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

LIGHT GUIDE INNOVATIONS LLC,	§	Case No.
Plaintiff,	§	**JURY TRIAL DEMANDED**
v.	§	
HISENSE COMPANY LTD., HISENSE VISUAL TECHNOLOGY CO. LTD. F/K/A QINGDAO HISENSE ELECTRIC CO. LTD., HISENSE INTERNATIONAL CO. LTD., HISENSE INTERNATIONAL (HONG KONG) AMERICA INVESTMENTS CO. LTD., and HISENSE INTERNATIONAL (HK) CO. LTD.,	§	
Defendants.	§	

COMPLAINT FOR PATENT INFRINGEMENT

Plaintiff Light Guide Innovations LLC ("LGI" or "Plaintiff") for its Complaint against Defendants Hisense Company Ltd., Hisense Visual Technology Co. Ltd. f/k/a Qingdao Hisense Electric Co. Ltd., Hisense International Co. Ltd., Hisense International (Hong Kong) America Investments Co. Ltd., and Hisense International (HK) Co. Ltd. (collectively, "Hisense" or "Defendants") 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. Upon information and belief, Defendant Hisense Company Ltd. ("Hisense Co.") is a corporation duly organized and existing under the laws of the People's Republic of China. It has

a place of business at Hisense Tower No. 17, Donghaixi Road, Qingdao, Shandong Province, 266071, People's Republic of China and may be served pursuant to the provisions of the Hague Convention. Hisense Co. is a leading manufacturer and seller of displays and televisions in the world and in the United States. Upon information and belied, Hisense Co. does business in Texas and in the Eastern District of Texas, directly or through intermediaries.

3. Upon information and belief, Defendant Hisense Visual Technology Co. Ltd. f/k/a Qingdao Hisense Electric Co. Ltd. ("Hisense Visual") is a corporation duly organized and existing under the laws of the People's Republic of China. It has a place of business at 218 Sinanan Road, Qingdao Economic & Technological Development Zone, Qingdao, Shandong Province, 266555, People's Republic of China and may be served pursuant to the provisions of the Hague Convention. Hisense Visual is a leading manufacturer and seller of displays and televisions in the world and in the United States. Upon information and belief, Hisense Visual does business in Texas and in the Eastern District of Texas, directly or through intermediaries.

4. Upon information and belief, Defendant Hisense International Co. Ltd. ("Hisense Intl") is a corporation organized and existing under the laws of People's Republic of China with its principal place of business located at Hisense Tower No. 17, Floor 22, Donghaixi Road, Qingdao, Shandong Province, 266071, People's Republic of China and may be served pursuant to the provisions of the Hague Convention. Hisense Intl is a leading manufacturer and seller of displays and televisions in the world and in the United States. Upon information and belief, Hisense Intl does business in Texas and in the Eastern District of Texas, directly or through intermediaries.

5. Upon information and belief, Defendant Hisense International (Hong Kong) America Investments Co. Ltd. ("Hisense HK") is a corporation organized and existing under the

laws of Hong Kong SAR, China, with its principal place of business located at Room 3101-3105, Senga Commercial Centre, No. 148, Connaught Road West, Hong Kong SAR, China and may be served pursuant to the provisions of the Hague Convention. Hisense HK is a leading importer of displays and televisions in the world and in the United States. Upon information and belief, Hisense HK does business in Texas and in the Eastern District of Texas, directly or through intermediaries.

6. Upon information and belief, Defendant Hisense International (HK) Co. Ltd. ("Hisense Intl (HK)"), is a corporation organized and existing under the laws of Hong Kong SAR, China, with its principal place of business located at Room 3101-3105, Sanga Commercial Centre, No. 148, Connaught Road West, Hong Kong SAR, China and may be served pursuant to the provisions of the Hague Convention. Hisense Intl (HK) is a leading importer of displays and televisions in the world and in the United States. Upon information and belief, Hisense Intl (HK) does business in Texas and in the Eastern District of Texas, directly or through intermediaries.

7. Upon information and belief, the Defendants identified in paragraphs 2-6 (collectively, "Hisense" or "Defendants") are an interrelated group of companies, which together comprise one of the world's largest manufacturers and sellers of televisions in the United States.

