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**UNITED STATES DISTRICT COURT**
**DISTRICT OF NEVADA**

| | |
|---|---|
| SIGNIFY NORTH AMERICA CORPORATION and SIGNIFY HOLDING B.V.,<br><br>Plaintiffs,<br><br>vs.<br><br>LEPRO INNOVATION INC, LE INNOVATION INC, INNOVATION RULES INC., HOME EVER INC., and LETIANLIGHTING, INC.,<br><br>Defendants. | Civil No. 2:22-cv-02095<br><br>**COMPLAINT FOR PATENT INFRINGEMENT**<br><br>**JURY TRIAL DEMANDED** |

Plaintiffs Signify North America Corporation and Signify Holding B.V. (collectively, "Signify") for their complaint against Defendants LEPRO Innovation Inc, LE Innovation Inc, Innovation Rules Inc., Home Ever Inc., and Letianlighting, Inc. (collectively, "Defendants") allege as follows:

## NATURE OF THE ACTION

1. This is a civil action for patent infringement arising under the patent laws of the United States, 35 U.S.C. § 1 *et seq*. including 35 U.S.C. § 271, which gives rise to the remedies specified under 35 U.S.C. §§ 281 and 283-285.

## THE PARTIES

2. Plaintiff Signify North America Corporation is a corporation organized and existing under the laws of Delaware with its principal place of business at 200 Franklin Square Drive, Somerset, New Jersey 08873.

3. Plaintiff Signify Holding B.V. is a corporation organized and existing under the laws of the Netherlands with its registered office at High Tech Campus 48, 5656 AE Eindhoven, The Netherlands.

4. On information and belief, LEPRO Innovation Inc is a domestic corporation organized and existing under the laws of Nevada with a place of business and a registered agent at 3651 Lindell Road, Suite D1048, Las Vegas, Nevada, 89103, USA.

5. On information and belief, the president and registered agent of LEPRO Innovation Inc is Taiming Xu.

6. On information and belief, Taiming Xu is a related family member to Litao Xu.

7. On information and belief, LE Innovation Inc is a domestic corporation organized and existing under the laws of Nevada with a place of business and a registered agent at 3651 Lindell Road, Suite D, Las Vegas, Nevada, 89103, USA.

8. On information and belief, the Initial List of LE Innovation Inc, filed with the State of Nevada on January 7, 2020, identified Ji Wu as the president, secretary, treasurer, and director of the corporation, as well as the registered agent for the corporation. An Amended List filed May 8, 2021, identified Litao Xu as the president, secretary, treasurer, and director of the corporation, while Ji Wu remained as the registered agent.

9. On information and belief Ji Wu and Litao Xu are currently, or were formerly, married.

10. On information and belief, Innovation Rules Inc. is a domestic corporation organized and existing under the laws of Nevada with a place of business and a registered agent at 11500 South Eastern Avenue #150, Henderson, Nevada, 89052, USA.

11. On information and belief, the president and registered agent of Innovation Rules Inc. is Maosheng Wu.

12. On information and belief, Maosheng Wu is a related family member to Ji Wu.

13. On information and belief, Home Ever Inc. is a domestic corporation organized and existing under the laws of Nevada with a place of business at 1810 E Sahara Ave Suite 704, Las Vegas, Nevada, 89104, USA and a registered agent at Corporation Service Company, 112 North Curry Street, Carson City, NV, 89703, USA.

14. On information and belief, the Annual List of Home Ever Inc., filed with the State of Nevada on August 26, 2018, identified Litao Xu as the president and Ji Wu as the secretary, treasurer, and director of the corporation. An Amended List filed July 19, 2021, identified Xiang Li as the president, secretary, treasurer, and director of the corporation.

15. On information and belief, Letianlighting, Inc. is a domestic corporation organized and existing under the laws of Nevada having a registered agent at 3651 Lindell Road, Suite D, Las Vegas, Nevada, 89103, USA.

16. On information and belief, the service email address for Letianlighting, Inc. is: service@lightingever.com.

17. On information and belief, the president and registered agent of Letianlighting, Inc. is Tianying Li, who is also the owner of foreign companies Lighting Ever Gmbh (German company) and Lighting Ever Ltd. (United Kingdom company).

18. On information and belief, Tianying Li is related to Xiang Li.

## JURISDICTION AND VENUE

19. This Court has subject-matter jurisdiction over this patent infringement action pursuant to 28 U.S.C. §§ 1331 and 1338.

20. This Court has personal jurisdiction over Defendants, on information and belief, for at least the following reasons: (i) Defendants have committed acts of patent infringement in this

District; (ii) Defendants regularly conduct business, solicit business, and/or derive substantial revenue from products provided within this District, including products that infringe Signify's patented technology; and (iii) Defendants have places of business within this District.

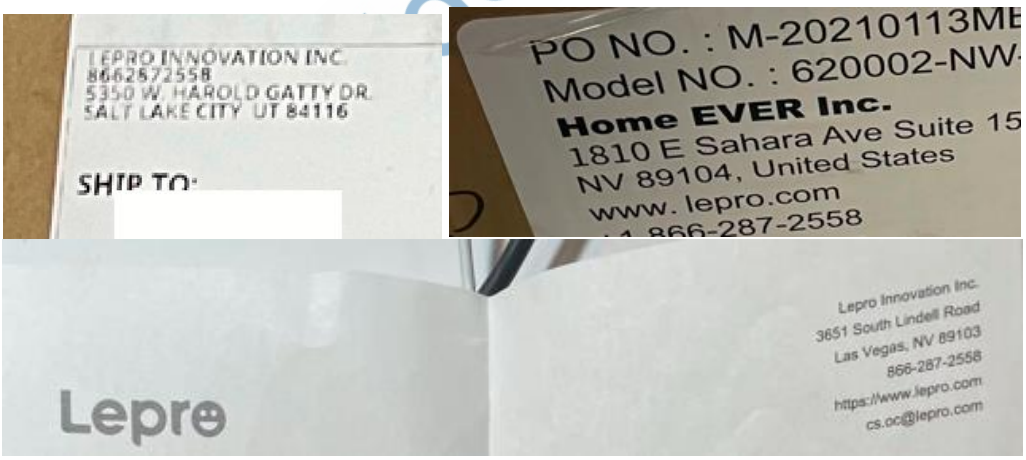
21. Venue properly lies in this District. Pursuant to 28 U.S.C. § 1400, on information and belief, Defendants have committed acts of patent infringement in this District and share regular and established places of business in this District.

22. On information and belief, Defendants' acts of patent infringement have arisen out of the same transaction, occurrence or series of transactions or occurrences related to the making, using, importing to the United States, offering for sale, or selling of the same accused products under related brand names "LE," "Lighting Ever," and "Lepro."

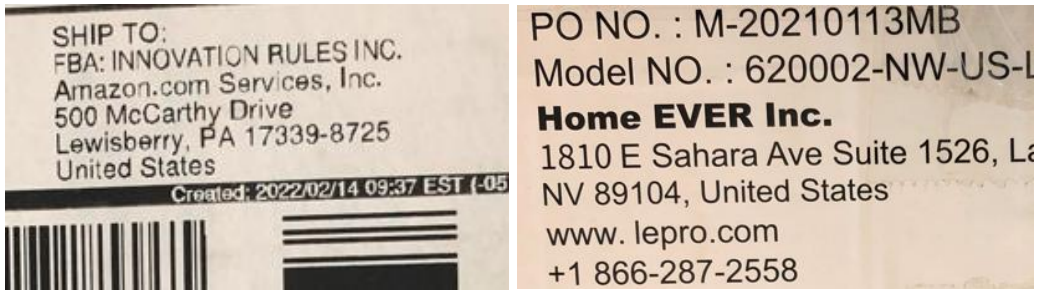
23. Further, on information and belief, Defendants act in concert to make infringing products and/or sell infringing products from Defendants' website www.lepro.com (or, an earlier website, www.lightingever.com) and the Amazon storefront for Lepro (https://www.amazon.com/stores/lightingever/lightingever/page/7C6C9B37-91CF-43AF-8C5A-36710FAD282C).

24. For example, Signify purchased a 3500013-DW-US product, accused of infringing US 7,348,604 and 8,063,577 below, from the Lepro Amazon storefront and received a box with "LE" and "Lighting EVER" branding and "Home EVER Inc. (US)" company listing, and which included a shipping label that identified "LETIANLIGHTING, INC."


25. Signify purchased a 620002-NW-US-LC product, accused of infringing US 7,348,604 and 8,063,577 below, from the Lepro website and received a box with "Home EVER Inc." company identifier and a Lepro website on the label and an "LEPRO INNOVATION INC." shipping label, and which included a receipt that identified "Lepro Innovation Inc."




26. Signify purchased a second 620002-NW-US-LC product from the Lepro Amazon storefront and received a box with "Home EVER Inc." company identifier and a Lepro website on the label, and an "INNOVATION RULES INC." shipping label.




27. Signify purchased a 350006-NW-US product, accused of infringing US 7,348,604 below, from the Lepro Amazon storefront and received a box with a label that included a "Home EVER Inc." company identifier with Lepro website and email address, and an "INNOVATION RULES INC." and "LETIANLIGHTING INC." shipping label. The 350006-NW-US product itself was also labeled "LE" and "Home EVER Inc."


28. Signify purchased a 350010-NW-US product, accused of infringing US 7,348,604 below, from the Lepro Amazon storefront and received a box with a label that included "LEPRO INNOVATION INC" company identifier with Lepro website and email address, and an "INNOVATION RULES INC." and "LETIANLIGHTING INC." shipping label. The 350010-NW-US product itself was also labeled "LEPRO INNOVATION INC."


29. Signify purchased two 901003-us products and a set of 901003-us-a products (the version of the product that is sold in a set of two), which are both accused of infringing RE 49,320 below, from the Lepro website and found that the 901003-us product was marked "Home EVER Inc." on the bulb, while the 901003-us-a product was marked "LE Innovation Inc."


30. Additionally, on information and belief, three of the Defendants share the same address at 3651 Lindell Road, Suite D, Las Vegas, NV, 89103: LEPRO Innovation Inc, LE Innovation Inc, and Letianlighting, Inc.

31. Further, on information and belief, at least two of the Defendants, LEPRO Innovation Inc and Home Ever Inc., share the same telephone number of 1-866-287-2558.

32. Upon information and belief, four of the Defendants—LE Innovation Inc, LEPRO Innovation Inc, Innovation Rules Inc., and Home Ever Inc.—are or have been operated by Ji Wu, Litao Xu, Taiming Xu, or Maosheng Wu, believed to be related individuals.

33. Accordingly, on information and belief, the Defendants' comingling of product branding and identification on product packaging, product specifications and instructions, shipping labels and product labels, in addition to their operation by related individuals and common phone numbers and addresses, demonstrate that the Defendants act in concert to make infringing products or to sell infringing products from the Lepro website and Lepro Amazon storefront.

**THE PATENTS-IN-SUIT**

34. Signify is a global market leader with recognized expertise in the development, manufacturing, and application of innovative LED lighting solutions. Signify's LED lighting products have been installed and utilized throughout the world, for example, on T-Mobile Arena (https://www.colorkinetics.com/global/showcase/t-mobile-arena[1]).


[1] Color Kinetics is a Signify Brand.

Additionally, for example, Signify's LED lighting products have been installed and utilized on The Forum Shops at Caesar's Palace (https://www.colorkinetics.com/global/showcase/caesars-palace-forum-shops).


35. To protect its innovations resulting from its significant investments, Signify applied for and obtained numerous patents directed to various LED inventions and technologies. For example, Signify's LED-related patents include U.S. Patent Nos. 7,014,336, 7,038,399, 7,348,604, 7,352,138, 8,063,577, 9,709,253, and RE 49,320 (collectively, the "Patents-in-Suit").

36. U.S. Patent No. 7,014,336 ("the '336 Patent"), titled "Systems and Methods for Generating and Modulating Illumination Conditions," was duly and legally issued by the United States Patent and Trademark Office on March 21, 2006. Signify North America Corporation is the assignee and owner of all right, title, and interest in the '336 Patent, a copy of which is attached as Exhibit 1.

37. U.S. Patent No. 7,038,399 ("the '399 Patent"), titled "Methods and Apparatus for Providing Power to Lighting Devices," was duly and legally issued by the United States Patent and

Trademark Office on May 2, 2006. Signify North America Corporation is the assignee and owner of all right, title, and interest in the '399 Patent, a copy of which is attached as Exhibit 2.

38. U.S. Patent No. 7,348,604 ("the '604 Patent"), titled "Light-Emitting Module," was duly and legally issued by the United States Patent and Trademark Office on March 25, 2008. Signify Holding B.V. is the assignee and owner of all right, title, and interest in the '604 Patent, a copy of which is attached as Exhibit 3.

39. U.S. Patent No. 7,352,138 ("the '138 Patent"), titled "Methods and Apparatus for Providing Power to Lighting Devices" was duly and legally issued by the United States Patent and Trademark Office on April 1, 2008. Signify North America Corporation is the assignee and owner of all right, title, and interest in the '138 Patent, a copy of which is attached as Exhibit 4.

40. U.S. Patent No. 8,063,577 ("the '577 Patent"), titled "Method and a Driver Circuit for LED Operation," was duly and legally issued by the United States Patent and Trademark Office on November 22, 2011. Signify Holding B.V. is the assignee and owner of all right, title, and interest in the '577 Patent, a copy of which is attached as Exhibit 5.

41. U.S. Patent No. 9,709,253 ("the '253 Patent"), titled "Light Emitting Diode Recessed Light Fixture," was duly and legally issued by the United States Patent and Trademark Office on July 18, 2017. Signify Holding B.V. is the assignee and owner of all right, title, and interest in the '253 Patent, a copy of which is attached as Exhibit 6.

42. U.S. Patent No. RE 49,320 ("the '320 Patent"), titled "Lighting Device with Built-in RF Antenna," was duly and legally reissued by the United States Patent and Trademark Office on November 29, 2022. RE 49,320 is a reissue of US 9,184,497 ("the '497 Patent"), which was duly and legally issued by the United States Patent and Trademark Office on November 10, 2015. Signify Holding B.V. is the assignee and owner of all right, title, and interest in the '320 Patent, a copy of which is attached as Exhibit 7.

**COUNT ONE**

**INFRINGEMENT OF U.S. PATENT NO. 7,014,336**

43. Signify incorporates by reference the allegations in foregoing paragraphs as if fully set forth herein.

44. On information and belief, Defendant has infringed claims of the '336 Patent, including at least claim 132, in violation of 35 U.S.C. § 271(a) by manufacturing, using, offering to sell, selling, and/or importing infringing products.

45. Claim 132 of the '336 patent recites:

> A lighting fixture for generating white-light, comprising:
>
> a plurality of component illumination sources including at least two white LEDs configured to generate electromagnetic radiation of at least two different spectrums; and
>
> a mounting holding said plurality, said mounting designed to allow said spectrums of said plurality to mix and form a resulting spectrum;
>
> wherein the visible portion of said resulting spectrum has intensity greater than background noise at its lowest spectral valley.

46. On information and belief, Defendant has directly infringed claim 132 of the '336 Patent by making, using, offering to sell, selling, and/or importing at least 901001-US-a products, in this judicial district and elsewhere in the United States, prior to the expiration date of the '336 Patent. (Certain of Defendants' products include a number, as part of the model number, signifying the quantity of products packaged together—such as 901001-US-2-a, which is a package of two 901001-US-a bulbs. Thus, reference to 901001-US-a is intended to cover both 901001-US-a and 901001-US-2-a.)

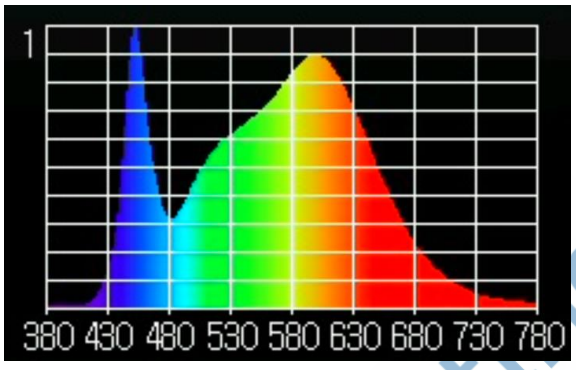
**Infringing 901001-US-a Products**

47. On information and belief, 901001-US-a products are lighting fixtures for generating white-light. An example of a 901001-US-a product is shown in the below image, taken from Defendants' website at https://www.lepro.com/9w-rgbw-alexa-light-bulb-wifi-google-home-a19-e26.html.


48. On information and belief, 901001-US-a products include a plurality of component illumination sources including at least two white LEDs configured to generate electromagnetic radiation of at least two different spectrums; for example, 901001-US-a products include multiple white LEDs are mounted to the circuit board. At least two of the white LEDs generate light of at least two different spectrums. For example, one white LED generates a spectrum having a color temperature of around 6500K, while another white LED generates a spectrum having a color temperature of around 2700K.

49. On information and belief, 901001-US-a products include a mounting holding said plurality, said mounting designed to allow said spectrums of said plurality to mix and form a resulting spectrum; for example, 901001-US-a products include a circuit board to which the LEDs are mounted, which allows the spectrums of the white LEDs to mix and form a resulting, tunable white, spectrum.

50. On information and belief, the visible portion of said resulting spectrum has intensity greater than background noise at its lowest spectral valley; for example, 901001-US-a products generate a continuous spectrum across the visible spectrum of light and have an intensity greater than the background noise at its lowest spectral valley.




51. The full extent of Defendants' infringement is not presently known to Signify. On information and belief, Defendants have made and sold products under different names or part numbers that infringe the '336 Patent in a similar manner. Signify makes this preliminary identification of infringing products and infringed claims in Count One without the benefit of discovery or claim construction in this action, and expressly reserves the right to augment, supplement, and revise its identifications based on additional information obtained through discovery or otherwise.

52. Signify has suffered damages as a result of Defendants' infringement of the '336 Patent in an amount to be determined at trial.

53. On information and belief, Defendants have been aware of and have had notice and actual knowledge of the '336 Patent and its infringement of the '336 Patent since at least as early as November 2018. On information and belief, Defendants were notified in an e-mail dated November 23, 2018, that Defendants' products infringed the '336 Patent.

54. On information and belief, Defendants were further notified in a letter dated April 6, 2021 that Defendants' products infringed the '336 Patent.

55. On information and belief, Defendants' 901001-US products are substantially similar to the products noticed in the November 23, 2018 e-mail as they relate to the '336 Patent, and thus Defendants were on actual notice of infringement for these products by November 23, 2018, or, if

later, the date these products were first made, used, sold, offered for sale, or imported. Defendants' 901001-US products are the same or substantially similar to the products noticed in the letter dated April 6, 2021 as they relate to the '336 Patent, and thus Defendants were further on actual notice for these products by April 6, 2021, or, if later, the date these products were first made, used, sold, offered for sale, or imported.

56. Defendants' pre-suit knowledge of the '336 Patent and failure to substantively address Signify's numerous notifications of infringement are sufficient to support a plausible inference that Defendants' infringement was willful and egregious, warranting enhancement of damages under 35 U.S.C. § 284, and attorneys' fees and costs incurred under 35 U.S.C. § 285.

**COUNT TWO**

**INFRINGEMENT OF U.S. PATENT NO. 7,038,399**

57. Signify incorporates by reference the allegations in foregoing paragraphs as if fully set forth herein.

58. On information and belief, Defendant has infringed claims of the '399 Patent, including at least claim 7, in violation of 35 U.S.C. § 271(a) by manufacturing, using, offering to sell, selling, and/or importing infringing products.

59. Claim 7 of the '399 patent recites:

> An illumination apparatus, comprising:
>
> at least one LED; and
>
> at least one controller coupled to the at least one LED and configured to receive a power-related signal from an alternating current (A.C.) power source that provides signals other than a standard A.C. line voltage, the at least one controller further configured to provide power to the at least one LED based on the power-related signal,
>
> wherein the A.C. power source is an A.C. dimmer circuit, wherein the A.C. dimmer circuit is controlled by a user interface to vary the power-related signal, and wherein the at least one controller is configured to variably control at least one parameter of light generated by the at least one LED in response

to operation of the user interface, and wherein the operation of the user interface varies a duty cycle of the power-related signal, and wherein the at least one controller is configured to variably control the at least one parameter of the light based at least on the variable duty cycle of the power-related signal.

