

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

LIGHT GUIDE INNOVATIONS LLC,

Plaintiff,

v.

WALMART INC.,

Defendant.

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Case No.

**JURY TRIAL DEMANDED**

**COMPLAINT FOR PATENT INFRINGEMENT**

Plaintiff Light Guide Innovations LLC (“LGI” or “Plaintiff”) for its Complaint against Defendant Walmart Inc. (“Walmart” or “Defendant”) for patent infringement, alleges as follows:

**THE PARTIES**

1. LGI is a limited liability company, organized and existing under the laws of the State of Texas, with its principal place of business located at 104 East Houston Street, Suite 140, Marshall, Texas 75670.

2. Defendant Walmart is a corporation, organized and existing under the laws of Delaware, with one or more regular and established places of business in this District at least at 1701 East End Boulevard North, Marshall, Texas 75670; 4006 Estes Parkway, Longview, Texas 75603; 515 East Loop 281, Longview, Texas 75605; 3812 Gilmer Road, Longview, Texas 75604; 2311 South Jefferson Avenue, Mt. Pleasant, Texas 75455; 105 East Centennial Boulevard, Lindale, Texas 75771; 450 South SE Loop 323, Tyler, Texas 75702; 3820 State Highway 64, Tyler, Texas 75704; 5050 Troup Highway, Tyler, Texas 75707; 6801 South Broadway Avenue, Tyler, Texas 75703; 4000 New Boston Road, Texarkana, Texas 75501; 401 East US Highway 82,

Sherman, Texas 75092; 8801 Ohio Drive, Plano, Texas 75024; 2025 S SW Loop 323, Tyler, Texas 75701; 1670 West University Drive, McKinney, Texas 75069; and at 8621 Ohio Drive, Plano, Texas 75024. Walmart may be served with process through its registered agent, CT Corporation System, 1999 Bryan Street, Suite 900, Dallas, Texas 75201.

### **JURISDICTION AND VENUE**

3. This is an action for patent infringement arising under the patent laws of the United States, 35 U.S.C. §§ 1, et seq. This Court has subject matter jurisdiction over this action pursuant to 28 U.S.C. §§ 1331, 1332, 1338, and 1367.

4. This Court has specific and personal jurisdiction over Defendant consistent with the requirements of the Due Process Clause of the United States Constitution and the Texas Long Arm Statute. Upon information and belief, Defendant has sufficient minimum contacts with this forum because Defendant has physical locations and transacts substantial business in the State of Texas and in this Judicial District. Further, Defendant has, directly or through subsidiaries or intermediaries, committed and continues to commit acts of patent infringement in the State of Texas and in this Judicial District as alleged in this Complaint, as alleged more particularly below.

5. Venue is proper in this Judicial District pursuant to 28 U.S.C. §§ 1391 and 1400(b). Walmart is registered to do business in Texas and, upon information and belief, Walmart has transacted business in this Judicial District, has committed acts of direct and indirect infringement in this Judicial District, and has regular and established places of business in this Judicial District as set forth above. Walmart is subject to personal jurisdiction in this Judicial District and has committed acts of patent infringement in this Judicial District. On information and belief, Walmart through its own acts and/or through the acts of others, makes, uses, sells, offers to sell, and/or imports infringing products within this Judicial District, regularly does and solicits business in this

Judicial District, and has the requisite minimum contacts with the Judicial District, such that this venue is a fair and reasonable one. Further, upon information and belief, Walmart has admitted or not contested proper venue in this Judicial District in other patent infringement actions.

**PATENTS-IN-SUIT**

6. On May 3, 2011, the United States Patent and Trademark Office duly and legally issued U.S. Patent No. 7,936,415 (the “’415 Patent”) entitled “Light Source Apparatus And Liquid Crystal Display Having The Same.” A true and correct copy of the ’415 Patent is attached hereto as Exhibit A.

7. On April 12, 2011, the United States Patent and Trademark Office duly and legally issued U.S. Patent No. 7,922,380 (the “’380 Patent”) entitled “Light Unit And Display Device Having The Same.” A true and correct copy of the ’380 Patent is attached hereto as Exhibit B.

8. On October 22, 2013, the United States Patent and Trademark Office duly and legally issued U.S. Patent No. 8,562,200 (the “’200 Patent”) entitled “Lighting Module, Backlight Unit, And Display Device Including The Same.” A true and correct copy of the ’200 Patent is attached hereto as Exhibit C.

9. On August 13, 2013, the United States Patent and Trademark Office duly and legally issued U.S. Patent No. 8,506,122 (the “’122 Patent”) entitled “Lens And Light Emitting Apparatus Having The Same.” A true and correct copy of the ’122 Patent is attached hereto as Exhibit D.

10. On November 8, 2011, the United States Patent and Trademark Office duly and legally issued U.S. Patent No. 8,052,307 (the “’307 Patent”) entitled “Lens And Light Emitting Apparatus Having The Same.” A true and correct copy of the ’307 Patent is attached hereto as Exhibit E.

11. On December 31, 2013, the United States Patent and Trademark Office duly and legally issued U.S. Patent No. 8,616,729 (the “’729 Patent”) entitled “Lens And Light Emitting Apparatus Having The Same.” A true and correct copy of the ’729 Patent is attached hereto as Exhibit F.

12. On July 3, 2012, the United States Patent and Trademark Office duly and legally issued U.S. Patent No. 8,213,093 (the “’093 Patent”) entitled “Lens And Light Emitting Apparatus Having The Same.” A true and correct copy of the ’093 Patent is attached hereto as Exhibit G.

13. On January 3, 2017, the United States Patent and Trademark Office duly and legally issued U.S. Patent No. 9,534,744 (the “’744 Patent”) entitled “Light Emitting Apparatus.” A true and correct copy of the ’744 Patent is attached hereto as Exhibit H.

14. On September 2, 2014, the United States Patent and Trademark Office duly and legally issued U.S. Patent No. 8,823,048 (the “’048 Patent”) entitled “Light Emitting Apparatus.” A true and correct copy of the ’048 Patent is attached hereto as Exhibit I.

15. On March 12, 2013, the United States Patent and Trademark Office duly and legally issued U.S. Patent No. 8,395,183 (the “’183 Patent”) entitled “Light Emitting Apparatus.” A true and correct copy of the ’183 Patent is attached hereto as exhibit J.

16. On May 2, 2017, the United States Patent and Trademark Office duly and legally issued U.S. Patent No. 9,638,378 (the “’378 Patent”) entitled “Light Emitting Apparatus.” A true and correct copy of the ’378 Patent is attached hereto as Exhibit K.

17. On May 13, 2014, the United States Patent and Trademark Office duly and legally issued U.S. Patent No. 8,723,411 (the “’411 Patent”) entitled “Photoluminescent Sheet.” A true and correct copy of the ’411 Patent is attached hereto as Exhibit L.

18. On August 7, 2012, the United States Patent and Trademark Office duly and legally issued U.S. Patent No. 8,237,352 (the “’352 Patent”) entitled “Photoluminescent Sheet.” A true and correct copy of the ’352 Patent is attached hereto as Exhibit M.

19. On July 24, 2018, the United States Patent and Trademark Office duly and legally issued U.S. Patent No. 10,030,823 (the “’823 Patent”) entitled “Light Emitting Apparatus.” A true and correct copy of the ’823 Patent is attached hereto as Exhibit N.

20. On April 2, 2013, the United States Patent and Trademark Office duly and legally issued U.S. Patent No. 8,408,778 (the “’778 Patent”) entitled “Light Source and Display Device Having the Same.” A true and correct copy of the ’778 Patent is attached hereto as Exhibit O.

21. On September 18, 2012, the United States Patent and Trademark Office duly and legally issued U.S. Patent No. 8,267,537 (the “’537 Patent”) entitled “Backlight Unit and Display Device Having the Same.” A true and correct copy of the ’537 Patent is attached hereto as Exhibit P.

22. LGI is the sole and exclusive owner of all right, title, and interest in the ’415 Patent, ’380 Patent, ’200 Patent, ’122 Patent, ’307 Patent, ’729 Patent, ’093 Patent, ’744 Patent, ’048 Patent, ’183 Patent, ’378 Patent, ’823 Patent, ’778 Patent, ’537 Patent, ’411 Patent, and ’352 Patent (collectively, the “Patents-in-Suit” or “Asserted Patents”) and holds the exclusive right to take all actions necessary to enforce its rights to the Patents-in-Suit, including the filing of this patent infringement lawsuit. LGI also has the right to recover all damages for past, present, and future infringement of the Patents-in-Suit and to seek injunctive relief as appropriate under the law.

### **FACTUAL ALLEGATIONS**

23. The Patents-in-Suit generally cover systems and methods related to LED lighting and image enhancement for televisions and displays.

24. The '415 Patent generally relates to an LED light source for displays, (e.g., LCD displays) allowing LED module substrates to efficiently and reliably illuminate the display. The technology of the '415 Patent was developed by Jun Seok Park of LG Innotek. By way of example, this technology is implemented today in the LED backlight units and LED strips of the Accused Products (e.g., televisions and displays).

25. The '200 Patent generally relates to an LED backlight unit providing reliable lighting for LCD and other displays. The technology of the '200 Patent was developed by Jun Seok Park of LG Innotek. By way of example, this technology is implemented today in the LED backlight units and LED strips of the Accused Products (e.g., televisions and displays).

26. The '380 and '778 Patents generally relate to a light unit and display providing improved backlighting, and definition for LCD and other displays. The technology of the '380 Patent was developed by Dong Wook Park of LG Innotek. The technology of the '778 Patent was developed by Hyung Hwa Park of LG Innotek. By way of example, this technology is implemented today in the LED backlight units, screens, and LED strips of the Accused Products (e.g., televisions and displays).

27. The '537 Patent generally relates to how a light unit is attached to a chassis. The technology of the '537 Patent was developed by Jun Seok Park of LG Innotek. By way of example, this technology is implemented today in the LED backlight units of the Accused Products.

28. The '122, '307, '729, '093, '744, '048, '183, '823 and '378 Patents generally relate to a light emitting apparatus including a lens with “superior light emitting characteristics in a lateral direction.” The technology described in the '122, '307, '729, '093, '744, '048, '183, '823 and '378 Patents was developed by Gyu Hyeong Bak and Sang Won Lee of LG Innotek. By way of example, this technology is implemented today in the LED backlight units and LED strips of the Accused

Products (e.g., televisions and displays).

29. The '411 and '352 Patents generally relate to photoluminescent sheets including a phosphor which may enhance the luminance and chromaticity of televisions and displays. The technology described in the '411 and '352 Patents was developed by Choong-Young Sohn, Young-Joo Ahn, and Young-Wook Ko. By way of example, this technology is implemented today in the Accused Products (e.g., televisions and displays) through their implementation of quantum dot technology.

30. Upon information and belief, Defendant has had knowledge and notice of the Patents-in-Suit, and its infringement thereof since they issued. For example, upon information and belief, Defendant has known of LGI's patents, at least since they were widely publicized during and after LG Innotek's sale to Suzhou Legin Semiconductor.<sup>1</sup> For example, upon information and belief, due to Walmart's recent acquisition of Vizio, a full IP audit and/or freedom to operate search was performed including examining potentially infringing patents.<sup>2</sup> Alternatively, to the extent that Defendant avoided actual knowledge of the Patents-in-Suit, and its infringement thereof, it was willfully blind. Upon information and belief, to the extent it lacked actual knowledge of infringement, Defendant deliberately avoided learning of infringement, despite subjectively believing that there was a high probability that it infringed the Patents-in-Suit. Upon information and belief, Defendant has adopted a policy or practice of not reviewing the patents of others, including those related to Defendant's television business, thereby remaining willfully blind to the Patents-in-Suit. Upon information and belief, Defendant lacks written policies disseminated to employees regarding monitoring or avoidance of patent infringement by

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<sup>1</sup> See e.g., <https://thelec.net/news/articleView.html?idxno=2871>

<sup>2</sup> See <https://corporate.walmart.com/news/2024/12/03/walmart-completes-acquisition-of-vizio>

Defendant and lacks mechanisms for employees to report patents which they believe Defendant may infringe.

31. Defendant has infringed and continues to infringe one or more of the Patents-in-Suit by making, using, selling, offering to sell, and/or importing, and by actively inducing others to make, use, sell, offer to sell, and/or import televisions and displays. For example, the Accused Products include all Quantum, Quantum Pro, 4k, Full HD, HD, M-Series, V-Series, and D-Series televisions or displays, including at least the M65Q6-L4 model, and components thereof (e.g., backlight components).

32. For example, Defendant sells and offers to sell the Accused Products in the United States through both their physical stores, and online store at [www.walmart.com](http://www.walmart.com).

**COUNT I**  
**(Infringement of the '415 Patent)**

33. Paragraphs 1 through 32 are incorporated by reference as if fully set forth herein.

34. LGI has not licensed or otherwise authorized Defendant to make, use, offer for sale, sell, or import any products that embody the inventions of the '415 Patent.

35. Defendant infringes, contributes to the infringement of, and/or induces infringement of the '415 Patent by making, using, selling, offering for sale, distributing, exporting from, and/or importing into the United States products and/or methods covered by one or more claims of the '415 Patent including, but not limited to, at least the Accused Products.

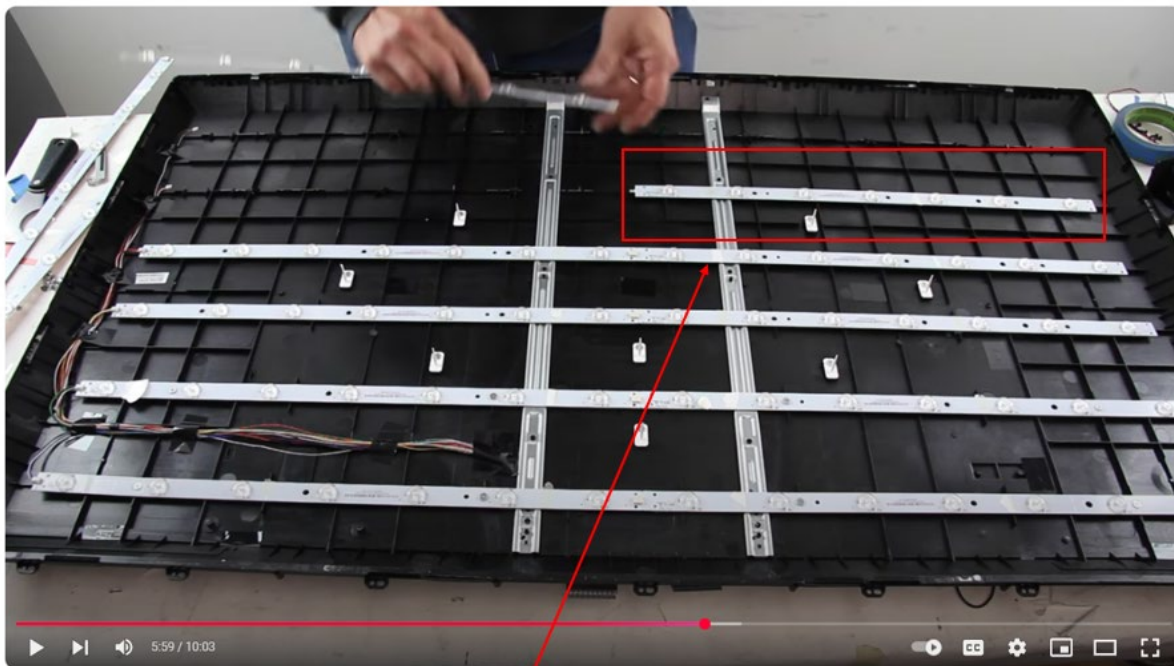
36. Defendant has directly infringed and continues to directly infringe the '415 Patent, either literally or under the doctrine of equivalents, without authority and in violation of 35 U.S.C. § 271, by making, using, offering to sell, selling, and/or importing into the United States products that satisfy each and every limitation of one or more claims of the '415 Patent. Upon information and belief, these products include the Accused Products that practice the methods and systems



covered by the '415 Patent including, for example, Vizio Quantum, Quantum Pro, 4k, Full HD, HD, M-Series, V-Series, and D-Series televisions. As an example, the M65Q6-L4 model Vizio television model infringes at least claim 1 of the '415 Patent.

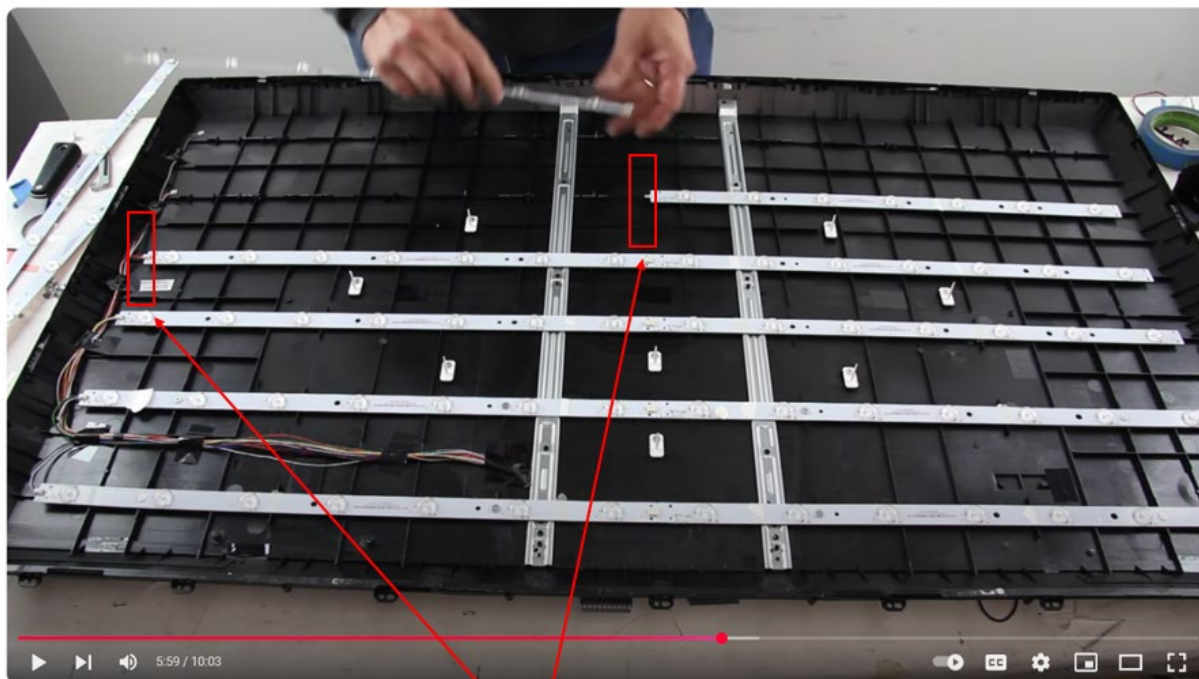
37. For example, Defendant has and continues to directly infringe at least claim 1 of the '415 Patent by making, using, offering to sell, selling, and/or importing into the United States products that comprise a light source apparatus comprising: at least one module substrate comprising connecting terminals at both side ends thereof; a light emitting diode on the module substrate; and a plurality of connecting substrates connected to the connecting terminals of the module substrate, wherein the connecting substrate comprises a termination connecting substrate, by which the connecting terminal provided at one end of a final module substrate of the module substrates is prepared as a closed loop circuit.

38. The Accused Products comprise at least one module substrate comprising connecting terminals at both side ends thereof. For example, the Accused Products include multiple LED strips (i.e., module substrate, shown below) which further comprise connecting terminals at both sides ends (as shown below).



LED Strip (module substrate)

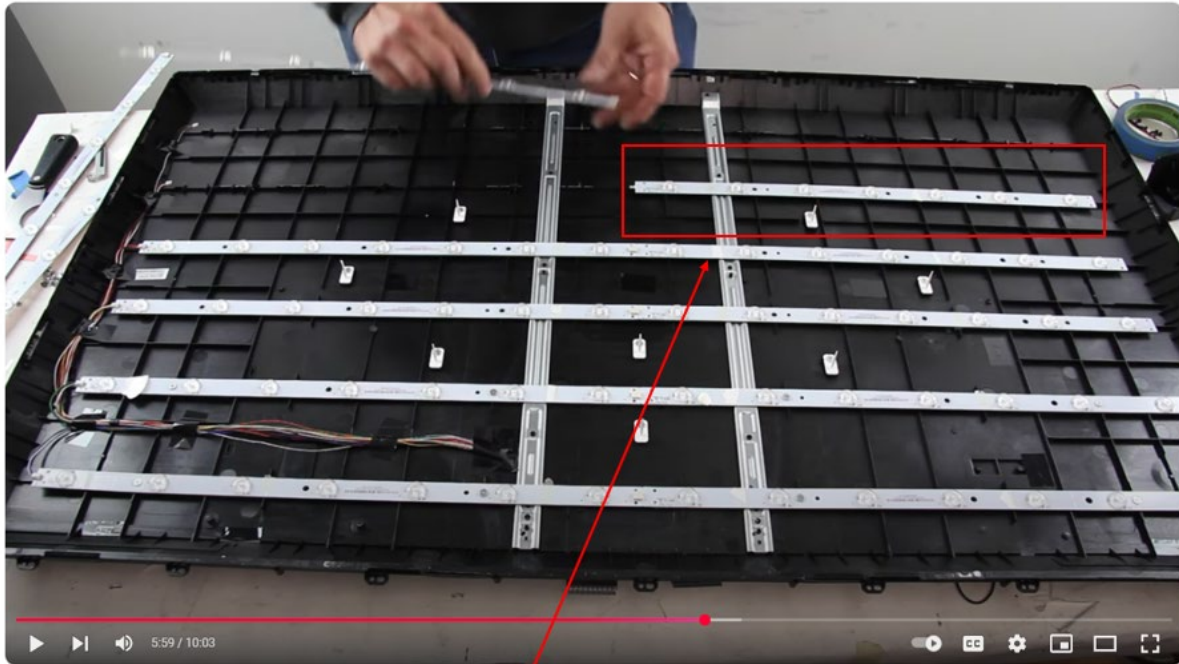
<https://www.youtube.com/watch?v=7AU2yD-XSi0>, Timestamp 5:59, last accessed date: March 12, 2025



Connecting terminals at ends of substrate

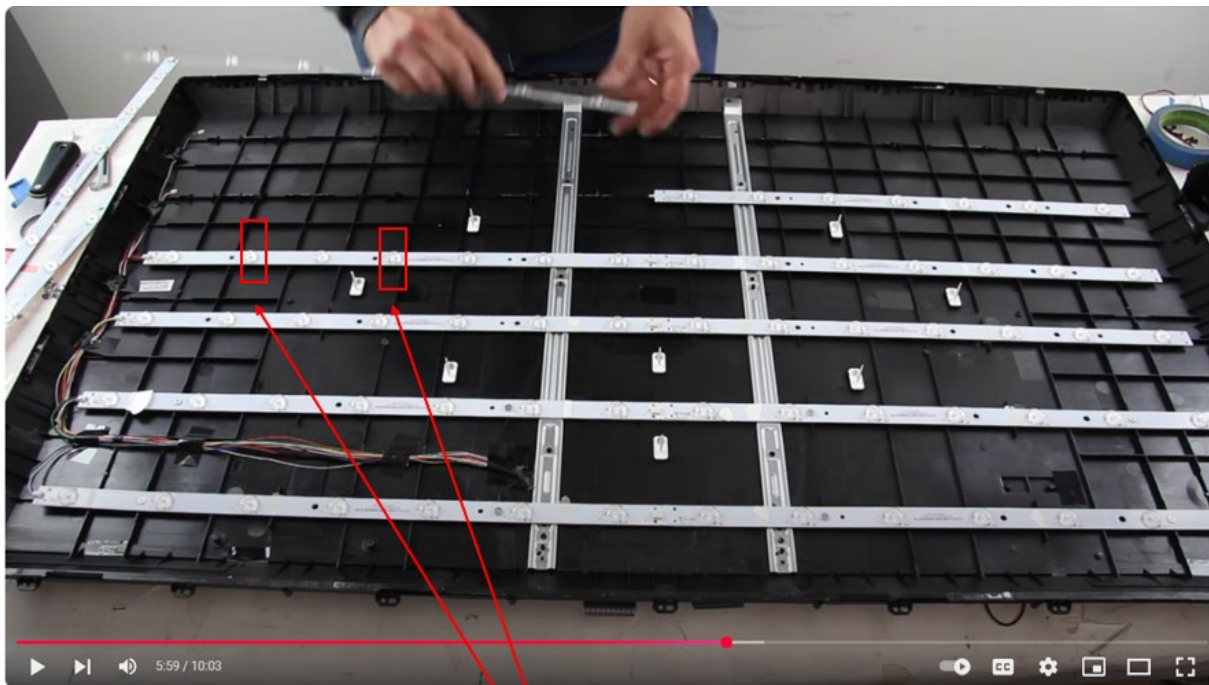
<https://www.youtube.com/watch?v=7AU2yD-XSi0>, Timestamp 5:59, last accessed date: March 12, 2025

39. The Accused Products comprise a light emitting diode on the module substrate. For example, the Accused Vizio TV light source apparatus consists of multiple LED strips (i.e., module substrate) where each LED strip includes multiple LED lights (i.e., light emitting diode) as shown below.



LED Strip (module substrate)

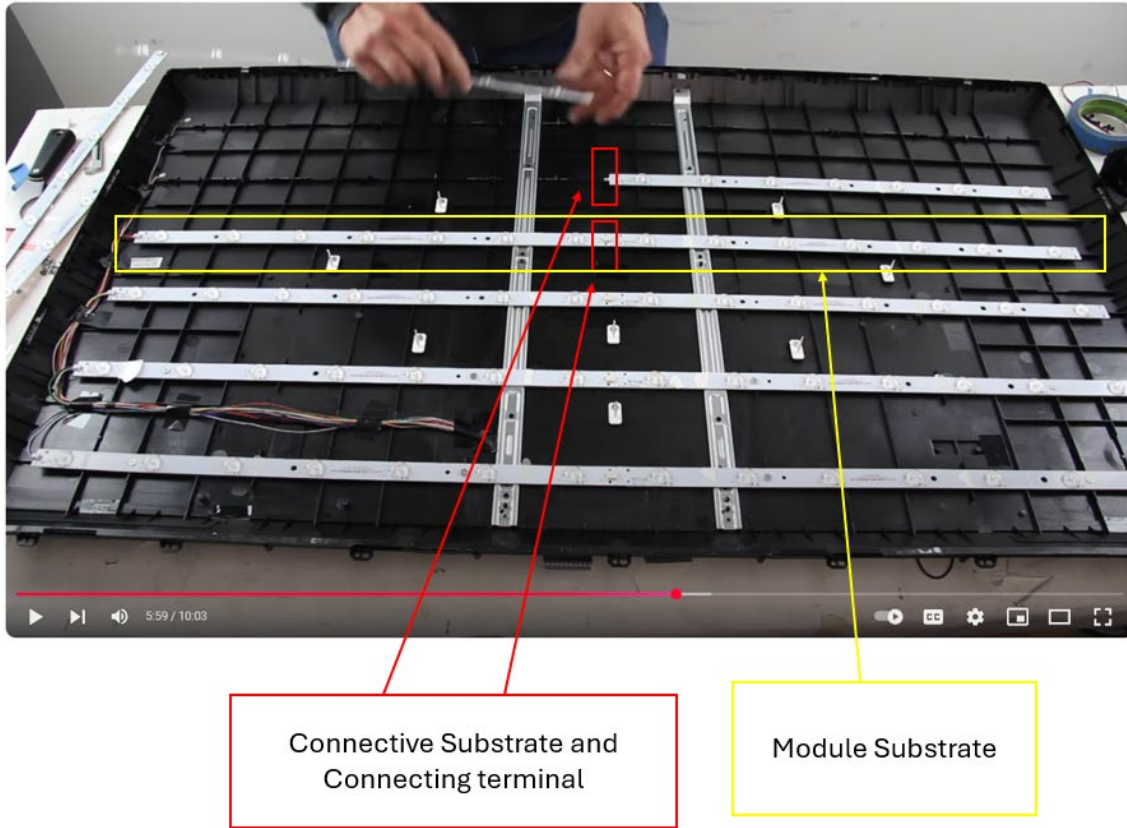
<https://www.youtube.com/watch?v=7AU2yD-XSi0>, Timestamp 5:59, last accessed: March 12, 2025



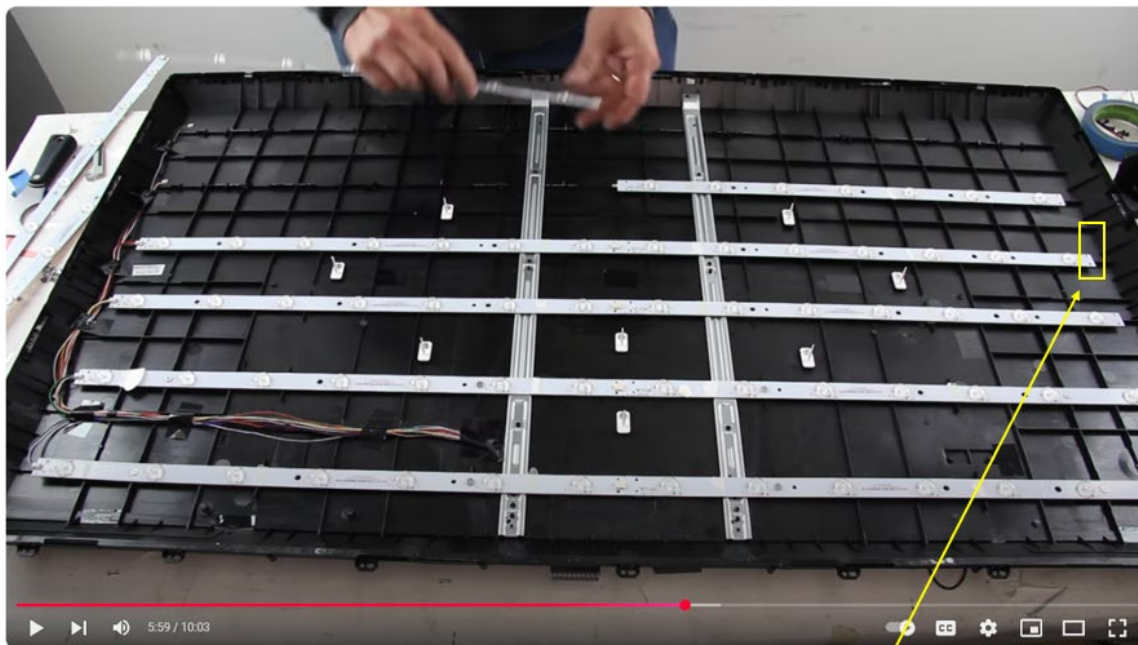
LEDs on LED Strip (substrate)

<https://www.youtube.com/watch?v=7AU2yD-XSi0>, Timestamp 5:59, Last accessed: March 12, 2025.

