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Attorneys for Plaintiff
SEMILED INNOVATIONS LLC

IN THE UNITED STATES DISTRICT COURT
FOR THE CENTRAL DISTRICT OF CALIFORNIA

SEMILED INNOVATIONS LLC, Plaintiff, vs. TOPAZ LIGHTING CORP., Defendant	Case No.: _____ To be supplied by the Clerk of The United States District Court **COMPLAINT**

Plaintiff SemiLED Innovations LLC ("SemiLED" or "Plaintiff"), by and through the undersigned counsel, hereby asserts the following claims for patent infringement against Defendant Topaz Lighting Corp. ("Topaz" or "Defendant"), and alleges as follows:

SUMMARY

1. Plaintiff is the owner by assignment of all right, title, and interest in United States Patent Nos. 8,963,196; 9,530,942; 8,309,971 and 7,128,454 (collectively, the "Patents-in-Suit").

2. Defendant infringes the Patents-in-Suit at least by selling, without authorization, Plaintiff's proprietary technologies embodied in a number of its

commercial products including, *inter alia*, Topaz LED Outdoor Parking Lot/Area Light, Topaz 150W Area Light, Topaz 6'' LED Surface Mount Disk Light, Topaz LED Retrofit Module, Topaz Low Power Flood Light, Topaz LED A21 Lamp, Topaz LED Wallpack/Area Light Retrofit, and Topaz Round High Bay Light, among other substantially similar products (collectively, the "Accused Products"). These Accused Products are marketed, offered, and distributed throughout the United States, including in this District.

3. By this action, Plaintiff seeks to obtain compensation for the harm Plaintiff has suffered, and will continue to suffer, as a result of Defendant's infringement of the Patents-in-Suit.

NATURE OF THE ACTION

4. This is a civil action for patent infringement arising under the patent laws of the United States, 35 U.S.C. § 1 et seq.

5. Defendant has infringed, and continues to infringe, one or more claims of Plaintiff's Patents-in-Suit at least by making, using, selling, and/or offering to sell the Accused Products in the United States, including in this District, and/or by importing the Accused Products into the United States.

6. Plaintiff is the legal owner by assignment of the Patents-in-Suit, which were duly and legally issued by the United States Patent and Trademark Office ("USPTO"). Plaintiff seeks monetary damages for Defendant's infringement of the Patents-in-Suit.

THE PARTIES

7. Plaintiff SemiLED Innovations LLC is a Texas limited liability company with its principal place of business at 4760 Preston Rd, STE 244-242, Frisco, TX 75034. Plaintiff is the owner of the intellectual property rights at issue in this action.

8. Upon information and belief, Defendant Topaz Lighting Corp. is a

corporation organized and existing under the laws of New York, with a regular and established place of business at 12801 Busch Place, Santa Fe Springs, California 90670.

9. On information and belief, Defendant makes its products available for sale in California and in this judicial district through its authorized retailer program.

10. On information and belief, Defendant is a developer and manufacturer of decorative residential and commercial lighting products, ceiling fans, and LED lighting systems across both consumer and professional distribution channels. Its products can be purchased at independent lighting showrooms and electrical distributors throughout the United States, as well as select e-retailers as shown at https://www.topaz-usa.com.

JURISDICTION AND VENUE

11. As this is a civil action for patent infringement arising under the patent laws of the United States, 35 U.S.C. § 1 et seq., this Court has subject matter jurisdiction over the matters asserted herein under 28 U.S.C. §§ 1331 and 1338(a).

12. This Court has general and specific personal jurisdiction over Defendant because Defendant is physically located in this state and in this judicial district. Defendant further conducts substantial business in the forum, directly and/or through intermediaries, including: (i) as least a portion of the infringing activity 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 persons in this District, and (iii) having a regular and established place of business in this state and in this judicial district.

13. Venue is proper in this District under 28 U.S.C. §§ 1391(b) and (c) and 28 U.S.C. § 1400(b), as Defendant has committed substantial acts of infringement in this District and has a regular and established places of business

in this District.

PATENTS-IN-SUIT

U.S. Patent No. 8,963,196

14. U.S. Patent No. 8,963,196 (the "'196 Patent") is titled "Slim LED package" and was issued on Feb 24, 2015. A true and correct copy of the '196 Patent is attached as Exhibit A.

15. The '196 Patent was filed on Jan 22, 2014 as U.S. Patent Application No.14/161,377.

16. Plaintiff is the owner of all rights, title, and interest in and to the '196 Patent, with the full and exclusive right to bring suit to enforce the '196 Patent, including the right to recover for past infringement.

17. The '196 Patent is valid and enforceable under United States Patent Laws.

18. The '196 Patent recognized problems with existing light emitting diode (LED) packages at the time of the invention of the '196 Patent.

19. For instance, the inventors of the '196 Patent recognized that prior art light emitting diode packages had issues where the housing supporting the lead frame would have excessive thickness. The added thickness made it difficult to fabricate a thin lead frame type LED package. Additionally, "the encapsulation material of the LED package which covers the LED chip, undergoes a yellowing phenomenon by energy generated from the LED chip emitting light. Such a yellowing phenomenon is a main cause of decreased luminescence performance and lifetime of the LED package." '196 Patent at 1:53-57. Prior attempts to address these issues involved the use of a heat sink structure, such as a heat dissipation slug inserted into the housing, which complicated the manufacturing process. *See id.* at 1:58-64.

20. The inventors of the '196 Patent recognized that a "lead frame on

which the LED chip is mounted and the lead frame with which a bonding wire is connected have a significantly increased area exposed to the bottom, so that the LED package has greatly improved thermal dissipation efficiency." *See id*. at 3:1-5. Additionally, the inventors of the '196 Patent describe the following method to increase LED package slimness: "the LED package is configured to mount an LED chip on a chip mounting recess, which is formed on a predetermined region of a lead frame by reducing the thickness of the predetermined region, such that the thickness of the LED chip partially overlaps the thickness of the lead frame." *See id*. at 2:62-66.

21. In view of the foregoing, among other advantages over the prior art, the inventions claimed by the '196 Patent provide the benefits of "thermal dissipation efficiency" and a reduction of thickness over the prior art by way of the LED chip mounting recess and lead frame area. *See id*. at 2:61-68 and 3:1-5.

U.S. Patent No. 9,530,942

22. U.S. Patent No. 9,530,942 (the "'942 Patent") is titled "Slim LED Package" and was issued on December 27, 2016. A true and correct copy of the '942 Patent is attached as Exhibit B.

23. The '942 Patent was filed on August 3, 2015 as U.S. Patent Application No. 14/816,532.

24. Plaintiff is the owner of all rights, title, and interest in and to the '942 Patent, with the full and exclusive right to bring suit to enforce the '942 Patent, including the right to recover for past infringement.

25. The '942 Patent is valid and enforceable under United States Patent Laws.

26. The '942 Patent recognized problems with existing light emitting diode (LED) packages at the time of the invention of the '942 Patent.

27. For instance, the inventors of the '942 Patent recognized that prior

art light emitting diode packages had issues where the housing supporting the lead frame would have excessive thickness. The added thickness made it difficult to fabricate a thin lead frame type LED package. Additionally, "the encapsulation material of the LED package which covers the LED chip, undergoes a yellowing phenomenon by energy generated from the LED chip emitting light. Such a yellowing phenomenon is a main cause of decreased luminescence performance and lifetime of the LED package." '942 Patent at 1:57-62. Prior attempts to address these issues involved the use of a heat sink structure, such as a heat dissipation slug inserted into the housing, which complicated the manufacturing process. *See id.* at 1:64-67 and 2:1.

28. The inventors of the '942 Patent recognized that a "lead frame on which the LED chip is mounted and the lead frame with which a bonding wire is connected have a significantly increased area exposed to the bottom, so that the LED package has greatly improved thermal dissipation efficiency." See id. at 3:6-11. Additionally, the inventors of the '942 Patent describe the following method to increase LED package slimness, "the LED package is configured to mount an LED chip on a chip mounting recess, which is formed on a predetermined region of a lead frame by reducing the thickness of the predetermined region, such that the thickness of the LED chip partially overlaps the thickness of the lead frame." *See id*. at 2:67 and 3:1-4.

29. In view of the foregoing, among other advantages over the prior art, the inventions claimed by the '942 Patent provide the benefits of "thermal dissipation efficiency" and a reduction of thickness over the prior art by way of the LED chip mounting recess and lead frame area. *See id*. at 2:67, 3:1-4 and 3:6-11.

U.S. Patent No. 8,309,971

30. U.S. Patent No. 8,309,971 (the "'971 Patent") is titled "Light emitting

diode having electrode pads" and was issued on Nov 13, 2012. A true and correct copy of the '971 Patent is attached as Exhibit C.

31. The '971 Patent was filed on December 21, 2010 as U.S. Patent Application No. 12/974,917.

32. Plaintiff is the owner of all rights, title, and interest in and to the '971 Patent, with the full and exclusive right to bring suit to enforce the '971 Patent, including the right to recover for past infringement.

33. The '971 Patent is valid and enforceable under United States Patent Laws.

34. The inventors of the '971 Patent recognized problems with the distribution of current in the P-type semiconductor layer. According to the inventors of the '971 Patent, "To solve such problems, a transparent electrode layer having a low resistivity may be formed on the P-type semiconductor layer so as to enhance current spreading." See id. at 1:53-56. This solution increased the light emitting area of the LED.

35. One problem present in the prior art was that "since the transparent electrode layer tends to absorb light, the thickness of the transparent electrode layer may be limited, thereby providing limited current spreading. In particular, in a large LED having an area of about 1 mm^2 or more for high output, there may be a limit in achieving efficient current spreading through the transparent electrode layer." The '971 Patent at 1:61-67.

36. The inventions claimed by the '971 Patent addressed these limitations by, e.g., spacing an electrode apart from a semiconductor layer and providing LEDs with various structures of electrode pads and extensions capable of enhancing current spreading. *See id*. at 2:26-28 and 2:32-35. As a result, the '971 Patent offered advantages of, inter alia, enhancing current spreading, as well as increasing the luminous efficacy.

U.S. Patent No. 7,128,454

37. U.S. Patent No. 7,128,454 (the "'454 Patent") is titled "Light emitting diode module for automobile headlights and automobile headlight having the same" and was issued on October 31, 2006. A true and correct copy of the '454 Patent is attached as Exhibit D.

38. The '454 Patent was filed on August 25, 2004 as U.S. Patent Application No. 10/924,866.

39. Plaintiff is the owner of all rights, title, and interest in and to the '454 Patent, with the full and exclusive right to bring suit to enforce the '454 Patent, including the right to recover for past infringement.

40. The '454 Patent is valid and enforceable under United States Patent Laws.

41. The '454 Patent recognized problems with existing light emitting diode modules at the time of the invention of the '454 Patent.

42. For instance, the '454 Patent describes a light emitting module, absent in the prior art, which comprises a water proof structure together with a heat radiating structure. *See, e.g.*, '454 Patent at 1:59-61. The '454 Patent recognized that LED modules generate more heat than a halogen lamp and require protection from external moisture. *See id*. at 1:43-47. At the time of the '454 Patent, white LED lighting modules were a relatively recent innovation, with the majority of modules being halogen lamps, which had much different thermal and protective requirements. *Id*. at 1:27-47.

43. The inventors of the '454 Patent recognized a number of advantages of the claimed inventions over the prior art, including preventing the "permeation of external moisture while efficiently radiating heat to the outside." *See id.* at 1:55-57.

COUNT I: INFRINGEMENT OF U.S. PATENT NO. 8,963,196

44. Plaintiff incorporates by reference and re-alleges paragraphs 1-43 of the Complaint as if fully set forth herein.

45. Defendant has infringed and is infringing, either literally or under the doctrine of equivalents, the '196 Patent in violation of 35 U.S.C. § 271 et seq., directly and/or indirectly, by making, using, offering for sale, and/or selling in the United States, and/or importing into the United States without authority or license products, including but not limited to the Topaz LED Outdoor Parking Lot/Area Light, Topaz 150W Area Light, Topaz LED Retrofit Module, Topaz Low Power Flood Light, Topaz LED Wallpack/Area Light Retrofit, and Topaz Round High Bay Light among other substantially similar products (collectively, the "'196 Accused Products").

46. By way of non-limiting example(s), set forth below (with claim language in bold and italics) is exemplary evidence of infringement of claim 1 and claim 2 of the '196 Patent by the '196 Accused Products. This description is based on publicly available information. Plaintiff reserves the right to modify this description, including, for example, on the basis of information about the '196 Accused Products that it obtains during discovery.

47. 1(a): A light emitting diode (LED) package, comprising:—The Topaz Round High Bay Light, Topaz LED Retrofit Module, Topaz 150W Area Light, and Topaz Low Power Flood Light, as seen in Figure 1A - 1 to Figure 1A - 8, each comprise a "light emitting diode (LED) package," as recited in claim 1:

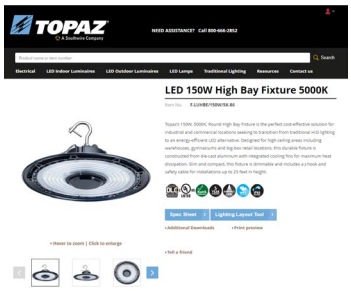

Figure 1A - 1 - LED Product - Topaz Round High Bay Light

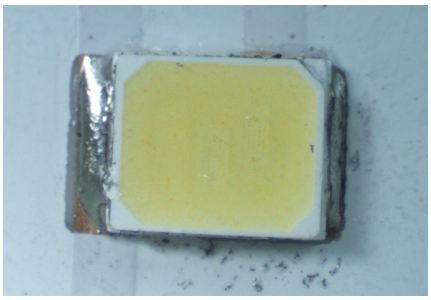

Figure 1A - 2 - LED Product - Topaz Round High Bay Light

Figure 1A - 3 - LED Product – Topaz LED Retrofit Module

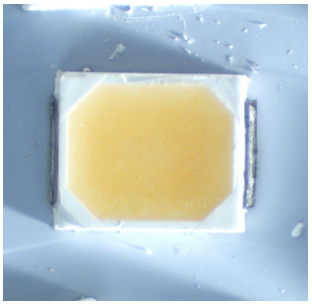

Figure 1A - 4 - LED Product – Topaz LED Retrofit Module

Figure 1A - 5 - LED Product – Topaz 150W Area Light

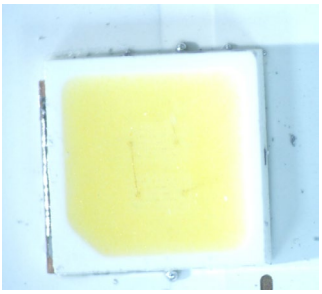

Figure 1A - 6 - LED Product – Topaz 150W Area Light

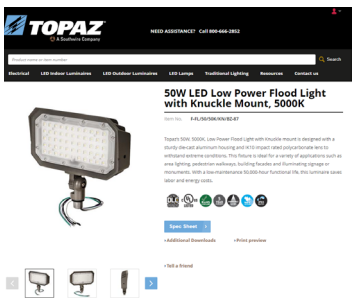

Figure 1A - 7 - LED Product – Topaz Low Power Flood Light

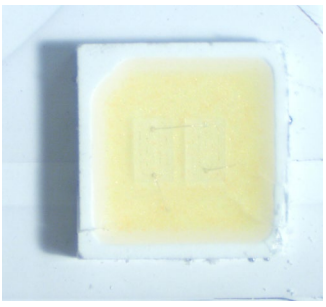

Figure 1A - 8 - LED Product – Topaz Low Power Flood Light

48. ***1(b): a first lead frame and a second lead frame separated from each other;***— The Topaz Round High Bay Light, Topaz LED Retrofit Module, Topaz 150W Area Light, and Topaz Low Power Flood Light each comprise a "first lead frame and second lead frame separated from each other," as seen in Figure 1B - 1 to Figure 1B - 4 where the first and second lead frames are annotated in yellow:

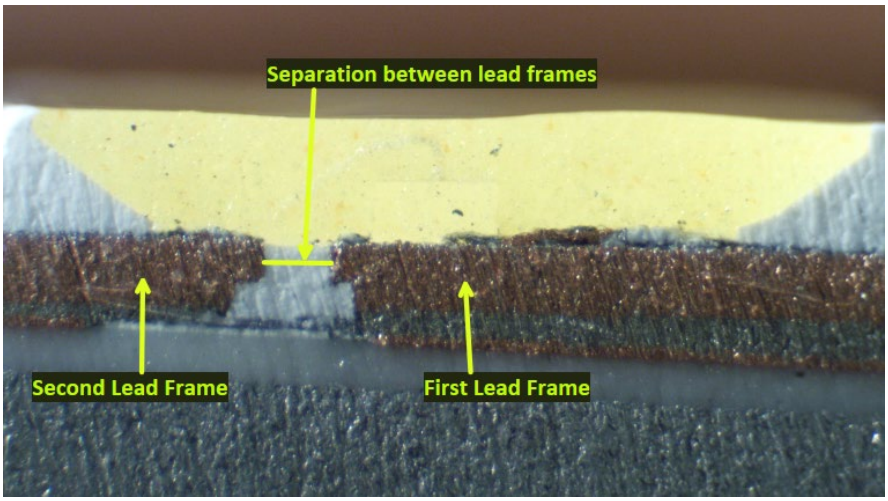

Figure 1B - 1 Topaz Round High Bay Light

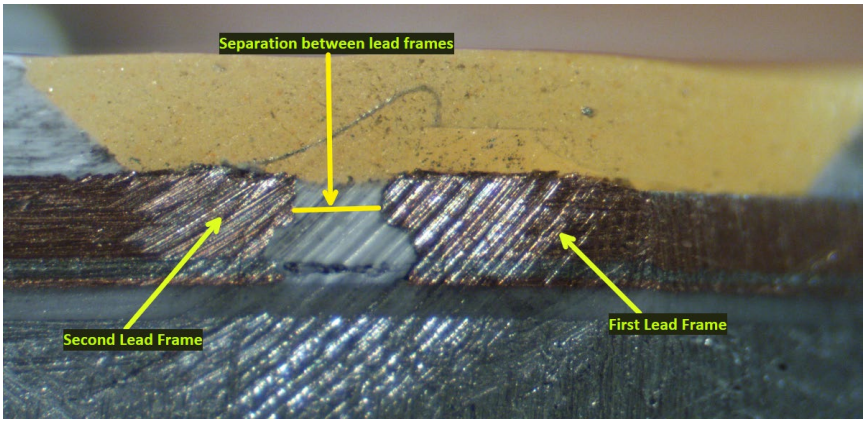

Figure 1B - 2 Topaz LED Retrofit Module

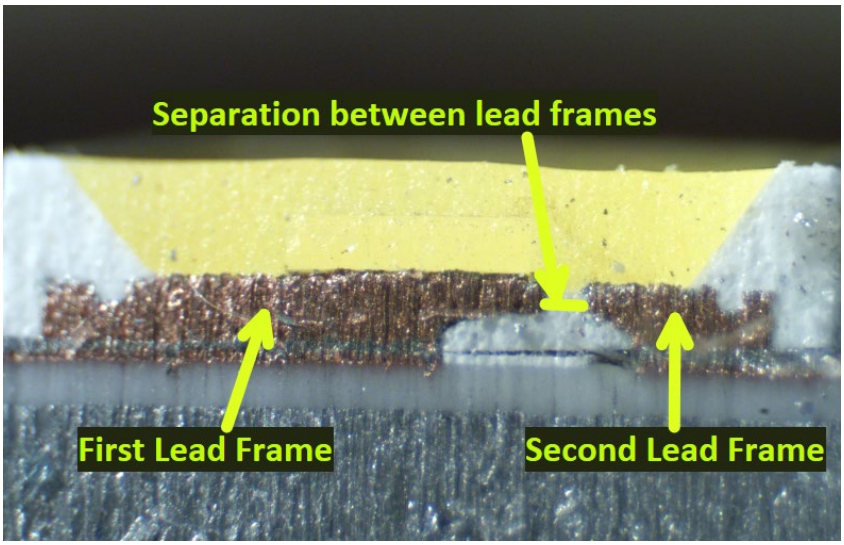

Figure 1B - 3 Topaz 150W Area Light

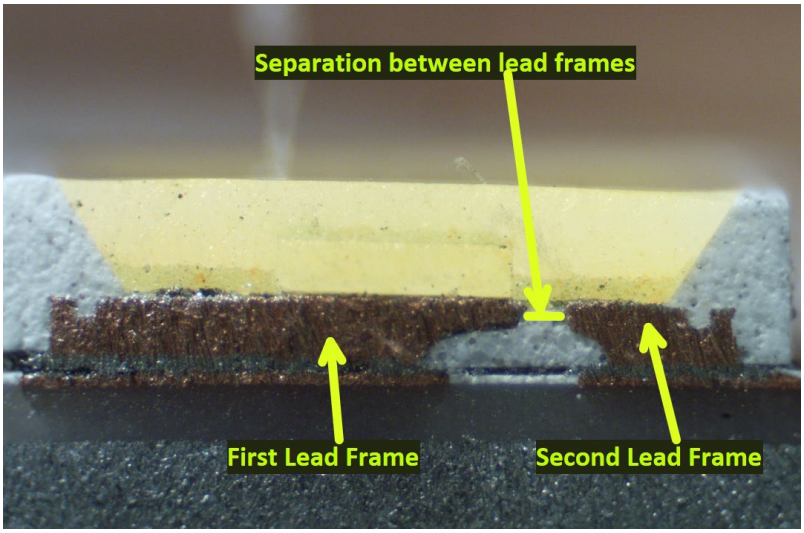

Figure 1B - 4 Topaz Low Power Flood Light

49. ***1(c): an LED Chip disposed on the first lead frame and electrically connected to the first lead frame and the second lead frame; and;—*** The Topaz Round High Bay Light, Topaz LED Retrofit Module, Topaz 150W Area Light, and Topaz Low Power Flood Light each comprise an "LED Chip disposed on the first lead frame and electrically connected to the first lead frame and the second lead

frame," as seen in Figure 1B - 5 to Figure 1B - 12:

