-SC-C1-OBO LED panel includes a plurality of LED packages, each of which includes a light emitting diode. The image of an LED package from the Finelite HPR-A-2X2-S-835-DCO-LED-3500K-277V-SC-C1-OBO LED panel is reproduced below left. The image below right shows the LED chip within the package.

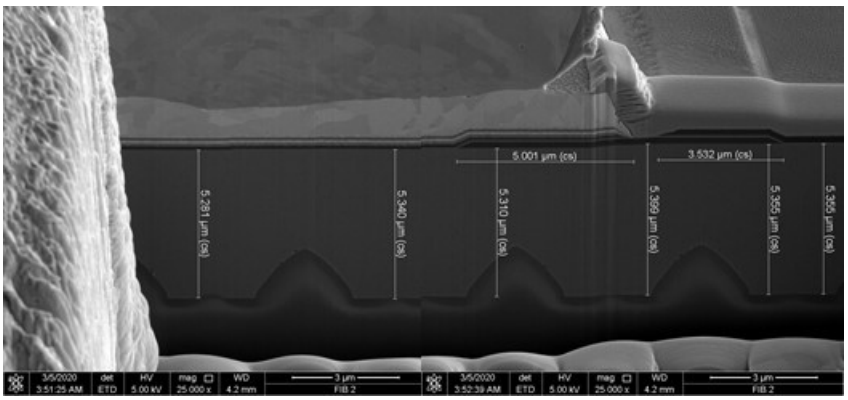




100. Below are two SEM images of the LED chip. The image to the left shows the top image of the LED chip, and the image below right shows the area surrounding the p-electrode of the LED chip. The dark space near the p-electrode indicates a hole created using a FIB.



101. The below composite image shows the cross-section of the hole created by the FIB. Focusing in on the central part of the image, the cross-section shows from bottom to top (in relevant part) a substrate, an n-type semiconductor layer, an active layer, a p-type semiconductor layer, a transparent electrode layer and the p-electrode pad, which includes a thin layer of aluminum on its bottom surface. The transparent electrode layer is comprised of indium tin oxide, which appears as a relatively thin lightly colored layer in contact with the top surface of the p-type semiconductor layer at the far right side of the image.



102. Focusing on the left half of the image above, there is shown from bottom to top a substrate, an n-type semiconductor layer, an active layer, a p-type semiconductor layer, and the p-electrode pad, which includes a thin layer of aluminum on its bottom surface. More specifically, in the left region the thin layer of aluminum contacts the underlying p-type semiconductor rather than the transparent electrode layer. That area of contact indicates an opening in the transparent electrode layer, where the contact between the aluminum and p-type semiconductor layer, comprises a current blocking portion.

103. With respect the central region of the image above, the electrode pad is arranged on an upper surface of the transparent electrode layer outside of the opening.

104. Finelite's infringement has caused and is continuing to cause damage and irreparable injury to Plaintiffs. Plaintiffs will continue to suffer damage and irreparable injury unless and until that infringement is enjoined by this Court, as a remedy at law alone would be inadequate.