40. The Accused Products comprise a plurality of connecting substrates connected to the connecting terminals of the module substrate, wherein the connecting substrate comprises a termination connecting substrate, by which the connecting terminal provided at one end of a final module substrate of the module substrates is prepared as a closed loop circuit. For example, the Accused Vizio TVs include connecting substrate which further includes connecting terminals used to connect one LED strip (i.e., module substrate) to the other LED strip as shown below. Furthermore, the Accused Vizio TVs include multiple connecting substrates (LED strips) which are connected in series, each including a positive and negative line. Each row of LED strips comprises a closed loop circuit. As shown below.



<https://www.youtube.com/watch?v=7AU2yD-XSi0>, Timestamp 5:59, last accessed date: March 12, 2025



Terminal end of  
substrate

<https://www.youtube.com/watch?v=7AU2yD-XSi0>, Timestamp 5:59, last accessed date: March 12, 2025

41. Defendant has indirectly infringed and continues to indirectly infringe one or more claims of the '415 Patent, as provided by 35 U.S.C. § 271(b), by knowingly and intentionally inducing infringement by others, such as Defendant's customers and end-users, in this District and elsewhere in the United States. For example, Defendant's customers and end-users directly infringe, either literally or under the doctrine of equivalents, by making, using, offering to sell, selling, and/or importing into the United States products that include infringing technology, such as the Accused Products. Defendant induces this direct infringement through its affirmative acts of manufacturing, selling, distributing, and/or otherwise making available the Accused Products, and providing instructions, documentation, and other information to customers and end-users suggesting that they use the Accused Products in an infringing manner, including technical

support, marketing, product manuals, advertisements, and online documentation. Because of Defendant's inducement, Defendant's customers and end-users use the Accused Products in a way Defendant intends and they directly infringe the '415 Patent. Defendant performs these affirmative acts with the intent to cause infringing acts by others or, in the alternative, with the belief that there was a high probability that others, including end-users, infringe the '415 Patent, but while remaining willfully blind to the infringement.

42. Defendant has indirectly infringed and continues to indirectly infringe one or more claims of the '415 Patent, as provided by 35 U.S.C. § 271(c), by contributing to direct infringement by others, such as customers and end-users, in this District and elsewhere in the United States. Defendant's affirmative acts of selling and offering to sell the Accused Products in this District and elsewhere in the United States and causing the Accused Products to be manufactured, used, sold, and offered for sale contributes to others' use and manufacture of the Accused Products, such that the '415 Patent is directly infringed by others. The accused components within the Accused Products are material to the invention of the '415 Patent, are not staple articles or commodities of commerce, have no substantial non-infringing uses, and are known by Defendant to be especially made or adapted for use in the infringement of the '415 Patent. Defendant performs these affirmative acts with knowledge of the '415 Patent and with intent, or willful blindness, that it causes the direct infringement of the '415 Patent.

43. Defendant has willfully infringed, and continues to willfully infringe, the '415 Patent by intentionally and deliberately carrying out acts of direct and indirect infringement, while knowing of, or by remaining willfully blind to, infringement.

44. LGI has suffered damages as a result of Defendant's direct and indirect infringement of the '415 Patent in an amount to be proved at trial.



45. LGI has suffered, and will continue to suffer, irreparable harm as a result of Defendant's infringement of the '415 Patent, for which there is no adequate remedy at law, unless Defendant's infringement is enjoined by this Court.

**COUNT II**  
**(Infringement of the '380 Patent)**

46. Paragraphs 1 through 32 are incorporated by reference as if fully set forth herein.

47. LGI has not licensed or otherwise authorized Defendant to make, use, offer for sale, sell, or import any products that embody the inventions of the '380 Patent.

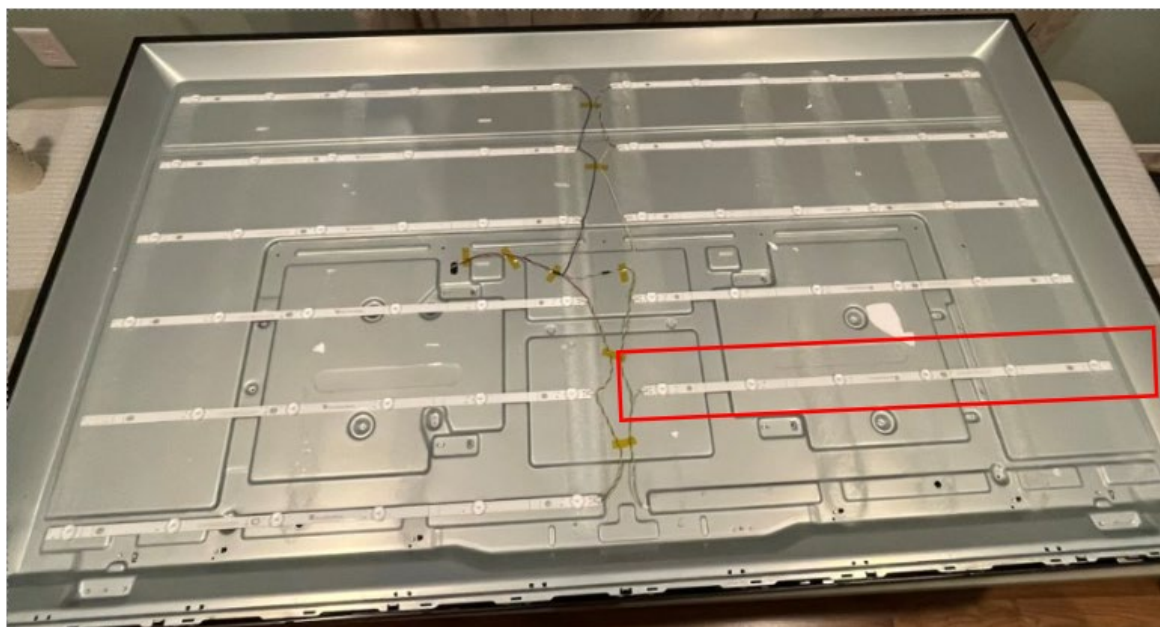
48. Defendant infringes, contributes to the infringement of, and/or induces infringement of the '380 Patent by making, using, selling, offering for sale, distributing, exporting from, and/or importing into the United States products and/or methods covered by one or more claims of the '380 Patent including, but not limited to, at least the Accused Products.

49. Defendant has directly infringed and continues to directly infringe the '380 Patent, either literally or under the doctrine of equivalents, without authority and in violation of 35 U.S.C. § 271, by making, using, offering to sell, selling, and/or importing into the United States products that satisfy each and every limitation of one or more claims of the '380 Patent. Upon information and belief, these products include the Accused Products that practice the methods and systems covered by the '380 Patent including, for example, Vizio Quantum, Quantum Pro, 4k, Full HD, HD, M-Series, V-Series, and D-Series televisions. As an example, the M65Q6-L4 model Vizio television infringes at least claim 1 of the '380 Patent.

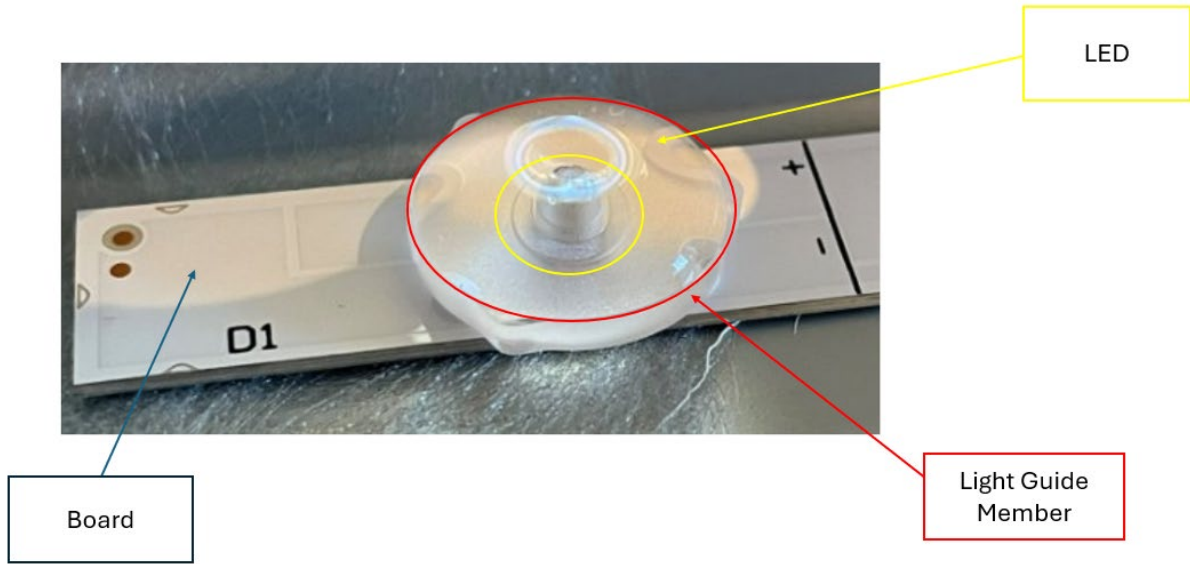
50. For example, Defendant has and continues to directly infringe at least claim 1 of the '380 Patent by making, using, offering to sell, selling, and/or importing into the United States products that comprise a light unit comprising: a light guide member outputting surface light upward; a board disposed to a first side of the light guide member; a plurality of light-emitting

devices mounted on a first side of the board; a reflection sheet under the light guide member; a housing receiving the light guide member, the light-emitting devices, the board, and the reflection sheet; and a metal plate attached to a second side of the board and a first side of the housing, wherein the second side of the board is opposite to the first side of the board, wherein a lower side of the metal plate is contacted with a bottom surface of the housing, wherein the board is a flexible PCB that includes a first portion disposed between the metal plate and the first side of the light guide member, and a second portion disposed between the reflection sheet and the housing, and wherein the second portion of the board includes line patterns connected to the light-emitting devices.

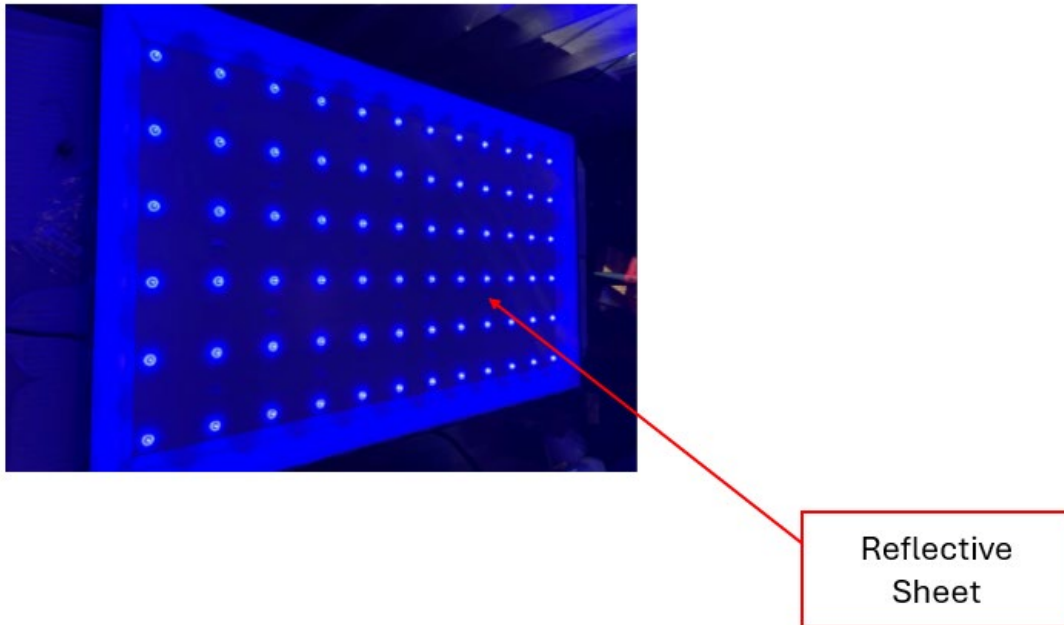
51. The Accused Products comprise a light guide member outputting surface light upward. For example, Vizio products, such as the Vizio M65Q6-L4, include multiple LEDs for backlighting, that allow a display screen to create an image. Each LED in the backlight module includes a transparent glass cover (i.e., a light guide member) over the top to guide the light coming from LEDs in the upward direction to the output, as shown below.



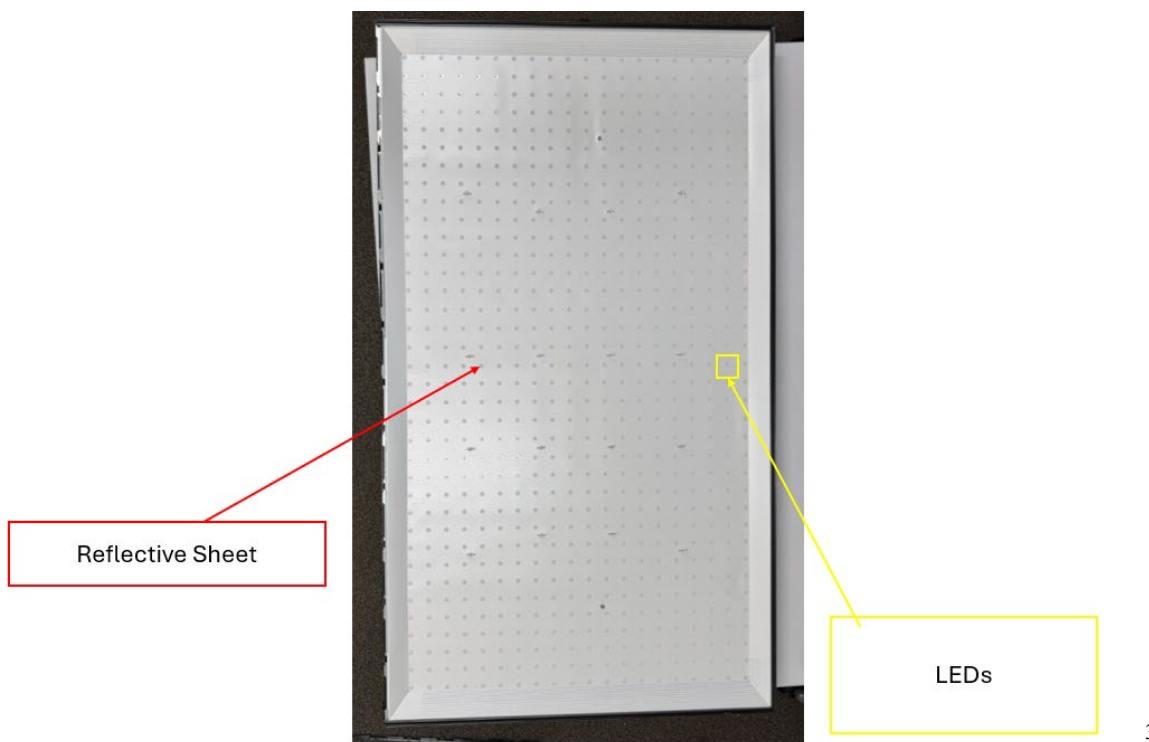
Source: M65Q6-L4 Teardown



Source: M65Q6-L4 Teardown



Source: M65Q6-L4 Teardown

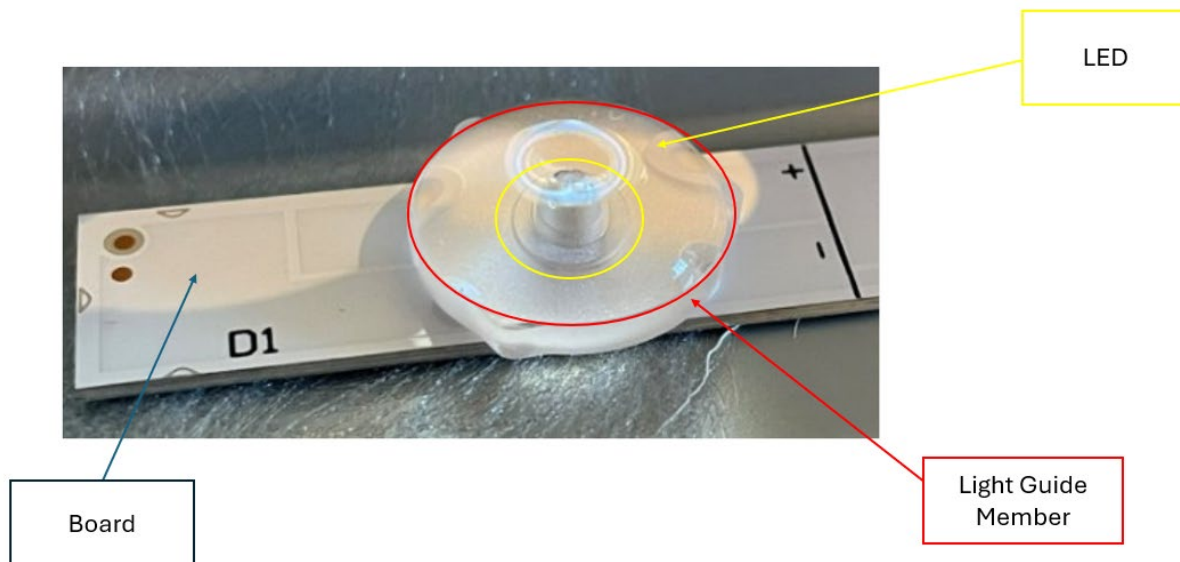


Source: M65Q6-L4 Teardown

52. The Accused Products comprise a board disposed to a first side of the light guide member. For example, the Vizio product, such as the Vizio M65Q6-L4, includes a LED strip (i.e., a board). The LED strip consists of multiple LEDs, where each LED has a transparent glass cover (i.e., the light guide member) covering the LED and connected or disposed to the LED strip (i.e., disposed to a first side), as shown below.

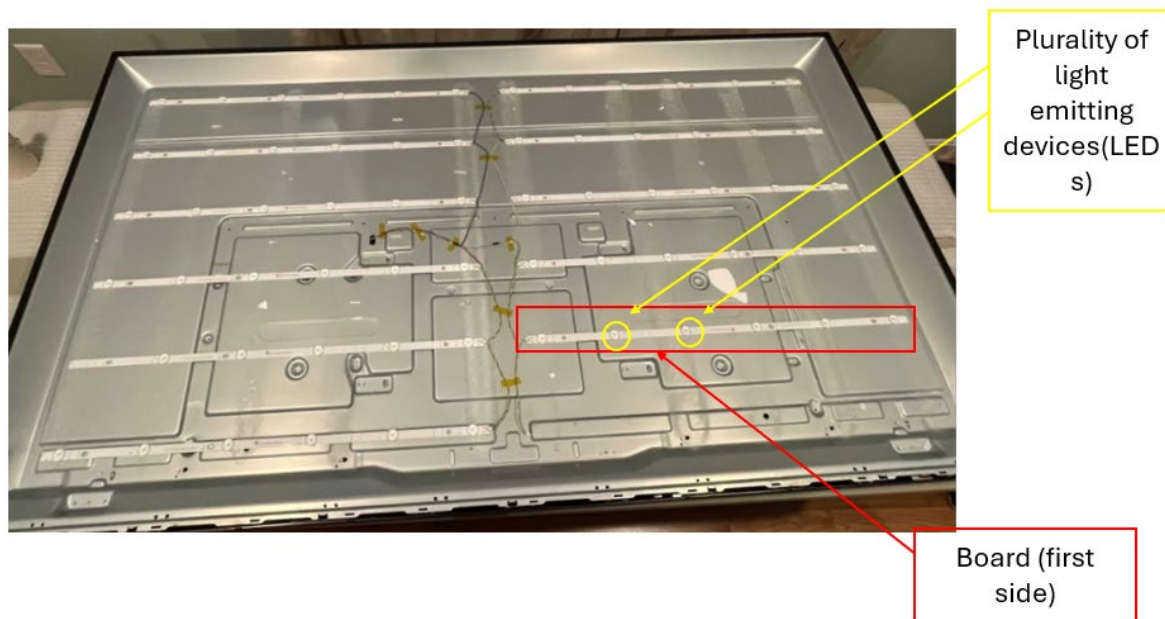
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<sup>3</sup> Note that there seems to be some slight variation within the M65Q6-L4; however, on information and belief, the image applies to both pictured variations.



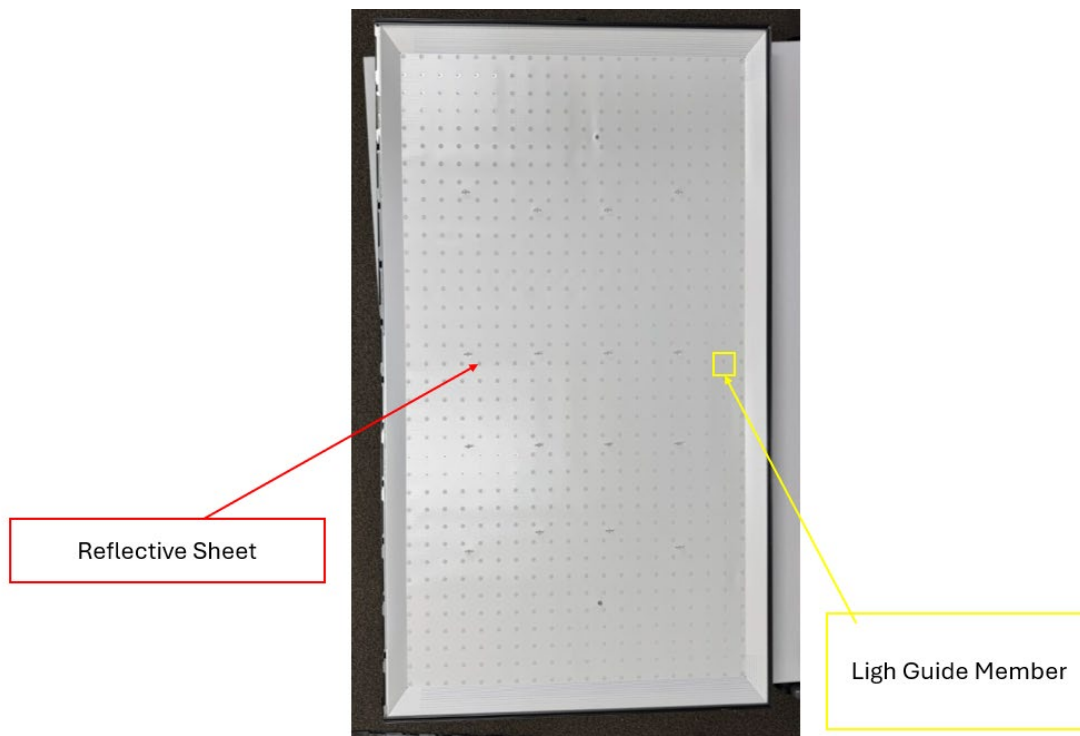
Source: M65Q6-L4 Teardown

53. The Accused Products comprise a plurality of light-emitting devices mounted on a first side of the board. For example, the Vizio products, such as the Vizio M65Q6-L4, include a plurality of light-emitted devices mounted on the front side (i.e., first side) of the LED strip (i.e., board), as shown below.



Source: M65Q6-L4 Teardown

54. The Accused Products comprise a reflection sheet under the light guide member, for example, Vizio products, such as the Vizio M65Q6-L4, include a housing containing a reflection sheet and light emitting devices having transparent glass cover (i.e., the light guide member) over it. The reflection sheet is placed under the light guide member as shown below, and the light emitting portions of the optics protrude above the sheet.



Source: M65Q6-L4 Teardown

55. The Accused Products comprise a housing receiving the light guide member, the light-emitting devices, the board, and the reflection sheet, for example, the Vizio products, such as the Vizio M65Q6-L4, include a plurality of light-emitted devices mounted on the front side (i.e., first side) of the LED strip (i.e., board) as shown below.

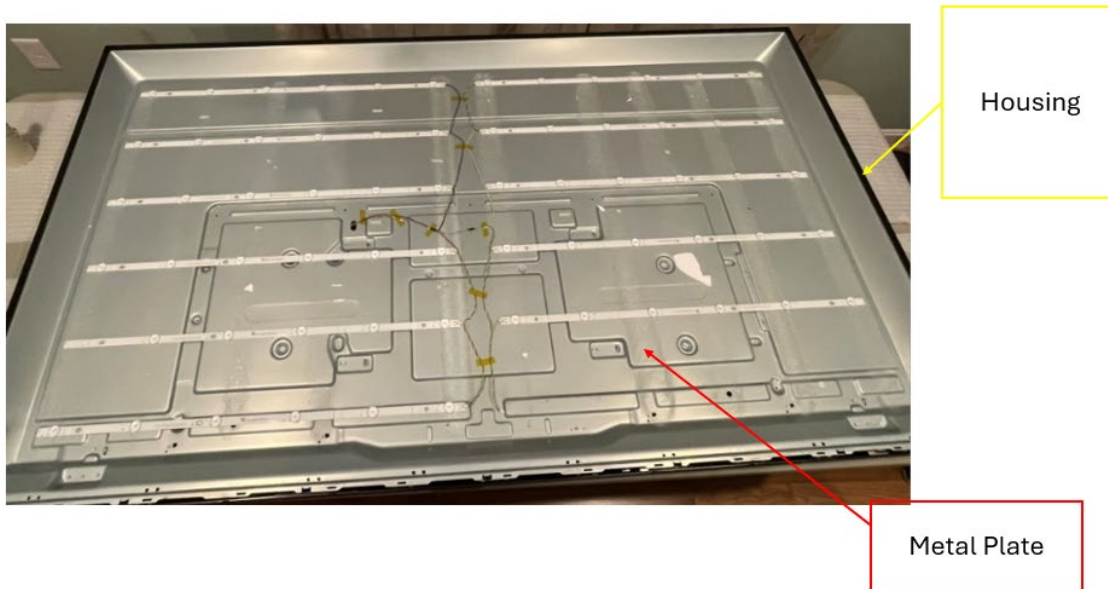
56. The Accused Products comprise a housing receiving the light guide member, the light-emitting devices, the board, and the reflection sheet. For example, the Vizio products include the exterior housing, which is the black covering and frame around the TV, as shown below. The housing provides the support to the metal plate which further includes the light-guide member, the light-emitting devices, the LED strip, and the reflection sheet ,as shown below.

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<sup>4</sup> Note that there seems to be some slight variation within the M65Q6-L4; however, on information and belief, the image applies to both pictured variations.



<https://www.vizio.com/en/tv/quantum/M65Q6-L4> last visited: March 9 2025

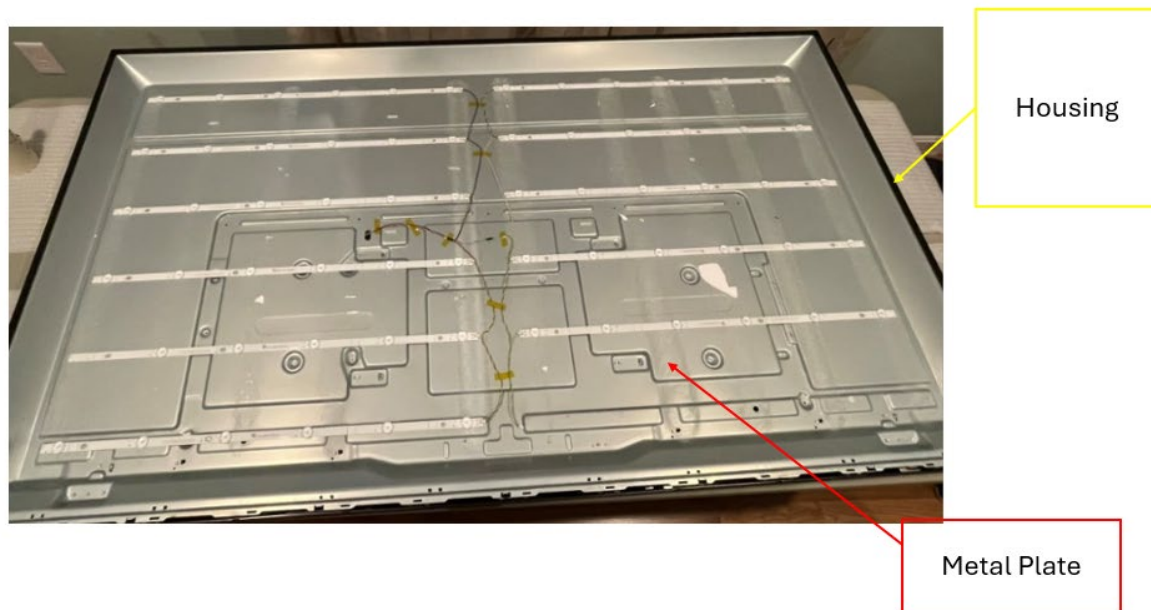


Source: M65Q6-L4 Teardown

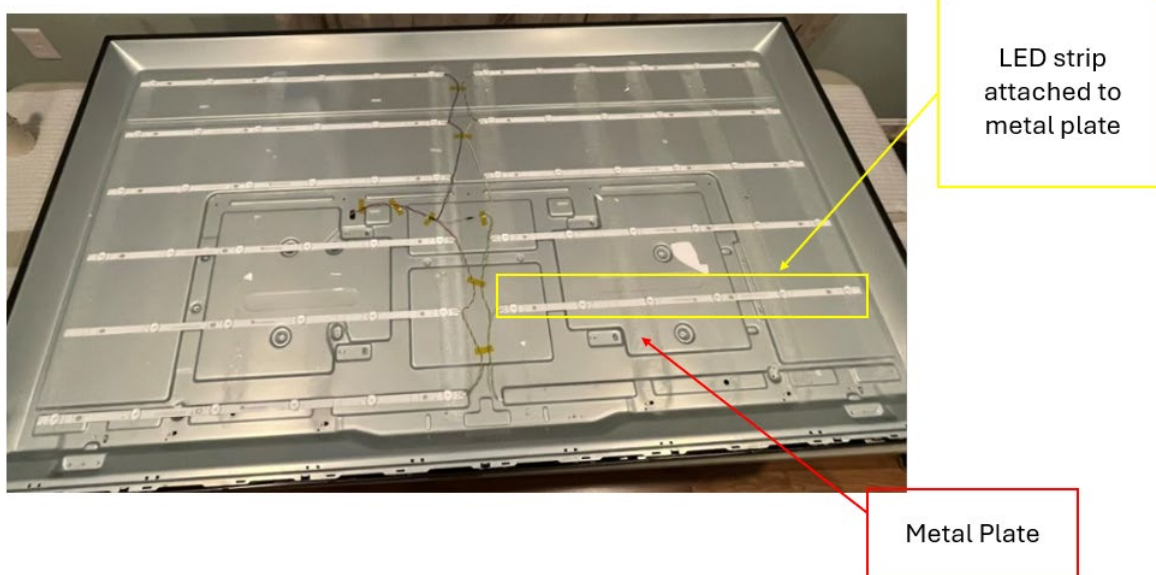
57. The Accused Products comprise a metal plate attached to a second side of the board and a first side of the housing. For example, the Vizio products include the exterior housing, which



is the black covering and frame around the TV metal plate. Below the housing there is a metal plate (as shown below). The metal plate provides attachment support to different parts of the backlight module, such as an LED strip over which LEDs are disposed, as shown below. Thus, the metal plate is on the second side of the board and on the first side of the housing.

