

**IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
MARSHALL DIVISION**

BRIGHTPLUS VENTURES LLC,

Plaintiff

-against-

LG ELECTRONICS, INC. and
LG ELECTRONICS U.S.A., INC.,

Defendants

Civil Action No.: 2:22-cv-170

Jury Trial Demanded

COMPLAINT FOR PATENT INFRINGEMENT

Plaintiff Brightplus Ventures LLC (“Brightplus” or “Plaintiff”), by way of this Complaint against Defendants LG Electronics, Inc. (“LG-Korea”) and LG Electronics U.S.A., Inc. (“LG-USA”) (collectively “LG” or “Defendants”), alleges as follows:

PARTIES

1. Plaintiff Brightplus Ventures LLC is a limited liability company organized and existing under the laws of the State of Texas, having its principal place of business at 17330 Preston Road, Suite 200D, Dallas, Texas 75252.
2. On information and belief, Defendant LG-Korea is a corporation organized and existing under the laws of the Republic of Korea with its principal place of business at LG Twin Towers 20, Yeouido-Dong, Yeongdeungpo-Gu, Seoul, South Korea, 150-721.
3. On information and belief, Defendant LG-USA is a wholly-owned subsidiary of LG-Korea, with a principal place of business at 1000 Sylvan Avenue, Englewood Cliffs, New Jersey 07632. LG-USA has a regular and established place of business in the Eastern District of Texas at 2151-2155 Eagle Parkway, Fort Worth, Texas 76177 and 14901 N Beach St, Fort Worth, TX

76177. LG-USA is registered to do business in the state of Texas and may be served with process at its registered agent for process at the United States Corporation Company, 211 E. 7th Street, Suite 620, Austin, Texas 78701.

JURISDICTION AND VENUE

4. This is an action under the patent laws of the United States, 35 U.S.C. §§ 1, *et seq.*, for infringement by LG of claims of U.S. Patent No. 7,690,812; U.S. Patent No. 7,872,705; U.S. Patent No. 8,177,382; U.S. Patent No. 8,294,075; U.S. Patent No. 8,330,710; U.S. Patent No. 8,941,331; U.S. Patent No. 9,605,835; U.S. Reissued Patent No. RE42,598; and U.S. Reissued Patent No. RE45,796 (collectively “the Patents-in-Suit”).

5. This Court has subject matter jurisdiction pursuant to 28 U.S.C. §§ 1331 and 1338(a).

6. LG-Korea is subject to personal jurisdiction of this Court because, *inter alia*, on information and belief, (i) LG-Korea, directly or through affiliates, subsidiaries, agents, or intermediaries, has committed and continues to commit acts of patent infringement in the State of Texas, including by making, using, offering to sell, selling, and/or importing the accused products into Texas; (ii) LG-Korea, directly or through affiliates, subsidiaries, agents, or intermediaries, purposefully supplies and directs the accused products for storage, warehousing, and sales by distributors and resellers in the State of Texas; and (iii) LG-Korea, directly or through affiliates, subsidiaries, agents, or intermediaries, delivers its products into the stream of commerce with the expectation that they will be purchased by consumers in the State of Texas. In addition, or in the alternative, this Court has personal jurisdiction over LG-Korea pursuant to Fed. R. Civ. P. 4(k)(2).

7. LG-USA is subject to personal jurisdiction of this Court because, *inter alia*, on information and belief, (i) LG-USA maintains a regular and established place of business in

Texas in this Judicial District at 2151-2155 Eagle Parkway, Fort Worth, Texas 76177 and 14901 N Beach St, Fort Worth, TX 76177; (ii) LG-USA has committed and continues to commit acts of patent infringement in the State of Texas, including by making, using, offering to sell, selling, and/or importing the accused products into Texas; (iii) LG-USA purposefully supplies and directs the accused products for storage, warehousing, and sales by distributors and resellers in the State of Texas; (iv) LG-USA delivers its products into the stream of commerce with the expectation that they will be purchased by consumers in the State of Texas; (v) LG-USA derives substantial revenue from its activities in this District; and (vi) LG-USA has purposefully established substantial, systematic and continuous contacts with this District such that it should reasonably expect to be haled into court in this District. For example, LG-USA has registered with the Texas Secretary of State Office to do business in the State of Texas and has appointed a registered agent for service of process in the State of Texas.

8. Venue is proper as to LG-Korea in this District under 28 U.S.C. § 1391(c) because, *inter alia*, LG-Korea is a foreign corporation.