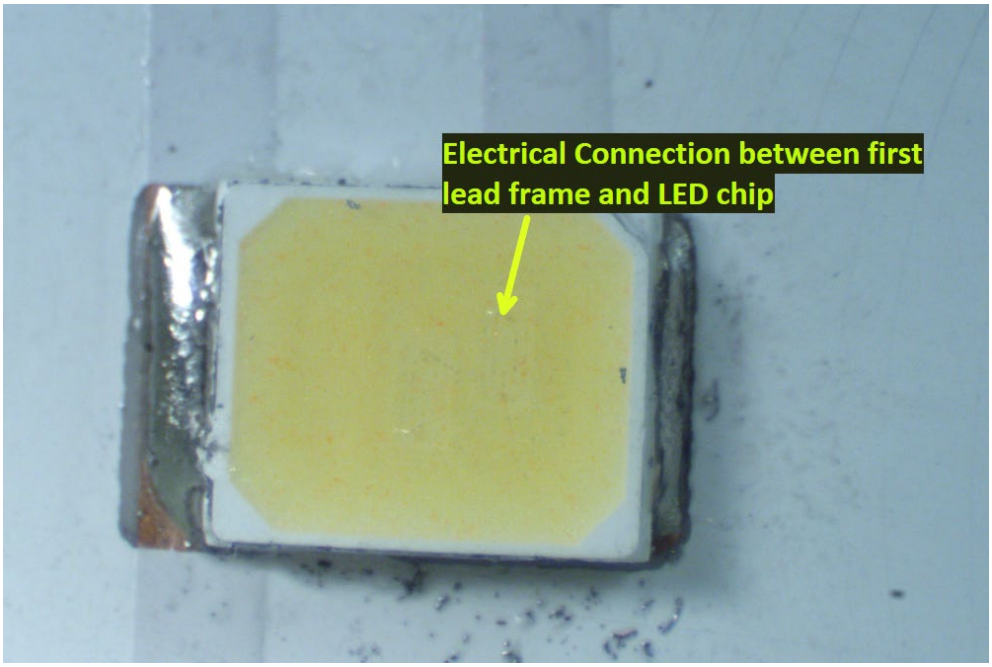

Figure 1B - 5 Topaz Round High Bay Light (1)

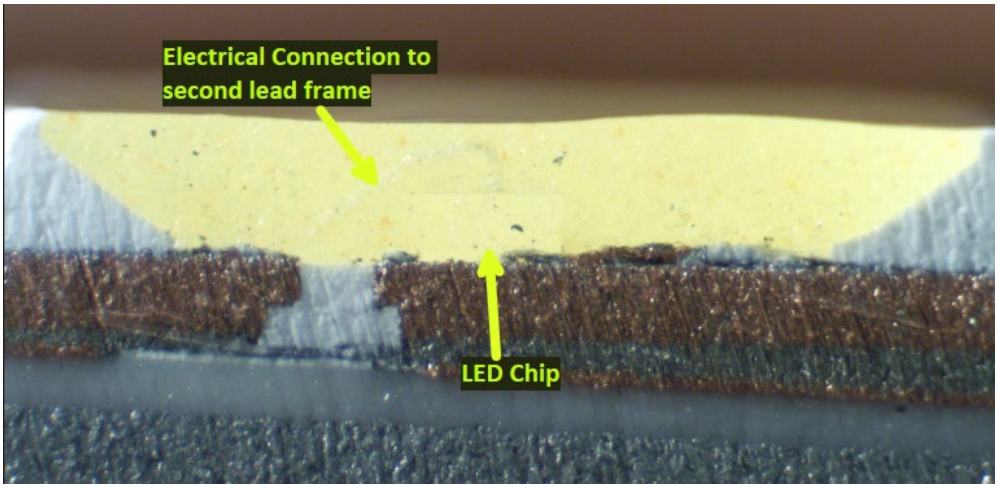

Figure 1B - 6 Topaz Round High Bay Light (2)

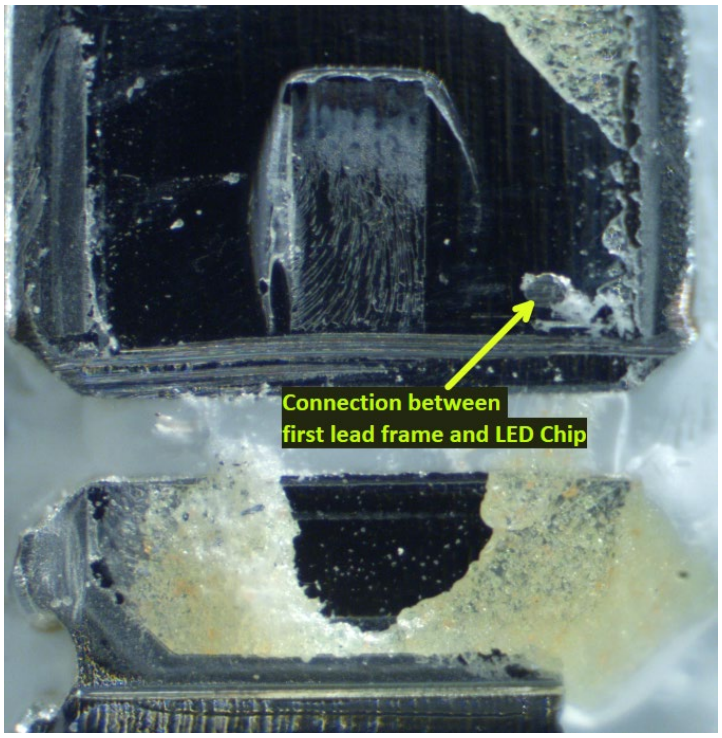

Figure 1B - 7 Topaz LED Retrofit Module (1)

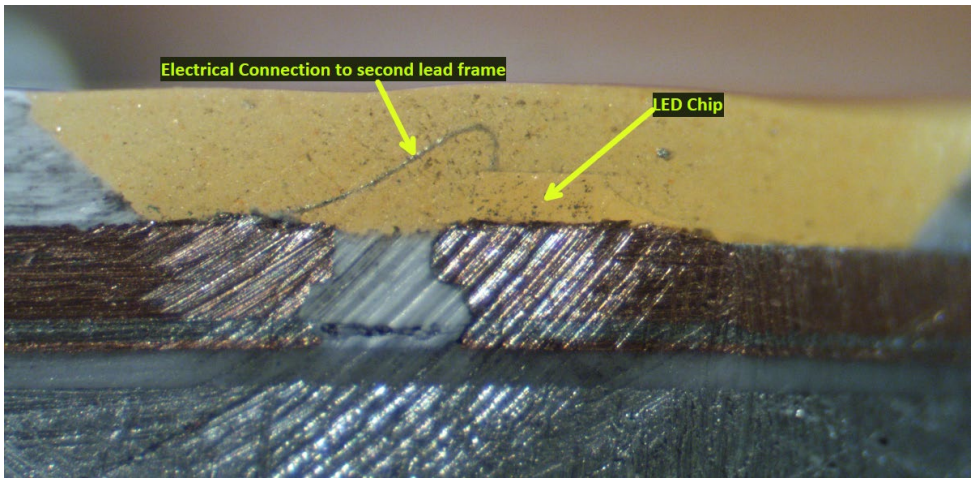

Figure 1B - 8 Topaz LED Retrofit Module (2)

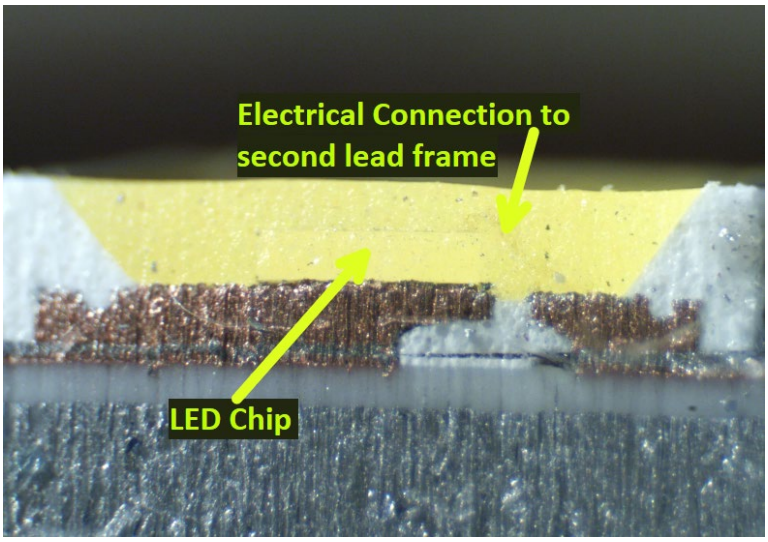

Figure 1B - 9 Topaz 150W Area Light (1)

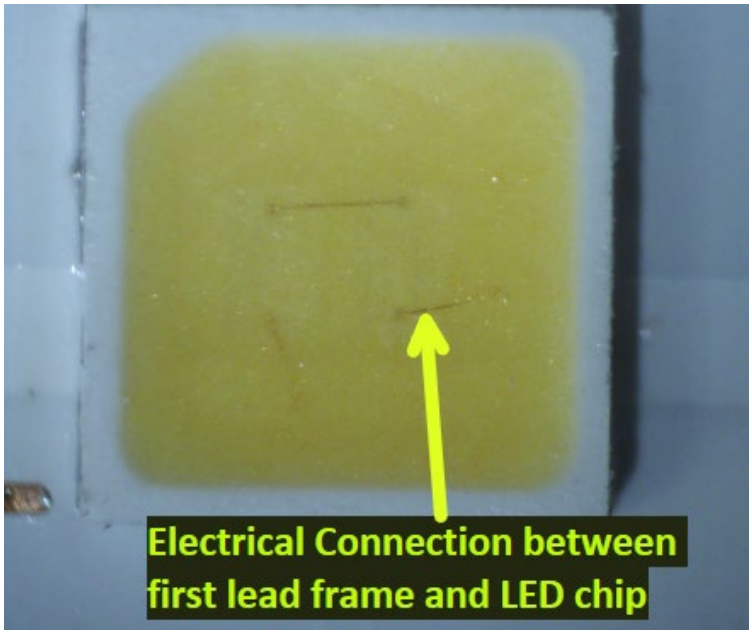

Figure 1B - 10 Topaz 150W Area Light (2)

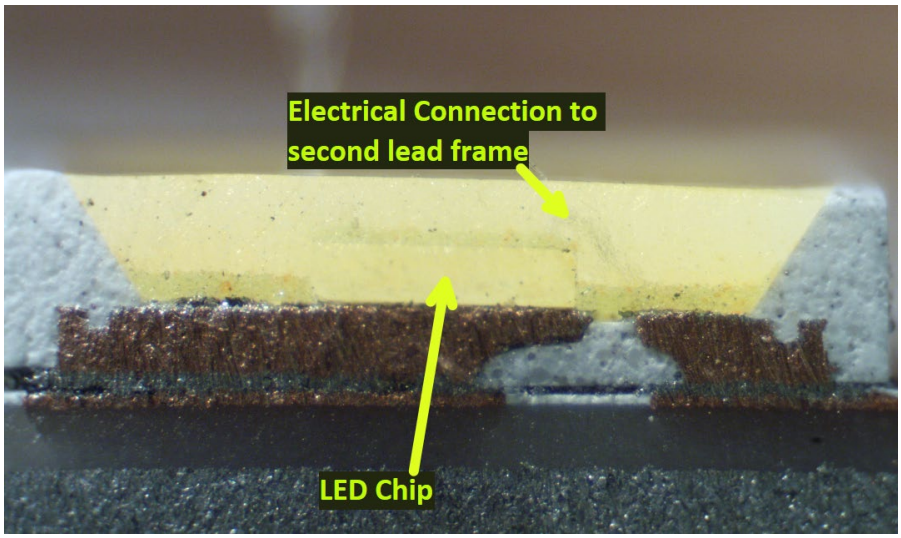

Figure 1B - 11 Topaz Low Power Flood Light (1)

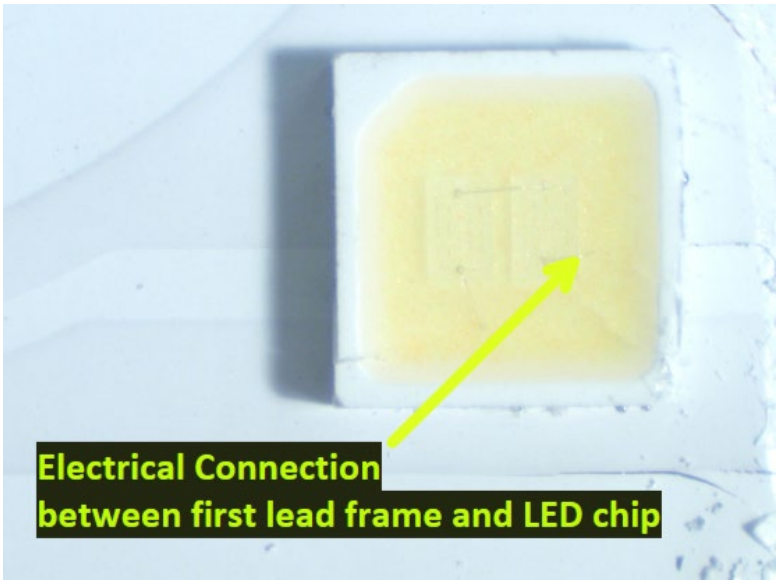

Figure 1B - 12 Topaz Low Power Flood Light (2)

50. ***1(d): a wire connecting the LED chip to the second lead frame;***— Topaz Round High Bay Light, Topaz LED Retrofit Module, Topaz 150W Area Light, and Topaz Low Power Flood Light each comprise an "a wire connection the LED chip to the second lead frame," as seen in Figure 1B - 13 to Figure 1B - 16 :

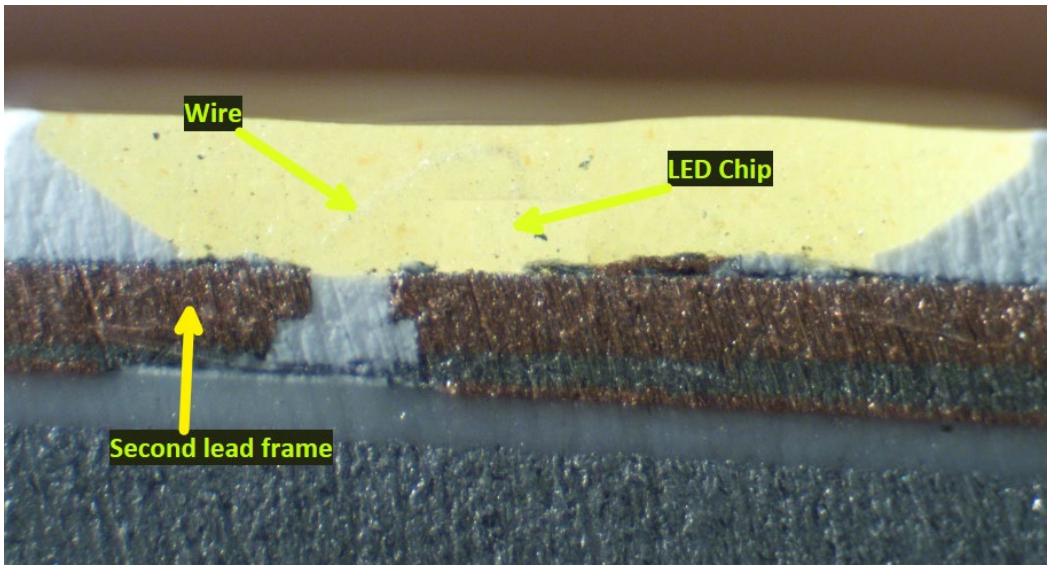

Figure 1B - 13 Topaz Round High Bay Light

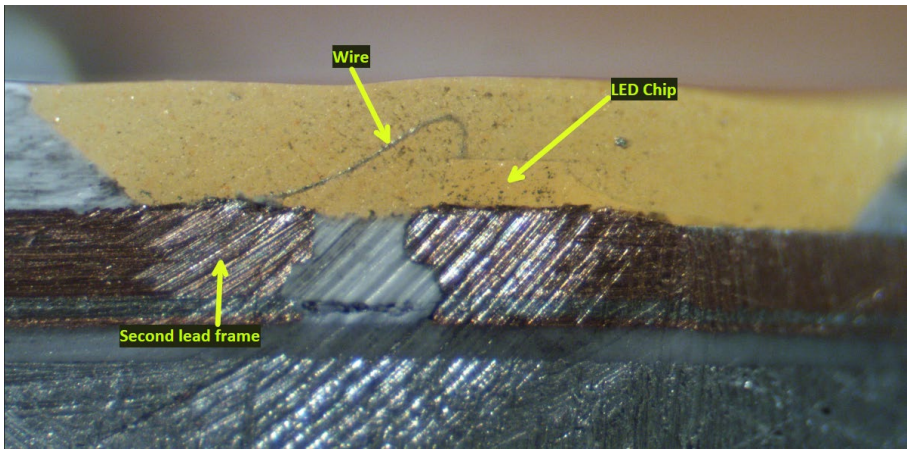

Figure 1B - 14 Topaz LED Retrofit Module

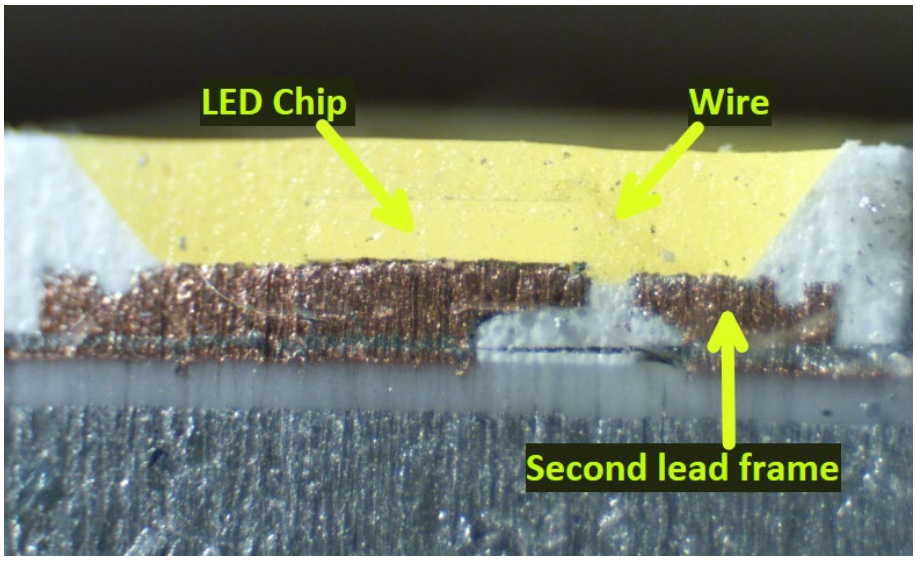

Figure 1B - 15 Topaz 150W Area Light

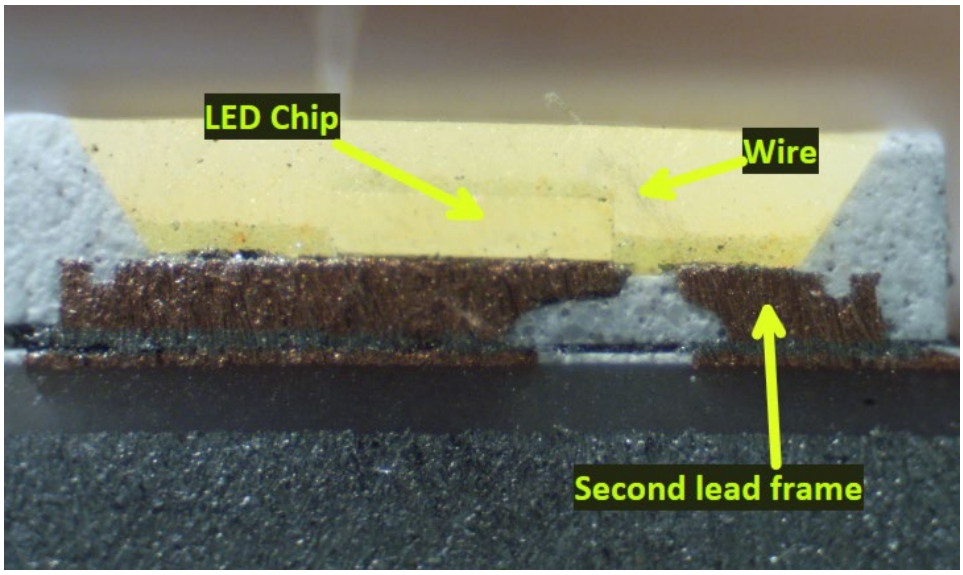

Figure 1B - 16 Topaz Low Power Flood Light

51. ***1(e): wherein opposing sides of the first lead frame and the second lead frame face each other in a slanted state to the other sides of the lead frame.***— The Topaz Round High Bay Light, Topaz LED Retrofit Module, Topaz 150W Area Light, and Topaz Low Power Flood Light each comprise opposing

sides of the first and second lead frames that "face each other in a slanted state to the other sides of the lead frame" as seen in Figure 1B - 17 to Figure 1B - 24:

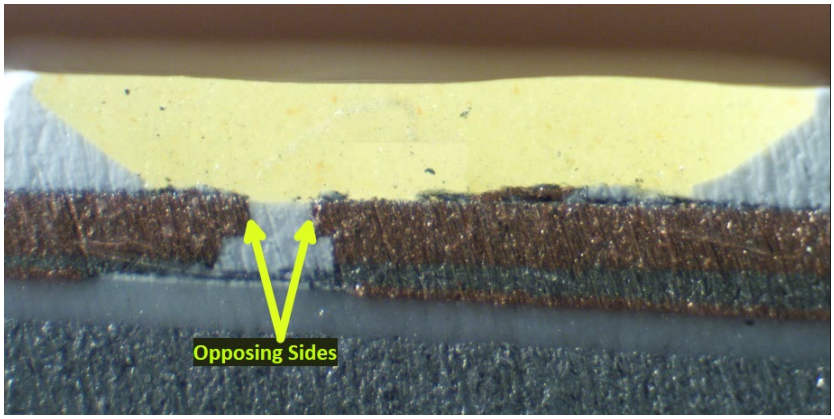

Figure 1B - 17 Topaz Round High Bay Light (1)

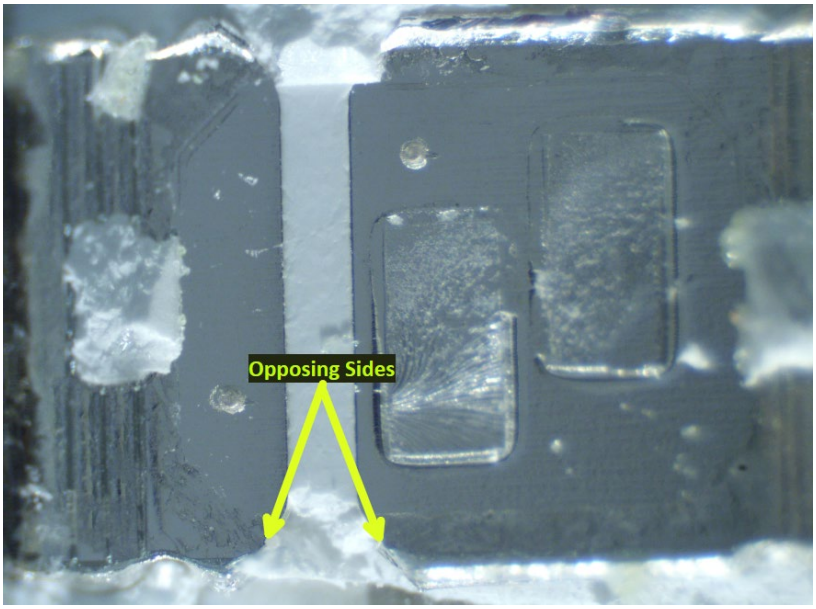

Figure 1B - 18 Topaz Round High Bay Light (2)

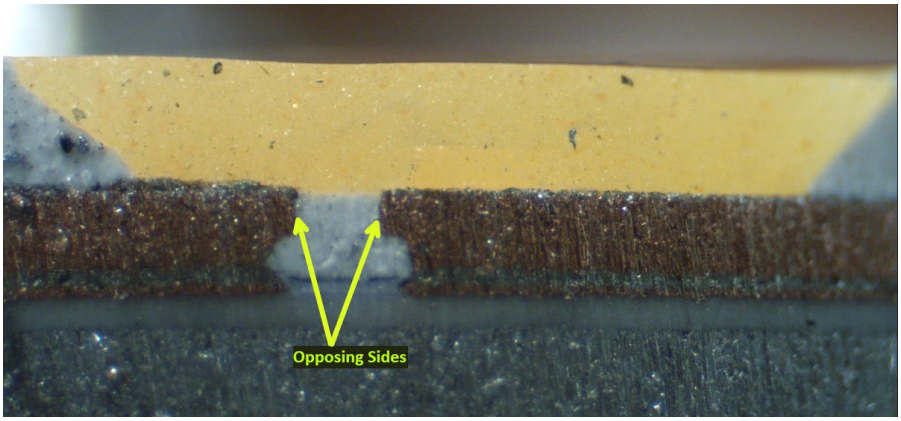

Figure 1B - 19 Topaz LED Retrofit Module (1)

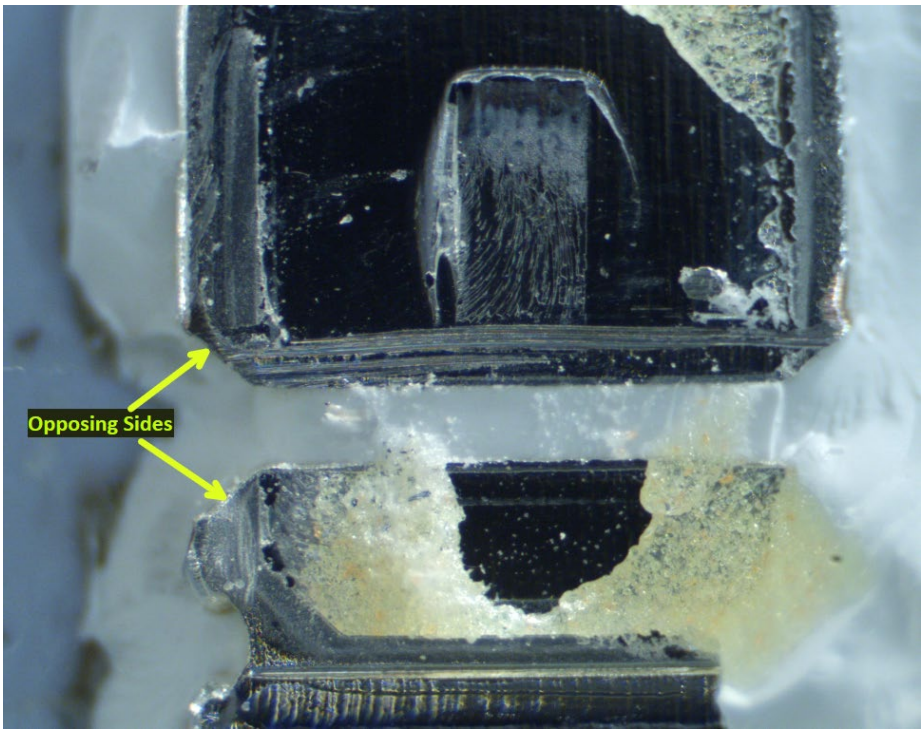

Figure 1B - 20 Topaz LED Retrofit Module (2)

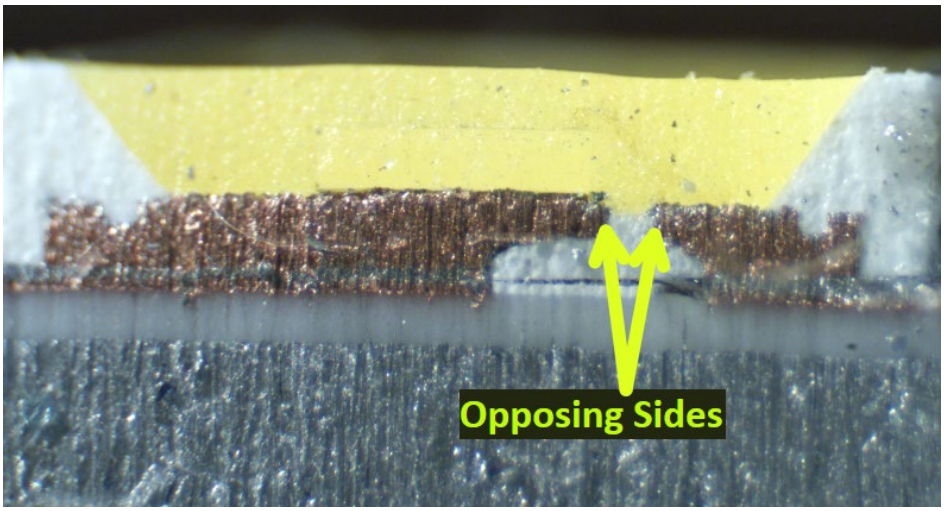

Figure 1B - 21 Topaz 150W Area Light (1)

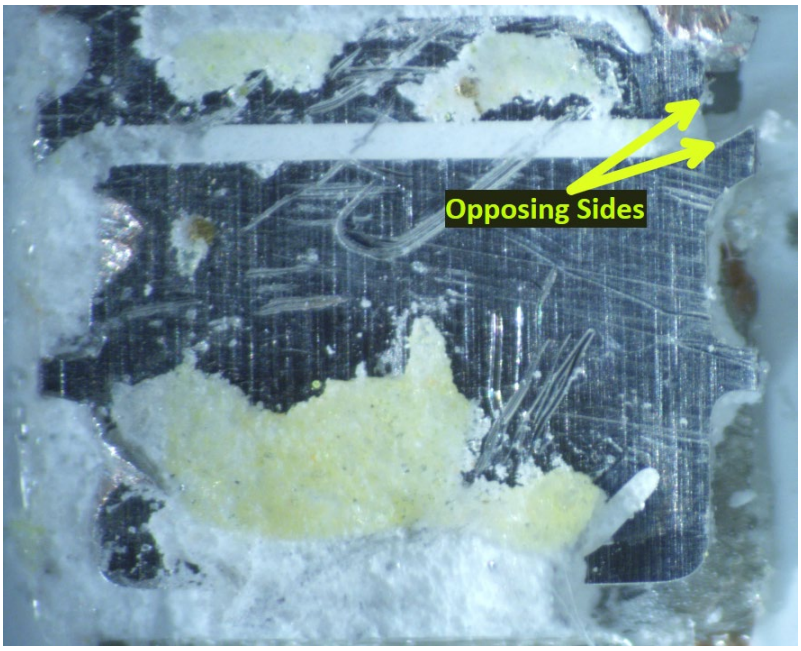

Figure 1B – 22 Topaz 150W Area Light (2)

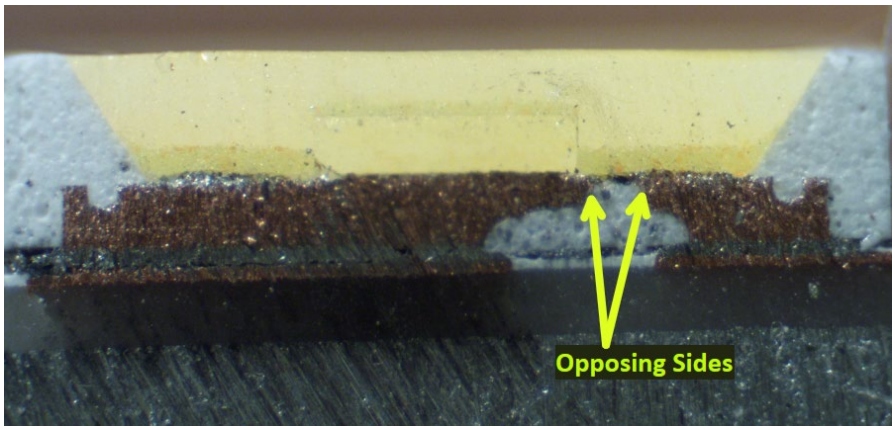

Figure 1B - 23 Topaz Low Power Flood Light (1)

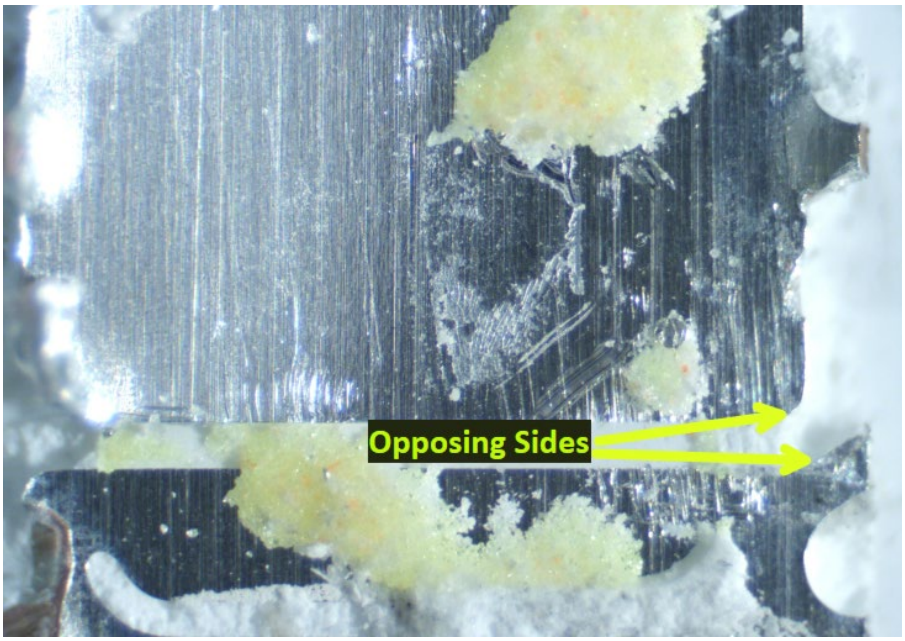

Figure 1B - 24 Topaz Low Power Flood Light (2)

52. Claim 2: **The LED package of claim 1, wherein both of the opposing sides have a linear or curved shape.** As one non-limiting example, as seen in Figure 1B - 25 and Figure 1B - 26, both the opposing sides in the Topaz 150W Area Light have a curved shape:

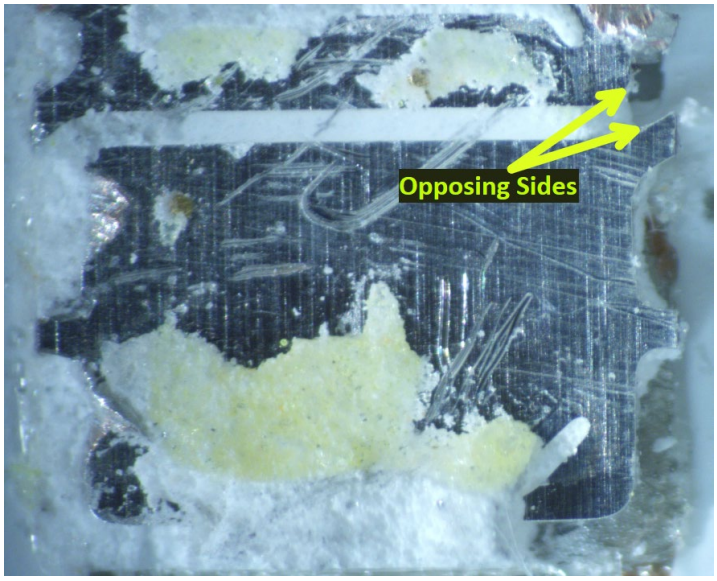

Figure 1B - 25 Topaz 150W Area Light (1)

Figure 1B - 26 Topaz 150W LED Area Light (2)

53. Claim 8: **The LED package of claim 1, further comprising a resin covering at least a portion of the surface of the first lead frame, the second lead**

frame, and the LED chip. As one non-limiting example, as seen in Figure 1B - 27, the LED package in the Topaz Low Power Flood Light comprises a resin covering a surface of the first lead frame, the second lead frame and the LED chip:

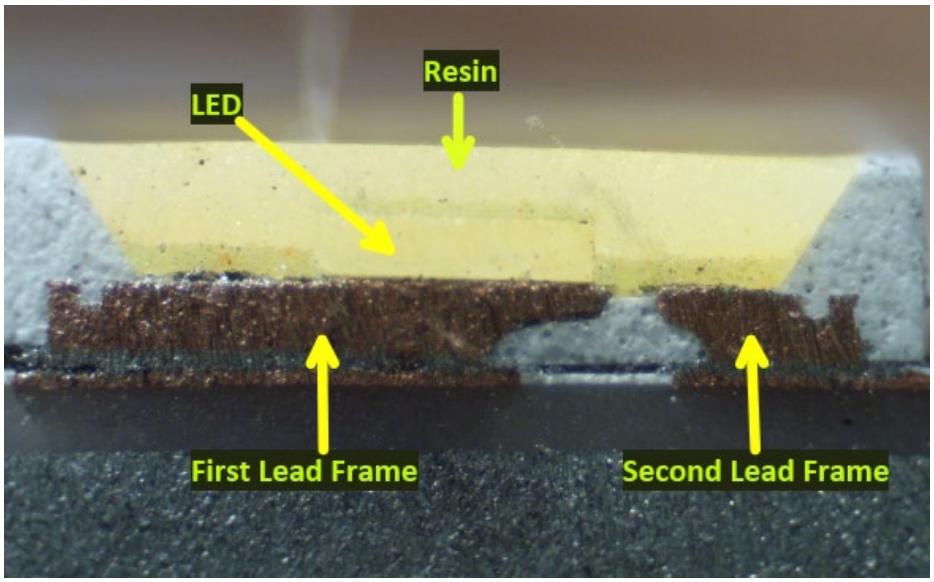

Figure 1B – 27 Topaz Low Power Flood Light

54. Defendant's infringement of the '196 Patent is exceptional and entitles Plaintiff to attorneys' fees and costs incurred in prosecuting this action under 35 U.S.C. § 285.

55. Plaintiff is in compliance with any applicable marking and/or notice provisions of 35 U.S.C. § 287 with respect to the '196 Patent.

56. Plaintiff is entitled to recover from Defendant all damages that Plaintiff has sustained as a result of Defendant's infringement of the '196 Patent, including, without limitation, a reasonable royalty.

COUNT II: INFRINGEMENT OF U.S. PATENT NO. 9,530,942

57. Plaintiff incorporates by reference and re-alleges paragraphs 1-56 of the Complaint as if fully set forth herein.

58. Defendant has infringed and is infringing, either literally or under the doctrine of equivalents, the '942 Patent in violation of 35 U.S.C. § 271 et seq., directly and/or indirectly, by making, using, offering for sale, and/or selling in the United States, and/or importing into the United States without authority or license products, including but not limited to the Topaz LED Outdoor Parking Lot/Area Light, Topaz 150W Area Light, Topaz LED Retrofit Module, Topaz Low Power Flood Light, Topaz LED Wallpack/Area Light Retrofit, and Topaz Round High Bay Light among other substantially similar products (collectively, the "'942 Accused Products").

59. By way of non-limiting example(s), set forth below (with claim language in bold and italics) is exemplary evidence of infringement of claim 1 and claim 3 of the '942 Patent. This description is based on publicly available information. Plaintiff reserves the right to modify this description, including, for example, on the basis of information about the '942 Accused Products that it obtains during discovery.