60. On information and belief, Defendant has directly infringed claim 7 of the '399 Patent by making, using, offering to sell, selling, and/or importing at least 100061-WW-US, PR100082-WW-US, 170004-DW-US, and 1700040-WW-US products, in this judicial district and elsewhere in the United States, prior to the expiration date of the '399 Patent.

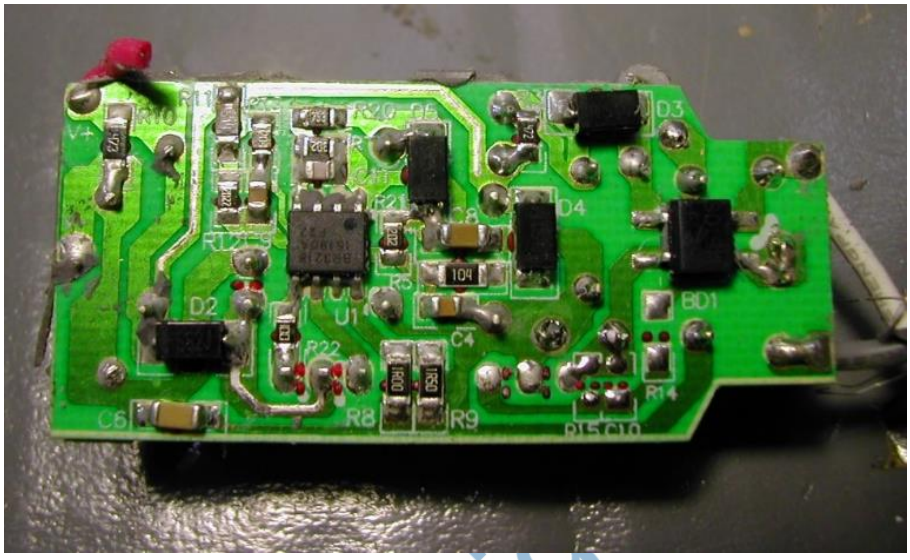
**Infringing 100061-WW-US Products**

61. On information and belief, 100061-WW-US products are illumination apparatuses. An example of a 100061-WW-US product is shown in the below image, taken from the Lepro Amazon store at https://www.amazon.com/Dimmable-Incandescent-Equivalent-1050lm-Medium/dp/B015MHKP1O.

62. On information and belief, 100061-WW-US products include at least one LED; for example, 100061-WW-US products include multiple LEDs.

63. On information and belief, 100061-WW-US products include at least one controller coupled to the at least one LED and configured to receive a power-related signal from an alternating current (A.C.) power source that provides signals other than a standard A.C. line voltage, the at least one controller further configured to provide power to the at least one LED based on the power-

related signal; for example, 100061-WW-US products include a controller that is configured to receive a phase-cut A.C. signal, e.g., from a TRIAC dimmer, and to provide power to the LEDs based on the phase-cut signal.




64. On information and belief, the A.C. power source is an A.C. dimmer circuit, wherein the A.C. dimmer circuit is controlled by a user interface to vary the power-related signal, and wherein the at least one controller is configured to variably control at least one parameter of light generated by the at least one LED in response to operation of the user interface, and wherein the operation of the user interface varies a duty cycle of the power-related signal, and wherein the at least one controller is configured to variably control the at least one parameter of the light based at least on the variable duty cycle of the power-related signal; for example, 100061-WW-US products are compatible with an A.C. dimmer circuit (e.g., TRIAC dimmer) that varies the duty cycle of the phase cut signal in response to a user adjusting a user interface, the controller variably controlling the intensity of the light emitted by the LEDs in response to the change in duty cycle of the phase cut signal. (The controller includes a BP3218, which is a high efficiency TRIAC dimmable driver chip. A publicly-available datasheet for the BP3218 chip is attached as Exhibit 8, retrieved from http://www.bpsemi.com/uploads/file/20161221103146_667.pdf, an image from which is included below.)

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**Description**

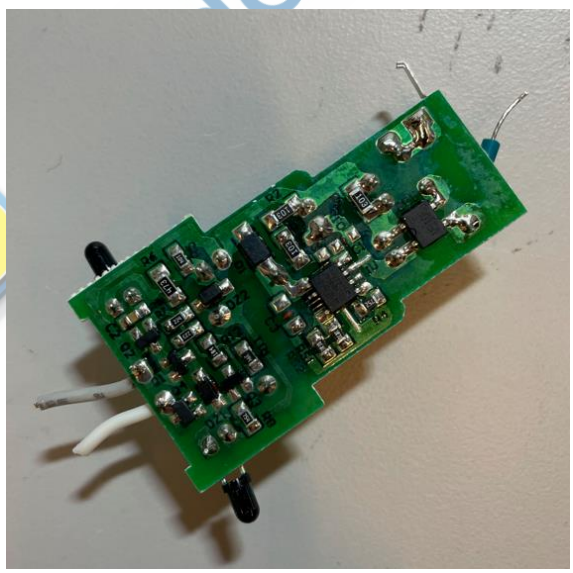
The BP3218 is a high efficiency TRIAC dimmable LED driver. The device operates in critical conduction mode and is suitable for buck, buck-boost or fly-back LED lighting.

**Infringing PR100082-WW-US Products**

65. On information and belief, PR100082-WW-US products are illumination apparatuses. An example of a PR100082-WW-US product is shown in the below image, taken from the Lepro Amazon store at: https://www.amazon.com/dp/B088CZ1Q54?ref_=cm_sw_r_cp_ud_dp_E1ZZJ87ZEDA8PP0SPKG7.


66. On information and belief, PR100082-WW-US products include at least one LED; for example, PR100082-WW-US products include multiple LEDs.


67. On information and belief, PR100082-WW-US products include at least one controller coupled to the at least one LED and configured to receive a power-related signal from an alternating current (A.C.) power source that provides signals other than a standard A.C. line voltage, the at least one controller further configured to provide power to the at least one LED based on the power-related signal; for example, PR100082-WW-US products include a controller that is configured to receive a phase-cut A.C. signal, e.g., from a forward phase dimmer, and to provide power to the LEDs based on the phase-cut signal.



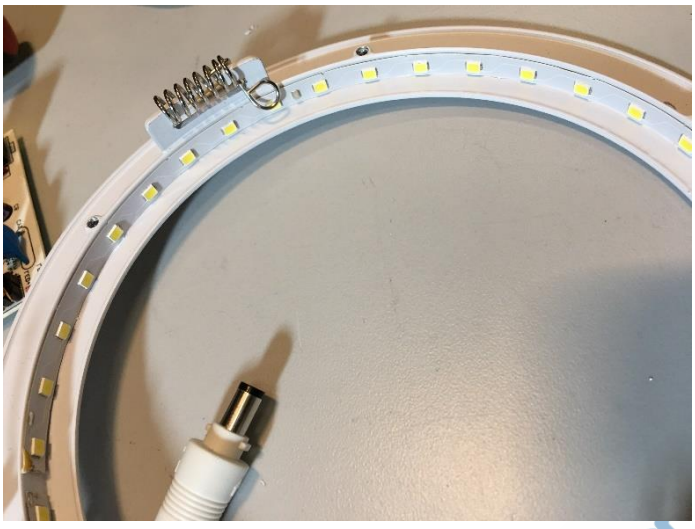
68. On information and belief, the A.C. power source is an A.C. dimmer circuit, wherein the A.C. dimmer circuit is controlled by a user interface to vary the power-related signal, and wherein the at least one controller is configured to variably control at least one parameter of light generated by the at least one LED in response to operation of the user interface, and wherein the operation of the user interface varies a duty cycle of the power-related signal, and wherein the at

least one controller is configured to variably control the at least one parameter of the light based at least on the variable duty cycle of the power-related signal; for example, PR100082-WW-US products are compatible with an A.C. dimmer circuit (e.g., a forward-phase dimmer) that varies the duty cycle of the phase cut signal in response to a user adjusting a user interface, the controller variably controlling the intensity of the light emitted by the LEDs in response to the change in duty cycle of the phase cut signal. Signify tested a PR100082-WW-US product using a Lutron DVCL-153P dimmer, a forward-phase dimmer, to verify that adjusting the slider of the dimmer resulted in an adjustment of the intensity of the light emitted by the LEDs, as a result of the change in duty cycle of the phase cut signal output by the dimmer.

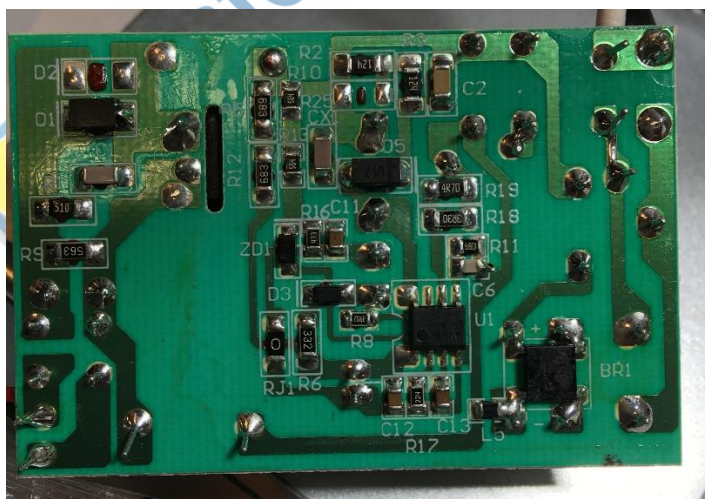
**Infringing 170004-DW-US Products**

69. On information and belief, 170004-DW-US products are illumination apparatuses. An example of a 170004-DW-US product is shown in the below image, taken from Defendants' website at: https://www.lepro.com/12-pack-14w-5-6-inch-led-recessed-lighting.html.

70. On information and belief, 170004-DW-US products include at least one LED; for example, 170004-DW-US products include multiple LEDs.

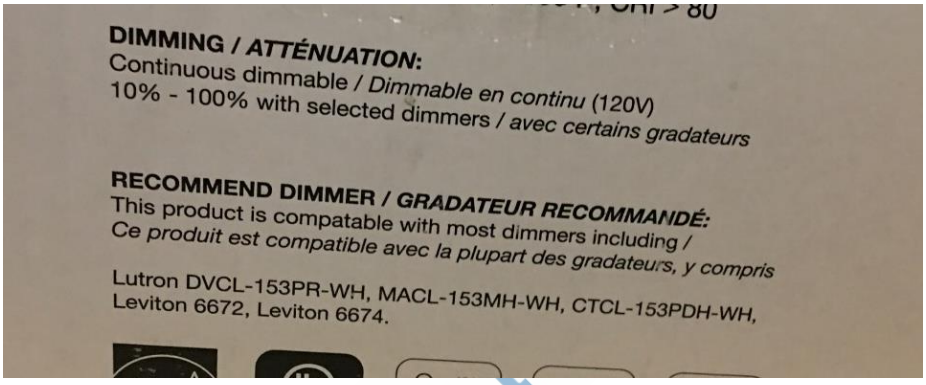


71. On information and belief, 170004-DW-US products include at least one controller coupled to the at least one LED and configured to receive a power-related signal from an alternating current (A.C.) power source that provides signals other than a standard A.C. line voltage, the at least one controller further configured to provide power to the at least one LED based on the power-related signal; for example, 170004-DW-US products include a controller that is configured to receive a power-related signal, e.g., from a dimmer, and to provide power to the LEDs based on the power-related signal.




72. On information and belief, the A.C. power source is an A.C. dimmer circuit, wherein the A.C. dimmer circuit is controlled by a user interface to vary the power-related signal, and wherein the at least one controller is configured to variably control at least one parameter of light generated by the at least one LED in response to operation of the user interface, and wherein the operation of the user interface varies a duty cycle of the power-related signal, and wherein the at

least one controller is configured to variably control the at least one parameter of the light based at least on the variable duty cycle of the power-related signal; for example, 170004-DW-US products are compatible with an A.C. dimmer circuit (e.g., TRIAC dimmer) that varies the duty cycle of the phase cut signal in response to a user adjusting a user interface, the controller variably controlling the intensity of the light emitted by the LEDs in response to the change in duty cycle of the phase cut signal. (For example, the packaging of the 170004-DW-US-12 identifies several different compatible dimmers, including the Leviton 6674, which is a TRIAC dimmer.)




**Infringing 1700040-WW-US Products**

73. On information and belief, 1700040-WW-US products are illumination apparatuses. An example of a 1700040 product is shown in the below image, taken from an archived version of Defendants' website at: http://web.archive.org/web/20170607211424/http://www.lightingever.com/12w-dimmable-recessed-light-1700040-dw-us-4.html.

74. On information and belief, 1700040-WW-US products include at least one LED; for example, 1700040-WW-US products include multiple LEDs.


75. On information and belief, 1700040-WW-US products include at least one controller coupled to the at least one LED and configured to receive a power-related signal from an alternating current (A.C.) power source that provides signals other than a standard A.C. line voltage, the at least one controller further configured to provide power to the at least one LED based on the power-related signal; for example, 1700040-WW-US products include a controller that is configured to receive a power-related signal, e.g., from a dimmer, and to provide power to the LEDs based on the power-related signal.

76. On information and belief, the A.C. power source is an A.C. dimmer circuit, wherein the A.C. dimmer circuit is controlled by a user interface to vary the power-related signal, and wherein the at least one controller is configured to variably control at least one parameter of light generated by the at least one LED in response to operation of the user interface, and wherein the operation of the user interface varies a duty cycle of the power-related signal, and wherein the at least one controller is configured to variably control the at least one parameter of the light based at least on the variable duty cycle of the power-related signal; for example, 1700040-WW-US products are compatible with an A.C. dimmer circuit (e.g., SCR dimmer) that varies the duty cycle of the phase cut signal in response to a user adjusting a user interface, the controller variably controlling the intensity of the light emitted by the LEDs in response to the change in duty cycle of the phase cut signal. (For example, the archived webpage for the 1700040-DW-US identifies silicon-controlled rectifier dimmers as being compatible.)

**Dimmable.** Works with most of dimmers but to ensure flicker free dimming, please use with silicon-controlled rectifier(SRC) type dimmer

77. The full extent of Defendants' infringement is not presently known to Signify. On information and belief, Defendants have made and sold products under different names or part numbers that infringe the '399 Patent in a similar manner. Signify makes this preliminary identification of infringing products and infringed claims in Count Two without the benefit of discovery or claim construction in this action, and expressly reserves the right to augment, supplement, and revise its identifications based on additional information obtained through discovery or otherwise.

78. Signify has suffered damages as a result of Defendants' infringement of the '399 Patent in an amount to be determined at trial.

79. On information and belief, Defendants have been aware of and have had notice and actual knowledge of the '399 Patent and its infringement of the '399 Patent since at least as early as November 2018. On information and belief, Defendants were notified in an e-mail dated November 23, 2018, that Defendants' products infringed the '399 Patent.

80. On information and belief, Defendants were further notified in a letter dated January 24, 2019, that Defendants' products infringed the '399 Patent.

81. On information and belief, Defendants were further notified in a letter dated April 6, 2021, that Defendants' products infringed the '399 Patent.

82. On information and belief, Defendants' 100061-WW-US, PR100082-WW-US, 170004-DW-US, and 1700040-WW-US products are substantially similar to the products noticed in the November 23, 2018 e-mail as they relate to the '399 Patent, and thus Defendants were on actual notice of infringement for these products by November 23, 2018, or, if later, the date these products were first made, used, sold, offered for sale, or imported. Defendants' 100061-WW-US, PR100082-WW-US, 170004-DW-US, and 1700040-WW-US products are substantially similar to the products noticed in the letter dated January 24, 2019 as they relate to the '399 Patent, and thus Defendants were further on actual notice for these products by January 24, 2019, or, if later, the date these products were first made, used, sold, offered for sale, or imported. Defendants' 100061-WW-US, PR100082-WW-US, 170004-DW-US, and 1700040-WW-US products are substantially similar to the products noticed in the letter dated April 6, 2021 as they relate to the '399 Patent, and thus Defendants were further on actual notice for these products by April 6, 2021, or, if later, the date these products were first made, used, sold, offered for sale, or imported.

83. Defendants' pre-suit knowledge of the '399 Patent and failure to substantively address Signify's numerous notifications of infringement are sufficient to support a plausible inference that Defendants' infringement was willful and egregious, warranting enhancement of damages under 35 U.S.C. § 284, and attorneys' fees and costs incurred under 35 U.S.C. § 285.

**COUNT THREE**

**INFRINGEMENT OF U.S. PATENT NO. 7,348,604**

84. Signify incorporates by reference the allegations in the foregoing paragraphs as if fully set forth herein.

85. On information and belief, Defendants have infringed and are infringing claims of the '604 Patent, including at least claims 1, in violation of 35 U.S.C. § 271(a) by manufacturing, using, offering to sell, selling, and/or importing infringing products.

86. Claim 1 of the ’604 patent recites:

A light-emitting module comprising:

(a) a thermally conductive substrate having one or more light-emitting elements thermally connected thereto, the substrate configured to operatively couple a source of power to the one or more light-emitting elements, thereby providing a means for activation of the one or more light-emitting elements;

(b) a heat dissipation element thermally coupled to the thermally conductive substrate; and

(c) a housing element including fastening means for detachably coupling the housing element to the heat dissipation element, said substrate being enclosed between the heat dissipation element and said housing element, said housing element including a transparent region enabling transmission of light emitted by the one or more light-emitting elements therethrough.

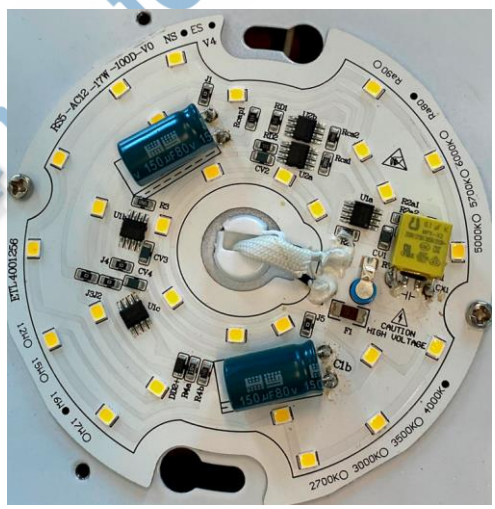
87. On information and belief, Defendants have directly infringed and are directly infringing, at least, claim 1 of the ’604 Patent by making, using, offering to sell, selling, and/or importing at least 150001-NW, 350005-NW-US, 350006-NW-US, 350010-NW-US, 3500013-DW-US, 620001-NW-US-LC, 620002-NW-US-LC, 620003-NW-US-LC, 620004-NW-US-LC, 6200009-DW, and 630010-NW-US products in this judicial district and elsewhere in the United States.



**Infringing 150001-NW Products**

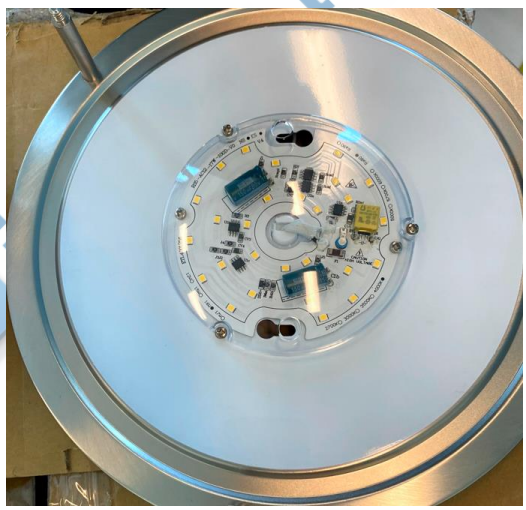
88. On information and belief, 150001-NW products are light-emitting modules. An example of a 150001-NW product is shown in the below image, taken from Defendants’ website at https://www.lepro.com/16w-led-flush-mount-ceiling-light-dimmable-10-5-inch-brushed-nickel-1200lm-4000k-white.html .