105. Plaintiffs are entitled to injunctive relief and damages in accordance with 35 U.S.C. §§ 271, 281, 283, and 284.

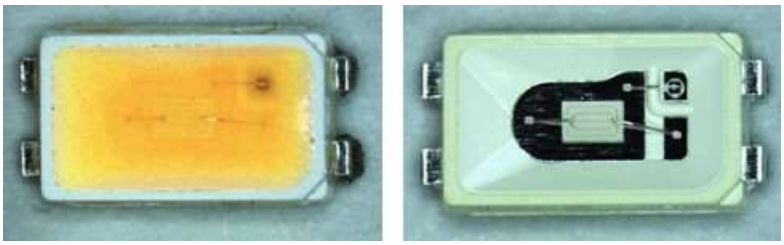
COUNT 10

INFRINGEMENT OF U.S. PATENT NO. 10,672,952

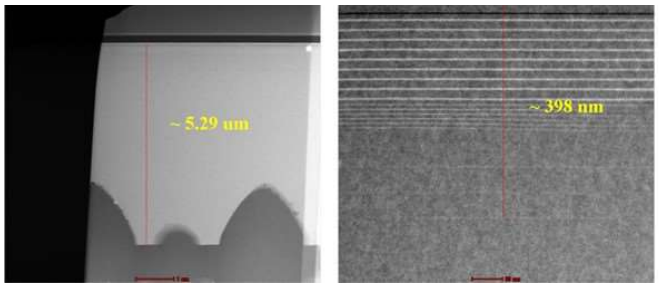
EXEMPLARY CLAIM 1

106. Finelite has infringed and continues to infringe one or more claims of the '952 patent, including but not limited to exemplary claim 1, in violation of 35 U.S.C. § 271(a), at least by without authority making, using, offering to sell and/or selling the Finelite HPR-A-2X2-S-835-DCO-LED-3500K-277V-SC-C1-OBO LED panel within the United States.

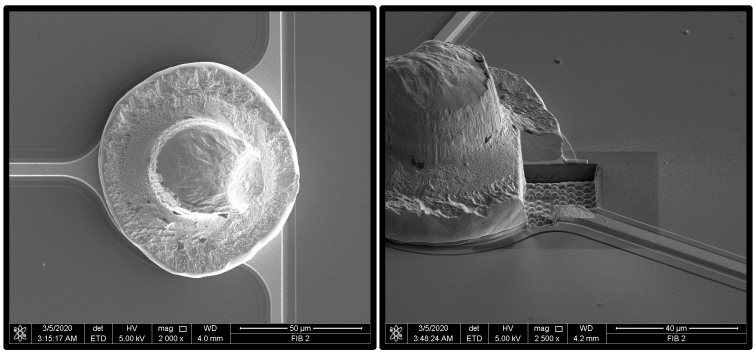
107. The Finelite HPR-A-2X2-S-835-DCO-LED-3500K-277V-SC-C1-OBO LED panel includes a plurality of LED packages. Optical microscope images of an LED package from the Finelite HPR-A-2X2-S-835-DCO-LED-3500K-277V-SC-C1-OBO LED panel are reproduced below before and after removal of an encapsulant. The image below right shows a light emitting diode at the center of the package.



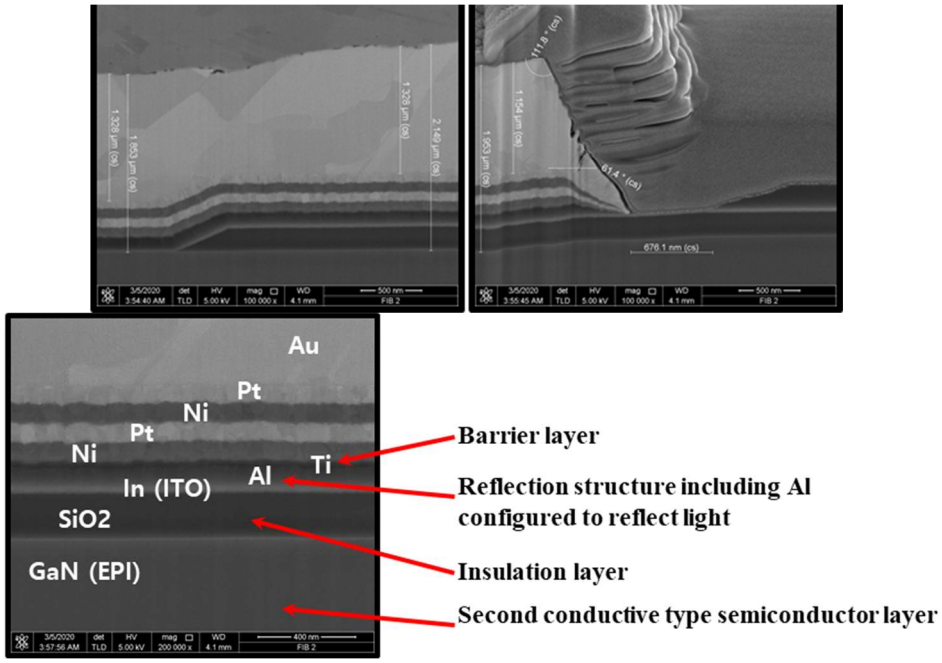
108. Two TEM images of the light emitting element are reproduced below. The image below left shows the full epitaxial structure above a patterned sapphire substrate. The image below right indicates a plurality of layers including from bottom to top an n-type semiconductor layer, an active layer, and a p-type semiconductor layer. The active layer is disposed between the n-type semiconductor layer and the p-type semiconductor layer and is operable to emit light in response to an electrical current through the light emitting structure.



