

**IN THE UNITED STATES DISTRICT COURT  
FOR THE DISTRICT OF DELAWARE**

BENCH WALK LIGHTING LLC,

Plaintiff,

v.

LITE-ON TECHNOLOGY  
CORPORATION, and LITE-ON  
TECHNOLOGY USA, INC.,

Defendants.

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CIVIL ACTION NO. 20-052 (RGA)

JURY TRIAL DEMANDED

**AMENDED COMPLAINT**

Plaintiff Bench Walk Lighting LLC (“Plaintiff” or “BWL”), by and through its attorneys, for its Amended Complaint for patent infringement against Lite-On Technology Corporation and Lite-On Technology USA, Inc. (“LITE-ON” or “Defendants”), and demanding trial by jury, hereby alleges on information and belief with regard to the actions of Defendants and on knowledge with regard to its own actions as follows:

**I. NATURE OF THE ACTION**

1. This is an action for patent infringement arising under the patent laws of the United States, 35 U.S.C. §§ 271, *et seq.*, to enjoin and obtain damages resulting from Defendants’ unauthorized use, sale, manufacture, importation, and offer to sell in the United States of products, methods, processes, services, and/or systems that infringe Plaintiff’s United States patents, as described herein.

2. Defendants manufacture, provide, use, sell, offer for sale, import, and/or distribute infringing products and services and encourage others to use its products and services in an infringing manner, as set forth herein.

3. Plaintiff seeks past and future damages and prejudgment and post-judgment interest for Defendants’ infringement of the Asserted Patents, as defined below.

## II. PARTIES

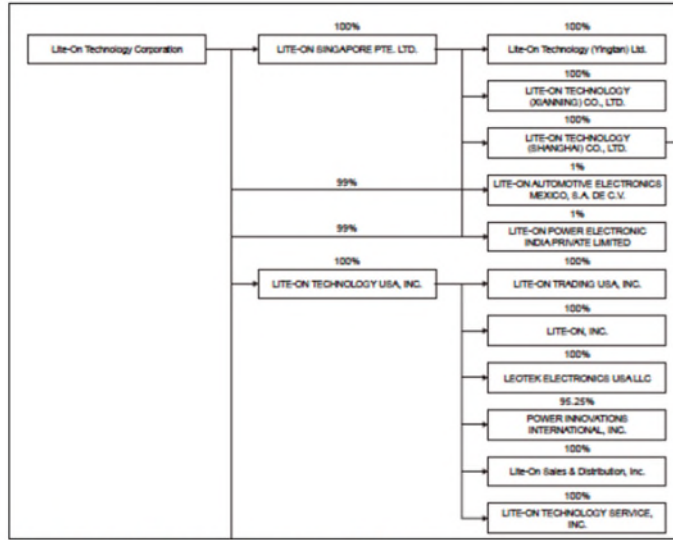
4. Plaintiff Bench Walk Lighting LLC is a limited liability company organized and existing under the laws of Delaware. Its principal place of business is 485 Lexington Avenue, 29th Floor, New York, NY 10017.

5. Lite-On Technology Corporation is a publicly held Taiwanese corporation, traded on the Taiwanese Stock Exchange. Its global headquarters is located at 392 Ruey Kwang Road, Neihu, Taipei 114, Taiwan, R.O.C. Lite-On Technology Corporation is the parent company of a group of wholly-owned subsidiaries (“Lite-On Group”) and manufactures and markets light-emitting diode (“LED”) products.

6. Lite-On Technology USA, Inc. is a Delaware Corporation and a wholly-owned subsidiary of Lite-On Technology Corporation. Lite-On Technology USA, Inc. sells and/or offers for sale in the United States LED products manufactured by it and/or Lite-On Technology Corporation, including in the State of Delaware and in this judicial district. Defendant Lite-On Technology USA, Inc. may be served via its registered agent for service of process: Incorporating Services, Ltd., 3500 S Dupont Hwy, Dover, DE 19901.

7. The Lite-On Group consists of related entities that operate as part of a corporate group or common business enterprise consisting of a number of related subsidiaries that operate under the LITE-ON brand and infringe the Asserted Patents by making, using, importing, offering for sale, and/or selling substantially the same products.

8. Lite-On Technology Corporation owns 100% of the equity interests of Lite-On Technology USA, Inc. Lite-On Technology USA, Inc., in turn, owns 100% of the equity interest in Lite-On, Inc. and other Lite-On Group companies involved in the sale of products that infringe Plaintiff’s patents.



Lite-On 2018 Annual Report, p. 122.

9. Lite-On Technology Corporation is the corporate parent of the other Lite-On Group entities and subsidiaries, which operates as a common business enterprise for the purpose of development, design, manufacture, sale, and distribution of LED products in an infringing manner. The named Defendants are all a part of Lite-On Group.

10. Lite-On Technology Corporation controls its subsidiaries, including named Defendant Lite-On Technology USA, Inc. Lite-On Technology USA, Inc. controls other US subsidiaries, including Lite-On, Inc. that distribute and sell infringing LED products.

11. Lite-On Technology Corporation has legal and effective control over Lite-On Technology USA, Inc. and other Lite-On Group subsidiaries.

12. Lite-On Technology USA, Inc. has legal and effective control over Lite-On, Inc. and other Lite-On Group subsidiaries.

### III. JURISDICTION AND VENUE

13. This is an action for patent infringement which arises under the patent laws of the United States, in particular, 35 U.S.C. §§ 271, 281, 283, 284, and 285.

14. This Court has exclusive jurisdiction over the subject matter of this action under 28 U.S.C. §§ 1331 and 1338(a).

15. Venue is proper in this district pursuant to 28 U.S.C. §§ 1391(b), (c), and 1400(b) because Defendants are foreign entities or have incorporated in this State; Defendants have transacted business in this judicial district and have committed acts within this judicial district giving rise to this action, directly and/or through subsidiaries, and/or Defendants have committed and/or induced acts of patent infringement in this judicial district directly and/or through subsidiaries.

16. Defendants are subject to this Court's specific and general personal jurisdiction pursuant to due process and/or the Delaware Long Arm Statute, 10 *Del. C.* § 3104, due to at least Defendants' substantial business in this forum, directly or through subsidiaries, including: (i) at least a portion of the infringements alleged herein; and (ii) regularly doing or soliciting business, engaging in other persistent courses of conduct, and/or deriving substantial revenue from goods and services provided to individuals in this judicial district.

17. Defendants, directly and/or through subsidiaries or intermediaries (including distributors, retailers, and others), have committed and continue to commit acts of infringement in this judicial district by, among other things, making, using, importing, offering for sale, and/or selling products and/or services that infringe the patents-in-suit. Thus, Defendants have purposefully availed themselves of the benefits of doing business in the State of Delaware and the exercise of jurisdiction over Defendants would not offend traditional notions of fair play and substantial justice.

#### **IV. FACTUAL BACKGROUND**

18. Plaintiff is the owner of the entire right, title, and interest of a portfolio of patents, including the right to recover for past infringement, covering technologies used in LED products,

including the patents-in-suit. The patent portfolio consists of 92 issued and pending patents from 70 patent families. The patent portfolio contains both U.S. and international issued and pending patents. Many of the patents in this portfolio were originally assigned to Agilent Technologies, Inc. and/or the successors of its LED business. Some patents of the portfolio were originally assigned to Avago Technologies Limited.

## **V. COUNTS OF PATENT INFRINGEMENT**

19. Plaintiff alleges that Defendants have infringed and continue to infringe the following United States patents (collectively the “Asserted Patents”):

U.S. patent 6,806,658 (the ‘658 Patent) (Exhibit A)  
U.S. patent 7,115,428 (the ‘428 Patent) (Exhibit B)  
U.S. patent 7,470,936 (the ‘936 Patent) (Exhibit C)  
U.S. patent 7,488,990 (the ‘990 Patent) (Exhibit D)  
U.S. patent 7,519,287 (the ‘287 Patent) (Exhibit E)  
U.S. patent 7,847,300 (the ‘300 Patent) (Exhibit F)  
U.S. patent 8,034,644 (the ‘644 Patent) (Exhibit G)  
U.S. patent 8,405,181 (the ‘181 Patent) (Exhibit H)  
U.S. patent 9,209,373 (the ‘373 Patent) (Exhibit I)  
U.S. patent 9,882,094 (the ‘094 Patent) (Exhibit J)  
U.S. patent 6,325,524 (the ‘524 Patent) (Exhibit K)

### **COUNT ONE** **INFRINGEMENT OF U.S. PATENT 6.806.658**

20. Plaintiff incorporates by reference the allegations in all preceding paragraphs as if fully set forth herein.

21. The ‘658 Patent, entitled “METHOD FOR MAKING AN LED,” was filed on March 7, 2003 and issued on October 19, 2004.

22. Plaintiff is the assignee and owner of all rights, title, and interest to the ‘658 Patent, including the right to recover for past infringements, and has the legal right to enforce the patent, sue for infringement, and seek equitable relief and damages.

### **Technical Description**

23. The '658 Patent addresses technical problems in the prior art of LED devices, including that a prior art manufacturing method “has a poor yield due to uneven phosphor dispersion in the reflecting cup,” and that the “liquid casting epoxy tends to shrink during the heat curing process.” (col. 1, ll. 31-41).

24. The '658 Patent provides a technical solution to the prior art problems by utilizing “a UV cured epoxy that sets in a very short period of time together with a thixotropic agent that retards the sedimentation of the phosphor particles.” (col. 2, ll. 2-4).

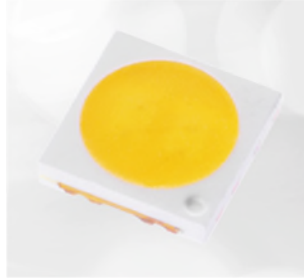
### **Direct Infringement**

25. Defendants, without authorization or license from Plaintiff, have been and are directly infringing the '658 Patent, either literally or equivalently, as infringement is defined by 35 U.S.C. § 271, including through making, using (including for testing purposes), selling and offering for sale methods and articles made by methods infringing one or more claims of the '658 Patent. Defendants, individually and operating as part of a common business enterprise, develop, design, manufacture, and distribute LED products that infringe one or more claims of the '658 Patent. Defendants are thus liable for direct infringement pursuant to 35 U.S.C. § 271. Exemplary infringing instrumentalities include the LTW-3030-BSL24 LED and all other substantially similar products (collectively the “'658 Accused Products”).

26. Plaintiff names this exemplary infringing instrumentality to serve as notice of Defendants' infringing acts, however Plaintiff reserves the right to include additional infringing products into the definition of '658 Accused Products that are either known to Plaintiff or revealed during discovery.

27. Defendants' LTW-3030-BSL24 LED is a non-limiting example of a light source that meets all limitations of claims 3 and 4 of the '658 Patent, either literally or equivalently.

28. Defendants' LTW-3030-BSL24 LED comprises a LED, fabricated by mounting on a substrate, that emits light of a first wavelength:



29. Defendants' LTW-3030-BSL24 LED comprises a powder of phosphor (circled in red below):



30. Defendants' LTW-3030-BSL24 LED comprises a powdered phosphor (circled in red below) suspended in a photo-curable medium with a thixotropic agent to convert light of a first wavelength to light of a second wavelength:



Curing of the photo-curable medium having phosphor suspended therein creates the encapsulant of the LED as shown.

31. Defendants' LTW-3030-BSL24 LED comprises a powdered phosphor suspended in a photo-curable medium that sets upon exposure to light of a curing wavelength. Photo (UV)

curing is a dominant technique for encapsulant curing and provides significant benefits versus heat curing. See “UV-curable Encapsulants for LED”, Oriental Journal of Chemistry, 2012, Vol. 28, No. (3): pg. 1135-1140; “Thermally resistant UV-curable epoxy–siloxane hybrid materials for light emitting diode (LED) encapsulation,” J. Mater. Chem., 2012, 22, pg. 8874-8880; “Considerations for Encapsulant Material Selection for Phosphor- Converted LEDs,” Application Note #16 Intematix Corp., December 2011.

32. Defendants’ LEDs use encapsulants supplied by Dow Corning and Wacker. Both Dow Corning and Wacker manufacture and sell UV curable encapsulants.

33. Defendants’ LTW-3030-BSL24 LED uses Wacker’s UV curable encapsulant.

34. Defendants’ LTW-3030-BSL24 LED comprises a phosphor layer wherein said photo-curable medium sets in a time less than that required for a change in concentration of said phosphor in said phosphor layer over said LED of more than 0.5 percent.

**CURING**

There are two common methods of encapsulant cure – temperature and ultraviolet exposure. The prime consideration with temperature cure systems is the robustness of the package components, as most phosphor is able to withstand, without permanently degrading, processing temperatures of 200°C (400°F), which is above normal cure temperatures. UV cure systems are generally compatible with phosphors, but consideration must be given to the ability of the phosphor to absorb some of the UV energy and convert it into visible light energy, resulting in the need for longer exposure/cure times, or higher exposure intensities.

Minimizing the change in concentration of the phosphor in a phosphor layer over an LED to less than 0.5 percent via expedient photo-curing is a dominant technique for encapsulant curing and provides significant benefits. See “UV-curable Encapsulants for LED”, Oriental Journal of Chemistry, 2012, Vol. 28, No. (3): pg. 1135-1140; “Thermally resistant UV-curable epoxy–siloxane hybrid materials for light emitting diode (LED) encapsulation,” J. Mater. Chem., 2012,



22, pg. 8874-8880; “*Considerations for Encapsulant Material Selection for Phosphor-Converted LEDs*,” Application Note #16 Intematix Corp., December 2011.

**Willful Infringement**

35. Defendants have had actual knowledge of their infringement of the '658 Patent at least as of receipt of Plaintiff's notice letter dated May 25, 2019.

36. Defendants have had actual knowledge of their infringement of the '658 Patent at least as of the service of Plaintiff's Original Complaint.

37. Defendants' risk of infringement of the patents-in-suit was either known or was so obvious that it should have been known to Defendants.

38. Notwithstanding this knowledge, Defendants have knowingly or with reckless disregard willfully infringed the '658 Patent. Defendants continue to infringe despite knowledge of Plaintiff's patent. Defendants have thus had actual notice of infringement of the '658 Patent and acted despite an objectively high likelihood that their actions constituted infringement of Plaintiff's valid patent rights, either literally or equivalently.

39. This objective risk was either known or so obvious that it should have been known to Defendants. Accordingly, Plaintiff seeks enhanced damages pursuant to 35 U.S.C. §§ 284 and 285.

**Indirect Infringement**

40. Defendants have induced and are knowingly inducing their customers and/or end users to directly infringe the '658 Patent, with the specific intent to encourage such infringement, and knowing that the induced acts constitute patent infringement, either literally or equivalently.

41. Defendants have knowingly contributed to direct infringement by their customers by having imported, sold, and/or offered for sale, and knowingly importing, selling, and/or offering to sell within the United States the '658 Accused Products which are not suitable for substantial

non-infringing use and which are especially made or especially adapted for use by their customers in an infringement of the asserted patent.

42. Defendants' indirect infringement includes, for example, providing data sheets, technical guides, demonstrations, software and hardware specifications, installation guides, and other forms of support that induce their customers and/or end users to directly infringe the '658 Patent. Defendants' indirect infringement additionally includes marketing its products for import by its customers into the United States. The '658 Accused Products are designed in such a way that when they are used for their intended purpose, the user infringes the '658 Patent, either literally or equivalently. Defendants know and intend that customers who purchase the '658 Accused Products will use those products for their intended purpose. For example, Defendants' United States website instructs customers to use the '658 Accused Products in numerous infringing applications.<sup>1</sup> As a non-limiting example, Defendants' customers such as manufacturers of lighting and consumer electronics incorporate the '658 Accused Products in commercial and consumer lighting or electronic devices using Defendants' provided data sheets and technical manuals. Defendants have knowledge that incorporation of the accused LEDs in lighting and electronic devices directly infringes. In addition, Defendants specifically intend that their customers, such as United States distributors, retailers, and consumer product companies, will import, use, and sell infringing products in the United States to serve and develop the United States market for Defendants' infringing products.

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<sup>1</sup> Lite-On's website, <http://optoelectronics.liteon.com/en-global/led>, provides data sheets and product manuals that inform its customers of the specifications of the '658 Accused Products and encourage their customers to infringe. *See, e.g.*, [https://optoelectronics.liteon.com/en-global/light/lighting\\_led/Content/197](https://optoelectronics.liteon.com/en-global/light/lighting_led/Content/197). Each data sheet provides instructions that Lite-On knows to infringe the '658 Patent when performed.

43. As a result of Defendants' infringement, Plaintiff has suffered monetary damages, and is entitled to an award of damages adequate to compensate it for such infringement which, by law, can be no less than a reasonable royalty, together with interest and costs as fixed by this Court under 35 U.S.C. § 284.

**COUNT TWO**  
**INFRINGEMENT OF U.S. PATENT 7,115,428**

44. Plaintiff incorporates by reference the allegations in all preceding paragraphs as if fully set forth herein.

45. The '428 Patent, entitled "METHOD FOR FABRICATING LIGHT-EMITTING DEVICES UTILIZING A PHOTO-CURABLE EPOXY," was filed on March 7, 2005 and issued on October 3, 2006.

46. Plaintiff is the assignee and owner of all rights, title, and interest to the '428 Patent, including the right to recover for past infringements, and has the legal right to enforce the patent, sue for infringement, and seek equitable relief and damages.

**Technical Description**

47. The '428 Patent addresses technical problems in the prior art of LED devices, including that a prior art manufacturing method "has a poor yield due to uneven phosphor dispersion in the reflecting cup." (col. 1, ll. 37-38).

48. The '428 Patent further addresses a technical problem in the prior art of LED devices, where "the viscous epoxy-phosphor layer will slump during this time interval [between depositing it and curing it in an oven], and hence, the amount of material over the various chips will vary depending on the point in time that each device was covered." (col. 2, ll. 44-48).

49. The '428 Patent further addresses a technical problem in the prior art of LED devices, where “the amount of epoxy-phosphor mixture needed per device is relatively large, since the areas to the side of LED 140 must also be filled with the mixture.” (col. 2, ll. 60-62).

50. The '428 Patent provides a technical solution to the prior art problems by utilizing “a mixture of photocurable epoxy and phosphor particles” such that “the dispensed mixture is then irradiated with light to cure the epoxy in a time period that is less than the time period in which the phosphor particles settle.” (col. 1, ll. 52-57).

51. The '428 Patent provides a further technical solution to the prior art problems by “including a reflective cup or some other structure that acts as a mold to define the thickness of the epoxy layer.” (col. 2, ll. 49-50).