89. On information and belief, 150001-NW products include a thermally conductive substrate having one or more light-emitting elements thermally connected thereto, the substrate configured to operatively couple a source of power to the one or more light-emitting elements, thereby providing a means for activation of the one or more light-emitting elements; for example, 150001-NW products include a thermally conductive substrate formed by a metal-core printed circuit board thermally connected to LEDs. The metal-core printed circuit board is configured to operatively couple a source of power—an LED driver—to the LEDs in order to power and thus activate the LEDs.



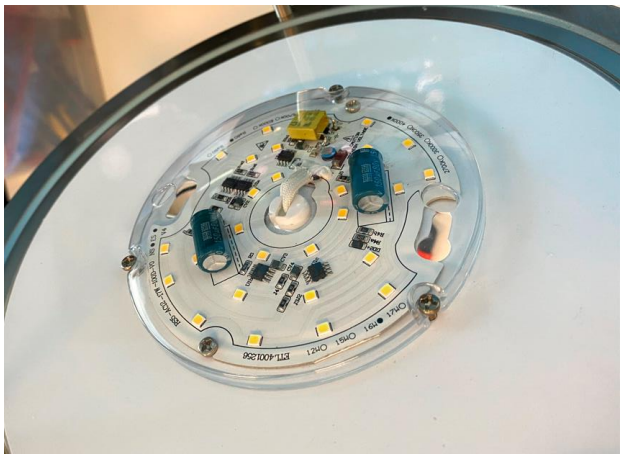

90. On information and belief, 150001-NW products include a heat dissipation element thermally coupled to the thermally conductive substrate; for example, 150001-NW products include a heat dissipation element formed by a solid-metal body, which is thermally coupled to the metal-core printed circuit board.

91. On information and belief, 150001-NW products include a housing element including fastening means for detachably coupling the housing element to the heat dissipation element; for example, 150001-NW products include a housing element, formed by a transparent window. The housing element further includes screws, which pass through holes in the transparent window and engage with threaded bores in the solid-metal body, to detachably couple the housing element to the heat dissipation element.



92. On information and belief, the substrate is enclosed between the heat dissipation element and said housing element; for example, the metal-core printed circuit board is enclosed between the solid-metal body and the frame and transparent window.

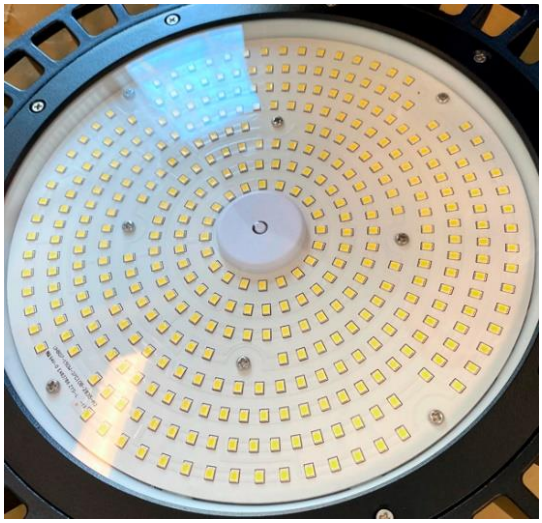
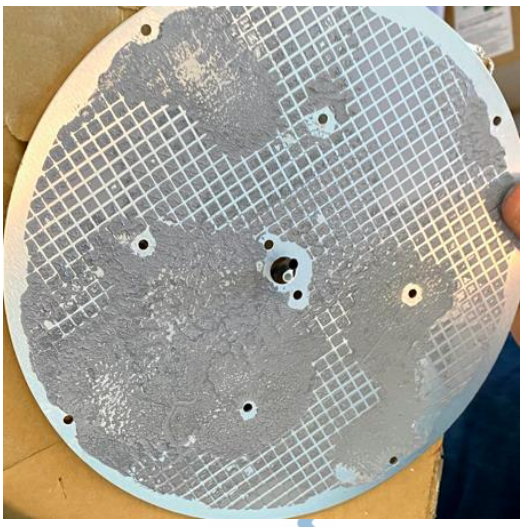
93. On information and belief, the housing element includes a transparent region enabling transmission of light emitted by the one or more light-emitting elements therethrough; for example, the housing element includes a transparent region, formed by the transparent window, that enables the transmission of light emitted by the LEDs to the outside of the housing element.



**Infringing 350005-NW-US Products**

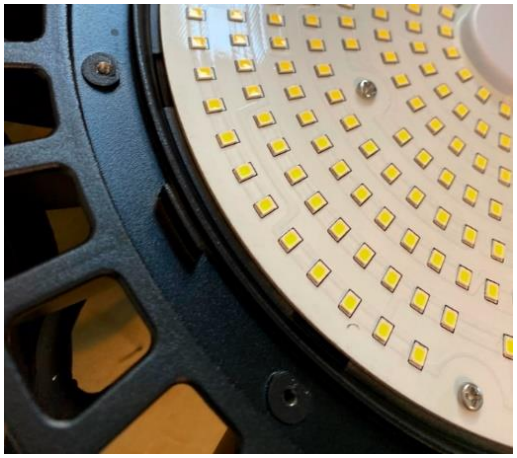
94. On information and belief, 350005-NW-US products are light-emitting modules. An example of a 350005-NW-US product is shown in the below image, taken from Defendants' website at https://www.lepro.com/150w-dimmable-ufo-high-bay-led-light.html.

95. On information and belief, 350005-NW-US products include a thermally conductive substrate having one or more light-emitting elements thermally connected thereto, the substrate configured to operatively couple a source of power to the one or more light-emitting elements, thereby providing a means for activation of the one or more light-emitting elements; for example, 350005-NW-US products include a thermally conductive substrate formed by a metal-core printed circuit board thermally connected to LEDs. The metal-core printed circuit board is configured to operatively couple a source of power—an LED driver—to the LEDs in order to power and thus activate the LEDs.

96. On information and belief, 350005-NW-US products include a heat dissipation element thermally coupled to the thermally conductive substrate; for example, 350005-NW-US products include a heat dissipation element formed by a solid-metal body that includes a set of fins, which is thermally coupled to the metal-core printed circuit board.

97. On information and belief, 350005-NW-US products include a housing element including fastening means for detachably coupling the housing element to the heat dissipation element; for example, 350005-NW-US products include a housing element, formed by a frame and transparent window. The housing element further includes screws, which pass through holes in the frame and engage with threaded bores in the solid-metal body, to detachably couple the housing element to the heat dissipation element.

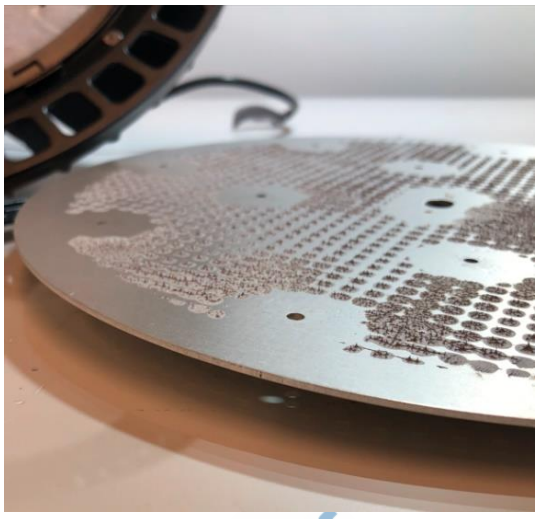
98. On information and belief, the substrate is enclosed between the heat dissipation element and said housing element; for example, the metal-core printed circuit board is enclosed between the solid-metal body and the frame and transparent window.

99. On information and belief, the housing element includes a transparent region enabling transmission of light emitted by the one or more light-emitting elements therethrough; for example, the housing element includes a transparent region, formed by the transparent window, that enables the transmission of light emitted by the LEDs to the outside of the housing element.

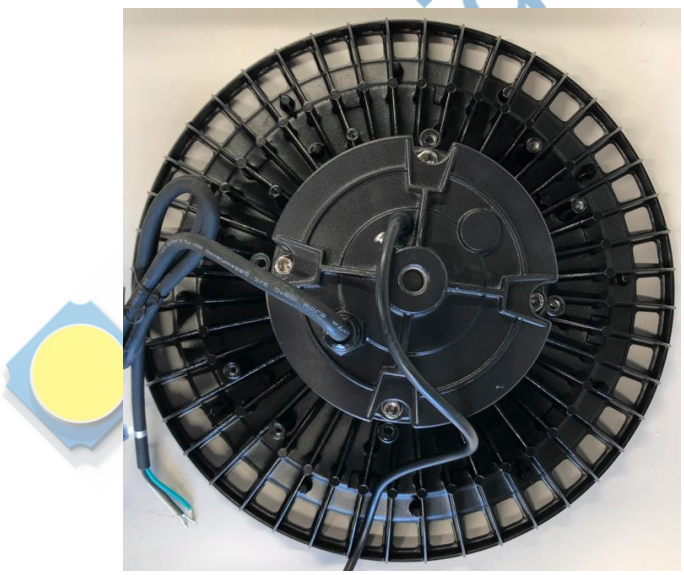
**Infringing 350006-NW-US Products**

100. On information and belief, 350006-NW-US products are light-emitting modules. An example of a 350006-NW-US product is shown in the below image, taken from Defendants' website at https://www.lepro.com/240w-dimmable-ufo-high-bay-led-light.html.

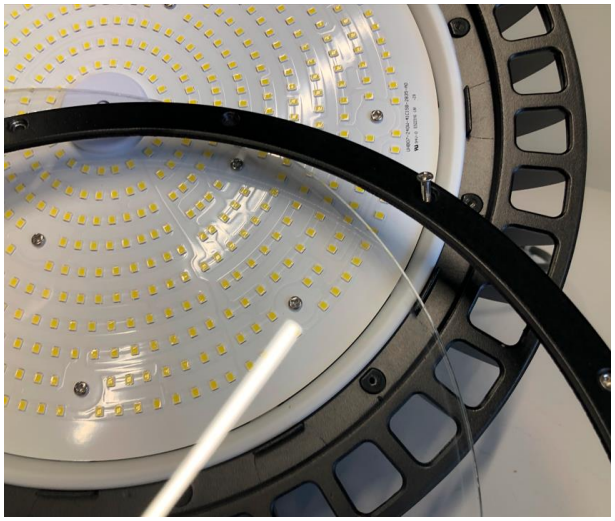
101. On information and belief, 350006-NW-US products include a thermally conductive substrate having one or more light-emitting elements thermally connected thereto, the substrate configured to operatively couple a source of power to the one or more light-emitting elements, thereby providing a means for activation of the one or more light-emitting elements; for example, 350006-NW-US products include a thermally conductive substrate formed by a metal-core printed circuit board thermally connected to LEDs. The metal-core printed circuit board is configured to operatively couple a source of power—an LED driver—to the LEDs in order to power and thus activate the LEDs.

102. On information and belief, 350006-NW-US products include a heat dissipation element thermally coupled to the thermally conductive substrate; for example, 350006-NW-US products include a heat dissipation element formed by a solid-metal body that includes a set of fins, which is thermally coupled to the metal-core printed circuit board.

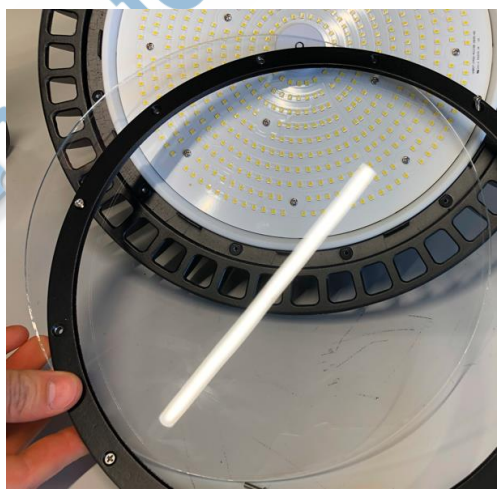


103. On information and belief, 350006-NW-US products include a housing element including fastening means for detachably coupling the housing element to the heat dissipation element; for example, 350006-NW-US products include a housing element, formed by a frame and transparent window. The housing element further includes screws, which pass through holes in the frame and engage with threaded bores in the solid-metal body, to detachably couple the housing element to the heat dissipation element.



104. On information and belief, the substrate is enclosed between the heat dissipation element and said housing element; for example, the metal-core printed circuit board is enclosed between the solid-metal body and the frame and transparent window.

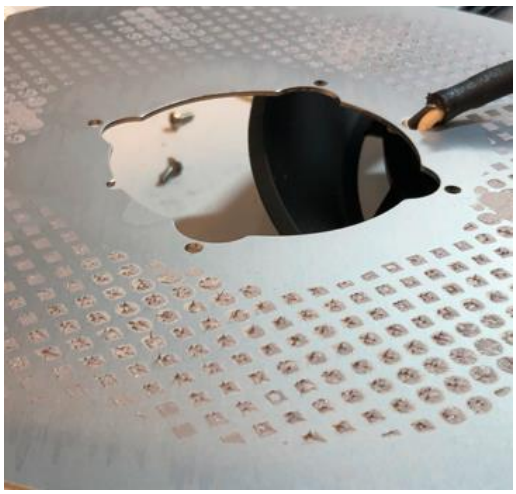
105. On information and belief, the housing element includes a transparent region enabling transmission of light emitted by the one or more light-emitting elements therethrough; for example, the housing element includes a transparent region, formed by the transparent window, that enables the transmission of light emitted by the LEDs to the outside of the housing element.



**Infringing 350010-NW-US Products**

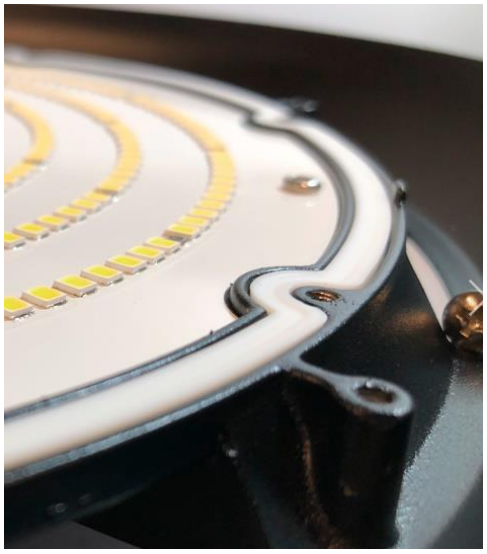
106. On information and belief, 350010-NW-US products are light-emitting modules. An example of a 350010-NW-US product is shown in the below image, taken from Defendants' website at https://www.lepro.com/150w-ufo-led-high-bay-light.html.

107. On information and belief, 350010-NW-US products include a thermally conductive substrate having one or more light-emitting elements thermally connected thereto, the substrate configured to operatively couple a source of power to the one or more light-emitting elements, thereby providing a means for activation of the one or more light-emitting elements; for example, 350010-NW-US products include a thermally conductive substrate formed by a metal-core printed circuit board thermally connected to LEDs. The metal-core printed circuit board is configured to operatively couple a source of power—an LED driver—to the LEDs in order to power and thus activate the LEDs.



108. On information and belief, 350010-NW-US products include a heat dissipation element thermally coupled to the thermally conductive substrate; for example, 350010-NW-US products include a heat dissipation element formed by a solid-metal body that includes a set of fins, which is thermally coupled to the metal-core printed circuit board.

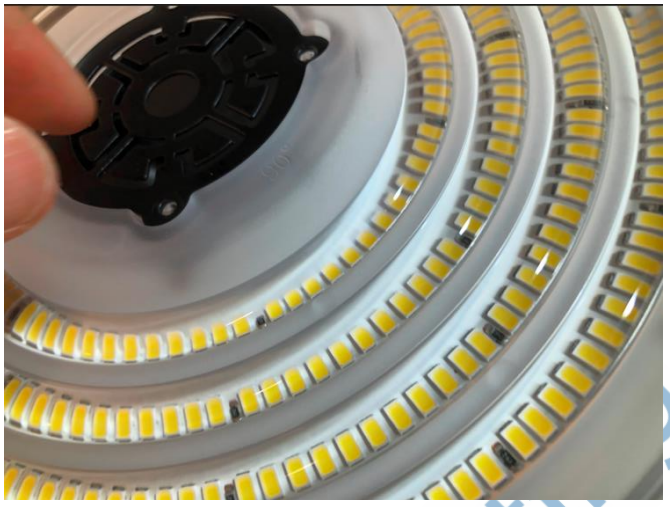
109. On information and belief, 350010-NW-US products include a housing element including fastening means for detachably coupling the housing element to the heat dissipation element; for example, 350010-NW-US products include a housing element, formed by a frame and transparent window. The housing element further includes screws, which pass through holes in the frame and engage with threaded bores in the solid-metal body, to detachably couple the housing element to the heat dissipation element.



110. On information and belief, the substrate is enclosed between the heat dissipation element and said housing element; for example, the metal-core printed circuit board is enclosed between the solid-metal body and the frame and transparent window.

111. On information and belief, the housing element includes a transparent region enabling transmission of light emitted by the one or more light-emitting elements therethrough; for

example, the housing element includes a transparent region, formed by the transparent window, that enables the transmission of light emitted by the LEDs to the outside of the housing element.



**Infringing 3500013-DW-US Products**

112. On information and belief, 3500013-DW-US products are light-emitting modules. An example of a 3500013-DW-US product is shown in the below image, taken from an archived version of Defendants' website at http://web.archive.org/web/20170926121626/https://www.lightingever.com/150w-ufo-dimmable-led-high-bay-light-3500013-dw.html.

113. On information and belief, 3500013-DW-US products include a thermally conductive substrate having one or more light-emitting elements thermally connected thereto, the substrate configured to operatively couple a source of power to the one or more light-emitting elements, thereby providing a means for activation of the one or more light-emitting elements; for example, 3500013-DW-US products include a thermally conductive substrate formed by a metal-core printed circuit board thermally connected to LEDs. The metal-core printed circuit board is

configured to operatively couple a source of power—an LED driver—to the LEDs in order to power and thus activate the LEDs.

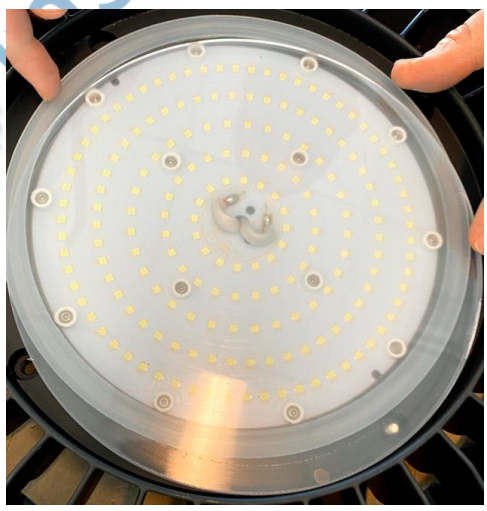
114. On information and belief, 3500013-DW-US products include a heat dissipation element thermally coupled to the thermally conductive substrate; for example, 3500013-DW-US products include a heat dissipation element formed by a solid-metal body that includes a set of fins, which is thermally coupled to the metal-core printed circuit board.

115. On information and belief, 3500013-DW-US products include a housing element including fastening means for detachably coupling the housing element to the heat dissipation element; for example, 3500013-DW-US products include a housing element, formed by a frame and transparent window. The housing element further includes screws, which pass through holes in the

frame and engage with threaded bores in the solid-metal body, to detachably couple the housing element to the heat dissipation element.

116. On information and belief, the substrate is enclosed between the heat dissipation element and said housing element; for example, the metal-core printed circuit board is enclosed between the solid-metal body and the frame and transparent window.

117. On information and belief, the housing element includes a transparent region enabling transmission of light emitted by the one or more light-emitting elements therethrough; for example, the housing element includes a transparent region, formed by the transparent window, that enables the transmission of light emitted by the LEDs to the outside of the housing element.