9. Venue is proper as to LG-USA in this District under 28 U.S.C. § 1400(b) because, *inter alia*, on information and belief, LG-USA has a regular and established place of business in this Judicial District at 2151-2155 Eagle Parkway, Fort Worth, Texas 76177 and 14901 N Beach St, Fort Worth, TX 76177, and has committed acts of infringement in the District and/or has contributed to or induced acts of patent infringement by others in this District.

BACKGROUND

10. On April 6, 2010, the United States Patent and Trademark Office duly and lawfully issued U.S. Patent No. 7,690,812 (“the ’812 Patent”), entitled “Apparatus And Methods For Conformable Diffuse Reflectors For Solid State Lighting Devices.”

11. On January 18, 2011, the United States Patent and Trademark Office duly and lawfully issued U.S. Patent No. 7,872,705 (“the ’705 Patent”), entitled “LED Backlight System For LCD Displays.”

12. On May 15, 2012, the United States Patent and Trademark Office duly and lawfully issued U.S. Patent No. 8,177,382 (“the ’382 Patent”), entitled “Apparatus And Methods For Multiplanar Optical Diffusers And Display Panels For Using The Same.”

13. On October 23, 2012, the United States Patent and Trademark Office duly and lawfully issued U.S. Patent No. 8,294,075 (“the ’075 Patent”), entitled “Solid State Luminaires For General Illumination.”

14. On December 11, 2012, the United States Patent and Trademark Office duly and lawfully issued U.S. Patent No. 8,330,710 (“the ’710 Patent”), entitled “Systems And Methods For Controlling A Solid State Lighting Panel.”

15. On January 27, 2015, the United States Patent and Trademark Office duly and lawfully issued U.S. Patent No. 8,941,331 (“the ’331 Patent”), entitled “Solid State Lighting Panels With Variable Voltage Boost Current Sources.”

16. On March 28, 2017, the United States Patent and Trademark Office duly and lawfully issued U.S. Patent No. 9,605,835 (“the ’835 Patent”), entitled “Solid-State Luminaires For General Illumination.”

17. On August 9, 2011, the United States Patent and Trademark Office duly and lawfully issued U.S. Patent No. RE42,598 (“the ’598 Patent”), entitled “Light Emitting Diode Arrays For Direct Backlighting Of Liquid Crystal Displays.”

18. On November 10, 2015, the United States Patent and Trademark Office duly and lawfully issued U.S. Reissued Patent No. RE45,796 (“the ’796 Patent”), entitled “Light Emitting Diode

Arrays For Direct Backlighting Of Liquid Crystal Displays.”

19. Brightplus is the assignee and owner of the right, title, and interest in and to the Patents-in-Suit, including the right to assert all causes of action arising under said patents and the right to any remedies for infringement of them.

20. By letter dated May 6, 2022 and received by LG on May 10, 2022, Brightplus notified LG of the existence of the Patents-in-Suit and of LG’s infringement of the Patents-in-Suit. Brightplus’s letter identified exemplary infringed claims and exemplary infringing LG products, and invited LG to hold a licensing discussion with Brightplus.

21. LG has infringed and continues to infringe the Patents-in-Suit by making, using, selling, or offering for sale in the United States, or importing into the United States televisions, monitors, displays, and products with lighting unit technology claimed in the Patents-in-Suit. Attachment A to this Complaint provides a non-exhaustive listing of Accused Products. Attachment B to this Complaint provides a listing of Exhibits comprising exemplary teardown images for certain Accused Products.

COUNT I: INFRINGEMENT OF THE ’812 PATENT BY LG

22. Plaintiff incorporates the preceding paragraphs as if fully set forth herein.

23. On information and belief, LG has infringed the ’812 Patent pursuant to 35 U.S.C. § 271(a), literally or under the doctrine of equivalents, by making, using, offering to sell, selling in the United States or importing into the United States the Accused Products and all other substantially similar displays and/or lighting units contained therein.

24. For example, on information and belief, LG has infringed and continues to infringe at least claim 1 of the ’812 Patent by making, using, offering to sell, selling in the United States, or importing into the United States the Accused Products, such as the LG 50UP80 television. The Accused Products include a solid state lighting tile. Exs. 1-4 (the LG 50UP80 includes an LED

lighting tile). The Accused Products' solid state lighting tile include a substrate. Ex. 5 (the LG 50UP80 LED lighting tile is mounted on the surface of the substrate). The Accused Products' solid state lighting tile further include a solid state lighting element mounted on a surface of the substrate. Ex. 5 (the LG 50UP80 LED lighting tile is mounted on the surface of the substrate). The Accused Products' solid state lighting tile further include a reflector sheet on the surface of the substrate, the reflector sheet configured to conform to a shape of a protruding feature on the tile. Exs. 4, 6 (the LG 50UP80 LED lighting tile includes a reflector sheet that conforms to a shape of a protruding feature on the tile, e.g., a wire interconnect, on the surface of the substrate).