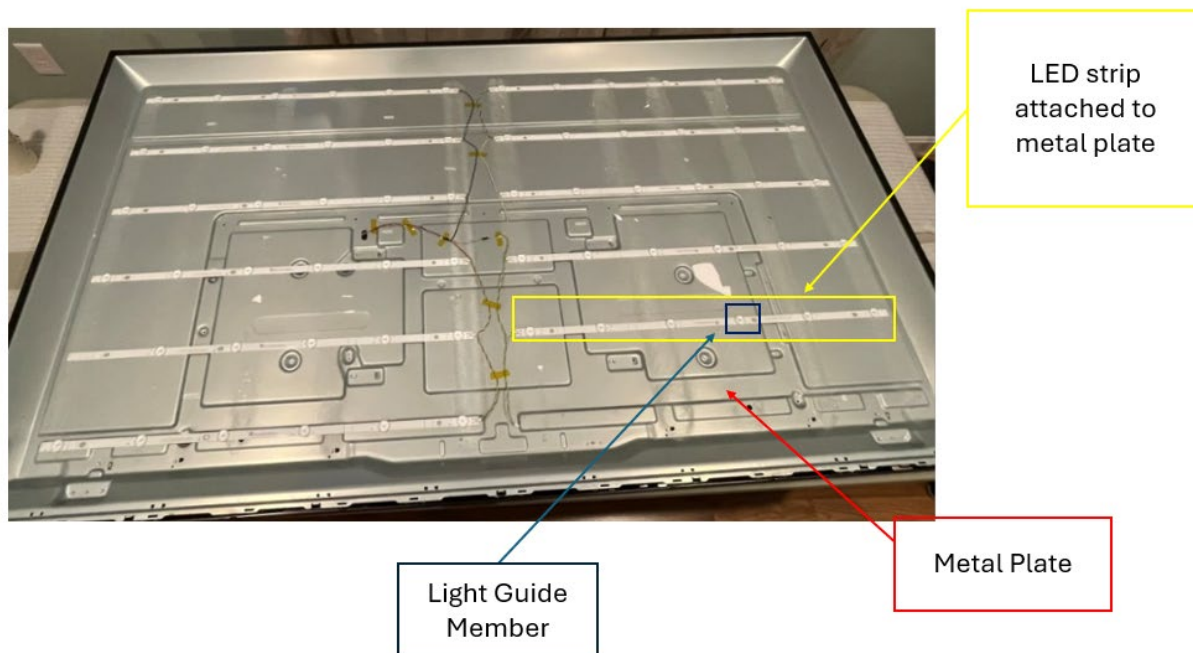


Source: M65Q6-L4 Teardown



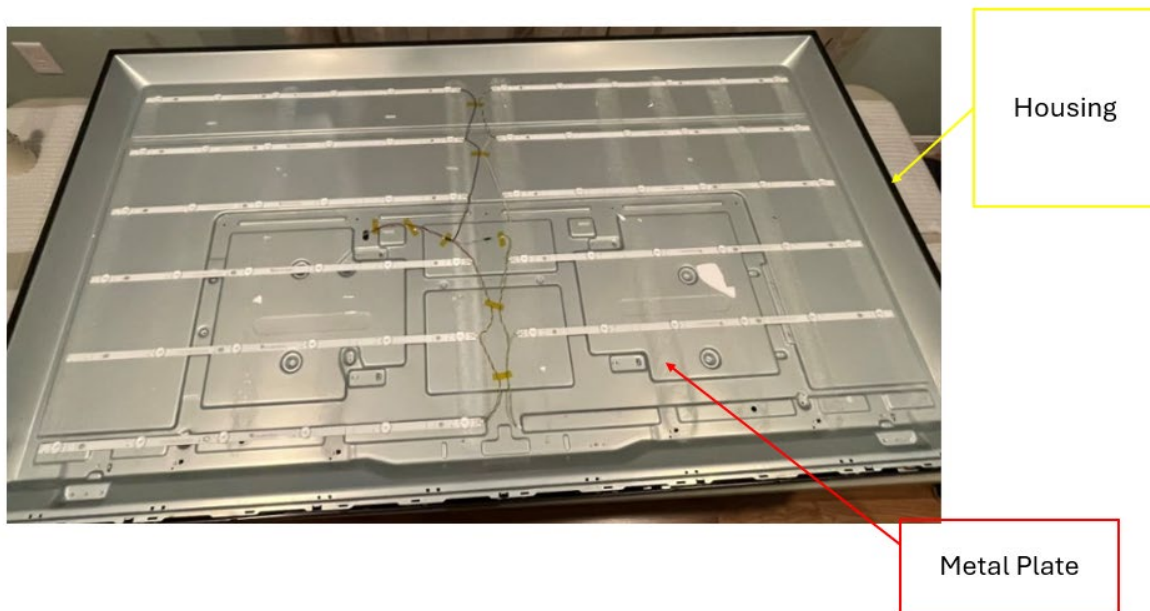
Source: M65Q6-L4 Teardown

58. The Accused Products comprise an apparatus wherein the second side of the board is opposite to the first side of the board. For example, the Vizio products include an LED strip over which multiple LEDs are disposed. The light guide member is present on the first side of the LED strip and the metal plate is present on the second side of the LED strip. Thus, the first side of the board is in the opposite direction to the second side of the board, as shown below.



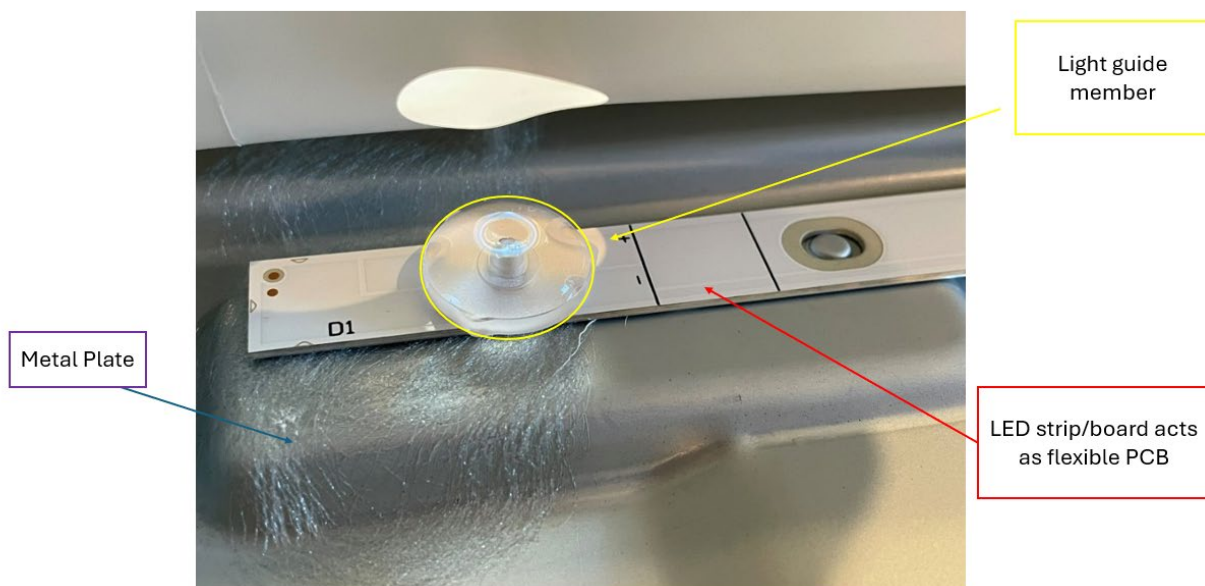
Source: M65Q6-L4 Teardown

59. The Accused Products comprise an apparatus wherein a lower side of the metal plate is contacted with a bottom surface of the housing. For example, the Vizio products include both metal plate and housing where the lower side of the metal plate is in direct contact with the bottom surface of the housing, as shown below.

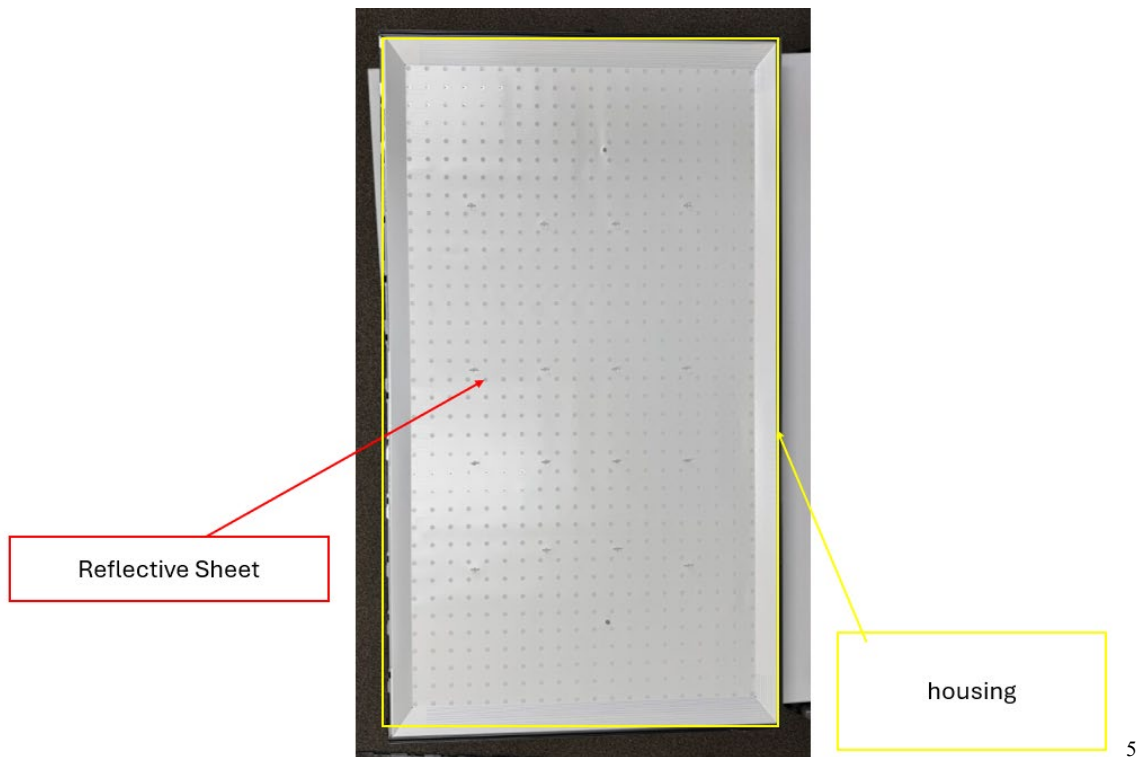


Source: M65Q6-L4 Teardown

60. The Accused Products comprise an apparatus wherein the board is a flexible PCB that includes a first portion disposed between the metal plate and the first side of the light guide member, and a second portion disposed between the reflection sheet and the housing. For example, the Vizio products include an LED strip board that acts as a flexible PCB. The board consists of an LED with a light guide member. This is the first portion of the board that is disposed between the metal plate and the first side of the light guide member (as shown below). The remaining part of the board (which does not consist of LED and guide member) is the second portion of the board that is disposed between the reflection sheet and the housing, as shown below.



Source: M65Q6-L4 Teardown



Source: M65Q6-L4 Teardown

<sup>5</sup> Note that there seems to be some slight variation within the M65Q6-L4; however, on information and belief, the image applies to both pictured variations.

61. The Accused Products comprise an apparatus wherein the second portion of the board includes line patterns connected to the light-emitting devices. For example, the Vizio products include an LED strip in which the second portion of the LED strip includes line patterns connected to the light-emitting devices to supply power to each of the LEDs present on the LED strip, as shown below.



S Source: M65Q6-L4 Teardown

62. Defendant has indirectly infringed and continues to indirectly infringe one or more claims of the '380 Patent, as provided by 35 U.S.C. § 271(b), by knowingly and intentionally inducing infringement by others, such as Defendant's customers and end-users, in this District and elsewhere in the United States. For example, Defendant's customers and end-users directly infringe, either literally or under the doctrine of equivalents, by making, using, offering to sell, selling, and/or importing into the United States products that include infringing technology, such as the Accused Products. Defendant induces this direct infringement through its affirmative acts

of manufacturing, selling, distributing, and/or otherwise making available the Accused Products, and providing instructions, documentation, and other information to customers and end-users suggesting that they use the Accused Products in an infringing manner, including technical support, marketing, product manuals, advertisements, and online documentation. Because of Defendant's inducement, Defendant's customers and end-users use the Accused Products in a way Defendant intends and they directly infringe the '380 Patent. Defendant performs these affirmative acts with the intent to cause infringing acts by others or, in the alternative, with the belief that there was a high probability that others, including end-users, infringe the '380 Patent, but while remaining willfully blind to the infringement.

63. Defendant has indirectly infringed and continues to indirectly infringe one or more claims of the '380 Patent, as provided by 35 U.S.C. § 271(c), by contributing to direct infringement by others, such as customers and end-users, in this District and elsewhere in the United States. Defendant's affirmative acts of selling and offering to sell the Accused Products in this District and elsewhere in the United States and causing the Accused Products to be manufactured, used, sold, and offered for sale contributes to others' use and manufacture of the Accused Products, such that the '380 Patent is directly infringed by others. The accused components within the Accused Products are material to the invention of the '380 Patent, are not staple articles or commodities of commerce, have no substantial non-infringing uses, and are known by Defendant to be especially made or adapted for use in the infringement of the '380 Patent. Defendant performs these affirmative acts with knowledge of the '380 Patent and with intent, or willful blindness, that it causes the direct infringement of the '380 Patent.

64. Defendant has willfully infringed, and continues to willfully infringe, the '380 Patent by intentionally and deliberately carrying out acts of direct and indirect infringement, while

knowing of, or by remaining willfully blind to, infringement.

65. LGI has suffered damages as a result of Defendant's direct and indirect infringement of the '380 Patent in an amount to be proved at trial.

66. LGI has suffered, and will continue to suffer, irreparable harm as a result of Defendant's infringement of the '380 Patent, for which there is no adequate remedy at law, unless Defendant's infringement is enjoined by this Court.

**COUNT III**  
**(Infringement of the '200 Patent)**

67. Paragraphs 1 through 32 are incorporated by reference as if fully set forth herein.

68. LGI has not licensed or otherwise authorized Defendant to make, use, offer for sale, sell, or import any products that embody the inventions of the '200 Patent.

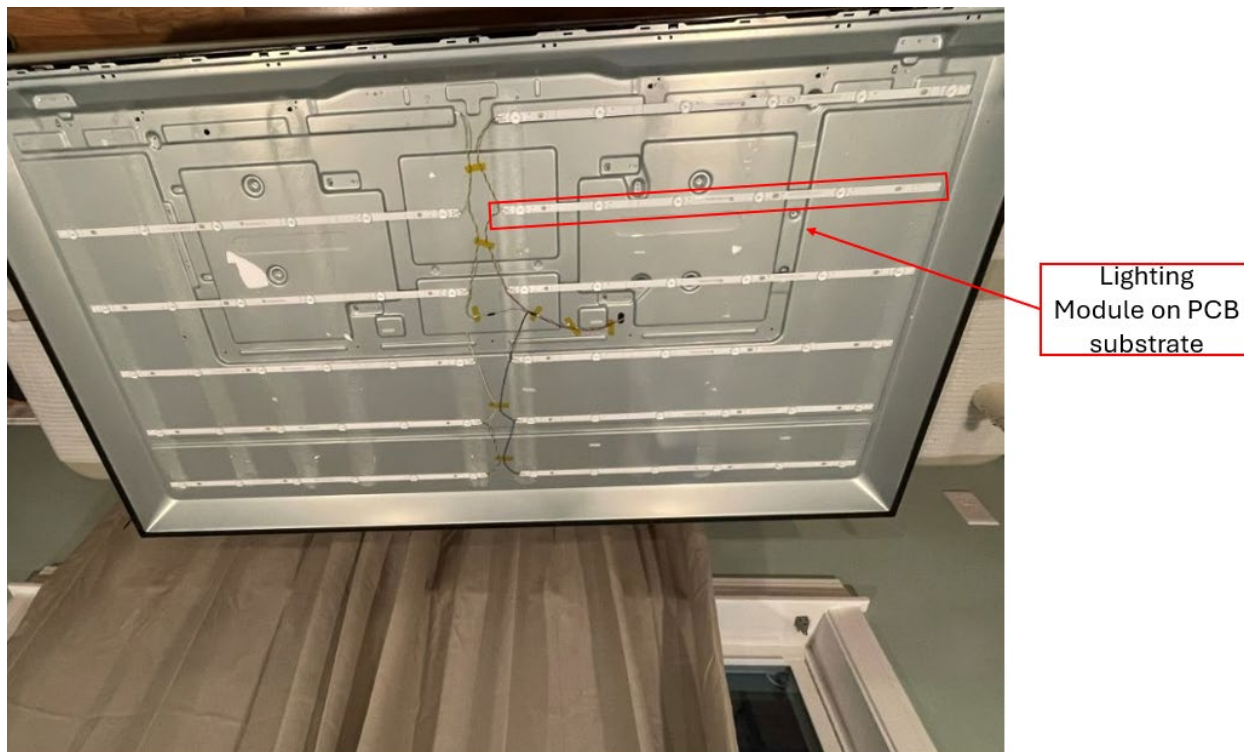
69. Defendant infringes, contributes to the infringement of, and/or induces infringement of the '200 Patent by making, using, selling, offering for sale, distributing, exporting from, and/or importing into the United States products and/or methods covered by one or more claims of the '200 Patent including, but not limited to, at least the Accused Products.

70. Defendant has directly infringed and continues to directly infringe the '200 Patent, either literally or under the doctrine of equivalents, without authority and in violation of 35 U.S.C. § 271, by making, using, offering to sell, selling, and/or importing into the United States products that satisfy each and every limitation of one or more claims of the '200 Patent. Upon information and belief, these products include the Accused Products that practice the methods and systems covered by the '200 Patent including, for example, Vizio Quantum, Quantum Pro, 4k, Full HD, HD, M-Series, V-Series, and D-Series televisions. As an example, the M65Q6-L4 model infringes at least claim 1 of the '200 Patent.



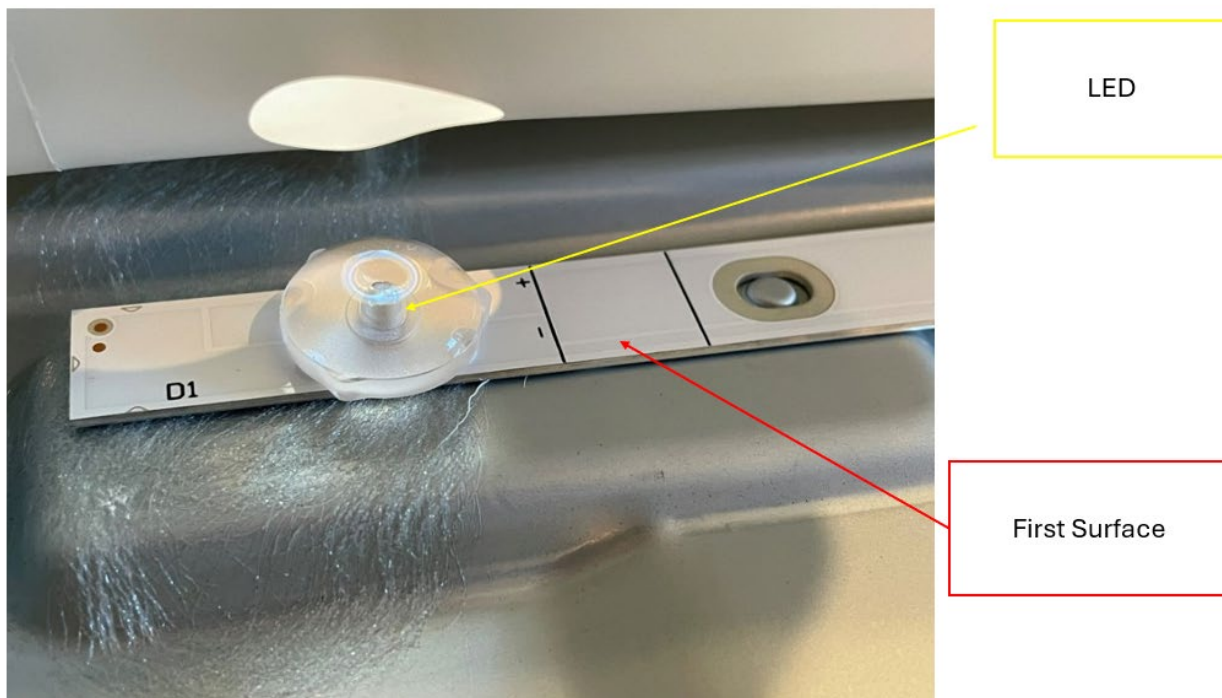
71. For example, Defendant has and continues to directly infringe at least claim 1 of the '200 Patent by making, using, offering to sell, selling, and/or importing into the United States products that comprise a lighting module comprising: a substrate; a plurality of light emitting diodes on a first surface of the substrate; and at least one guide protrusion on the first surface of the substrate, wherein the at least one guide protrusion comprises a pin protruding from the first surface of the substrate and a cap coupled to the pin, and the pin has a height less than a height of the light emitting diodes.

72. The Accused Products comprise a lighting module which comprises a substrate. For example, the Accused Products (including the Vizio M65Q6-L4) include a backlight module, which contains the LED strips (i.e., lighting module) and multiple light-emitting diodes (LEDs) arranged on the surface (i.e., substrate) of the LED strips, as shown below).

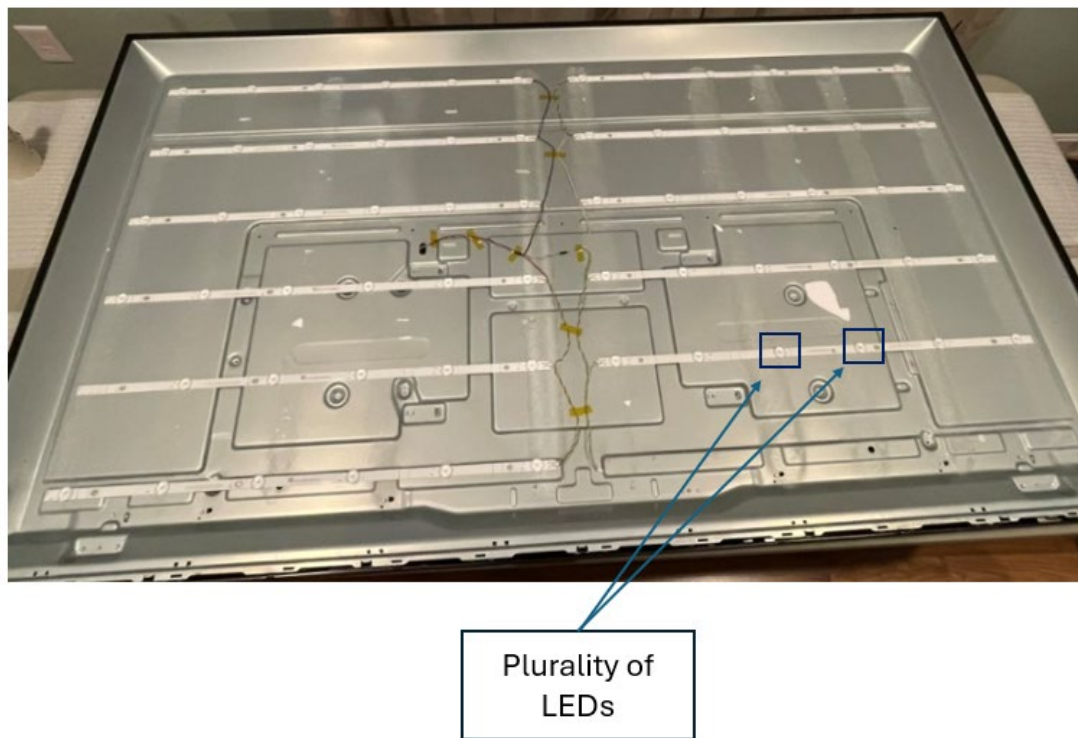


Source: M65Q6-L4 Teardown

73. The Accused Products comprise a plurality of light emitting diodes on a first surface of the substrate. For example, the Accused Products (including, but not limited to, the Vizio M65Q6-L4) consist of multiple light-emitting diodes (LEDs) (i.e., plurality of light emitting diodes) positioned or mounted on the front surface (i.e., first surface) of the LED strip (as shown below):

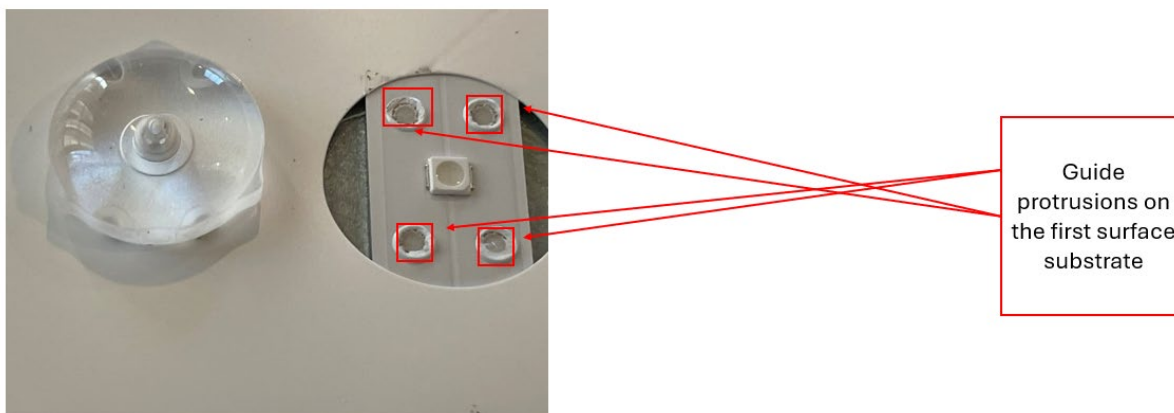


Source: M65Q6-L4 Teardown



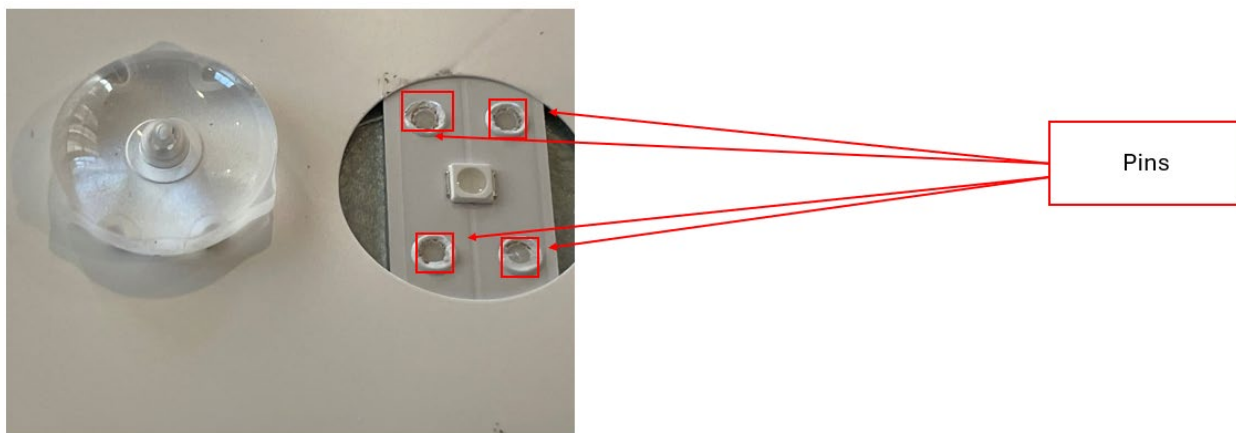
Source: M65Q6-L4 Teardown

74. The Accused Products comprise at least one guide protrusion on the first surface of the substrate. For example, the Accused Products (including, but not limited to, the Vizio M65Q6-L4) consist of multiple guides (i.e., guide protrusion) on the front surface (i.e., first surface) of the LED strip (as shown below):

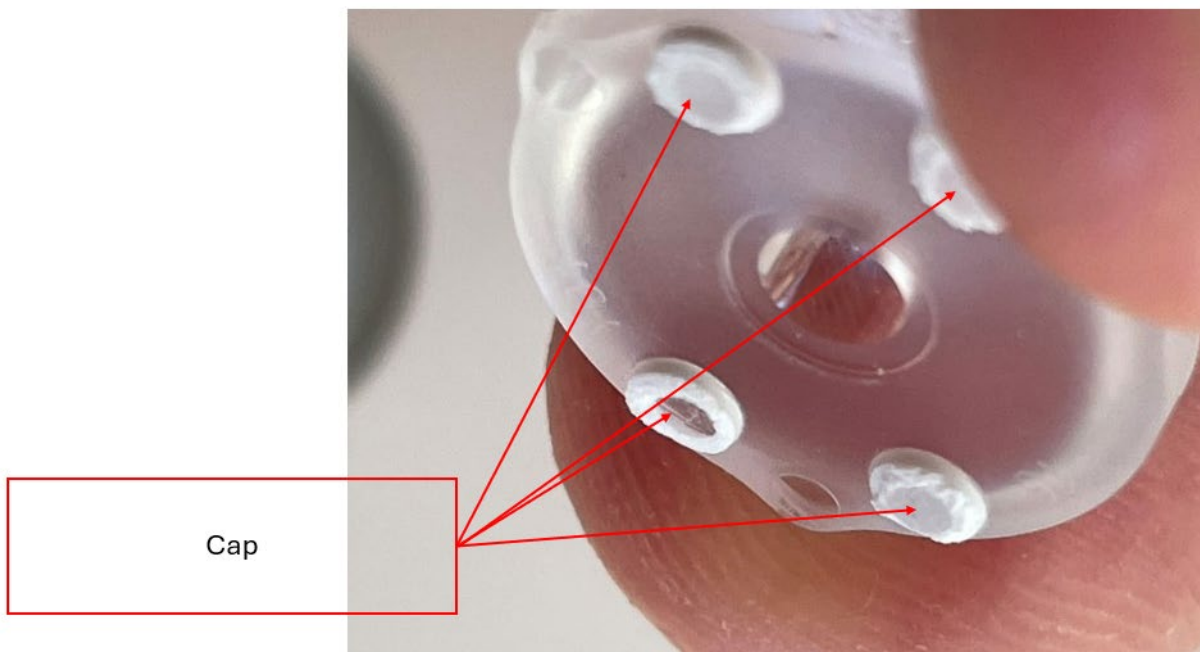


Source: M65Q6-L4 Teardown

75. The Accused Products comprise an apparatus wherein the at least one guide protrusion comprises a pin protruding from the first surface of the substrate and a cap coupled to the pin, and the pin has a height less than a height of the light emitting diodes. For example, in the Accused Products (including, but not limited to, the Vizio M65Q6-L4) the light guide is placed above the LED through the guide protrusion which is present on the first surface of the substrate (as shown below). The light guide consists of a cap coupled to the pin (as shown below). The pin of the light guide protrudes through the guide protrusion the height of the guide pin is less than the height of the LED.