109. Below are two Scanning Electron Microscope (SEM) images of an LED chip from the Finelite HPR-A-2X2-S-835-DCO-LED-3500K-277V-SC-C1-OBO LED panel. The image on the left shows the p-pad, with three conductors extending from the p-pad. The image on the right was created after the creation of a hole in the LED using a focused ion beam (FIB).



110. The first two images below are SEM images showing the layer structure within the above FIB-created hole. The third image is an enlarged view of the layer structure above the semiconductor layers with an identification of the composition of the relevant layers. The LED includes an aluminum reflection structure disposed on the p-type semiconductor layer and is configured to reflect light emitted by the light emitting structure. The LED also includes an SiO_2 insulation layer disposed over the p-type semiconductor layer. The LED also includes a titanium barrier layer disposed over the second conductive type semiconductor layer and the reflection structure, the barrier layer structured to include conductive materials and to prevent a diffusion of the metal in the reflection structure.



111. Finelite's infringement has caused and is continuing to cause damage and irreparable injury to Plaintiffs. Plaintiffs will continue to suffer damage and irreparable injury unless and until that infringement is enjoined by this Court, as a remedy at law alone would be inadequate.

112. Plaintiffs are entitled to injunctive relief and damages in accordance with 35 U.S.C. §§ 271, 281, 283, and 284.

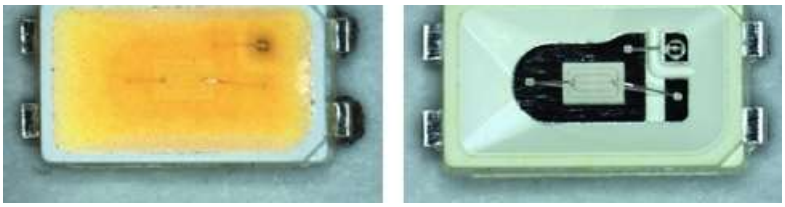
COUNT 11

INFRINGEMENT OF U.S. PATENT NO. 8,981,410

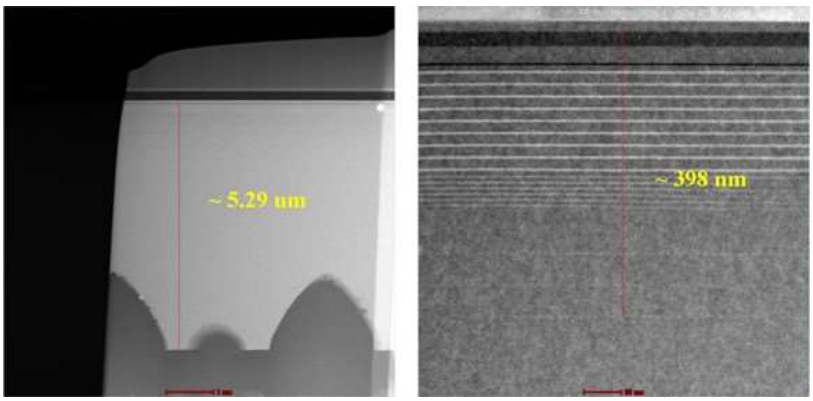
EXEMPLARY CLAIM 1

113. Finelite has infringed and continues to infringe one or more claims of the '410 patent, including but not limited to exemplary claim 1, in violation of 35 U.S.C. § 271(a), at least by without authority making, using, offering to sell and/or selling the Finelite HPR-A-2X2-S-835-DCO-LED-3500K-277V-SC-C1-OBO LED panel within the United States.