25. On information and belief, LG has induced infringement of the '812 Patent pursuant to 35 U.S.C. § 271(b), by actively and knowingly inducing, directing, causing, and encouraging others, including, but not limited to, its partners, resellers, distributors, customers, and end users, to make, use, sell, and/or offer to sell in the United States, and/or import into the United States, the Accused Products by, among other things, providing the Accused Products and incorporated lighting unit technology, specifications, instructions, manuals, advertisements, marketing materials, and technical assistance relating to the installation, set up, use, operation, and maintenance of said products.

26. On information and belief, LG has infringed the '812 Patent pursuant to 35 U.S.C. § 271(g), literally or under the doctrine of equivalents, by importing into the United States or offering to sell, selling, or using within the United States the Accused Products and all other substantially similar displays and/or lighting units contained therein which are made by a patented process claimed by the '812 Patent.

27. For example, on information and belief, LG has infringed and continues to infringe at least claim 15 of the '812 Patent by importing into the United States or offering to sell, selling, or

using within the United States the Accused Products, such as the LG 50UP80 television, that are produced by a method of forming a solid state lighting device. Exs. 1-4 (production of the LG 50UP80 includes forming an LED lighting device). The method of forming a solid state lighting device comprises providing a substrate of a solid state lighting tile. Ex. 5 (forming the LG 50UP80 LED lighting device includes providing a substrate of an LED lighting tile). The method of forming a solid state lighting device comprises mounting a solid state lighting element on a surface of the substrate. Ex. 5 (forming the LG 50UP80 LED lighting device includes mounting LEDs on the surface of the substrate). The method of forming a solid state lighting device comprises positioning a reflector sheet on the surface of the substrate, the reflector sheet configured to conform to a shape of a protruding feature on the solid state lighting tile. Exs. 4, 6 (forming the LG 50UP80 LED lighting device includes positioning a reflector sheet that conforms to a shape of a protruding feature on the tile, e.g., a wire interconnect, on the surface of the substrate).

28. On information and belief, LG has committed the foregoing infringing activities without a license.

29. On information and belief, LG knew the '812 Patent existed and knew of exemplary infringing LG products while committing the foregoing infringing acts thereby willfully, wantonly and deliberately infringing the '812 Patent.

COUNT II: INFRINGEMENT OF THE '705 PATENT BY LG

30. Plaintiff incorporates the preceding paragraphs as if fully set forth herein.

31. On information and belief, LG has infringed the '705 Patent pursuant to 35 U.S.C. § 271(a), literally or under the doctrine of equivalents, by making, using, offering to sell, selling in the United States or importing into the United States the Accused Products and all other substantially similar displays and/or lighting units contained therein.

32. For example, on information and belief, LG has infringed and continues to infringe at least claim 1 of the '705 Patent by making, using, offering to sell, selling in the United States, or importing into the United States the Accused Products, such as the LG 27UP600 monitor. The Accused Products include a liquid crystal display (LCD) system. Exs. 7-8 (the LG 27UP600 includes an LCD system). The Accused Products' LCD system include an LCD panel. Exs. 7, 9 (the LG 27UP600 LCD system includes an LCD panel). The Accused Products' LCD system further include at least one waveguide element comprising a plurality of light entry regions. Exs. 10-14 (the 27UP600 LCD system includes a waveguide panel layer with light entry regions on the side edge of the waveguide panel). The Accused Products' LCD system further include a first light-emitting source comprising a first plurality of LEDs arranged in a first strip and positioned to emit light into the at least one waveguide element at a first light entry region of the plurality of light entry regions. Exs. 13-16 (the LG 27UP600 LCD system includes strip of LEDs that are positioned to emit light into the waveguide panel at a first light entry region on the left side of the waveguide panel). The Accused Products' LCD system further include a second light-emitting source comprising a second plurality of LEDs arranged in a second strip and positioned to emit light into the at least one waveguide element at a second light entry region of the plurality of light entry regions. Exs. 13-16 (the LG 27UP600 LCD system includes a second strip of LEDs positioned to emit light into the waveguide panel at a second light entry region on the right side of waveguide panel). The Accused Products' LCD system further include a common control circuit in electrical communication with at least one of the first plurality of LEDs and the second plurality of LEDs. Exs. 17-18 (the LG 27UP600 LCD system includes a common control circuit connected to the first strip of LEDs on the left side and the second strip of LEDs on the right side).