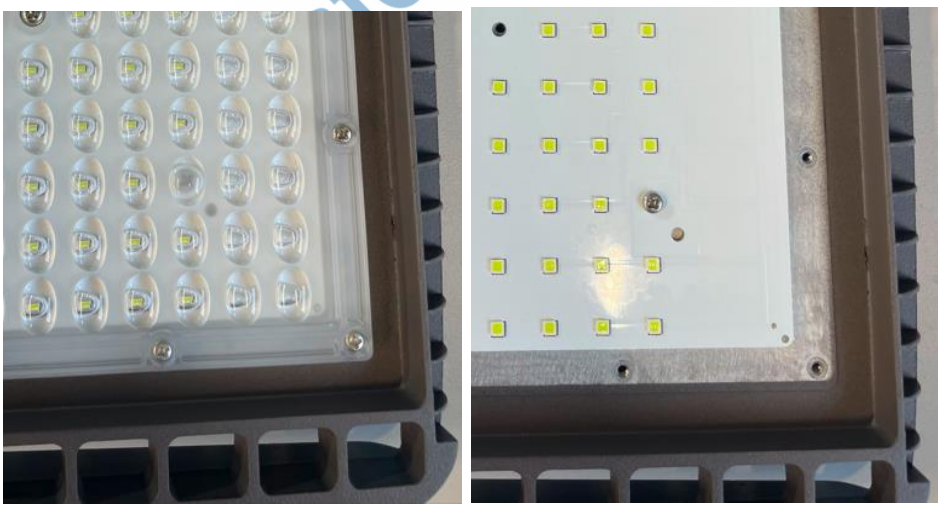
**Infringing 620001-NW-US-LC Products**

118. On information and belief, 620001-NW-US-LC products are light-emitting modules. An example of a 620001-NW-US-LC product is shown in the below image, taken from Defendants' website at https://www.lepro.com/100w-led-parking-lot-light.html.

119. On information and belief, 620001-NW-US-LC products include a thermally conductive substrate having one or more light-emitting elements thermally connected thereto, the substrate configured to operatively couple a source of power to the one or more light-emitting elements, thereby providing a means for activation of the one or more light-emitting elements; for example, 620001-NW-US-LC products include a thermally conductive substrate formed by a metal-core printed circuit board thermally connected to LEDs. The metal-core printed circuit board is configured to operatively couple a source of power—an LED driver—to the LEDs in order to power and thus activate the LEDs.

120. On information and belief, 620001-NW-US-LC products include a heat dissipation element thermally coupled to the thermally conductive substrate; for example, 620001-NW-US-LC products include a heat dissipation element formed by a solid-metal body that includes a set of fins, which is thermally coupled to the metal-core printed circuit board.

121. On information and belief, 620001-NW-US-LC products include a housing element including fastening means for detachably coupling the housing element to the heat dissipation element; for example, 620001-NW-US-LC products include a housing element, formed by a transparent window. The housing element further includes screws, which pass through holes in the transparent window and engage with threaded bores in the solid-metal body, to detachably couple the housing element to the heat dissipation element.



122. On information and belief, the substrate is enclosed between the heat dissipation element and said housing element; for example, the metal-core printed circuit board is enclosed between the solid-metal body and the frame and transparent window.

123. On information and belief, the housing element includes a transparent region enabling transmission of light emitted by the one or more light-emitting elements therethrough; for

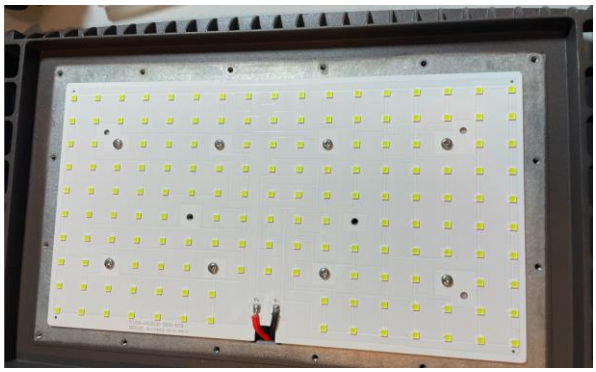
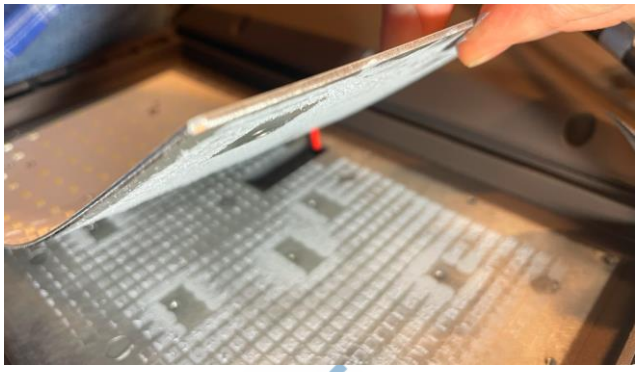
example, the housing element includes a transparent region, formed by the transparent window, that enables the transmission of light emitted by the LEDs to the outside of the housing element.

**Infringing 620002-NW-US-LC Products**

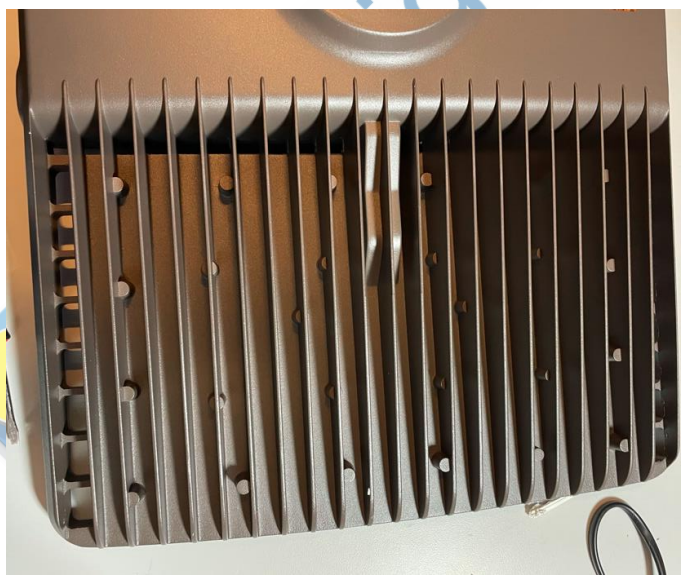
124. On information and belief, 620002-NW-US-LC products are light-emitting modules. An example of a 620002-NW-US-LC product is shown in the below image, taken from Defendants' website at https://www.lepro.com/150w-led-parking-lot-light.html.

125. On information and belief, 620002-NW-US-LC products include a thermally conductive substrate having one or more light-emitting elements thermally connected thereto, the substrate configured to operatively couple a source of power to the one or more light-emitting elements, thereby providing a means for activation of the one or more light-emitting elements; for example, 620002-NW-US-LC products include a thermally conductive substrate formed by a metal-core printed circuit board thermally connected to LEDs. The metal-core printed circuit board is

configured to operatively couple a source of power—an LED driver—to the LEDs in order to power and thus activate the LEDs.

126. On information and belief, 620002-NW-US-LC products include a heat dissipation element thermally coupled to the thermally conductive substrate; for example, 620002-NW-US-LC products include a heat dissipation element formed by a solid-metal body that includes a set of fins, which is thermally coupled to the metal-core printed circuit board.



127. On information and belief, 620002-NW-US-LC products include a housing element including fastening means for detachably coupling the housing element to the heat dissipation element; for example, 620002-NW-US-LC products include a housing element, formed by a transparent window. The housing element further includes screws, which pass through holes in the transparent window and engage with threaded bores in the solid-metal body, to detachably couple the housing element to the heat dissipation element.

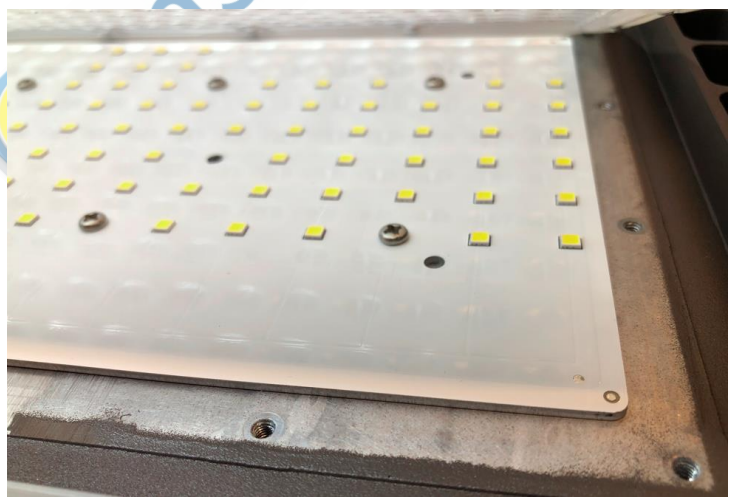

128. On information and belief, the substrate is enclosed between the heat dissipation element and said housing element; for example, the metal-core printed circuit board is enclosed between the solid-metal body and the and transparent window.

129. On information and belief, the housing element includes a transparent region enabling transmission of light emitted by the one or more light-emitting elements therethrough; for example, the housing element includes a transparent region, formed by the transparent window, that enables the transmission of light emitted by the LEDs to the outside of the housing element.

**Infringing 620003-NW-US-LC Products**

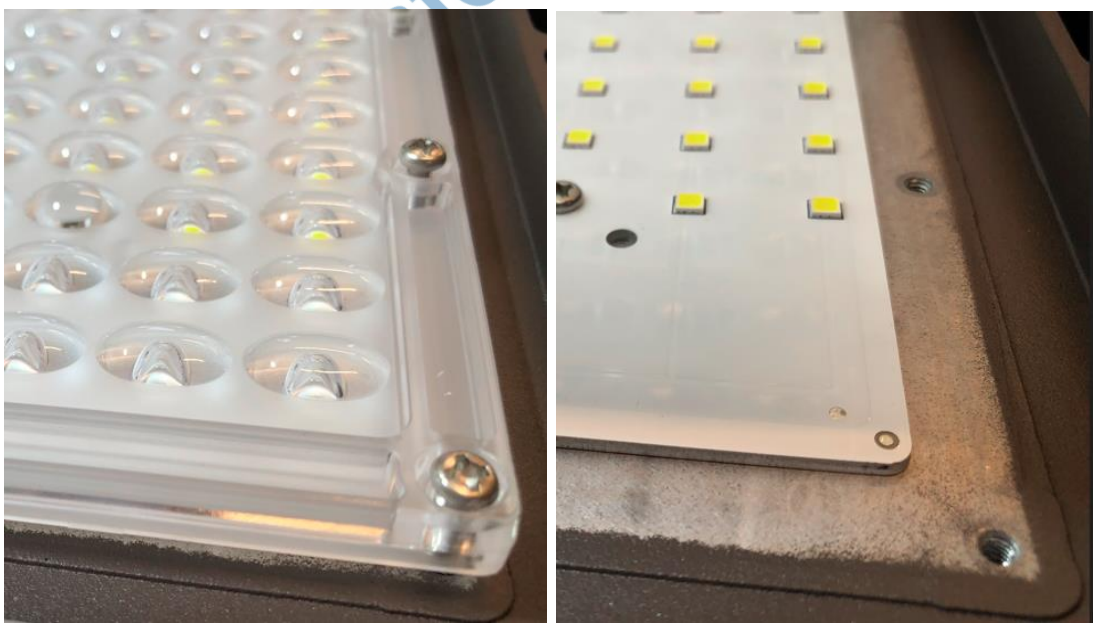
130. On information and belief, 620003-NW-US-LC products are light-emitting modules. An example of a 620003-NW-US-LC product is shown in the below image, taken from Defendants' website at https://www.lepro.com/200w-led-parking-lot-light-photocell.html/.

131. On information and belief, 620003-NW-US-LC products include a thermally conductive substrate having one or more light-emitting elements thermally connected thereto, the substrate configured to operatively couple a source of power to the one or more light-emitting elements, thereby providing a means for activation of the one or more light-emitting elements; for example, 620003-NW-US-LC products include a thermally conductive substrate formed by a metal-core printed circuit board thermally connected to LEDs. The metal-core printed circuit board is configured to operatively couple a source of power—an LED driver—to the LEDs in order to power and thus activate the LEDs.



132. On information and belief, 620003-NW-US-LC products include a heat dissipation element thermally coupled to the thermally conductive substrate; for example, 620003-NW-US-LC products include a heat dissipation element formed by a solid-metal body that includes a set of fins, which is thermally coupled to the metal-core printed circuit board.

133. On information and belief, 620003-NW-US-LC products include a housing element including fastening means for detachably coupling the housing element to the heat dissipation element; for example, 620003-NW-US-LC products include a housing element, formed by a transparent window. The housing element further includes screws, which pass through holes in the transparent window and engage with threaded bores in the solid-metal body, to detachably couple the housing element to the heat dissipation element.



134. On information and belief, the substrate is enclosed between the heat dissipation element and said housing element; for example, the metal-core printed circuit board is enclosed between the solid-metal body and the frame and transparent window.

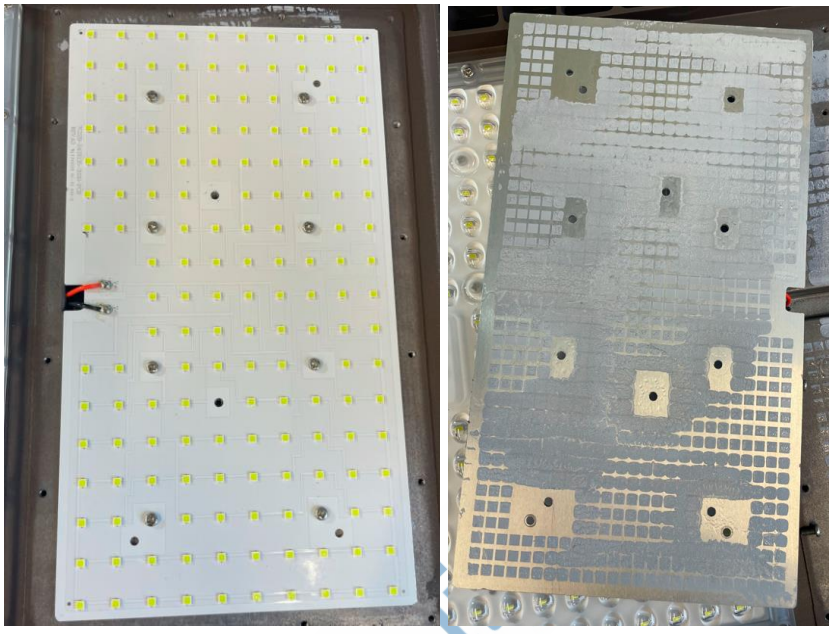
135. On information and belief, the housing element includes a transparent region enabling transmission of light emitted by the one or more light-emitting elements therethrough; for example, the housing element includes a transparent region, formed by the transparent window, that enables the transmission of light emitted by the LEDs to the outside of the housing element.

**Infringing 620004-NW-US-LC Products**

136. On information and belief, 620004-NW-US-LC products are light-emitting modules. An example of a 620004-NW-US-LC product is shown in the below image, taken from the website at https://www.lepro.com/300w-led-parking-lot-light.html.

137. On information and belief, 620004-NW-US-LC products include a thermally conductive substrate having one or more light-emitting elements thermally connected thereto, the substrate configured to operatively couple a source of power to the one or more light-emitting elements, thereby providing a means for activation of the one or more light-emitting elements; for example, 620004-NW-US-LC products include a thermally conductive substrate formed by a metal-

core printed circuit board thermally connected to LEDs. The metal-core printed circuit board is configured to operatively couple a source of power—an LED driver—to the LEDs in order to power and thus activate the LEDs.



138. On information and belief, 620004-NW-US-LC products include a heat dissipation element thermally coupled to the thermally conductive substrate; for example, 620004-NW-US-LC products include a heat dissipation element formed by a solid-metal body that includes a set of fins, which is thermally coupled to the metal-core printed circuit board.

139. On information and belief, 620004-NW-US-LC products include a housing element including fastening means for detachably coupling the housing element to the heat dissipation element; for example, 620004-NW-US-LC products include a housing element, formed by a

transparent window. The housing element further includes screws, which pass through holes in the transparent window and engage with threaded bores in the solid-metal body, to detachably couple the housing element to the heat dissipation element.

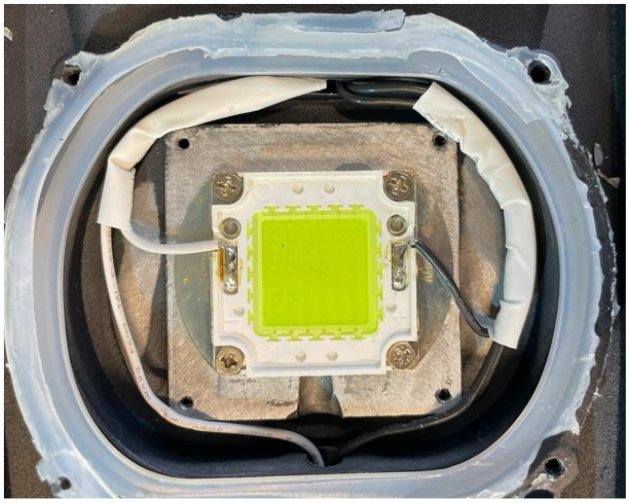
140. On information and belief, the substrate is enclosed between the heat dissipation element and said housing element; for example, the metal-core printed circuit board is enclosed between the solid-metal body and the frame and transparent window.

141. On information and belief, the housing element includes a transparent region enabling transmission of light emitted by the one or more light-emitting elements therethrough; for example, the housing element includes a transparent region, formed by the transparent window, that enables the transmission of light emitted by the LEDs to the outside of the housing element.

**Infringing 6200009-DW Products**

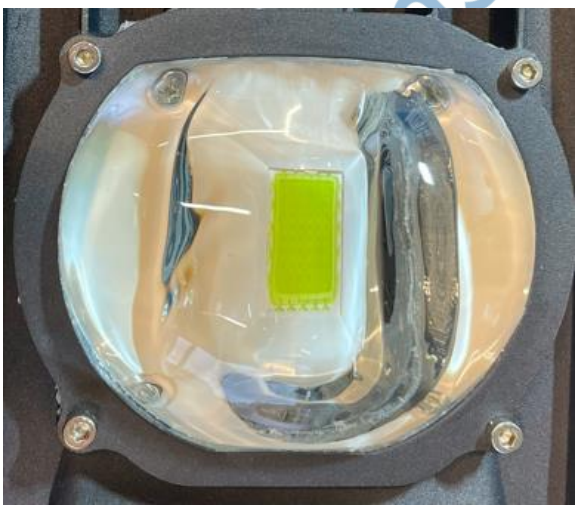
142. On information and belief, 6200009-DW products are light-emitting modules. An example of a 6200009-DW product is shown in the below image, taken from Defendants' website at https://www.lepro.com/180w-led-street-light.html.

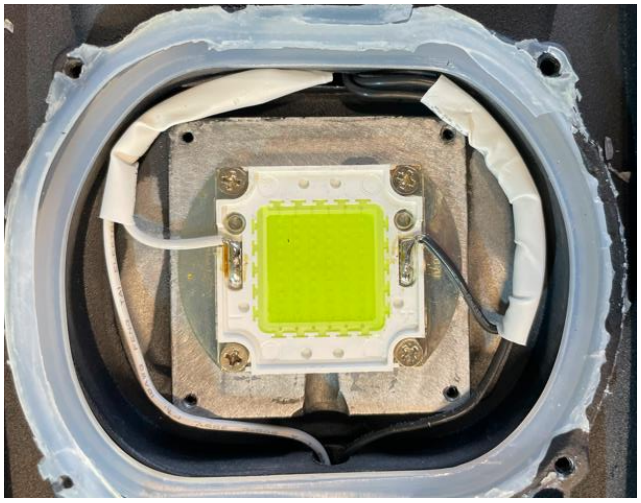
143. On information and belief, 6200009-DW products include a thermally conductive substrate having one or more light-emitting elements thermally connected thereto, the substrate configured to operatively couple a source of power to the one or more light-emitting elements, thereby providing a means for activation of the one or more light-emitting elements; for example, 6200009-DW products include a thermally conductive substrate formed by a metal-core printed circuit board thermally connected to LEDs. The metal-core printed circuit board is configured to operatively couple a source of power—an LED driver—to the LEDs in order to power and thus activate the LEDs.