JURISDICTION

8. 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 jurisdiction over this action pursuant to 28 U.S.C. §§ 1331 and 1338(a) and 1367.

9. This Court has specific and personal jurisdiction over the Defendants consistent with the requirements of the Due Process Clause of the United States Constitution and the Texas Long Arm Statute. Upon information and belief, the Defendants have sufficient minimum contacts

with the forum because Defendants transact substantial business in the State of Texas and in this Judicial District. Further, the Defendants have, directly or through subsidiaries or intermediaries, committed and continue 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. For example, on information and belief, the Accused Products are available for purchase in this Judicial District.

10. Venue is proper in this Judicial District pursuant to 28 U.S.C. § 1391(b) and (c) because the Defendants are foreign companies that may be sued in any Judicial District, including the Eastern District of Texas. The Defendants are subject to personal jurisdiction in this Judicial District and have committed acts of patent infringement in this Judicial District. On information and belief, the Defendants through their own acts and/or through the acts of each other Defendant, make, use, sell, and/or offer to sell infringing products within this Judicial District, regularly do and solicit business in this Judicial District, and have the requisite minimum contacts with the Judicial District such that this venue is a fair and reasonable one. Further, upon information and belief, the Defendants have admitted or not contested proper venue in this Judicial District in other patent infringement actions.

PATENTS-IN-SUIT

11. 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 available at https://patentimages.storage.googleapis.com/90/4a/cc/b22c825803b567/US7936415.pdf.

12. 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 available at https://patentimages.storage.googleapis.com/f5/ab/2c/4f2a472b168069/US7922380.pdf.

13. 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 available at https://patentimages.storage.googleapis.com/8d/f3/83/8cfb0a9171ad65/US8562200.pdf.

14. 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 available at https://patentimages.storage.googleapis.com/85/c9/7b/4626a8ccc924c3/US8506122.pdf.

15. 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 available at https://patentimages.storage.googleapis.com/69/95/3f/c49557399ea8cb/US8052307.pdf.

16. 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 available at https://patentimages.storage.googleapis.com/cc/a3/05/8a07a884d78b29/US8616729.pdf.

17. 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 available at https://patentimages.storage.googleapis.com/51/f6/5c/09573de8182e5a/US8213093.pdf.

18. 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 available at https://patentimages.storage.googleapis.com/a1/cc/d1/389ff7d4c60829/US9534744.pdf.

19. 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 available at https://patentimages.storage.googleapis.com/c2/6a/7d/6c870242fc098f/US8823048.pdf.

20. 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 available at https://patentimages.storage.googleapis.com/e7/eb/c3/d40c6c5f10f10a/US8395183.pdf.

21. 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 available at https://patentimages.storage.googleapis.com/f4/43/5a/838fa925b0750f/US9638378.pd.

22. 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 available at https://patentimages.storage.googleapis.com/dd/91/c1/efd9a90fab9472/US8723411.pdf.

23. 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 available at

https://patentimages.storage.googleapis.com/63/19/29/a2cd5b3c36a6b3/US8237352.pdf.

24. 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 available at https://patentimages.storage.googleapis.com/97/49/4c/1726c8cf19aa71/US10030823.pdf.

25. On July 9, 2013, the United States Patent and Trademark Office duly and legally issued U.S. Patent No. 8,480,778 (the "'778 Patent") entitled "Air Cleaner Arrangements; Components; And, Methods." A true and correct copy of the '778 Patent is available at https://patentimages.storage.googleapis.com/40/31/04/a6fbf8e52bb015/US8480778.pdf.

26. 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 available at https://patentimages.storage.googleapis.com/a4/cb/16/9378b106b04c95/US8267537.pdf.

27. 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,'411 Patent, '352 Patent, '823 Patent, '778 Patent, and '537 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

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

29. 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 Co., Ltd. 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).

30. 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 Co., Ltd. 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).

31. The ’093 Patent generally relates to an LED backlight unit providing improved brightness uniformity for displays and televisions. The technology of the ’093 Patent was developed by Gyu Hyeong Bak and Sang Won Lee of LG Innotek Co., Ltd. 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).