33. On information and belief, LG has induced infringement of the '705 Patent pursuant to 35 U.S.C. § 271(b), by actively and knowingly inducing, directing, causing, and encouraging others, including, but not limited to, its partners, resellers, distributors, customers, and end users, to make, use, sell, and/or offer to sell in the United States, and/or import into the United States, the Accused Products by, among other things, providing the accused products and incorporated lighting unit technology, specifications, instructions, manuals, advertisements, marketing materials, and technical assistance relating to the installation, set up, use, operation, and maintenance of said products.

34. On information and belief, LG has committed the foregoing infringing activities without a license.

35. On information and belief, LG knew the '705 Patent existed and knew of exemplary infringing LG products while committing the foregoing infringing acts thereby willfully, wantonly and deliberately infringing the '705 Patent.

COUNT III: INFRINGEMENT OF THE '382 PATENT BY LG

36. Plaintiff incorporates the preceding paragraphs as if fully set forth herein.

37. On information and belief, LG has infringed the '382 Patent pursuant to 35 U.S.C. § 271(a), literally or under the doctrine of equivalents, by making, using, offering to sell, selling in the United States or importing into the United States the Accused Products and all other substantially similar displays and/or lighting units contained therein performing a method of providing diffused light as claimed in the '382 Patent.

38. For example, on information and belief, LG has infringed and continues to infringe at least claim 13 of the '382 Patent by making, using, offering to sell, selling in the United States, or importing into the United States the Accused Products, such as the LG 70NANO75UPA television, which perform a method of providing diffused light. Exs. 19-23 (in the Accused

Products, such as the LG 70NANO75UPA, LG provides diffused light from solid state light emitters such as light emitting diodes (LEDs)). The method of providing diffused light of each of the Accused Products comprises emitting light from a plurality of solid state light emitters arranged in a planar configuration. Exs. 24-25 (in the Accused Products, such as the LG 70NANO75UPA, LG emits light from LEDs that are arranged in a planar configuration). The method of providing diffused light of each of the Accused Products comprises receiving the emitted light at a first side of a first diffusion plane that is a first distance from the plurality of solid state light emitters. Exs. 21, 26-29 (in the Accused Products, LG receives the emitted light at a first side of a first diffusion plane that is a first distance from the LEDs, e.g., measured to be 19.77 mm in the LG 70NANO75UPA). The method of providing diffused light of each of the Accused Products comprises transmitting first diffused light from a structured refractive diffuser plate at a second side of the first diffusion plane. Exs. 21, 30-31 (in the Accused Products, such as the LG 70NANO75UPA, LG transmits first diffused light from a structured refractive diffuser plate, e.g., a diffuser plate having consistent refractive element density across the surface, at a second side of the first diffusion plane). The method of providing diffused light of each of the Accused Products comprises receiving the first diffused light from the first diffusion plane at a first side of a second diffusion plane that is a second distance from the plurality of solid state light emitters. Exs. 21, 29, 32 (in the Accused Products, LG receives the first diffused light from the first diffusion plane at a first side of a second diffusion plane located on top of the first diffusion plane that is a second distance from the LEDs, e.g., measured to be 22.17 mm (first distance discussed above (19.77 mm) + diffuser plate thickness (2.40 mm)) in the LG 70NANO75UPA). The method of providing diffused light of each of the Accused Products comprises transmitting second diffused light from a second side of the second diffusion plane.

Exs. 21, 23, 33 (in the Accused Products, such as the LG 70NANO75UPA, LG transmits second diffused light from a second side of the second diffusion plane located on top of the first diffusion plane). The plurality of solid state light emitters of each of the Accused Products comprise a third distance between adjacent ones of the plurality of solid state light emitters, wherein the first distance is a function of the third distance. Ex. 29, 34 (in the Accused Products, the LEDs comprise a third distance between adjacent LEDs, e.g., measured to be 119.05 mm in the LG 70NANO75UPA, wherein the first distance (measured to be 19.77 mm) is a function of the third distance (measured to be 119.05 mm); the third distance is 6 times the length of the first distance).

39. On information and belief, LG has induced infringement of the '382 Patent pursuant to 35 U.S.C. § 271(b), by actively and knowingly inducing, directing, causing, and encouraging others, including, but not limited to, its partners, resellers, distributors, customers, and end users, to make, use, sell, and/or offer to sell in the United States, and/or import into the United States, the Accused Products by, among other things, providing the accused products and incorporated lighting unit technology, specifications, instructions, manuals, advertisements, marketing materials, and technical assistance relating to the installation, set up, use, operation, and maintenance of said products.

40. On information and belief, LG has committed the foregoing infringing activities without a license.

41. On information and belief, LG knew the '382 Patent existed and knew of exemplary infringing LG products while committing the foregoing infringing acts thereby willfully, wantonly and deliberately infringing the '382 Patent.