### **Direct Infringement**

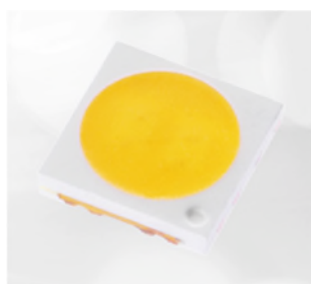
52. Defendants, without authorization or license from Plaintiff, have been and are directly infringing the '428 Patent, either literally or equivalently, as infringement is defined by 35 U.S.C. § 271, including through making, using (including for testing purposes), selling and offering for sale articles made by methods infringing one or more claims of the '428 Patent. Defendants, individually and operating as part of a common business enterprise, develop, design, manufacture, and distribute LED products that infringe one or more claims of the '428 Patent. Defendants are thus liable for direct infringement pursuant to 35 U.S.C. § 271. Exemplary infringing instrumentalities include the LTW-3030-BSL24 LED and all substantially similar products (collectively the “'428 Accused Products”).

53. Plaintiff names this exemplary infringing instrumentality to serve as notice of Defendants' infringing acts, however Plaintiff reserves the right to include additional infringing products into the definition of '428 Accused Products that are either known to Plaintiff or revealed during discovery.

54. Defendants are liable for direct infringement pursuant to 35 U.S.C. § 271 for the development, design, manufacture, sale, or distribution of Defendants' LTW-3030-BSL24 LED.

55. Defendants' LTW-3030-BSL24 LED is a non-limiting example of a light source that meets all limitations of claim 1 of the '428 Patent, either literally or equivalently.

56. Defendants' LTW-3030-BSL24 LED is manufactured using a method for fabricating a light emitting device comprising mounting a die comprising a semiconductor light emitting device on a carrier, said die having a face through which light is emitted.



57. The method further comprises dispensing a bead of a mixture of photo curable epoxy and phosphor particles on said face in a pattern that covers said face.

58. The method further comprises irradiating said dispensed mixture in a time period that is less than the time period in which said phosphor particles settle wherein said time period is less than 1 second. Curing the phosphor mixture via irradiation to minimize the time period in which phosphor particles settle is a dominant technique and provides significant benefits. *See* "UV-curable Encapsulants for LED", *Oriental Journal of Chemistry*, 2012, Vol. 28, No. (3): pg. 1135-1140; "Thermally resistant UV-curable epoxy-siloxane hybrid materials for light emitting diode (LED) encapsulation," *J. Mater. Chem.*, 2012, 22, pg. 8874-8880; "Considerations for Encapsulant Material Selection for Phosphor-Converted LEDs," Application Note #16 Intematix Corp., December 2011.

59. Defendants' LEDs use encapsulants supplied by Dow Corning and Wacker. Both Dow Corning and Wacker manufacture and sell UV curable encapsulants.

60. Defendants' LTW-3030-BSL24 LED uses Wacker's UV curable encapsulant.

### **Willful Infringement**

61. Defendants have had actual knowledge of their infringement of the '428 Patent at least as of receipt of Plaintiff's notice letter dated May 25, 2019.

62. Defendants have had actual knowledge of their infringement of the '428 Patent at least as of the service of Plaintiff's Original Complaint.

63. Defendants' risk of infringement of the patents-in-suit was either known or was so obvious that it should have been known to Defendants.

64. Notwithstanding this knowledge, Defendants have knowingly or with reckless disregard willfully infringed the '428 Patent. Defendants continue to infringe despite knowledge of Plaintiff's patent. Defendants have thus had actual notice of infringement of the '428 Patent and acted despite an objectively high likelihood that their actions constituted infringement of Plaintiff's valid patent rights, either literally or equivalently.

65. This objective risk was either known or so obvious that it should have been known to Defendants. Accordingly, Plaintiff seeks enhanced damages pursuant to 35 U.S.C. §§ 284 and 285.

### **Indirect Infringement**

66. Defendants have induced and are knowingly inducing their customers and/or end users to directly infringe the '428 Patent, with the specific intent to encourage such infringement, and knowing that the induced acts constitute patent infringement, either literally or equivalently.

67. Defendants have knowingly contributed to direct infringement by their customers by having imported, sold, and/or offered for sale, and knowingly importing, selling, and/or offering

to sell within the United States the '428 Accused Products which are not suitable for substantial non-infringing use and which are especially made or especially adapted for use by their customers in an infringement of the asserted patent.

68. Defendants' indirect infringement includes, for example, providing data sheets, technical guides, demonstrations, software and hardware specifications, installation guides, and other forms of support that induce their customers and/or end users to directly infringe the '428 Patent. Defendants' indirect infringement additionally includes marketing its products for import by its customers into the United States. The '428 Accused Products are designed in such a way that when they are used for their intended purpose, the user infringes the '428 Patent, either literally or equivalently. Defendants know and intend that customers who purchase the '428 Accused Products will use those products for their intended purpose. For example, Defendants' United States website instructs customers to use the '428 Accused Products in numerous infringing applications.<sup>2</sup> As a non-limiting example, Defendants' customers such as manufacturers of lighting and consumer electronics incorporate the '428 Accused Products in commercial and consumer lighting or electronic devices using Defendants' provided data sheets and technical manuals. Defendants have knowledge that incorporation of the accused LEDs in lighting and electronic devices directly infringes. In addition, Defendants specifically intend that their customers, such as United States distributors, retailers, and consumer product companies, will import, use, and sell infringing products in the United States to serve and develop the United States market for Defendants' infringing products.

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<sup>2</sup> Lite-On's website, <http://optoelectronics.liteon.com/en-global/led>, provides data sheets and product manuals that inform its customers of the specifications of the '428 Accused Products and encourage their customers to infringe. *See, e.g.*, [https://optoelectronics.liteon.com/en-global/light/lighting\\_led/Content/197](https://optoelectronics.liteon.com/en-global/light/lighting_led/Content/197). Each data sheet provides instructions that Lite-On knows to infringe the '428 Patent when performed.

69. As a result of Defendants' infringement, Plaintiff has suffered monetary damages, and is entitled to an award of damages adequate to compensate it for such infringement which, by law, can be no less than a reasonable royalty, together with interest and costs as fixed by this Court under 35 U.S.C. § 284.

**COUNT THREE**  
**INFRINGEMENT OF U.S. PATENT 7,470,936**

70. Plaintiff incorporates by reference the allegations in all preceding paragraphs as if fully set forth herein.

71. The '936 Patent, entitled "LIGHT EMITTING DIODE WITH A STEP SECTION BETWEEN THE BASE AND THE LENS OF THE DIODE," was filed on March 9, 2007 and issued on December 30, 2008.

72. Plaintiff is the assignee and owner of all rights, title, and interest to the '936 Patent, including the right to recover for past infringements, and has the legal right to enforce the patent, sue for infringement, and seek equitable relief and damages.

**Technical Description**

73. The '936 Patent addresses technical problems in the prior art of LED devices, resulting from a prior art process where "black resin material is generally provided in the gaps among the LEDs 100 in order to prevent reduction in contrast due to reflection of light from the base 40." (col. 1, ll. 24-27).

74. The '936 Patent teaches an LED that solves prior art problems, "such as reduced contrast and a narrower viewing angle." (col. 1, ll. 49-50).

75. Specifically, the '936 Patent addresses the prior art problem that:

In general, when resin material is injected into the gaps among a plurality of arranged LEDs, it is difficult to check that a desired amount of resin material (or the amount that provides an appropriate height) has been injected. In particular, if the resin material comes into contact with the



convex lens (light emitting surface) when the resin material is injected, the surface tension of the resin material shapes the surface of the resin material into a meniscus at the portion where the resin material is in contact with the lens, as shown in FIG. 6. Then, the resin material 110 may cover the lens 50, which is the light emitting surface, in such a way that the height of the resin material is higher than the desired height. In this case, light emitted from the lens will be absorbed by the resin material, resulting in reduced contrast and a narrower viewing angle. (col. 1, ll. 36-50).

76. The '936 Patent provides several technical solutions to this problem, and “allows resin material to be easily filled when the resin material is used to cover a base of an LED with a lens having a hemispherical light emitting surface.” (col. 1, ll. 58-61).

77. Specifically, the '936 Patent provides a technical solution to address these prior art problems by using a “step section which is provided around the outside of the lens having a hemispherical light emitting surface and which projects from the base prevents the resin material from being in direct contact with the lens. The height of the step section defines the amount of the resin material enough for reliably covering the lead section and the base of the LEDs.” (col. 2, ll. 38-44).

78. The '936 Patent further provides a technical solution to address these prior art problems by including a cutout in the step section where “the cutout provided in the step section allows the operator to easily check that the amount of the resin material being injected is approaching a predetermined level. In this way, an appropriate amount of resin material can easily be injected, so that there is provided an LED that solves problems, such as reduced contrast and a narrower viewing angle.” (col. 2, ll. 44-50).

79. The '936 Patent provides a technical solution to these problems where “a plurality of the LEDs described above can be used to provide an LED display device with increased contrast and a wider viewing angle usable as an outdoor display.” (col. 2, ll. 50-54).

**Direct Infringement**

80. Defendants, without authorization or license from Plaintiff, have been and are directly infringing the '936 Patent, either literally or equivalently, as infringement is defined by 35 U.S.C. § 271, including through making, using (including for testing purposes), selling and offering for sale methods and articles infringing one or more claims of the '936 Patent. Defendants, individually and operating as part of a common business enterprise, develop, design, manufacture, and distribute LED products that infringe one or more claims of the '936 Patent. Defendants are thus liable for direct infringement pursuant to 35 U.S.C. § 271. Exemplary infringing instrumentalities include the LTE-S9511, LTE-R38386AS-S, and all other substantially similar products (collectively the "'936 Accused Products").

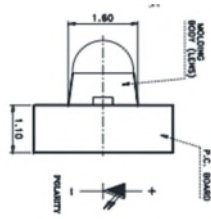
81. Defendants' LTE-S9511 is a non-limiting example of a light source that meets all limitations of claim 1 of the '936 Patent, either literally or equivalently.

82. Defendants' LTE-R38386AS-S is also a non-limiting example of a light source that meets all limitations of claim 1 of the '936 Patent, either literally or equivalently.

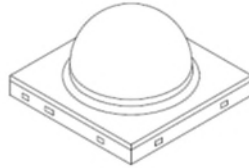
83. Plaintiff names these exemplary infringing instrumentalities to serve as notice of Defendants' infringing acts, however Plaintiff reserves the right to include additional infringing products into the definition of '936 Accused Products that are either known to Plaintiff or revealed during discovery.

84. Defendants are liable for direct infringement pursuant to 35 U.S.C. § 271 for the development, design, manufacture, sale, or distribution of Defendants' LTE-S9511 and LTE-R38386AS-S.

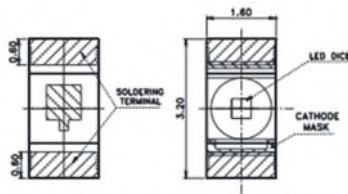
85. Defendants' LTE-S9511 is a light emitting diode.



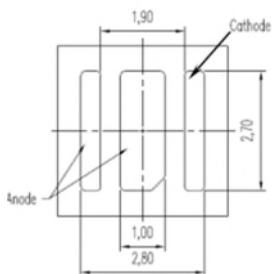
86. LTE-R38386AS-S is also a light emitting diode.



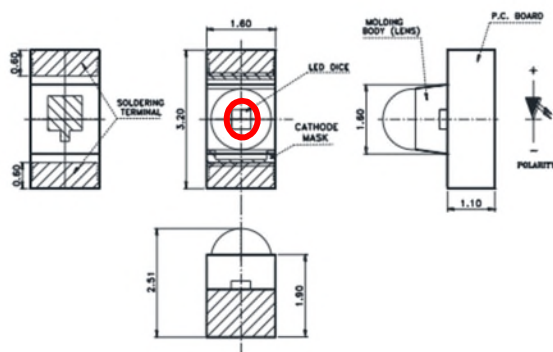
87. Defendants' LTE-S9511 comprises a leadframe.



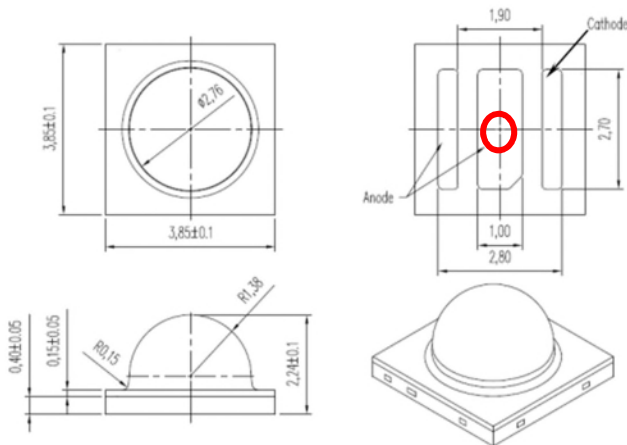
88. Defendants' LTE-R38386AS-S also comprises a leadframe.



89. Defendants' LTE-S9511 comprises a light emitting element positioned on the leadframe.

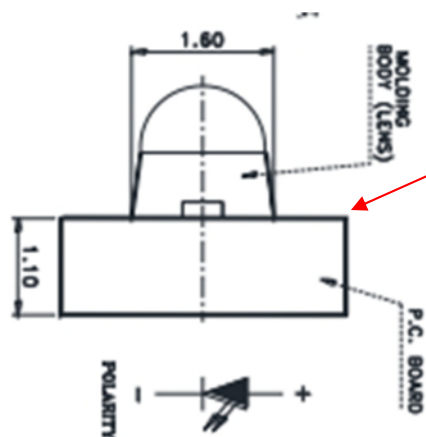


90. Defendants' LTE-R38386AS-S also comprises a light emitting element positioned on the leadframe.



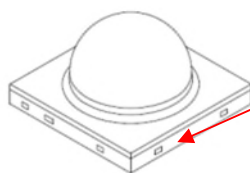
91. Defendants' LTE-S9511 comprises a base configured to cover the leadframe such

that portions of the leadframe extend from the base.



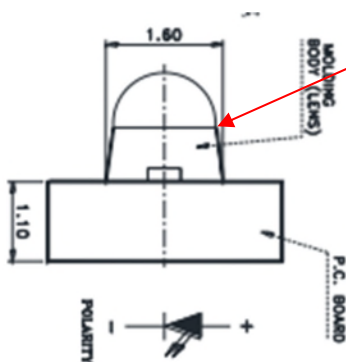
The base is configured to cover the leadframe

92. Defendants' LTE-R38386AS-S also comprises a base configured to cover the leadframe such that portions of the leadframe extend from the base.



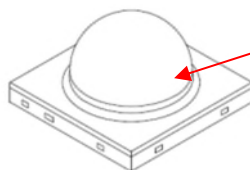
The base is configured to cover the leadframe

93. Defendants' LTE-S9511 comprises a lens disposed on the base, the lens having a hemispherical light emitting surface.



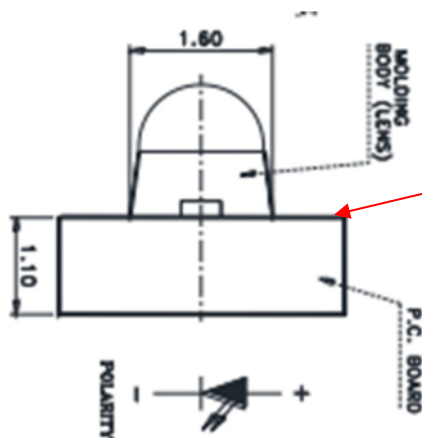
Hemispherical lens disposed on the base

94. Defendants' LTE-R38386AS-S also comprises a lens disposed on the base, the lens having a hemispherical light emitting surface.



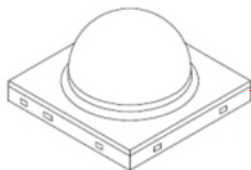
Hemispherical lens disposed on the base

95. Defendants' LTE-S9511 comprises a step section disposed between the base and the lens, the step section having a diameter larger than that of the lens and smaller than a length or a width of the base.



Step section having a diameter larger than the lens, but smaller

96. Defendants' LTE-R38386AS-S also comprises a step section disposed between the base and the lens, the step section having a diameter larger than that of the lens and smaller than a length or a width of the base.



Step section having a diameter larger than the lens, but smaller

**Willful Infringement**

97. Defendants have had actual knowledge of their infringement of the '936 Patent at least as of receipt of Plaintiff's notice letter dated May 25, 2019.

98. Defendants have had actual knowledge of their infringement of the '936 Patent at least as of service of Plaintiff's Original Complaint.

99. Defendants' risk of infringement of the patents-in-suit was either known or was so obvious that it should have been known to Defendants.

100. Notwithstanding this knowledge, Defendants have knowingly or with reckless disregard willfully infringed the '936 Patent. Defendants continue to infringe despite knowledge of Plaintiff's patent. Defendants have thus had actual notice of infringement of the '936 Patent and acted despite an objectively high likelihood that their actions constituted infringement of Plaintiff's valid patent rights, either literally or equivalently.

101. This objective risk was either known or so obvious that it should have been known to Defendants. Accordingly, Plaintiff seeks enhanced damages and reimbursement of its reasonable attorney fees pursuant to 35 U.S.C. §§ 284 and 285.

### **Indirect Infringement**

102. Defendants are knowingly inducing their customers and/or end users to directly infringe the '936 Patent, with the specific intent to encourage such infringement, and knowing that the induced acts constitute patent infringement, either literally or equivalently.

103. Defendants have knowingly contributed to direct infringement by their customers by having imported, sold, and/or offered for sale, and knowingly importing, selling, and/or offering to sell within the United States the '936 Accused Products, which are not suitable for substantial non-infringing use and which are especially made or especially adapted for use by their customers in an infringement of the asserted patent.

104. Defendants' indirect infringement includes, for example, providing data sheets, technical guides, demonstrations, software and hardware specifications, installation guides, and other forms of support that induce their customers and/or end users to directly infringe the '936

Patent. Defendants' indirect infringement additionally includes marketing their products for import by their customers into the United States. The '936 Accused Products are designed in such a way that when they are used for their intended purpose, the user infringes the '936 Patent, either literally or equivalently. Defendants know and intend that customers who purchase the '936 Accused Products will use those products for their intended purpose. For example, Defendants' United States website instructs customers to use the '936 Accused Products in numerous infringing applications.<sup>3</sup> As a non-limiting example, Defendants' customers, such as manufacturers of lighting and consumer electronics including smartphones, incorporate the '936 Accused Products in commercial and consumer lighting or electronic devices using Defendants' provided data sheets and technical manuals. Defendants have knowledge that incorporation of the accused LEDs in lighting and electronic devices directly infringes. In addition, Defendants specifically intend that their customers, such as United States distributors, retailers, and consumer product companies, will import, use, and sell infringing products in the United States to serve and develop the United States market for Defendants' infringing products.