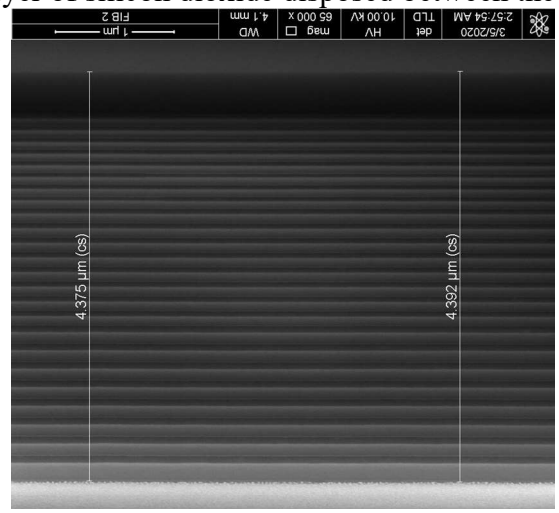
114. The Finelite HPR-A-2X2-S-835-DCO-LED-3500K-277V-SC-C1-OBO LED panel includes a plurality of LED packages, each of which includes a light emitting diode. The image of an LED package from the Finelite HPR-A-2X2-S-835-DCO-LED-3500K-277V-SC-C1-OBO LED panel is reproduced below left. The image below right shows an LED chip within the package.



115. The images below are two TEM images created from a thin section taken from the light emitting diode device. The image below left shows a substrate toward the bottom of the image. The image below right is a higher resolution image focused on the active layer formed above the substrate.



116. The image below is an SEM image created of a hole made in the light emitting diode device. The image is focused on a layer structure formed below the back surface of the substrate (which appears at the top of the image below). The layer structure shown in the image below includes, in relevant part starting from the top, the substrate, a low-index total internal reflection layer, and a distributed Bragg reflector (DBR). The low-index total internal reflection layer comprises a relatively thick layer of silicon dioxide disposed between the substrate and the DBR.



117. The DBR is comprised of interleaved layers of the high index dielectric titanium dioxide and low index dielectric silicon dioxide. The titanium dioxide layers appear as relatively light and thin layers relative to the silicon dioxide layers. As the image shows, the upper layers of the DBR comprise a first plurality of periods where the high index material layers have a first thickness and the low index materials have a second thickness. The image also shows that the lower layers of the DBR comprise a second plurality of periods where the high index material layers have a third thickness and the low index materials have a fourth thickness.

118. Finelite's infringement has caused and is continuing to cause damage and irreparable injury to Plaintiffs. Plaintiffs will continue to suffer damage and irreparable injury unless and until that infringement is enjoined by this Court, as a remedy at law alone would be inadequate.

119. Plaintiffs are entitled to injunctive relief and damages in accordance with 35 U.S.C. §§ 271, 281, 283, and 284.

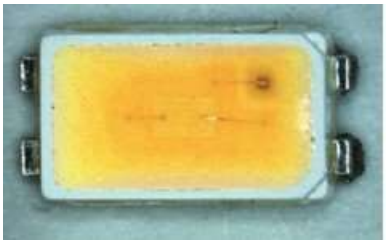
COUNT 12

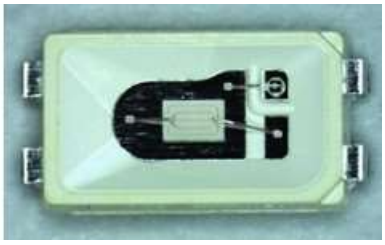
INFRINGEMENT OF U.S. PATENT NO. 9,577,157

EXEMPLARY CLAIM 1

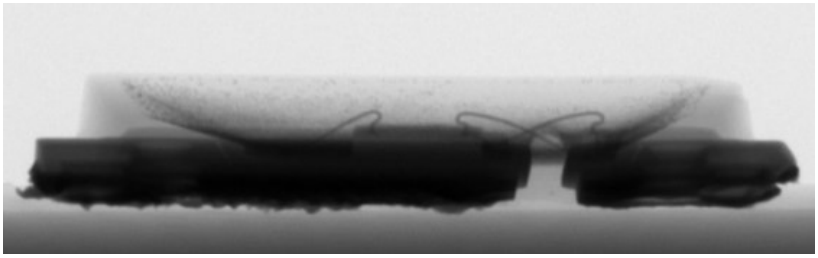
120. Finelite has infringed and continues to infringe one or more claims of the '157 patent, including but not limited to exemplary claim 1, in violation of 35 U.S.C. § 271(a), at least by without authority making, using, offering to sell and/or selling the Finelite HPR-A-2X2-S-835-DCO-LED-3500K-277V-SC-C1-OBO LED panel within the United States.