COUNT IV: INFRINGEMENT OF THE '075 PATENT BY LG

42. Plaintiff incorporates the preceding paragraphs as if fully set forth herein.

43. On information and belief, LG has infringed the '075 Patent pursuant to 35 U.S.C. § 271(a), literally or under the doctrine of equivalents, by making, using, offering to sell, selling in the United States or importing into the United States the Accused Products and all other substantially similar displays and/or lighting units contained therein.

44. For example, on information and belief, LG has infringed and continues to infringe at least claim 1 of the '075 Patent by making, using, offering to sell, selling in the United States, or importing into the United States the Accused Products, such as the LG LG32LM57 television. The Accused Products include a lighting panel. Exs. 35-41 (the LG LG32LM57 includes a lighting panel, i.e., a backlighting panel). The Accused Products' lighting panel include at least one substrate having a first side parallel to a principal plane of the lighting panel. Exs. 41-42 (the LG LG32LM57 lighting panel includes at least one substrate that is parallel to the plane of the lighting panel). The Accused Products' lighting panel further include a plurality of solid state lighting devices arranged on the first side of the at least one substrate and configured to emit light. Ex. 42 (the LG LG32LM57 lighting panel includes solid state lighting devices, e.g., light emitting diodes (LEDs), arranged on the substrate and are configured to emit light). The Accused Products' lighting panel further include a reflector sheet on the first side of the at least one substrate. Exs. 41, 43 (the LG LG32LM57 lighting panel includes a reflector sheet on the substrate). The Accused Products' lighting panel further include a brightness enhancement film on the reflector sheet, wherein the reflector sheet is arranged between the at least one substrate and the brightness enhancement film and the brightness enhancement film is configured to preferentially emit light having a first orientation from the lighting panel and to preferentially reflect light having a second orientation, different from the first orientation, back into the lighting panel. Exs. 40, 44-46 (the LG LG32LM57 lighting panel includes a brightness enhancement

film on top of the reflector sheet which is on top of the substrate; the LG LG32LM57 lighting panel's brightness enhancement film(s) are configured to preferentially emit light having a first orientation from the lighting panel and to preferentially reflect light having a second orientation, different from the first orientation, back into the lighting panel as recycled light). The Accused Products' lighting panel further include a diffuser sheet between the reflector sheet and the brightness enhancement film, wherein the reflector sheet, the diffuser sheet and brightness enhancement film extend and are arranged parallel to the principal plane of the lighting panel. Ex. 40 (the LG LG32LM57 lighting panel includes a diffuser sheet between the reflector sheet and the brightness enhancement film(s); the diffuser sheet and the brightness enhancement film(s) extend across and are parallel to the plane of the lighting panel).

45. On information and belief, LG has induced infringement of the '075 Patent pursuant to 35 U.S.C. § 271(b), by actively and knowingly inducing, directing, causing, and encouraging others, including, but not limited to, its partners, resellers, distributors, customers, and end users, to make, use, sell, and/or offer to sell in the United States, and/or import into the United States, the Accused Products by, among other things, providing the accused products and incorporated lighting unit technology, specifications, instructions, manuals, advertisements, marketing materials, and technical assistance relating to the installation, set up, use, operation, and maintenance of said products.

46. On information and belief, LG has committed the foregoing infringing activities without a license.

47. On information and belief, LG knew the '075 Patent existed and knew of exemplary infringing LG products while committing the foregoing infringing acts thereby willfully, wantonly and deliberately infringing the '075 Patent.

COUNT V: INFRINGEMENT OF THE '710 PATENT BY LG

48. Plaintiff incorporates the preceding paragraphs as if fully set forth herein.

49. On information and belief, LG has infringed the '710 Patent pursuant to 35 U.S.C. § 271(a), literally or under the doctrine of equivalents, by making, using, offering to sell, selling in the United States or importing into the United States the Accused Products and all other substantially similar displays and/or lighting units contained therein.

50. For example, on information and belief, LG has infringed and continues to infringe at least claim 1 of the '710 Patent by making, using, offering to sell, selling in the United States, or importing into the United States the Accused Products, such as the LG 65NANO90 television. The Accused Products include a lighting system. Exs. 47-48 (the LG 65NANO90 includes a lighting system, i.e., a backlighting system). The Accused Products' lighting system include a plurality of strings of solid state lighting devices arranged in a first direction and positioned at intervals in at least one second direction. Ex. 48 (the LG 65NANO90 lighting system includes strings of solid state lighting devices, e.g., light emitting diodes (LEDs), arranged in a first direction, e.g., laterally, and positioned at intervals in at least one second direction, e.g., vertically). The Accused Products' lighting system further include a current supply circuit configured to selectively supply a plurality of on-state drive currents to the plurality of strings responsive to a plurality of control signals. Exs. 49-51 (the LG 65NANO90 lighting system includes a current supply circuit configured to selectively supply a plurality of on-state drive currents to the LED strings in response to a plurality of control signals). The Accused Products' lighting system further include a control system configured to receive a user input and to selectively provide control signals to the current supply circuit responsive to the user input to selectively drive the plurality of strings. Exs. 49-50, 52-54 (the LG 65NANO90 lighting system includes a control system configured to receive a user input, such as a user input image to