60. 1(a): A light emitting ***diode (LED) package, comprising;***— The Topaz Round High Bay Light, Topaz LED Retrofit Module, Topaz 150W Area Light, and Topaz Low Power Flood Light, as seen in Figure 2A - 1 to Figure 2A - 8, each comprise a "light emitting diode (LED) package," as recited in claim 1:

Figure 1A - 1 - LED Product - Topaz Round High Bay Light

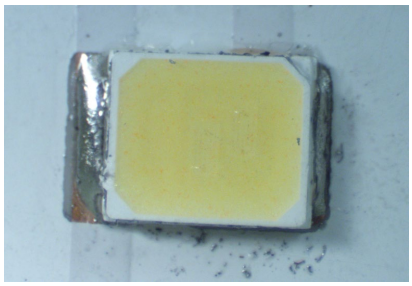

Figure 1A - 2 - LED Product - Topaz Round High Bay Light

Figure 1A - 3 - LED Product – Topaz LED Retrofit Module

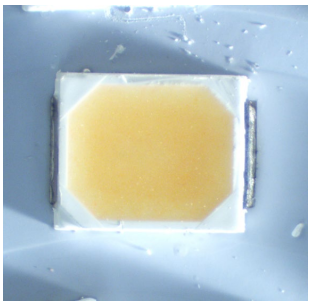

Figure 1A - 4 - LED Product – Topaz LED Retrofit Module

Figure 1A - 5 - LED Product – Topaz 150W Area Light

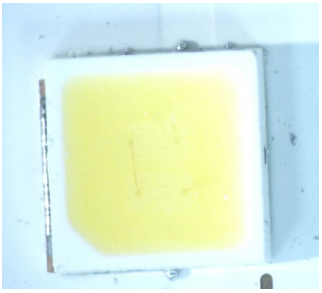

Figure 1A - 6 - LED Product – Topaz 150W Area Light

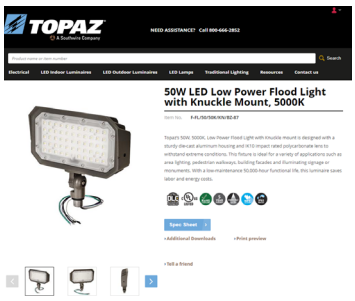

Figure 1A - 7 - LED Product – Topaz Low Power Flood Light

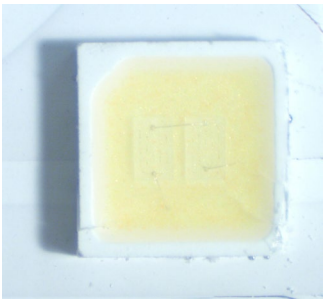

Figure 1A - 8 - LED Product – Topaz Low Power Flood Light

61. ***1(b): a first lead frame and a second lead frame separated from each other;***— The Topaz Round High Bay Light, Topaz LED Retrofit Module, Topaz 150W Area Light, and Topaz Low Power Flood Light each comprise a "first lead frame and second lead frame separated from each other," as seen in Figure 2B - 1 to Figure 2B - 4, where the first and second lead frames are annotated in yellow:

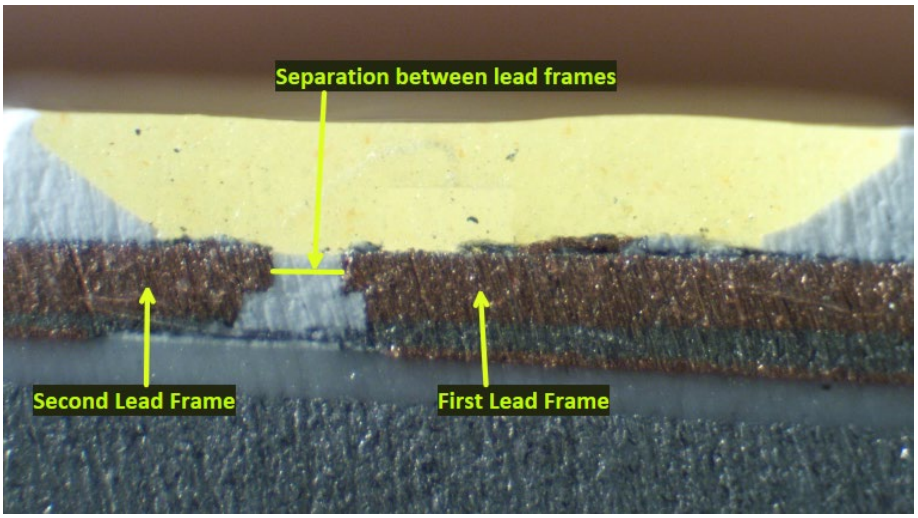

Figure 2B - 1 Topaz Round High Bay Light

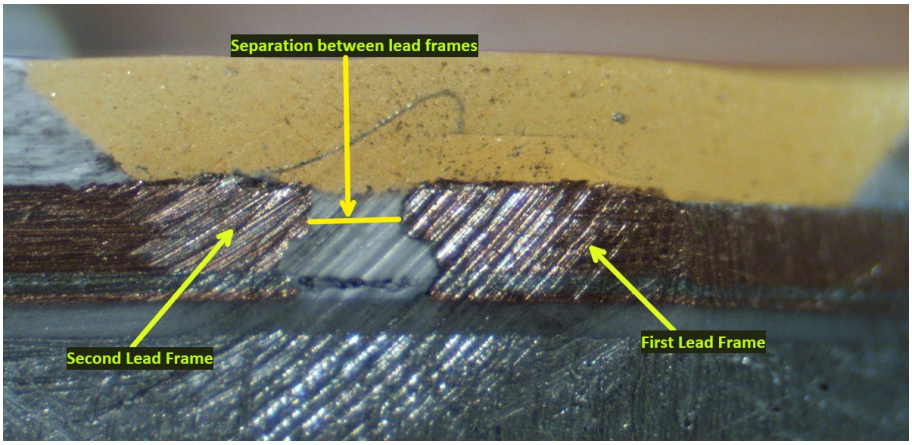

Figure 2B - 2 Topaz LED Retrofit Module

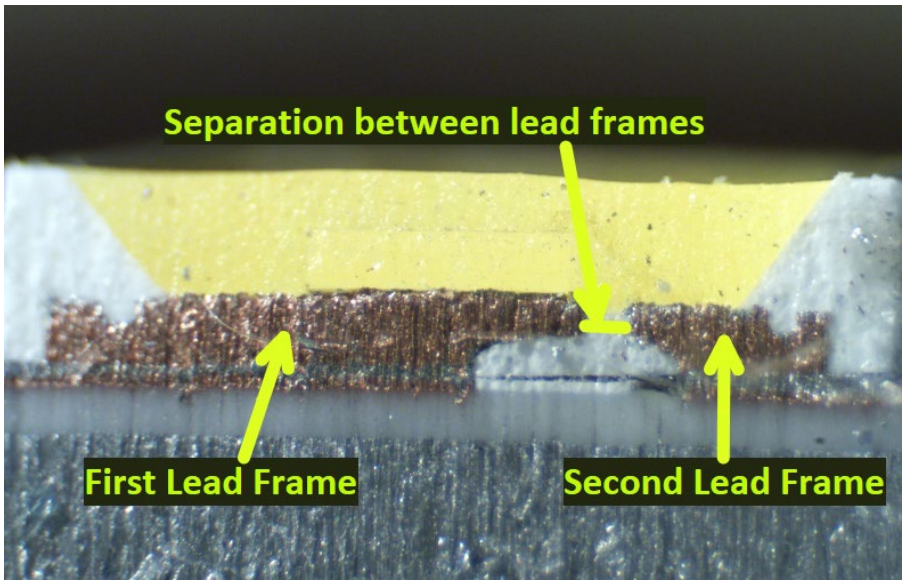

Figure 2B - 3 Topaz 150W Area Light

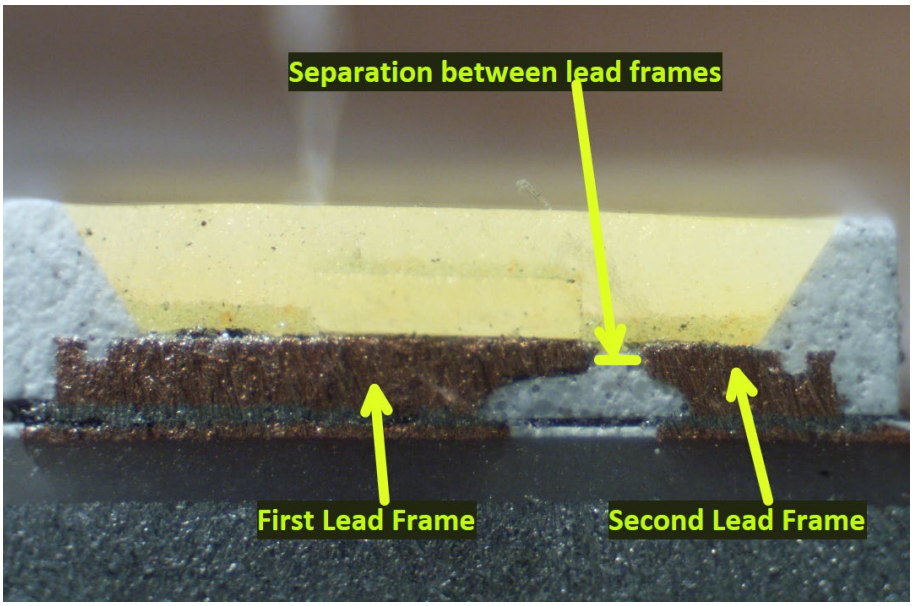

Figure 2B - 4 Topaz Low Power Flood Light

62. ***1(c): an LED Chip disposed on the first lead frame and electrically connected with the second lead frame; and;***— The Topaz Round High Bay Light, Topaz LED Retrofit Module, Topaz 150W Area Light, and Topaz Low Power

Flood Light each comprise an "LED Chip disposed on the first lead frame and electrically connected with the second lead frame," as seen in Figure 2B - 5 to Figure 2B - 8:

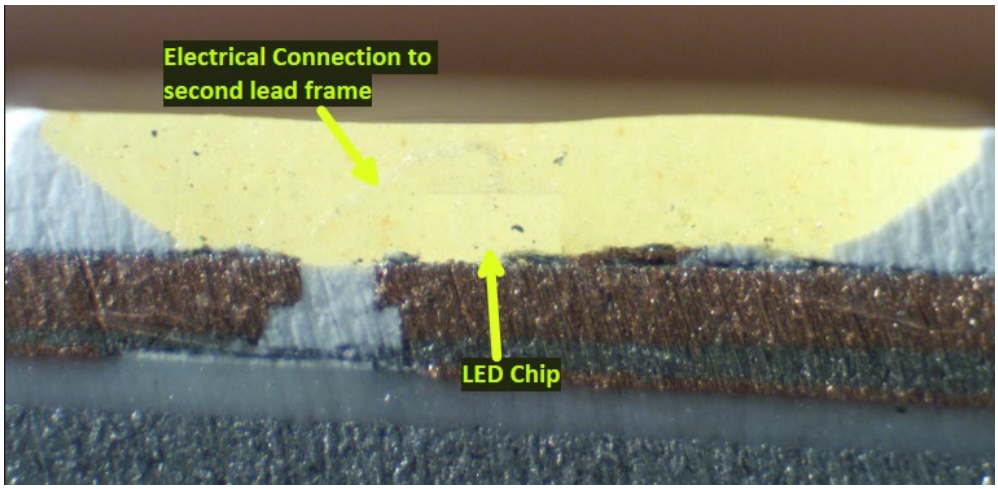

Figure 2B - 5 Topaz Round High Bay Light

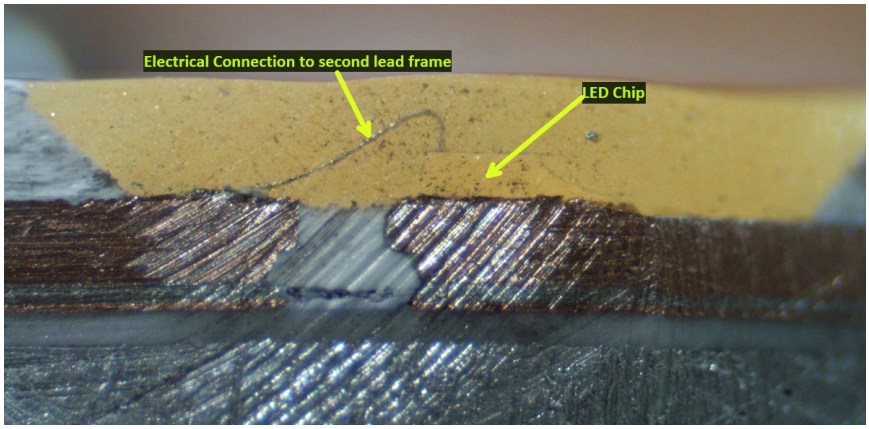

Figure 2B - 6 Topaz LED Retrofit Module

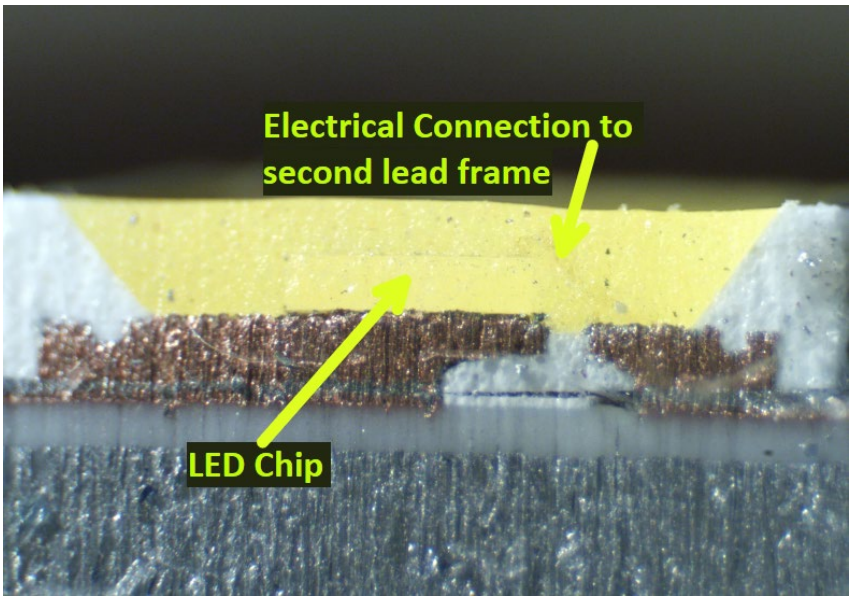

Figure 2B - 7 Topaz 150W Area Light

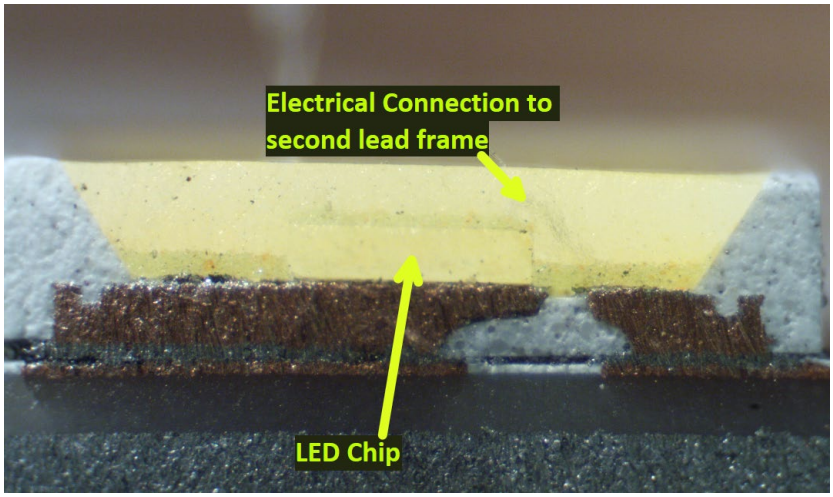

Figure 2B - 8 Topaz Low Power Flood Light

63. ***1(d): a resin covering at least portions of surfaces of the first and second lead frames, wherein;—*** The Topaz Round High Bay Light, Topaz LED Retrofit Module, Topaz 150W Area Light, and Topaz Low Power Flood Light each comprise an "a resin covering at least portions of surfaces of the first and second lead frames," as seen in Figure 2B - 9 to Figure 2B - 12:

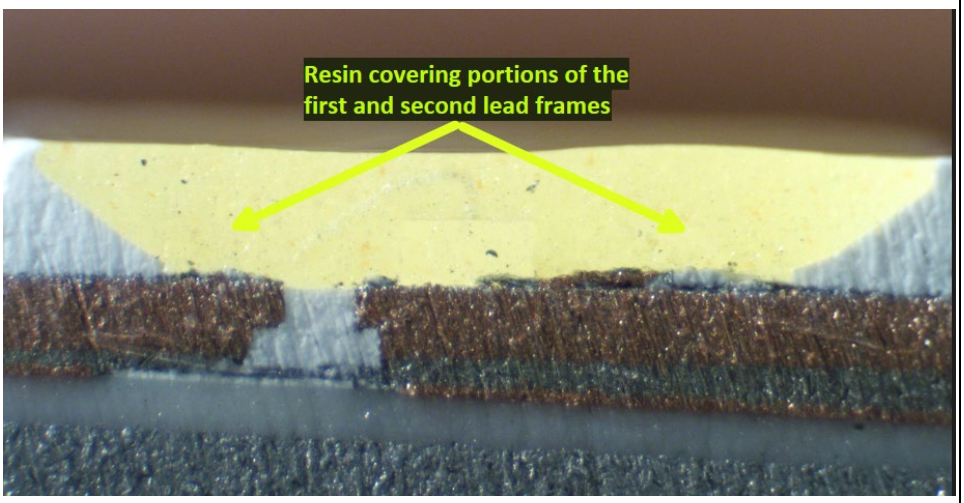

Figure 2B - 9 Topaz Round High Bay Light

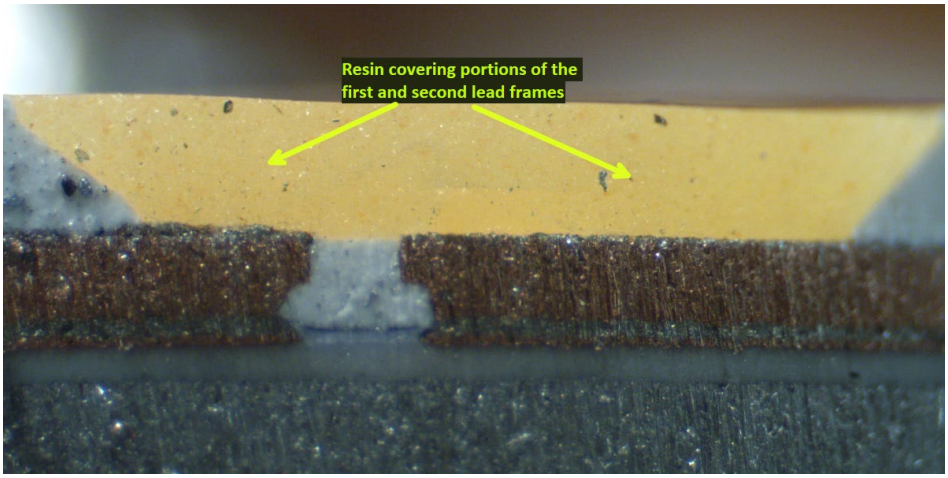

Figure 2B - 10 Topaz LED Retrofit Module

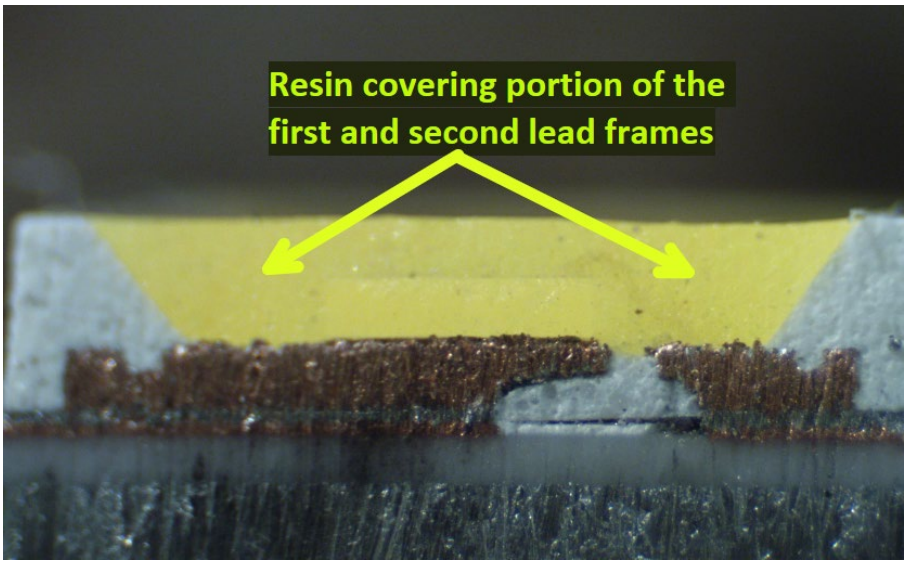

Figure 2B - 11 Topaz 150W Area Light

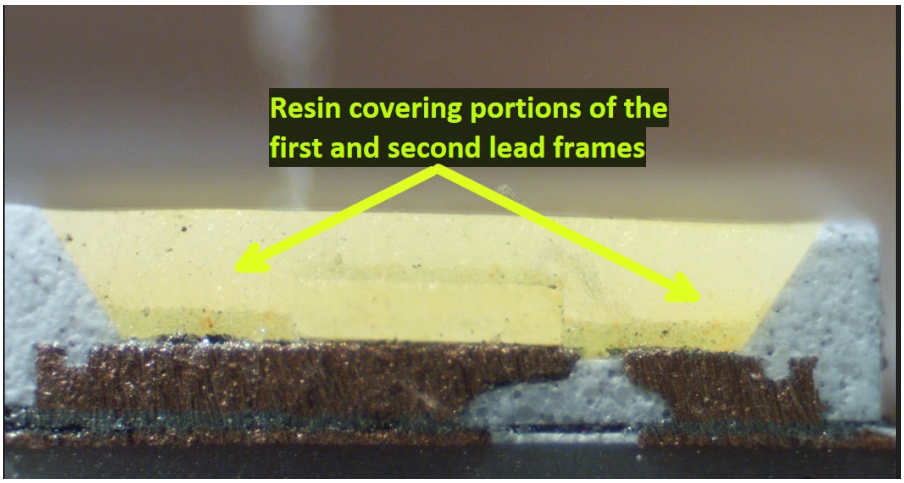

Figure 2B - 12 Topaz Low Power Flood Light

64. ***1(e): at least one of the*** first ***and second lead frames comprises a first edge facing the other lead frame and a second side opposite the first side;—*** At least one of the first and second lead frames in the Topaz Round High Bay Light, Topaz LED Retrofit Module, Topaz 150W Area Light, and Topaz Low Power