144. On information and belief, 6200009-DW products include a heat dissipation element thermally coupled to the thermally conductive substrate; for example, 6200009-DW products include a heat dissipation element formed by a solid-metal body that includes a set of fins, which is thermally coupled to the metal-core printed circuit board.

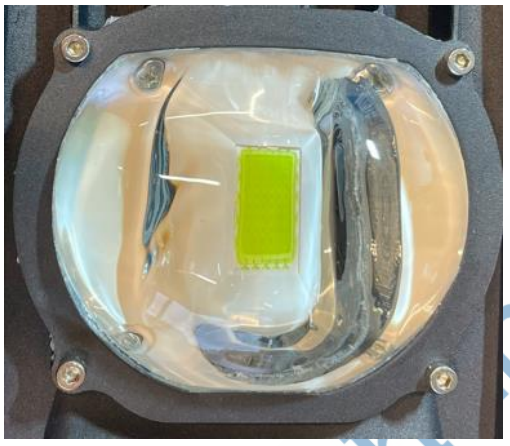
145. On information and belief, 6200009-DW products include a housing element including fastening means for detachably coupling the housing element to the heat dissipation element; for example, 6200009-DW products include a housing element, formed by a frame and transparent window. The housing element further includes screws, which pass through holes in the frame and engage with threaded bores in the solid-metal body, to detachably couple the housing element to the heat dissipation element.





146. On information and belief, the substrate is enclosed between the heat dissipation element and said housing element; for example, the metal-core printed circuit board is enclosed between the solid-metal body and the frame and transparent window.

147. On information and belief, the housing element includes a transparent region enabling transmission of light emitted by the one or more light-emitting elements therethrough; for example, the housing element includes a transparent region, formed by the transparent window, that enables the transmission of light emitted by the LEDs to the outside of the housing element.



**Infringing 630010-NW-US Products**

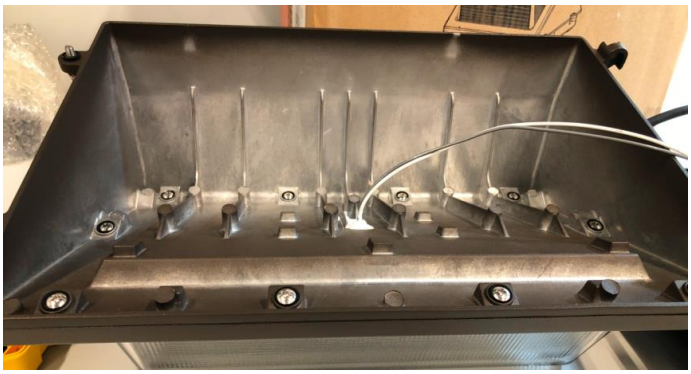
148. On information and belief, 630010-NW-US products are light-emitting modules. An example of a 630010-NW-US product is shown in the below image, taken from Defendants' website at https://www.lepro.com/80w-led-wall-pack-light.html.

149. On information and belief, 630010-NW-US products include a thermally conductive substrate having one or more light-emitting elements thermally connected thereto, the substrate configured to operatively couple a source of power to the one or more light-emitting elements, thereby providing a means for activation of the one or more light-emitting elements; for example, 630010-NW-US products include a thermally conductive substrate formed by a metal-core printed

circuit board thermally connected to LEDs. The metal-core printed circuit board is configured to operatively couple a source of power—an LED driver—to the LEDs in order to power and thus activate the LEDs.

150. On information and belief, 630010-NW-US products include a heat dissipation element thermally coupled to the thermally conductive substrate; for example, 630010-NW-US products include a heat dissipation element formed by a solid-metal body that includes a set of fins, which is thermally coupled to the metal-core printed circuit board.

151. On information and belief, 630010-NW-US products include a housing element including fastening means for detachably coupling the housing element to the heat dissipation element; for example, 630010-NW-US products include a housing element, formed by a frame and transparent window. The housing element further includes screws, which pass through holes in the frame and engage with threaded bores in the solid-metal body, to detachably couple the housing element to the heat dissipation element.

152. On information and belief, the substrate is enclosed between the heat dissipation element and said housing element; for example, the metal-core printed circuit board is enclosed between the solid-metal body and the frame and transparent window.


153. On information and belief, the housing element includes a transparent region enabling transmission of light emitted by the one or more light-emitting elements therethrough; for example, the housing element includes a transparent region, formed by the transparent window, that enables the transmission of light emitted by the LEDs to the outside of the housing element.


154. The full extent of Defendants' infringement is not presently known to Signify. On information and belief, Defendants have made and sold products under different names or part

numbers that infringe the '604 Patent in a similar manner. Signify makes this preliminary identification of infringing products and infringed claims in Count Three without the benefit of discovery or claim construction in this action, and expressly reserves the right to augment, supplement, and revise its identifications based on additional information obtained through discovery or otherwise.

155. Signify has suffered and continues to suffer damages as a result of Defendants' infringement of the '604 Patent in an amount to be determined at trial.

156. Defendant's infringement of the '604 Patent is causing irreparable harm for which Signify has no adequate remedy at law unless Defendant is enjoined by this Court. Under 35 U.S.C. § 283, Signify is entitled to a permanent injunction against further infringement of the '604 Patent.

157. On information and belief, Defendants have been aware of and have had notice and actual knowledge of the '604 Patent and its infringement of the '604 Patent since at least as early as June 2017. On information and belief, Defendants were notified in a letter dated June 1, 2017, that Defendants' products infringed the '604 Patent.

158. On information and belief, Defendants were further notified in a letter dated April 6, 2021, that Defendants' products infringed the '604 Patent.

159. On information and belief, Defendants' 150001-NW, 350005-NW-US, 350006-NW-US, 350010-NW-US, 3500013-DW-US, 620001-NW-US-LC, 620002-NW-US-LC, 620003-NW-US-LC, 620004-NW-US-LC, 6200009-DW, and 630010-NW-US products are the same as or substantially similar to the products noticed in the June 1, 2017 e-mail as they relate to the '604 Patent, and thus Defendants were on actual notice of infringement for these products by June 1, 2017, or, if later, the date these products were first made, used, sold, offered for sale, or imported. Defendants' 150001-NW, 350005-NW-US, 350006-NW-US, 350010-NW-US, 3500013-DW-US, 620001-NW-US-LC, 620002-NW-US-LC, 620003-NW-US-LC, 620004-NW-US-LC, 6200009-DW, and 630010-NW-US products are the same as or substantially similar to the products noticed in the letter dated April 6, 2021 as they relate to the '604 Patent, and thus Defendants were further on actual notice for these products by April 6, 2021, or, if later, the date these products were first made, used, sold, offered for sale, or imported.

160. Defendants' pre-suit knowledge of the '604 Patent and failure to substantively address Signify's numerous notifications of infringement are sufficient to support a plausible inference that Defendants' infringement was willful and egregious, warranting enhancement of damages under 35 U.S.C. § 284, and attorneys' fees and costs incurred under 35 U.S.C. § 285.

**COUNT FOUR**

**INFRINGEMENT OF U.S. PATENT NO. 7,352,138**

161. Signify incorporates by reference the allegations in the foregoing paragraphs as if fully set forth herein.

162. On information and belief, Defendant has infringed claims of the '138 Patent, including at least claim 9, in violation of 35 U.S.C. § 271(a) by manufacturing, using, offering to sell, selling, and/or importing infringing products.

163. Claim 9 of the '138 patent, including the limitations of claims 1 and 2, recites:

> An illumination apparatus, comprising:
>
> at least one LED; and
>
> at least one controller coupled to the at least one LED and configured to receive a power-related signal from an alternating current (A.C.) power source that provides signals other than a standard A.C. line voltage, the at least one controller further configured to provide power to the at least one LED based on the power-related signal,
>
> wherein the A.C. power source is an (A.C.) dimmer circuit,
>
> wherein the A.C. dimmer circuit is controlled by a user interface to vary the power-related signal, and wherein the at least one controller is configured to variably control at least one parameter of light generated by the at least one LED in response to operation of the user interface.

164. On information and belief, Defendant has directly infringed claim 9 of the '138 Patent by making, using, offering to sell, selling, and/or importing at least 100061-WW-US, PR100082-WW-US, 170004-DW-US, and 1700040-WW-US products, in this judicial district and elsewhere in the United States, prior to the expiration date of the '138 Patent.

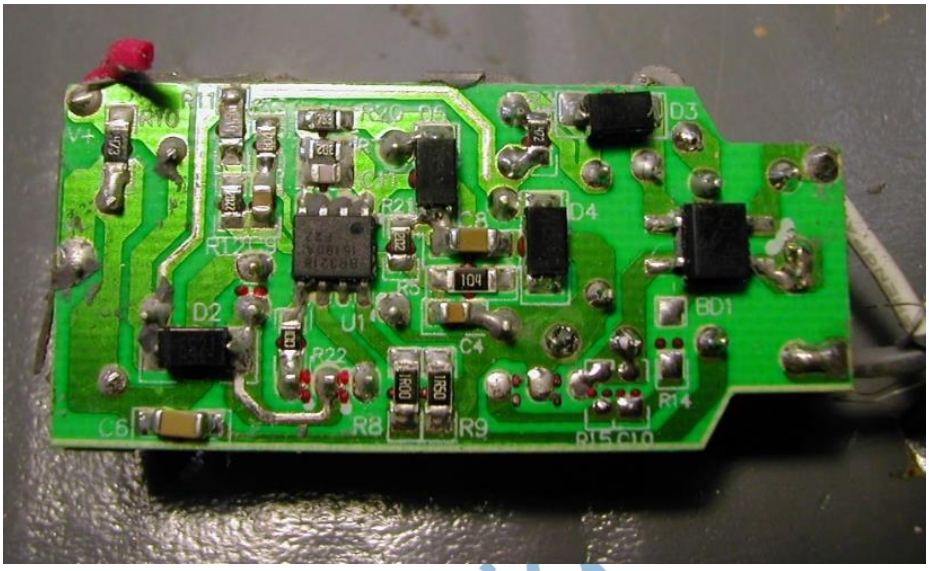
**Infringing 100061-WW-US Products**

165. On information and belief, 100061-WW-US products are illumination apparatuses. An example of a 100061-WW-US product is shown in the below image, taken from the Lepro Amazon store at: https://www.amazon.com/Dimmable-Incandescent-Equivalent-1050lm-Medium/dp/B015MHKP1O.


166. On information and belief, 100061-WW-US products include at least one LED; for example, 100061-WW-US products include multiple LEDs.

167. On information and belief, 100061-WW-US products include at least one controller coupled to the at least one LED and configured to receive a power-related signal from an alternating current (A.C.) power source that provides signals other than a standard A.C. line voltage, the at least one controller further configured to provide power to the at least one LED based on the power-

related signal; for example, 100061-WW-US products include a controller that is configured to receive a phase-cut A.C. signal, e.g., from a TRIAC dimmer, and to provide power to the LEDs based on the phase-cut signal.




168. On information and belief, the A.C. power source is an (A.C.) dimmer circuit; for example, 100061-WW-US products are compatible with an A.C. dimmer circuit (e.g., TRIAC dimmer).

169. On information and belief, the A.C. dimmer circuit is controlled by a user interface to vary the power-related signal, and wherein the at least one controller is configured to variably control at least one parameter of light generated by the at least one LED in response to operation of the user interface; for example, 100061-WW-US products are compatible with an A.C. dimmer circuit (e.g., TRIAC dimmer) that varies the duty cycle of the phase cut signal in response to a user adjusting a user interface, the controller variably controlling the intensity of the light emitted by the LEDs in response to the change in duty cycle of the phase cut signal. (The controller includes a BP3218, which is a high efficiency TRIAC dimmable driver chip. A publicly-available datasheet for the BP3218 chip is attached as Exhibit 8, retrieved from http://www.bpsemi.com/uploads/file/20161221103146_667.pdf, an image from which is included below.)

晶丰明源半导体 High Effi

**Description**

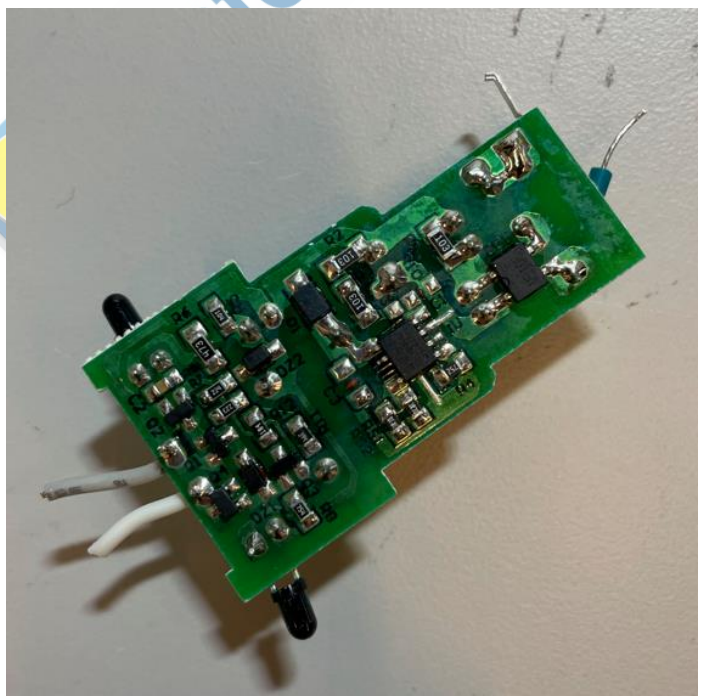
The BP3218 is a high efficiency TRIAC dimmable LED driver. The device operates in critical conduction mode and is suitable for buck, buck-boost or fly-back LED lighting.

**Infringing PR100082-WW-US Products**

170. On information and belief, PR100082-WW-US products are illumination apparatuses. An example of a PR100082-WW-US product is shown in the below image, taken from the Lepro Amazon store at: https://www.amazon.com/dp/B088CZ1Q54?ref_=cm_sw_r_cp_ud_dp_4S0WKS4NZ6549QQKMAGE.


171. On information and belief, PR100082-WW-US products include at least one LED; for example, PR100082-WW-US products include multiple LEDs.


172. On information and belief, PR100082-WW-US products include at least one controller coupled to the at least one LED and configured to receive a power-related signal from an alternating current (A.C.) power source that provides signals other than a standard A.C. line voltage, the at least one controller further configured to provide power to the at least one LED based on the power-related signal; for example, PR100082-WW-US products include a controller that is configured to receive a phase-cut A.C. signal, e.g., from a forward phase dimmer, and to provide power to the LEDs based on the phase-cut signal.



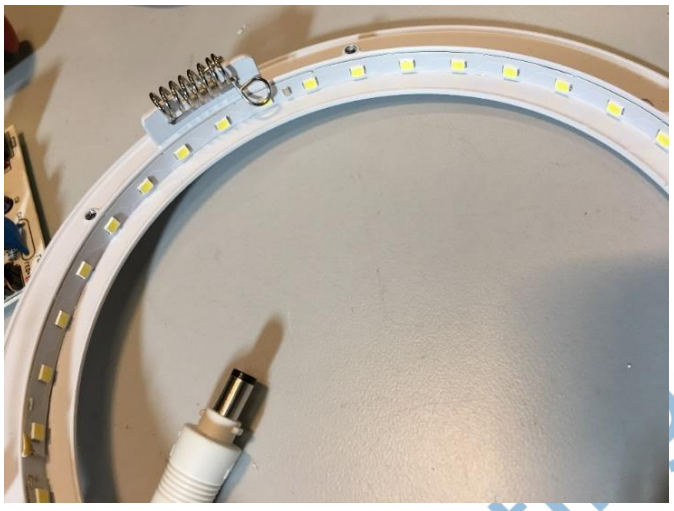
173. On information and belief, the A.C. power source is an (A.C.) dimmer circuit; for example, PR100082-WW-US products are compatible with an A.C. dimmer circuit (e.g., a forward-phase dimmer).

174. On information and belief, the A.C. dimmer circuit is controlled by a user interface to vary the power-related signal, and wherein the at least one controller is configured to variably control at least one parameter of light generated by the at least one LED in response to operation of the user interface; for example, PR100082-WW-US products are compatible with an A.C. dimmer circuit (e.g., a forward-phase dimmer) that varies the duty cycle of the phase cut signal in response to a user adjusting a user interface, the controller variably controlling the intensity of the light emitted by the LEDs in response to the change in duty cycle of the phase cut signal. Signify tested a PR100082-WW-US product using a Lutron DVCL-153P dimmer, a forward-phase dimmer, and verified that adjusting the slider of the dimmer resulted in an adjustment of the intensity of the light emitted by the LEDs, resulting from the change in duty cycle of the phase cut signal output by the dimmer.

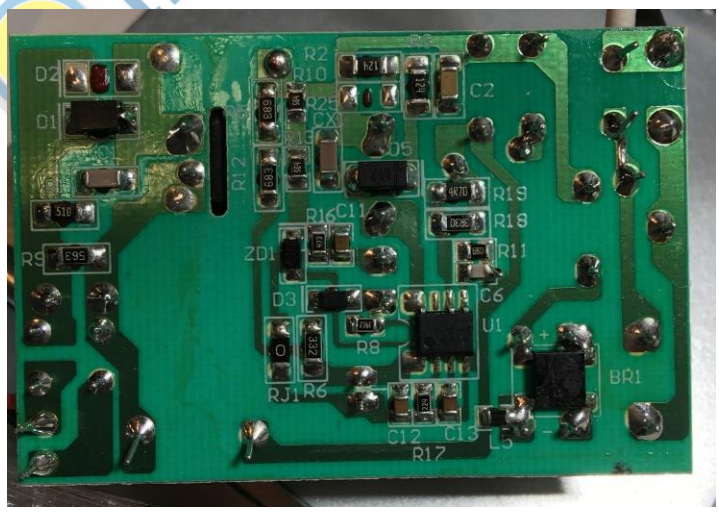
**Infringing 170004-DW-US Products**

175. On information and belief, 170004-DW-US products are illumination apparatuses. An example of a 170004-DW-US product is shown in the below image, taken from Defendants' website at: https://www.lepro.com/12-pack-14w-5-6-inch-led-recessed-lighting.html.

176. On information and belief, 170004-DW-US products include at least one LED; for example, 170004-DW-US products include multiple LEDs.

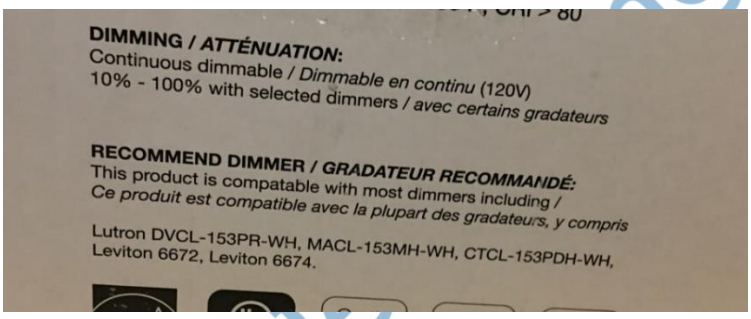


177. On information and belief, 170004-DW-US products include at least one controller coupled to the at least one LED and configured to receive a power-related signal from an alternating current (A.C.) power source that provides signals other than a standard A.C. line voltage, the at least one controller further configured to provide power to the at least one LED based on the power-related signal; for example, 170004-DW-US products include a controller that is configured to receive a power-related signal, e.g., from a dimmer, and to provide power to the LEDs based on the power-related signal.




178. On information and belief, the A.C. power source is an (A.C.) dimmer circuit; for example, 170004-DW-US products are compatible with an A.C. dimmer circuit (e.g., TRIAC dimmer).

179. On information and belief, the A.C. dimmer circuit is controlled by a user interface to vary the power-related signal, and wherein the at least one controller is configured to variably control at least one parameter of light generated by the at least one LED in response to operation of the user interface; for example, 170004-DW-US products are compatible with an A.C. dimmer circuit (e.g., TRIAC dimmer) that varies the duty cycle of the phase cut signal in response to a user adjusting a user interface, the controller variably controlling the intensity of the light emitted by the LEDs in response to the change in duty cycle of the phase cut signal. (For example, the packaging of the 170004-DW-US-12 identifies several different compatible dimmers, including the Leviton 6674, which is a TRIAC dimmer.)