105. As a result of Defendants' infringement, Plaintiff has suffered monetary damages, and is entitled to an award of damages adequate to compensate it for such infringement which, by law, can be no less than a reasonable royalty, together with interest and costs as fixed by this Court under 35 U.S.C. § 284.

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<sup>3</sup> Lite-On's website, <http://optoelectronics.liteon.com/en-global/led>, provides data sheets and product manuals that inform its customers of the specifications of the '936 Accused Products and encourage their customers to infringe. *See, e.g.*, <https://optoelectronics.liteon.com/upload/download/DS50-2013-0018/20131219%20LTE-S9511-E%20DATA%20SHEET.pdf> and <https://optoelectronics.liteon.com/upload/download/DS50-2016-0064/LTE-R38386AS-S%20DATA%20SHEET.pdf>. Each data sheet provides instructions that Lite-On knows to infringe the '936 Patent when performed.



**COUNT FOUR**  
**INFRINGEMENT OF U.S. PATENT 7,488,990**

106. Plaintiff incorporates by reference the allegations in all preceding paragraphs as if fully set forth herein.

107. The '990 Patent, entitled "USING MULTIPLE TYPES OF PHOSPHOR IN COMBINATION WITH A LIGHT EMITTING DEVICE," was filed on April 2, 2004 and issued on February 10, 2009.

108. Plaintiff is the assignee and owner of all rights, title, and interest to the '990 Patent, including the right to recover for past infringements, and has the legal right to enforce the patent, sue for infringement, and seek equitable relief and damages.

**Technical Description**

109. The '990 Patent addresses technical problems in the prior art of LED devices relating to limitations regarding "colors that can be achieved by such a combination of blue light with a single-color phosphor. For example, yellowish green and greenish-white colors cannot be produced by a known combination of a blue LED light and a single-color phosphor." (col. 1, ll. 25-29).

110. The '990 Patent addresses these technical problems in the prior art of LED devices by teaching the use of "multiple types of phosphor in combination with a light emitting device." (col. 1, ll. 8-10).

111. The technical solution of the '990 Patent results in advantages over the prior art, including that: "by adjusting the mixture and ratio of green phosphor and yellow phosphor, a wide variety of colors in this color spectrum can be obtained." (col. 2, ll. 23-25).

**Direct Infringement**

112. Defendants, without authorization or license from Plaintiff, have been and are

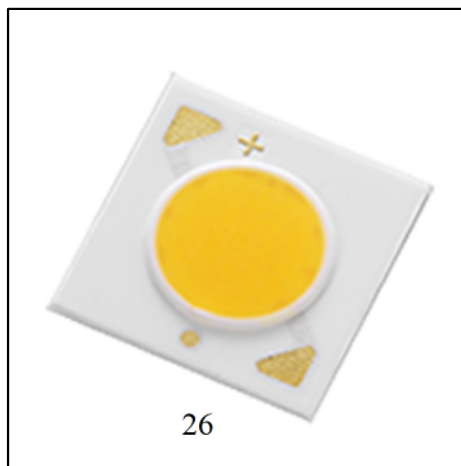
directly infringing the '990 Patent, either literally or equivalently, as infringement is defined by 35 U.S.C. § 271, including through making, using (including for testing purposes), selling and offering for sale methods and articles infringing one or more claims of the '990 Patent. Defendants, individually and operating as part of a common business enterprise, develop, design, manufacture, and distribute LED products that infringe one or more claims of the '990 Patent. Defendants are thus liable for direct infringement pursuant to 35 U.S.C. § 271. Exemplary infringing instrumentalities include the Lite-On M03 CoB Product Series and all other substantially similar products (collectively the "'990 Accused Products").

113. Plaintiff names this exemplary infringing instrumentality to serve as notice of Defendants' infringing acts, however Plaintiff reserves the right to include additional infringing products into the definition of '990 Accused Products that are either known to Plaintiff or revealed during discovery.

114. Defendants' Lite-On M03 CoB Product Series, including the LTPL-M03622ZS30-T0, is a non-limiting example of a light source that meets all limitations of claim 12 of the '990 Patent, either literally or equivalently.

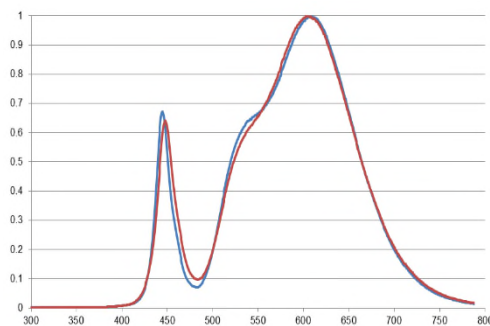
115. Defendants are liable for direct infringement pursuant to 35 U.S.C. § 271 for the development, design, manufacture, sale, or distribution of Defendants' Lite-On M03 CoB Product Series.

116. Defendants' Lite-On M03 CoB Product Series comprises a light generating device.



<https://optoelectronics.liteon.com/en-global/Led/LED-Component/Detail/919>

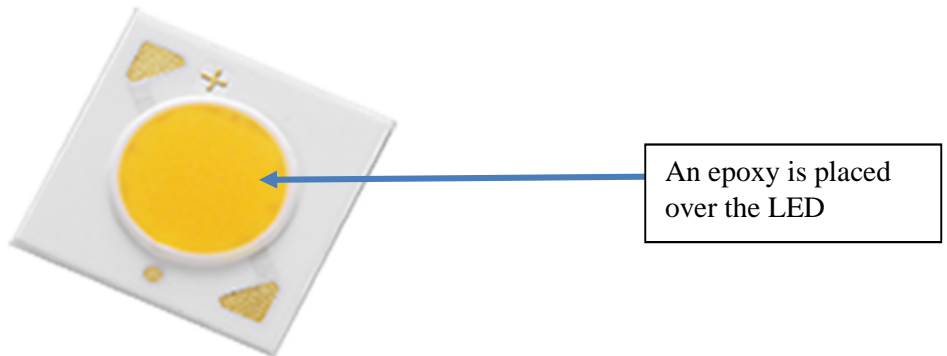
117. Defendants' Lite-On M03 CoB Product Series comprises a blue light emitting device that emits blue light with peak wavelength within a range from 460 nanometers (nm) to 480 nm. The M03 CoB Product Series is disclosed to have a spectral curve that shows the emitted light is within the from 460 nanometers (nm) to 480 nm.



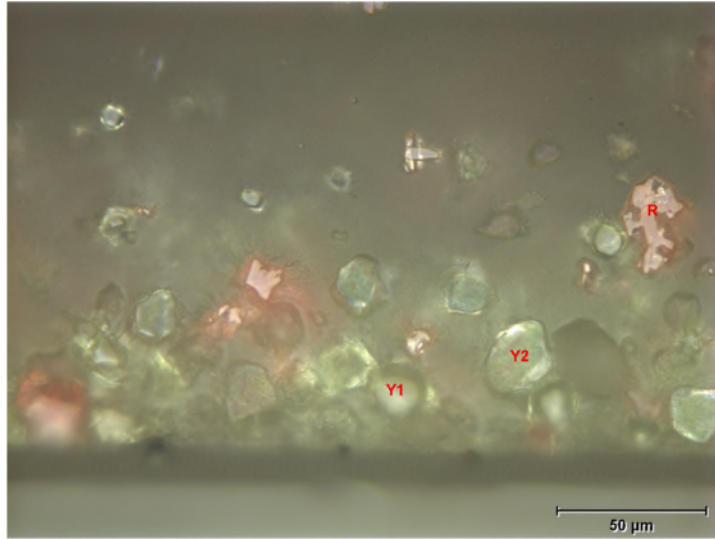
<https://optoelectronics.liteon.com/upload/download/DS23-2016->

[0112/LTPL-M03%20CoB%20Product%20Series\\_Gen2\\_20160226.pdf](https://optoelectronics.liteon.com/upload/download/DS23-2016-0112/LTPL-M03%20CoB%20Product%20Series_Gen2_20160226.pdf)

118. Defendants' Lite-On M03 CoB Product Series comprises an epoxy placed over the light emitting device.



119. Defendants' Lite-On M03 CoB Product Series comprises an epoxy including a first type of phosphor and a second type of phosphor.



Light Microscope Image, Magnification: 500X

Defendants' Lite-On M03 CoB Product Series comprises an epoxy wherein the first type of phosphor, when excited, emits green light; and, wherein the second type of phosphor, when excited, emits yellow light. Based on the elemental composition, the "Yellow Y1" shown above is  $\text{Lu}_3\text{Al}_5\text{O}_{12}$  more commonly known as LuAG a well-known "green phosphor" and "Yellow Y2" shown above is a yellow phosphor.

### **Willful Infringement**

120. Defendants have had actual knowledge of their infringement of the '990 Patent at least as of receipt of Plaintiff's notice letter dated May 25, 2019.

121. Defendants have had actual knowledge of their infringement of the '990 Patent at least as of the service of Plaintiff's Original Complaint.

122. Defendants' risk of infringement of the patents-in-suit was either known or was so obvious that it should have been known to Defendants.

123. Notwithstanding this knowledge, Defendants have knowingly or with reckless disregard willfully infringed the '990 Patent. Defendants continue to infringe despite knowledge of Plaintiff's patent. Defendants have thus had actual notice of infringement of the '990 Patent and

acted despite an objectively high likelihood that their actions constituted infringement of Plaintiff's valid patent rights, either literally or equivalently.

124. This objective risk was either known or so obvious that it should have been known to Defendants. Accordingly, Plaintiff seeks enhanced damages pursuant to 35 U.S.C. §§ 284 and 285.

### **Indirect Infringement**

125. Defendants have induced and are knowingly inducing their customers and/or end users to directly infringe the '990 Patent, with the specific intent to encourage such infringement, and knowing that the induced acts constitute patent infringement, either literally or equivalently.

126. Defendants have knowingly contributed to direct infringement by their customers by having imported, sold, and/or offered for sale, and knowingly importing, selling, and/or offering to sell within the United States the '990 Accused Products which are not suitable for substantial non-infringing use and which are especially made or especially adapted for use by their customers in an infringement of the asserted patent.

127. Defendants' indirect infringement includes, for example, providing data sheets, technical guides, demonstrations, software and hardware specifications, installation guides, and other forms of support that induce their customers and/or end users to directly infringe the '990 Patent. Defendants' indirect infringement additionally includes marketing its products for import by its customers into the United States. The '990 Accused Products are designed in such a way that when they are used for their intended purpose, the user infringes the '990 Patent, either literally or equivalently. Defendants know and intend that customers who purchase the '990 Accused Products will use those products for their intended purpose. For example, Defendants' United States website instructs customers to use the '990 Accused Products in numerous infringing

applications.<sup>4</sup> As a non-limiting example, Defendants' customers, such as manufacturers of lighting and consumer electronics, incorporate the '990 Accused Products in commercial and consumer lighting or electronic devices using Defendants' provided data sheets and technical manuals. Defendants have knowledge that incorporation of the accused LEDs in lighting and electronic devices directly infringes. In addition, Defendants specifically intend that their customers, such as United States distributors, retailers, and consumer product companies, will import, use, and sell infringing products in the United States to serve and develop the United States market for Defendants' infringing products.

128. As a result of Defendants' infringement, Plaintiff has suffered monetary damages, and is entitled to an award of damages adequate to compensate it for such infringement which, by law, can be no less than a reasonable royalty, together with interest and costs as fixed by this Court under 35 U.S.C. § 284.

**COUNT FIVE**  
**INFRINGEMENT OF U.S. PATENT 7,519,287**

129. Plaintiff incorporates by reference the allegations in all preceding paragraphs as if fully set forth herein.

130. The '287 Patent, entitled "ELECTRONIC FLASH, IMAGING DEVICE AND METHOD FOR PRODUCING A FLASH OF LIGHT HAVING A RECTANGULAR RADIATION PATTERN," was filed on August 19, 2005 and issued on April 14, 2009.

131. Plaintiff is the assignee and owner of all rights, title, and interest to the '287 Patent,

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<sup>4</sup> Lite-On's website, <http://optoelectronics.liteon.com/en-global/led>, provides data sheets and product manuals that inform its customers of the specifications of the '990 Accused Products and encourage their customers to infringe. *See, e.g.*, [https://optoelectronics.liteon.com/upload/download/DS23-2016-0112/LTPL-M03%20CoB%20Product%20Series\\_Gen2\\_20160226.pdf](https://optoelectronics.liteon.com/upload/download/DS23-2016-0112/LTPL-M03%20CoB%20Product%20Series_Gen2_20160226.pdf). Each data sheet provides instructions that Lite-On knows to infringe the '990 Patent when performed.

including the right to recover for past infringements, and has the legal right to enforce the patent, sue for infringement, and seek equitable relief and damages.

### **Technical Description**

132. The '287 Patent addresses technical problems in the prior art of LED devices, wherein “a significant portion of the emitted light from the conventional LED flashes is not used when capturing an image of a scene of interest.” (col. 1, ll. 37-39).

133. Specifically, the '287 Patent addresses technical problems in the prior art, illustrated in Fig. 1 of the '287 Patent, that “the radiation pattern 10 of flashes of light produced by the LED flashes is round or oval. However, the imaging field of view 12 of a camera is rectangular. Since the imaging field of view 12 needs to be within the radiation field 10, a significant portion of the emitted light from the conventional LED flashes is not used when capturing an image of a scene of interest.” (col. 1, ll. 32-38).

134. Accordingly, the '287 Patent teaches a technical solution to these prior art problems, including “an LED flash and method for producing a flash of light that allows the flash of light to be used efficiently by an imaging device, such as a digital camera.” (col. 1, ll. 42-45).

135. Specifically, the teachings of the '287 Patent include an LED design wherein “an electronic flash, imaging device and method for producing flashes of light uses a diffractive optical element to produce a flash of light having a rectangular radiation pattern.” (col. 1, ll. 49-51). Since “the image sensor is configured to electronically capture an image of a scene of interest using the flash of light having the rectangular radiation pattern,” (col. 2, ll. 12-15), the portion of the emitted light from the LED flash is improved.

### **Indirect Infringement**

136. Defendants, without authorization or license from Plaintiff, are knowingly inducing their customers and/or end users to directly infringe the '287 Patent, with the specific intent to

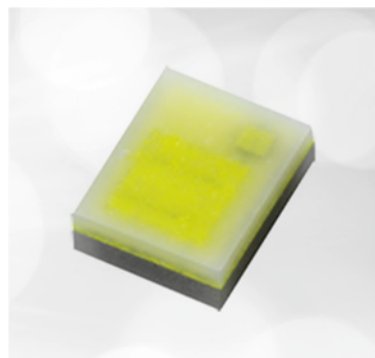
encourage such infringement, and knowing that the induced acts constitute patent infringement, either literally or equivalently.

137. Defendants' customers, without authorization or license from Plaintiff, have been and are directly infringing the '287 Patent, either literally or equivalently, as infringement is defined by 35 U.S.C. § 271, including through making, using (including for testing purposes), selling and offering for sale methods and articles infringing one or more claims of the '287 Patent. Defendants' customers are liable for direct infringement pursuant to 35 U.S.C. § 271 and Defendants are liable for indirect infringement as a result of their customers' direct infringement. Exemplary infringing instrumentalities include the 2016 Series SMD Flash LED and all other substantially similar products (collectively the "'287 Accused Products").

138. Plaintiff names this exemplary infringing instrumentality to serve as notice of Defendants' infringing acts, however Plaintiff reserves the right to include additional infringing products into the definition of '287 Accused Products that are either known to Plaintiff or revealed during discovery.

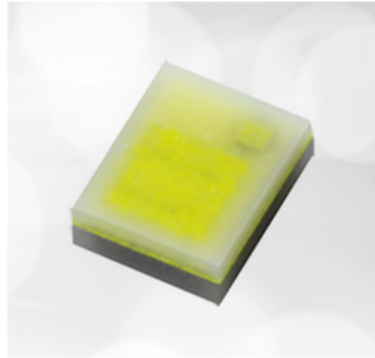
139. Defendants' 2016 Series SMD Flash LED is a non-limiting example of a light source that indirectly infringe claim 16 of the '287 Patent, either literally or equivalently.

140. Defendants' 2016 Series SMD Flash LED practices a method for producing flashes of light.

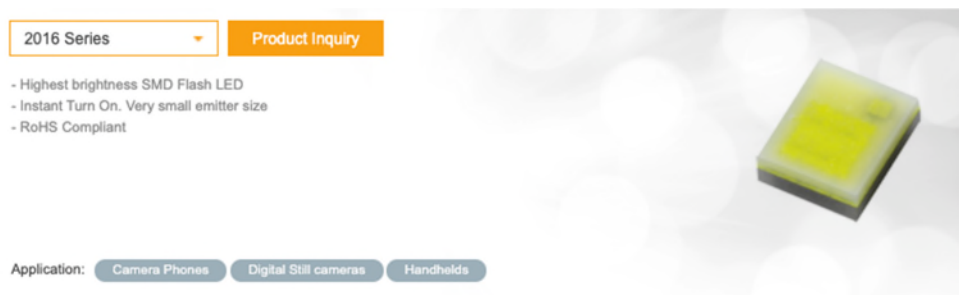




141. Defendants' 2016 Series SMD Flash LED generates light within an electronic flash.



142. Defendants' customers incorporate Defendants' 2016 Series SMD Flash LED in devices in a manner that diffracts light using a diffractive optical element. For example, Defendants encourage the use of the 2016 Series SMD Flash LED in "Camera Phones," "Digital Still cameras," and "Handhelds":



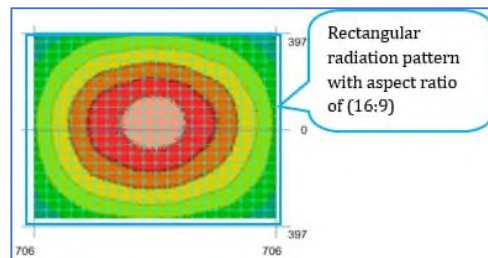
Defendants' customers, when incorporating the 2016 Series SMD Flash LED in camera phones and other electronic devices, use a diffractive optical element to diffract light emitted by the 2016 Series SMD Flash LED.

143. Defendants' customers incorporate Defendants' 2016 Series SMD Flash LED in devices in a manner that diffracts light using the diffractive optical element such that the radiation pattern of the light emitted from the diffractive optical element is rectangular to produce a flash of light having a rectangular pattern and focuses the light to narrow the viewing angle of the light prior to the light being diffracted by the diffractive optical element. For example, Defendants encourage the use of the 2016 Series SMD Flash LED in "Camera Phones," "Digital Still

cameras,” and “Handhelds”:



Defendants’ customers, when incorporating the 2016 Series SMD Flash LED in camera phones and other electronic devices, use a diffractive optical element to diffract light emitted by the 2016 Series SMD Flash LED. A rectangular radiation pattern is obtained using a diffractive optical element and focusing said light to narrow the viewing angle of said light prior to said light being diffracted by said diffractive optical element.