Flood Light comprise "a first edge facing the other lead frame and second side opposite the first side" as seen in Figure 2B - 13 to Figure 2B - 20:

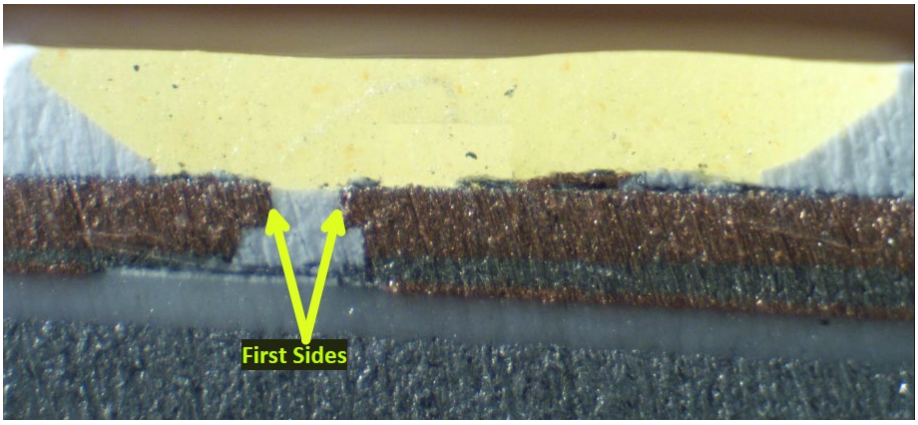

Figure 2B - 13 Topaz Round High Bay Light (1)

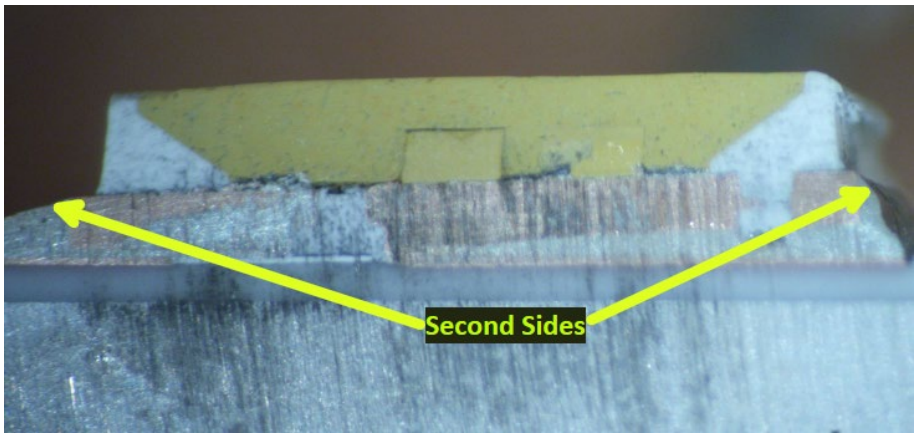

Figure 2B - 14 Topaz Round High Bay Light (2)

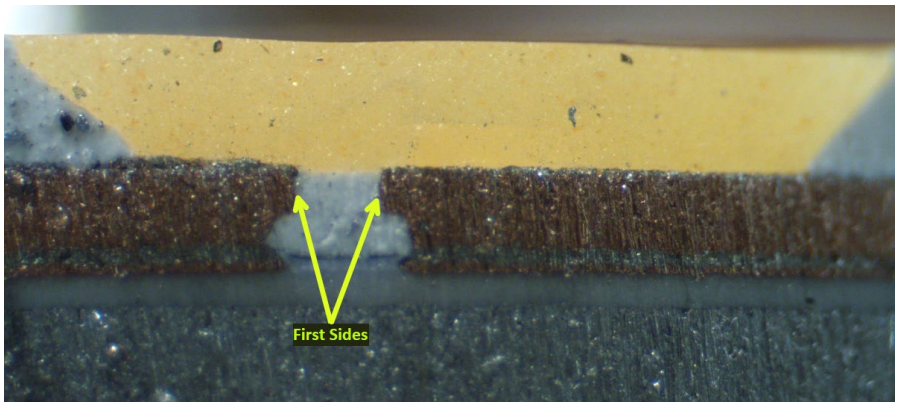

Figure 2B - 15 Topaz LED Retrofit Module (1)

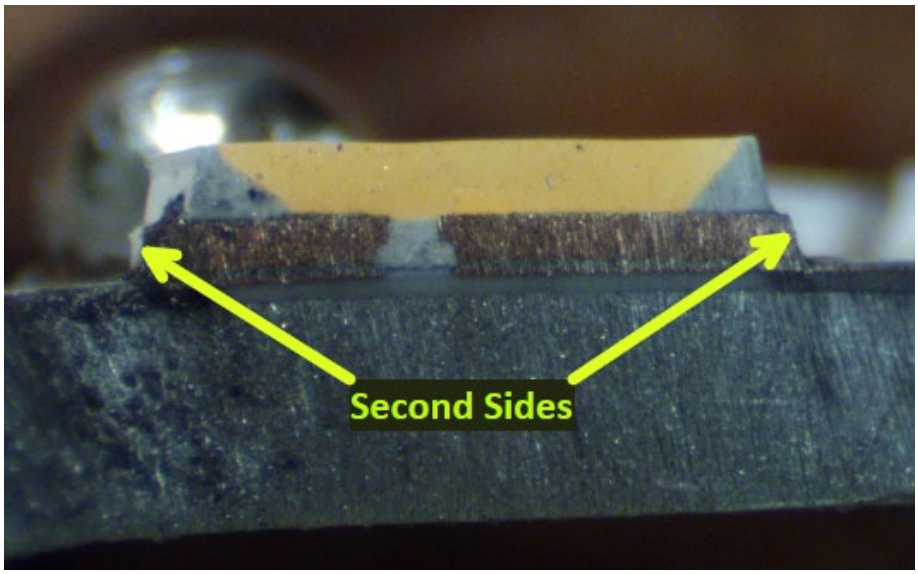

Figure 2B - 16 Topaz LED Retrofit Module (2)

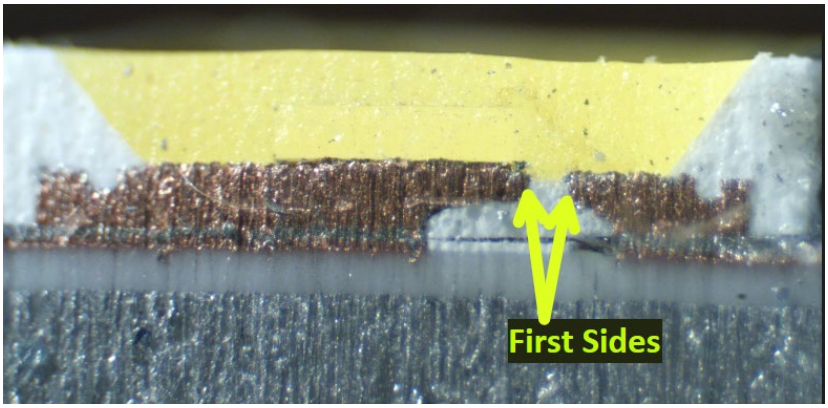

Figure 2B - 17 Topaz 150W Area Light (1)

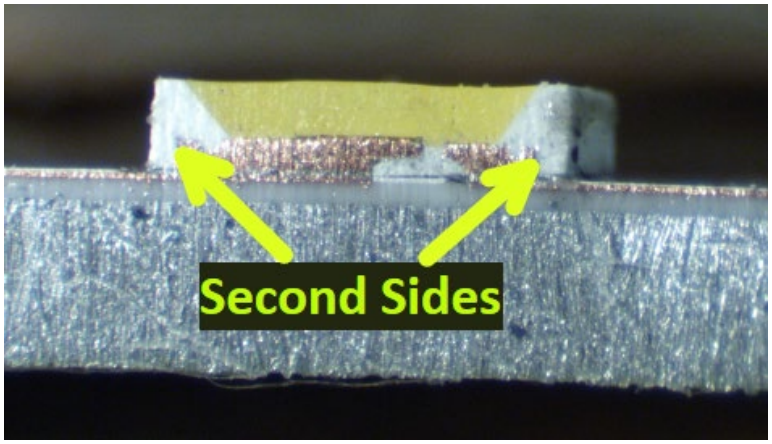

Figure 2B - 18 Topaz 150W Area Light (2)

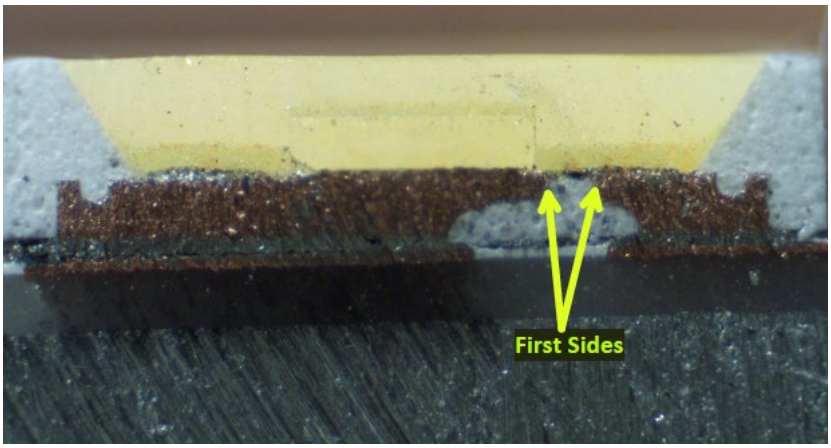

Figure 2B - 19 Topaz Low Power Flood Light (1)

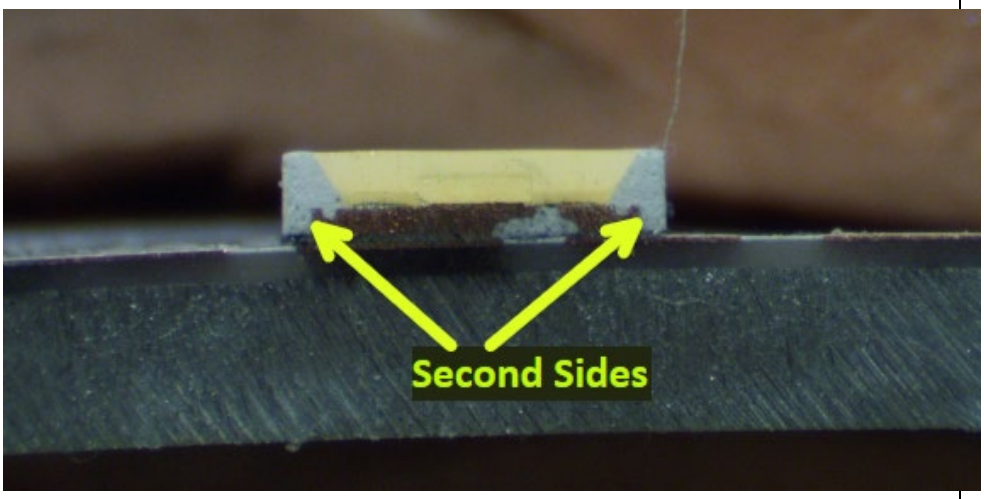

Figure 2B - 20 Topaz Low Power Flood Light (2)

65. ***1(f): the first lead frame comprising a first*** groove ***disposed on a lower surface thereof, and the second lead frame comprises a second groove disposed on the lower surface thereof;***—The Topaz Round High Bay Light, Topaz LED Retrofit Module, Topaz 150W Area Light, and Topaz Low Power Flood Light each comprise a first lead frame with "a first groove disposed on a lower surface thereof," and second lead frame with "a second groove disposed on a lower surface thereof;" as seen in Figure 2B - 21 to Figure 2B - 24:

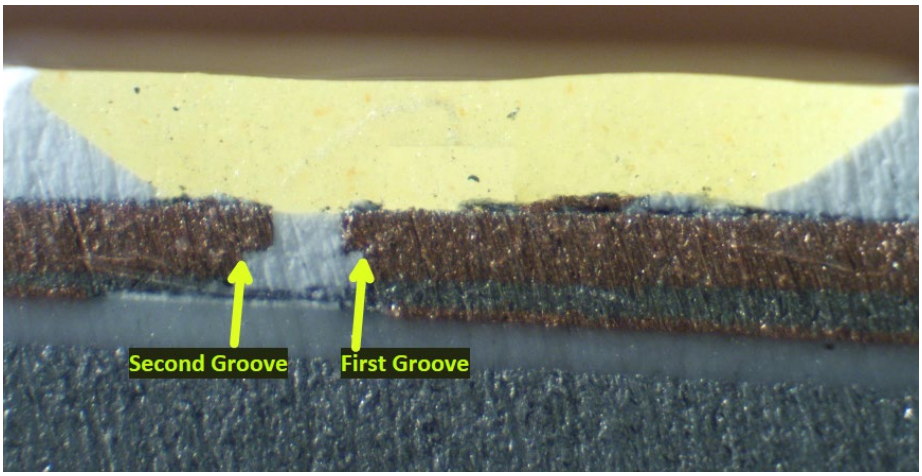

Figure 2B - 21 Topaz Round High Bay Light

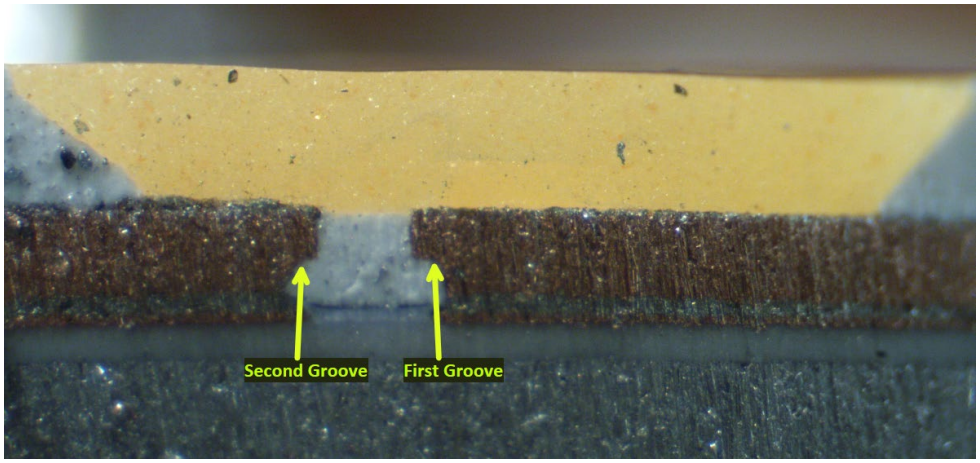

Figure 2B - 22 Topaz LED Retrofit Module

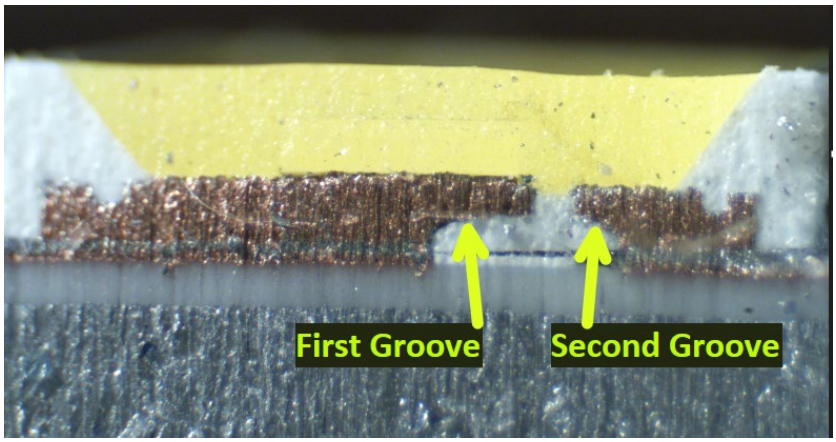

Figure 2B - 23 Topaz 150W Area Light

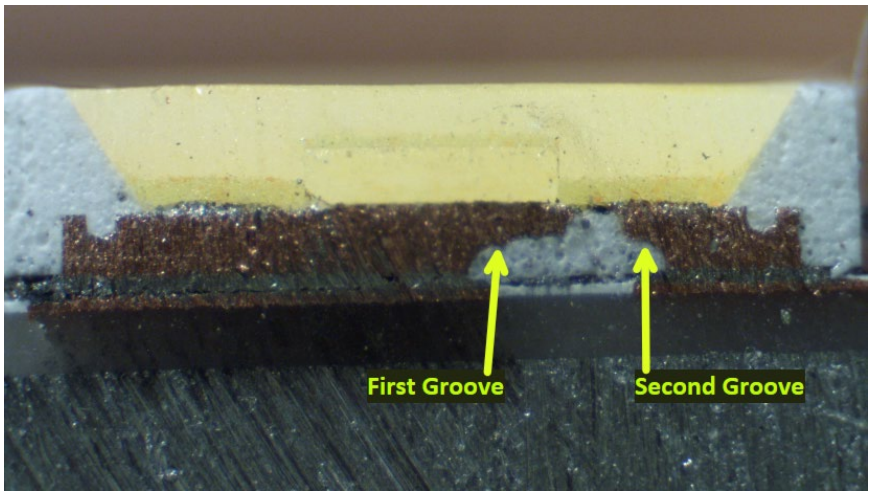

Figure 2B - 24 Topaz Low Power Flood Light

66. ***1(g): each of the first and second grooves is open only on the lower surfaces of the first and second lead frames, respectively; and;***—The Topaz Round High Bay Light, Topaz LED Retrofit Module, Topaz 150W Area Light, and Topaz Low Power Flood Light each comprise first and second grooves that are "open only on the lower surfaces of the first and second lead frames, respectively;" as seen in Figure 2B - 25 to Figure 2B - 28:

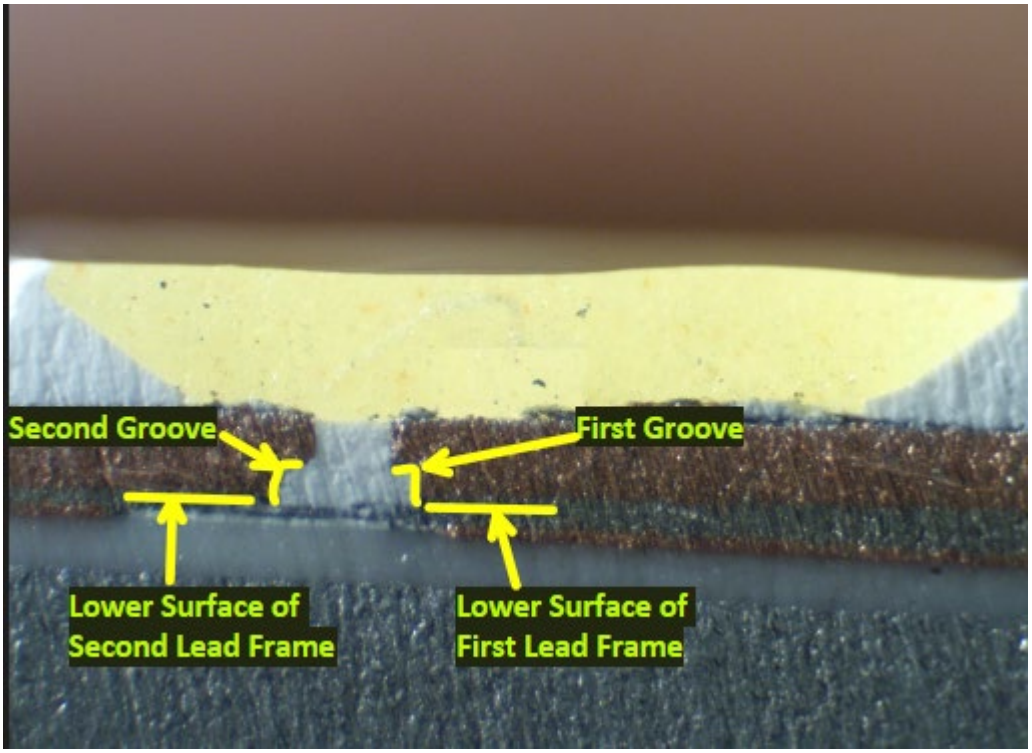

Figure 2B - 25 Topaz Round High Bay Light

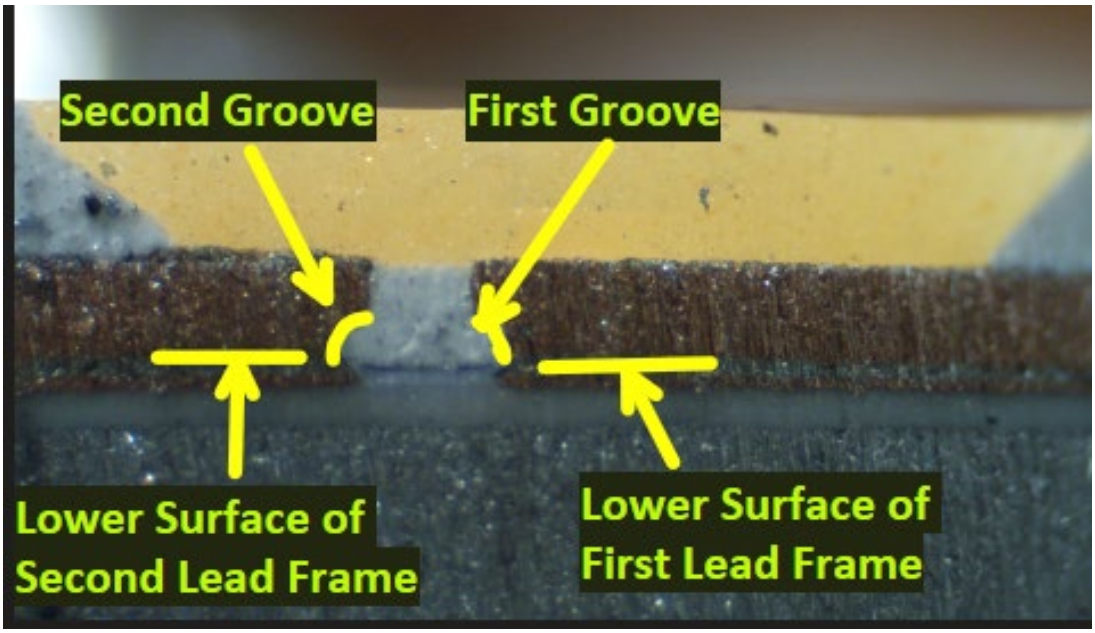

Figure 2B - 26 Topaz LED Retrofit Module

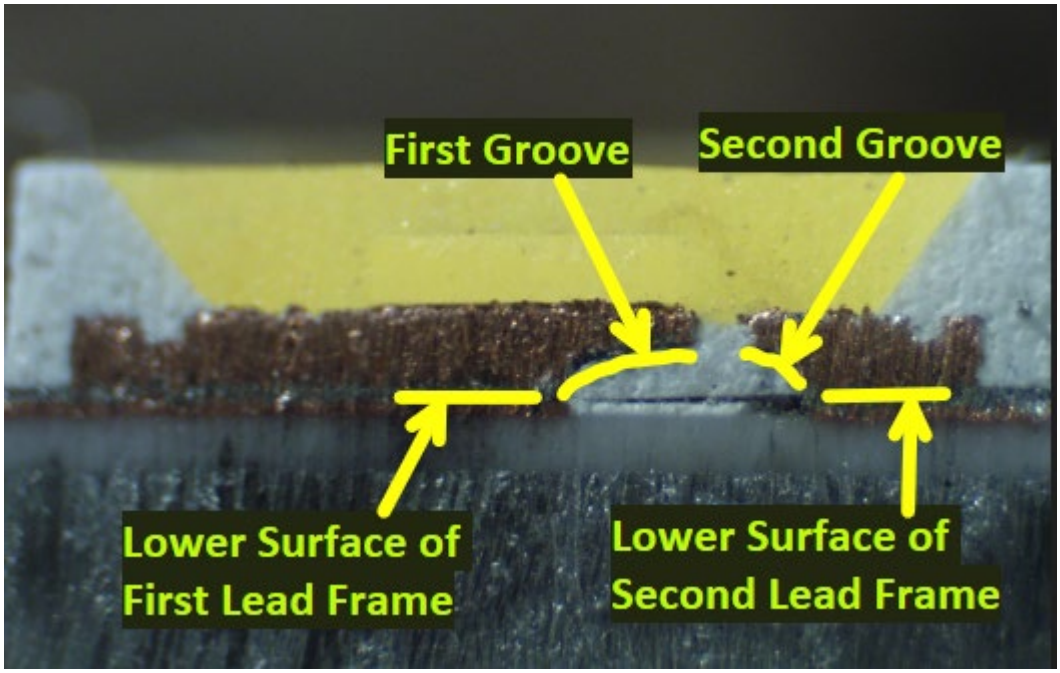

Figure 2B - 27 Topaz 150W Area Light

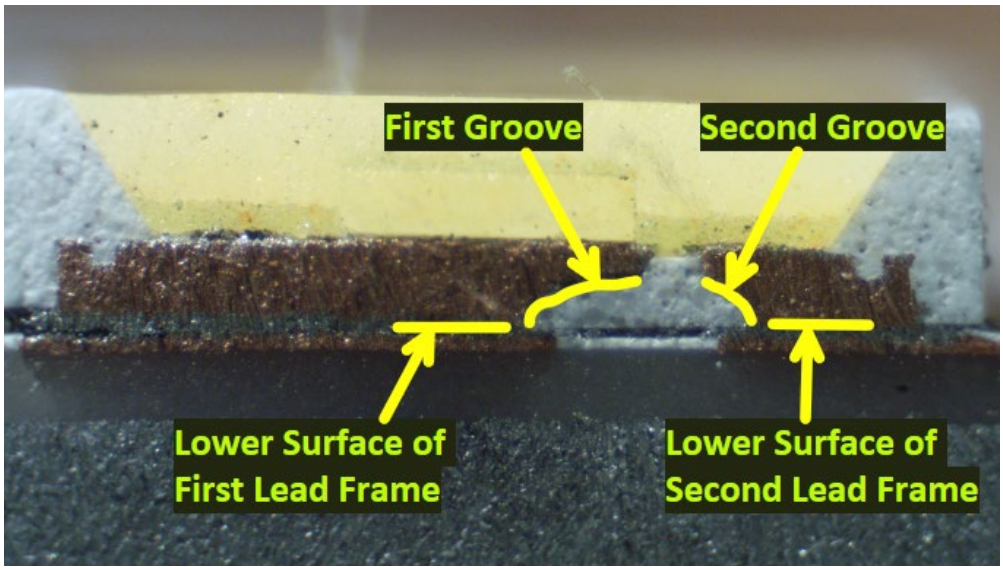

Figure 2B - 28 Topaz Low Power Flood Light

67. ***1(h): a depth of the first groove is equal to a depth of the second groove.***—The Topaz Round High Bay Light, Topaz LED Retrofit Module, Topaz 150W Area Light, and Topaz Low Power Flood Light each contain a first and second groove with equal depths, as seen in Figure 2B - 29 to Figure 2B - 32:

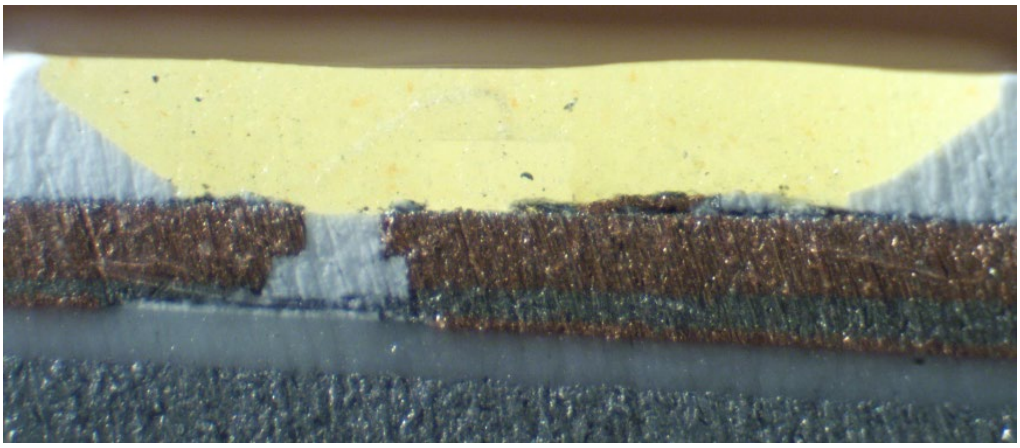

Figure 2B - 29 Topaz Round High Bay Light

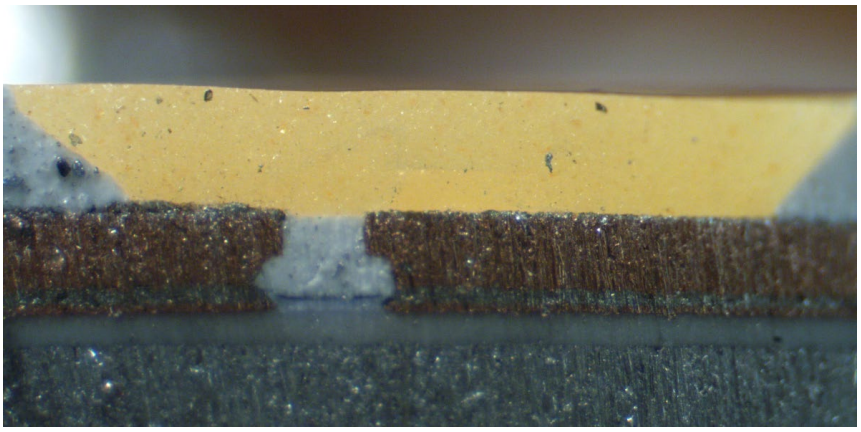

Figure 2B - 30 Topaz LED Retrofit Module

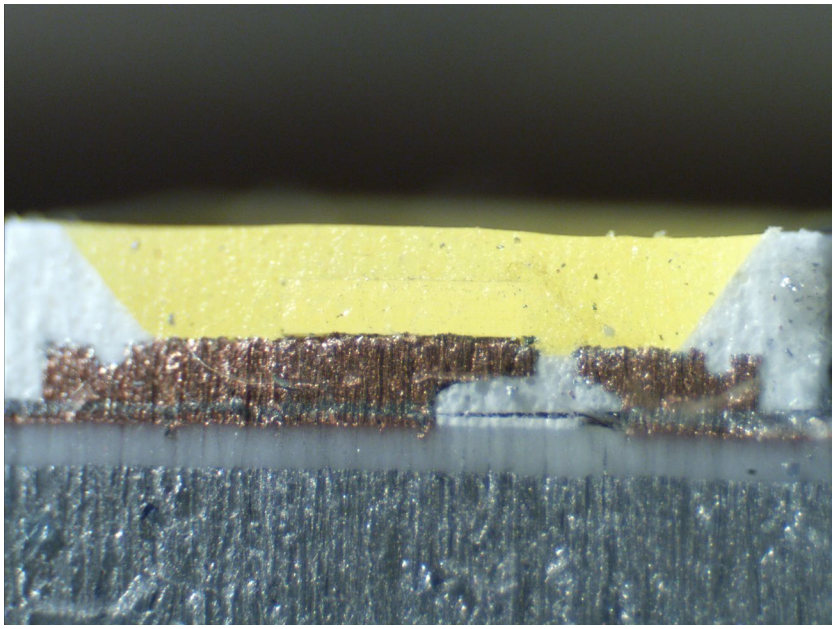

Figure 2B - 31 Topaz 150W Area Light

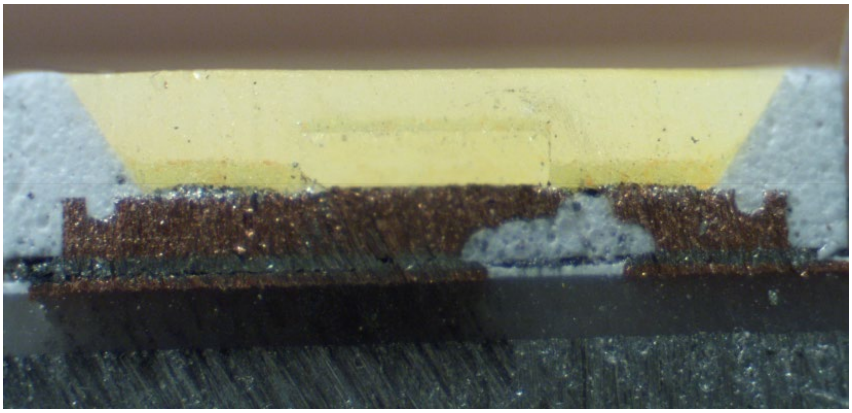

Figure 2B - 32 Topaz Low Power Flood Light

68. Claim 3: The LED package of claim 1, wherein at least a portion of the lower surface of at least one of the first and second lead frames is not covered by the resin. As one non- limiting example, as seen in Figure 2B - 33, the LED package in the Topaz LED Retrofit Module has a portion of the lower surface of the first and second lead frames not covered by the resin:

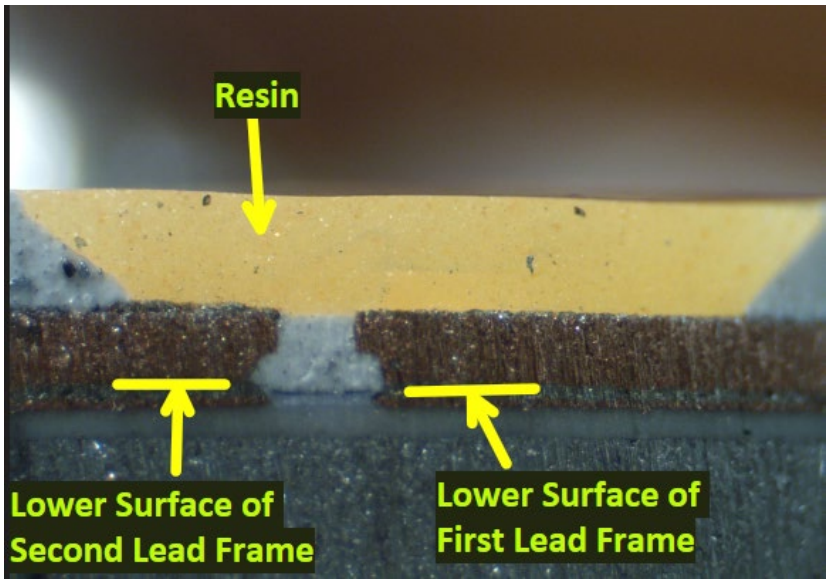

Figure 2B - 33 Topaz LED Retrofit Module

69. Defendant's infringement of the '942 Patent is exceptional and

entitles Plaintiff to attorneys' fees and costs incurred in prosecuting this action under 35 U.S.C. § 285.

70. Plaintiff is in compliance with any applicable marking and/or notice provisions of 35 U.S.C. § 287 with respect to the '942 Patent.

71. Plaintiff is entitled to recover from Defendant all damages that Plaintiff has sustained as a result of Defendant's infringement of the '942 Patent, including, without limitation, a reasonable royalty.

COUNT III: INFRINGEMENT OF U.S. PATENT NO. 8,309,971

72. Plaintiff incorporates by reference and re-alleges 1-71 of the Complaint as if fully set forth herein.

73. Defendant has infringed and is infringing, either literally or under the doctrine of equivalents, the '971 Patent in violation of 35 U.S.C. § 271 et seq., directly and/or indirectly, by making, using, offering for sale, and/or selling in the United States, and/or importing into the United States without authority or license, products, including but not limited to the Topaz LED Outdoor Parking Lot/Area Light and Topaz 150W Area Light among other substantially similar products (collectively, the "'971 Accused Products").

74. As non-limiting examples, set forth below (with claim language in bold and italics) is exemplary evidence of infringement of claim 1 of the '971 Patent. This description is based on publicly available information. Plaintiff reserves the right to modify this description, including, for example, on the basis of information about the '971 Accused Products that it obtains during discovery.

75. 1(a): A light emitting ***diode, comprising a substrate;***—The Topaz LED Outdoor Parking Lot/Area Light contain light emitting diodes, as seen in Figure 3A - 1 and Figure 3A - 2 comprising a substate.

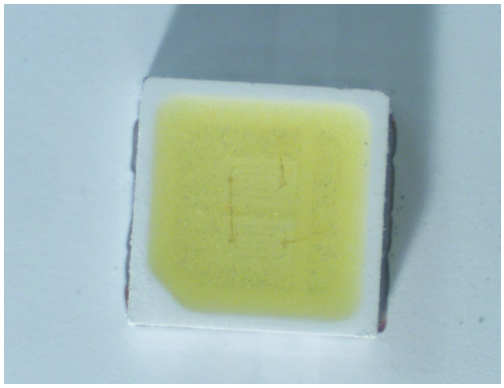

Figure 3A - 1 - LED Chip – Topaz LED Outdoor Parking Lot/Area Light

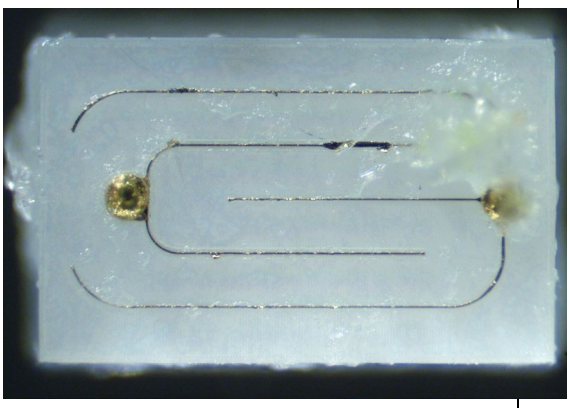

Figure 3A - 2 - LED Chip – Topaz LED Outdoor Parking Lot/Area Light

76. ***1(b): a first conductive type semiconductor layer arranged on the substrate;***— The below SEM images of an individual light emitting diode from the above '971 Accused Products, as seen in Figure 3B – 1 and Figure 3B - 2, are annotated to illustrate the first conductive type semiconductor layer arranged on the substrate:

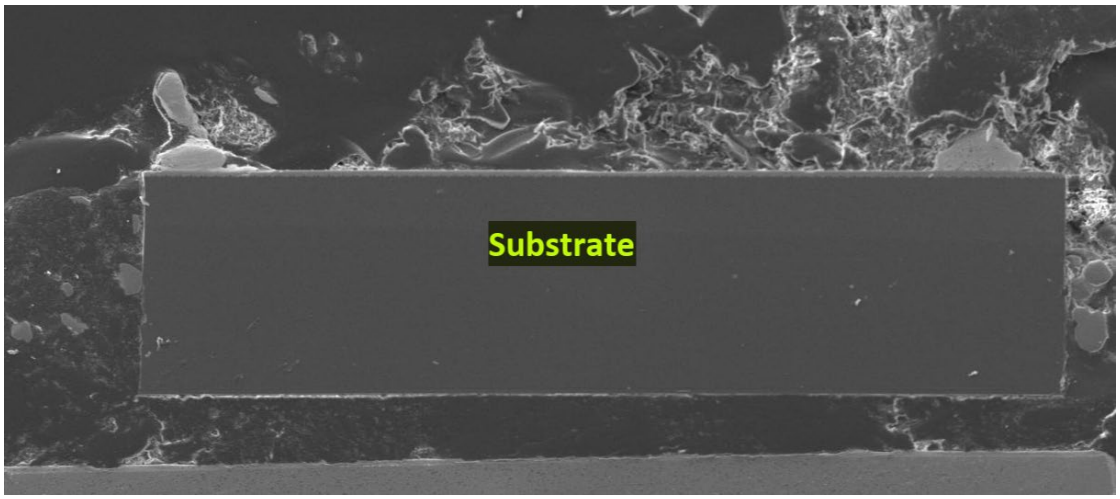

Figure 3B - 1 Topaz LED Outdoor Parking Lot/Area Light (1)

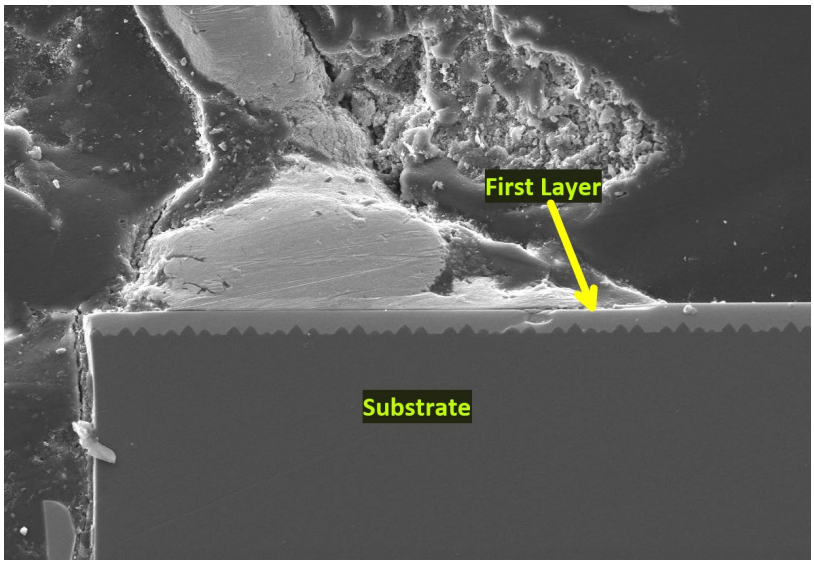

Figure 3B - 2 Topaz LED Outdoor Parking Lot/Area Light (2)

77. ***1(c): a second conductive type semiconductor layer arranged on the first conductive type semiconductor layer;***—The below images of an individual light emitting diode from the above '971 Accused Products, as seen in Figure 3B – 3, are annotated to illustrate the second conductive type semiconductor layer arranged on the conductive type semiconductor layer.