Source: M65Q6-L4 Teardown



Source: M65Q6-L4 Teardown

76. Defendant has indirectly infringed and continues to indirectly infringe one or more claims of the '200 Patent, as provided by 35 U.S.C. § 271(b), by knowingly and intentionally inducing infringement by others, such as Defendant's customers and end-users, in this District and elsewhere in the United States. For example, Defendant's customers and end-users directly infringe, either literally or under the doctrine of equivalents, by making, using, offering to sell, selling, and/or importing into the United States products that include infringing technology, such as the Accused Products. Defendant induces this direct infringement through its affirmative acts of manufacturing, selling, distributing, and/or otherwise making available the Accused Products, and providing instructions, documentation, and other information to customers and end-users suggesting that they use the Accused Products in an infringing manner, including technical support, marketing, product manuals, advertisements, and online documentation. Because of Defendant's inducement, Defendant's customers and end-users use the Accused Products in a way

Defendant intends and they directly infringe the '200 Patent. Defendant performs these affirmative acts with the intent to cause infringing acts by others or, in the alternative, with the belief that there was a high probability that others, including end-users, infringe the '200 Patent, but while remaining willfully blind to the infringement.

77. Defendant has indirectly infringed and continues to indirectly infringe one or more claims of the '200 Patent, as provided by 35 U.S.C. § 271(c), by contributing to direct infringement by others, such as customers and end-users, in this District and elsewhere in the United States. Defendant's affirmative acts of selling and offering to sell the Accused Products in this District and elsewhere in the United States and causing the Accused Products to be manufactured, used, sold, and offered for sale contributes to others' use and manufacture of the Accused Products, such that the '200 Patent is directly infringed by others. The accused components within the Accused Products are material to the invention of the '200 Patent, are not staple articles or commodities of commerce, have no substantial non-infringing uses, and are known by Defendant to be especially made or adapted for use in the infringement of the '200 Patent. Defendant performs these affirmative acts with knowledge of the '200 Patent and with intent, or willful blindness, that it causes the direct infringement of the '200 Patent.

78. Defendant has willfully infringed, and continues to willfully infringe, the '200 Patent by intentionally and deliberately carrying out acts of direct and indirect infringement, while knowing of, or by remaining willfully blind to, infringement.

79. LGI has suffered damages as a result of Defendant's direct and indirect infringement of the '200 Patent in an amount to be proved at trial.

80. LGI has suffered, and will continue to suffer, irreparable harm as a result of Defendant's infringement of the '200 Patent, for which there is no adequate remedy at law, unless

Defendant's infringement is enjoined by this Court.

**COUNT IV**  
**(Infringement of the '122 Patent)**

81. Paragraphs 1 through 32 are incorporated by reference as if fully set forth herein.

82. LGI has not licensed or otherwise authorized Defendant to make, use, offer for sale, sell, or import any products that embody the inventions of the '122 Patent.

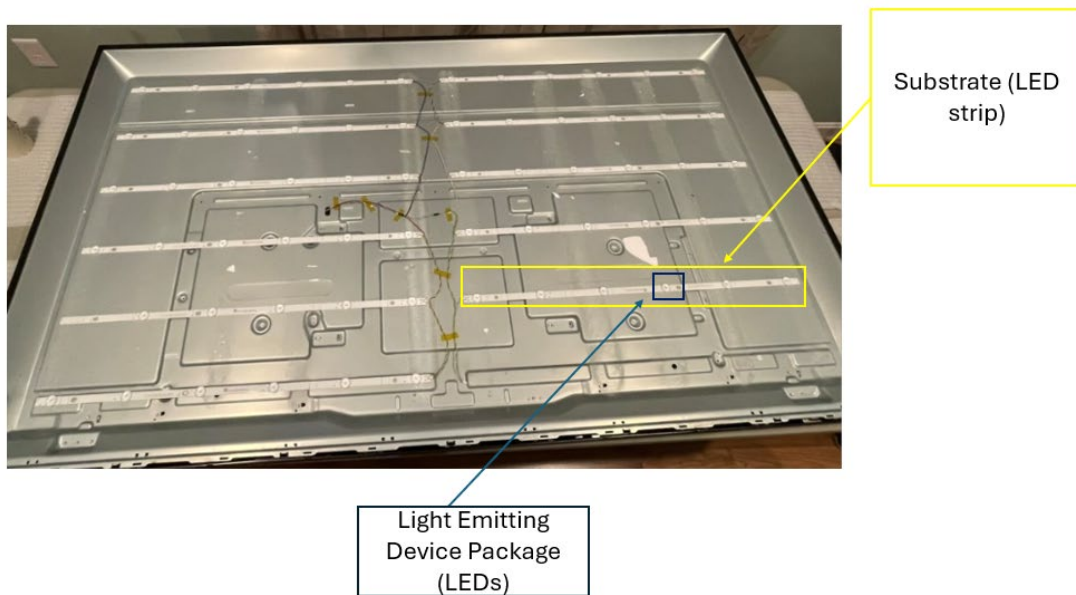
83. Defendant infringes, contributes to the infringement of, and/or induces infringement of the '122 Patent by making, using, selling, offering for sale, distributing, exporting from, and/or importing into the United States products and/or methods covered by one or more claims of the '122 Patent including, but not limited to, at least the Accused Products.

84. Defendant has directly infringed and continues to directly infringe the '122 Patent, either literally or under the doctrine of equivalents, without authority and in violation of 35 U.S.C. § 271, by making, using, offering to sell, selling, and/or importing into the United States products that satisfy each and every limitation of one or more claims of the '122 Patent. Upon information and belief, these products include the Accused Products that practice the methods and systems covered by the '122 Patent including, for example, Vizio Quantum, Quantum Pro, 4k, Full HD, HD, M-Series, V-Series, and D-Series televisions. As an example, the Vizio model M65Q6-L4 television infringes at least claim 1 of the '122 Patent.

85. For example, Defendant has and continues to directly infringe at least claim 1 of the '122 Patent by making, using, offering to sell, selling, and/or importing into the United States products that comprise A light emitting apparatus comprising: a substrate; a light emitting device package on the substrate; and a lens supported by the substrate, the lens being disposed on the light emitting device package, wherein the lens comprises a lens body having a first recess at a central portion of a top surface thereof, a second recess at a central portion of a bottom surface thereof,

and a lens support disposed on the bottom surface of the lens body to support the lens body, such that the bottom surface of the lens body is spaced apart from the substrate.

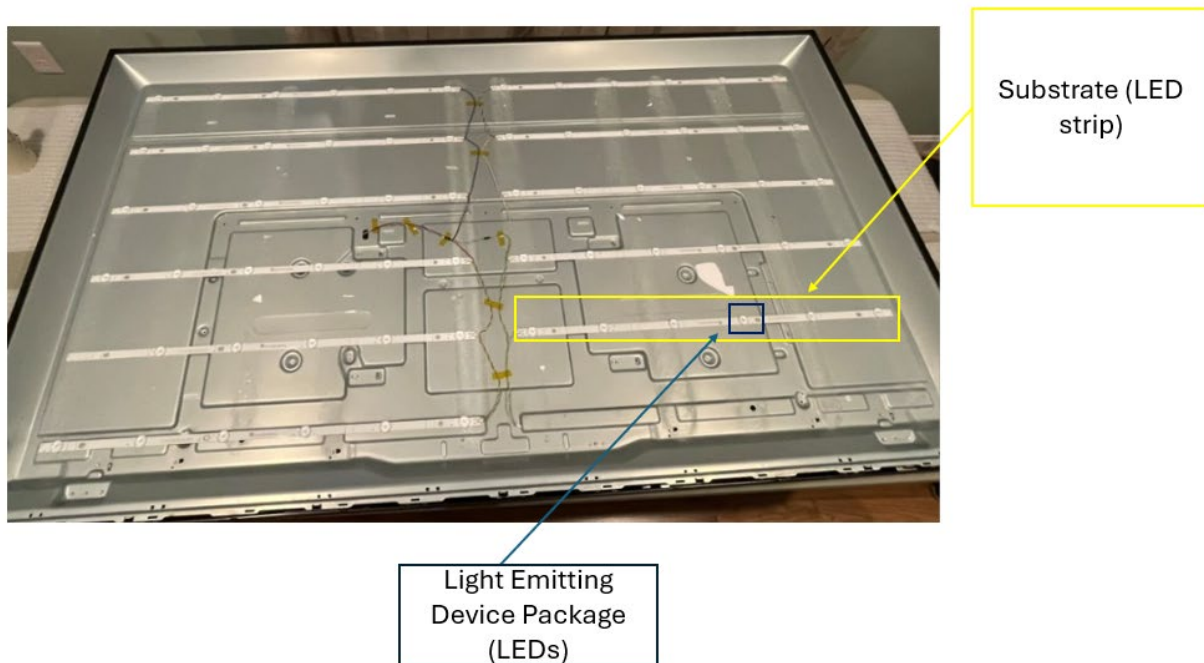
86. The Accused Products comprise a substrate. For example, the Accused Products contain LED strips.



Source: M65Q6-L4 Teardown

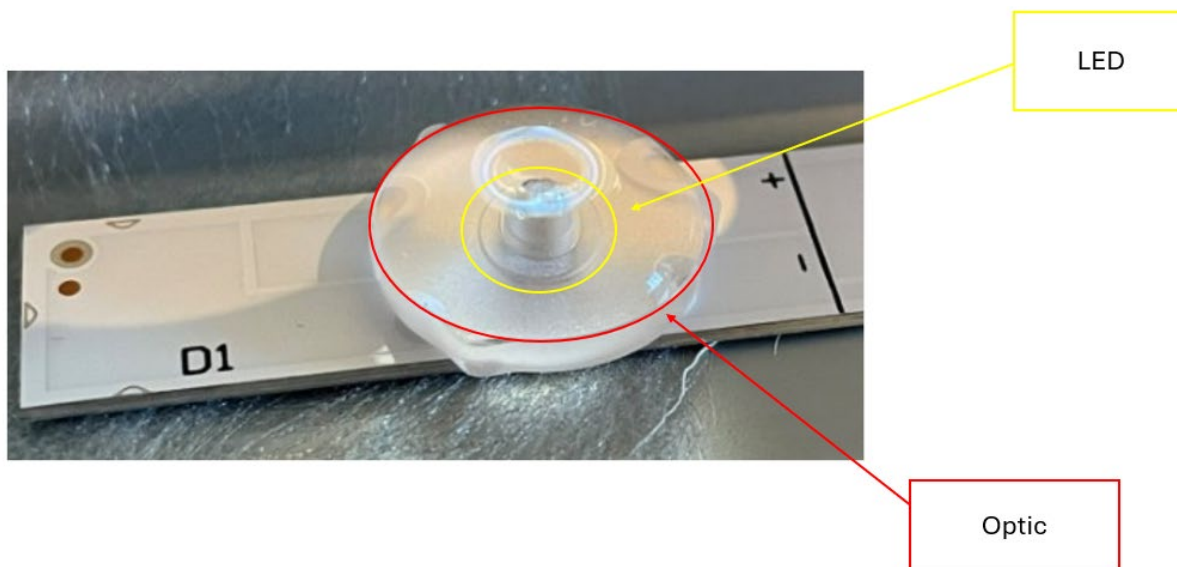
87. The Accused Products comprise a light emitting device package on the substrate; for example, the LED packages on the LED strip of the M65Q6-L4.





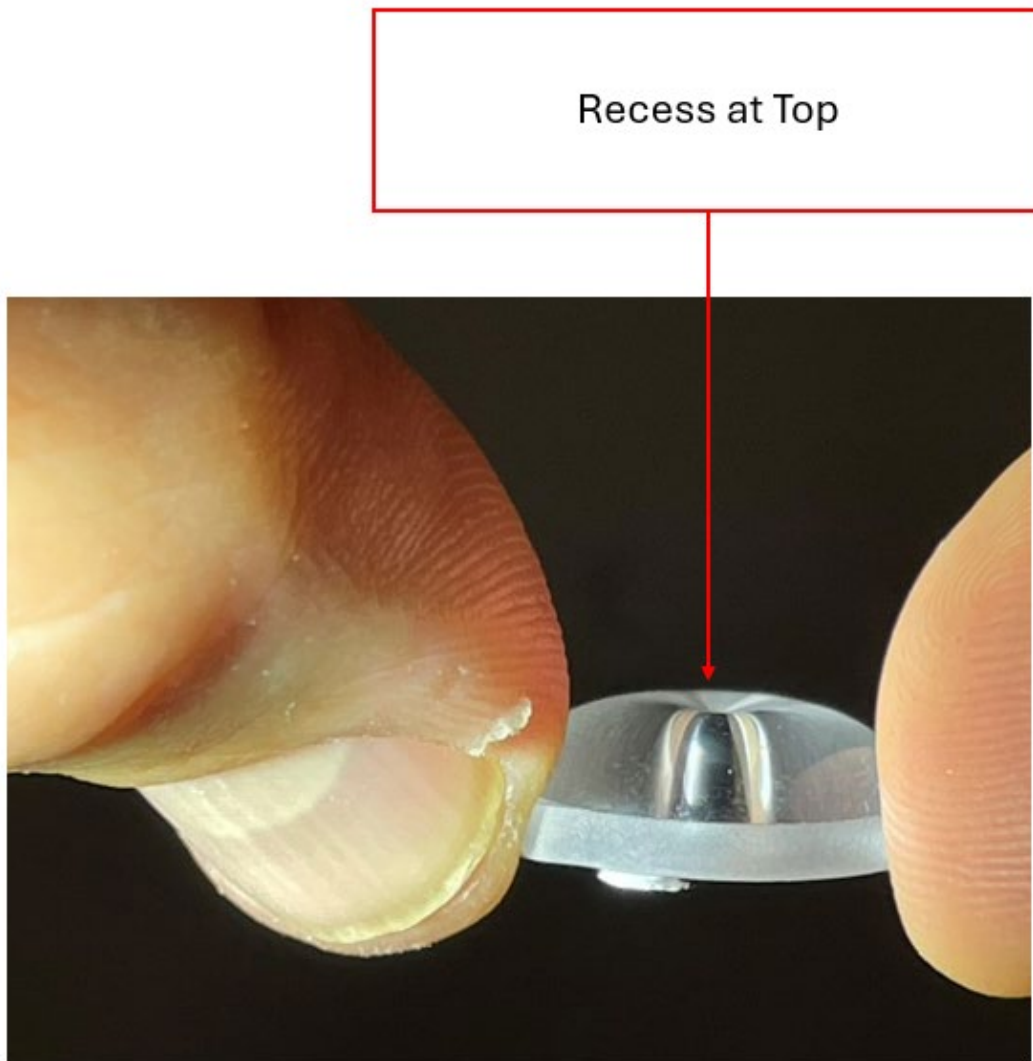
Source: M65Q6-L4 Teardown

88. The Accused Products comprise a lens supported by the substrate, the lens being disposed on the light emitting device package, *e.g.*, optics disposed over the LED packages of the LED strips, as shown above.

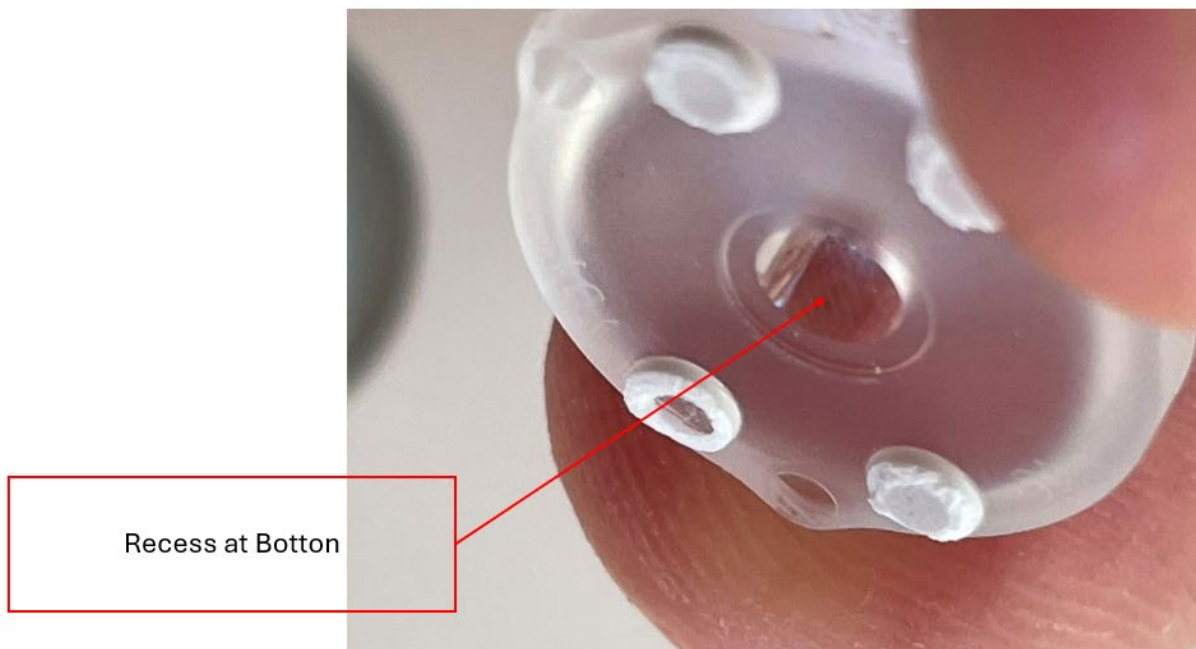


Source: M65Q6-L4 Teardown

89. The Accused Products comprise an apparatus wherein the lens comprises a lens body having a first recess at a central portion of a top surface thereof, a second recess at a central portion of a bottom surface thereof, and a lens support disposed on the bottom surface of the lens body to support the lens body, such that the bottom surface of the lens body is spaced apart from the substrate:



Source: M65Q6-L4 Teardown



Source: M65Q6-L4 Teardown

90. Defendant has indirectly infringed and continues to indirectly infringe one or more claims of the '122 Patent, as provided by 35 U.S.C. § 271(b), by knowingly and intentionally inducing infringement by others, such as Defendant's customers and end-users, in this District and elsewhere in the United States. For example, Defendant's customers and end-users directly infringe, either literally or under the doctrine of equivalents, by making, using, offering to sell, selling, and/or importing into the United States products that include infringing technology, such as the Accused Products. Defendant induces this direct infringement through its affirmative acts of manufacturing, selling, distributing, and/or otherwise making available the Accused Products, and providing instructions, documentation, and other information to customers and end-users suggesting that they use the Accused Products in an infringing manner, including technical support, marketing, product manuals, advertisements, and online documentation. Because of Defendant's inducement, Defendant's customers and end-users use the Accused Products in a way

Defendant intends and they directly infringe the '122 Patent. Defendant performs these affirmative acts with the intent to cause infringing acts by others or in the alternative with the belief that there was a high probability that others, including end-users, infringe the '122 Patent, but while remaining willfully blind to the infringement.

91. Defendant has indirectly infringed and continues to indirectly infringe one or more claims of the '122 Patent, as provided by 35 U.S.C. § 271(c), by contributing to direct infringement by others, such as customers and end-users, in this District and elsewhere in the United States. Defendant's affirmative acts of selling and offering to sell the Accused Products in this District and elsewhere in the United States and causing the Accused Products to be manufactured, used, sold, and offered for sale contributes to others' use and manufacture of the Accused Products, such that the '122 Patent is directly infringed by others. The accused components within the Accused Products are material to the invention of the '122 Patent, are not staple articles or commodities of commerce, have no substantial non-infringing uses, and are known by Defendant to be especially made or adapted for use in the infringement of the '122 Patent. Defendant performs these affirmative acts with knowledge of the '122 Patent and with intent, or willful blindness, that it causes the direct infringement of the '122 Patent.

92. Defendant has willfully infringed, and continues to willfully infringe, the '122 Patent by intentionally and deliberately carrying out acts of direct and indirect infringement, while knowing of, or by remaining willfully blind to, infringement.

93. LGI has suffered damages as a result of Defendant's direct and indirect infringement of the '122 Patent in an amount to be proved at trial.

94. LGI has suffered, and will continue to suffer, irreparable harm as a result of Defendant's infringement of the '122 Patent, for which there is no adequate remedy at law, unless

Defendant's infringement is enjoined by this Court.

**COUNT V**  
**(Infringement of the '307 Patent)**

95. Paragraphs 1 through 32 are incorporated by reference as if fully set forth herein.

96. LGI has not licensed or otherwise authorized Defendant to make, use, offer for sale, sell, or import any products that embody the inventions of the '307 Patent.

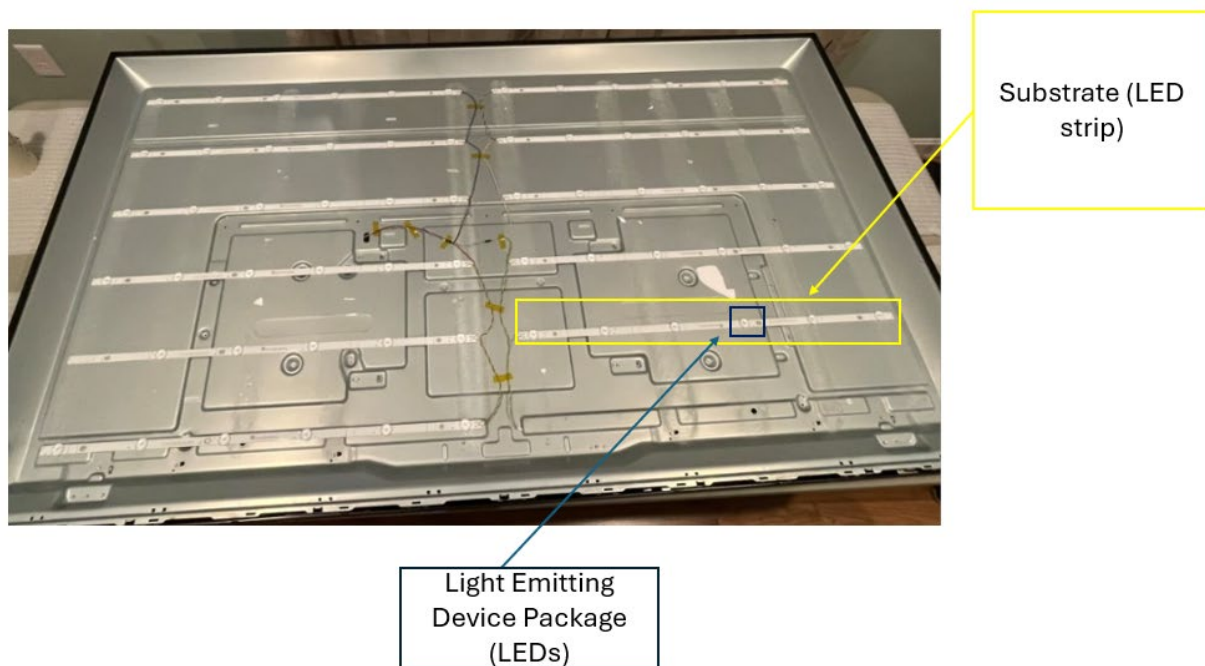
97. Defendant infringes, contributes to the infringement of, and/or induces infringement of the '307 Patent by making, using, selling, offering for sale, distributing, exporting from, and/or importing into the United States products and/or methods covered by one or more claims of the '307 Patent including, but not limited to, at least the Accused Products.

98. Defendant has directly infringed and continues to directly infringe the '307 Patent, either literally or under the doctrine of equivalents, without authority and in violation of 35 U.S.C. § 271, by making, using, offering to sell, selling, and/or importing into the United States products that satisfy each and every limitation of one or more claims of the '307 Patent. Upon information and belief, these products include the Accused Products that practice the methods and systems covered by the '307 Patent including, for example, Vizio Quantum, Quantum Pro, 4k, Full HD, HD, M-Series, V-Series, and D-Series televisions. As an example, the Vizio model M65Q6-L4 television infringes at least claim 1 of the '307 Patent.

99. For example, Defendant has and continues to directly infringe at least claim 1 of the '307 Patent by making, using, offering to sell, selling, and/or importing into the United States products that comprise a light emitting apparatus, comprising: a substrate; a light emitting device package on the substrate, the light emitting device package comprising: a package body provided on the substrate; at least one light emitting device provided on the package body; a phosphor layer surrounding the light emitting device; and a sealing resin layer provided on the phosphor layer and

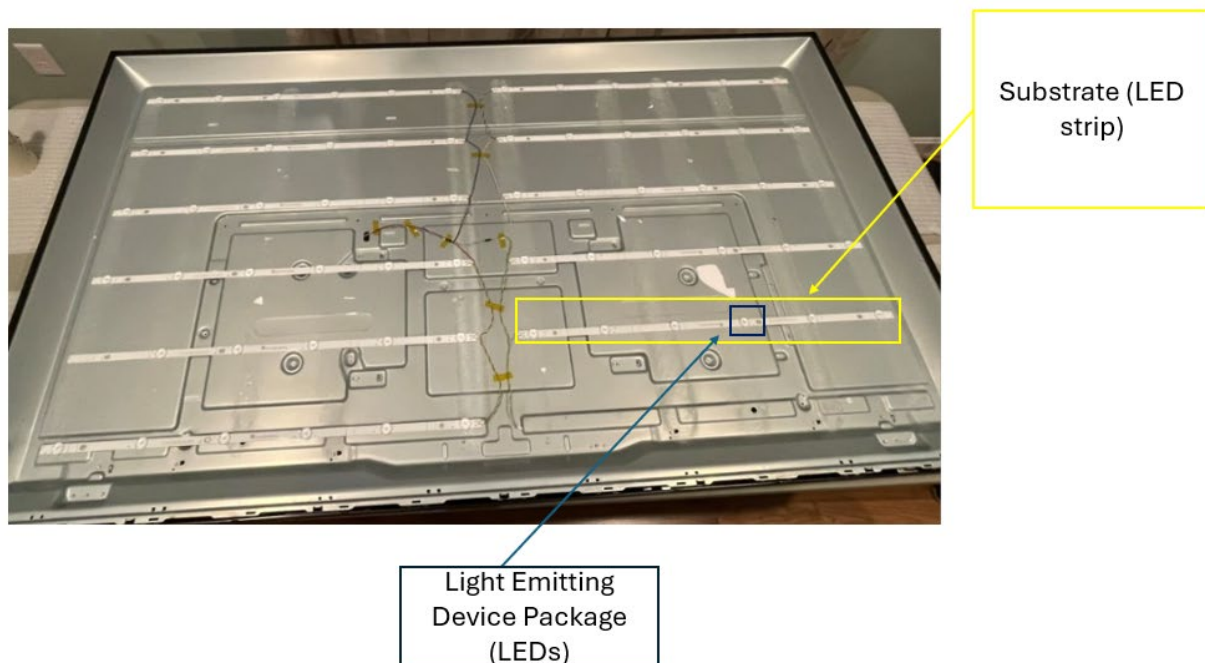
the package body; and a lens supported by the substrate, the lens being disposed on the light emitting device package, wherein the lens comprises a lens body having a first recess at a central portion of a top surface thereof, a second recess at a central portion of a bottom surface thereof, and a lens support disposed on the bottom surface of the lens body to support the lens body, such that the bottom surface of the lens body is spaced apart from the substrate.

100. The Accused Products, light emitting apparatuses, comprise a substrate, such as an LED strip.



Source: M65Q6-L4 Teardown

101. The Accused Products comprise a light emitting device package on the substrate, *e.g.*, LED packages on the LED strips of the M65Q6-L4.