32. The ’380 and ’778 Patent generally relates 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 Co. Ltd. The technology of the ’778 patent was developed by Michael Baseotto, et al. of Donaldson Company, Inc. 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).

33. 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 Co., Ltd. By way of example, this technology is implemented today in the LED backlight units of the Accused Products.

34. 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 Co., Ltd. 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).

35. 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.

36. Defendants have infringed and continue 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 importing televisions and displays. For example, the Accused Products include all LCD LED, LED, ULED, QLED, MINI-LED ULED, and MINI-LED QLED televisions or displays, including at least the U6, R6, H7, A6, A5, R7, V1, K2, QD7, U7, S7, U9, QD6, A4, and H4 models of products, and components thereof (e.g., backlight components).

37. For example, Defendants sell and offer to sell the Accused Products in the United States through online stores such as Amazon, Walmart, and https://www.hisense-usa.com. Upon information and belief, Defendants sell and offer to sell the Accused Products directly to customers and end-users through their website, as well as through their stores on Amazon and Walmart.

38. For further example, Defendants sell and offer to sell the Accused Products directly to customers and end-users in this District at the Walmart Supercenter in Marshall, Texas 75670 for in-store purchase. Defendants also sell and offer to sell the Accused Products directly to customers and end-users in this District at the Target in Lufkin, Texas 75901.

39. Upon information and belief, Defendants are jointly responsible for the sale of the Accused Products to customers in the United States, including through their store at https://www.hisense-usa.com. For example, the Hisense global privacy policy available on https://www.hisense-usa.com and https://global.hisense.com is on behalf of "Hisense USA Corporation and its parents, subsidiaries, and affiliates (collectively referred to as "Hisense", "We" or "Us")."[1] For example, upon information and belief, Defendants further sell and offer to sell the Accused Products directly to retailers and carriers in the United States, such as Walmart, Best Buy, Target, Micro Center, Costco, and the like. For example, upon information and belief, Defendants further sell and offer to sell the Accused Products to their own subsidiaries and sister entities in the United States, such as Hisense USA Co.

40. For example, upon information and belief, Defendants sell and offer to sell the Accused Products in the United States, and track sales and growth of the Accused Products on, at least, a quarterly basis.[2]

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[1] https://www.hisense-usa.com/privacy-policy

[2] https://global.hisense.com/about-hisense/newsroom/hisense-retains-no2-ranking-globally-for-tv-shipment-in-2023

41. For example, in a 2024 interview, Catherine Fang, President of Hisense Intl, told CNBC that Hisense "aims to become the No. 1 seller of television sets in the U.S. in about two years."[3] Upon information and belief, Defendants further sell, and offer to sell the Accused Products to customers in the United States through related intermediary entities, including those listed.

42. For example, upon information and belief, Defendants import the Accused Products into the United States, including for at least the aforementioned sales, by paying for and arranging the shipment of the Accused Products into the United States, and specifying their destinations within the United States.

43. For example, upon information and belief, Defendants use the Accused Products in the United States for demonstration, marketing, and to create tutorials and instructions, inducing those based on which end-users and other buyers are induced to infringe. For example, Hisense regularly attends the CES conference where it demonstrates and markets its products, including, upon information and belief, the accused televisions.[4]

COUNT I
(Infringement of the '415 Patent)

44. Paragraphs 1 through 43 are incorporated by reference as if fully set forth herein.

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

46. Defendants infringe, contribute to the infringement of, and/or induce infringement of the '415 Patent by making, using, selling, offering for sale, distributing, exporting from, and/or