121. The Finelite HPR-A-2X2-S-835-DCO-LED-3500K-277V-SC-C1-OBO LED panel includes a plurality of LED packages, each of which includes a light emitting diode. The image of an LED package from the Finelite HPR-A-2X2-S-835-DCO-LED-3500K-277V-SC-C1-OBO LED panel is reproduced below left. The image below right shows an LED chip within the package.

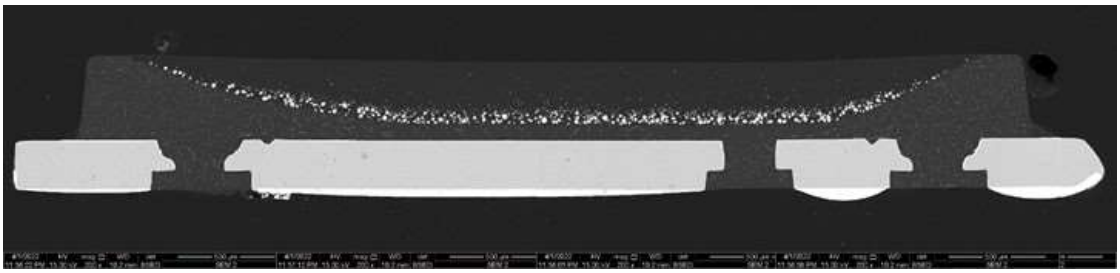




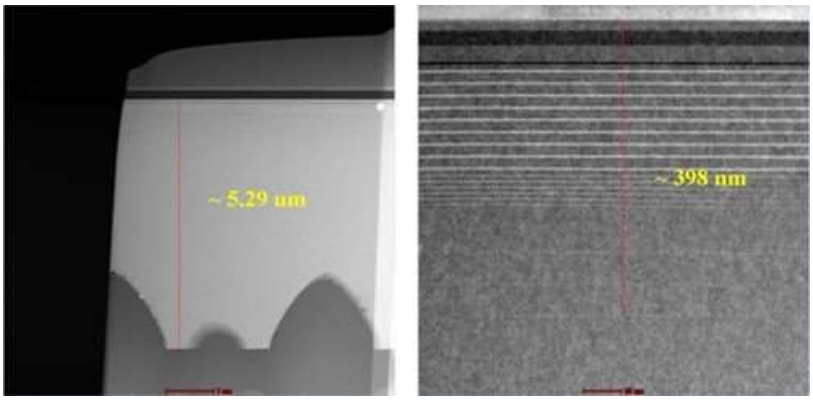
122. An X-ray side view image of the package is reproduced below. The image shows the body, leads, and a mounting surface upon which the LED chip is disposed. The LED chip is shown covered by a member comprised of resin.



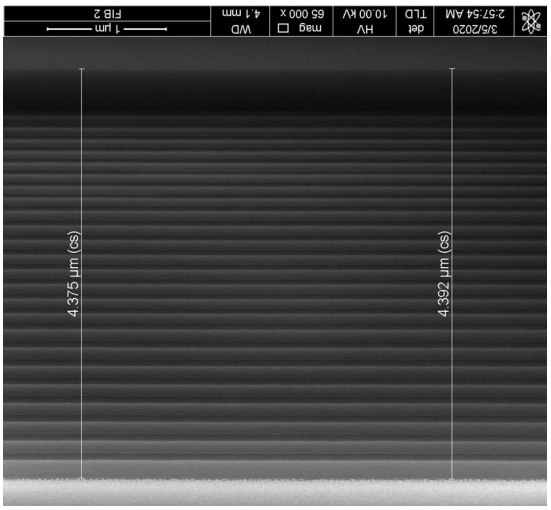
123. The image at bottom shows a SEM image of a cross-section through the package. The image shows the resin member contains phosphor particles, which can be seen as relatively bright spots within the darker resin.



124. Two transmission electron microscope images of a light emitting structure from the HPR-A-2X2-S-835-DCO-LED-3500K-277V-SC-C1-OBO are reproduced below. The image below left shows the entire vertical epi-structure formed above a patterned sapphire substrate. The image below right shows a portion of the epi-structure including from bottom to top, a portion of the n-type semiconductor layer, a multi-quantum well active layer, and a p-type semiconductor layer.