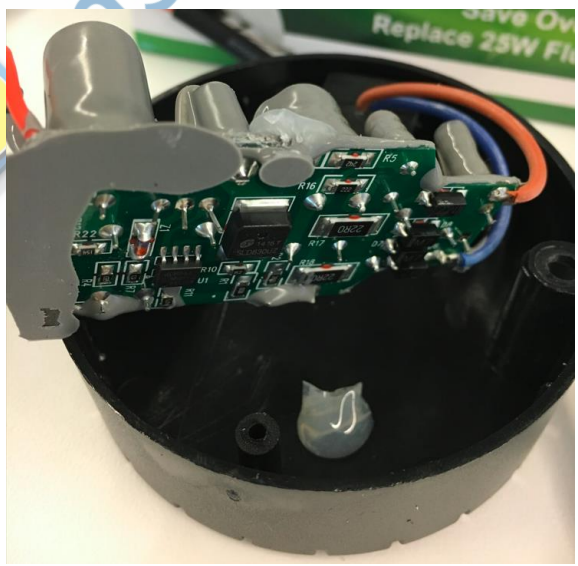



**Infringing 1700040-WW-US Products**

180. On information and belief, 1700040-WW-US products are illumination apparatuses. An example of a 1700040 product is shown in the below image, taken from an archived version of Defendants' website: http://web.archive.org/web/20170607211424/http://www.lightingever.com/12w-dimmable-recessed-light-1700040-dw-us-4.html.

181. On information and belief, 1700040-WW-US products include at least one LED; for example, 1700040-WW-US products include multiple LEDs.


182. On information and belief, 1700040-WW-US products include at least one controller coupled to the at least one LED and configured to receive a power-related signal from an alternating current (A.C.) power source that provides signals other than a standard A.C. line voltage, the at least one controller further configured to provide power to the at least one LED based on the power-related signal; for example, 1700040-WW-US products include a controller that is configured to receive a power-related signal, e.g., from a dimmer, and to provide power to the LEDs based on the power-related signal.



183. On information and belief, the A.C. power source is an (A.C.) dimmer circuit; for example, 1700040-WW-US products are compatible with an A.C. dimmer circuit (e.g., SCR dimmer).

184. On information and belief, the A.C. dimmer circuit is controlled by a user interface to vary the power-related signal, and wherein the at least one controller is configured to variably control at least one parameter of light generated by the at least one LED in response to operation of the user interface; for example, 1700040-WW-US products are compatible with an A.C. dimmer circuit (e.g., SCR dimmer) that varies the duty cycle of the phase cut signal in response to a user adjusting a user interface, the controller variably controlling the intensity of the light emitted by the LEDs in response to the change in duty cycle of the phase cut signal. (For example, the archived webpage for the 1700040-DW-US identifies silicon-controlled rectifier dimmers as being compatible.)

**Dimmable.** Works with most of dimmers but to ensure flicker free dimming, please use with silicon-controlled rectifier(SRC) type dimmer

185. The full extent of Defendants' infringement is not presently known to Signify. On information and belief, Defendants have made and sold products under different names or part numbers that infringe the '138 Patent in a similar manner. Signify makes this preliminary identification of infringing products and infringed claims in Count Four without the benefit of discovery or claim construction in this action, and expressly reserves the right to augment, supplement, and revise its identifications based on additional information obtained through discovery or otherwise.

186. Signify has suffered damages as a result of Defendants' infringement of the '138 Patent in an amount to be determined at trial.

187. On information and belief, Defendants have been aware of and have had notice and actual knowledge of the '138 Patent and its infringement of the '138 Patent since at least as early as June 2017. On information and belief, Defendants were notified in a letter dated June 1, 2017, that Defendants' products infringed the '138 Patent.

188. On information and belief, Defendants were further notified in a letter dated January 24, 2019, that Defendants' products infringed the '138 Patent.

189. On information and belief, Defendants were further notified in a letter dated April 6, 2021, that Defendants' products infringed the '138 Patent.

190. On information and belief, Defendants' 100061-WW-US, 1700040-WW-US, 170004-DW-US, and PR100082-WW-US products are substantially similar to the products noticed in the June 1, 2017 e-mail, and thus Defendants were on actual notice of infringement for these products by June 1, 2017 as they relate to the '138 Patent, or, if later, the date these products were first made, used, sold, offered for sale, or imported. Defendants' 100061-WW-US, 1700040-WW-US, 170004-DW-US, and PR100082-WW-US products are substantially similar to the products noticed in the letter dated January 24, 2019 as they relate to the '138 Patent, and thus Defendants were further on actual notice for these products by January 24, 2019, or, if later, the date these products were first made, used, sold, offered for sale, or imported. Defendants' 100061-WW-US, 1700040-WW-US, 170004-DW-US, and PR100082-WW-US products are substantially similar to the products noticed in the letter dated April 6, 2021 as they relate to the '138 Patent, and thus Defendants were further on actual notice for these products by April 6, 2021, or, if later, the date these products were first made, used, sold, offered for sale, or imported.

191. Defendants' pre-suit knowledge of the '138 Patent and failure to substantively address Signify's numerous notifications of infringement are sufficient to support a plausible inference that Defendants' infringement was willful and egregious, warranting enhancement of damages under 35 U.S.C. § 284, and attorneys' fees and costs incurred under 35 U.S.C. § 285.

**COUNT FIVE**

**INFRINGEMENT OF U.S. PATENT NO. 8,063,577**

192. Signify incorporates by reference the allegations in the foregoing paragraphs as if fully set forth herein.

193. On information and belief, Defendants have infringed and are infringing claims of the '577 Patent, including at least claims 1, in violation of 35 U.S.C. § 271(a) by manufacturing, using, offering to sell, selling, and/or importing infringing products.

194. Claim 1 of the '577 patent recites:

> A driver circuit for operating a light emitting diode, the driver circuit being configured to control a current to be supplied to the LED, the driver circuit comprising:

a set of input terminals for receiving a supply voltage;

a resonant capacitor;

a transformer, a primary winding of the transformer and the resonant capacitor being coupled in series to the set of input terminals;

a rectifier means coupled to the secondary winding of the transformer for rectifying an alternating load voltage on the secondary winding of the transformer;

an output circuit coupled to the rectifier means for receiving a rectified voltage, the output circuit comprising a buffer circuitry and a set of output terminals for coupling the LED to the driver circuit, wherein the buffer circuitry comprises an inductor connected in series with the set of output terminals, and the value of the inductor is selected to provide a substantially constant current through the LED.

195. On information and belief, Defendants have directly infringed and are directly infringing, at least, claim 1 of the '577 Patent by making, using, offering to sell, selling, and/or importing at least 3500013-DW-US and 620002-NW-US-LC products in this judicial district and elsewhere in the United States.

**Infringing 3500013-DW-US Products**

196. On information and belief, 3500013-DW-US products include a driver circuit (i.e., a Mean Well HLG-150H-54B power supply) for operating a light emitting diode, the driver circuit being configured to control a current to be supplied to the LED. An example of a 3500013-DW-US product is shown in the below image, taken from an archived version of Defendants' website at: http://web.archive.org/web/20170926121626/https://www.lightingever.com/150w-ufo-Dimmable-led-high-bay-light-3500013-dw.html.

A Mean Well HLG-150H-54B power supply was reverse engineered, and the resulting schematic is attached as Exhibit 9. All components referred to in the below allegations against the 3500013-DW-US are references to Exhibit 9.

197. On information and belief, 3500013-DW-US products include a set of input terminals for receiving a supply voltage; for example, 3500013-DW-US products include input terminals, formed by the node between switch Q5 and switch Q6 and by ground, that receive a supply voltage.

198. On information and belief, 3500013-DW-US products include a resonant capacitor; for example, 3500013-DW-US products include a resonant capacitor formed by capacitor C33.

199. On information and belief, 3500013-DW-US products include a transformer, a primary winding of the transformer and the resonant capacitor being coupled in series to the set of input terminals; for example, 3500013-DW-US products include a primary winding of transformer T2A and resonant capacitor C33 that are coupled in series with the input terminals.

200. On information and belief, 3500013-DW-US products include a rectifier means coupled to the secondary winding of the transformer for rectifying an alternating load voltage on the secondary winding of the transformer; for example, 3500013-DW-US products include a rectifier means comprised of diodes D25 and D27 coupled to the secondary winding of transformer T2A for rectifying the alternating load voltage on the secondary winding of the transformer.

201. On information and belief, 3500013-DW-US products include an output circuit coupled to the rectifier means for receiving a rectified voltage, the output circuit comprising a buffer

circuitry and a set of output terminals for coupling the LED to the driver circuit, wherein the buffer circuitry comprises an inductor connected in series with the set of output terminals, and the value of the inductor is selected to provide a substantially constant current through the LED; for example, 3500013-DW-US products include an output circuit coupled to the rectifier means, comprising buffer circuitry and a set of output terminals LED+ and LED- for coupling an LED to the driver circuit. The buffer circuitry comprises choke LF3, formed by a pair of inductors connected in series with output terminals LED+ and LED-, the values of which are selected to provide substantially constant current through the LEDs.

**Infringing 620002-NW-US-LC Products**

202. On information and belief, 620002-NW-US-LC products include a driver circuit (i.e., a Sosen SS-150VA-56B power supply) for operating a light emitting diode, the driver circuit being configured to control a current to be supplied to the LED. An example of a 620002-NW-US-LC product is shown in the below image, taken from Defendants' website at https://www.lepro.com/150w-led-parking-lot-light.html.

A Sosen SS-150VA-56B power supply was reverse engineered and the resulting schematic is attached as Exhibit 10. All components referred to in the below allegations against the 62002-NW-US-LC are references to Exhibit 10.

203. On information and belief, 620002-NW-US-LC products include a set of input terminals for receiving a supply voltage; for example, 620002-NW-US-LC products include input

terminals, formed by the node between switch Q9 and switch Q11 and by ground, that receive a supply voltage.

204. On information and belief, 620002-NW-US-LC products include a resonant capacitor; for example, 620002-NW-US-LC products include a resonant capacitor formed by capacitor C37.

205. On information and belief, 620002-NW-US-LC products include a transformer, a primary winding of the transformer and the resonant capacitor being coupled in series to the set of input terminals; for example, 620002-NW-US-LC products include a primary winding of transformer T2A and resonant capacitor C37 that are coupled in series with the input terminals.

206. On information and belief, 620002-NW-US-LC products include a rectifier means coupled to the secondary winding of the transformer for rectifying an alternating load voltage on the secondary winding of the transformer; for example, 620002-NW-US-LC products include a rectifier means comprised of diodes D20A and D20B coupled to the secondary winding of transformer T2A for rectifying the alternating load voltage on the secondary winding of the transformer.

207. On information and belief, 620002-NW-US-LC products include an output circuit coupled to the rectifier means for receiving a rectified voltage, the output circuit comprising a buffer circuitry and a set of output terminals for coupling the LED to the driver circuit, wherein the buffer circuitry comprises an inductor connected in series with the set of output terminals, and the value of the inductor is selected to provide a substantially constant current through the LED; for example, 620002-NW-US-LC products include an output circuit coupled to the rectifier means, comprising buffer circuitry and a set of output terminals LED+ and LED- for coupling an LED to the driver circuit. The buffer circuitry comprises choke LF3, formed by a pair of inductors connected in series with output terminals LED+ and LED-, the values of which are selected to provide substantially constant current through the LEDs.

208. The full extent of Defendants' infringement is not presently known to Signify. On information and belief, Defendants has made and sold products under different names or part numbers that infringe the '577 Patent in a similar manner. Signify makes this preliminary

identification of infringing products and infringed claims in Count Five without the benefit of discovery or claim construction in this action, and expressly reserves the right to augment, supplement, and revise its identifications based on additional information obtained through discovery or otherwise.

209. Signify has suffered and continues to suffer damages as a result of Defendants' infringement of the '577 Patent in an amount to be determined at trial.

210. Defendant's infringement of the '577 Patent is causing irreparable harm for which Signify has no adequate remedy at law unless Defendant is enjoined by this Court. Under 35 U.S.C. § 283, Signify is entitled to a permanent injunction against further infringement of the '577 Patent.

211. On information and belief, Defendants have been aware of and have had notice and actual knowledge of the '577 Patent and its infringement of the '577 Patent since at least as early as April 2021. On information and belief, Defendants were notified in a letter dated April 6, 2021, that Defendants' products infringed the '577 Patent.

212. On information and belief, Defendants' 3500013-DW-US and 620002-NW-US-LC products are the same as or substantially similar to the products noticed in the April 6, 2021 letter as they relate to the '577 Patent, and thus Defendants was on actual notice of infringement for these products by April 6, 2021.

213. Defendants' pre-suit knowledge of the '577 Patent and failure to substantively address Signify's numerous notifications of infringement are sufficient to support a plausible inference that Defendants' infringement was willful and egregious, warranting enhancement of damages under 35 U.S.C. § 284, and attorneys' fees and costs incurred under 35 U.S.C. § 285.

**COUNT SIX**

**INFRINGEMENT OF U.S. PATENT NO. 9,709,253**

214. Signify incorporates by reference the allegations in the foregoing paragraphs as if fully set forth herein.

215. On information and belief, Defendant has infringed and is infringing claims of the '253 Patent, including at least claim 30, in violation of 35 U.S.C. § 271(a) by manufacturing, using, offering to sell, selling, and/or importing infringing products.

216. Claim 30 of the ’253 Patent recites:

A downlight module, comprising:

a heat sink comprising an upper surface and a lower surface;

at least one light emitting diode (LED) thermally coupled to the heat sink;

a reflector comprising a top end, a bottom end, and an internal surface extending from the top end to the bottom end and defining a cavity therein, at least a portion of the reflector being disposed below the at least one LED, the internal surface receiving at least a portion of light emitted from the at least one LED;

a driver electrically coupled to the at least one LED; and

an adapter comprising: at one end of the adapter, an Edison screw-in plug configured to be electrically coupled to an Edison base socket, and at an opposing end of the adapter, a quick-connect connector configured to be connected to the driver,

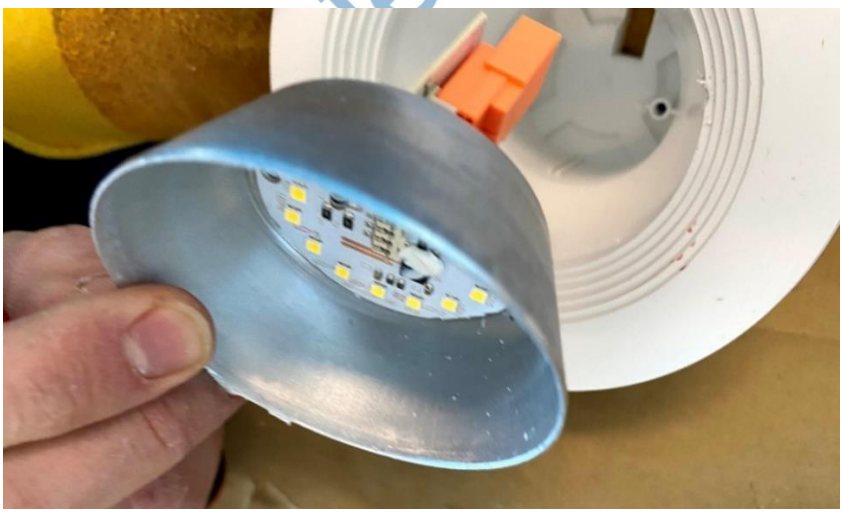
wherein the at least one LED emits light through the cavity.

217. On information and belief, Defendant has directly infringed and is directly infringing claim 30 of the ’253 Patent by making, using, offering to sell, selling, and/or importing at least 170001-DW-US and 1700044-WW-US products in this District and elsewhere in the United States.

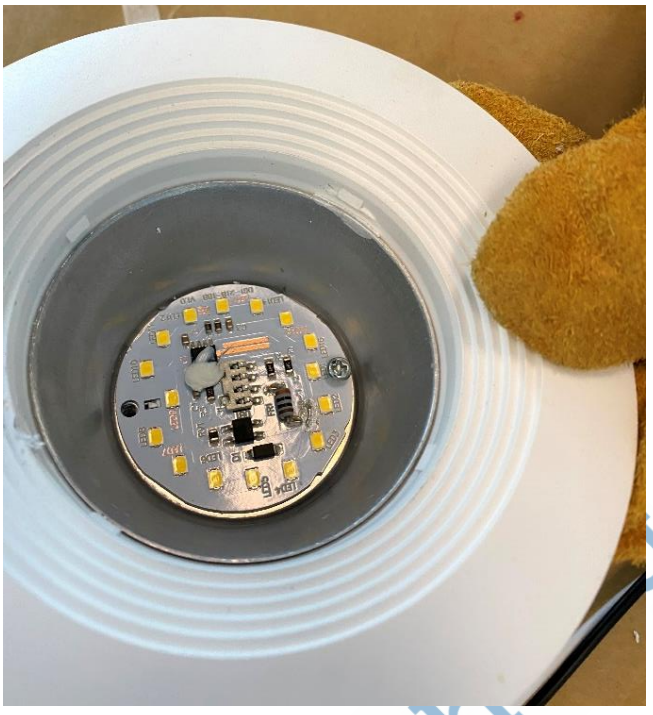
**Infringing 170001-DW-US Products**

218. On information and belief, 170001-DW-US products are downlight modules for use with a recessed housing located above a ceiling. An example of a 170001-WW-US product is shown in the below image, taken from an archived version of Defendants’ website at http://web.archive.org/web/20220526201835/https://www.lepro.com/4-inch-led-recessed-lights-daylight-white.html.


219. On information and belief, 170001-DW-US products include a heat sink comprising an upper surface and a lower surface; for example, 170001-DW-US products include a heat sink, formed by a solid metal backing, which includes an upper surface and a lower surface.

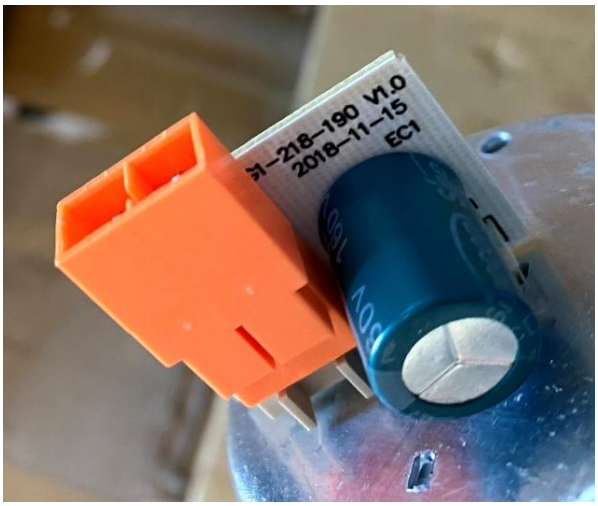


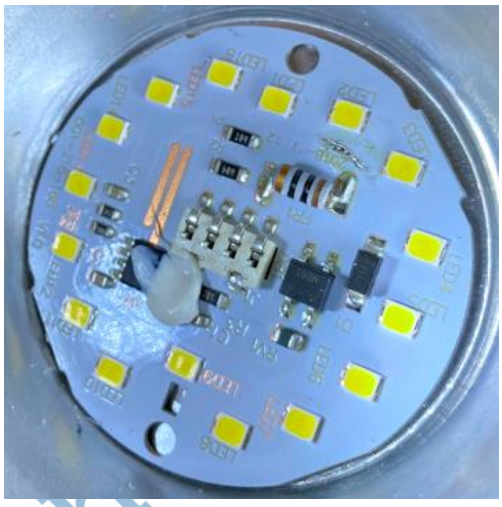
220. On information and belief, 170001-DW-US products include at least one light emitting diode (LED) thermally coupled to the heat sink; for example, 170001-DW-US products include multiple LED light sources mounted to and in thermal communication with the solid metal backing.



221. On information and belief, 170001-DW-US products include a reflector comprising a top end, a bottom end, and an internal surface extending from the top end to the bottom end and defining a cavity therein, at least a portion of the reflector being disposed below the at least one LED, the internal surface receiving at least a portion of light emitted from the at least one LED; for example, 170001-DW-US products include a reflector with a top end, a bottom end, and an internal surface extending from the top end to the bottom end and defining a cavity therein, the reflector disposed below the LEDs and receiving a portion of the light emitted from the LED light sources.