144. Defendants have knowingly contributed to direct infringement by their customers by having imported, sold, and/or offered for sale, and knowingly importing, selling, and/or offering to sell within the United States the '287 Accused Products, which are not suitable for substantial non-infringing use and which are especially made or especially adapted for use by their customers in an infringement of the asserted patent.

145. Defendants’ indirect infringement includes, for example, providing data sheets, technical guides, demonstrations, software and hardware specifications, installation guides, and other forms of support that induce their customers and/or end users to directly infringe the '287 Patent. Defendants’ indirect infringement additionally includes marketing their products for import

by their customers into the United States. The '287 Accused Products are designed in such a way that when they are used for their intended purpose, the user infringes the '287 Patent, either literally or equivalently. Defendants know and intend that customers who purchase the '287 Accused Products will use those products for their intended and infringing purpose. Customers who use Defendants' products in the manner marketed and/or instructed by Defendants directly infringe the patented methods. For example, Defendants' United States website instructs customers to use the '287 Accused Products in numerous infringing applications.<sup>5</sup> As a non-limiting example, Defendants' customers such as manufacturers of lighting and consumer electronics including smartphones incorporate the '287 Accused Products in commercial and consumer lighting or electronic devices using Defendants' provided data sheets and technical manuals. Defendants' customers directly infringe by diffracting the light emitted by Defendants' products using a diffractive optical element in a rectangular pattern. Defendants have knowledge that incorporation of the accused LEDs in lighting and electronic devices directly infringes. For example, Defendants market advertise that a "rectangle illumination profile" is suitable for "camera phone[s]" and

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<sup>5</sup> Lite-On's website, <http://optoelectronics.liteon.com/en-global/led>, provides data sheets and product manuals that inform its customers of the specifications of the '287 Accused Products and encourage their customers to infringe. *See, e.g.*, <https://optoelectronics.liteon.com/Redirect/Led/LED-Component/Detail/794?param4=15>. Each data sheet provides instructions that Lite-On knows to infringe the '287 Patent when performed.

“handheld device[s].”

In addition, Defendants specifically intend that its customers, such as United States distributors, retailers, and consumer product companies, will import, use, and sell infringing products in the United States to serve and develop the United States market for Defendants’ infringing products.

146. As a result of Defendants’ infringement, Plaintiff has suffered monetary damages, and is entitled to an award of damages adequate to compensate it for such infringement which, by law, can be no less than a reasonable royalty, together with interest and costs as fixed by this Court under 35 U.S.C. § 284.



### **Willful Indirect Infringement**

147. Defendants have had actual knowledge of their infringement of the '287 Patent at least as of receipt of Plaintiff’s notice letter dated May 25, 2019.

148. Defendants have had actual knowledge of their infringement of the '287 Patent at least as of the service of Plaintiff’s Original Complaint.

149. Defendants’ risk of infringement of the patents-in-suit was either known or was so obvious that it should have been known to Defendants.

150. Notwithstanding this knowledge, Defendants have knowingly or with reckless disregard willfully infringed the '287 Patent. Defendants continue to infringe despite knowledge

of Plaintiff's patent. Defendants have thus had actual notice of infringement of the '287 Patent and acted despite an objectively high likelihood that its actions constituted infringement of Plaintiff's valid patent rights, either literally or equivalently.

151. This objective risk was either known or so obvious that it should have been known to Defendants. Accordingly, Plaintiff seeks enhanced damages and reimbursement of its reasonable attorney fees pursuant to 35 U.S.C. §§ 284 and 285.

**COUNT SIX**  
**INFRINGEMENT OF U.S. PATENT 7,847,300**

152. Plaintiff incorporates by reference the allegations in all preceding paragraphs as if fully set forth herein.

153. The '300 Patent, entitled "LIGHT-EMITTING DIODE PACKAGE," was filed on March 28, 2008 and issued on December 7, 2010.

154. Plaintiff is the assignee and owner of all rights, title, and interest to the '300 Patent, including the right to recover for past infringements, and has the legal right to enforce the patent, sue for infringement, and seek equitable relief and damages.

**Technical Description**

155. The '300 Patent addresses technical problems in the prior art of LED devices caused by inaccurate assembly methodology combined with a relatively costly machining process.

156. Specifically, the '300 Patent addresses technical problems in the prior art, including:

A recent LED package tends to be manufactured in the type of a surface mount device (SMD) that permits the LED package to be very small in size to keep pace with slim and compact designed devices on which to be mounted. A SMD type of LED package includes a housing configuring its appearance, at least one electrode pad, and at least one electrode lead extended from the electrode pad to be exposed outside the housing and bent in a direction of the housing. Such bending of the electrode lead may leave a clearance between the electrode pad and a portion of the housing

where the electrode pad meets. (col. 1, ll. 30-40).

157. Accordingly, the '300 Patent teaches a technical solution to these prior art problems which "provides a light-emitting diode package with a high reliability and an excellent light efficiency." (col. 1, ll. 46-47).

158. Specifically, the teachings of the '300 Patent include an LED design wherein "[a]s described above, making second portion 116 thicker than other portions of housing wall 112 may increase the area of the top surface of lead electrode 140 which abuts the bottom surface of the front portion of housing 110, and this may prevent the occurrence of a clearance therebetween." (col. 2, ll. 58-63).

### **Direct Infringement**

159. Defendants, without authorization or license from Plaintiff, have been and are directly infringing the '300 Patent, either literally or equivalently, as infringement is defined by 35 U.S.C. § 271, including through making, using (including for testing purposes), selling and offering for sale methods and articles infringing one or more claims of the '300 Patent. Defendants, individually and operating as part of a common business enterprise, develop, design, manufacture, and distribute LED products that infringe one or more claims of the '300 Patent. Defendants are thus liable for direct infringement pursuant to 35 U.S.C. § 271. Exemplary infringing instrumentalities include the LTST-M140KFKT and all other substantially similar products (collectively the "'300 Accused Products").

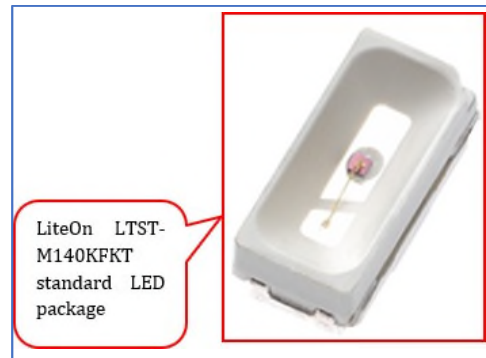
160. Plaintiff names this exemplary infringing instrumentality to serve as notice of Defendants' infringing acts, however Plaintiff reserves the right to include additional infringing products into the definition of '300 Accused Products that are either known to Plaintiff or revealed during discovery.

161. Defendants are liable for direct infringement pursuant to 35 U.S.C. § 271 for the

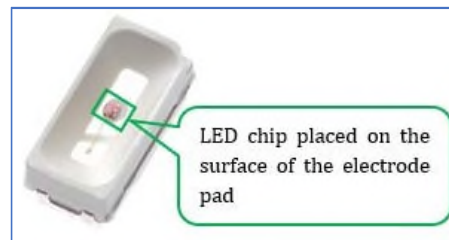
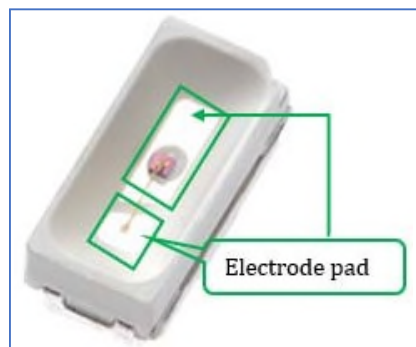
development, design, manufacture, sale or distribution of Defendants' LTST-M140KFKT.

162. Defendants' LTST-M140KFKT is a non-limiting example of a light source that meets all limitations of claim 10 of the '300 Patent, either literally or equivalently.

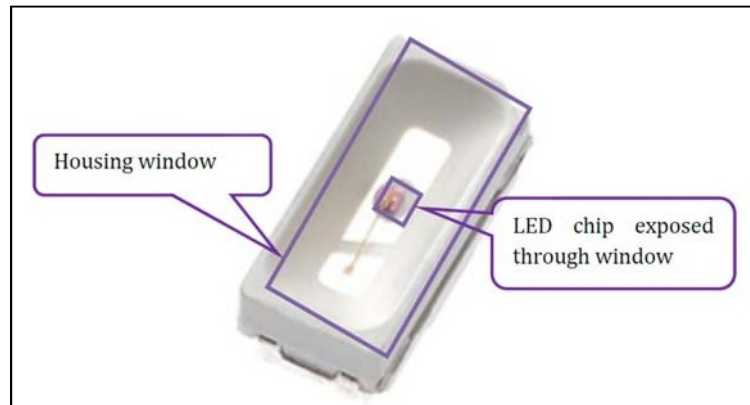
163. Defendants' LTST-M140KFKT is a light-emitting diode package.



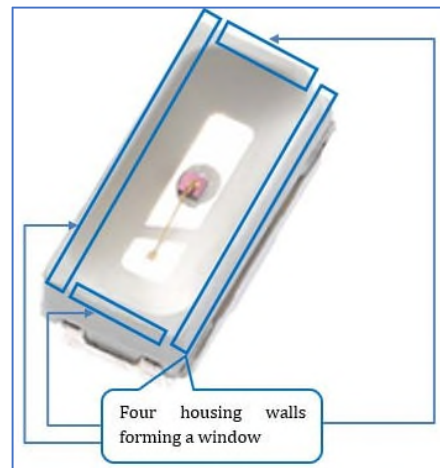
164. Defendants' LTST-M140KFKT comprises an electrode pad on which a chip is placed.



165. Defendants' LTST-M140KFKT comprises a housing having a window through which the chip is exposed.

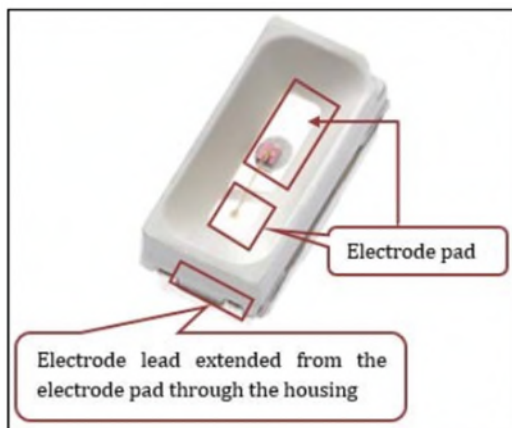


166. Defendants' LTST-M140KFKT comprises a housing wall defining the window.

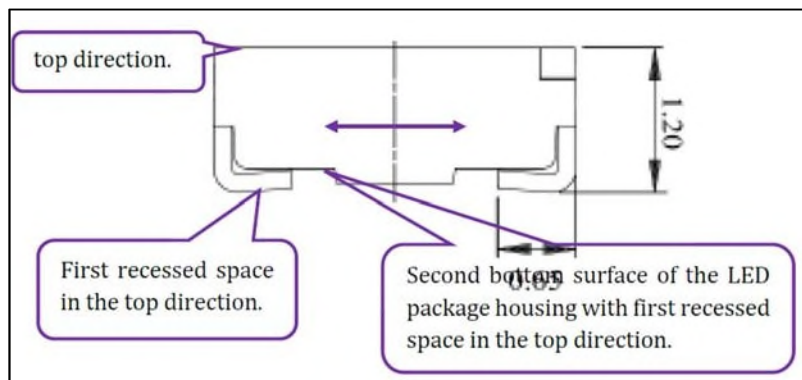
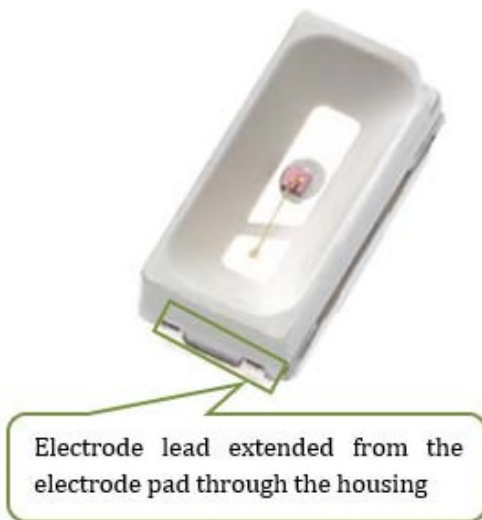




167. Defendants' LTST-M140KFKT comprises an electrode lead extended from the electrode pad through the housing to be exposed in a first direction of the housing.

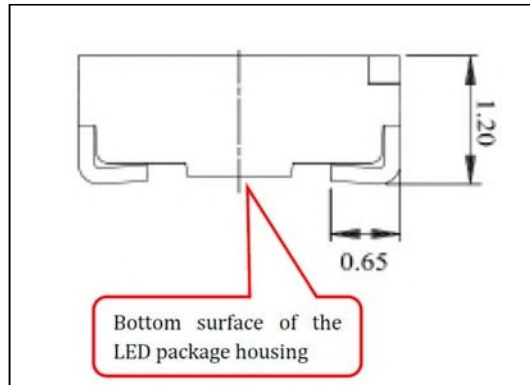


168. Defendants' LTST-M140KFKT comprises an electrode lead that is bent to an outside surface of the housing at through the housing.



The electrode lead is highlighted at the bottom of the LED and bends to an outside surface of the housing as shown.

169. Defendants' LTST-M140KFKT comprises a housing wherein a bottom surface of the housing comprises a first bottom surface.



170. Defendants' LTST-M140KFKT comprises a housing wherein a bottom surface of the housing comprises a second bottom surface having a first recessed space in a top direction of the housing so that the electrode lead is arranged in the first recessed space.

### **Willful Infringement**

171. Defendants have had actual knowledge of their infringement of the '300 Patent at least as of receipt of Plaintiff's notice letter dated May 25, 2019.

172. Defendants have had actual knowledge of their infringement of the '300 Patent at least as of the service of Plaintiff's Original Complaint.

173. Defendants' risk of infringement of the patents-in-suit was either known or was so obvious that it should have been known to Defendants.

174. Notwithstanding this knowledge, Defendants have knowingly or with reckless disregard willfully infringed the '300 Patent. Defendants continue to infringe despite knowledge of Plaintiff's patent. Defendants have thus had actual notice of infringement of the '300 Patent and acted despite an objectively high likelihood that their actions constituted infringement of Plaintiff's valid patent rights, either literally or equivalently.

175. This objective risk was either known or so obvious that it should have been known to Defendants. Accordingly, Plaintiff seeks enhanced damages and reimbursement of its reasonable attorney fees pursuant to 35 U.S.C. §§ 284 and 285.

### **Indirect Infringement**

176. Defendants are knowingly inducing their customers and/or end users to directly infringe the '300 Patent, with the specific intent to encourage such infringement, and knowing that the induced acts constitute patent infringement, either literally or equivalently.

177. Defendants have knowingly contributed to direct infringement by their customers by having imported, sold, and/or offered for sale, and knowingly importing, selling, and/or offering to sell within the United States the '300 Accused Products, which are not suitable for substantial non-infringing use and which are especially made or especially adapted for use by their customers in an infringement of the asserted patent.

178. Defendants' indirect infringement includes, for example, providing data sheets, technical guides, demonstrations, software and hardware specifications, installation guides, and other forms of support that induce their customers and/or end users to directly infringe the '300 Patent. Defendants' indirect infringement additionally includes marketing their products for import by their customers into the United States. The '300 Accused Products are designed in such a way that when they are used for their intended purpose, the user infringes the '300 Patent, either literally or equivalently. Defendants know and intend that customers who purchase the '300 Accused Products will use those products for their intended purpose. For example, Defendants' United States website instructs customers to use '300 Accused Products in numerous infringing applications.<sup>6</sup> As a non-limiting example, Defendants' customers such as manufacturers of lighting

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<sup>6</sup> Lite-On's website, <http://optoelectronics.liteon.com/en-global/led>, provides data sheets and product manuals that inform its customers of the specifications of the '300 Accused Products and

and consumer electronics incorporate the '300 Accused Products in commercial and consumer lighting or electronic devices using Defendants' provided data sheets and technical manuals. Defendants have knowledge that incorporation of the accused LEDs in lighting and electronic devices directly infringes. In addition, Defendants specifically intend that their customers, such as United States distributors, retailers, and consumer product companies, will import, use, and sell infringing products in the United States to serve and develop the United States market for Defendants' infringing products.

179. As a result of Defendants' infringement, Plaintiff has suffered monetary damages, and is entitled to an award of damages adequate to compensate it for such infringement which, by law, can be no less than a reasonable royalty, together with interest and costs as fixed by this Court under 35 U.S.C. § 284.

**COUNT SEVEN**  
**INFRINGEMENT OF U.S. PATENT 8,034,644**

180. Plaintiff incorporates by reference the allegations in all preceding paragraphs as if fully set forth herein.

181. The '644 Patent, entitled "LIGHT EMITTING DEVICE," was filed on January 23, 2009 and issued on October 11, 2011.

182. Plaintiff is the assignee and owner of all rights, title, and interest to the '644 Patent, including the right to recover for past infringements, and has the legal right to enforce the patent, sue for infringement, and seek equitable relief and damages.

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encourage their customers to infringe. *See, e.g.*, <https://optoelectronics.liteon.com/upload/download/DS22-2011-0334/LTST-M140KFKT.PDF>. Each data sheet provides instructions that Lite-On knows to infringe the '399 Patent when performed.

### **Technical Description**

183. The '644 Patent addresses technical problems in LEDs, specifically in TTW devices (“Through The Wave” soldering packages) and SMT devices (“Surface Mount Technology”).

184. The '644 Patent teaches that “TTW type light emitting devices tend to have better optical performance, potting capabilities, and other benefits over SMT (surface mount technology) devices. However, surface mount technology offers benefits in manufacturing over through the wave techniques.” (col. 1, ll. 9-14).

185. The '644 Patent addresses technical problems in the prior art of LED devices, including by teaching a device where “the light emitter 100 is a surface mount technology (SMT) device that has the characteristics of a through the wave (TTW) type device.” (col. 1, ll. 31-33).

186. Specifically, the '644 Patent addresses the prior art problem, by teaching a device where “the light emitter 100 is able to have the advantages of a thru-hole device, but in a surface mount package.” (col. 1, ll. 63-65).

187. By teaching an “SMT device that has TTW light characteristics,” (col. 2, l. 50), the '644 Patent provides a technical solution that combines the advantages of prior art SMT and TTW technology that was not previously known to be possible.