125. The image below is SEM image created of a hole made in the light emitting diode device. The image is focused on a layer structure formed below the back surface of the substrate (which appears at the top of the image below). The layer structure shown in the image below includes, in relevant part starting from the top, the substrate, and a DBR. As shown in the below image, the DBR comprises two portions., an upper portion comprising relatively thick layers of silicon dioxide ("SiO_2") and titanium dioxide ("TiO_2") and a lower portion comprising relatively thin layers of SiO_2 and TiO_2. The relatively dark layers comprise SiO_2 and the relatively bright layers comprise TiO_2. The optical thickness of the layers comprising the upper portion are greater than the optical thickness of the layers comprising the lower portion.



126. Finelite's infringement has caused and is continuing to cause damage and irreparable injury to Plaintiffs. Plaintiffs will continue to suffer damage and irreparable injury unless and until that infringement is enjoined by this Court, as a remedy at law alone would be inadequate.

127. Finelite's infringement has occurred with knowledge of the '210 patent and knowledge that its acts constitute infringement. Finelite's continuing conduct, therefore, is willful.

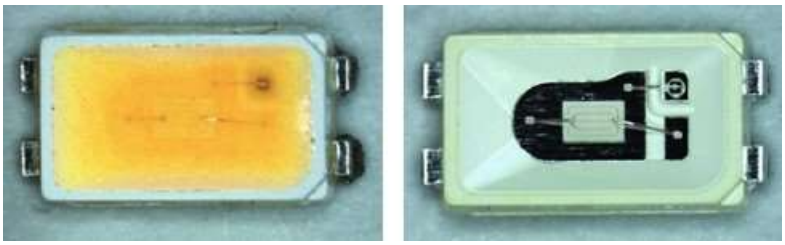
128. Plaintiffs are entitled to injunctive relief and damages in accordance with 35 U.S.C. §§ 271, 281, 283, and 284.

COUNT 13

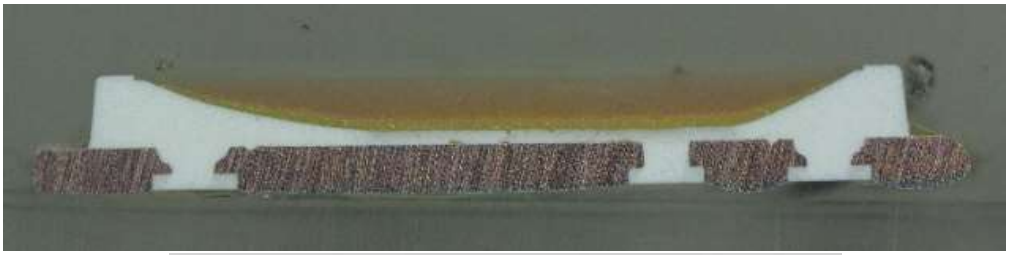
INFRINGEMENT OF U.S. PATENT NO. 10,134,967

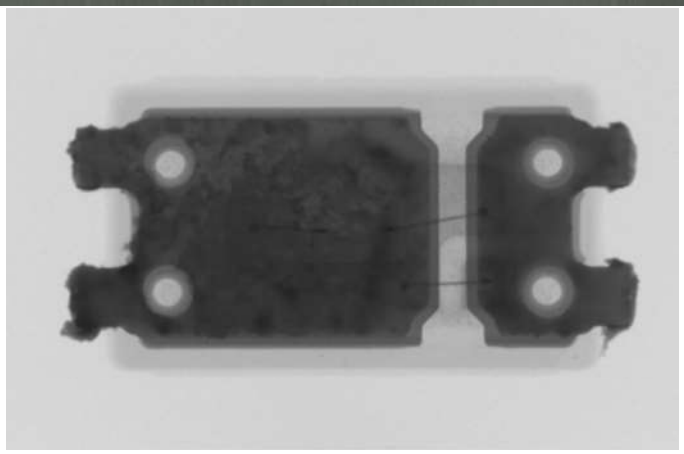
EXEMPLARY CLAIM 1

129. The Finelite HPR-A-2X2-S-835-DCO-LED-3500K-277V-SC-C1-OBO LED includes a plurality of LED packages. Optical microscope images of an LED package from the Finelite HPR-A-2X2-S-835-DCO-LED-3500K-277V-SC-C1-OBO LED are reproduced below before and after removal of an encapsulant. An LED chip is disposed on the top surface of the right lead frame in the optical image.