display, and to selectively provide control signals to the current supply circuit in response to the user input to selectively drive the LED strings). The control system of the Accused Products' lighting system further includes firing logic, configured to determine a firing order of the plurality of strings. Exs. 50, 52-53 (the LG 65NANO90 control system further includes firing logic configured to determine a firing order of the various LED strings).

51. On information and belief, LG has induced infringement of the '710 Patent pursuant to 35 U.S.C. § 271(b), by actively and knowingly inducing, directing, causing, and encouraging others, including, but not limited to, its partners, resellers, distributors, customers, and end users, to make, use, sell, and/or offer to sell in the United States, and/or import into the United States, the Accused Products by, among other things, providing the accused products and incorporated lighting unit technology, specifications, instructions, manuals, advertisements, marketing materials, and technical assistance relating to the installation, set up, use, operation, and maintenance of said products.

52. On information and belief, LG has committed the foregoing infringing activities without a license.

53. On information and belief, LG knew the '710 Patent existed and knew of exemplary infringing LG products while committing the foregoing infringing acts thereby willfully, wantonly and deliberately infringing the '710 Patent.

COUNT VI: INFRINGEMENT OF THE '331 PATENT BY LG

54. Plaintiff incorporates the preceding paragraphs as if fully set forth herein.

55. On information and belief, LG has infringed the '331 Patent pursuant to 35 U.S.C. § 271(a), literally or under the doctrine of equivalents, by making, using, offering to sell, selling in the United States or importing into the United States the Accused Products and all other substantially similar displays and/or lighting units contained therein.

56. For example, on information and belief, LG has infringed and continues to infringe at least claim 17 of the '331 Patent by making, using, offering to sell, selling in the United States, or importing into the United States the Accused Products, such as the LG 65NANO80UPA television. The Accused Products include a lighting system. Exs. 55-57 (the LG 65NANO80UPA includes a lighting system, i.e., an edge lighting system). The Accused Products' lighting system include a lighting panel including at least first and second strings of solid state lighting devices that are respectively configured to emit at least a first light and a second light, respectively. Ex. 58 (the LG 65NANO80UPA lighting system includes a lighting panel including at least 2 strings of solid state lighting devices, e.g., light emitting diodes (LEDs), that are respectively configured to emit at least a first and second light that vary in brightness). The Accused Products' lighting system further include at least first and second current supply circuits coupled to the at least first and second strings of solid state lighting devices, respectively, and configured to supply an on-state drive currents to a respective one of the first and second strings of solid state lighting devices. Exs. 58-62 (the LG 65NANO80UPA lighting system includes at least 2 current supply circuits respectively coupled to the LED strings respectively configured to supply on-state drive currents to one of the LED strings). The Accused Products' lighting system further include a pulse width modulation (PWM) controller that is coupled to the first current supply circuit and the second current supply circuit, a first PWM control signal and a second PWM control signal that are supplied to the each of the at least first and second strings. Exs. 58, 60, 62-63 (the LG 65NANO80UPA lighting system includes a PWM controller that is coupled to the first and second current supply circuit, a first and second PWM control signal that are supplied to each of the LED strings).

57. On information and belief, LG has induced infringement of the '331 Patent pursuant to

35 U.S.C. § 271(b), by actively and knowingly inducing, directing, causing, and encouraging others, including, but not limited to, its partners, resellers, distributors, customers, and end users, to make, use, sell, and/or offer to sell in the United States, and/or import into the United States, the Accused Products by, among other things, providing the accused products and incorporated lighting unit technology, specifications, instructions, manuals, advertisements, marketing materials, and technical assistance relating to the installation, set up, use, operation, and maintenance of said products.

58. On information and belief, LG has committed the foregoing infringing activities without a license.

59. On information and belief, LG knew the '331 Patent existed and knew of exemplary infringing LG products while committing the foregoing infringing acts thereby willfully, wantonly and deliberately infringing the '331 Patent.