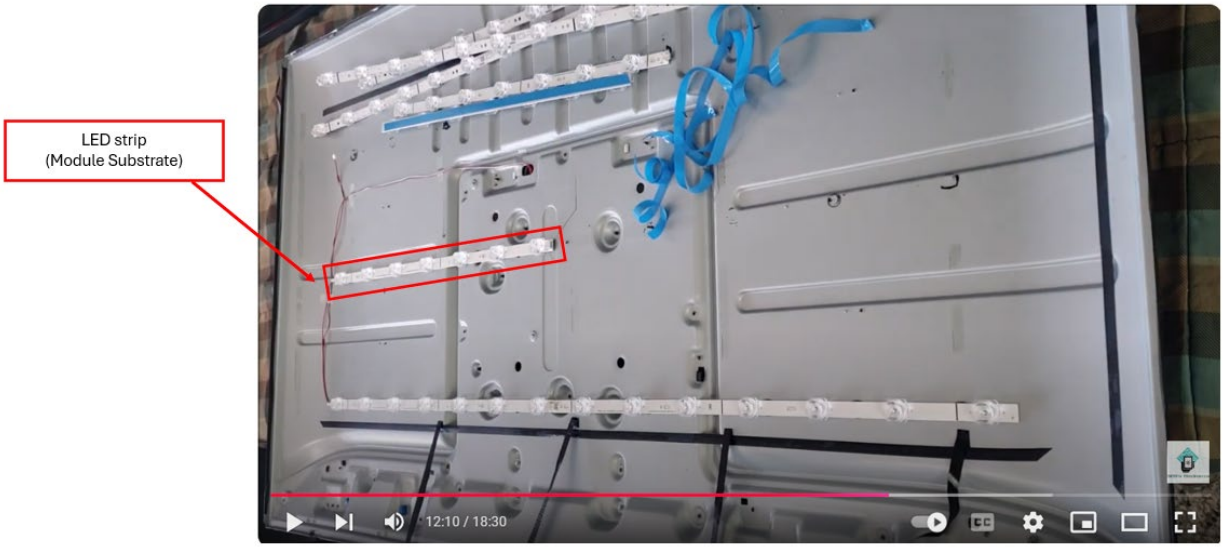
[3] https://www.cnbc.com/2024/11/05/chinas-hisense-aims-to-become-the-no-1-tv-company-in-the-us-within-2-years.html
[4] https://global.hisense.com/about-hisense/newsroom/hisense-retains-no2-ranking-globally-for-tv-shipment-in-2023

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.

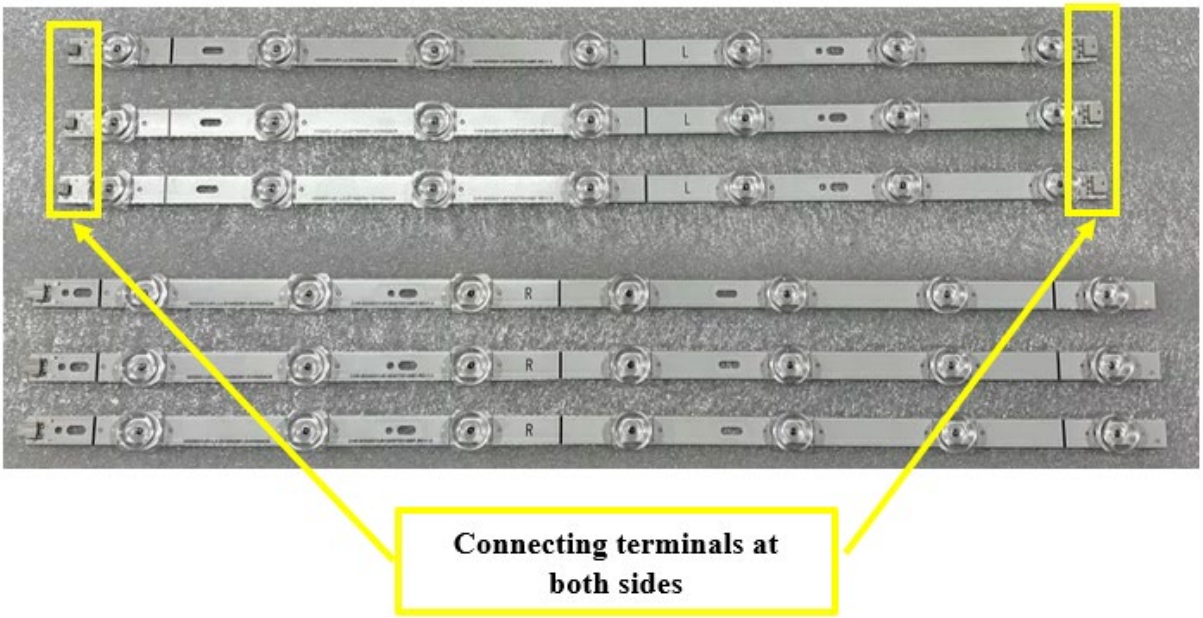
47. Defendants have directly infringed and continue to directly infringe the ’415 Patent, either literally or under the doctrine of equivalents, without authority and in violation of 35 U.S.C. § 271, by making, using, offering to sell, selling, and/or importing into the United States products that satisfy 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, Hisense LCD LED, LED, ULED, QLED, MINI-LED ULED, and MINI-LED QLED televisions. As an example, the 50R6E3 model Hisense television model infringes at least claim 1 of the ’415 Patent.