### **Direct Infringement**

188. Defendants, without authorization or license from Plaintiff, have been and are directly infringing the '644 Patent, either literally or equivalently, as infringement is defined by 35 U.S.C. § 271, including through making, using (including for testing purposes), selling and offering for sale methods and articles produced by methods infringing one or more claims of the '644 Patent. Defendants, individually and operating as part of a common business enterprise, develop, design, manufacture, and distribute LED products that infringe one or more claims of the

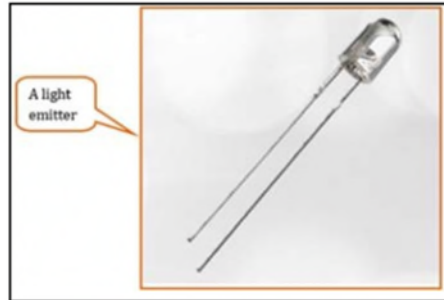
'644 Patent. Defendants are thus liable for direct infringement pursuant to 35 U.S.C. § 271. Exemplary infringing instrumentalities include the LTW5H3DVBJ-DK-002A and all other substantially similar products (collectively the "'644 Accused Products").

189. Plaintiff names this exemplary infringing instrumentality to serve as notice of Defendants' infringing acts, however Plaintiff reserves the right to include additional infringing products into the definition of '644 Accused Products that are either known to Plaintiff or revealed during discovery.

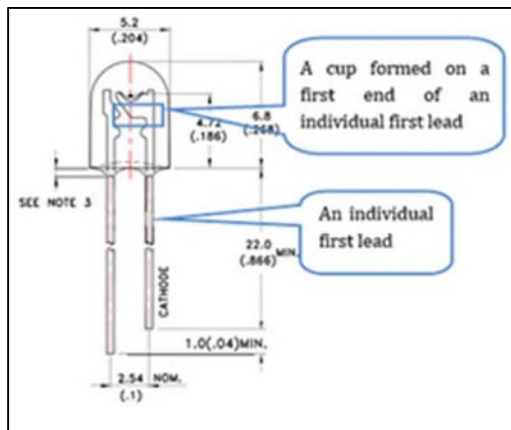
190. Defendants are liable for direct infringement pursuant to 35 U.S.C. § 271 for the development, design, manufacture, sale or distribution of Defendants' LTW5H3DVBJ-DK-002A.

191. Defendants' LTW5H3DVBJ-DK-002A is a non-limiting example of a light source that meets all limitations of claim 1 of the '644 Patent, either literally or equivalently.

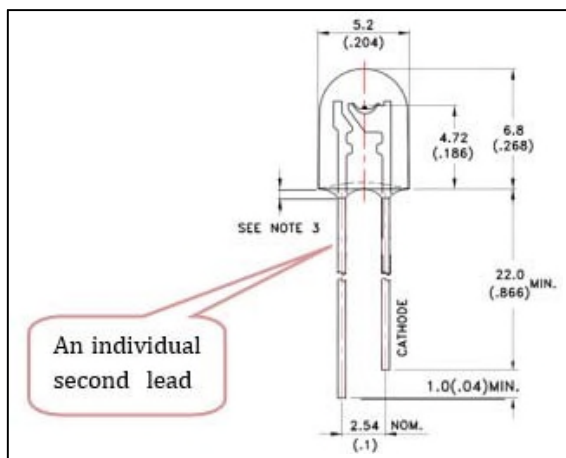
192. Defendants' LTW5H3DVBJ-DK-002A is made by a method of making a light emitter.



193. Defendants' LTW5H3DVBJ-DK-002A is made by fabricating a line of first leads, the line of first leads comprising a plurality of connected individual first leads each having a cup formed on a first end thereof.



194. Defendants' LTW5H3DVBJ-DK-002A is made by fabricating a line of second leads, the line of second leads comprising a plurality of connected individual second leads.

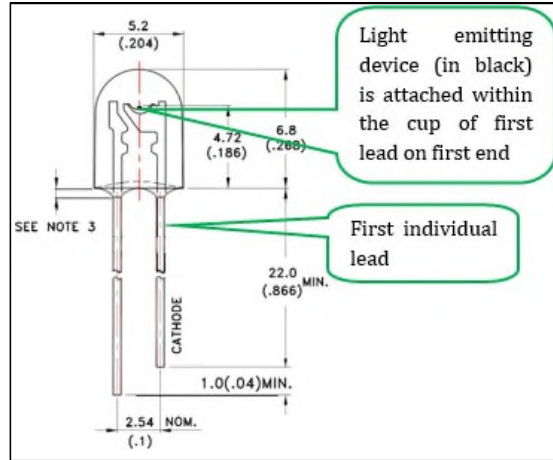


195. Defendants' LTW5H3DVBJ-DK-002A is made by physically connecting the line of first leads to the line of second leads with a rail, wherein a first individual first lead is on a first side of the rail and adjacent a first individual second lead which is on a second side of the rail, wherein the second side of the rail opposes the first side of the rail. The first and second leads are physically connected by a rail as shown:

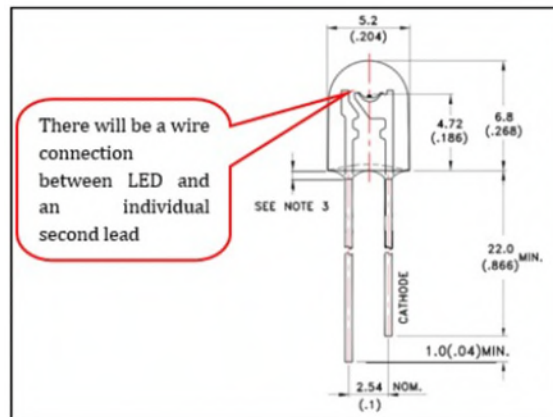


196. Defendants' LTW5H3DVBJ-DK-002A is made by attaching a light emitting device to the first individual first lead within the cup formed on the first end of the first individual lead such that the light emitting device is located substantially along a major axis of the first individual lead.

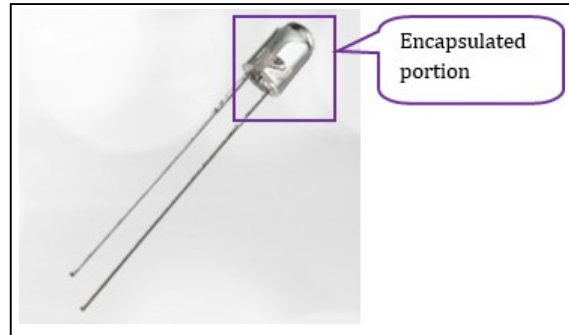




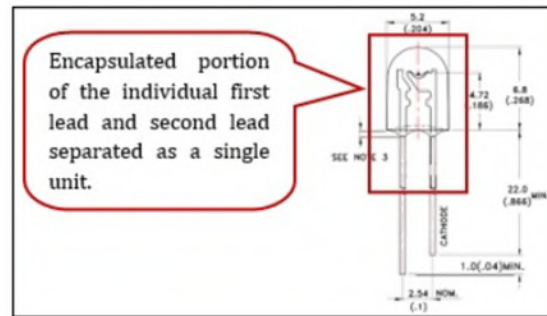
197. Defendants' LTW5H3DVBJ-DK-002A is made by electrically connecting the light emitting device to the first individual second lead.



198. Defendants' LTW5H3DVBJ-DK-002A is made by encapsulating a portion of the individual first lead and a portion of the individual second lead as a single unit.



199. Defendants' LTW5H3DVBJ-DK-002A is made by separating the encapsulated first individual lead and the second individual lead from the first line of leads and the second line of leads.



### **Willful Infringement**

200. Defendants have had actual knowledge of their infringement of the '644 Patent at least as of receipt of Plaintiff's notice letter dated May 25, 2019.

201. Defendants have had actual knowledge of their infringement of the '644 Patent at least as of the service of Plaintiff's Original Complaint.

202. Defendants' risk of infringement of the patents-in-suit was either known or was so obvious that it should have been known to Defendants.

203. Notwithstanding this knowledge, Defendants have knowingly or with reckless disregard willfully infringed the '644 Patent. Defendants continue to infringe despite knowledge

of Plaintiff's patent. Defendants have thus had actual notice of infringement of the '644 Patent and acted despite an objectively high likelihood that their actions constituted infringement of Plaintiff's valid patent rights, either literally or equivalently.

204. This objective risk was either known or so obvious that it should have been known to Defendants. Accordingly, Plaintiff seeks enhanced damages and reimbursement of its reasonable attorney fees pursuant to 35 U.S.C. §§ 284 and 285.

### **Indirect Infringement**

205. Defendants are knowingly inducing their customers and/or end users to directly infringe the '644 Patent, with the specific intent to encourage such infringement, and knowing that the induced acts constitute patent infringement, either literally or equivalently.

206. Defendants have knowingly contributed to direct infringement by their customers by having imported, sold, and/or offered for sale, and knowingly importing, selling, and/or offering to sell within the United States the '644 Accused Products, which are not suitable for substantial non-infringing use and which are especially made or especially adapted for use by their customers in an infringement of the asserted patent.

207. Defendants' indirect infringement includes, for example, providing data sheets, technical guides, demonstrations, software and hardware specifications, installation guides, and other forms of support that induce their customers and/or end users to directly infringe the '644 Patent. Defendants' indirect infringement additionally includes marketing their products for import by their customers into the United States. The '644 Accused Products are designed in such a way that when they are used for their intended purpose, the user infringes the '644 Patent, either literally or equivalently. Defendants know and intend that customers who purchase the '644 Accused Products will use those products for their intended purpose. For example, Defendants' United States website instructs customers to use the '644 Accused Products in numerous infringing

applications.<sup>7</sup> As a non-limiting example, Defendants’ customers such as manufacturers of lighting and consumer electronics including smartphones incorporate Defendants’ the ‘644 Products in commercial and consumer lighting or electronic devices using Defendants’ provided data sheets and technical manuals. Defendants have knowledge that incorporation of the accused LEDs in lighting and electronic devices directly infringes. In addition, Defendants specifically intend that their customers, such as United States distributors, retailers, and consumer product companies, will import, use, and sell infringing products in the United States to serve and develop the United States market for Defendants’ infringing products.

208. As a result of Defendants’ infringement, Plaintiff has suffered monetary damages, and is entitled to an award of damages adequate to compensate it for such infringement which, by law, can be no less than a reasonable royalty, together with interest and costs as fixed by this Court under 35 U.S.C. § 284.

**COUNT EIGHT**  
**INFRINGEMENT OF U.S. PATENT 8,405,181**

209. Plaintiff incorporates by reference the allegations in all preceding paragraphs as if fully set forth herein.

210. The ’181 Patent, entitled “HIGH BRIGHTNESS AND HIGH CONTRAST PLASTIC LEADED CHIP CARRIER LED,” was filed on March 16, 2011 and issued on March 26, 2013.

211. Plaintiff is the assignee and owner of all rights, title, and interest to the ’181 Patent,

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<sup>7</sup> Lite-On’s website, <http://optoelectronics.liteon.com/en-global/led>, provides data sheets and product manuals that inform its customers of the specifications of the ’644 Accused Products and encourage their customers to infringe. *See, e.g.*, <https://optoelectronics.liteon.com/upload/download/DS20-2015-0266/DS%20LTW5H3DVBJ-DK-002A.pdf>. Each data sheet provides instructions that Lite-On knows to infringe the ’644 Patent when performed.

including the right to recover for past infringements, and has the legal right to enforce the patent, sue for infringement, and seek equitable relief and damages.

### **Technical Description**

212. The '181 Patent addresses technical problems in the prior art of LED devices, including that there was no known LED package that combines the low-profile nature of a Plastic Leaded Chip Carrier ("PLCC") package as well as simultaneously achieves high contrast and brightness.

213. Specifically, the '181 Patent addresses technical problems in the prior art, including that "currently available PLCC packages cannot simultaneously provide high contrast and high brightness" and that a "thru-hole LED is almost always brighter than a PLCC package, regardless of whether a black or white plastic is used for the housing." (col. 1, ll. 31-41).

214. Accordingly, the '181 Patent teaches a technical solution to these prior art problems wherein "the PLCC package 100 simultaneously provides both good contrast and brightness properties." (col. 3, ll. 31-32).

215. Specifically, the teachings of the '181 Patent include an LED design wherein "by incorporating the lead frame 104 into the interior walls of the reflector cup 116, the reflectivity of the reflector cup 116 can be enhanced without requiring an additional step of applying a reflective material to the interior surface of the reflector cup 116." (col. 4, ll. 2-6).

### **Direct Infringement**

216. Defendants, without authorization or license from Plaintiff, have been and are directly infringing the '181 Patent, either literally or equivalently, as infringement is defined by 35 U.S.C. § 271, including through making, using (including for testing purposes), selling and offering for sale methods and articles infringing one or more claims of the '181 Patent. Defendants, individually and operating as part of a common business enterprise, develop, design, manufacture,

and distribute LED products that infringe one or more claims of the '181 Patent. Defendants are thus liable for direct infringement pursuant to 35 U.S.C. § 271. Exemplary infringing instrumentalities include the LTE C269 and all other substantially similar products (collectively the “'181 Accused Products”).

217. Plaintiff names this exemplary infringing instrumentality to serve as notice of Defendants’ infringing acts, however Plaintiff reserves the right to include additional infringing products into the definition of '181 Accused Products that are either known to Plaintiff or revealed during discovery.

218. Defendants are liable for direct infringement pursuant to 35 U.S.C. § 271 for the development, design, manufacture, sale or distribution of Defendants’ LTE C269.

219. Defendants’ LTE C269 is a non-limiting example of a light source that meets all limitations of claim 1 of the '181 Patent, either literally or equivalently.

220. Defendants’ LTE C269 comprises a PLCC package.

**SMD Bowl Type Infrared LED**

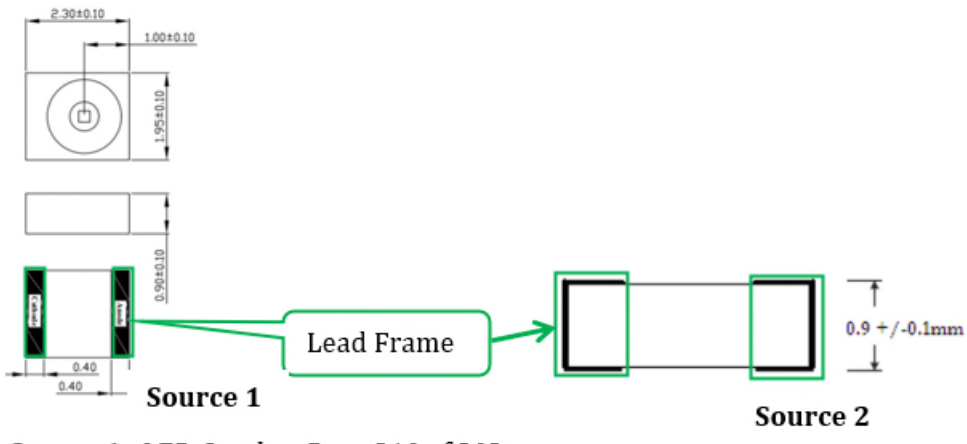
This special package has an opaque base substrate to ensure zero emission from the sides and bottom which help to eliminate design problem relating to cross-talk. The SMD Reflective Bowl Type IR LED offers mobile phones designers the flexibility when pairing with Proximity Sensor given its narrow viewing angle without lens, high radiant intensity, eliminate cross-talk and in miniature package at a height of 0.9mm



LTE-C269 (or LTE-C249) consists of a black Plastic Leaded Chip Carrier (PLCC) package

SMD Bowl Type Infrared LED								
Part No.	Description	Package Dimension (L x W x H) (mm)	Forward Voltage (V)	Viewing Angle	Radiant Intensity (mW/sr)	Continuous Forward Current (max) (mA)	Wavelength (nm)	Device Type
LTE-C249	High Performance Infrared emitter with low height	2.30 x 1.96 x 0.90	1.6V typ @ 100mA	30	20-114 @ 100mA	100	855	Bowl IR LED
LTE-C269	High Performance Infrared emitter with low height	2.30 x 1.96 x 0.90	1.4V typ @ 100mA	30	35-114 @ 100mA	100	940	Bowl IR LED

221. Defendants’ LTE C269 comprises a lead frame.



222. Defendants’ LTE C269 comprises a plastic housing attached to the lead

frame.

This special package has an opaque base substrate to ensure zero emission from the sides and bottom which help to eliminate design problem relating to cross-talk. The SMD Reflective Bowl Type IR LED offers mobile phones designers the flexibility when pairing with Proximity Sensor given its narrow viewing angle without lens, high radiant intensity, eliminate cross-talk and in miniature package at a height of 0.9mm

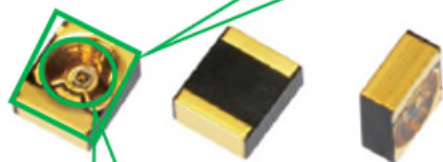
SMD Bowl Type Infrared LED								
Part No.	Description	Package Dimension (L x W x H) (mm)	Forward Voltage (V)	Viewing Angle	Radiant Intensity (mW/Sr)	Continuous Forward Current (mA)	Wavelength (nm)	Device Type
LTE-C269	High Performance Infrared emitter with low height	2.30 x 1.95 x 0.90	1.6V typ @ 100mA	30	20-114 @ 100mA	100	855	Bowl IR LED
LTE-C268	High Performance Infrared emitter with low height	2.30 x 1.95 x 0.90	1.4V typ @ 100mA	30	25-114 @ 100mA	100	940	Bowl IR LED

223. Defendants’ LTE C269 comprises said plastic housing, the plastic housing comprising at least one cavity which defines part of a reflector cup configured to receive a light source and exposes one or more leads of the lead frame such that a light source can be positioned in a bottom surface of the reflector cup and connected to the one or more leads.



**SMD Bowl Type Infrared LED**

This special package has an opaque base substrate to ensure zero emission from the sides and bottom which help to eliminate design problem relating to cross-talk. The SMD Reflective Bowl Type IR LED offers mobile phones designers the flexibility when pairing with Proximity Sensor given its narrow viewing angle without lens, high radiant intensity, eliminate cross-talk and in miniature package at a height of 0.9mm



A plastic housing comprising a cavity (i.e. a reflector cup) which exposes LED as well as electrode lead (i.e. a lead frame)

SMD Bowl Type Infrared LED								
Part No.	Description	Package Dimension (L x W x H) (mm)	Forward Voltage (V)	Viewing Angle	Radiant Intensity (mW/Sr)	Continuous Forward Current (max) mA	Wavelength (nm)	Device Type
LTE-C249	High Performance Infrared emitter with low height	2.30 x 1.95 x 0.90	1.6V typ @ 100mA	30	20-114 @ 100mA	100	855	Bowl IR LED
LTE-C269	High Performance Infrared emitter with low height	2.30 x 1.95 x 0.90	1.4V typ @ 100mA	30	35-114 @ 100mA	100	940	Bowl IR LED

LED (i.e. a light source) chip mounted on the electrode lead is placed at the bottom surface of the cavity (i.e. reflector cup)

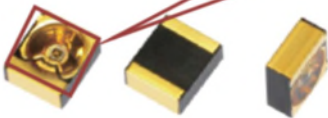
224. Defendants’ LTE C269 comprises said reflector cup wherein a wall of the reflector cup extending from the bottom surface of the reflector cup to a top surface of the plastic housing comprises a portion of the lead frame and a portion of the plastic housing so the wall has a continuous circumference crossing the portion of the lead frame and the portion of the housing.