COUNT VII: INFRINGEMENT OF THE '835 PATENT BY LG

60. Plaintiff incorporates the preceding paragraphs as if fully set forth herein.

61. On information and belief, LG has infringed the '835 Patent pursuant to 35 U.S.C. § 271(a), literally or under the doctrine of equivalents, by making, using, offering to sell, selling in the United States or importing into the United States the Accused Products and all other substantially similar displays and/or lighting units contained therein.

62. For example, on information and belief, LG has infringed and continues to infringe at least claim 1 of the '835 Patent by making, using, offering to sell, selling in the United States, or importing into the United States the Accused Products, such as the LG 55UP76 television. The Accused Products include a lighting panel. Exs. 64-66 (the LG 55UP76 includes a lighting panel, i.e., a backlighting panel). The Accused Products' lighting panel include at least one substrate having a first side parallel to a principal plane of the lighting panel. Ex. 66 (the LG

55UP76 lighting panel includes at least one substrate that is parallel to the plane of the lighting panel). The Accused Products' lighting panel further include a plurality of solid state lighting devices arranged on the first side of the at least one substrate and configured to emit light. Exs. 66-67 (the LG 55UP76 lighting panel includes solid state lighting devices, e.g., light emitting diodes (LEDs), arranged on the substrate and are configured to emit light). The Accused Products' lighting panel further include a reflector on the first side of the at least one substrate. Exs. 65, 67 (the LG 55UP76 lighting panel includes a reflector sheet on the substrate). The Accused Products' lighting panel further include a brightness enhancement film on the reflector, wherein the reflector is arranged between the at least one substrate and the brightness enhancement film and the brightness enhancement film is configured to preferentially emit light having a first orientation from the lighting panel and to preferentially reflect light having a second orientation, different from the first orientation, back into the lighting panel. Exs. 44-45, 65 (the LG 55UP76 lighting panel includes a brightness enhancement film on top of the reflector sheet which is on top of the substrate; the LG 55UP76 lighting panel's brightness enhancement film is configured to preferentially emit light having a first orientation from the lighting panel and to preferentially reflect light having a second orientation, different from the first orientation, back into the lighting panel as recycled light). The Accused Products' lighting panel further include a generally planar diffuser sheet between the reflector and the brightness enhancement film, wherein the light having the second orientation that is reflected back into the lighting panel is recycled within at least the diffuser sheet. Exs. 44-45, 65 (the LG 55UP76 lighting panel includes a diffuser sheet between the reflector sheet and the brightness enhancement film wherein some light is reflected and recycled back into the lighting panel through the diffuser sheet).

63. On information and belief, LG has induced infringement of the '835 Patent pursuant to 35 U.S.C. § 271(b), by actively and knowingly inducing, directing, causing, and encouraging others, including, but not limited to, its partners, resellers, distributors, customers, and end users, to make, use, sell, and/or offer to sell in the United States, and/or import into the United States, the Accused Products by, among other things, providing the accused products and incorporated lighting unit technology, specifications, instructions, manuals, advertisements, marketing materials, and technical assistance relating to the installation, set up, use, operation, and maintenance of said products.

64. On information and belief, LG has committed the foregoing infringing activities without a license.

65. On information and belief, LG knew the '835 Patent existed and knew of exemplary infringing LG products while committing the foregoing infringing acts thereby willfully, wantonly and deliberately infringing the '835 Patent.

COUNT VIII: INFRINGEMENT OF THE '598 PATENT BY LG

66. Plaintiff incorporates the preceding paragraphs as if fully set forth herein.

67. On information and belief, LG has infringed the '598 Patent pursuant to 35 U.S.C. § 271(a), literally or under the doctrine of equivalents, by making, using, offering to sell, selling in the United States or importing into the United States the Accused Products and all other substantially similar displays and/or lighting units contained therein.

68. For example, on information and belief, LG has infringed and continues to infringe at least claim 43 of the '598 Patent by making, using, offering to sell, selling in the United States, or importing into the United States the Accused Products, such as the LG 43UN69 television. The Accused Products include a display panel for a flat panel display. Exs. 68-69 (the LG 43UN69 is a flat panel liquid crystal display (LCD)). The Accused Products' display panel

include a front face comprising a planar array of liquid crystal display (LCD) devices. Ex. 69 (the LG 43UN69 display panel includes a planar array of LCD devices). The Accused Products' display panel further include a back face comprising at least one solid block including first and second opposing faces that extend parallel to the array of LCD devices, wherein the first face is facing toward the array of LCD devices and the second face is facing away from the array of LCD devices. Exs. 70-72 (the LG 43UN69 display panel includes a lighting unit that contains a solid block parallel to the array of LCD devices with a face facing toward the LCD devices and a face facing away from the LCD devices). The Accused Products' display panel further include a plurality of LED devices mounted on the first face. Ex. 71 (the LG 43UN69 display panel includes light emitting diodes (LEDs) mounted on the face facing the LCD devices of the solid block). The at least one solid block of the Accused Products' display panel includes a plurality of solid block tiles that are arranged in an array that is congruent to the planar array of LCD devices. Ex. 71 (the solid block of the LG 43UN69 display panel includes solid block tiles arranged in an array that is congruent, e.g., in harmony with, the LCD devices).