48. For example, Defendants have and continue 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.

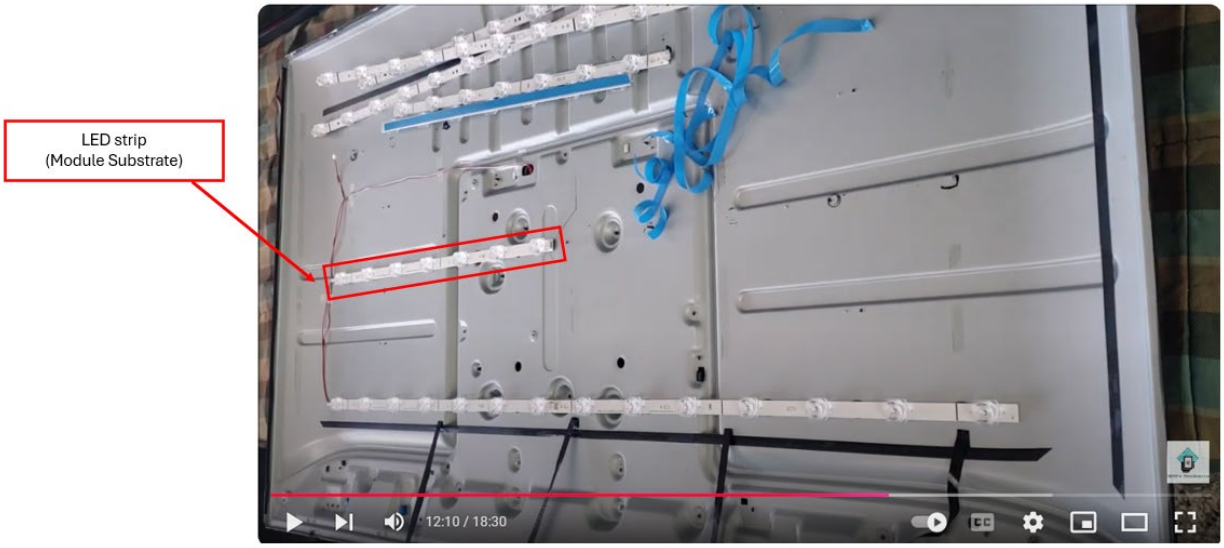
49. The Accused Products comprise at least one module substrate comprising connecting terminals at both side ends thereof. For example, the Accused Products include multiple LED strip (i.e., module substrate, shown below) which further comprise connecting terminals at both sides ends (as shown below).