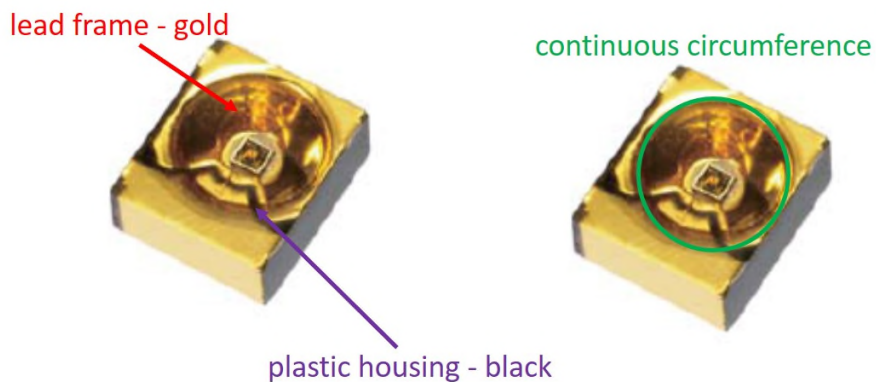
**SMD Bowl Type Infrared LED**

This special package has an opaque base substrate to ensure zero emission from the sides and bottom which help to eliminate design problem relating to cross-talk. The SMD Reflective Bowl Type IR LED offers mobile phones designers the flexibility when pairing with Proximity Sensor given its narrow viewing angle without lens, high radiant intensity, eliminate cross-talk and in miniature package at a height of 0.9mm

Wall of the reflector cup forms a continuous circumference due to upward extended walls of the reflector cup of PLCC package.



SMD Bowl Type Infrared LED								
Part No.	Description	Package Dimension (L x W x H) (mm)	Forward Voltage (V)	Viewing Angle	Radiant Intensity (mW/Sr)	Continuous Forward Current (max) (mA)	Wavelength (nm)	Device Type
LTE-C269	High Performance infrared emitter with low height	2.30 x 1.95 x 0.90	1.6V typ @ 100mA	30	20-114 @ 100mA	100	855	Bowl IR LED
LTE-C269	High Performance infrared emitter with low height	2.30 x 1.95 x 0.90	1.4V typ @ 100mA	30	35-114 @ 100mA	100	940	Bowl IR LED



**Willful Infringement**

225. Defendants have had actual knowledge of their infringement of the '181 Patent at least as of receipt of Plaintiff's notice letter dated May 25, 2019.

226. Defendants and/or closely-related affiliates of Defendants have had actual knowledge of the '181 Patent, gained in their own prosecution activities.

227. Specifically, the prosecution of Lite-On Electronics Co., Ltd.'s Chinese patent application CN103367344B cites the '181 Patent.

228. Defendants have had actual knowledge of their infringement of the '181 Patent at

least as of the service of Plaintiff's Original Complaint.

229. Defendants' risk of infringement of the patents-in-suit was either known or was so obvious that it should have been known to Defendants.

230. Notwithstanding this knowledge, Defendants have knowingly or with reckless disregard willfully infringed the '181 Patent. Defendants continue to infringe despite knowledge of Plaintiff's patent. Defendants have thus had actual notice of infringement of the '181 Patent and acted despite an objectively high likelihood that their actions constituted infringement of Plaintiff's valid patent rights, either literally or equivalently.

231. This objective risk was either known or so obvious that it should have been known to Defendants. Accordingly, Plaintiff seeks enhanced damages and reimbursement of its reasonable attorney fees pursuant to 35 U.S.C. §§ 284 and 285.

### **Indirect Infringement**

232. Defendants are knowingly inducing their customers and/or end users to directly infringe the '181 Patent, with the specific intent to encourage such infringement, and knowing that the induced acts constitute patent infringement, either literally or equivalently.

233. Defendants have knowingly contributed to direct infringement by their customers by having imported, sold, and/or offered for sale, and knowingly importing, selling, and/or offering to sell within the United States the '181 Accused Products, which are not suitable for substantial non-infringing use and which are especially made or especially adapted for use by their customers in an infringement of the asserted patent.

234. Defendants' indirect infringement includes, for example, providing data sheets, technical guides, demonstrations, software and hardware specifications, installation guides, and other forms of support that induce their customers and/or end users to directly infringe the '181 Patent. Defendants' indirect infringement additionally includes marketing their products for import

by their customers into the United States. The '181 Accused Products are designed in such a way that when they are used for their intended purpose, the user infringes the '181 Patent, either literally or equivalently. Defendants know and intend that customers who purchase the '181 Accused Products will use those products for their intended purpose. For example, Defendants' United States website instructs customers to use '181 Accused Products in numerous infringing applications.<sup>8</sup> As a non-limiting example, Defendants' customers such as manufacturers of lighting and consumer electronics incorporate the '181 Accused Products in commercial and consumer lighting or electronic devices using Defendants' provided data sheets and technical manuals. Defendants have knowledge that incorporation of the accused LEDs in lighting and electronic devices directly infringes. In addition, Defendants specifically intend that their customers, such as United States distributors, retailers, and consumer product companies, will import, use, and sell infringing products in the United States to serve and develop the United States market for Defendants' infringing products.

235. As a result of Defendants' infringement, Plaintiff has suffered monetary damages, and is entitled to an award of damages adequate to compensate it for such infringement which, by law, can be no less than a reasonable royalty, together with interest and costs as fixed by this Court under 35 U.S.C. § 284.

**COUNT NINE**  
**INFRINGEMENT OF U.S. PATENT 9,209,373**

236. Plaintiff incorporates by reference the allegations in all preceding paragraphs as if

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<sup>8</sup> Lite-On's website, <http://optoelectronics.liteon.com/en-global/led>, provides data sheets and product manuals that inform its customers of the specifications of the '181 Accused Products and encourage their customers to infringe. *See, e.g.*, <https://optoelectronics.liteon.com/upload/download/DS22-2011-0521/LTST-G683ESBW.pdf>. Each data sheet provides instructions that Lite-On knows to infringe the '181 Patent when performed.

fully set forth herein.

237. The '373 Patent, entitled "HIGH POWER PLASTIC LEADED CHIP CARRIER WITH INTEGRATED METAL REFLECTOR CUP AND DIRECT HEAT SINK," was filed on February 23, 2011 and issued on December 8, 2015.

238. Plaintiff is the assignee and owner of all rights, title, and interest to the '373 Patent, including the right to recover for past infringement, and has the legal right to enforce the patent, sue for infringement, and seek equitable relief and damages.

### **Technical Description**

239. The '373 Patent addresses technical problems in the prior art of LED devices, including that "to increase the capacity of an LED package to dissipate more heat, various designs are used in the industry; however, each of these designs results in LED packages with limited heat dissipation capacities which simultaneously increase the complexity and the costs associated with manufacturing the LED packages." For example:

Some LED package designs utilize a large heat sink slug that is distinct from the lead frame. The heat sink slug increases the capacity of the LED package to dissipate heat; however, because the heat sink slug is a separate component, the costs associated with manufacturing LED packages according to this design are relatively difficult and more costly, particularly because the number of manufacturing steps are increased due to the need to assemble the multiple pieces together. Furthermore, LED packages which incorporate a separate heat sink slug are larger in size due to the increased number of components in the LED package. Another shortcoming is that because a large LED package is required to accommodate the separate heat sink slug, a larger lens is also required to fit onto the larger LED package. All of this increases the cost of the LED package. (col. 1, ll. 28-47).

240. The '373 Patent provides technical solutions, including use of a "plastic molded lead frame" such that:

the PLCC package 108 comprises a plastic housing 112 molded around a lead frame 120. As can be seen in FIGS. 1A and 1B, the lead frame 120 may be carried by the package carrier 104. In some embodiments, the

package carrier 104 comprises a plurality of lead frames 120. Thus, batch manufacturing techniques can be employed to manufacture a plurality of PLCC packages 108 on a single package carrier 104.” (col. 2, ll. 54-61).

241. The ’373 Patent provides that a technical advantage of its solutions is that “some or all of the features of the lead frame 120 may be created in a single manufacturing step (e.g., a single stamping step) or in multiple manufacturing steps (e.g., a stamping step followed by a machining or etching step).” (col. 3, ll. 8-12).

### **Direct Infringement**

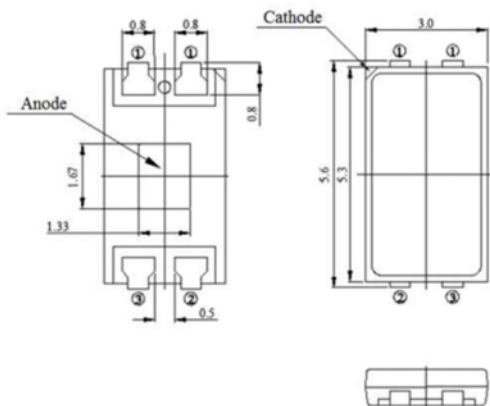
242. Defendants, without authorization or license from Plaintiff, have been and are directly infringing the ’373 Patent, either literally or equivalently, as infringement is defined by 35 U.S.C. § 271, including through making, using (including for testing purposes), selling and offering for sale methods and articles infringing one or more claims of the ’373 Patent. Defendants, individually and operating as part of a common business enterprise, develop, design, manufacture, and distribute LED products that infringe one or more claims of the ’373 Patent. Defendants are thus liable for direct infringement pursuant to 35 U.S.C. § 271. Exemplary infringing instrumentalities include the LTST-5630VDWT and all other substantially similar products (collectively the “’373 Accused Products”).

243. Plaintiff names this exemplary infringing instrumentality to serve as notice of Defendants’ infringing acts, however Plaintiff reserves the right to include additional infringing products into the definition of ‘373 Accused Products that are either known to Plaintiff or revealed during discovery.

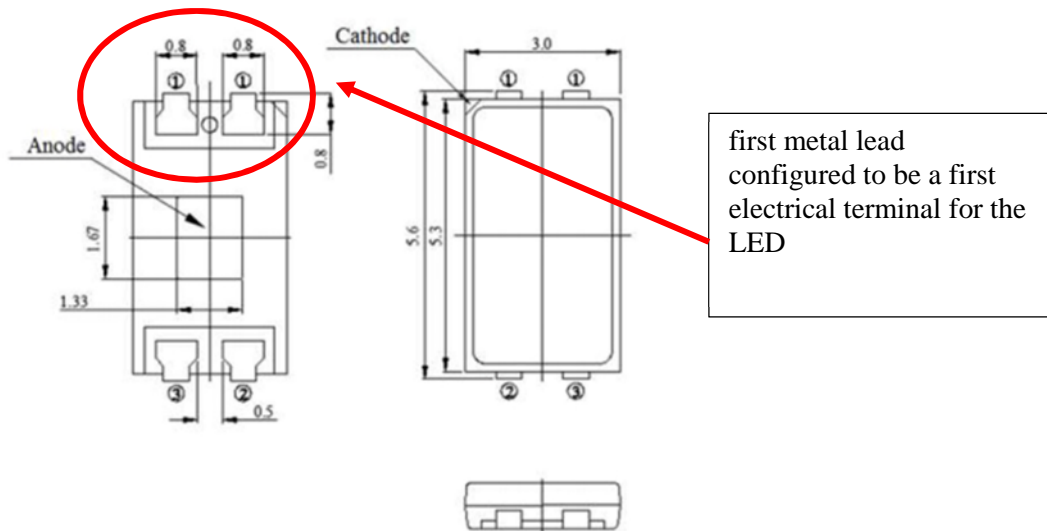
244. Defendants are liable for direct infringement pursuant to 35 U.S.C. § 271 for the development, design, manufacture, sale, or distribution of Defendants’ LTST-5630VDWT.

245. Defendants’ LTST-5630VDWT is a non-limiting example of a light source that meets all limitations of claim 13 of the ’373 Patent, either literally or equivalently.

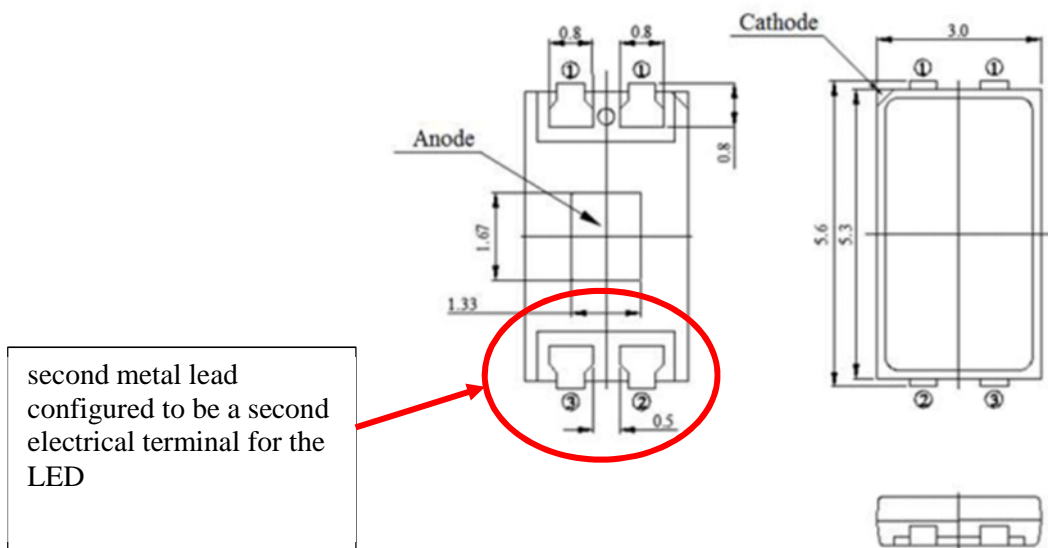
246. Defendants' LTST-5630VDWT comprises a lead frame configured to have a light source mounted thereto.



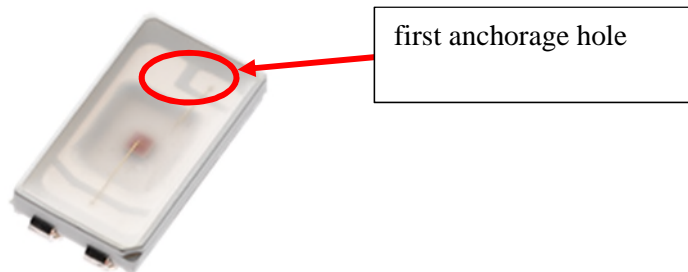
247. Defendants' LTST-5630VDWT comprises a first metal lead with a first bottom surface extending to a first side and configured to be a first electrical terminal for the light source.



248. Defendants' LTST-5630VDWT comprises a second metal lead with a second bottom surface extending to a second side and configured to be a second electrical terminal for the light source.

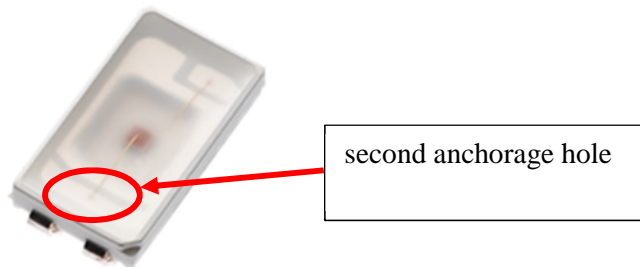


249. Defendants' LTST-5630VDWT comprises a first anchorage hole in the first bottom surface.



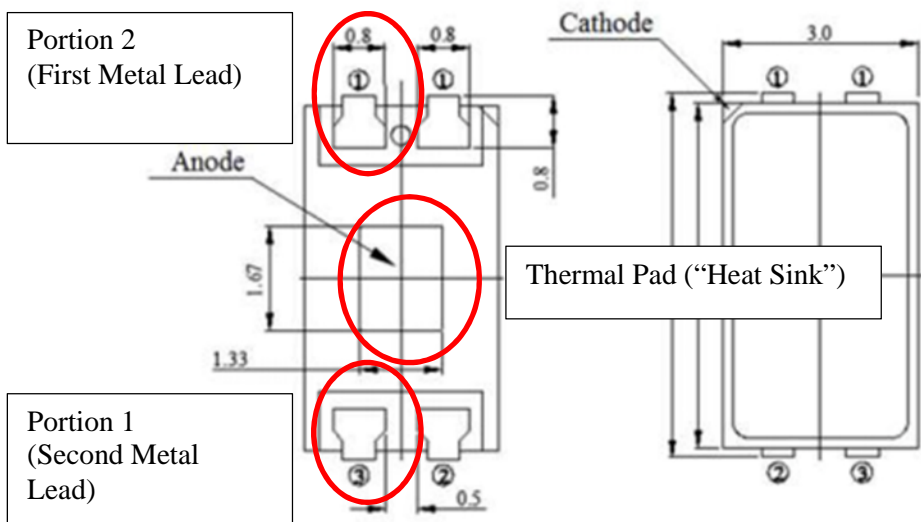
The first hole goes through the first bottom surface as an anchorage hole.

250. Defendants' LTST-5630VDWT comprises a second anchorage hole in the second bottom surface.



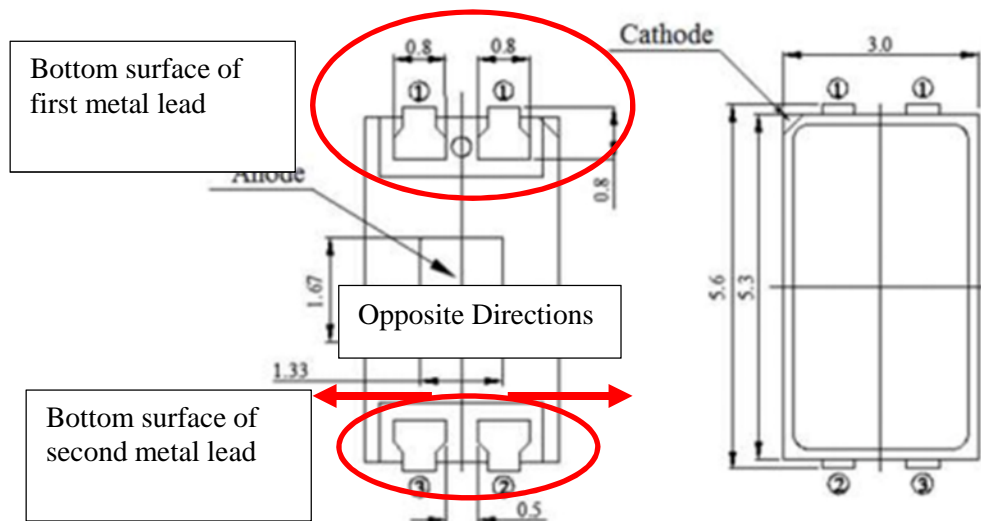
The second hole goes through the second bottom surface as an anchorage hole.