222. On information and belief, 170001-DW-US products include a driver electrically coupled to the at least one LED; for example, 170001-DW-US products include a driver electrically coupled to the LED light sources.



223. On information and belief, 170001-DW-US products include an adapter comprising: at one end of the adapter, an Edison screw-in plug configured to be electrically coupled to an Edison base socket, and at an opposing end of the adapter, a quick-connect connector configured to be connected to the driver; for example, 170001-DW-US products include an adapter that comprises, at one end, an E26 screw-in plug adapter configured to be coupled to an Edison base socket, and, at another end, a quick-connect connector configured to be connected to the driver via wires.

224. On information and belief, the at least one LED emits light through the cavity; for example, the LED light sources emit light through the cavity of the reflector.

**Infringing 1700044-WW-US Products**

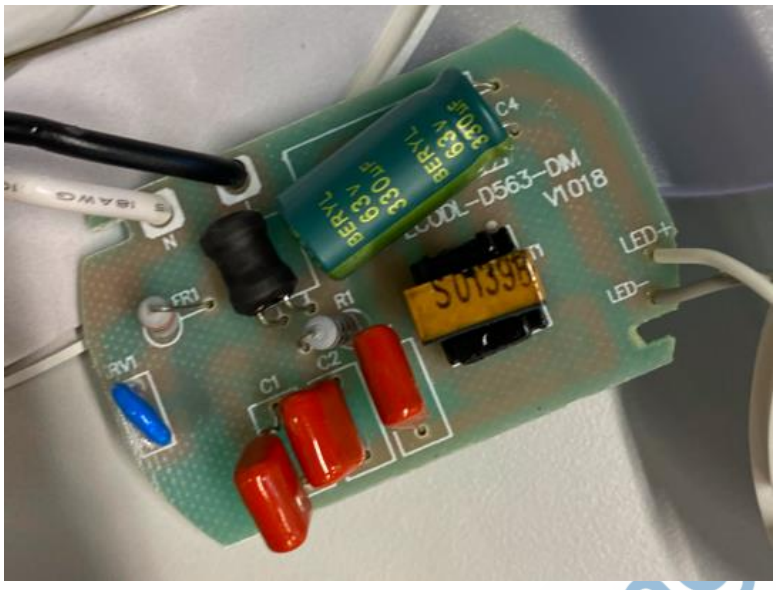
225. On information and belief, 1700044-WW-US products are downlight modules for use with a recessed housing located above a ceiling. An example of a 1700044-WW-US product is shown in the below image, taken from Defendants' website at https://www.lepro.com/15w-warm-white-led-downlights-1700044-ww-us-8.html.

226. On information and belief, 1700044-WW-US products include a heat sink comprising an upper surface and a lower surface; for example, 1700044-WW-US products include a heat sink, formed by a solid metal backing, which includes an upper surface and a lower surface.

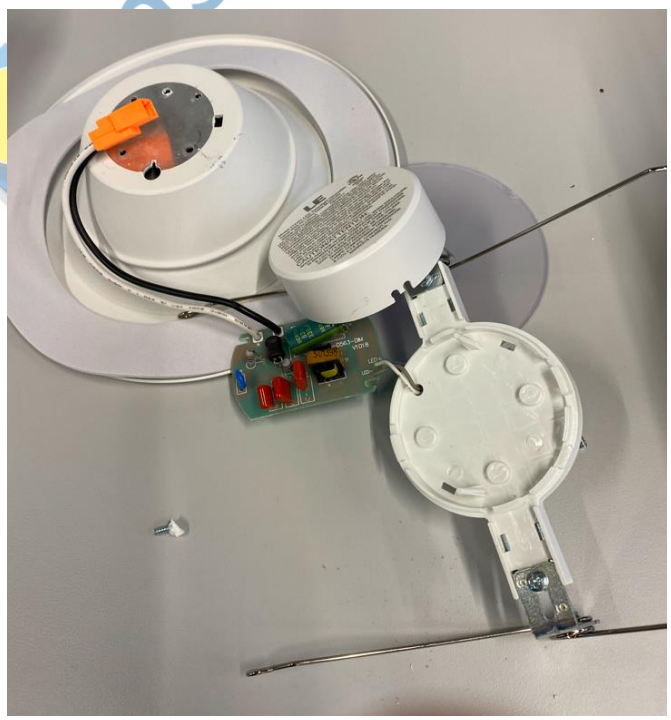
227. On information and belief, 1700044-WW-US products include at least one light emitting diode (LED) thermally coupled to the heat sink; for example, 1700044-WW-US products include multiple LED light sources mounted to and in thermal communication with the solid metal backing.

228. On information and belief, 1700044-WW-US products include a reflector comprising a top end, a bottom end, and an internal surface extending from the top end to the bottom end and defining a cavity therein, at least a portion of the reflector being disposed below the at least one LED, the internal surface receiving at least a portion of light emitted from the at least one LED; for example, 1700044-WW-US products include a reflector with a top end, a bottom end, and an internal surface extending from the top end to the bottom end and defining a cavity therein, the reflector disposed below the LEDs and receiving a portion of the light emitted from the LED light sources.

229. On information and belief, 1700044-WW-US products include a driver electrically coupled to the at least one LED; for example, 1700044-WW-US products include a driver electrically coupled to the LED light sources.




230. On information and belief, 1700044-WW-US products include an adapter comprising: at one end of the adapter, an Edison screw-in plug configured to be electrically coupled to an Edison base socket, and at an opposing end of the adapter, a quick-connect connector configured to be connected to the driver; for example, 1700044-WW-US products include an adapter that comprises, at one end, an E26 screw-in plug adapter configured to be coupled to an Edison base socket, and, at another end, a quick-connect connector configured to be connected to the driver via wires.



231. On information and belief, the at least one LED emits light through the cavity; for example, the LED light sources emit light through the cavity of the reflector.

232. The full extent of Defendants' infringement is not presently known to Signify. On information and belief, Defendants has made and sold products under different names or part numbers that infringe the '253 Patent in a similar manner. Signify makes this preliminary identification of infringing products and infringed claims in Count Six without the benefit of discovery or claim construction in this action, and expressly reserves the right to augment, supplement, and revise its identifications based on additional information obtained through discovery or otherwise.

233. Signify has suffered and continues to suffer damages as a result of Defendants' infringement of the '253 Patent in an amount to be determined at trial.

234. Defendant's infringement of the '253 Patent is causing irreparable harm for which Signify has no adequate remedy at law unless Defendant is enjoined by this Court. Under 35 U.S.C. § 283, Signify is entitled to a permanent injunction against further infringement of the '253 Patent.

235. On information and belief, Defendants have been aware of and have had notice and actual knowledge of the '253 Patent and its infringement of the '253 Patent since at least as early as April 2021. On information and belief, Defendants were notified in a letter dated April 6, 2021, that Defendants' products infringed the '253 Patent.

236. On information and belief, Defendants' 170001-DW-US and 1700044-WW-US products are the same as or substantially similar to the products noticed in the April 6, 2021 letter as they relate to the '253 Patent, and thus Defendants was on actual notice of infringement for these products by April 6, 2021.

237. Defendants' pre-suit knowledge of the '253 Patent and failure to substantively address Signify's numerous notifications of infringement are sufficient to support a plausible inference that Defendants' infringement was willful and egregious, warranting enhancement of damages under 35 U.S.C. § 284, and attorneys' fees and costs incurred under 35 U.S.C. § 285.

**COUNT SEVEN**

**INFRINGEMENT OF RE. 49,320**

238. Signify incorporates by reference the allegations in the foregoing paragraphs as if fully set forth herein.

239. On information and belief, Defendants have infringed and are infringing claims of the '320 Patent, including at least claim 1, in violation of 35 U.S.C. § 271(a) by manufacturing, using, offering to sell, selling, and/or importing infringing products.

240. Claim 1 of the '320 patent recites:

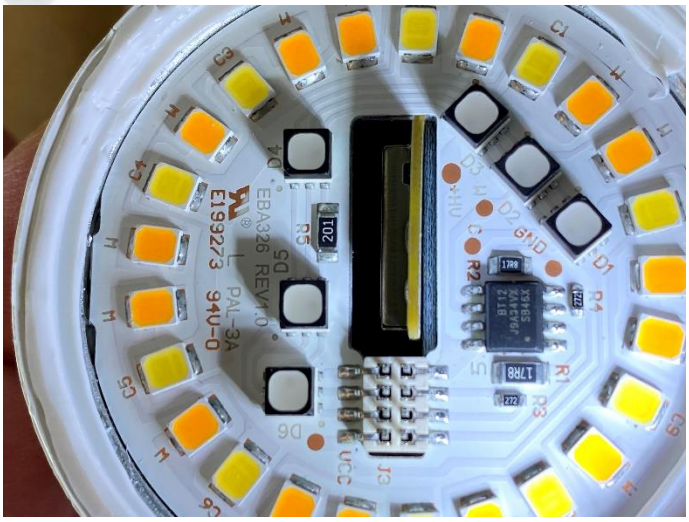
> A lighting device, comprising
>
> a light source comprising one or more light-emitting diodes configured for generating light along an optical axis,
>
> a heat sink comprising a metal with an electrical resistivity being less than 0.01 Ωm, and configured for removing heat produced by the light source, the heat sink forming at least a portion of an outer enclosure,
>
> a RF communication circuit, and
>
> a first antenna connected to the RF communication circuit for communicating RF control signals and arranged within the outer enclosure, wherein the lighting device comprises one or more metallic components having an extension larger than at least 1/10 of a wavelength of the RF control signals and arranged below a virtual plane drawn orthogonal to the optical axis and going through the first antenna.

241. On information and belief, Defendants have directly infringed and are directly infringing, at least, claim 1 of the '320 Patent by making, using, offering to sell, selling, and/or importing at least 901001-US-a, 901003-US, 901003-US-a, and 907001-US products in this judicial district and elsewhere in the United States.

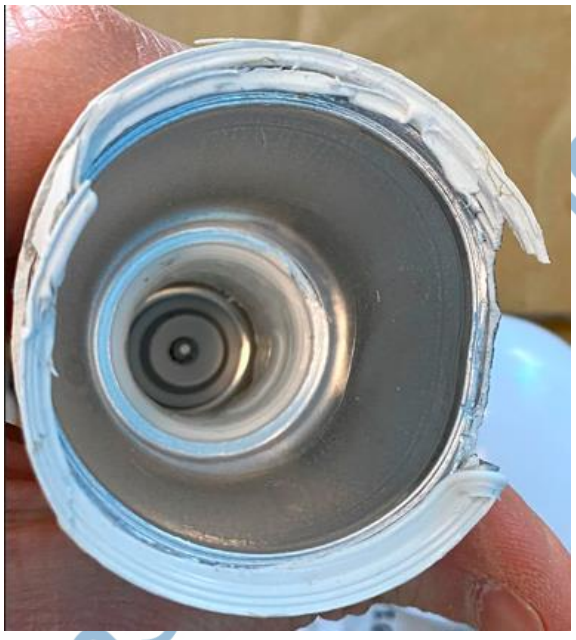
**Infringing 901001-US-a Products**

242. On information and belief, 901001-US-a products are lighting devices. An example of a 901001-US-a product is shown in the below image, taken from Defendants' website at https://www.lepro.com/9w-rgbw-alexa-light-bulb-wifi-google-home-a19-e26.html.

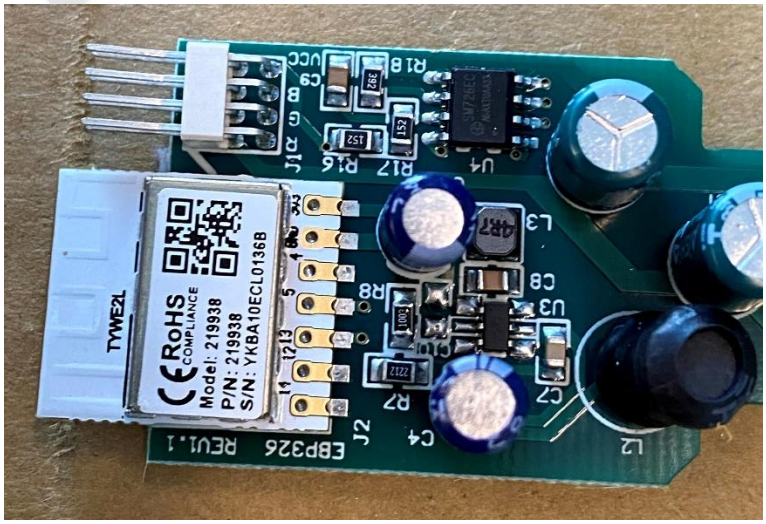

243. On information and belief, 901001-US-a products include a light source comprising one or more light-emitting diodes configured for generating light along an optical axis; for example, 901001-US-a products include a light source formed by an LED light engine that includes multiple light emitting diodes that generate light along an optical axis that extends substantially perpendicular from the LED light engine.



244. On information and belief, 901001-US-a products include a heat sink comprising a metal with an electrical resistivity being less than 0.01 Ωm, and configured for removing heat produced by the light source, the heat sink forming at least a portion of an outer enclosure; for example, 901001-US-a products include a heat sink formed by metal lining, with a resistivity of less than 0.01 Ωm, disposed beneath the light engine for removing heat produced by the light source, the metal lining forming a portion of the outer enclosure of the lighting device.

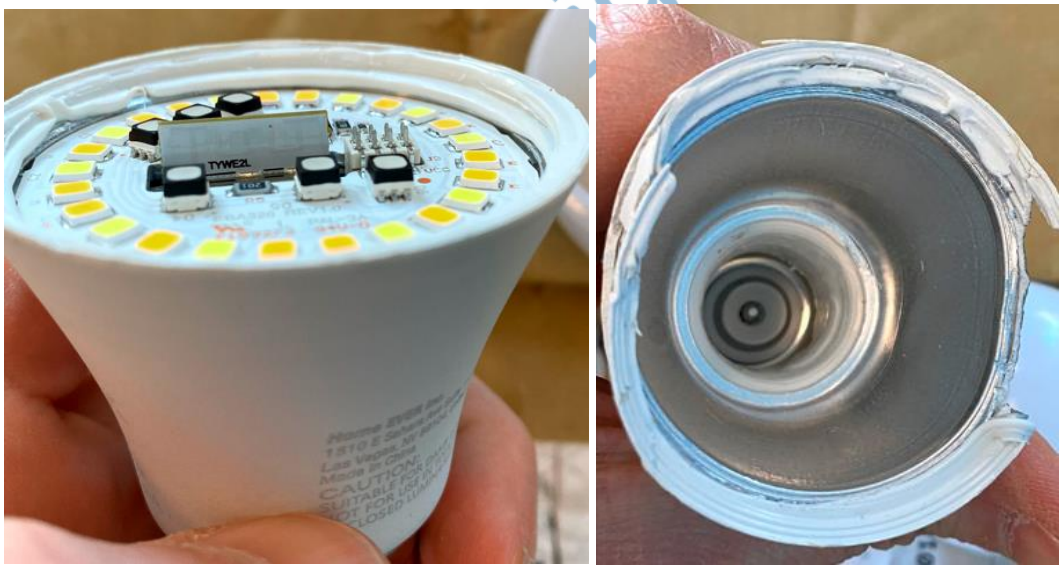


245. On information and belief, 901001-US-a products include a RF communication circuit; for example, 901001-US-a products include an RF communication circuit formed by a TYWE2L chip, a low-power embedded Wi-Fi module.



246. On information and belief, 901001-US-a products include a first antenna connected to the RF communication circuit for communicating RF control signals and arranged within the outer enclosure, for example, 901001-US-a products include an antenna connected to the RF module for communicating RF control signals—via the Wi-Fi protocol. The antenna is arranged within the plastic bulb of the lighting device, which comprises a portion of the outer enclosure.

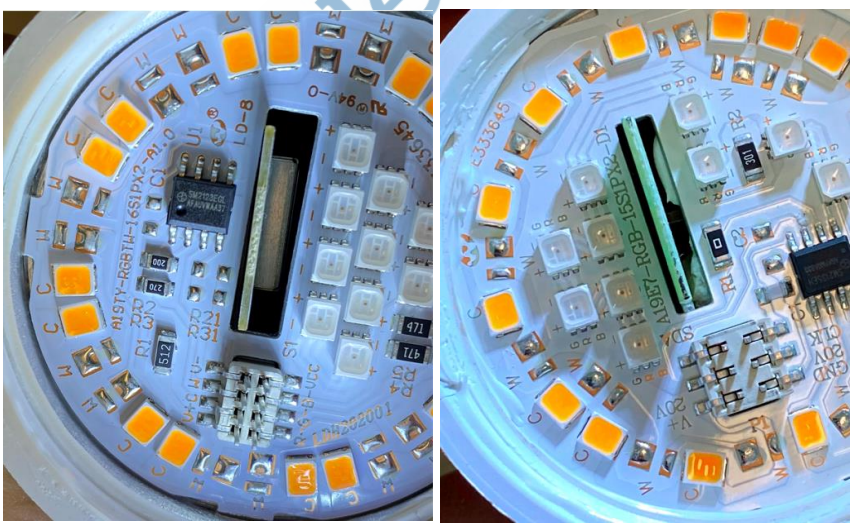
247. On information and belief, 901001-US-a products comprise one or more metallic components having an extension larger than at least 1/10 of a wavelength of the RF control signals and arranged below a virtual plane drawn orthogonal to the optical axis and going through the first antenna; for example, the metal lining extends a length larger than 1/10 of a wavelength of the RF control signals (i.e., more than approximately 1.25 cm, 1/10 of a wavelength of a Wi-Fi signal transmitted at 2.4 GHz). The metal lining is arranged below a plane extending parallel to the circuit board the LEDs are mounted on and extending through the first antenna.



**Infringing 901003-US Products**

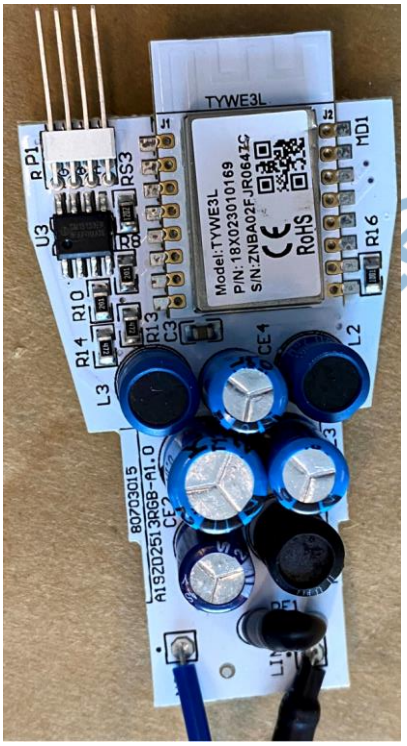
248. On information and belief, 901003-US products are lighting devices. An example of a 901003-US product is shown in the below image, taken from Defendants' website at https://www.lepro.com/9w-rgb-wifi-smart-light-bulb-works-with-alexa-google-assistant-no-hub-required.html.

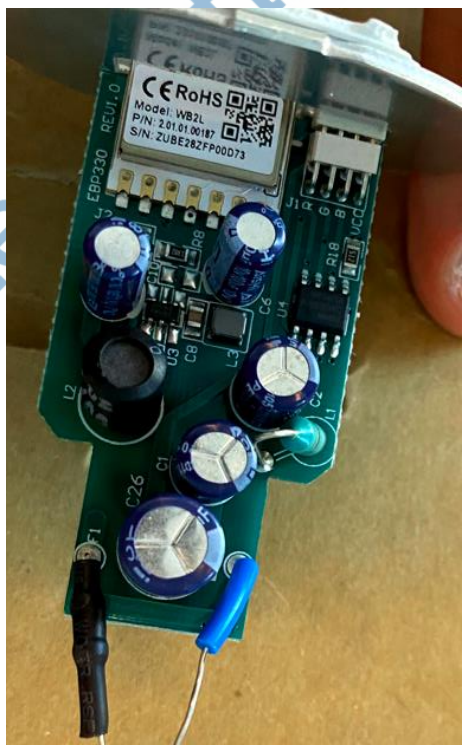

249. On information and belief, 901003-US products include a light source comprising one or more light-emitting diodes configured for generating light along an optical axis; for example, 901003-US products include a light source formed by an LED light engine that includes multiple light emitting diodes that generate light along an optical axis that extends substantially perpendicular from the LED light engine.