69. On information and belief, LG has induced infringement of the '598 Patent pursuant to 35 U.S.C. § 271(b), by actively and knowingly inducing, directing, causing, and encouraging others, including, but not limited to, its partners, resellers, distributors, customers, and end users, to make, use, sell, and/or offer to sell in the United States, and/or import into the United States, the Accused Products by, among other things, providing the accused products and incorporated lighting unit technology, specifications, instructions, manuals, advertisements, marketing materials, and technical assistance relating to the installation, set up, use, operation, and maintenance of said products.

70. On information and belief, LG has committed the foregoing infringing activities without

a license.

71. On information and belief, LG knew the '598 Patent existed and knew of exemplary infringing LG products while committing the foregoing infringing acts thereby willfully, wantonly and deliberately infringing the '598 Patent.

COUNT IX: INFRINGEMENT OF THE '796 PATENT BY LG

72. Plaintiff incorporates the preceding paragraphs as if fully set forth herein.

73. On information and belief, LG has infringed the '796 Patent pursuant to 35 U.S.C. § 271(a), literally or under the doctrine of equivalents, by making, using, offering to sell, selling in the United States or importing into the United States the Accused Products and all other substantially similar displays and/or lighting units contained therein.

74. For example, on information and belief, LG has infringed and continues to infringe at least claim 37 of the '796 Patent by making, using, offering to sell, selling in the United States, or importing into the United States the Accused Products, such as the LG 65QNED90 television. The Accused Products include a flat panel. Exs. 73-74 (the LG 65QNED90 is a flat panel liquid crystal display (LCD)). The Accused Products' flat panel include a plurality of solid metal block tiles, a respective one of which includes first and second opposing faces and four ends therebetween, the plurality of solid metal block tiles being connected end-to-end in the flat panel, the plurality of solid metal block tiles including mating surfaces therebetween. Exs. 75-77 (the LG 65QNED90 flat panel includes solid metal block tiles with 2 opposing sides and 4 edges connected end-to-end to the flat panel; the solid metal block tiles include mating surfaces on the edges of the block tiles). The Accused Products' flat panel further include a plurality of light emitting diodes (LEDs), a respective one of which is mounted on the first face of a respective solid metal block tile in the flat panel. Ex. 78 (the LG 65QNED90 flat panel includes LEDs mounted on the face of a solid metal block tile facing towards the display panel).

75. On information and belief, LG has induced infringement of the '796 Patent pursuant to 35 U.S.C. § 271(b), by actively and knowingly inducing, directing, causing, and encouraging others, including, but not limited to, its partners, resellers, distributors, customers, and end users, to make, use, sell, and/or offer to sell in the United States, and/or import into the United States, the Accused Products by, among other things, providing the accused products and incorporated lighting unit technology, specifications, instructions, manuals, advertisements, marketing materials, and technical assistance relating to the installation, set up, use, operation, and maintenance of said products.

76. On information and belief, LG has committed the foregoing infringing activities without a license.

77. On information and belief, LG knew the '796 Patent existed and knew of exemplary infringing LG products while committing the foregoing infringing acts thereby willfully, wantonly and deliberately infringing the '796 Patent.

PRAYER FOR RELIEF

WHEREFORE, Brightplus prays for judgment in its favor against LG for the following relief:

- A. Entry of judgment in favor of Brightplus against LG on all counts;
- B. Entry of judgment that LG has infringed the Patents-in-Suit;
- C. Entry of judgment that LG's infringement of the Patents-in-Suit has been willful;
- D. An order permanently enjoining LG from infringing the Patents-in-Suit;
- E. Award of compensatory damages adequate to compensate Brightplus for LG's infringement of the Patents-in-Suit, in no event less than a reasonable royalty trebled as provided by 35 U.S.C. § 284;

- F. Award of reasonable attorneys' fees and expenses against LG pursuant to 35 U.S.C. § 285;
- G. Brightplus's costs;
- H. Pre-judgment and post-judgment interest on Brightplus's award; and
- I. All such other and further relief as the Court deems just or equitable.

DEMAND FOR JURY TRIAL

Pursuant to Rule 38 of the Fed. R. Civ. Proc., Plaintiff hereby demands trial by jury in this action of all claims so triable.

Dated: May 24, 2022

Respectfully submitted,

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