251. Defendants’ LTST-5630VDWT comprises a heat sink comprising a lead frame cavity that is configured to have the light source mounted therein and reflect light emitted by the light source, the heat sink being separated physically from the second metal lead and disposed between the first metal lead and the second metal lead such that the first bottom surface of the first metal lead and the second bottom surface of the second metal lead are on a same plane.



252. Defendants’ LTST-5630VDWT comprises a first and second metal lead wherein the bottom surfaces of the first metal lead and the second metal lead extend in opposite directions.





**Willful Infringement**

253. Defendants have had actual knowledge of their infringement of the '373 Patent at least as of receipt of Plaintiff's notice letter dated May 25, 2019.

254. Defendants have had actual knowledge of their infringement of the '373 Patent at least as of the service of Plaintiff's Original Complaint.

255. Defendants' risk of infringement of the patents-in-suit was either known or was so obvious that it should have been known to Defendants.

256. Notwithstanding this knowledge, Defendants have knowingly or with reckless disregard willfully infringed the '373 Patent. Defendants continue to infringe despite knowledge of Plaintiff's patent. Defendants have thus had actual notice of infringement of the '373 Patent and acted despite an objectively high likelihood that their actions constituted infringement of Plaintiff's valid patent rights, either literally or equivalently.

257. This objective risk was either known or so obvious that it should have been known to Defendants. Accordingly, Plaintiff seeks enhanced damages and reimbursement of its reasonable attorney fees pursuant to 35 U.S.C. §§ 284 and 285.

### **Indirect Infringement**

258. Defendants are knowingly inducing their customers and/or end users to directly infringe the '373 Patent, with the specific intent to encourage such infringement, and knowing that the induced acts constitute patent infringement, either literally or equivalently.

259. Defendants have knowingly contributed to direct infringement by their customers by having imported, sold, and/or offered for sale, and knowingly importing, selling, and/or offering to sell within the United States the '373 Accused Products, which are not suitable for substantial non-infringing use and which are especially made or especially adapted for use by their customers in an infringement of the asserted patent.

260. Defendants' indirect infringement includes, for example, providing data sheets, technical guides, demonstrations, software and hardware specifications, installation guides, and other forms of support that induce their customers and/or end users to directly infringe the '373 Patent. Defendants' indirect infringement additionally includes marketing their products for import by their customers into the United States. The '373 Accused Products are designed in such a way that when they are used for their intended purpose, the user infringes the '373 Patent, either literally or equivalently. Defendants know and intend that customers who purchase the '373 Accused Products will use those products for their intended purpose. For example, Defendants' United States website instructs customers to use the '373 Accused Products in numerous infringing applications.<sup>9</sup> As a non-limiting example, Defendants' customers such as manufacturers of lighting and consumer electronics incorporate the '373 Accused Products in commercial and consumer

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<sup>9</sup> Lite-On's website, <http://optoelectronics.liteon.com/en-global/led>, provides data sheets and product manuals that inform its customers of the specifications of the '373 Accused Products and encourage their customers to infringe. *See, e.g.*, <http://optoelectronics.liteon.com:8080/upload/download/DS22-2012-0206/LTST-5630VDWT.PDF>. Each data sheet provides instructions that Lite-On knows to infringe the '373 Patent when performed.

lighting or electronic devices using Defendants' provided data sheets and technical manuals. Defendants have knowledge that incorporation of the accused LEDs in lighting and electronic devices directly infringes. In addition, Defendants specifically intend that their customers, such as United States distributors, retailers, and consumer product companies, will import, use, and sell infringing products in the United States to serve and develop the United States market for Defendants' infringing products.

261. As a result of Defendants' infringement, Plaintiff has suffered monetary damages, and is entitled to an award of damages adequate to compensate it for such infringement which, by law, can be no less than a reasonable royalty, together with interest and costs as fixed by this Court under 35 U.S.C. § 284.

**COUNT TEN**  
**INFRINGEMENT OF U.S. PATENT 9,882,094**

262. Plaintiff incorporates by reference the allegations in all preceding paragraphs as if fully set forth herein.

263. The '094 Patent, entitled "LIGHT SOURCE WITH INNER AND OUTER BODIES COMPRISING THREE DIFFERENT ENCAPSULANTS," was filed on March 14, 2011 and issued on January 30, 2018.

264. Plaintiff is the assignee and owner of all rights, title, and interest to the '094 Patent, including the right to recover for past infringements, and has the legal right to enforce the patent, sue for infringement, and seek equitable relief and damages.

**Technical Description**

265. The '094 Patent addresses technical problems in the prior art of LED devices, including that most "electronic infotainment display systems are placed outdoors and thus require high reliability specifications, such as wider operating temperature, resistance to moisture, and

longer life.” (col. 1, ll. 16-20).

266. Additionally, the '094 Patent addresses technical problems including that for “infotainment display systems that require high resolution, the LEDs are preferably as small as possible so that more LEDs can be placed into a limited space to represent more pixels per unit area.” (col. 1, ll. 41-44).

267. The '094 Patent further discloses that “another feature of LEDs affecting the infotainment display quality may be the brightness of LEDs. To be viewable from a distance, the LEDs [infotainment display systems] are required to produce more lumen per unit area.” (col. 1, ll. 46-47).

268. Further, the '094 Patent discloses that “for an application such as an infotainment display system in which the performance of the display may be sensitive to form factors of the LEDs, the high reflectivity of the leads 110 and the outer surface 121 may reduce the contrast of the display.” (col. 3, ll. 35-39).

269. The '094 Patent provides technical solutions to increase reliability of prior art devices, for example by teaching that “the inner reflective body and the outer non-reflective body may comprise interlock structures, as well as interlock geometries to further improve interlocking between the bodies to increase reliability.” (col. 2, ll. 6-11).

270. The '094 Patent further discloses that “reliability performance of the light-emitting device may be improved by using interlocking aperture at the lead frame, interlock structure and interlock geometries defined by the inner reflective body and the outer non-reflective body.” ('094 Abstract)

271. The '094 Patent provides further technical solutions to these problems, including a “light-emitting device having an inner reflective body and an outer non-reflective body” to

improve contrast of the display. *Id.* Specifically, the '094 Patent discloses that the inner reflective body defines a reflector configured to reflect light. In one embodiment, the outer non-reflective body encloses the inner reflective body to minimize reflectivity of the light emitting device. When assembled into an infotainment display system, the outer non-reflective body may be configured to reduce reflection of ambient light and hence, increase contrast ratio of the display. *Id.*

### **Direct Infringement**

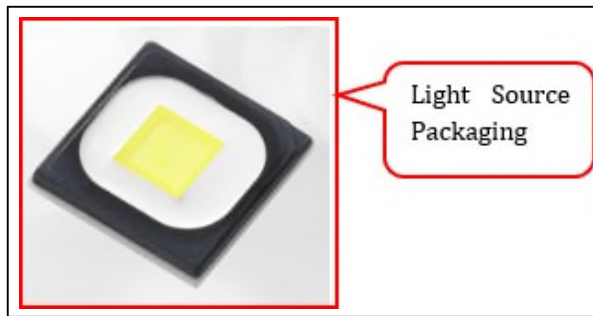
272. Defendants, without authorization or license from Plaintiff, have been and are directly infringing the '094 Patent, either literally or equivalently, as infringement is defined by 35 U.S.C. § 271, including through making, using (including for testing purposes), selling and offering for sale methods and articles infringing one or more claims of the '094 Patent. Defendants, individually and operating as part of a common business enterprise, develop, design, manufacture, and distribute LED products that infringe one or more claims of the '094 Patent. Defendants are thus liable for direct infringement pursuant to 35 U.S.C. § 271. Exemplary infringing instrumentalities include the LTPA-S38FUMWE and all other substantially similar products (collectively the "'094 Accused Products").

273. Plaintiff names this exemplary infringing instrumentality to serve as notice of Defendants' infringing acts, however Plaintiff reserves the right to include additional infringing products into the definition of '094 Accused Products that are either known to Plaintiff or revealed during discovery.

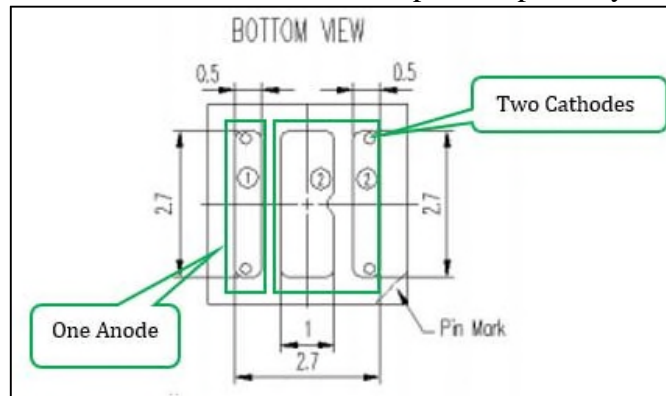
274. Defendants are liable for direct infringement pursuant to 35 U.S.C. § 271 for the development, design, manufacture, sale, or distribution of Defendants' LTPA-S38FUMWE.

275. Defendants' LTPA-S38FUMWE is a non-limiting example of a light source that meets all limitations of claim 1 of the '094 Patent, either literally or equivalently.

276. Defendants' LTPA-S38FUMWE comprises a light source packaging.



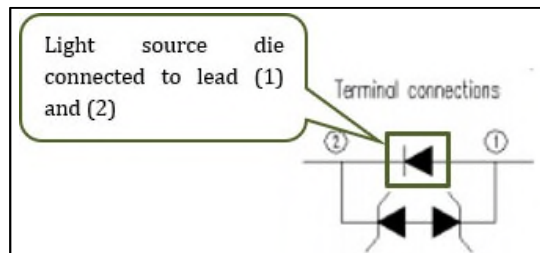
277. Defendants' LTPA-S38FUMWE comprises a plurality of leads.



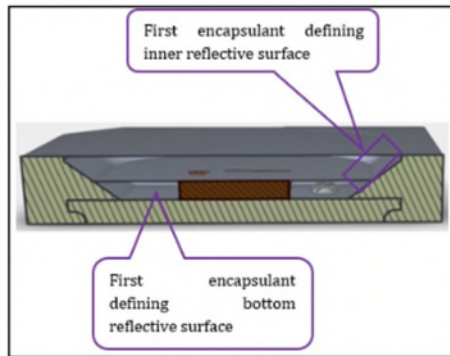
Source:

[https://optoelectronics.liteon.com/upload/media/LED\\_Component/Automotive\\_LED/20171124\\_Website\\_DS/LTPA\\_S38/LTPA\\_S38FUMWE\\_DS\\_Preliminary\\_20171117.pdf](https://optoelectronics.liteon.com/upload/media/LED_Component/Automotive_LED/20171124_Website_DS/LTPA_S38/LTPA_S38FUMWE_DS_Preliminary_20171117.pdf)

278. Defendants' LTPA-S38FUMWE comprises at least one light source die attached on one of the plurality of leads.



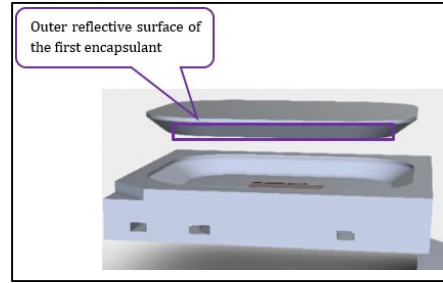
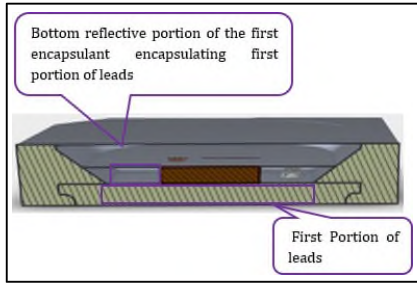
279. Defendants' LTPA-S38FUMWE comprises a first encapsulant encapsulating a first portion of the leads defining an inner reflective body.



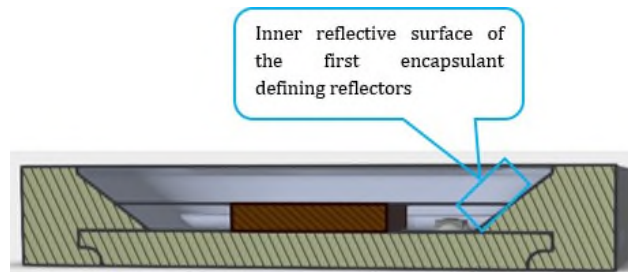
3D models of Defendants' LTPA-S38FUMWE as shown above are found at Defendants' website [https://optoelectronics.liteon.com/en-us/Light/lighting\\_led/Content/758](https://optoelectronics.liteon.com/en-us/Light/lighting_led/Content/758):

Specifications		Documentation		
Data Sheet	Version	Size	Last Updated	Download
LTPA-S38FUMWE	Preliminary	1.03MB	2017/11/17	<a href="#">↓</a>
LTPA-S38PUANPKA	Preliminary	938KB	2017/11/11	<a href="#">↓</a>
Ray File		Size	Last Updated	Download
LTPA-S38FUMWE Optical Source Model - ASAP (zip)		22.5MB	2017/12/20	<a href="#">↓</a>
LTPA-S38FUMWE Optical Source Model - LightTool (zip)		22.5MB	2017/12/20	<a href="#">↓</a>
LTPA-S38FUMWE Optical Source Model - LUCID (zip)		22.5MB	2017/12/20	<a href="#">↓</a>
LTPA-S38FUMWE Optical Source Model - Trace (zip)		22.5KB	2017/12/20	<a href="#">↓</a>
Design File		Size	Last Updated	Download
LTPA-S38 Series - 3D Model (zip)		325KB	2018/2/2	<a href="#">↓</a>

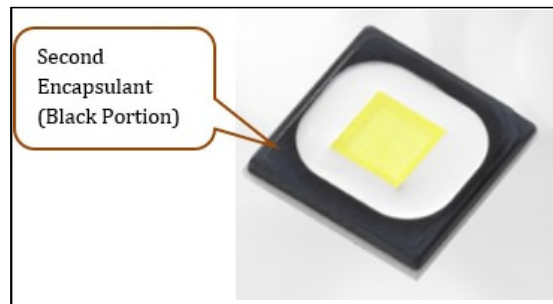
280. Defendants' LTPA-S38FUMWE comprises a first encapsulant consisting of an inner reflective surface, a bottom reflective portion and an outer reflective surface, and encapsulates the first portion of the leads in the bottom reflective portion.



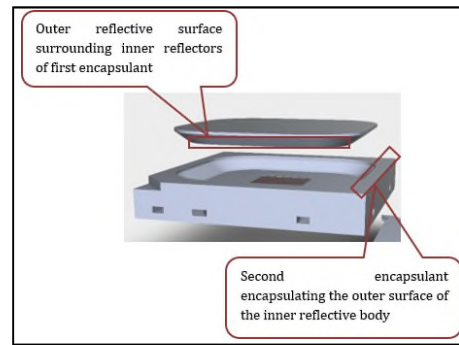
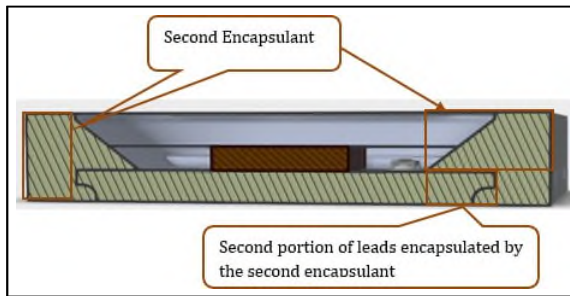
281. Defendants' LTPA-S38FUMWE comprises a reflector defined by at least the inner reflective surface.



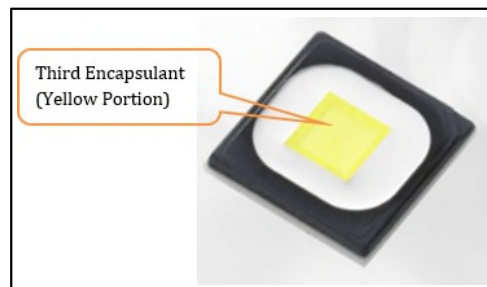
282. Defendants' LTPA-S38FUMWE comprises a second encapsulant encapsulating substantially a second portion of the leads and the outer reflective surface surrounding the reflector of the inner reflective body defining an outer non-reflective body.







283. Defendants' LTPA-S38FUMWE comprises a third encapsulant encapsulating the light source die and the inner reflective surface in a way that a top surface of the third encapsulant is below a top surface of the inner reflective body.



**Willful Infringement**

284. Defendants have had actual knowledge of their infringement of the '094 Patent at least as of receipt of Plaintiff's notice letter dated May 25, 2019.

285. Defendants have had actual knowledge of their infringement of the '094 Patent at least as of the service of Plaintiff's Original Complaint.

286. Defendants' risk of infringement of the patents-in-suit was either known or was so obvious that it should have been known to Defendants.

287. Notwithstanding this knowledge, Defendants have knowingly or with reckless disregard willfully infringed the '094 Patent. Defendants continue to infringe despite knowledge of Plaintiff's patent. Defendants have thus had actual notice of infringement of the '094 Patent and

acted despite an objectively high likelihood that their actions constituted infringement of Plaintiff's valid patent rights, either literally or equivalently.

288. This objective risk was either known or so obvious that it should have been known to Defendants. Accordingly, Plaintiff seeks enhanced damages and reimbursement of its reasonable attorney fees pursuant to 35 U.S.C. §§ 284 and 285.

### **Indirect Infringement**

289. Defendants are knowingly inducing their customers and/or end users to directly infringe the '094 Patent, with the specific intent to encourage such infringement, and knowing that the induced acts constitute patent infringement, either literally or equivalently.

290. Defendants have knowingly contributed to direct infringement by their customers by having imported, sold, and/or offered for sale, and knowingly importing, selling, and/or offering to sell within the United States the '094 Accused Products, which are not suitable for substantial non-infringing use and which are especially made or especially adapted for use by their customers in an infringement of the asserted patent.