130. The top image below is an optical microscope image of a cross-section through the LED package. The bottom image below is an x-ray through the package.





131. As the above images show, the LED package contains two metal lead frames spaced apart from each other. The optical image shows that each lead frame has a substantially flat top surface, a bottom surface, a fixing hole, and sidewalls between the top and bottom surfaces.

132. The cross-section image above depicts the cross-sectional shape of the sidewalls of

both lead frames at the sides that face each other in the horizontal direction. In addition, the upper surface of the left and right lead frames extend further into the space between the lead frames than the bottom surface of the left and right lead frames. That the top surfaces extend further into the space indicates an undercut in the sidewall that partially defines a fixing space between the two lead frames. This same feature is also depicted in the x-ray image above. In particular, both leads are shown with relatively dark interior regions and three sides have relatively light outer regions. The differences in brightness correlate to the thickness of the metal at those locations. The relatively light outer regions correspond to undercut sidewalls on three sides of both lead frames. The undercuts form the fixing space.

133. As discussed above and as shown in the images above, the first and second lead frames include a fixing hole located in the interior portions and each fixing hole includes an undercut sidewall that envelopes inner bounds of the fixing hole.

134. As discussed above, the lead frames face each other in the horizontal direction and both lead frames have three undercut sidewalls as indicated by the cross-sectional and x-ray images above. Of those three undercut sidewalls, each lead frame has a sidewall shown as extending vertically in the x-ray image and two sidewalls shown as extending horizontally. The sidewalls extending horizontally in the x-ray image are all parallel and also perpendicular to those shown extending vertically.

135. Finelite's infringement has caused and is continuing to cause damage and irreparable injury to Plaintiffs. Plaintiffs will continue to suffer damage and irreparable injury unless and until that infringement is enjoined by this Court, as a remedy at law alone would be inadequate.

136. Plaintiffs are entitled to injunctive relief and damages in accordance with 35 U.S.C. §§ 271, 281, 283, and 284.

COUNT 14

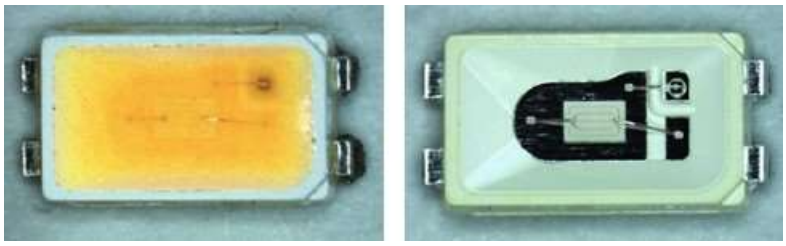
INFRINGEMENT OF U.S. PATENT NO. 10,510,933

EXEMPLARY CLAIM 15

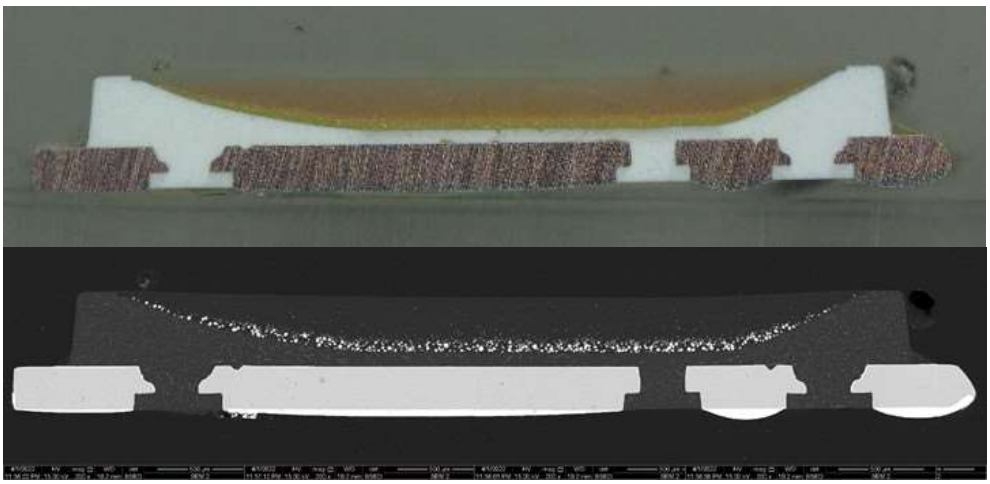
137. Finelite has infringed and continues to infringe one or more claims of the '933