Source: M65Q6-L4 Teardown

102. The Accused Products comprise a light emitting device package comprising: a package body provided on the substrate; at least one light emitting device provided on the package body; a phosphor layer surrounding the light emitting device; and a sealing resin layer provided on the phosphor layer and the package body. For example, the LED strips of the M65Q6-L4 comprise a plurality of an LED packages which each comprise, upon information and belief, a package body on the substrate, and LED, a phosphor layer surrounding the LED (*e.g.*, the yellow phosphor layer of each LED), and a sealing resin layer on the phosphor and package body.

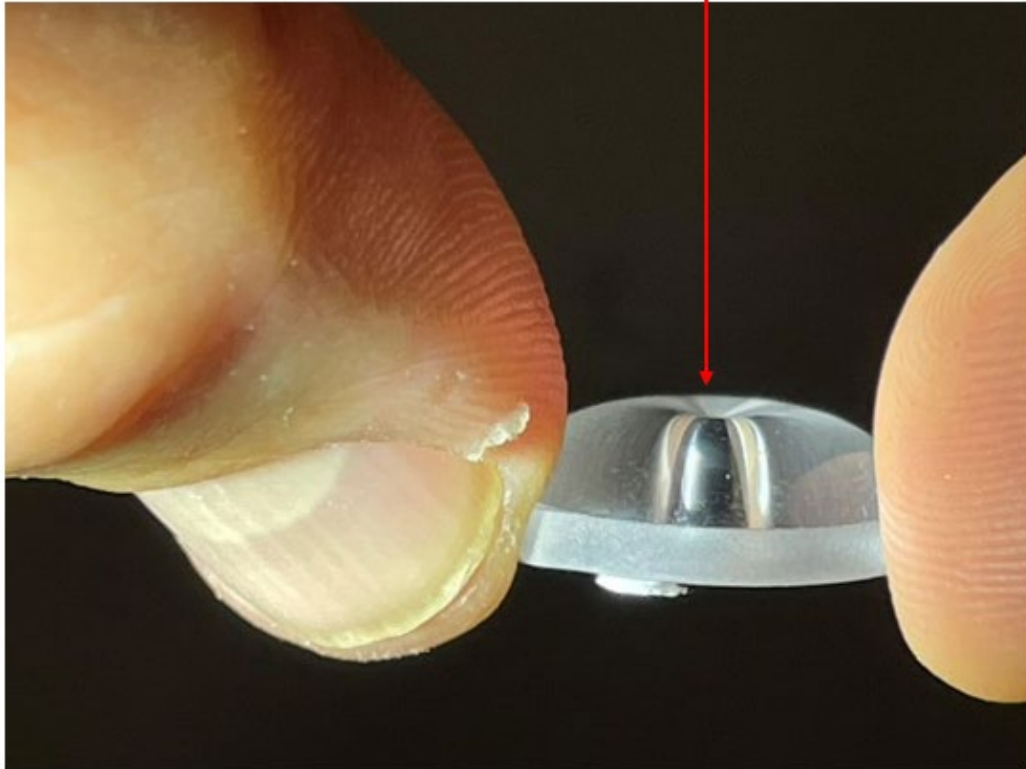


Source: M65Q6-L4 Teardown

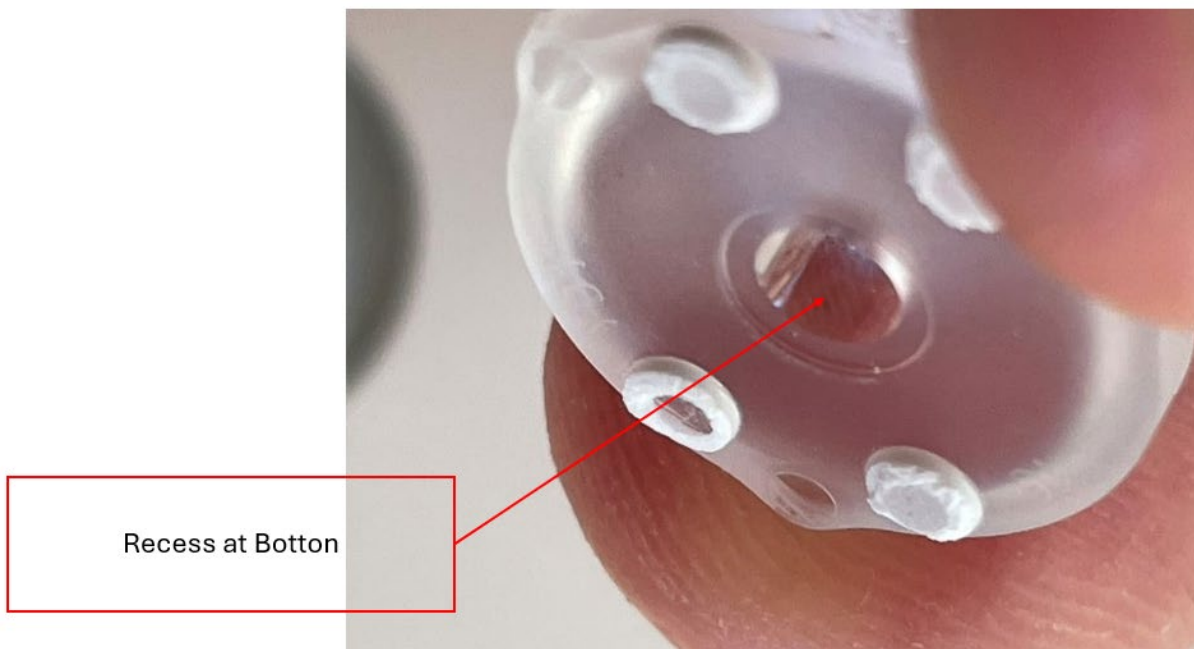
103. The Accused Products comprise a lens supported by the substrate, the lens being disposed on the light emitting device package, wherein the lens comprises a lens body having a first recess at a central portion of a top surface thereof, a second recess at a central portion of a bottom surface thereof, and a lens support disposed on the bottom surface of the lens body to support the lens body, such that the bottom surface of the lens body is spaced apart from the substrate:



Recess at Top



Source: M65Q6-L4 Teardown



Source: M65Q6-L4 Teardown

104. Defendant has indirectly infringed and continues to indirectly infringe one or more claims of the '307 Patent, as provided by 35 U.S.C. § 271(b), by knowingly and intentionally inducing infringement by others, such as Defendant's customers and end-users, in this District and elsewhere in the United States. For example, Defendant's customers and end-users directly infringe, either literally or under the doctrine of equivalents, by making, using, offering to sell, selling, and/or importing into the United States products that include infringing technology, such as the Accused Products. Defendant induces this direct infringement through its affirmative acts of manufacturing, selling, distributing, and/or otherwise making available the Accused Products, and providing instructions, documentation, and other information to customers and end-users suggesting that they use the Accused Products in an infringing manner, including technical support, marketing, product manuals, advertisements, and online documentation. Because of Defendant's inducement, Defendant's customers and end-users use the Accused Products in a way

Defendant intends and they directly infringe the '307 Patent. Defendant performs these affirmative acts with the intent to cause infringing acts by others or, in the alternative, with the belief that there was a high probability that others, including end-users, infringe the '307 Patent, but while remaining willfully blind to the infringement.

105. Defendant has indirectly infringed and continues to indirectly infringe one or more claims of the '307 Patent, as provided by 35 U.S.C. § 271(c), by contributing to direct infringement by others, such as customers and end-users, in this District and elsewhere in the United States. Defendant's affirmative acts of selling and offering to sell the Accused Products in this District and elsewhere in the United States and causing the Accused Products to be manufactured, used, sold, and offered for sale contributes to others' use and manufacture of the Accused Products, such that the '307 Patent is directly infringed by others. The accused components within the Accused Products are material to the invention of the '307 Patent, are not staple articles or commodities of commerce, have no substantial non-infringing uses, and are known by Defendant to be especially made or adapted for use in the infringement of the '307 Patent. Defendant performs these affirmative acts with knowledge of the '307 Patent and with intent, or willful blindness, that it causes the direct infringement of the '307 Patent.

106. Defendant has willfully infringed, and continues to willfully infringe, the '307 Patent by intentionally and deliberately carrying out acts of direct and indirect infringement, while knowing of, or by remaining willfully blind to, infringement.

107. LGI has suffered damages as a result of Defendant's direct and indirect infringement of the '307 Patent in an amount to be proved at trial.

108. LGI has suffered, and will continue to suffer, irreparable harm as a result of Defendant's infringement of the '307 Patent, for which there is no adequate remedy at law, unless

Defendant's infringement is enjoined by this Court.

**COUNT VI**  
**(Infringement of the '729 Patent)**

109. Paragraphs 1 through 32 are incorporated by reference as if fully set forth herein.

110. LGI has not licensed or otherwise authorized Defendant to make, use, offer for sale, sell, or import any products that embody the inventions of the '729 Patent.

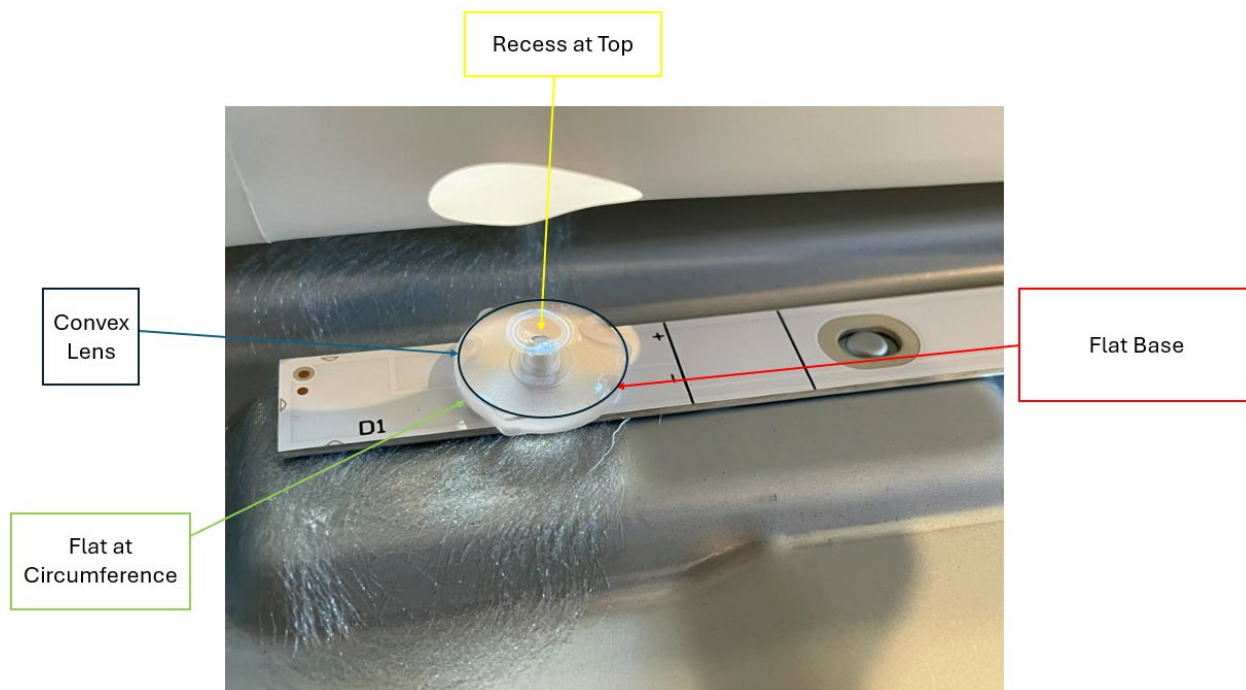
111. Defendant infringes, contributes to the infringement of, and/or induces infringement of the '729 Patent by making, using, selling, offering for sale, distributing, exporting from, and/or importing into the United States products and/or methods covered by one or more claims of the '729 Patent including, but not limited to, at least the Accused Products.

112. Defendant has directly infringed and continues to directly infringe the '729 Patent, either literally or under the doctrine of equivalents, without authority and in violation of 35 U.S.C. § 271, by making, using, offering to sell, selling, and/or importing into the United States products that satisfy each and every limitation of one or more claims of the '729 Patent. Upon information and belief, these products include the Accused Products that practice the methods and systems covered by the '729 Patent including, for example, Vizio Quantum, Quantum Pro, 4k, Full HD, HD, M-Series, V-Series, and D-Series televisions. As an example, the Vizio model M65Q6-L4 television infringes at least claim 1 of the '729 Patent.

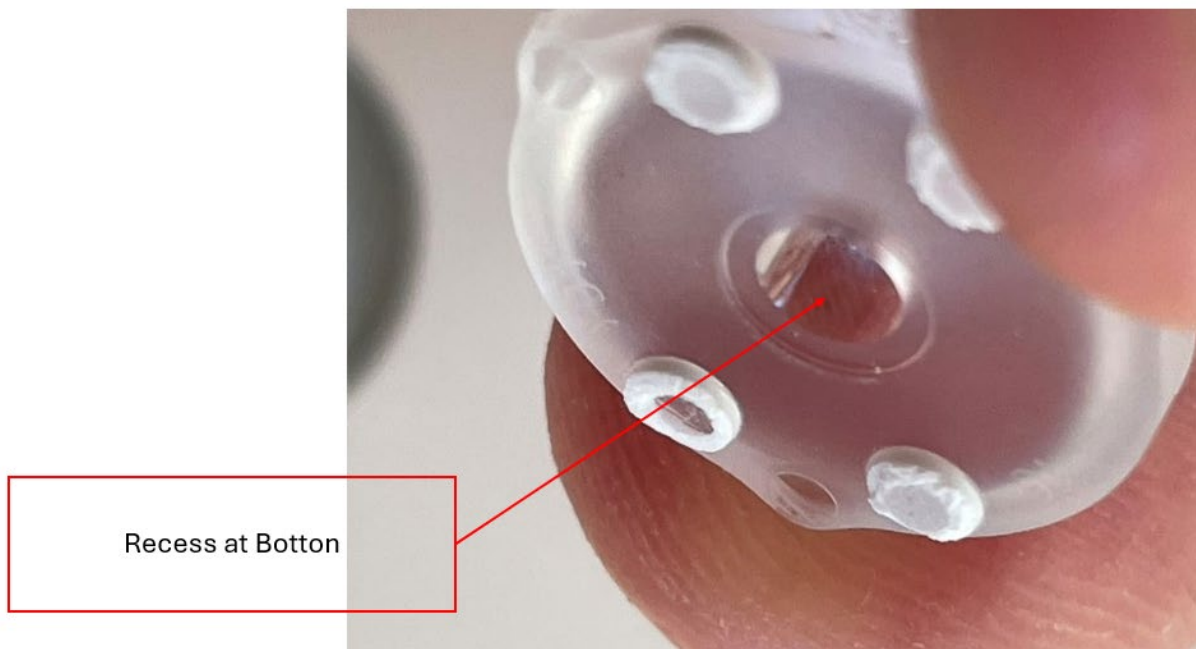
113. For example, Defendant has and continues to directly infringe at least claim 1 of the '729 Patent by making, using, offering to sell, selling, and/or importing into the United States products that comprise a lens comprising: a lens body having a convex top surface comprising a first recessed part at a central portion thereof and a flat surface at a circumference thereof and a flat bottom surface comprising a second recessed part at a central portion thereof; and a plurality of lens supports on the bottom surface of the lens body, wherein a ratio of a maximum depth (a)

of the first recessed part, from the top surface of the lens body to a bottom surface of the first recessed part, to a maximum thickness (h) of the lens body, from the top surface of the lens body to the bottom surface of the lens body, ranges from about 0.06 to about 0.1.

114. The Accused Products comprise a lens body having a convex top surface comprising a first recessed part at a central portion thereof and a flat surface at a circumference thereof and a flat bottom surface comprising a second recessed part at a central portion thereof. For example, the M65Q6-L4 comprises LED strips, which comprise lenses having a lens body having a convex top surface comprising a first recessed part at a central portion thereof and a flat surface at a circumference thereof and a flat bottom surface comprising a second recessed part at a central portion thereof:



Source: M65Q6-L4 Teardown



Source: M65Q6-L4 Teardown

115. The Accused Products comprise a plurality of lens supports on the bottom surface of the lens body. For example, upon information and belief, the bottom of the optics of the LED strips includes at least three legs on the bottom surface of the lens body. *Id.*

116. Upon information and belief, the Accused Products comprise an apparatus wherein a ratio of a maximum depth (a) of the first recessed part, from the top surface of the lens body to a bottom surface of the first recessed part, to a maximum thickness (h) of the lens body, from the top surface of the lens body to the bottom surface of the lens body, ranges from about 0.06 to about 0.1. For example, upon information and belief, the lens of the M65Q6-L4, as shown below, has a ratio of a maximum depth (a) of the first recessed part, from the top surface of the lens body to a bottom surface of the first recessed part, to a maximum thickness (h) of the lens body, from the top surface of the lens body to the bottom surface of the lens body, ranges from about 0.06 to about 0.1.

117. Defendant has indirectly infringed and continues to indirectly infringe one or more claims of the '729 Patent, as provided by 35 U.S.C. § 271(b), by knowingly and intentionally inducing infringement by others, such as Defendant's customers and end-users, in this District and elsewhere in the United States. For example, Defendant's customers and end-users directly infringe, either literally or under the doctrine of equivalents, by making, using, offering to sell, selling, and/or importing into the United States products that include infringing technology, such as the Accused Products. Defendant induces this direct infringement through its affirmative acts of manufacturing, selling, distributing, and/or otherwise making available the Accused Products, and providing instructions, documentation, and other information to customers and end-users suggesting that they use the Accused Products in an infringing manner, including technical support, marketing, product manuals, advertisements, and online documentation. Because of Defendant's inducement, Defendant's customers and end-users use the Accused Products in a way Defendant intends and they directly infringe the '729 Patent. Defendant performs these affirmative acts with the intent to cause infringing acts by others or, in the alternative, with the belief that there was a high probability that others, including end-users, infringe the '729 Patent, but while remaining willfully blind to the infringement.

118. Defendant has indirectly infringed and continues to indirectly infringe one or more claims of the '729 Patent, as provided by 35 U.S.C. § 271(c), by contributing to direct infringement by others, such as customers and end-users, in this District and elsewhere in the United States. Defendant's affirmative acts of selling and offering to sell the Accused Products in this District and elsewhere in the United States and causing the Accused Products to be manufactured, used, sold, and offered for sale contributes to others' use and manufacture of the Accused Products, such that the '729 Patent is directly infringed by others. The accused components within the Accused

Products are material to the invention of the '729 Patent, are not staple articles or commodities of commerce, have no substantial non-infringing uses, and are known by Defendant to be especially made or adapted for use in the infringement of the '729 Patent. Defendant performs these affirmative acts with knowledge of the '729 Patent and with intent, or willful blindness, that it causes the direct infringement of the '729 Patent.

119. Defendant has willfully infringed, and continues to willfully infringe, the '729 Patent by intentionally and deliberately carrying out acts of direct and indirect infringement, while knowing of, or by remaining willfully blind to, infringement.

120. LGI has suffered damages as a result of Defendant's direct and indirect infringement of the '729 Patent in an amount to be proved at trial.

121. LGI has suffered, and will continue to suffer, irreparable harm as a result of Defendant's infringement of the '729 Patent, for which there is no adequate remedy at law, unless Defendant's infringement is enjoined by this Court.

**COUNT VII**  
**(Infringement of the '093 Patent)**

122. Paragraphs 1 through 32 are incorporated by reference as if fully set forth herein.

123. LGI has not licensed or otherwise authorized Defendant to make, use, offer for sale, sell, or import any products that embody the inventions of the '093 Patent.

124. Defendant infringes, contributes to the infringement of, and/or induces infringement of the '093 Patent by making, using, selling, offering for sale, distributing, exporting from, and/or importing into the United States products and/or methods covered by one or more claims of the '307 Patent including, but not limited to, at least the Accused Products.

125. Defendant has directly infringed and continues to directly infringe the '093 Patent, either literally or under the doctrine of equivalents, without authority and in violation of 35 U.S.C.

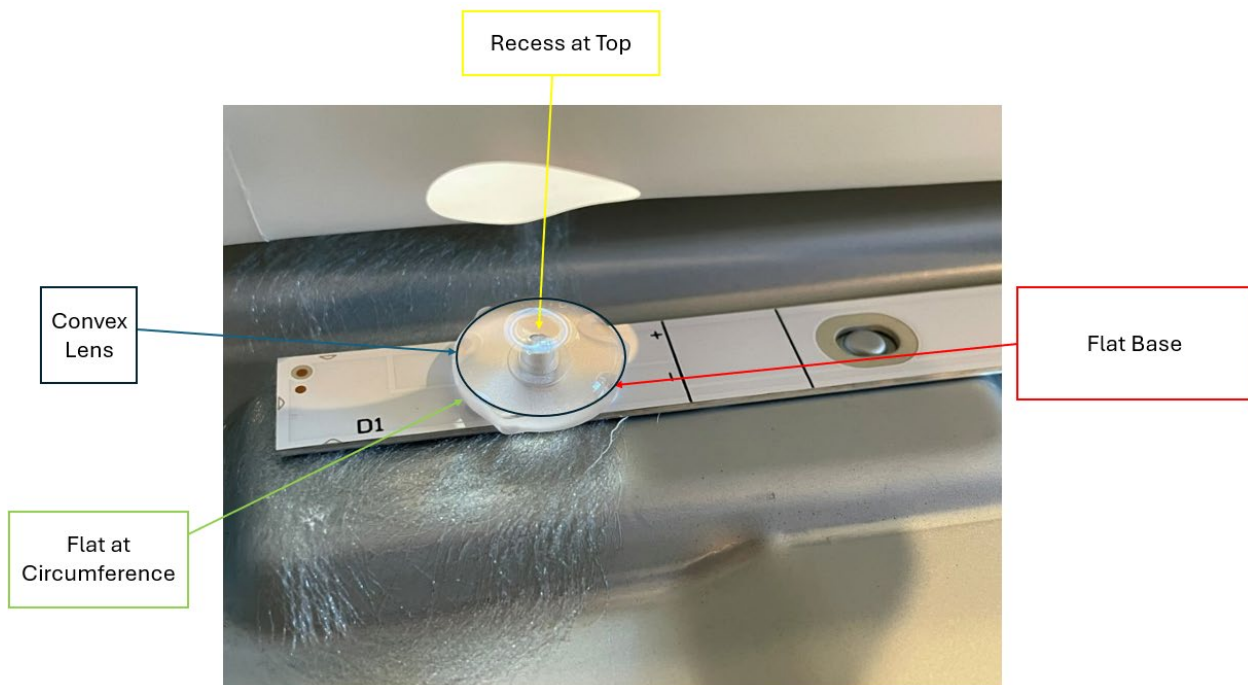


§ 271, by making, using, offering to sell, selling, and/or importing into the United States products that satisfy each and every limitation of one or more claims of the '093 Patent. Upon information and belief, these products include the Accused Products that practice the methods and systems covered by the '307 Patent including, for example, Vizio Quantum, Quantum Pro, 4k, Full HD, HD, M-Series, V-Series, and D-Series televisions. As an example, the Vizio model M65Q6-L4 television infringes at least claim 1 of the '307 Patent.

126. For example, Defendant has and continues to directly infringe at least claim 1 of the '307 Patent by making, using, offering to sell, selling, and/or importing into the United States products that comprise a lens, comprising: a lens body having a convex top surface comprising a first recessed part at a central portion thereof and a flat surface at a circumference thereof and a flat bottom surface comprising a second recessed part at a central portion thereof; and a plurality of lens supports on the bottom surface of the lens body, wherein a ratio of a maximum depth of the first recessed part to a maximum thickness of the lens body ranges from about 0.06 to about 0.1, a ratio of a maximum depth of the second recessed part to the maximum thickness of the lens body ranges from about 0.5 to 0.75, and a ratio of the maximum depth of the second recessed part to the maximum depth of the first recessed part ranges from about 6.25 to about 10, and a ratio of a maximum width of the first recessed part to a maximum width of the lens body ranges from about 0.18 to about 0.3, a ratio of a maximum width of the second recessed part to the maximum width of the lens body ranges from about 0.14 to about 0.25, and a ratio of the maximum width of the second recessed part to the maximum width of the first recessed part ranges from about 0.7 to about 0.94.

127. The Accused Products comprise a lens body having a convex top surface comprising a first recessed part at a central portion thereof and a flat surface at a circumference

thereof and a flat bottom surface comprising a second recessed part at a central portion thereof:



Source: M65Q6-L4 Teardown

128. The Accused Products comprise a plurality of lens supports on the bottom surface of the lens body. For example, upon information and belief, the bottom of the optics of the LED strips includes at least three legs on the bottom surface of the lens body. *Id.*

129. The Accused Products comprise an apparatus wherein a ratio of a maximum depth of the first recessed part to a maximum thickness of the lens body ranges from about 0.06 to about 0.1, a ratio of a maximum depth of the second recessed part to the maximum thickness of the lens body ranges from about 0.5 to 0.75, and a ratio of the maximum depth of the second recessed part to the maximum depth of the first recessed part ranges from about 6.25 to about 10. For example, upon information and belief, the lens of the M65Q6-L4, as shown below has a ratio of a maximum depth of the first recessed part to a maximum thickness of the lens body ranges from about 0.06 to about 0.1, a ratio of a maximum depth of the second recessed part to the maximum thickness of the lens body ranges from about 0.5 to 0.75, and a ratio of the maximum depth of the second

recessed part to the maximum depth of the first recessed part ranges from about 6.25 to about 10, as shown above.

130. The Accused Products comprise an apparatus wherein a ratio of a maximum width of the first recessed part to a maximum width of the lens body ranges from about 0.18 to about 0.3, a ratio of a maximum width of the second recessed part to the maximum width of the lens body ranges from about 0.14 to about 0.25, and a ratio of the maximum width of the second recessed part to the maximum width of the first recessed part ranges from about 0.7 to about 0.94. For example, upon information and belief, the lens of the M65Q6-L4, as shown above, has a ratio of a maximum width of the first recessed part to a maximum width of the lens body ranges from about 0.18 to about 0.3, a ratio of a maximum width of the second recessed part to the maximum width of the lens body ranges from about 0.14 to about 0.25, and a ratio of the maximum width of the second recessed part to the maximum width of the first recessed part ranges from about 0.7 to about 0.94.

131. Defendant has indirectly infringed and continues to indirectly infringe one or more claims of the '093 Patent, as provided by 35 U.S.C. § 271(b), by knowingly and intentionally inducing infringement by others, such as Defendant's customers and end-users, in this District and elsewhere in the United States. For example, Defendant's customers and end-users directly infringe, either literally or under the doctrine of equivalents, by making, using, offering to sell, selling, and/or importing into the United States products that include infringing technology, such as the Accused Products. Defendant induces this direct infringement through its affirmative acts of manufacturing, selling, distributing, and/or otherwise making available the Accused Products, and providing instructions, documentation, and other information to customers and end-users suggesting that they use the Accused Products in an infringing manner, including technical

support, marketing, product manuals, advertisements, and online documentation. Because of Defendant's inducement, Defendant's customers and end-users use the Accused Products in a way Defendant intends and they directly infringe the '093 Patent. Defendant performs these affirmative acts with the intent to cause infringing acts by others or, in the alternative, with the belief that there was a high probability that others, including end-users, infringe the '093 Patent, but while remaining willfully blind to the infringement.

132. Defendant has indirectly infringed and continues to indirectly infringe one or more claims of the '093 Patent, as provided by 35 U.S.C. § 271(c), by contributing to direct infringement by others, such as customers and end-users, in this District and elsewhere in the United States. Defendant's affirmative acts of selling and offering to sell the Accused Products in this District and elsewhere in the United States and causing the Accused Products to be manufactured, used, sold, and offered for sale contributes to others' use and manufacture of the Accused Products, such that the '093 Patent is directly infringed by others. The accused components within the Accused Products are material to the invention of the '093 Patent, are not staple articles or commodities of commerce, have no substantial non-infringing uses, and are known by Defendant to be especially made or adapted for use in the infringement of the '093 Patent. Defendant performs these affirmative acts with knowledge of the '093 Patent and with intent, or willful blindness, that it causes the direct infringement of the '093 Patent.

133. Defendant has willfully infringed, and continues to willfully infringe, the '093 Patent by intentionally and deliberately carrying out acts of direct and indirect infringement, while knowing or taking deliberate steps to avoid learning, that those acts infringe.

134. LGI has suffered damages as a result of Defendant's direct and indirect infringement of the '093 Patent in an amount to be proved at trial.

135. LGI has suffered, and will continue to suffer, irreparable harm as a result of Defendant's infringement of the '093 Patent, for which there is no adequate remedy at law, unless Defendant's infringement is enjoined by this Court.

**COUNT VIII**  
**(Infringement of the '744 Patent)**

136. Paragraphs 1 through 32 are incorporated by reference as if fully set forth herein.

137. LGI has not licensed or otherwise authorized Defendant to make, use, offer for sale, sell, or import any products that embody the inventions of the '744 Patent.