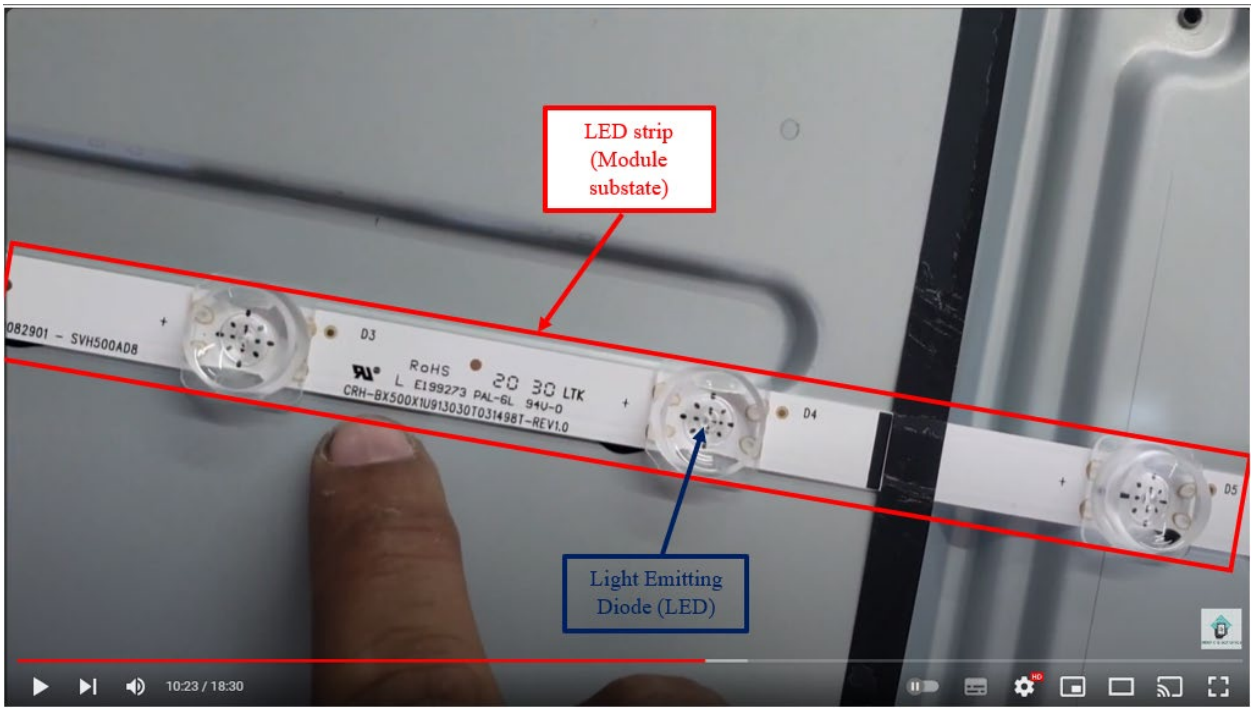
https://youtu.be/sJ5cZtFxUi8?si=WldJ1OVrasFyjD7y&t=531, Timestamp 12:10, last accessed date: December 13, 2024 Exhibit A.



https://www.ebay.com/, Page 1, last accessed date: June 6, 2024. The Accused Products comprise a light emitting diode on the module substrate. For example, the Accused Hisense 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.



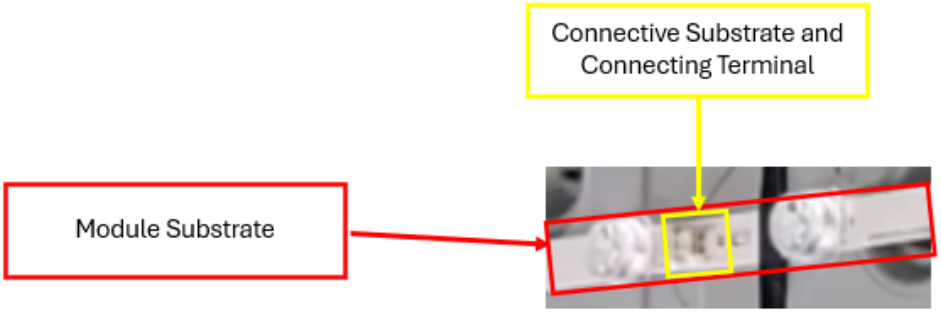
https://youtu.be/sJ5cZtFxUi8?si=WldJ1OVrasFyjD7y&t=531, Timestamp 12:10,lLast accessed date: December 13, 2024 =



https://youtu.be/sJ5cZtFxUi8?si=j0GRViiDIZIBL5JY&t=618, Timestamp 10:18, last accessed date: June 6, 2024