patent, including but not limited to exemplary claim 15, in violation of 35 U.S.C. § 271(a), at least by without authority making, using, offering to sell and/or selling the Finelite HPR-A-2X2-S-835-DCO-LED-3500K-277V-SC-C1-OBO LED panel within the United States.

138. The Finelite HPR-A-2X2-S-835-DCO-LED-3500K-277V-SC-C1-OBO LED panel includes a plurality of LED packages, each of which includes a light emitting diode. The image of an LED package from the Finelite HPR-A-2X2-S-835-DCO-LED-3500K-277V-SC-C1-OBO LED panel is reproduced below left. The image below right shows an LED chip within package. The chip emits blue light with a Full Width at Half Maximum of less than 40 nm.



139. The image above left is an optical microscope image of the top surface of the package, where the white material comprises a housing. The images below are an optical microscope image (top) and a SEM image (bottom) created after cross-sectioning the package. The housing material appears white in the optical image. The image shows that the package includes a housing having both a top surface, an opposite bottom surface, wherein the top surface includes, from top to bottom, upper, intermediate, and lower portions.



140. Also shown in the image above is an encapsulating molding part formed over and around the light-emitting diode chip. The molding part is a silicon based encapsulant. The relatively

bright inclusions within the encapsulant include two different phosphors, one a Lutetium-based phosphor that has an output wavelength in the green with a peak between 520 nm and 570 nm, and the other a nitride-based phosphor that has an output wavelength in the red with a peak between 600 nm and 670 nm. The Full Width at Half Maximum of the nitride-based phosphor is narrower than that of the Lutetium-based phosphor, which is wider than 40 nm.

141. The output from the blue chip combined with light down converted by the first and second phosphors is white light.

142. Finelite's infringement has caused and is continuing to cause damage and irreparable injury to Plaintiffs. Plaintiffs will continue to suffer damage and irreparable injury unless and until that infringement is enjoined by this Court, as a remedy at law alone would be inadequate.

143. Plaintiffs are entitled to injunctive relief and damages in accordance with 35 U.S.C. §§ 271, 281, 283, and 284.

PRAYER FOR RELIEF

WHEREFORE, the Plaintiffs requests that the Court enter judgment in their favor and against Defendant Finelite, Inc., as follows:

A. A judgment that Defendant infringe the '069, '868, '800, '225, '638, '210, '514, '496, '207, '952, '410, '157, '967 and '933 patents;

B. A preliminary and permanent injunction restraining and enjoining Defendant, its officers, partners, agents, servants, employees, parents, subsidiaries, divisions, affiliate corporations, joint ventures, other related business entities and all other persons acting in concert, participation, or in privity with them, and their successors and assigns, from infringing the '069, '868, '800, '225, '638, '210, '514, '496, '207, '952, '410, '157, '967 and '933 patents;

C. An award of damages to Plaintiffs Seoul Semiconductor and Seoul Viosys arising from Defendant's past and continuing infringement up until the date Defendant is finally and permanently enjoined from further infringement, including compensatory damages;

D. A determination that Defendant's infringement of one or more of the '210, '514, and '157 patents was willful, and a trebling of damages pursuant to 35 U.S.C. § 284;

E. A determination that this is an exceptional case and awarding the Seoul Plaintiffs' attorneys' fees pursuant to 35 U.S.C. § 285; An order awarding the Seoul Plaintiffs the costs and expenses that they have incurred in prosecuting this action;

F. An order awarding the Seoul Plaintiffs pre- and post-judgment interest on their damages; and

G. Such other and further relief in law or in equity as this Court deems just and proper.

JURY DEMAND

Plaintiffs Seoul Semiconductor and Seoul Viosys respectfully request a jury trial on all issues so triable.

//

Dated: May 13, 2022

Respectfully submitted,

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