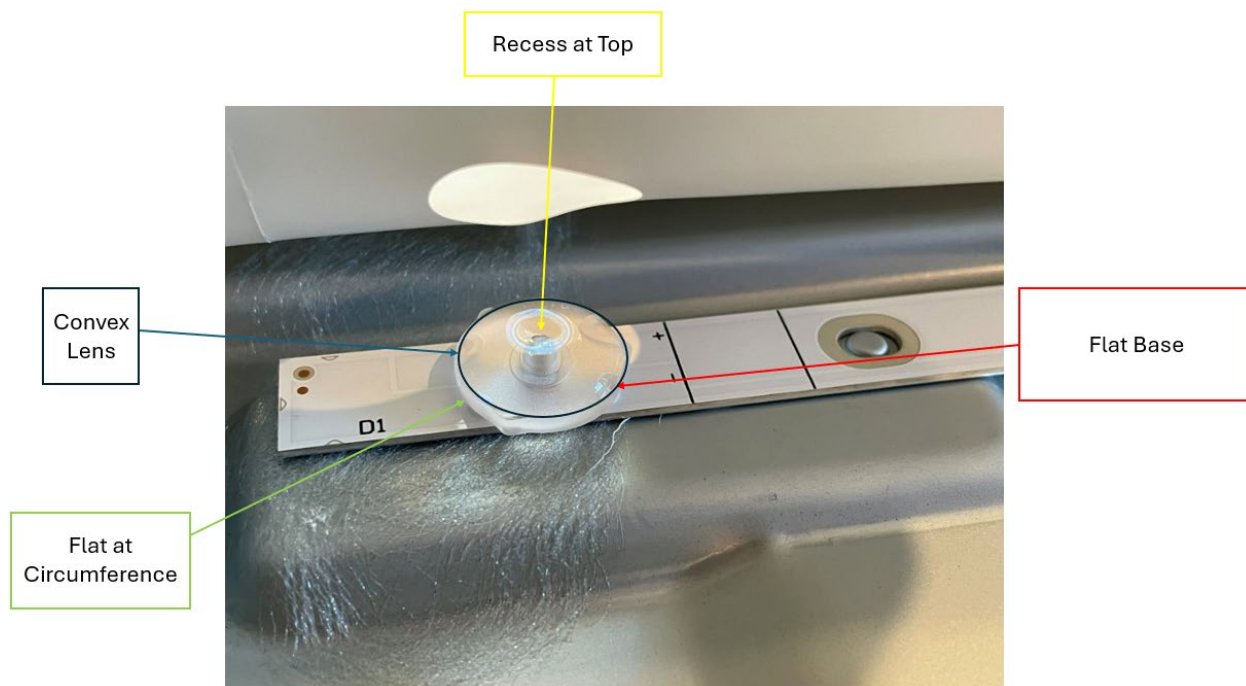
138. Defendant infringes, contributes to the infringement of, and/or induces infringement of the '744 Patent by making, using, selling, offering for sale, distributing, exporting from, and/or importing into the United States products and/or methods covered by one or more claims of the '744 Patent including, but not limited to, at least the Accused Products.

139. Defendant has directly infringed and continues to directly infringe the '744 Patent, either literally or under the doctrine of equivalents, without authority and in violation of 35 U.S.C. § 271, by making, using, offering to sell, selling, and/or importing into the United States products that satisfy each and every limitation of one or more claims of the '744 Patent. Upon information and belief, these products include the Accused Products that practice the methods and systems covered by the '744 Patent including, for example, Vizio Quantum, Quantum Pro, 4k, Full HD, HD, M-Series, V-Series, and D-Series televisions. As an example, the Vizio model M65Q6-L4 television infringes at least claim 1 of the '744 Patent.

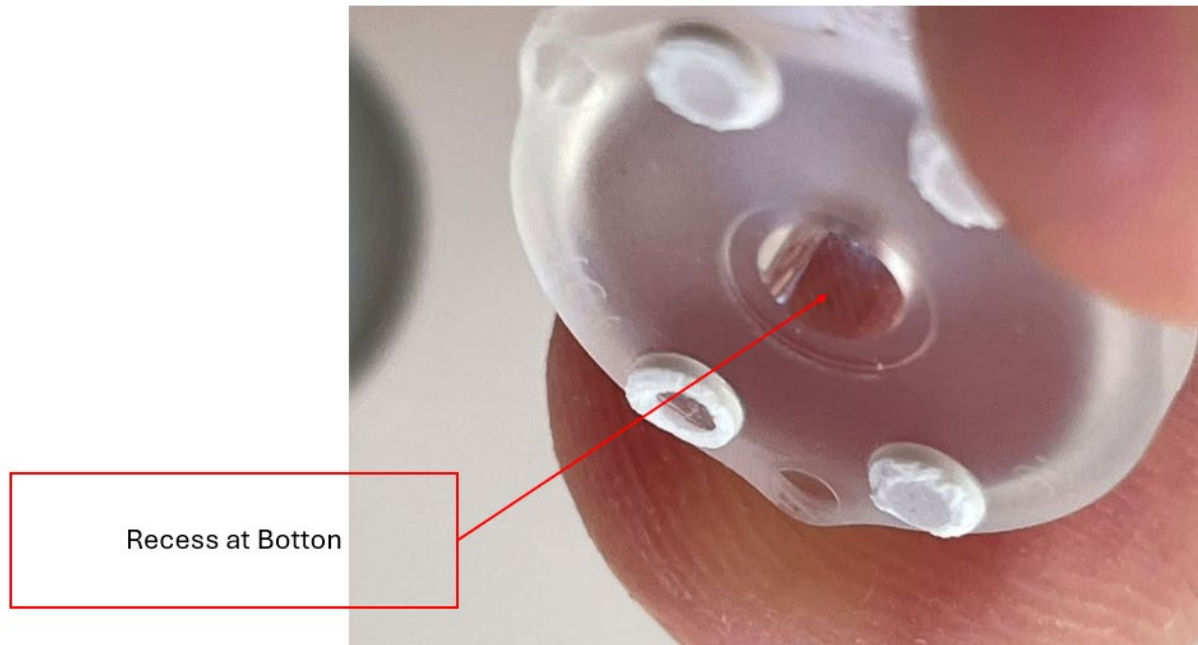
140. For example, Defendant has and continues to directly infringe at least claim 1 of the '744 Patent by making, using, offering to sell, selling, and/or importing into the United States products that comprise a lens comprising: a lens body having a convex top surface and a bottom surface, the convex top surface including a first recessed part at a central portion thereof and a flat

top surface at a circumference of the top surface of the lens body, the bottom surface including a second recessed part at a central portion thereof, wherein the flat top surface is disposed lower than a lowest point of the first recessed part; and a plurality of lens supporters at the bottom surface of the lens body, wherein a maximum width (i) at a portion in which the convex top surface of the lens body is curved ranges from about 12 mm to about 18 mm, wherein a maximum width (j) of the lens body ranges from about 13 mm to about 19 mm, wherein a maximum depth (b) of the lens body ranges from about 13 mm to about 19 mm, wherein a ratio of a maximum depth (b) of the second recessed part to a maximum thickness (h) of the lens body ranges from about 0.5 to about 0.75, and wherein a ratio of a maximum width (d) of the second recessed part to a maximum width (j) of the lens body ranges from about 0.14 to about 0.25.

141. The Accused Products comprise: a lens body having a convex top surface and a bottom surface, the convex top surface including a first recessed part at a central portion thereof and a flat top surface at a circumference of the top surface of the lens body, the bottom surface including a second recessed part at a central portion thereof, wherein the flat top surface is disposed lower than a lowest point of the first recessed part:



Source: M65Q6-L4 Teardown



Source: M65Q6-L4 Teardown

142. The Accused Products comprise a plurality of lens supports on the bottom surface of the lens body. For example, upon information and belief, the bottom of the optics of the LED strips include at least three legs on the bottom surface of the lens body. *Id.*

143. The Accused Products comprise an apparatus wherein a maximum width (i) at a portion in which the convex top surface of the lens body is curved ranges from about 12 mm to about 18 mm, wherein a maximum width (j) of the lens body ranges from about 13 mm to about 19 mm, wherein a ratio of a maximum depth (b) of the second recessed part to a maximum thickness (h) of the lens body ranges from about 0.5 to about 0.75, and wherein a ratio of a maximum width (d) of the second recessed part to a maximum width (j) of the lens body ranges from about 0.14 to about 0.25.

144. For example, upon information and belief, the lens of the M65Q6-L4, as shown below, has a maximum width (i) at a portion in which the convex top surface of the lens body is curved ranges from about 12 mm to about 18 mm, wherein a maximum width (j) of the lens body ranges from about 13 mm to about 19 mm, wherein a ratio of a maximum depth (b) of the second recessed part to a maximum thickness (h) of the lens body ranges from about 0.5 to about 0.75, and wherein a ratio of a maximum width (d) of the second recessed part to a maximum width (j) of the lens body ranges from about 0.14 to about 0.25, as shown above.

145. Defendant has indirectly infringed and continues to indirectly infringe one or more claims of the '744 Patent, as provided by 35 U.S.C. § 271(b), by knowingly and intentionally inducing infringement by others, such as Defendant's customers and end-users, in this District and elsewhere in the United States. For example, Defendant's customers and end-users directly infringe, either literally or under the doctrine of equivalents, by making, using, offering to sell, selling, and/or importing into the United States products that include infringing technology, such as the Accused Products. Defendant induces this direct infringement through its affirmative acts of manufacturing, selling, distributing, and/or otherwise making available the Accused Products, and providing instructions, documentation, and other information to customers and end-users suggesting that they use the Accused Products in an infringing manner, including technical support, marketing, product manuals, advertisements, and online documentation. Because of Defendant's inducement, Defendant's customers and end-users use the Accused Products in a way Defendant intends and they directly infringe the '744 Patent. Defendant performs these affirmative acts with the intent to cause infringing acts by others or, in the alternative, with the belief that there was a high probability that others, including end-users, infringe the '744 Patent, but while remaining willfully blind to the infringement.



146. Defendant has indirectly infringed and continues to indirectly infringe one or more claims of the '744 Patent, as provided by 35 U.S.C. § 271(c), by contributing to direct infringement by others, such as customers and end-users, in this District and elsewhere in the United States. Defendant's affirmative acts of selling and offering to sell the Accused Products in this District and elsewhere in the United States and causing the Accused Products to be manufactured, used, sold, and offered for sale contributes to others' use and manufacture of the Accused Products such that the '744 Patent is directly infringed by others. The accused components within the Accused Products are material to the invention of the '744 Patent, are not staple articles or commodities of commerce, have no substantial non-infringing uses, and are known by Defendant to be especially made or adapted for use in the infringement of the '744 Patent. Defendant performs these affirmative acts with knowledge of the '744 Patent and with intent, or willful blindness, that it causes the direct infringement of the '744 Patent.

147. Defendant has willfully infringed, and continues to willfully infringe, the '744 Patent by intentionally and deliberately carrying out acts of direct and indirect infringement, while knowing of, or by remaining willfully blind to, infringement.

148. LGI has suffered damages as a result of Defendant's direct and indirect infringement of the '744 Patent in an amount to be proved at trial.

149. LGI has suffered, and will continue to suffer, irreparable harm as a result of Defendant's infringement of the '744 Patent, for which there is no adequate remedy at law, unless Defendant's infringement is enjoined by this Court.

**COUNT IX**  
**(Infringement of the '048 Patent)**

150. Paragraphs 1 through 32 are incorporated by reference as if fully set forth herein.

151. LGI has not licensed or otherwise authorized Defendant to make, use, offer for sale, sell, or import any products that embody the inventions of the '048 Patent.

152. Defendant infringes, contributes to the infringement of, and/or induces infringement of the '048 Patent by making, using, selling, offering for sale, distributing, exporting from, and/or importing into the United States products and/or methods covered by one or more claims of the '048 Patent including, but not limited to, at least the Accused Products.

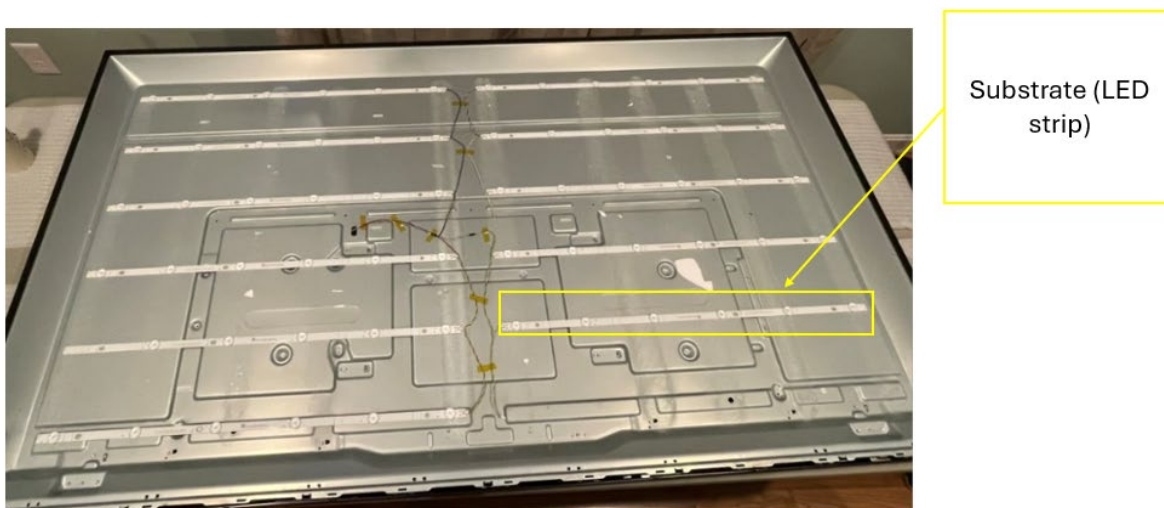
153. Defendant has directly infringed and continues to directly infringe the '048 Patent, either literally or under the doctrine of equivalents, without authority and in violation of 35 U.S.C. § 271, by making, using, offering to sell, selling, and/or importing into the United States products that satisfy each and every limitation of one or more claims of the '048 Patent. Upon information and belief, these products include the Accused Products that practice the methods and systems covered by the '048 Patent including, for example, Vizio Quantum, Quantum Pro, 4k, Full HD, HD, M-Series, V-Series, and D-Series televisions. As an example, the Vizio model M65Q6-L4 television infringes at least claim 1 of the '048 Patent.

154. For example, Defendant has and continues to directly infringe at least claim 1 of the '048 Patent by making, using, offering to sell, selling, and/or importing into the United States products that comprise a light emitting apparatus comprising: a substrate; a light emitting device on the substrate; and a lens on the light emitting device, wherein the lens includes a center portion, a peripheral portion surrounding the center portion and a side portion surrounding the peripheral portion and having an outer side surface, wherein the center portion of the lens has a first top surface with a first recess and a first bottom surface with a second recess, the first and second recesses opposite to each other, wherein the first recess has an inwardly-concave curvature shape, wherein the first recess has a width greater than that of the second recess, wherein a thickness of

the outer side surface of the side portion is smaller than a depth of the second recess of the center portion, and wherein the peripheral portion of the lens has a second rounded-top surface extending from the first top surface to the side portion, and wherein the second rounded-top surface of the peripheral portion has a continuing surface between the center portion and the side portion.

155. The Accused Products comprise a substrate, such as an LED strip.

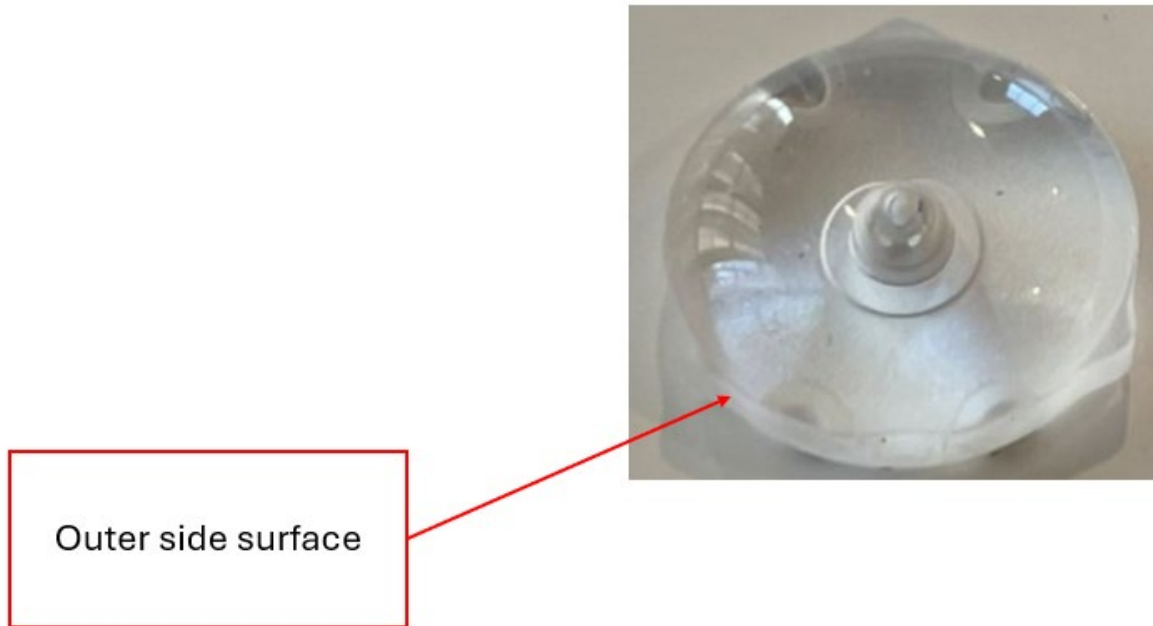
156. The Accused Products comprise a light emitting device on the substrate, such as an LED mounted on an LED strip.



Source: M65Q6-L4 Teardown

157. The Accused Products comprise a lens on the light emitting device, *e.g.*, optics disposed over LEDs of the LED strips of the M65Q6-L4.

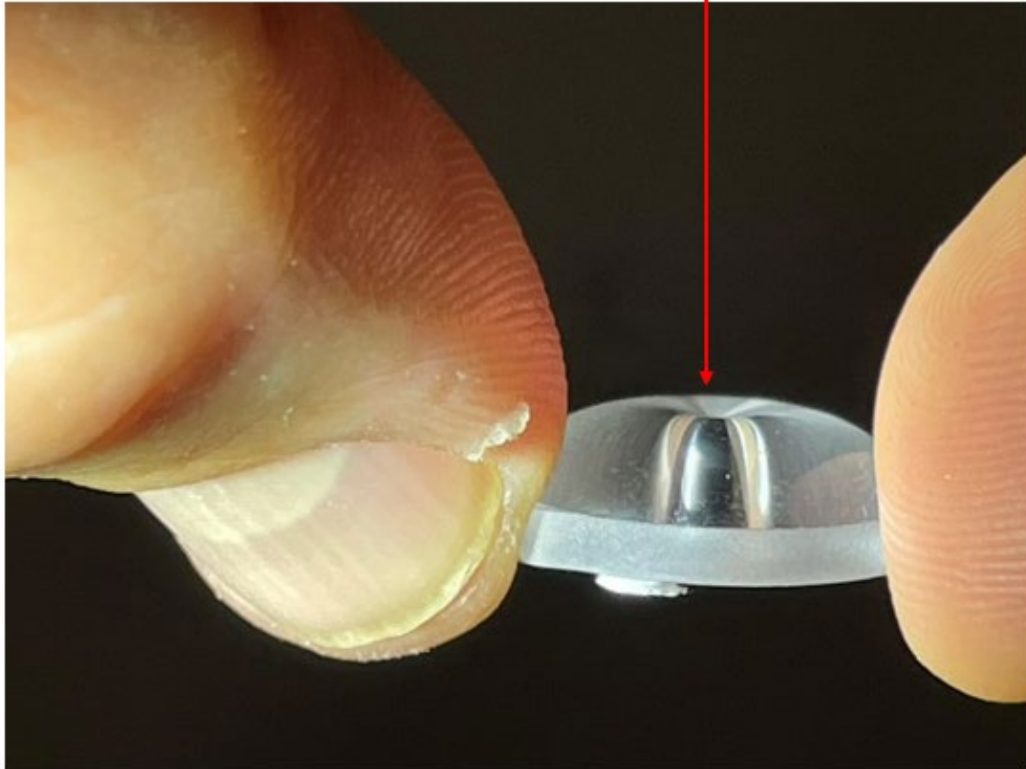
158. The Accused Products comprise an apparatus wherein the lens includes a center portion, a peripheral portion surrounding the center portion and a side portion surrounding the peripheral portion and having an outer side surface, as shown below for the strips of the M65Q6-L4:



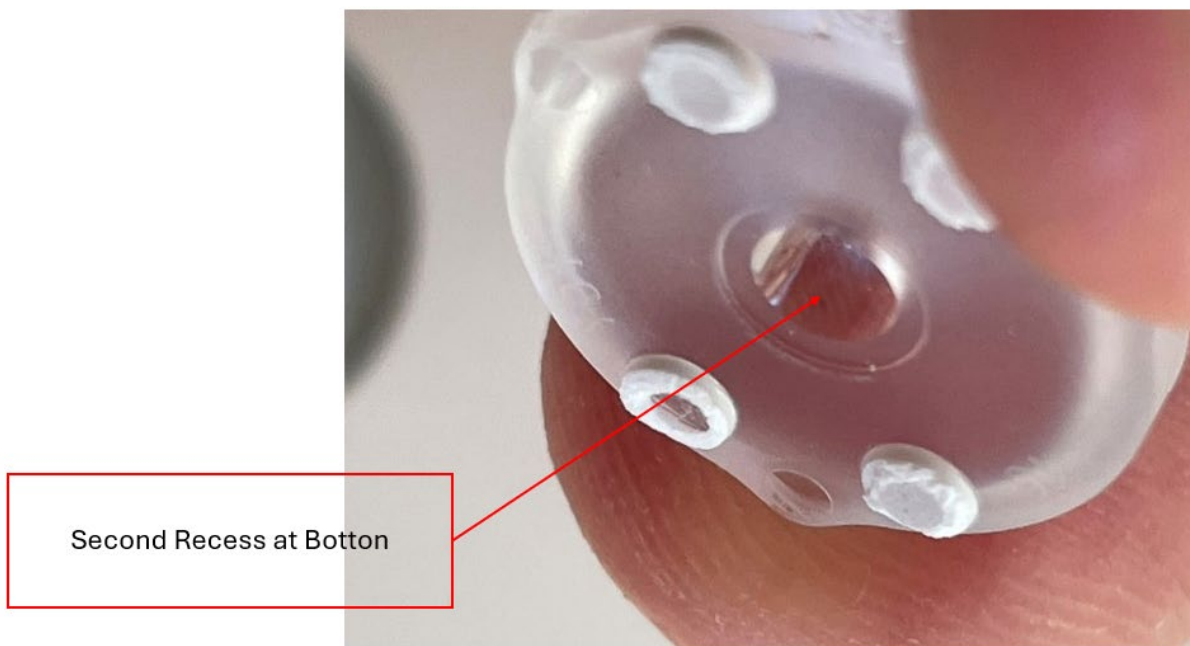
Source: M65Q6-L4 Teardown

159. The Accused Products comprise an apparatus wherein the center portion of the lens has a first top surface with a first recess and a first bottom surface with a second recess, the first and second recesses opposite to each other, as shown below.

Recess at Top



Source: M65Q6-L4 Teardown



Source: M65Q6-L4 Teardown

160. The Accused Products comprise an apparatus wherein the first recess has an inwardly-concave curvature shape, as shown above for the M65Q6-L4 LEDs.

161. The Accused Products comprise an apparatus wherein the first recess has a width greater than that of the second recess, as shown above for the M65Q6-L4 LEDs.

162. Upon information and belief, The Accused Products comprise an apparatus wherein a thickness of the outer side surface of the side portion is smaller than a depth of the second recess of the center portion, as shown above for the M65Q6-L4 LEDs.

163. Upon information and belief, The Accused Products comprise an apparatus wherein the peripheral portion of the lens has a second rounded-top surface extending from the first top surface to the side portion. For example, the M65Q6-L4 LEDs shown above.

164. Upon information and belief, the Accused Products comprise an apparatus wherein the second rounded-top surface of the peripheral portion has a continuing surface between the center portion and the side portion, such as the M65Q6-L4 LEDs shown above.

165. Defendant has indirectly infringed and continues to indirectly infringe one or more claims of the '048 Patent, as provided by 35 U.S.C. § 271(b), by knowingly and intentionally inducing infringement by others, such as Defendant's customers and end-users, in this District and elsewhere in the United States. For example, Defendant's customers and end-users directly infringe, either literally or under the doctrine of equivalents, by making, using, offering to sell, selling, and/or importing into the United States products that include infringing technology, such as the Accused Products. Defendant induces this direct infringement through its affirmative acts of manufacturing, selling, distributing, and/or otherwise making available the Accused Products, and providing instructions, documentation, and other information to customers and end-users suggesting that they use the Accused Products in an infringing manner, including technical support, marketing, product manuals, advertisements, and online documentation. Because of Defendant's inducement, Defendant's customers and end-users use the Accused Products in a way Defendant intends and they directly infringe the '048 Patent. Defendant performs these affirmative acts with the intent to cause infringing acts by others or, in the alternative, with the belief that there was a high probability that others, including end-users, infringe the '048 Patent, but while remaining willfully blind to the infringement.

166. Defendant has indirectly infringed and continues to indirectly infringe one or more claims of the '048 Patent, as provided by 35 U.S.C. § 271(c), by contributing to direct infringement by others, such as customers and end-users, in this District and elsewhere in the United States. Defendant's affirmative acts of selling and offering to sell the Accused Products in this District

and elsewhere in the United States and causing the Accused Products to be manufactured, used, sold, and offered for sale contributes to others' use and manufacture of the Accused Products such that the '048 Patent is directly infringed by others. The accused components within the Accused Products are material to the invention of the '048 Patent, are not staple articles or commodities of commerce, have no substantial non-infringing uses, and are known by Defendant to be especially made or adapted for use in the infringement of the '048 Patent. Defendant performs these affirmative acts with knowledge of the '048 Patent and with intent, or willful blindness, that it causes the direct infringement of the '048 Patent.

167. Defendant has willfully infringed, and continues to willfully infringe, the '048 Patent by intentionally and deliberately carrying out acts of direct and indirect infringement, while knowing of, or by remaining willfully blind to, infringement.

168. LGI has suffered damages as a result of Defendant's direct and indirect infringement of the '048 Patent in an amount to be proved at trial.

169. LGI has suffered, and will continue to suffer, irreparable harm as a result of Defendant's infringement of the '048 Patent, for which there is no adequate remedy at law, unless Defendant's infringement is enjoined by this Court.

**COUNT X**  
**(Infringement of the '183 Patent)**

170. Paragraphs 1 through 32 are incorporated by reference as if fully set forth herein.

171. LGI has not licensed or otherwise authorized Defendant to make, use, offer for sale, sell, or import any products that embody the inventions of the '183 Patent.

172. Defendant infringes, contributes to the infringement of, and/or induces infringement of the '183 Patent by making, using, selling, offering for sale, distributing, exporting from, and/or importing into the United States products and/or methods covered by one or more



claims of the '183 Patent including, but not limited to, at least the Accused Products.

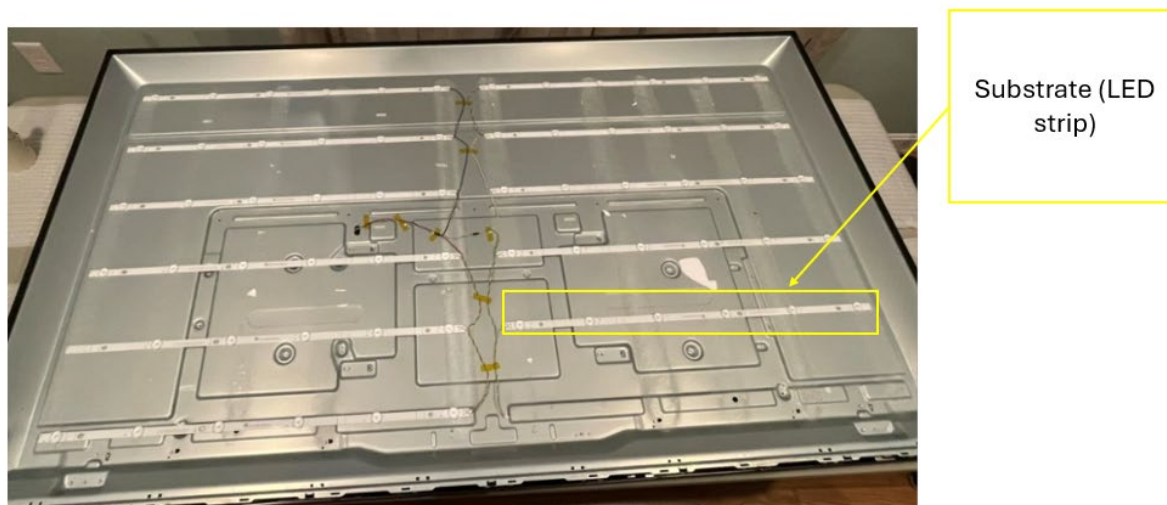
173. Defendant has directly infringed and continues to directly infringe the '183 Patent, either literally or under the doctrine of equivalents, without authority and in violation of 35 U.S.C. § 271, by making, using, offering to sell, selling, and/or importing into the United States products that satisfy each and every limitation of one or more claims of the '183 Patent. Upon information and belief, these products include the Accused Products that practice the methods and systems covered by the '183 Patent including, for example, Vizio Quantum, Quantum Pro, 4k, Full HD, HD, M-Series, V-Series, and D-Series televisions. As an example, the Vizio model M65Q6-L4 television infringes at least claim 1 of the '183 Patent.

174. For example, Defendant has and continues to directly infringe at least claim 1 of the '183 Patent by making, using, offering to sell, selling, and/or importing into the United States products that comprise a light emitting apparatus comprising: a substrate; a light emitting device on the substrate; a fluorescent layer formed on the substrate and the light emitting device to surround the light emitting device; an encapsulant resin layer formed on the substrate and the fluorescent layer to surround the fluorescent layer; and a lens disposed on the light emitting device and supported by the substrate, wherein the lens includes a lens body having a downwardly concave first recess formed at a center of a top surface of the lens body and an upwardly concave second recess formed at a center of a bottom surface of the lens body, and at least one of lens supporters provided at the bottom surface of the lens body to support the lens body, such that the lens body is spaced apart from the substrate, and wherein a thickness of the lens body between a bottom surface of the downwardly concave first recess and a top surface of the upwardly concave second recess increases from a center region of one of the downwardly concave first recess or the upwardly concave second recess to an end region thereof, wherein a ratio of a maximum depth of

the first recess to a maximum depth of the second recess is about 6.25 to 10.