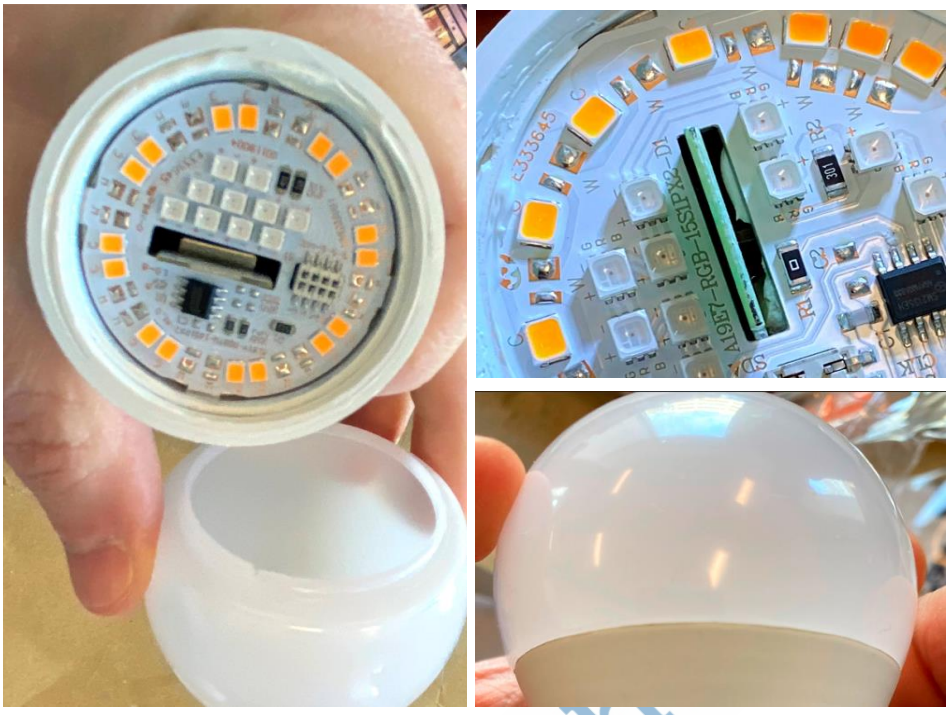
250. On information and belief, 901003-US products include a heat sink comprising a metal with an electrical resistivity being less than 0.01 Ωm, and configured for removing heat produced by the light source, the heat sink forming at least a portion of an outer enclosure; for example, 901003-US products include a heat sink formed by metal lining, with a resistivity of less than 0.01 Ωm, disposed beneath the light engine for removing heat produced by the light source, the metal lining forming a portion of the outer enclosure of the lighting device.


251. On information and belief, 901003-US products include a RF communication circuit; for example, 901003-US products include an RF communication circuit formed by a low power embedded Wi-Fi module.

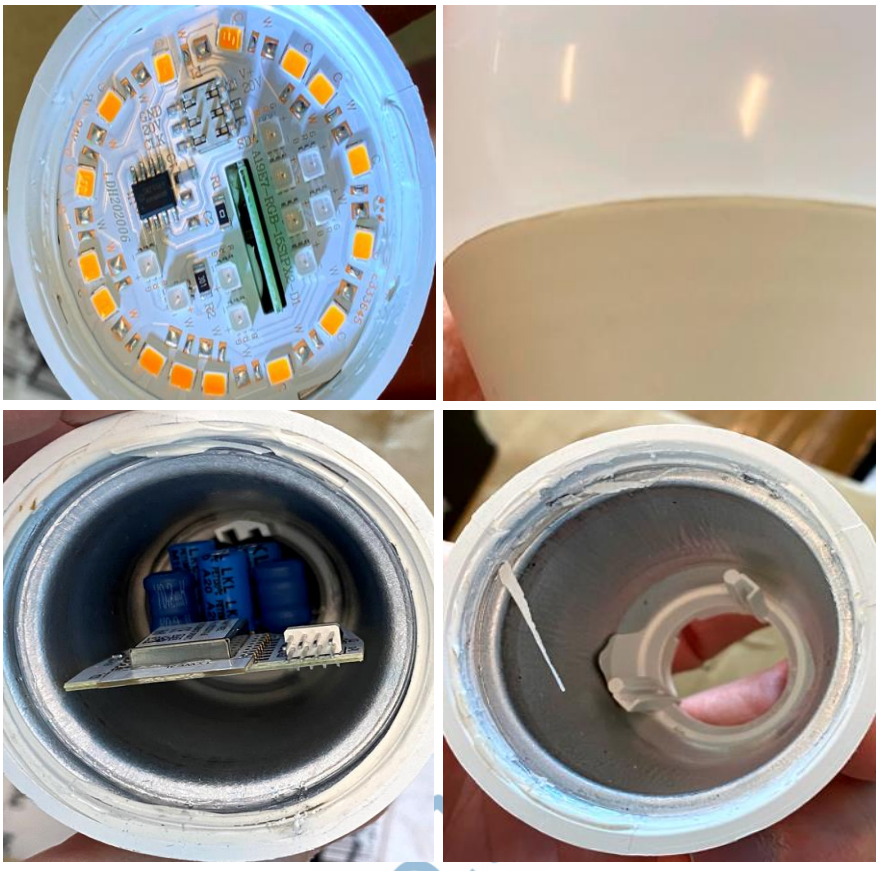





252. On information and belief, 901003-US products include a first antenna connected to the RF communication circuit for communicating RF control signals and arranged within the outer enclosure; for example, 901003-US products include an antenna connected to the RF module for communicating RF control signals—via the Wi-Fi protocol. The antenna is arranged within the plastic bulb of the lighting device, which comprises a portion of the outer enclosure.



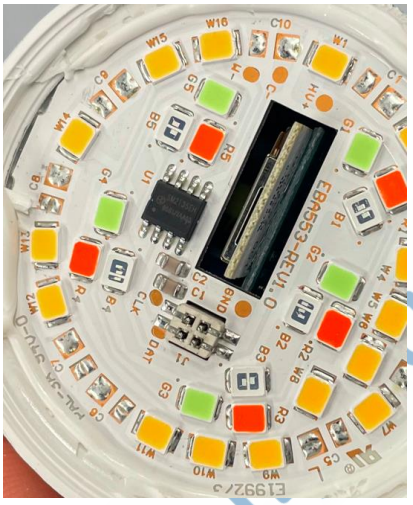
253. On information and belief, 901003-US products comprise one or more metallic components having an extension larger than at least 1/10 of a wavelength of the RF control signals and arranged below a virtual plane drawn orthogonal to the optical axis and going through the first antenna; for example, the metal lining extends a length larger than 1/10 of a wavelength of the RF control signals (i.e., more than approximately 1.25 cm, 1/10 of a wavelength of a Wi-Fi signal transmitted at 2.4 GHz). The metal lining is arranged below a plane extending parallel to the circuit board the LEDs are mounted on and extending through the first antenna.



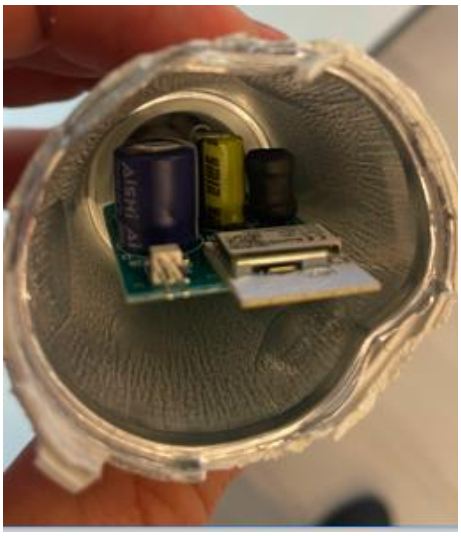
**Infringing 901003-US-a Products**

254. On information and belief, 901003-US-a products are lighting devices. An example of a 901003-US-a product is shown in the below image, taken from Defendants' website at https://www.lepro.com/led-bulbs/a19-led-light-bulbs/le-led-smart-light-bulbs-a19-e26-rgb-9w-2pack.html.

255. On information and belief, 901003-US-a products include a light source comprising one or more light-emitting diodes configured for generating light along an optical axis; for example, 901003-US-a products include a light source formed by an LED light engine that includes multiple light emitting diodes that generate light along an optical axis that extends substantially perpendicular from the LED light engine.

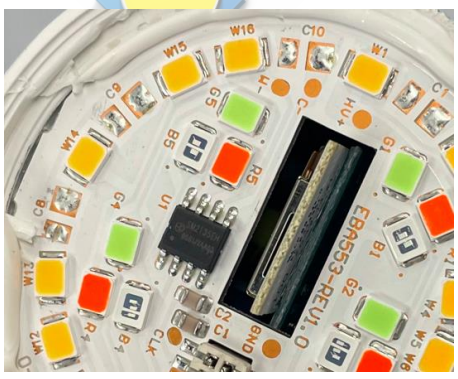


256. On information and belief, 901003-US-a products include a heat sink comprising a metal with an electrical resistivity being less than 0.01 Ωm, and configured for removing heat produced by the light source, the heat sink forming at least a portion of an outer enclosure; for example, 901003-US products include a heat sink formed by metal lining, with a resistivity of less than 0.01 Ωm, disposed beneath the light engine for removing heat produced by the light source, the metal lining forming a portion of the outer enclosure of the lighting device.



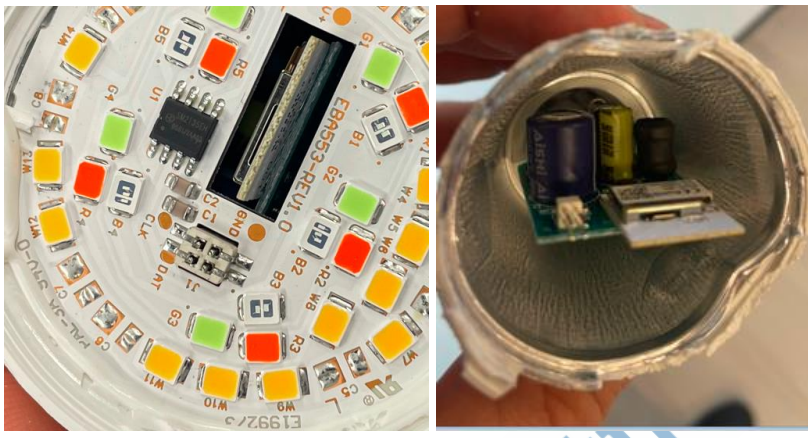
257. On information and belief, 901003-US-a products include a RF communication circuit; for example, 901003-US products include an RF communication circuit formed by a low power embedded Wi-Fi module.


258. On information and belief, 901003-US-a products include a first antenna connected to the RF communication circuit for communicating RF control signals and arranged within the outer enclosure; for example, 901003-US products include an antenna connected to the RF module for communicating RF control signals—via the Wi-Fi protocol. The antenna is arranged within the plastic bulb of the lighting device, which comprises a portion of the outer enclosure.




259. On information and belief, 901003-US-a products comprise one or more metallic components having an extension larger than at least 1/10 of a wavelength of the RF control signals and arranged below a virtual plane drawn orthogonal to the optical axis and going through the first antenna; for example, the metal lining extends a length larger than 1/10 of a wavelength of the RF

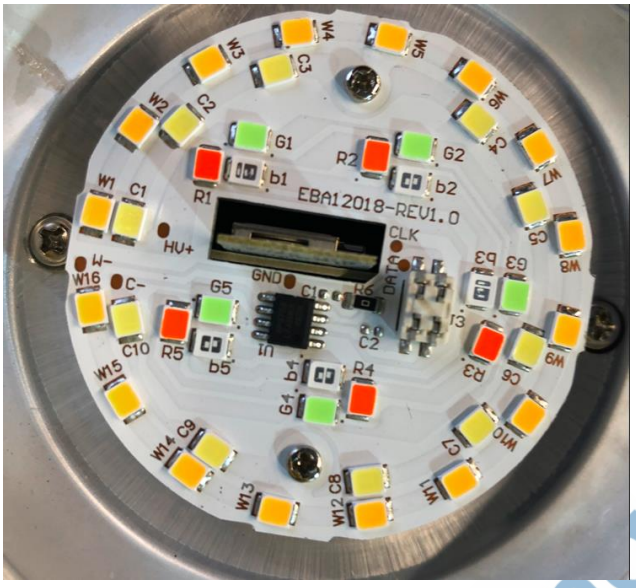
control signals (i.e., more than approximately 1.25 cm, 1/10 of a wavelength of a Wi-Fi signal transmitted at 2.4 GHz). The metal lining is arranged below a plane extending parallel to the circuit board the LEDs are mounted on and extending through the first antenna.



**Infringing 907001-US Products**

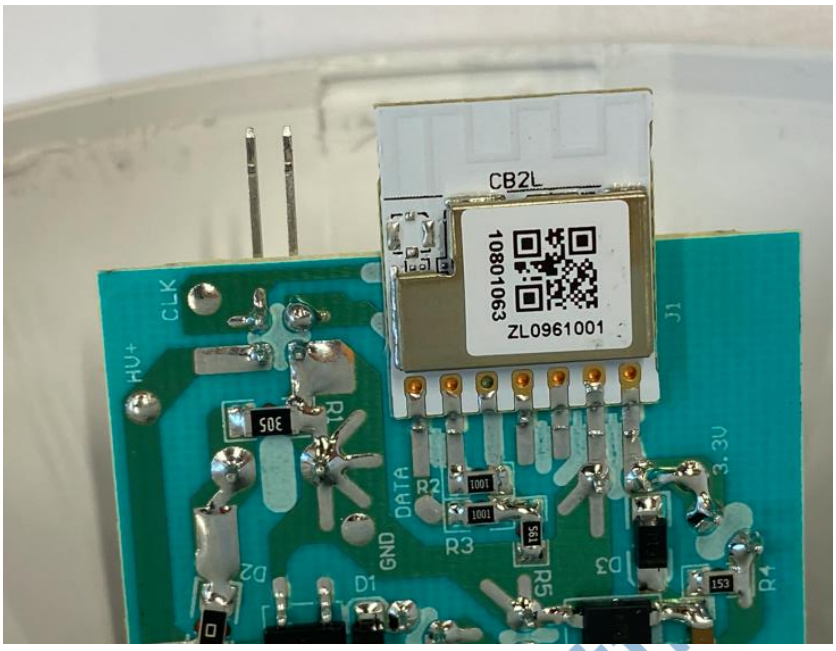
260. On information and belief, 907001-US products are lighting devices. An example of a 907001-US product is shown in the below image, taken from Defendants' website at: https://www.lepro.com/2-pack-9w-rgbw-br30-wifi-smart-led-bulbs-alexa-google-home-compatible-no-hub-required.html.


261. On information and belief, 907001-US products include a light source comprising one or more light-emitting diodes configured for generating light along an optical axis; for example, 907001-US products include a light source formed by an LED light engine that includes multiple light emitting diodes that generate light along an optical axis that extends substantially perpendicular from the LED light engine.




262. On information and belief, 907001-US products include a heat sink comprising a metal with an electrical resistivity being less than 0.01 Ωm, and configured for removing heat produced by the light source, the heat sink forming at least a portion of an outer enclosure; for example, 907001-US products include a heat sink formed by metal lining, with a resistivity of less than 0.01 Ωm, disposed beneath the light engine for removing heat produced by the light source, the metal lining forming a portion of the outer enclosure of the lighting device.

263. On information and belief, 907001-US products include a RF communication circuit; for example, 907001-US products include an RF communication circuit formed by a CB2L chip, a low-power embedded Wi-Fi module.




264. On information and belief, 907001-US products include a first antenna connected to the RF communication circuit for communicating RF control signals and arranged within the outer enclosure; for example, 907001-US products include an antenna connected to the RF module for communicating RF control signals—via the Wi-Fi protocol. The antenna is arranged within the plastic bulb of the lighting device, which comprises a portion of the outer enclosure.

265. On information and belief, 901003-US products comprise one or more metallic components having an extension larger than at least 1/10 of a wavelength of the RF control signals and arranged below a virtual plane drawn orthogonal to the optical axis and going through the first antenna; for example, the metal lining extends a length larger than 1/10 of a wavelength of the RF control signals (i.e., more than approximately 1.25 cm, 1/10 of a wavelength of a Wi-Fi signal transmitted at 2.4 GHz). The metal lining is arranged below a plane extending parallel to the circuit board the LEDs are mounted on and extending through the first antenna.

266. The full extent of Defendants' infringement is not presently known to Signify. On information and belief, Defendants has made and sold products under different names or part numbers that infringe the '320 Patent in a similar manner. Signify makes this preliminary identification of infringing products and infringed claims in Count Seven without the benefit of discovery or claim construction in this action, and expressly reserves the right to augment, supplement, and revise its identifications based on additional information obtained through discovery or otherwise.

267. Signify has suffered and continues to suffer damages as a result of Defendants' infringement of the '320 Patent in an amount to be determined at trial.

268. Defendant's infringement of the '320 Patent is causing irreparable harm for which Signify has no adequate remedy at law unless Defendant is enjoined by this Court. Under 35 U.S.C. § 283, Signify is entitled to a permanent injunction against further infringement of the '320 Patent.

269. On information and belief, Defendants have been aware of and have had notice and actual knowledge of the '320 Patent and its infringement of the '320 Patent since at least as early as April 2021. On information and belief, Defendants were notified in a letter dated April 6, 2021, that Defendants' products infringed the '497 Patent, which reissued without substantial amendments as the '320 Patent.

270. On information and belief, Defendants' 901001-US-a, 901003-US, 901003-US-a, and 907001-US products are the same as or substantially similar to the products noticed in the April 6, 2021 letter as they relate to the '497 and '320 Patent, and thus Defendants was on actual notice of infringement for these products by April 6, 2021.

271. Defendants' pre-suit knowledge of the '320 Patent and failure to substantively address Signify's numerous notifications of infringement are sufficient to support a plausible inference that Defendants' infringement was willful and egregious, warranting enhancement of damages under 35 U.S.C. § 284, and attorneys' fees and costs incurred under 35 U.S.C. § 285.

## PRAYER FOR RELIEF

WHEREFORE, Signify prays for the following judgments and relief:

(a) A judgment that Defendants have infringed and are infringing the Patents-in-Suit;

(b) A permanent injunction against Defendants and its affiliates, subsidiaries, assigns, employees, agents or anyone acting in privity or concert from infringing the Patents-in-Suit, including enjoining the making, offering to sell, selling, using, or importing into the United States products claimed in any of the claims of the Patents-in-Suit; using or performing methods claimed in any of the claims of the Patents-in-Suit; inducing others to use and perform methods that infringe any claim of the Patents-in-Suit; or contributing to others using and performing methods that infringe any claim of the Patents-in-Suit, until the expiration of the Patents-in-Suit;

(c) An award of damages adequate to compensate Signify for Defendants' patent infringement, and an accounting to adequately compensate Signify for the infringement, including, but not limited to, lost profits and/or a reasonable royalty;

(d) An award of pre-judgment and post-judgment interest at the maximum rate allowed by law;

(e) An order finding that this is an exceptional case and awarding Signify its costs, expenses, disbursements, and reasonable attorneys' fees related to Defendants' patent infringement under 35 U.S.C. § 285 and all other applicable statutes, rules and common law;

(f) A determination that Defendants' conduct with respect to the Patents-in-Suit has been willful and deliberate, and a three-fold enhancement of any damages that Defendants must pay to Signify on account of its infringement; and

(g) Such other further relief, in law or equity, as this Court deems just and proper.

## JURY TRIAL

In accordance with Rule 38 of the Federal Rules of Civil Procedure, Signify hereby demands a jury trial on all issues triable before a jury.

Dated: December 19, 2022

Respectfully submitted,

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***COUNSEL FOR PLAINTIFFS***
***Signify North America Corporation and***
***Signify Holding B.V.***