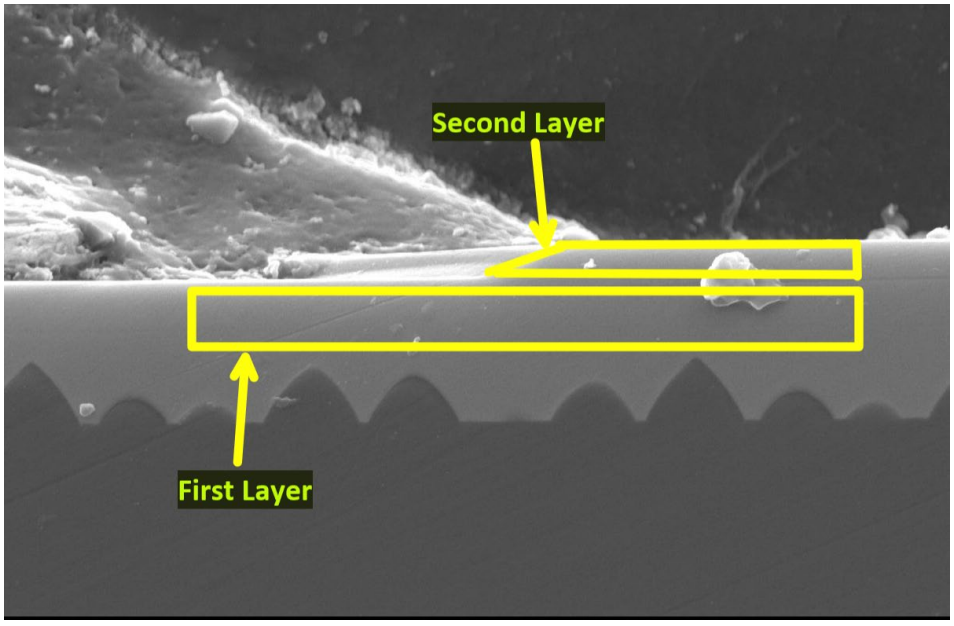

Figure 3B – 3 Topaz LED Outdoor Parking Lot/Area Light

78. ***1(d): an active layer disposed between the first conductive type semiconductor layer and the second conductive type semiconductor layer;***—The below images of an individual light emitting diode from the above '971 Accused Products, as seen in Figure 3B - 4, are annotated to illustrate the active layer between the two conductive type semiconductor layers.

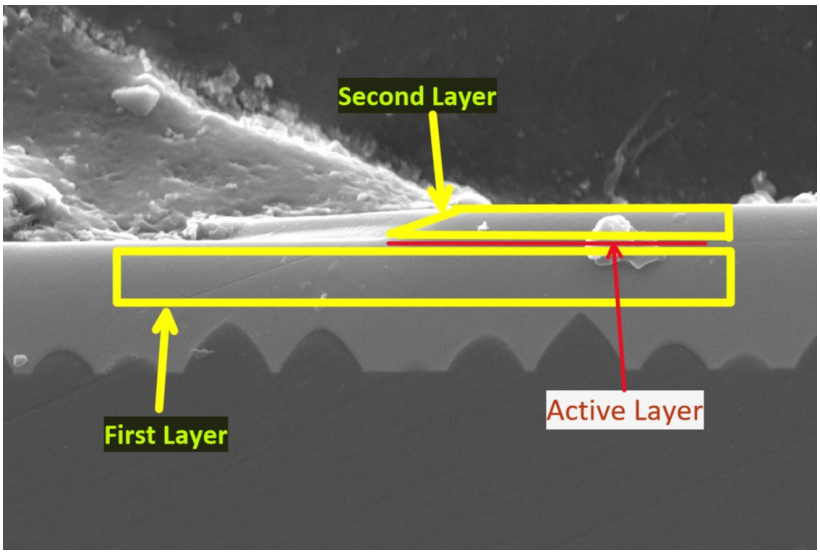

Figure 3B - 4 Topaz LED Outdoor Parking Lot/Area Light

79. ***1(e): a first electrode pad electrically connected to the first conductive type semiconductor layer;***—The below images of an individual light emitting diode from the above '971 Accused Products, as seen in Figure 3B - 5 and Figure 3B - 6 are annotated to illustrate the first electrode pad electrically connected to the first conductive type semiconductor layer.

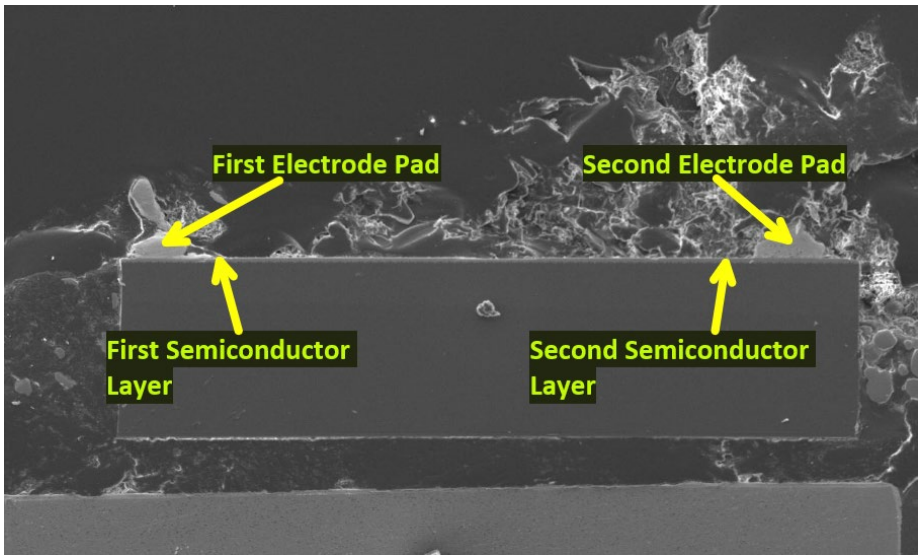

Figure 3B -5 Topaz LED Outdoor Parking Lot/Area Light (1)

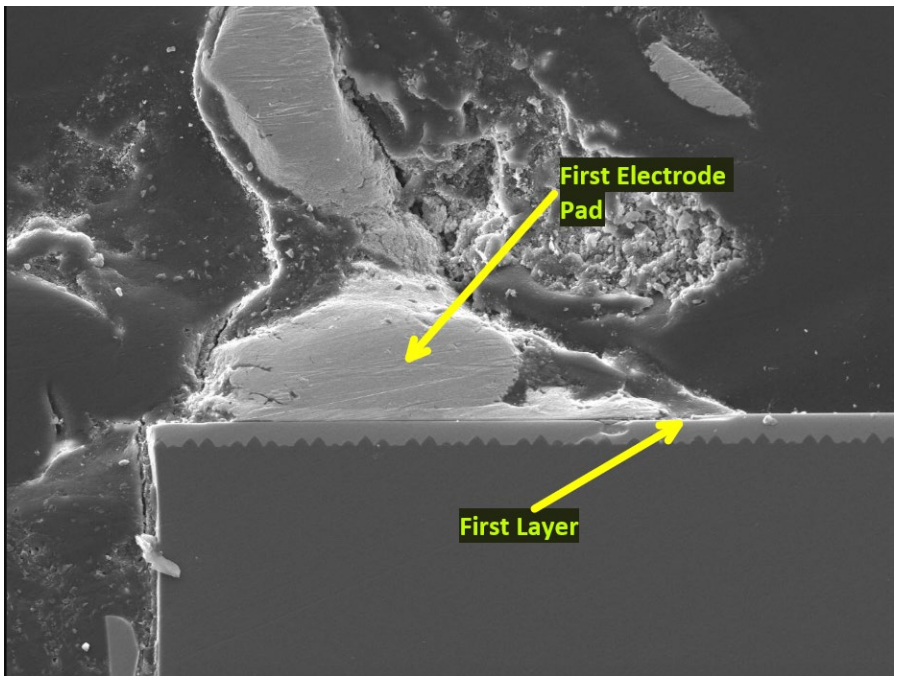

Figure 3B - 6 Topaz LED Outdoor Parking Lot/Area Light (2)

80. ***1(f): a second electrode pad arranged on the second conductive type semiconductor layer;***—The below images of an individual light emitting diode from the above '971 Accused Products, as seen in Figure 3B - 7, are annotated to illustrate the second electrode pad arranged on the second conductive type

semiconductor layer.

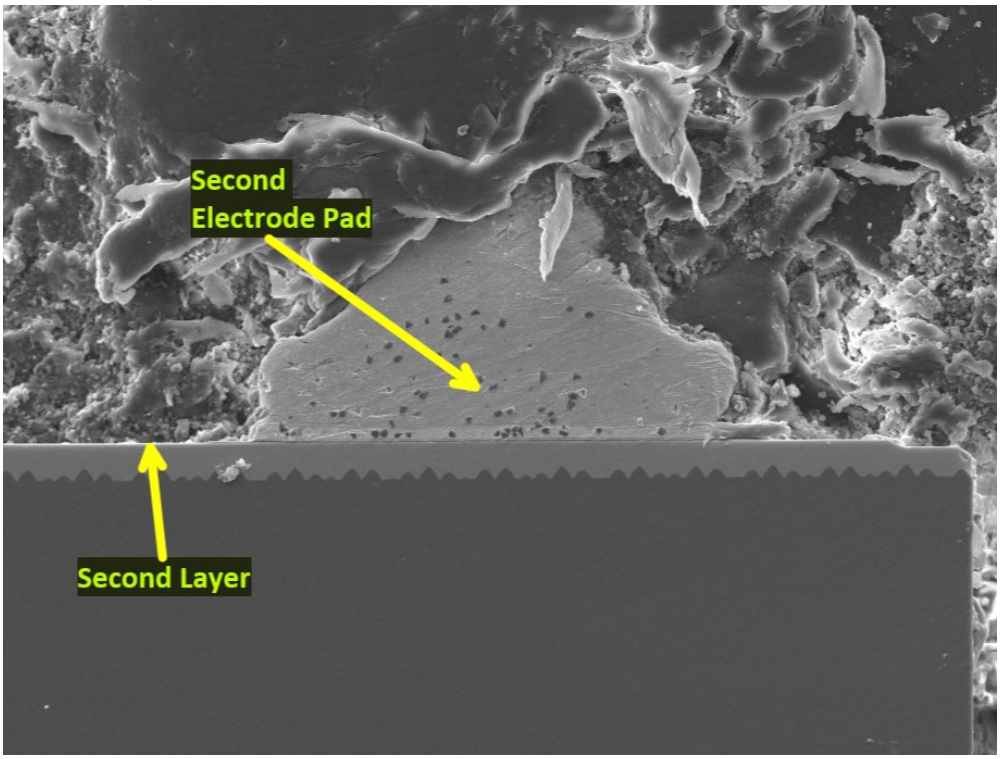

Figure 3B - 7 Topaz LED Outdoor Parking Lot/Area Light

81. ***1(g): an insulation layer disposed between the second conductive type semiconductor layer and the second electrode pad;***—The below images of an individual light emitting diode ***from*** the above '971 Accused Products, as seen in Figure 3B - 8, are annotated to illustrate the insulation layer between the second conductive type semiconductor layer and the second electrode pad.

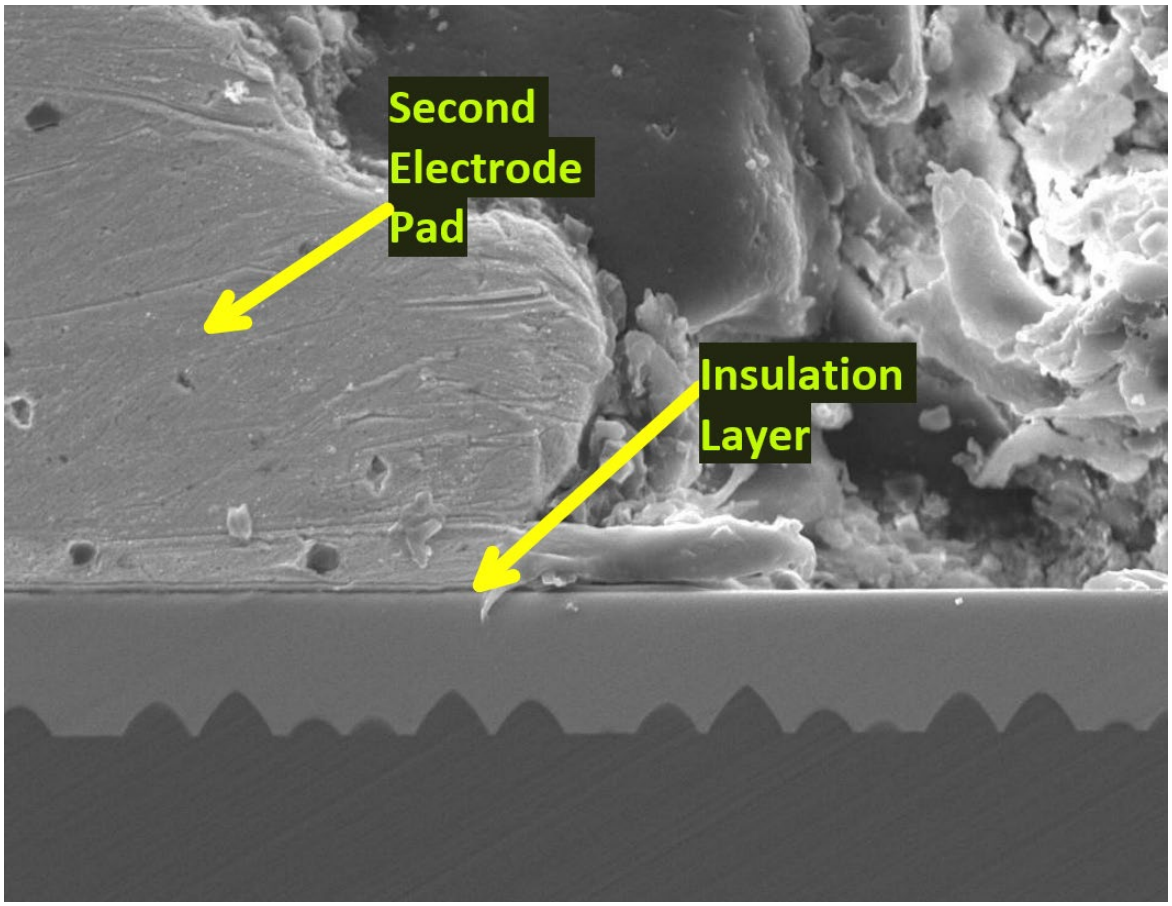

Figure 3B - 8 Topaz LED Outdoor Parking Lot/Area Light

82. ***1(h): and at least one upper extension electrically connected to the second electrode pad, the at least one upper extension being electrically connected to the second conductive type semiconductor layer.***—The below ***images*** of an individual light emitting diode from the above '971 Accused Products, as seen in Figure 3B - 9 and Figure 3B - 10, are annotated to illustrate the upper extension electrically connected to the second electrode pad and second conductive type semiconductor layer.

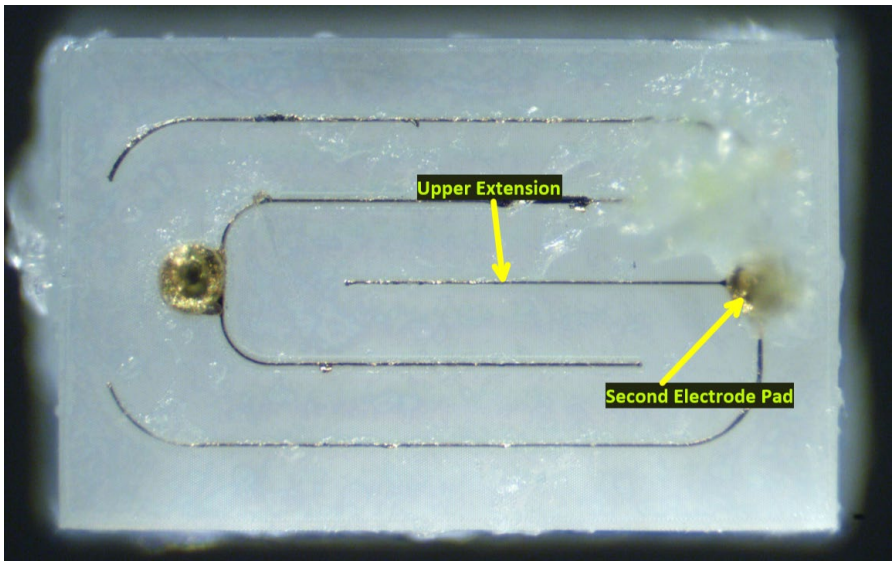

Figure 3B - 9 Topaz LED Outdoor Parking Lot/Area Light (1)

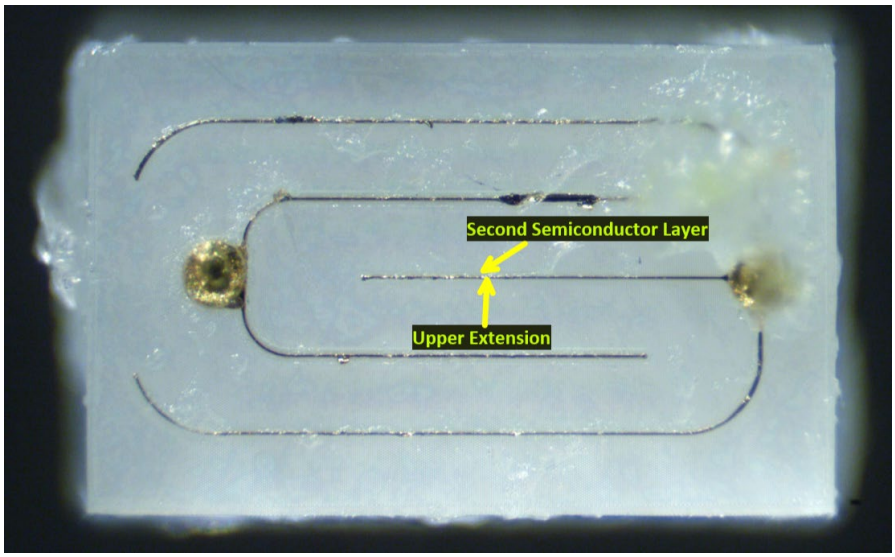

Figure 3B - 10 Topaz LED Outdoor Parking Lot/Area Light (2)

83. Defendant's infringement of the '971 Patent is exceptional and entitles Plaintiff to attorneys' fees and costs incurred in prosecuting this action under 35 U.S.C. § 285.

84. Plaintiff is in compliance with any applicable marking and/or notice provisions of 35 U.S.C. § 287 with respect to the '971 Patent.

85. Plaintiff is entitled to recover from Defendant all damages that Plaintiff has sustained as a result of Defendant's infringement of the '971 Patent, including, without limitation, a reasonable royalty.

COUNT IV: INFRINGEMENT OF U.S. PATENT NO. 7,128,454

86. Plaintiff incorporates by reference and re-alleges 1-85 of the Complaint as if fully set forth herein.

87. Defendant has infringed and is infringing, either literally or under the doctrine of equivalents, the '454 Patent in violation of 35 U.S.C. § 271 et seq., directly and/or indirectly, by making, using, offering for sale, and/or selling in the United States, and/or importing into the United States without authority or license, products, including but not limited to the Topaz LED A21 Lamp among other substantially similar products (collectively, the "'454 Accused Products").

88. As non-limiting examples, set forth below (with claim language in bold and italics) is exemplary evidence of infringement of claim 1 and claim 15 of the '454 Patent. This description is based on publicly available information. Plaintiff reserves the right to modify this description, including, for example, on the basis of information about the '454 Accused Products that it obtains during discovery.

89. ***1(a): A Light Emitting Diode (LED) module comprising:***—The Topaz LED A21 Lamp is light emitting diode module, as seen in Figure 4A - 1 and Figure 4A - 2:

Figure 4A - 1 – Product – Topaz LED A21 Lamp

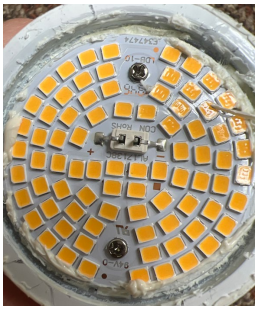

Figure 4A - 2 - LED – Topaz LED A21 Lamp

90. ***1(b): a lighting unit including an LED chip;***—The lighting unit of the Topaz LED A21 Lamp includes an LED Chip as illustrated in Figure 4B - 3.