175. The Accused Products comprise a substrate, such as an LED strip.

176. The Accused Products comprise a light emitting device on the substrate, such as an LED mounted on an LED strip.

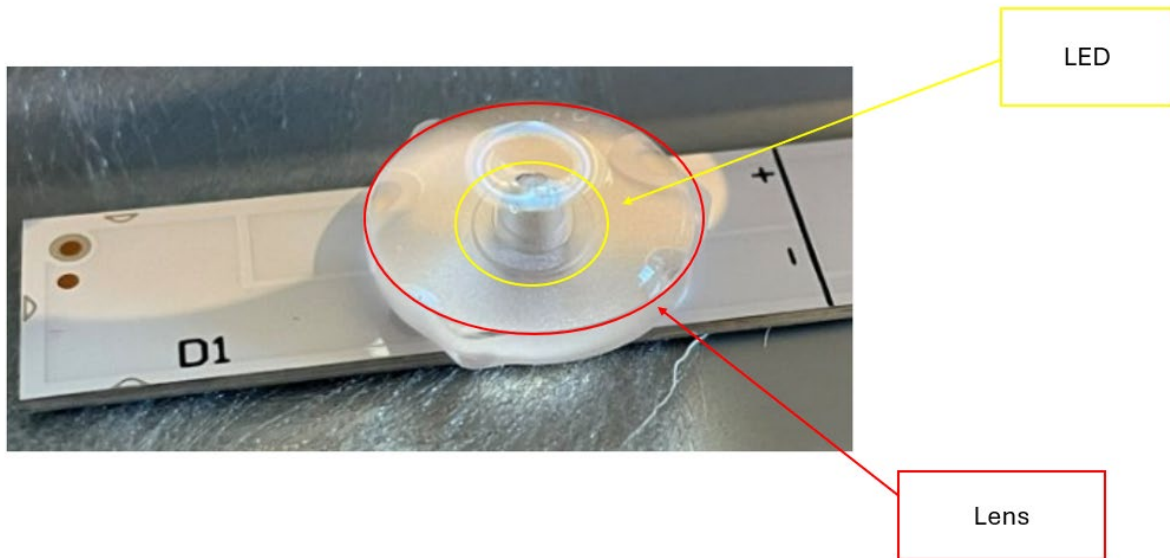


Source: M65Q6-L4 Teardown

177. The Accused Products comprise a fluorescent layer formed on the substrate and the light emitting device to surround the light emitting device, *e.g.*, a phosphor layer for each LED on the LED strip.

178. The Accused Products comprise a fluorescent layer formed on the substrate and the light emitting device to surround the light emitting device. For example, upon information and belief, each LED package of M65Q6-L4 includes an encapsulant resin layer over a phosphor layer.

179. The Accused Products comprise a lens disposed on the light emitting device and supported by the substrate, *e.g.*, a lens over an LED of an LED strip, as shown above. *See also:*



Source: M65Q6-L4 Teardown

180. The Accused Products comprise an apparatus wherein the lens includes a lens body having a downwardly concave first recess formed at a center of a top surface of the lens body and an upwardly concave second recess formed at a center of a bottom surface of the lens body, and at least one of lens supporters provided at the bottom surface of the lens body to support the lens body, such that the lens body is spaced apart from the substrate, as shown above for the LED strips of an M65Q6-L4.

181. The Accused Products comprise an apparatus wherein a thickness of the lens body between a bottom surface of the downwardly concave first recess and a top surface of the upwardly concave second recess increases from a center region of one of the downwardly concave first recess or the upwardly concave second recess to an end region thereof, as shown above, for the LED strips of an M65Q6-L4.

182. The Accused Products comprise an apparatus wherein a ratio of a maximum depth of the first recess to a maximum depth of the second recess is about 6.25 to 10, as shown above,

for the LED strips of an M65Q6-L4.

183. Defendant has indirectly infringed and continues to indirectly infringe one or more claims of the '183 Patent, as provided by 35 U.S.C. § 271(b), by knowingly and intentionally inducing infringement by others, such as Defendant's customers and end-users, in this District and elsewhere in the United States. For example, Defendant's customers and end-users directly infringe, either literally or under the doctrine of equivalents, by making, using, offering to sell, selling, and/or importing into the United States products that include infringing technology, such as the Accused Products. Defendant induces this direct infringement through its affirmative acts of manufacturing, selling, distributing, and/or otherwise making available the Accused Products, and providing instructions, documentation, and other information to customers and end-users suggesting that they use the Accused Products in an infringing manner, including technical support, marketing, product manuals, advertisements, and online documentation. Because of Defendant's inducement, Defendant's customers and end-users use the Accused Products in a way Defendant intends and they directly infringe the '183 Patent. Defendant performs these affirmative acts with the intent to cause infringing acts by others or, in the alternative, with the belief that there was a high probability that others, including end-users, infringe the '183 Patent, but while remaining willfully blind to the infringement.

184. Defendant has indirectly infringed and continues to indirectly infringe one or more claims of the '183 Patent, as provided by 35 U.S.C. § 271(c), by contributing to direct infringement by others, such as customers and end-users, in this District and elsewhere in the United States. Defendant's affirmative acts of selling and offering to sell the Accused Products in this District and elsewhere in the United States and causing the Accused Products to be manufactured, used, sold, and offered for sale contributes to others' use and manufacture of the Accused Products, such

that the '183 Patent is directly infringed by others. The accused components within the Accused Products are material to the invention of the '183 Patent, are not staple articles or commodities of commerce, have no substantial non-infringing uses, and are known by Defendant to be especially made or adapted for use in the infringement of the '183 Patent. Defendant performs these affirmative acts with knowledge of the '183 Patent and with intent, or willful blindness, that it causes the direct infringement of the '183 Patent.

185. Defendant has willfully infringed, and continues to willfully infringe, the '183 Patent by intentionally and deliberately carrying out acts of direct and indirect infringement, while knowing of, or by remaining willfully blind to, infringement.

186. LGI has suffered damages as a result of Defendant's direct and indirect infringement of the '183 Patent in an amount to be proved at trial.

187. LGI has suffered, and will continue to suffer, irreparable harm as a result of Defendant's infringement of the '183 Patent, for which there is no adequate remedy at law, unless Defendant's infringement is enjoined by this Court.

**COUNT XI**  
**(Infringement of the '378 Patent)**

188. Paragraphs 1 through 32 are incorporated by reference as if fully set forth herein.

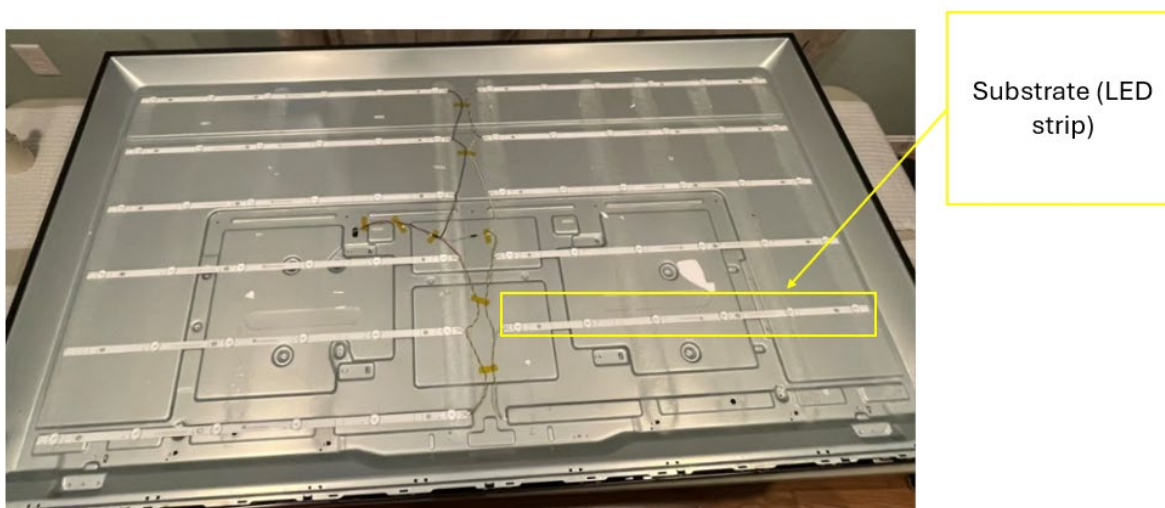
189. LGI has not licensed or otherwise authorized Defendant to make, use, offer for sale, sell, or import any products that embody the inventions of the '378 Patent.

190. Defendant infringes, contributes to the infringement of, and/or induces infringement of the '378 Patent by making, using, selling, offering for sale, distributing, exporting from, and/or importing into the United States products and/or methods covered by one or more claims of the '378 Patent including, but not limited to, at least the Accused Products.

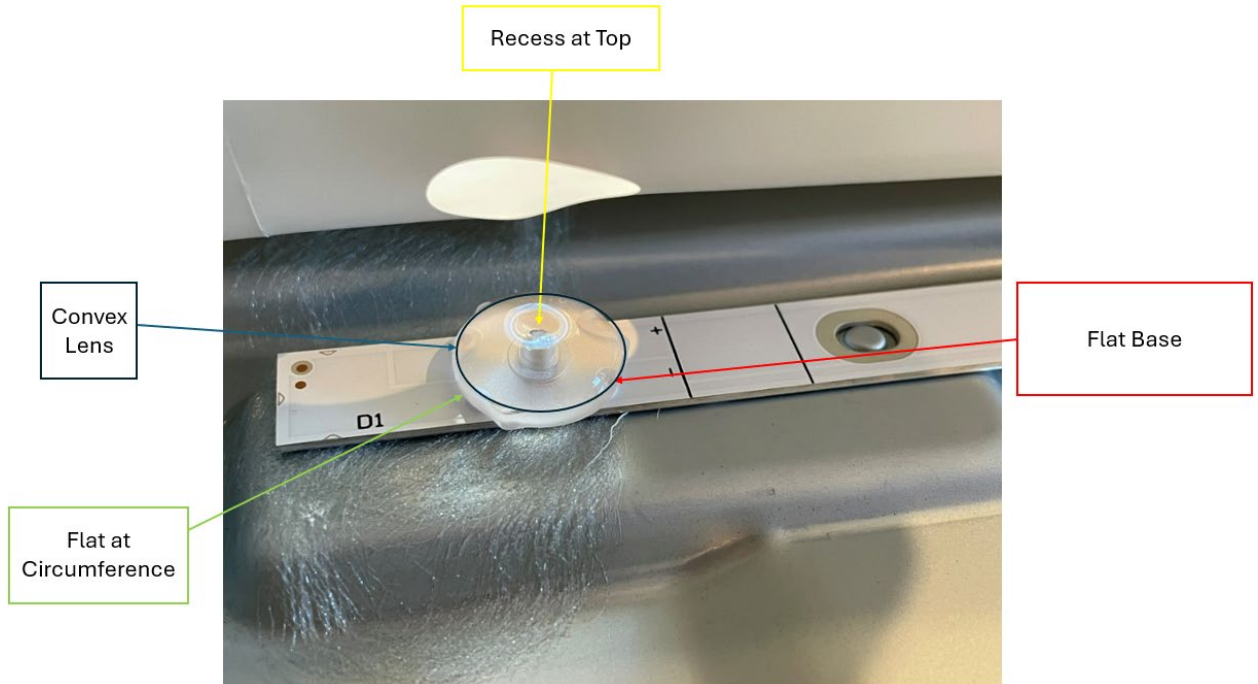
191. Defendant has directly infringed and continues to directly infringe the '378 Patent, either literally or under the doctrine of equivalents, without authority and in violation of 35 U.S.C. § 271, by making, using, offering to sell, selling, and/or importing into the United States products that satisfy each and every limitation of one or more claims of the '378 Patent. Upon information and belief, these products include the Accused Products that practice the methods and systems covered by the '378 Patent including, for example, Vizio Quantum, Quantum Pro, 4k, Full HD, HD, M-Series, V-Series, and D-Series televisions. As an example, the Vizio model M65Q6-L4 infringes at least claim 1 of the '378 Patent.

192. For example, Defendant has and continues to directly infringe at least claim 1 of the '378 Patent by making, using, offering to sell, selling, and/or importing into the United States products that comprise a lens comprising: a lens body having a convex top surface and a bottom surface, the convex top surface including a first recessed part at a central portion thereof and a flat top surface at a circumference of the top surface of the lens body, the bottom surface including a second recessed part at a central portion thereof, wherein the flat top surface is disposed lower than a lowest point of the first recessed part, and the flat top surface is disposed lower than a highest point of the second recessed part; and a plurality of lens supporters at the bottom surface of the lens body, wherein a maximum width at a portion in which the convex top surface of the lens body is curved ranges from about 12 mm to about 18 mm, wherein a maximum width of the lens body ranges from about 13 mm to about 19 mm, wherein a ratio of a maximum width of the second recessed part to the maximum width at the portion in which the convex top surface of the lens body is curved ranges from about 0.15 to about 0.27, and wherein a ratio of the maximum width of the second recessed part to the maximum width of the lens body ranges from about 0.14 to about 0.25.

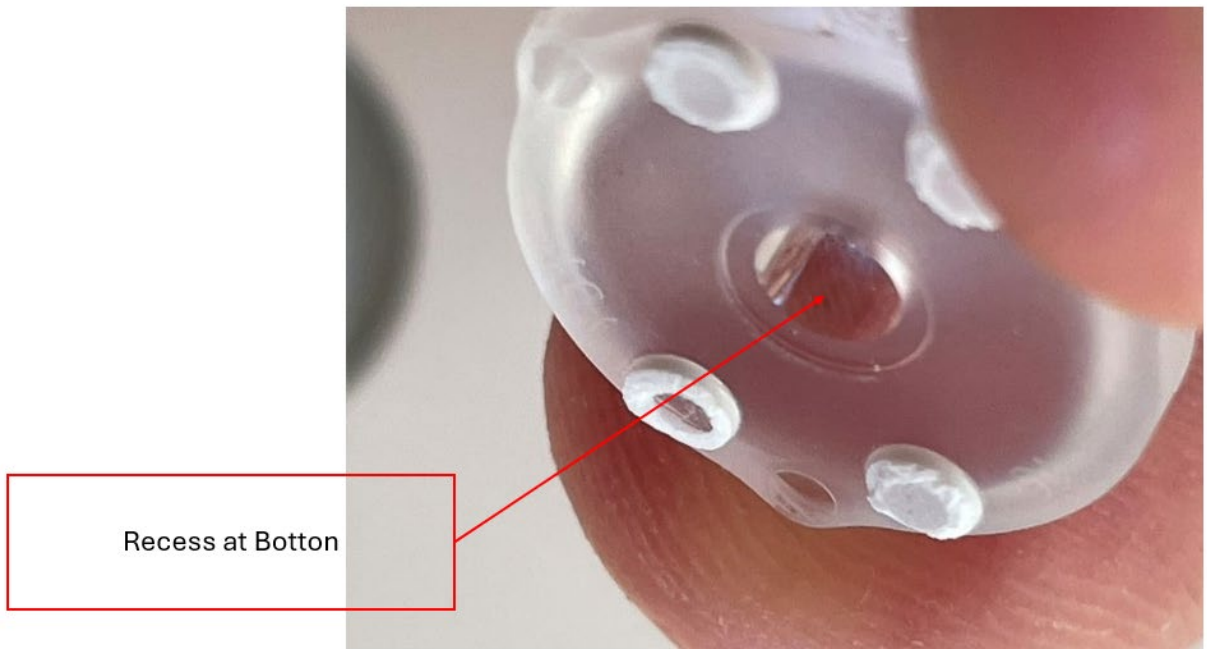
193. The Accused Products comprise a lens body having a convex top surface and a bottom surface, the convex top surface including a first recessed part at a central portion thereof and a flat top surface at a circumference of the top surface of the lens body, the bottom surface including a second recessed part at a central portion thereof, wherein the flat top surface is disposed lower than a lowest point of the first recessed part, and the flat top surface is disposed lower than a highest point of the second recessed part, as shown below, for the LED strips of an M65Q6-L4.



Source: M65Q6-L4 Teardown



Source: M65Q6-L4 Teardown



Source: M65Q6-L4 Teardown



194. The Accused Products comprise a plurality of lens supporters at the bottom surface of the lens body. For example, upon information and belief, each lens of the LED strips on a M65Q6-L4 comprise at least three legs.

195. The Accused Products comprise an apparatus wherein a maximum width at a portion in which the convex top surface of the lens body is curved ranges from about 12 mm to about 18 mm, as shown above, for the LED strips of an M65Q6-L4.

196. The Accused Products comprise an apparatus wherein a maximum width of the lens body ranges from about 13 mm to about 19 mm, as shown above for the LED strips of an M65Q6-L4.

197. The Accused Products comprise an apparatus wherein a ratio of a maximum width of the second recessed part to the maximum width at the portion in which the convex top surface of the lens body is curved ranges from about 0.15 to about 0.27, as shown above for LED strips of an M65Q6-L4.

198. The Accused Products comprise an apparatus wherein a ratio of the maximum width of the second recessed part to the maximum width of the lens body ranges from about 0.14 to about 0.25, as shown above for the LED strips of an M65Q6-L4.

199. Defendant has indirectly infringed and continues to indirectly infringe one or more claims of the '378 Patent, as provided by 35 U.S.C. § 271(b), by knowingly and intentionally inducing infringement by others, such as Defendant's customers and end-users, in this District and elsewhere in the United States. For example, Defendant's customers and end-users directly infringe, either literally or under the doctrine of equivalents, by making, using, offering to sell, selling, and/or importing into the United States products that include infringing technology, such as the Accused Products. Defendant induces this direct infringement through its affirmative acts

of manufacturing, selling, distributing, and/or otherwise making available the Accused Products, and providing instructions, documentation, and other information to customers and end-users suggesting that they use the Accused Products in an infringing manner, including technical support, marketing, product manuals, advertisements, and online documentation. Because of Defendant's inducement, Defendant's customers and end-users use the Accused Products in a way Defendant intends and they directly infringe the '378 Patent. Defendant performs these affirmative acts with the intent to cause infringing acts by others or, in the alternative, with the belief that there was a high probability that others, including end-users, infringe the '378 Patent, but while remaining willfully blind to the infringement.

200. Defendant has indirectly infringed and continues to indirectly infringe one or more claims of the '378 Patent, as provided by 35 U.S.C. § 271(c), by contributing to direct infringement by others, such as customers and end-users, in this District and elsewhere in the United States. Defendant's affirmative acts of selling and offering to sell the Accused Products in this District and elsewhere in the United States and causing the Accused Products to be manufactured, used, sold, and offered for sale contributes to others' use and manufacture of the Accused Products such that the '378 Patent is directly infringed by others. The accused components within the Accused Products are material to the invention of the '378 Patent, are not staple articles or commodities of commerce, have no substantial non-infringing uses, and are known by Defendant to be especially made or adapted for use in the infringement of the '378 Patent. Defendant performs these affirmative acts with knowledge of the '378 Patent and with intent, or willful blindness, that it causes the direct infringement of the '378 Patent.

201. Defendant has willfully infringed, and continues to willfully infringe, the '378 Patent by intentionally and deliberately carrying out acts of direct and indirect infringement, while knowing of, or by remaining willfully blind to, infringement.

202. LGI has suffered damages as a result of Defendant's direct and indirect infringement of the '378 Patent in an amount to be proved at trial.

203. LGI has suffered, and will continue to suffer, irreparable harm as a result of Defendant's infringement of the '378 Patent, for which there is no adequate remedy at law, unless Defendant's infringement is enjoined by this Court.

**COUNT XII**  
**(Infringement of the '823 Patent)**

204. Paragraphs 1 through 32 are incorporated by reference as if fully set forth herein.

205. LGI has not licensed or otherwise authorized Defendant to make, use, offer for sale, sell, or import any products that embody the inventions of the '823 Patent.

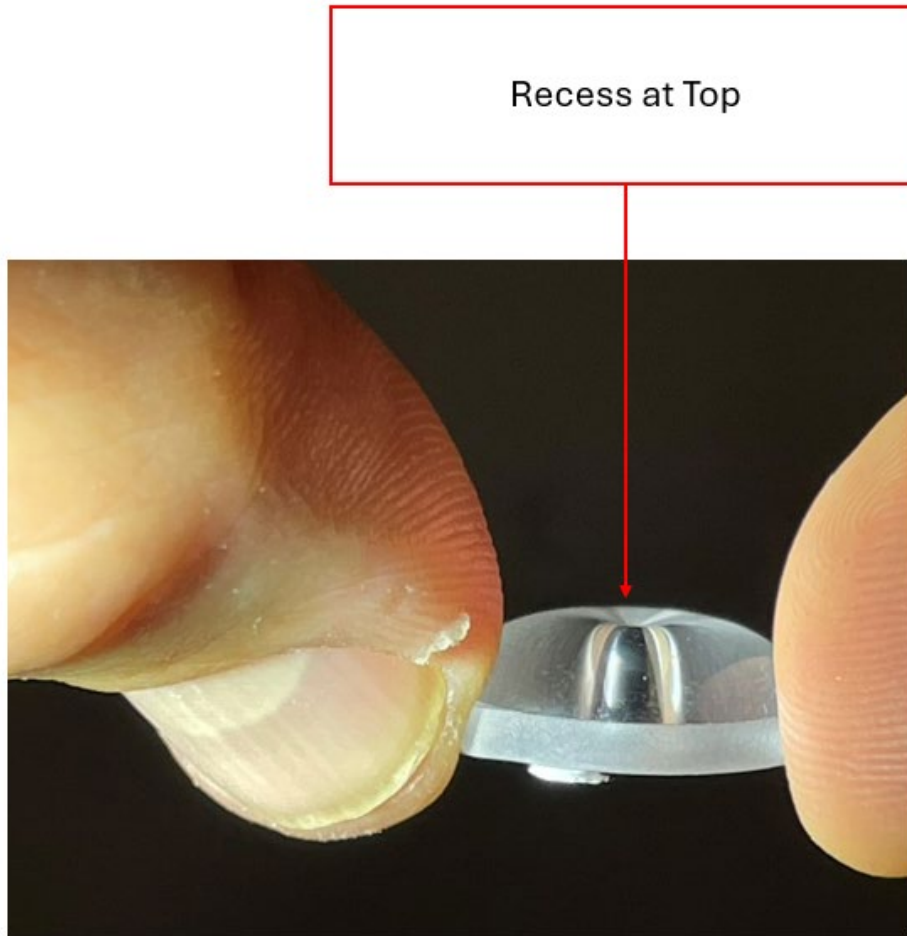
206. Defendant infringes, contributes to the infringement of, and/or induces infringement of the '823 Patent by making, using, selling, offering for sale, distributing, exporting from, and/or importing into the United States products and/or methods covered by one or more claims of the '823 Patent including, but not limited to, at least the Accused Products.

207. Defendant has directly infringed and continues to directly infringe the '823 Patent, either literally or under the doctrine of equivalents, without authority and in violation of 35 U.S.C. § 271, by making, using, offering to sell, selling, and/or importing into the United States products that satisfy each and every limitation of one or more claims of the '823 Patent. Upon information and belief, these products include the Accused Products that practice the methods and systems covered by the '823 Patent including, for example, Vizio Quantum, Quantum Pro, 4k, Full HD, HD, M-Series, V-Series, and D-Series televisions. As an example, the Vizio model M65Q6-L4

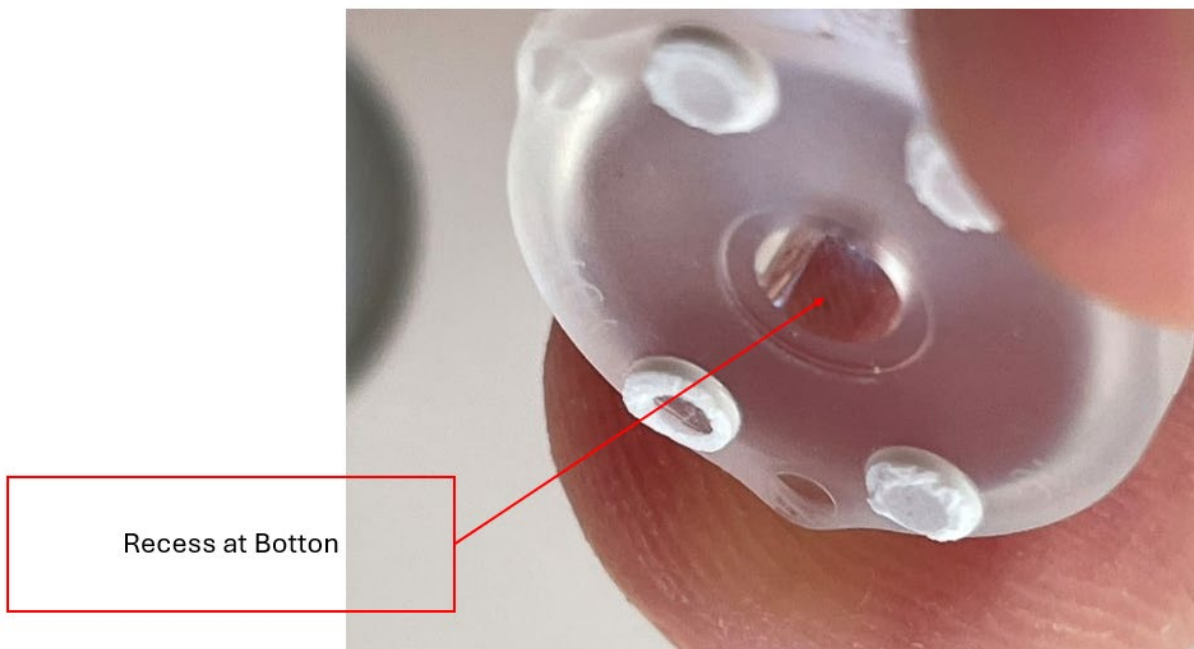
infringes at least claim 1 of the '823 Patent.

208. For example, Defendant has and continues to directly infringe at least claim 1 of the '823 Patent by making, using, offering to sell, selling, and/or importing into the United States products that comprise a lens comprising: a lens body having a convex top surface, a bottom surface, and a lateral surface between the convex top surface and the bottom surface, the bottom surface including a recessed part at a central portion thereof, the lateral surface being perpendicular to the bottom surface; and a plurality of lens supporters at the bottom surface of the lens body, wherein a maximum thickness (f) of the lateral surface ranges from about 1.8 mm to about 2 mm, wherein a ratio of a maximum depth (b) of the recessed part to a maximum thickness (h) of the lens body ranges from about 0.5 to about 0.75, and wherein a ratio of a maximum width (d) of the recessed part to a maximum width (j) of the lens body ranges from about 0.14 to about 0.25.

209. Upon information and belief, the Accused Products comprise a lens, which comprises a lens body having a convex top surface, a bottom surface, and a lateral surface between the convex top surface and the bottom surface, the bottom surface including a recessed part at a central portion thereof, the lateral surface being perpendicular to the bottom surface; and a plurality of lens supporters at the bottom surface of the lens body, as shown below for the M65Q6-L4.



Source: M65Q6-L4 Teardown



Source: M65Q6-L4 Teardown

210. Upon information and belief, the Accused Products comprise a maximum thickness of the lateral surface which ranges from about 1.8 mm to about 2mm.

211. Upon information and belief, the Accused Products comprise a ratio of a maximum depth (b) of the recessed part to a maximum thickness (h) of the lens body ranges from about 0.5 to about 0.75.

212. Upon information and belief, the Accused Products comprise a ratio of a maximum width (d) of the recessed part to a maximum width (j) of the lens body ranges from about 0.14 to about 0.25.

213. Defendant has indirectly infringed and continues to indirectly infringe one or more claims of the '378 Patent, as provided by 35 U.S.C. § 271(b), by knowingly and intentionally inducing infringement by others, such as Defendant's customers and end-users, in this District and elsewhere in the United States. For example, Defendant's customers and end-users directly

infringe, either literally or under the doctrine of equivalents, by making, using, offering to sell, selling, and/or importing into the United States products that include infringing technology, such as the Accused Products. Defendant induces this direct infringement through its affirmative acts of manufacturing, selling, distributing, and/or otherwise making available the Accused Products, and providing instructions, documentation, and other information to customers and end-users suggesting that they use the Accused Products in an infringing manner, including technical support, marketing, product manuals, advertisements, and online documentation. Because of Defendant's inducement, Defendant's customers and end-users use the Accused Products in a way Defendant intends and they directly infringe the '823 Patent. Defendant performs these affirmative acts with the intent to cause infringing acts by others or, in the alternative, with the belief that there was a high probability that others, including end-users, infringe the '823 Patent, but while remaining willfully blind to the infringement.

214. Defendant has indirectly infringed and continues to indirectly infringe one or more claims of the '823 Patent, as provided by 35 U.S.C. § 271(c), by contributing to direct infringement by others, such as customers and end-users, in this District and elsewhere in the United States. Defendant's affirmative acts of selling and offering to sell the Accused Products in this District and elsewhere in the United States and causing the Accused Products to be manufactured, used, sold, and offered for sale contributes to others' use and manufacture of the Accused Products such that the '823 Patent is directly infringed by others. The accused components within the Accused Products are material to the invention of the '823 Patent, are not staple articles or commodities of commerce, have no substantial non-infringing uses, and are known by Defendant to be especially made or adapted for use in the infringement of the '823 Patent. Defendant performs these affirmative acts with knowledge of the '823 Patent and with intent, or willful blindness, that it

causes the direct infringement of the '823 Patent.

215. Defendant has willfully infringed, and continues to willfully infringe, the '823 Patent by intentionally and deliberately carrying out acts of direct and indirect infringement, while knowing of, or by remaining willfully blind to, infringement.

216. LGI has suffered damages as a result of Defendant's direct and indirect infringement of the '823 Patent in an amount to be proved at trial.

217. LGI has suffered, and will continue to suffer, irreparable harm as a result of Defendant's infringement of the '823 Patent, for which there is no adequate remedy at law, unless Defendant's infringement is enjoined by this Court.

**COUNT XIII**  
**(Infringement of the '778 Patent)**

218. Paragraphs 1 through 32 are incorporated by reference as if fully set forth herein.

219. LGI has not licensed or otherwise authorized Defendant to make, use, offer for sale, sell, or import any products that embody the inventions of the '778 Patent.

220. Defendant infringes, contributes to the infringement of, and/or induces infringement of the '778 Patent by making, using, selling, offering for sale, distributing, exporting from, and/or importing into the United States products and/or methods covered by one or more claims of the '823 Patent including, but not limited to, at least the Accused Products.

221. Defendant has directly infringed and continues to directly infringe the '778 Patent, either literally or under the doctrine of equivalents, without authority and in violation of 35 U.S.C. § 271, by making, using, offering to sell, selling, and/or importing into the United States products that satisfy each and every limitation of one or more claims of the '778 Patent. Upon information and belief, these products include the Accused Products that practice the methods and systems covered by the '778 Patent including, for example, Vizio Quantum, Quantum Pro, 4k, Full HD,



HD, M-Series, V-Series, and D-Series televisions. As an example, the Vizio model M65Q6-L4 infringes at least claim 1 of the '778 Patent.