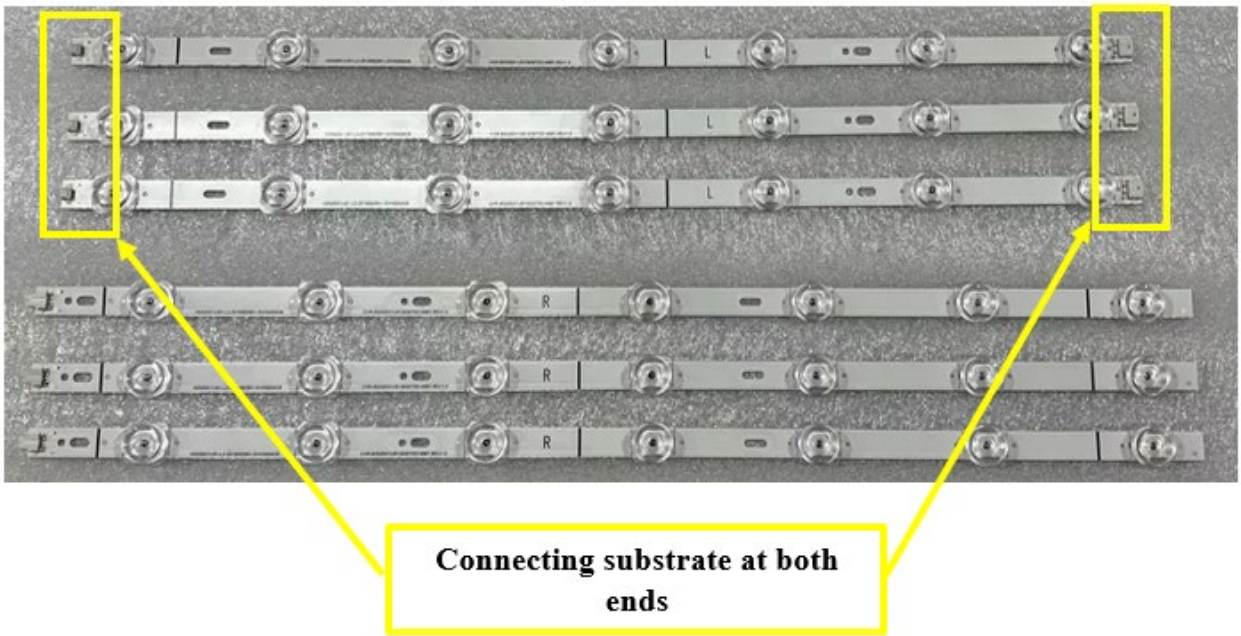
50. The Accused Products comprise a plurality of connecting substrates connected to the connecting terminals of the module substrate, wherein the connecting substrate comprises a

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 Hisense 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 Hisense TVs include multiple connecting substrates (LED strips) which are connected in series, each include a positive and negative line. Each row of LED strips comprises a closed loop circuit as shown below.