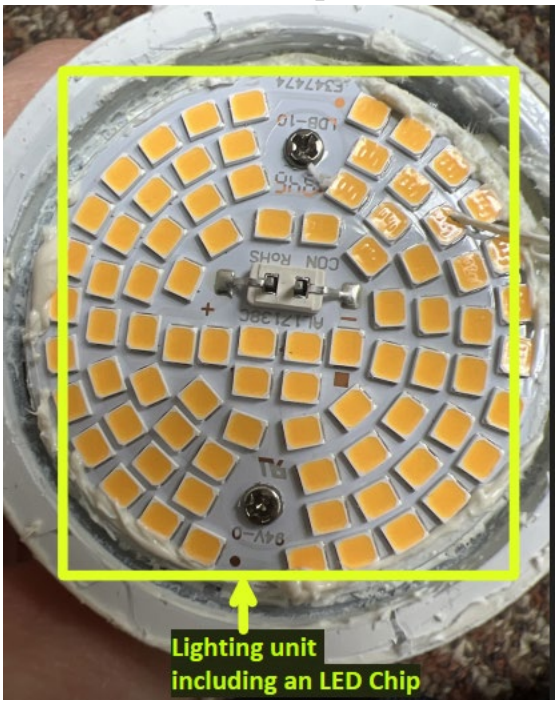

Figure 4B - 3 Topaz LED A21 Lamp

91. ***1(c): a module body supporting the lighting unit at a leading end and extending from the leading end to a rear end for a predetermined length, the leading end being structured to guide light from the lighting unit in an upward direction, the module body being made of a high thermal conductivity material and having a through hole extending through the length of the modular body;***—

The lighting unit of the Topaz LED A21 Lamp includes an modular body, which supports the lighting unit at a leading end and extends from the leading end to a rear end for a predetermined length. The leading end is structured to guide light from the lighting unit in an upward direction. The module body is made of a high thermal conductivity material and has a through hole extending through the length of the modular body as illustrated by Figure 4B - 4 to Figure 4B - 6.

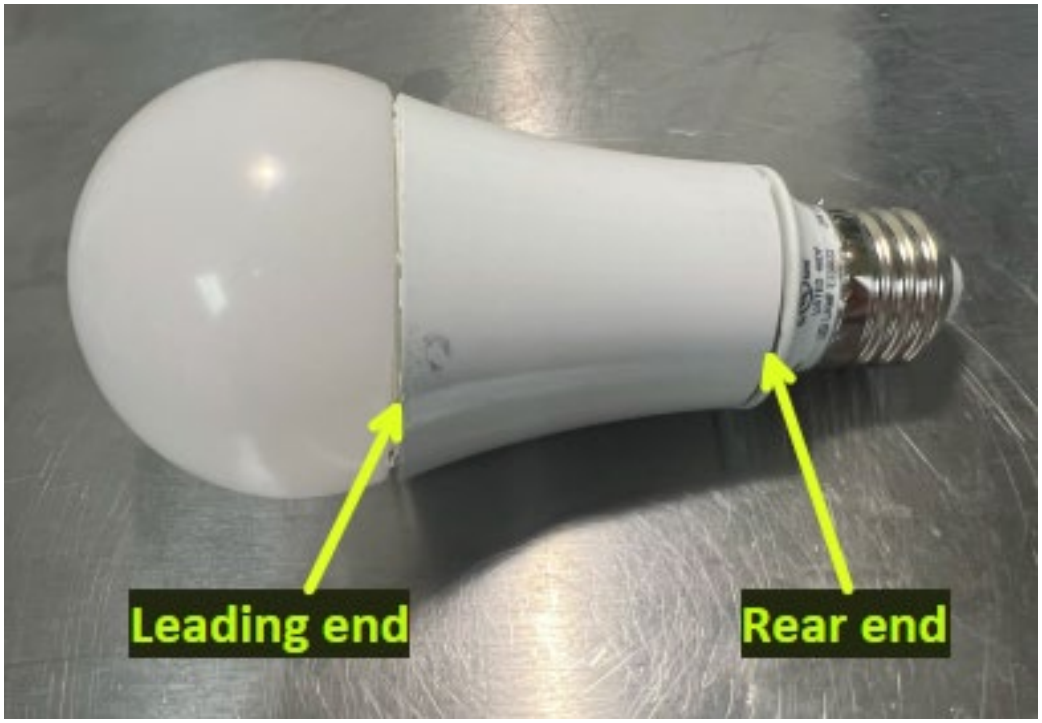

Figure 4B - 4 Topaz LED A21 Lamp (1)

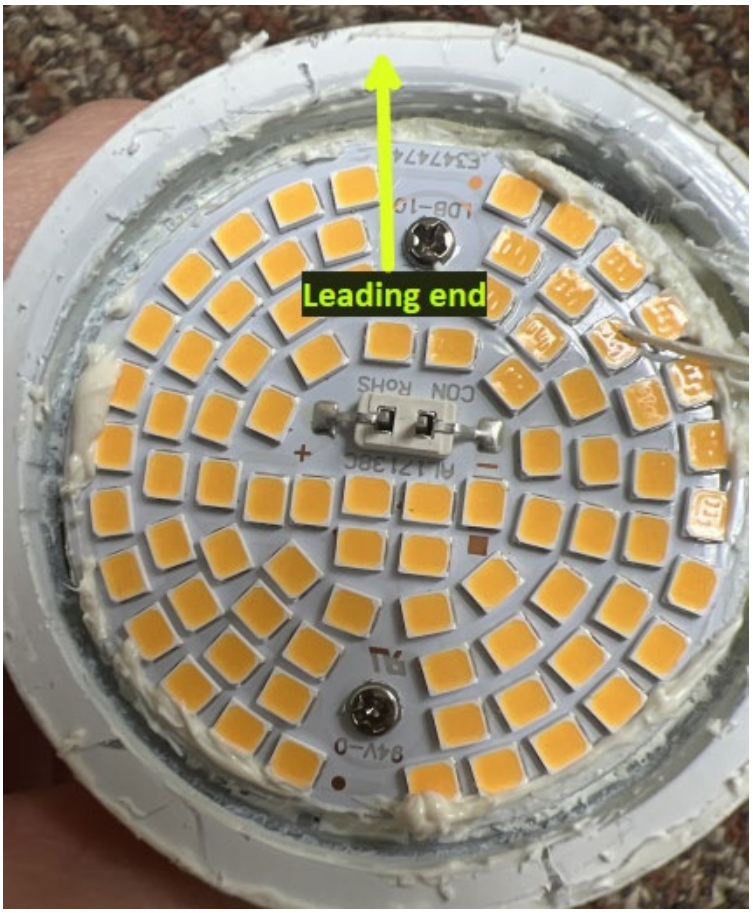

Figure 4B – 5 Topaz LED A21 Lamp (2)

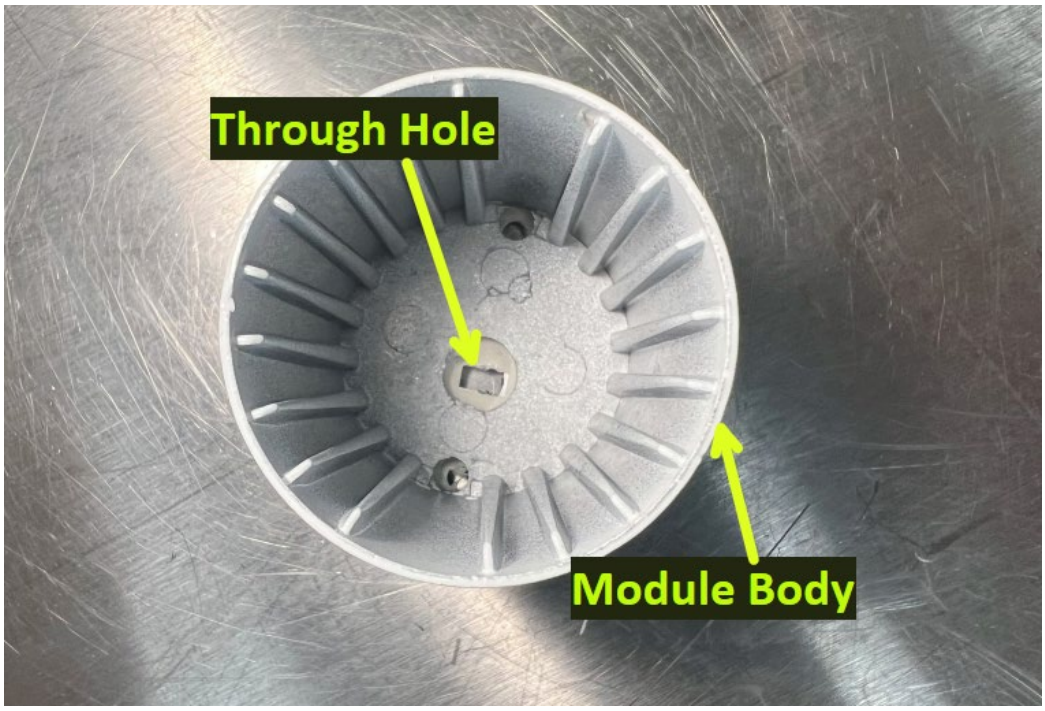

Figure 4B - 6 Topaz LED A21 Lamp (3)

92. ***1(d): a connector sealingly coupled to the rear end of the module body, the connector having a conductor inserted into and extending through the through hole in the module body for supplying external voltage to the lighting unit; and—*** The module body of the Topaz LED A21 Lamp comprises a connector coupled to the rear end. The connector has a conductor inserted into and extending through the through hole in the module body for supplying external voltage to the lighting unit as illustrated by Figure 4B - 7 to Figure 4B - 9.

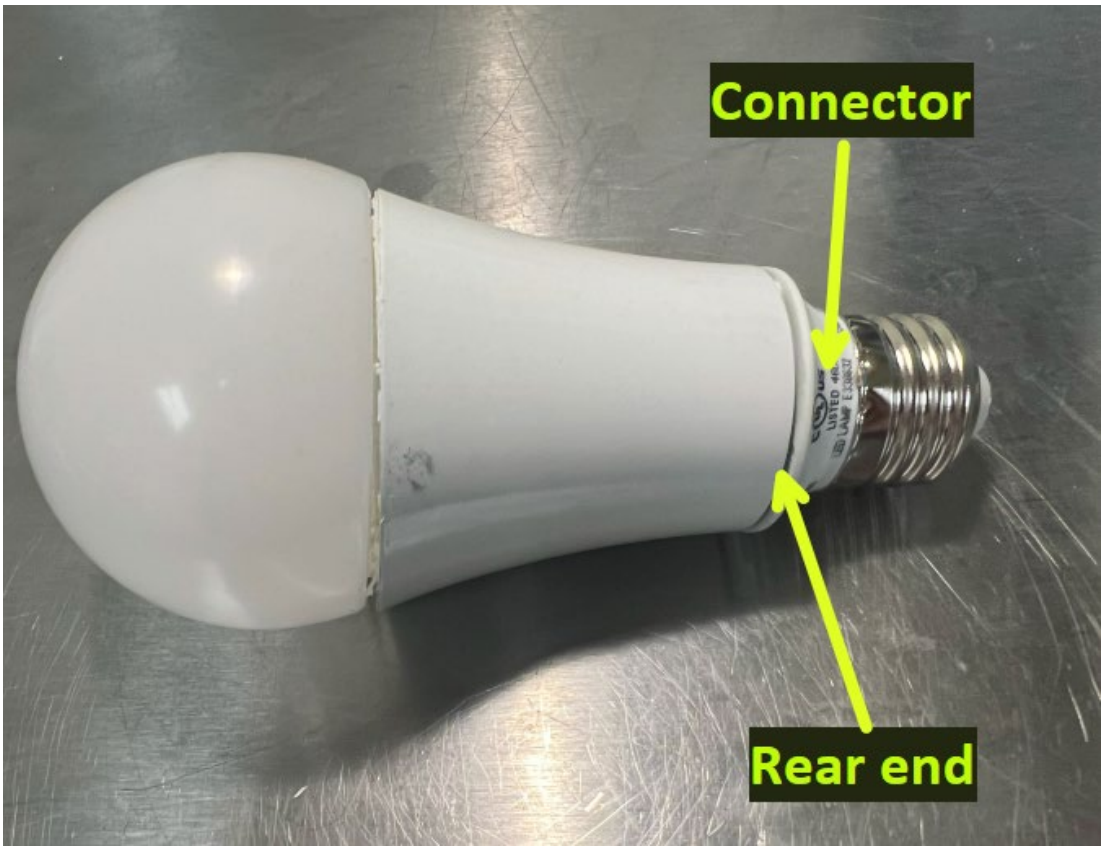

Figure 4B - 7 Topaz LED A21 Lamp (1)

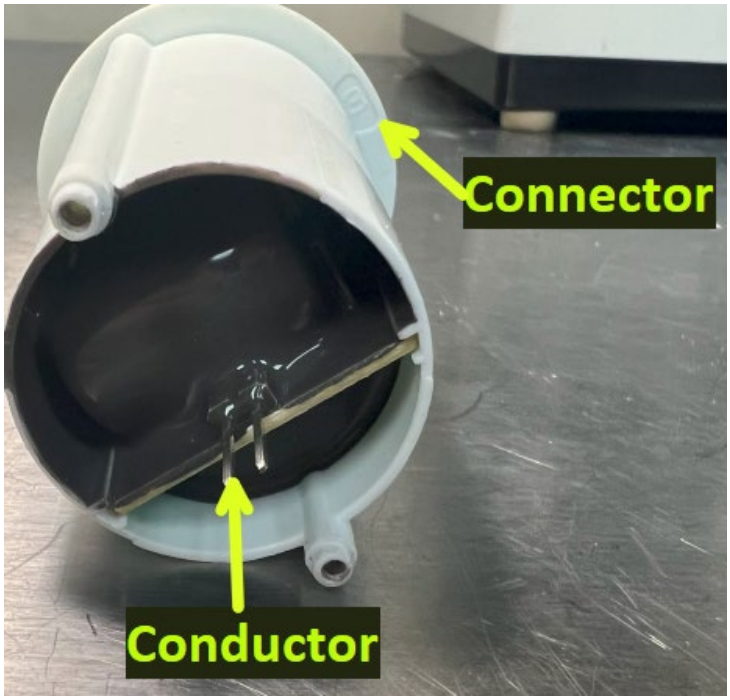

Figure 4B - 8 Topaz LED A21 Lamp (2)

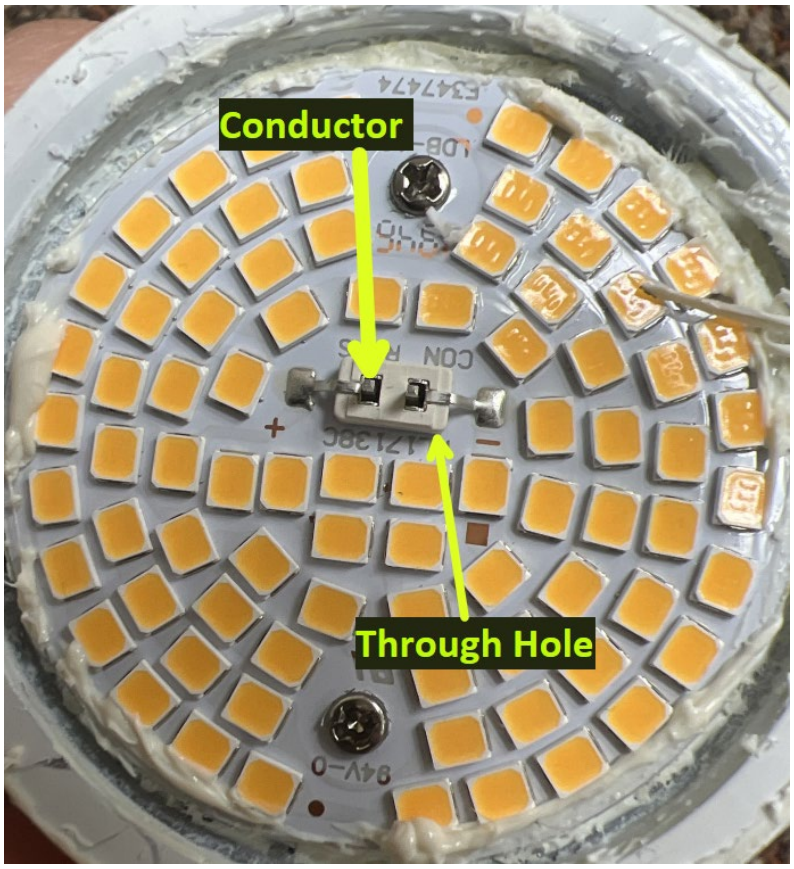

Figure 4B - 9 Topaz LED A21 Lamp (3)

93. ***1(e): a transparent member coupled with the leading end of the module body to seal and protect the lighting unit and a portion of the conductor exposed from the leading end of the module body from an external environment.***— The below images of the Topaz LED A21 Lamp, as seen in Figure 4B - 10, is annotated to illustrate the transparent member couple with the leading end of the module body to seal and protect the lighting unit and a portion of the conductor.

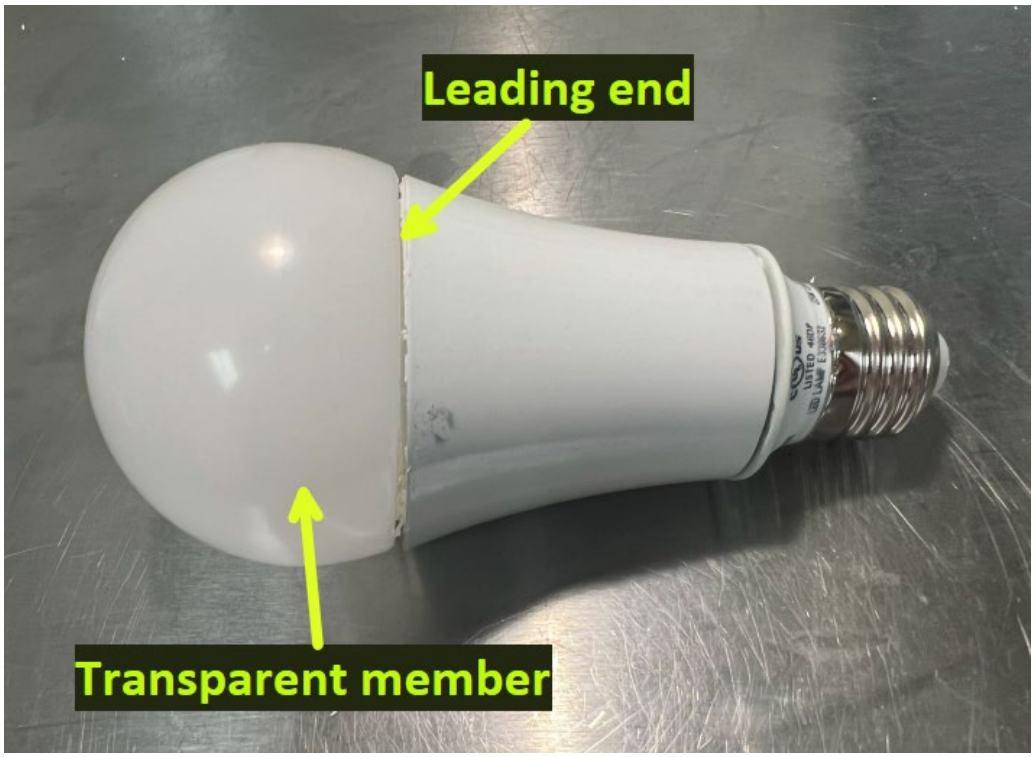

Figure 4B – 10 Topaz LED A21 Lamp

94. Claim 15: **The LED module according to claim 1, wherein the transparent member is configured as a lens.** As one non-limiting example, as seen in Figure 4B - 11, the transparent member in the Topaz LED A21 Lamp is configured as a lens:

Figure 4B - 11 Topaz LED A21 Lamp

95. Defendant's infringement of the '454 Patent is exceptional and entitles Plaintiff to attorneys' fees and costs incurred in prosecuting this action under 35 U.S.C. § 285.

96. Plaintiff is in compliance with any applicable marking and/or notice provisions of 35 U.S.C. § 287 with respect to the '454 Patent.

97. Plaintiff is entitled to recover from Defendant all damages that Plaintiff has sustained as a result of Defendant's infringement of the '454 Patent, including, without limitation, a reasonable royalty.

JURY DEMAND

Plaintiff hereby demands a trial by jury on all issues so triable.

PRAYER FOR RELIEF

WHEREFORE, Plaintiff respectfully requests:

A. That Judgment be entered that Defendant has infringed at least one or more claims of the Patents-in-Suit, directly and/or indirectly, literally and/or under the doctrine of equivalents;

B. An award of damages sufficient to compensate Plaintiff for Defendant's infringement under 35 U.S.C. § 284;

C. That the case be found exceptional under 35 U.S.C. § 285 and that Plaintiff be awarded its reasonable attorneys' fees;

D. Costs and expenses in this action;

E. An award of prejudgment and post-judgment interest; and

F. Such other and further relief as the Court may deem just and proper.

Dated: August 31, 2023

/s/ Andrew S. Dallmann

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