222. On information and belief, Defendant has and continues to directly infringe at least claim 1 of the '778 Patent by making, using, offering to sell, selling, and/or importing into the United States products that comprise a light source, comprising: a light guide plate; at least one light emitting module positioned so as to emit light incident on the light guide plate, wherein the at least one light emitting module comprises a plurality of light emitting diodes; an optical sheet on a top surface of the light guide plate; and a conversion sheet provided on a top surface of the optical sheet, wherein the conversion sheet converts a color of the light emitted by the at least one light emitting module to a target color, wherein the optical sheet includes a diffusion sheet and a prism sheet aligned with the diffusion sheet, and wherein the optical sheet is disposed on the light guide plate and the conversion sheet, such that the conversion sheet converts the color of the light passing through the diffusion sheet and the prism sheet.

223. On information and belief, the Accused Products comprise a light guide plate.

224. On information and belief, the Accused Products comprise at least one light emitting module positioned so as to emit light incident on the light guide plate, wherein the at least one light emitting module comprises a plurality of light emitting diodes (i.e., LEDs).

225. On information and belief, the Accused Products comprise an optical sheet on a top surface of the light guide plate..

226. On information and belief, the Accused Products comprise a conversion sheet provided on a top surface of the optical sheet, wherein the conversion sheet converts a color of the light emitted by the at least one light emitting module to a target color.

227. On information and belief, the Accused Products comprise an optical sheet wherein the optical sheet includes a diffusion sheet and a prism sheet aligned with the diffusion sheet, and wherein the optical sheet is disposed on the light guide plate and the conversion sheet, such that the conversion sheet converts the color of the light passing through the diffusion sheet and the prism sheet.

228. Defendant has indirectly infringed and continues to indirectly infringe one or more claims of the '778 Patent, as provided by 35 U.S.C. § 271(b), by knowingly and intentionally inducing infringement by others, such as Defendant's customers and end-users, in this District and elsewhere in the United States. For example, Defendant's customers and end-users directly infringe, either literally or under the doctrine of equivalents, by making, using, offering to sell, selling, and/or importing into the United States products that include infringing technology, such as the Accused Products. Defendant induces this direct infringement through its affirmative acts of manufacturing, selling, distributing, and/or otherwise making available the Accused Products, and providing instructions, documentation, and other information to customers and end-users suggesting that they use the Accused Products in an infringing manner, including technical support, marketing, product manuals, advertisements, and online documentation. Because of Defendant's inducement, Defendant's customers and end-users use the Accused Products in a way Defendant intends and they directly infringe the '778 Patent. Defendant performs these affirmative acts with the intent to cause infringing acts by others or, in the alternative, with the belief that there was a high probability that others, including end-users, infringe the '778 Patent, but while remaining willfully blind to the infringement.

229. Defendant has indirectly infringed and continues to indirectly infringe one or more claims of the '778 Patent, as provided by 35 U.S.C. § 271(c), by contributing to direct infringement

by others, such as customers and end-users, in this District and elsewhere in the United States. Defendant's affirmative acts of selling and offering to sell the Accused Products in this District and elsewhere in the United States and causing the Accused Products to be manufactured, used, sold, and offered for sale contributes to others' use and manufacture of the Accused Products such that the '778 Patent is directly infringed by others. The accused components within the Accused Products are material to the invention of the '778 Patent, are not staple articles or commodities of commerce, have no substantial non-infringing uses, and are known by Defendant to be especially made or adapted for use in the infringement of the '778 Patent. Defendant performs these affirmative acts with knowledge of the '778 Patent and with intent, or willful blindness, that it causes the direct infringement of the '778 Patent.

230. Defendant has willfully infringed, and continues to willfully infringe, the '778 Patent by intentionally and deliberately carrying out acts of direct and indirect infringement, while knowing of, or by remaining willfully blind to, infringement.

231. LGI has suffered damages as a result of Defendant's direct and indirect infringement of the '778 Patent in an amount to be proved at trial.

232. LGI has suffered, and will continue to suffer, irreparable harm as a result of Defendant's infringement of the '778 Patent, for which there is no adequate remedy at law, unless Defendant's infringement is enjoined by this Court.

**COUNT XIV**  
**(Infringement of the '537 Patent)**

233. Paragraphs 1 through 32 are incorporated by reference as if fully set forth herein.

234. LGI has not licensed or otherwise authorized Defendant to make, use, offer for sale, sell, or import any products that embody the inventions of the '537 Patent.

235. Defendant infringes, contributes to the infringement of, and/or induces infringement of the '537 Patent by making, using, selling, offering for sale, distributing, exporting from, and/or importing into the United States products and/or methods covered by one or more claims of the '537 Patent including, but not limited to, at least the Accused Products.

236. Defendant has directly infringed and continues to directly infringe the '537 Patent, either literally or under the doctrine of equivalents, without authority and in violation of 35 U.S.C. § 271, by making, using, offering to sell, selling, and/or importing into the United States products that satisfy each and every limitation of one or more claims of the '537 Patent. Upon information and belief, these products include the Accused Products that practice the methods and systems covered by the '537 Patent including, for example, Vizio Quantum, Quantum Pro, 4k, Full HD, HD, M-Series, V-Series, and D-Series televisions. As an example, the Vizio model M65Q6-L4 infringes at least claim 1 of the '537 Patent.

237. For example, Defendant has and continues to directly infringe at least claim 1 of the '537 Patent by making, using, offering to sell, selling, and/or importing into the United States products that comprise a backlight unit comprising: a light emitting diode (LED) module comprising an LED; a case supporting the LED module, and comprising a bending part that guides and fixes an end portion of the LED module; and a fixing part fixing the LED module to the case.

238. On information and belief, the Accused Products comprise a backlight unit.

239. On information and belief, the Accused Products comprise a backlight unit which comprises a light emitting diode (LED) module comprising an LED.

240. On information and belief, the Accused Products' backlight unit also comprises a case supporting the LED module.

241. On information and belief, the Accused Products' backlight unit also comprises a bending part that guides and fixes an end portion of the LED module.

242. On information and belief, the Accused Products' backlight unit also comprises a fixing part fixing the LED module to the case. pins that fit through holes of the LED strips, fixing the LED strips in place.

243. Defendant has indirectly infringed and continues to indirectly infringe one or more claims of the '537 Patent, as provided by 35 U.S.C. § 271(b), by knowingly and intentionally inducing infringement by others, such as Defendant's customers and end-users, in this District and elsewhere in the United States. For example, Defendant's customers and end-users directly infringe, either literally or under the doctrine of equivalents, by making, using, offering to sell, selling, and/or importing into the United States products that include infringing technology, such as the Accused Products. Defendant induces this direct infringement through its affirmative acts of manufacturing, selling, distributing, and/or otherwise making available the Accused Products, and providing instructions, documentation, and other information to customers and end-users suggesting that they use the Accused Products in an infringing manner, including technical support, marketing, product manuals, advertisements, and online documentation. Because of Defendant's inducement, Defendant's customers and end-users use the Accused Products in a way Defendant intends and they directly infringe the '537 Patent. Defendant performs these affirmative acts with the intent to cause infringing acts by others or, in the alternative, with the belief that there was a high probability that others, including end-users, infringe the '537 Patent, but while remaining willfully blind to the infringement.

244. Defendant has indirectly infringed and continues to indirectly infringe one or more claims of the '537 Patent, as provided by 35 U.S.C. § 271(c), by contributing to direct infringement

by others, such as customers and end-users, in this District and elsewhere in the United States. Defendant's affirmative acts of selling and offering to sell the Accused Products in this District and elsewhere in the United States and causing the Accused Products to be manufactured, used, sold, and offered for sale contributes to others' use and manufacture of the Accused Products such that the '537 Patent is directly infringed by others. The accused components within the Accused Products are material to the invention of the '537 Patent, are not staple articles or commodities of commerce, have no substantial non-infringing uses, and are known by Defendant to be especially made or adapted for use in the infringement of the '537 Patent. Defendant performs these affirmative acts with knowledge of the '537 Patent and with intent, or willful blindness, that it cause the direct infringement of the '537 Patent.

245. Defendant has willfully infringed, and continues to willfully infringe, the '537 Patent by intentionally and deliberately carrying out acts of direct and indirect infringement, while knowing of, or by remaining willfully blind to, infringement.

246. LGI has suffered damages as a result of Defendant's direct and indirect infringement of the '537 Patent in an amount to be proved at trial.

247. LGI has suffered, and will continue to suffer, irreparable harm as a result of Defendant's infringement of the '537 Patent, for which there is no adequate remedy at law, unless Defendant's infringement is enjoined by this Court.

**COUNT XV**  
**(Infringement of the '411 Patent)**

248. Paragraphs 1 through 32 are incorporated by reference as if fully set forth herein.

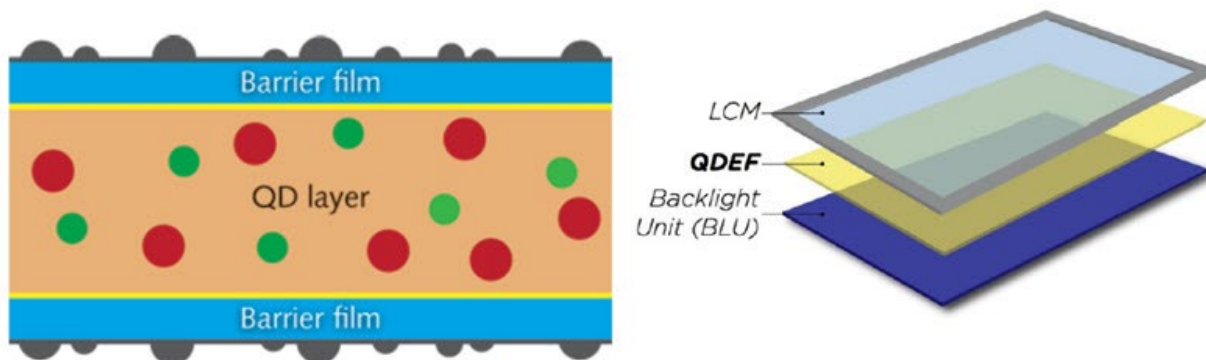
249. LGI has not licensed or otherwise authorized Defendant to make, use, offer for sale, sell, or import any products that embody the inventions of the '411 Patent.

250. Defendant infringes, contributes to the infringement of, and/or induces infringement of the '411 Patent by making, using, selling, offering for sale, distributing, exporting from, and/or importing into the United States products and/or methods covered by one or more claims of the '411 Patent including, but not limited to, at least the Accused Products.

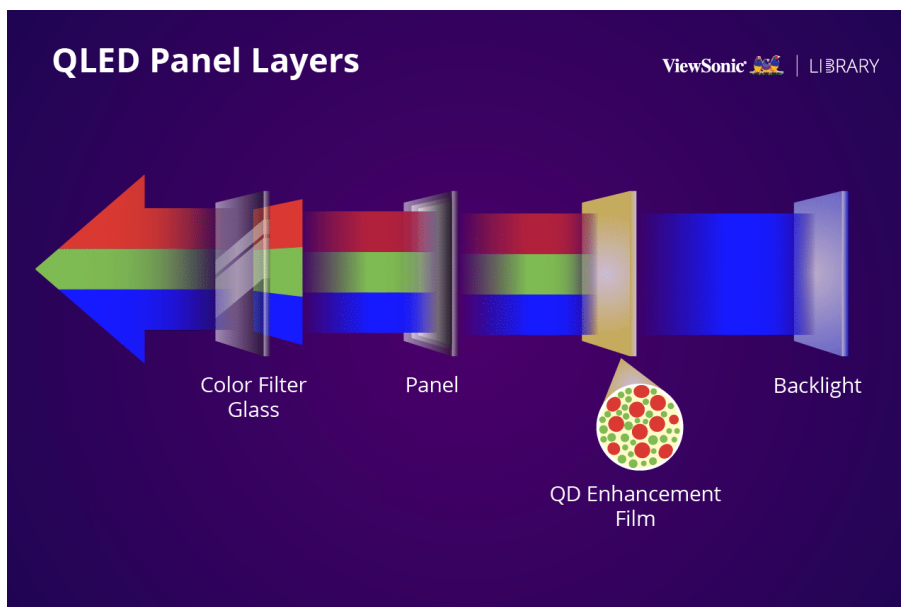
251. Defendant has directly infringed and continues to directly infringe the '411 Patent, either literally or under the doctrine of equivalents, without authority and in violation of 35 U.S.C. § 271, by making, using, offering to sell, selling, and/or importing into the United States products that satisfy each and every limitation of one or more claims of the '411 Patent. Upon information and belief, these products include the Accused Products that practice the methods and systems covered by the '411 Patent including, for example, Vizio Quantum, Quantum Pro, 4k, Full HD, HD, M-Series, V-Series, and D-Series televisions. As an example, the Vizio model M65Q6-L4 infringes at least claim 1 of the '411 Patent.

252. For example, Defendant has and continues to directly infringe at least claim 1 of the '411 Patent by making, using, offering to sell, selling, and/or importing into the United States products that comprise a photoluminescent sheet comprising: a resin layer; a phosphor configured to convert a wavelength of light emitted from an LED in the resin layer; a first protective film of uniform thickness on a top surface of the resin layer, wherein the first protective film is formed of a transparent synthetic resin; and a second protective film of uniform thickness on a bottom surface of the resin layer, wherein the second protective film is formed of a transparent synthetic resin; wherein the resin layer is interposed between the first protective film and the second protective film, and wherein the first protective film and the second protective film comprise at least one same material.

253. The Accused Products comprise a resin layer. For example, the Vizio model M65Q6-L4 is a quantum dot television which, upon information and belief, comprises a photoluminescent sheet including a resin layer between its backlight and panel:



Source: Laser Focus World, Nanosys

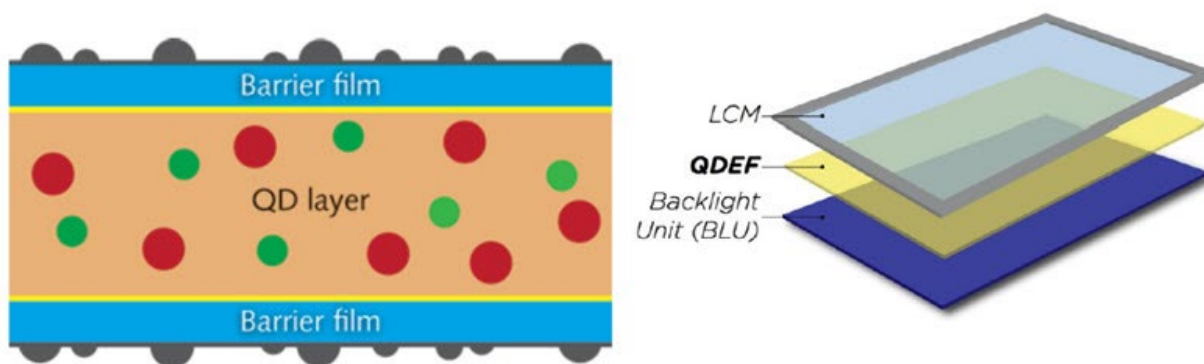


254. The Accused Products comprise a phosphor configured to convert a wavelength of light emitted from an LED in the resin layer. For example, upon information and belief, the Vizio model M65Q6-L4 comprises a QD enhancement film which includes a phosphor configured to



convert a wavelength of light from an LED.<sup>6</sup>

255. The Accused Products comprise a first protective film of uniform thickness on a top surface of the resin layer, wherein the first protective film is formed of a transparent synthetic resin and a second protective film of uniform thickness on a bottom surface of the resin layer, wherein the second protective film is formed of a transparent synthetic resin, wherein the resin layer is interposed between the first protective film and the second protective film. For example, upon information and belief, the Vizio model M65Q6-L4 comprises barrier film layers of uniform thickness on a top and bottom surface of the quantum dot layer, formed of a transparent synthetic resin, *e.g.*, PET.



Source: Laser Focus World, Nanosys

256. The Accused Products comprise an apparatus wherein the first protective film and the second protective film comprise at least one same material. For example, upon information and belief, the first and second protective films both contain PET.

257. Defendant has indirectly infringed and continues to indirectly infringe one or more claims of the '411 Patent, as provided by 35 U.S.C. § 271(b), by knowingly and intentionally inducing infringement by others, such as Defendant's customers and end-users, in this District and elsewhere in the United States. For example, Defendant's customers and end-users directly

<sup>6</sup> See *e.g.*, <https://www.idtechex.com/en/research-article/quantum-dots-evolving-downconverter-technology-beyond-phosphors/15633>

infringe, either literally or under the doctrine of equivalents, by making, using, offering to sell, selling, and/or importing into the United States products that include infringing technology, such as the Accused Products. Defendant induces this direct infringement through its affirmative acts of manufacturing, selling, distributing, and/or otherwise making available the Accused Products, and providing instructions, documentation, and other information to customers and end-users suggesting that they use the Accused Products in an infringing manner, including technical support, marketing, product manuals, advertisements, and online documentation. Because of Defendant's inducement, Defendant's customers and end-users use the Accused Products in a way Defendant intends and they directly infringe the '411 Patent. Defendant performs these affirmative acts with the intent to cause infringing acts by others or, in the alternative, with the belief that there was a high probability that others, including end-users, infringe the '411 Patent, but while remaining willfully blind to the infringement.

258. Defendant has indirectly infringed and continues to indirectly infringe one or more claims of the '411 Patent, as provided by 35 U.S.C. § 271(c), by contributing to direct infringement by others, such as customers and end-users, in this District and elsewhere in the United States. Defendant's affirmative acts of selling and offering to sell the Accused Products in this District and elsewhere in the United States and causing the Accused Products to be manufactured, used, sold, and offered for sale contributes to others' use and manufacture of the Accused Products such that the '411 Patent is directly infringed by others. The accused components within the Accused Products are material to the invention of the '411 Patent, are not staple articles or commodities of commerce, have no substantial non-infringing uses, and are known by Defendant to be especially made or adapted for use in the infringement of the '411 Patent. Defendant performs these affirmative acts with knowledge of the '411 Patent and with intent, or willful blindness, that it

causes the direct infringement of the '411 Patent.

259. Defendant has willfully infringed, and continues to willfully infringe, the '411 Patent by intentionally and deliberately carrying out acts of direct and indirect infringement, while knowing of, or by remaining willfully blind to, infringement.

260. LGI has suffered damages as a result of Defendant's direct and indirect infringement of the '411 Patent in an amount to be proved at trial.

261. LGI has suffered, and will continue to suffer, irreparable harm as a result of Defendant's infringement of the '411 Patent, for which there is no adequate remedy at law, unless Defendant's infringement is enjoined by this Court.

**COUNT XVI**  
**(Infringement of the '352 Patent)**

262. Paragraphs 1 through 32 are incorporated by reference as if fully set forth herein.

263. LGI has not licensed or otherwise authorized Defendant to make, use, offer for sale, sell, or import any products that embody the inventions of the '352 Patent.

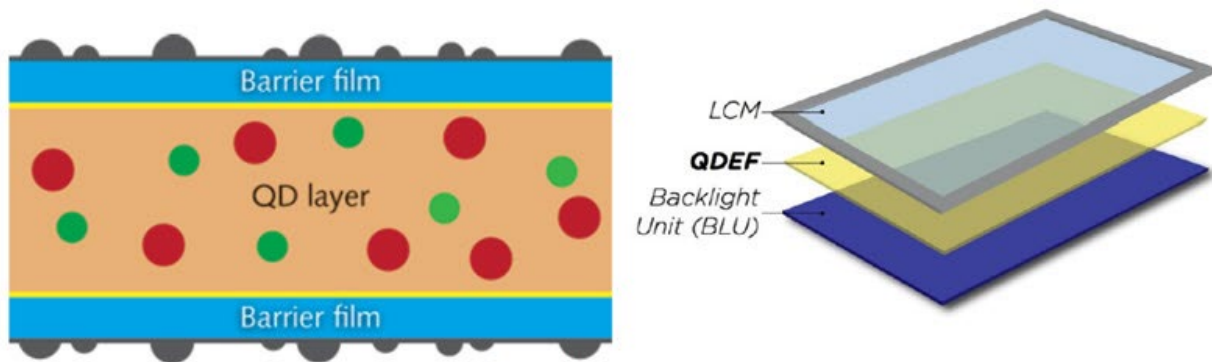
264. Defendant infringes, contributes to the infringement of, and/or induces infringement of the '352 Patent by making, using, selling, offering for sale, distributing, exporting from, and/or importing into the United States products and/or methods covered by one or more claims of the '352 Patent including, but not limited to, at least the Accused Products.

265. Defendant has directly infringed and continues to directly infringe the '352 Patent, either literally or under the doctrine of equivalents, without authority and in violation of 35 U.S.C. § 271, by making, using, offering to sell, selling, and/or importing into the United States products that satisfy each and every limitation of one or more claims of the '352 Patent. Upon information and belief, these products include the Accused Products that practice the methods and systems covered by the '352 Patent including, for example, Vizio Quantum, Quantum Pro, 4k, Full HD,

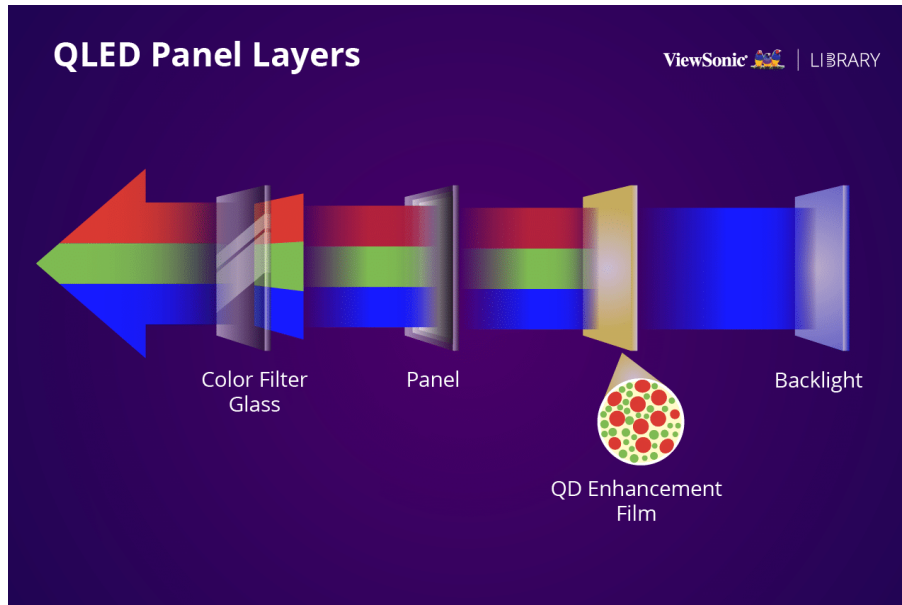
HD, M-Series, V-Series, and D-Series televisions. As an example, the Vizio model M65Q6-L4 television infringes at least claim 1 of the '352 Patent.

266. For example, Defendant has and continues to directly infringe at least claim 1 of the '352 Patent by making, using, offering to sell, selling, and/or importing into the United States products that comprise a photoluminescent sheet comprising: a resin layer; a phosphor configured to convert a wavelength of light emitted from an LED in the resin layer; a curing agent in the resin layer; an additive configured to disperse the phosphor in the resin layer; a first protective film of uniform thickness on a top surface of the resin layer, wherein the first protective film is formed of a transparent synthetic resin which is not curable by light; and a second protective film of uniform thickness on a bottom surface of the resin layer, wherein the second protective film is formed of a transparent synthetic resin which is not curable by light.

267. The Accused Products comprise a resin layer. For example, the Vizio model M65Q6-L4 is a quantum dot television which, upon information and belief, comprises a photoluminescent sheet including a resin layer between its backlight and panel:



Source: Laser Focus World, Nanosys



268. The Accused Products comprise a phosphor configured to convert a wavelength of light emitted from an LED in the resin layer. For example, upon information and belief, the Vizio model M65Q6-L4 comprises a QD enhancement film which includes a phosphor configured to convert a wavelength of light from an LED.<sup>7</sup>

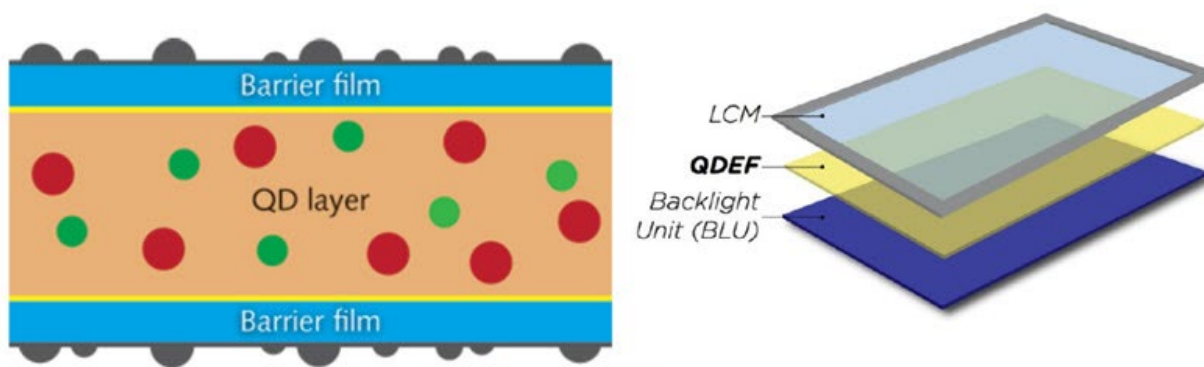
269. The Accused Products comprise a curing agent in the resin layer. For example, upon information and belief, the quantum dot resin layer includes a UV curing agent, such as a silicone-based curing agent.

270. The Accused Products comprise an additive configured to disperse the phosphor in the resin layer. For example, upon information and belief, the Vizio model M65Q6-L4 comprises a silicone surface additive and/or other rheological additive to disperse phosphor in the resin layer.

271. The Accused Products comprise a first protective film of uniform thickness on a top surface of the resin layer, wherein the first protective film is formed of a transparent synthetic resin which is not curable by light and a second protective film of uniform thickness on a bottom

<sup>7</sup> See e.g., <https://www.idtechex.com/en/research-article/quantum-dots-evolving-downconverter-technology-beyond-phosphors/15633>

surface of the resin layer, wherein the second protective film is formed of a transparent synthetic resin which is not curable by light. For example, upon information and belief, the 75QD7N comprises barrier film layers of uniform thickness on a top and bottom surface of the quantum dot layer, formed of a transparent synthetic resin, *e.g.*, PET.



Source: Laser Focus World, Nanosys

272. Defendant has indirectly infringed and continues to indirectly infringe one or more claims of the '352 Patent, as provided by 35 U.S.C. § 271(b), by knowingly and intentionally inducing infringement by others, such as Defendant's customers and end-users, in this District and elsewhere in the United States. For example, Defendant's customers and end-users directly infringe, either literally or under the doctrine of equivalents, by making, using, offering to sell, selling, and/or importing into the United States products that include infringing technology, such as the Accused Products. Defendant induces this direct infringement through its affirmative acts of manufacturing, selling, distributing, and/or otherwise making available the Accused Products, and providing instructions, documentation, and other information to customers and end-users suggesting that they use the Accused Products in an infringing manner, including technical support, marketing, product manuals, advertisements, and online documentation. Because of Defendant's inducement, Defendant's customers and end-users use the Accused Products in a way Defendant intends and they directly infringe the '352 Patent. Defendant performs these affirmative acts with the intent to cause infringing acts by others or, in the alternative, with the belief that there

was a high probability that others, including end-users, infringe the '352 Patent, but while remaining willfully blind to the infringement.

273. Defendant has indirectly infringed and continues to indirectly infringe one or more claims of the '352 Patent, as provided by 35 U.S.C. § 271(c), by contributing to direct infringement by others, such as customers and end-users, in this District and elsewhere in the United States. Defendant's affirmative acts of selling and offering to sell the Accused Products in this District and elsewhere in the United States and causing the Accused Products to be manufactured, used, sold, and offered for sale contributes to others' use and manufacture of the Accused Products such that the '352 Patent is directly infringed by others. The accused components within the Accused Products are material to the invention of the '352 Patent, are not staple articles or commodities of commerce, have no substantial non-infringing uses, and are known by Defendant to be especially made or adapted for use in the infringement of the '352 Patent. Defendant performs these affirmative acts with knowledge of the '352 Patent and with intent, or willful blindness, that it causes the direct infringement of the '352 Patent.

274. Defendant has willfully infringed, and continues to willfully infringe, the '352 Patent by intentionally and deliberately carrying out acts of direct and indirect infringement, while knowing of, or by remaining willfully blind to, infringement.

275. LGI has suffered damages as a result of Defendant's direct and indirect infringement of the '352 Patent in an amount to be proved at trial.

276. LGI has suffered, and will continue to suffer, irreparable harm as a result of Defendant's infringement of the '352 Patent, for which there is no adequate remedy at law, unless Defendant's infringement is enjoined by this Court.

**DEMAND FOR JURY TRIAL**

Plaintiff hereby demands a jury for all issues so triable.

**PRAYER FOR RELIEF**

WHEREFORE, LGI prays for relief against Defendant as follows:

- a. Entry of judgment declaring that Defendant directly and/or indirectly infringes one or more claims of each of the Patents-in-Suit;
- b. Entry of judgment declaring that Defendant's infringement of the Patents-in-Suit is willful;
- c. An order awarding damages sufficient to compensate Plaintiff for Defendant's infringement of the Patents-in-Suit, but in no event less than a reasonable royalty, including supplemental damages post-verdict, together with pre-judgment and post-judgment interest and costs;
- d. Enhanced damages pursuant to 35 U.S.C. § 284;
- e. Entry of judgment declaring that this case is exceptional and awarding Plaintiff its costs and reasonable attorney fees pursuant to 35 U.S.C. § 285;
- f. An accounting for acts of infringement;
- g. Such other equitable relief which may be requested and to which the Plaintiff is entitled; and
- h. Such other and further relief as the Court deems just and proper.

Dated: March 21 , 2025

Respectfully submitted,

/s/ Vincent J. Rubino, III

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