291. Defendants' indirect infringement includes, for example, providing data sheets, technical guides, demonstrations, software and hardware specifications, installation guides, and other forms of support that induce their customers and/or end users to directly infringe the '094 Patent. Defendants' indirect infringement additionally includes marketing their products for import by their customers into the United States. The '094 Accused Products are designed in such a way that when they are used for their intended purpose, the user infringes the '094 Patent, either literally or equivalently. Defendants know and intend that customers who purchase the '094 Accused Products will use those products for their intended purpose. For example, Defendants' United States website instructs customers to use the '094 Accused Products in numerous infringing

applications.<sup>10</sup> As a non-limiting example, Defendants' customers such as manufacturers of automobiles, lighting, and consumer electronics incorporate the '094 Accused Products in automobiles, commercial and consumer lighting, or electronic devices using Defendants' provided data sheets and technical manuals. Defendants have knowledge that incorporation of the accused LEDs in automobiles, lighting, and electronic devices directly infringes. In addition, Defendants specifically intend that their customers, such as United States distributors, retailers, and consumer product companies, will import, use, and sell infringing products in the United States to serve and develop the United States market for Defendants' infringing products.

292. As a result of Defendants' infringement, Plaintiff has suffered monetary damages, and is entitled to an award of damages adequate to compensate it for such infringement which, by law, can be no less than a reasonable royalty, together with interest and costs as fixed by this Court under 35 U.S.C. § 284.

**COUNT ELEVEN**  
**INFRINGEMENT OF U.S. PATENT 6,325,524**

293. Plaintiff incorporates by reference the allegations in all preceding paragraphs as if fully set forth herein.

294. The '524 Patent, entitled "SOLID STATE BASED ILLUMINATION SOURCE FOR A PROJECTION DISPLAY," was filed on January 29, 1999 and issued on December 4, 2001.

295. Plaintiff is the assignee and owner of all rights, title, and interest to the '524 Patent, including the right to recover for past infringements, and has the legal right to enforce the patent,

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<sup>10</sup> Lite-On's website, <http://optoelectronics.liteon.com/en-global/led>, provides data sheets and product manuals that inform its customers of the specifications of the '936 Accused Products and encourage their customers to infringe. *See, e.g.*, [https://optoelectronics.liteon.com/en-global/Light/lighting\\_led/Content/758](https://optoelectronics.liteon.com/en-global/Light/lighting_led/Content/758). Each data sheet provides instructions that Lite-On knows to infringe the '936 Patent when performed.

sue for infringement, and seek equitable relief and damages.

**Technical Description**

296. The '524 Patent addresses technical problems such as limited lifetimes, poor output stability, and inclusion of spectral components that damage viewer eyes in the prior art projection systems based on incandescent or arc lamps (col. 1, ll. 10-18).

297. Additionally, the '524 Patent addresses technical problems including that:

Unfortunately, individual solid state light sources do not provide sufficient brightness for many projection display applications; hence, arrays of LEDs must be utilized to obtain sufficient output. A significant fraction of the light generated in an LED array is lost. Conventional LEDs emit light through the top, the bottom and the side facets. Most high power red, green and blue LEDs contain an optically transparent substrate. If the LEDs are placed on a planar heat sink, the substrate and top surface of the LED act as an optical waveguide, guiding the light between neighboring LEDs. This waveguide effect transports a significant fraction of the light emitted through the side facets of the LEDs to the outer edge of the array. The light is attenuated during this transportation process and emitted at a place where it is only partially captured by the collimating optics. (col. 1, ll. 30-45).

298. To address these prior art problems, the '524 Patent discloses a technical solution that overcomes the prior art issues by “utilizing a non-planar reflecting heat sink” (col. 2, ll. 43-63).

299. Specifically, the '524 Patent discloses the technical solution as mounting LEDs on a heat sink that includes a plurality of planar facets set at angles to the optical axis of the optical System that collimates the light from light source 20 (col. 2, ll. 45-63).

300. The '524 Patent further teaches the technical solution includes setting the angle of inclination such “that light leaving both the top Surface and Sides of the LED leaves at an angle within the acceptance cone of the optical system 29 that collimates the light.” *Id.*

301. Figures 2-4 of the '524 Patent are cross sections of various embodiments of the invention showing the improved heat sink (col. 2, ll. 43-col. 3, ll. 30).

302. The '524 Patent further teaches that an advantage of its technical solution is that “it more efficiently captures the light leaving the side facets of the LEDs than prior art light Sources.” (col. 1, ll. 45-50).

**Direct Infringement**

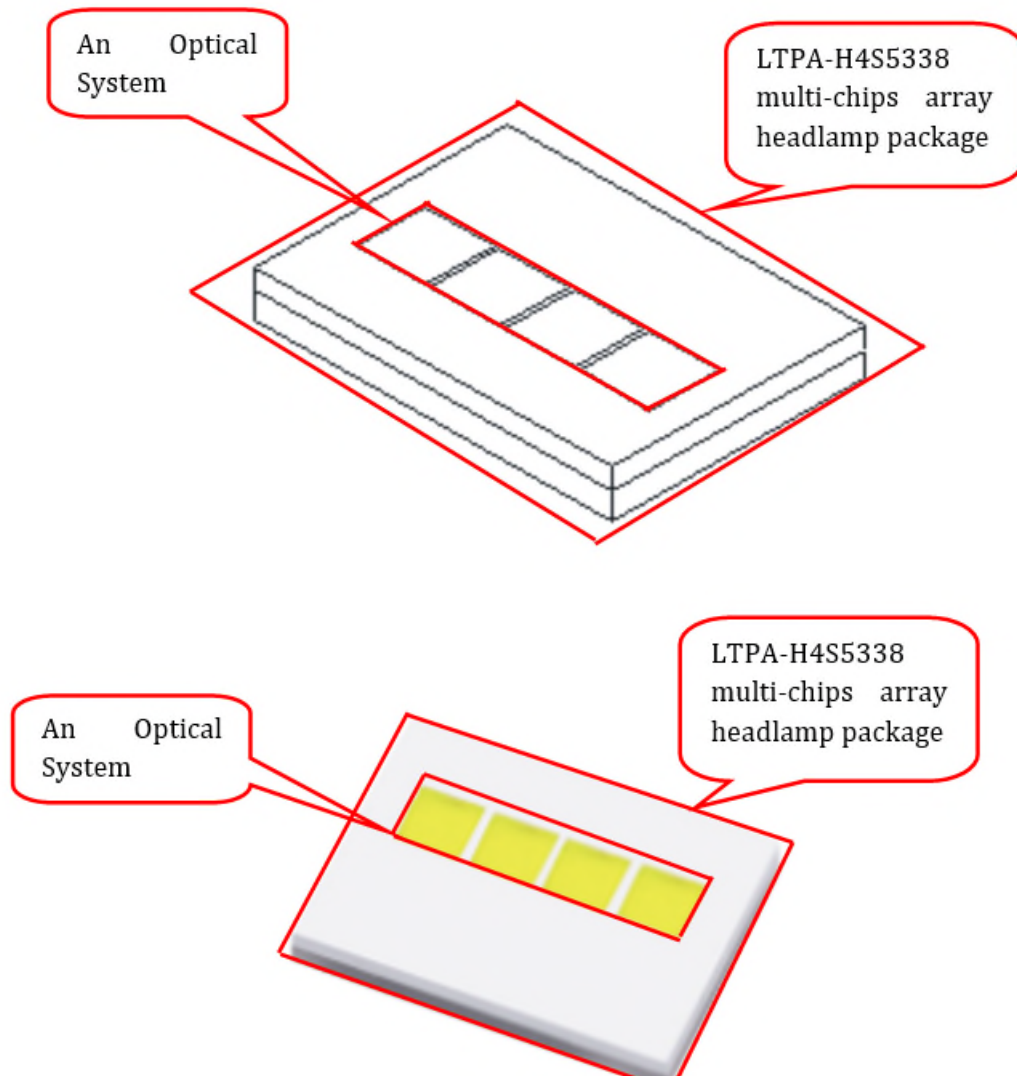
303. Defendants, without authorization or license from Plaintiff, have been and are directly infringing the '524 Patent, either literally or equivalently, as infringement is defined by 35 U.S.C. §§ 271, including through making, using (including for testing purposes), selling and offering for sale methods and articles infringing one or more claims of the '524 Patent. Defendants, individually and operating as part of a common business enterprise, develop, design, manufacture, and distribute LED products that infringe one or more claims of the '524 Patent. Defendants are thus liable for direct infringement pursuant to 35 U.S.C. § 271. Exemplary infringing instrumentalities include the LTPA-H4S5338 and all other substantially similar products (collectively the “'524 Accused Products”).

304. Plaintiff names this exemplary infringing instrumentality to serve as notice of Defendants' infringing acts, however Plaintiff reserves the right to include additional infringing products into the definition of '524 Accused Products that are either known to Plaintiff or revealed during discovery.

305. Defendants are liable for direct infringement pursuant to 35 U.S.C. § 271 for the development, design, manufacture, sale, or distribution of Defendants' LTPA-H4S5338.

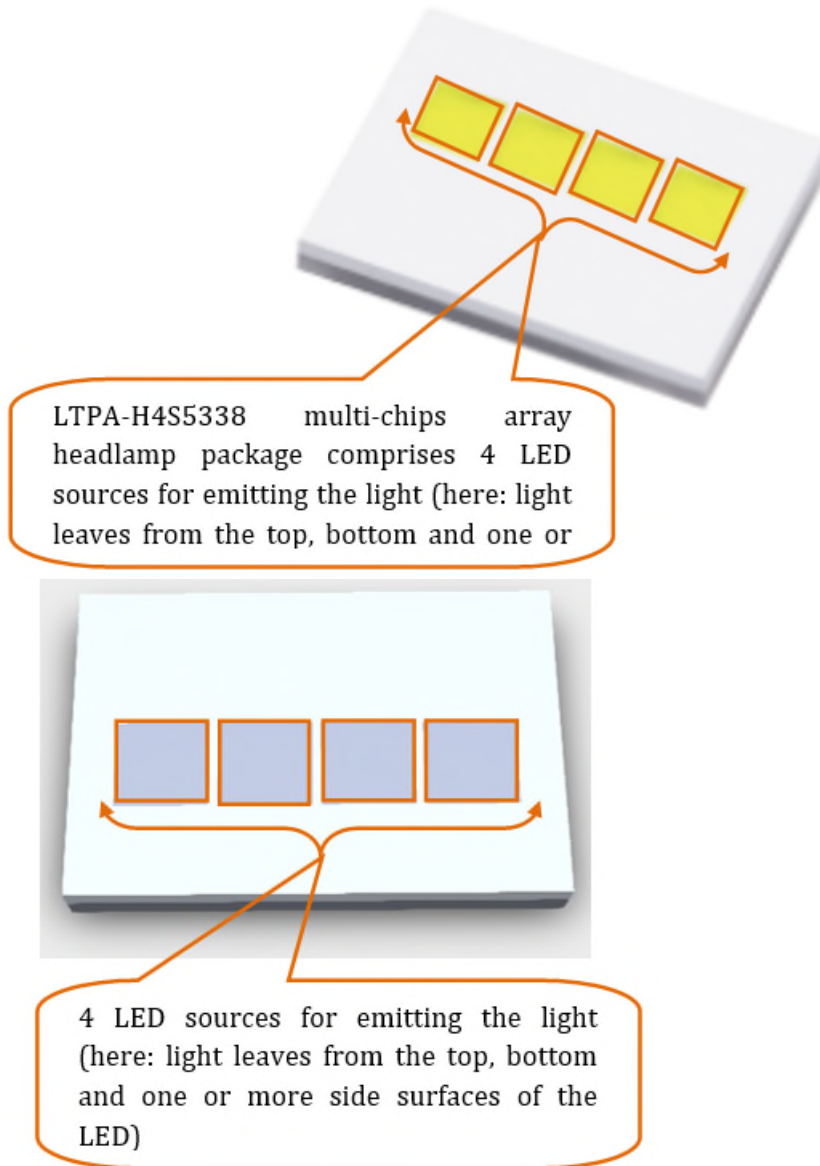
306. Defendants' LTPA-H4S5338 is a non-limiting example of a light source that meets all limitations of claim 1 of the '524 Patent, either literally or equivalently.

307. Defendants' LTPA-H4S5338 a light source for generating light that is collected by an optical system, said optical system accepting light leaving said light source within a predetermined acceptance angle relative to an axis defined in relation to said optical system.

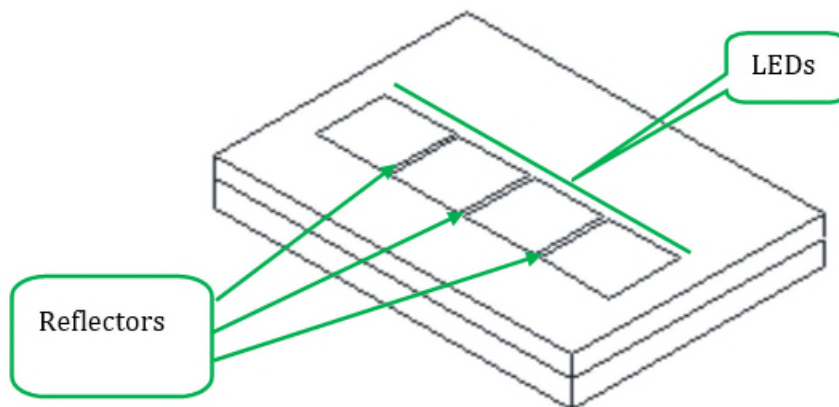


Defendants' LTPA-H4S5338 is a multi-chips array headlamp package series which emits light at a predetermined angle.

308. Defendants' LTPA-H4S5338 comprises a plurality of LEDs mounted on a reflective base, each of said LEDs generating light that leaves that LED via a top surface, a bottom surface, and one or more side surfaces of said LED, said reflective base having a reflective surface in contact with said bottom surface of each of said LEDs.



309. Defendants' LTPA-H4S5338 comprises a plurality of reflectors for reflecting light leaving said side surfaces of said LEDs into said acceptance angle of said optical system, at least one of said reflectors being located between two of said LEDs.



**Willful Infringement**

310. Defendants have had actual knowledge of their infringement of the '524 Patent at least as of receipt of Plaintiff's notice letter dated May 25, 2019.

311. Defendants have had actual knowledge of their infringement of the '524 Patent at least as of the service of Plaintiff's Original Complaint.

312. Defendants' risk of infringement of the patents-in-suit was either known or was so obvious that it should have been known to Defendants.

313. Notwithstanding this knowledge, Defendants have knowingly or with reckless disregard willfully infringed the '524 Patent. Defendants continue to infringe despite knowledge of Plaintiff's patent. Defendants have thus had actual notice of infringement of the '524 Patent and acted despite an objectively high likelihood that their actions constituted infringement of Plaintiff's valid patent rights, either literally or equivalently.

314. This objective risk was either known or so obvious that it should have been known to Defendants. Accordingly, Plaintiff seeks enhanced damages and reimbursement of its reasonable attorney fees pursuant to 35 U.S.C. §§ 284 and 285.

**Indirect Infringement**

315. Defendants are knowingly inducing their customers and/or end users to directly infringe the '524 Patent, with the specific intent to encourage such infringement, and knowing that the induced acts constitute patent infringement, either literally or equivalently.

316. Defendants have knowingly contributed to direct infringement by their customers by having imported, sold, and/or offered for sale, and knowingly importing, selling, and/or offering to sell within the United States the '524 Accused Products, which are not suitable for substantial non-infringing use and which are especially made or especially adapted for use by their customers in an infringement of the asserted patent.



317. Defendants' indirect infringement includes, for example, providing data sheets, technical guides, demonstrations, software and hardware specifications, installation guides, and other forms of support that induce their customers and/or end users to directly infringe the '524 Patent. Defendants' indirect infringement additionally includes marketing their products for import by their customers into the United States. The '524 Accused Products are designed in such a way that when they are used for their intended purpose, the user infringes the '524 Patent, either literally or equivalently. Defendants know and intend that customers who purchase the '524 Accused Products will use those products for their intended purpose. For example, Defendants' United States website instructs customers to use the '524 Accused Products in numerous infringing applications.<sup>11</sup> As a non-limiting example, Defendants' customers such as manufacturers of automobiles, lighting, and consumer electronics incorporate the '524 Accused Products in automobiles, commercial and consumer lighting, or electronic devices using Defendants' provided data sheets and technical manuals. Defendants have knowledge that incorporation of the accused LEDs in automobiles, lighting, and electronic devices directly infringes. In addition, Defendants specifically intend that their customers, such as United States distributors, retailers, and consumer product companies, will import, use, and sell infringing products in the United States to serve and develop the United States market for Defendants' infringing products.

318. As a result of Defendants' infringement, Plaintiff has suffered monetary damages, and is entitled to an award of damages adequate to compensate it for such infringement which, by law, can be no less than a reasonable royalty, together with interest and costs as fixed by this Court

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<sup>11</sup> Lite-On's website, <http://optoelectronics.liteon.com/en-global/led>, provides data sheets and product manuals that inform its customers of the specifications of the '524 Accused Products and encourage their customers to infringe. *See, e.g.*, [https://optoelectronics.liteon.com/en-global/Light/lighting\\_led/Content/2147](https://optoelectronics.liteon.com/en-global/Light/lighting_led/Content/2147). Each data sheet provides instructions that Lite-On knows to infringe the '524 Patent when performed.

under 35 U.S.C. § 284.

## **VI. NOTICE**

319. Plaintiff has complied with the notice requirement of 35 U.S.C. § 287 and does not distribute, sell, offer for sale, or make products embodying the Asserted Patents.

## **VII. JURY DEMAND**

320. Plaintiff demands a trial by jury of all matters to which it is entitled to trial by jury, pursuant to FED. R. CIV. P. 38.

## **VIII. PRAYER FOR RELIEF**

WHEREFORE, Plaintiff prays for judgment and seeks relief against Defendants as follows:

- A. A determination that one or more claims of the Asserted Patents is infringed by Defendants, both literally and under the doctrine of equivalents;
- B. A determination that one or more claims of the Asserted Patents is indirectly infringed by Defendants;
- C. An award of damages adequate to compensate Plaintiff for the patent infringement that has occurred, together with prejudgment and post-judgment interest and costs, and an ongoing royalty for continued infringement;
- D. For Defendants to be permanently enjoined pursuant to 35 U.S.C. § 283;
- E. A finding that this case is exceptional pursuant to 35 U.S.C. § 285;
- F. A determination that Defendants' infringements were willful;
- G. An award of enhanced damages against Defendants pursuant to 35 U.S.C. § 284;
- H. An award of reasonable attorneys' fees; and
- I. An award of any such other relief to Plaintiff as the Court deems just and

proper.

Dated: July 10, 2020

Respectfully Submitted,

*/s/ Kimberly A. Evans*

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