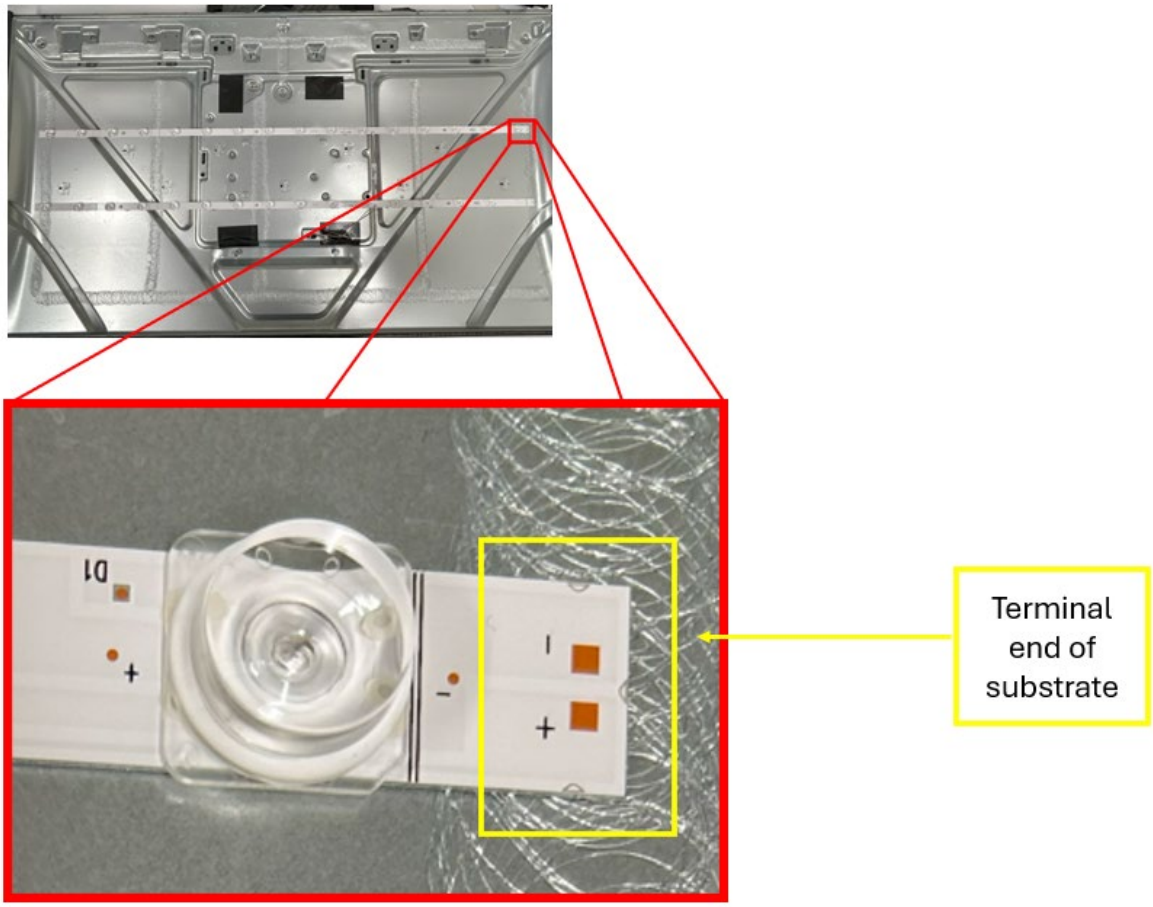


https://youtu.be/sJ5cZtFxUi8?si=5sNS_TdMycSAlkoJ&t=758, Timestamp 12:38, last accessed date: June 6, 2024

https://youtu.be/sJ5cZtFxUi8?si=5sNS_TdMycSAlkoJ&t=758, Timestamp 12:38, last accessed date: June 6, 2024



https://www.ebay.com/, Page 1, last accessed date: June 6, 2024



[5]

51. Defendants have indirectly infringed and continue 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 Defendants' customers and end-users, in this District and elsewhere in the United States. For example, Defendants' 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. Defendants induce this direct infringement through their affirmative acts of manufacturing, selling, distributing, and/or otherwise making available the Accused Products,

[5] On information and belief, the pictured Hisense model 50R6E5 is substantially similar to the Hisense model 50R6E3 for the purposes of the claimed limitations.

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 Defendants' inducement, Defendants' customers and end-users use the Accused Products in a way Defendants intend and they directly infringe the '415 Patent. Defendants perform 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.

52. Defendants have indirectly infringed and continue 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. Defendants' 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 Defendants to be especially made or adapted for use in the infringement of the '415 Patent. Defendants perform these affirmative acts with knowledge of the '415 Patent and with intent, or willful blindness, that they cause the direct infringement of the '415 Patent.

53. Defendants have willfully infringed, and continue to willfully infringe, the '415 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. For example, upon

information and belief, Defendants have known of LGI's patents, including the '415 Patent, at least since they were widely publicized during and after LG Innotek's sale to Suzhou Lekin Semiconductor.[6]

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

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

COUNT II
(Infringement of the '380 Patent)

56. Paragraphs 1 through 43 are incorporated by reference as if fully set forth herein.

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

58. Defendants infringe, contribute to the infringement of, and/or induce 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.

59. Defendants have directly infringed and continue 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

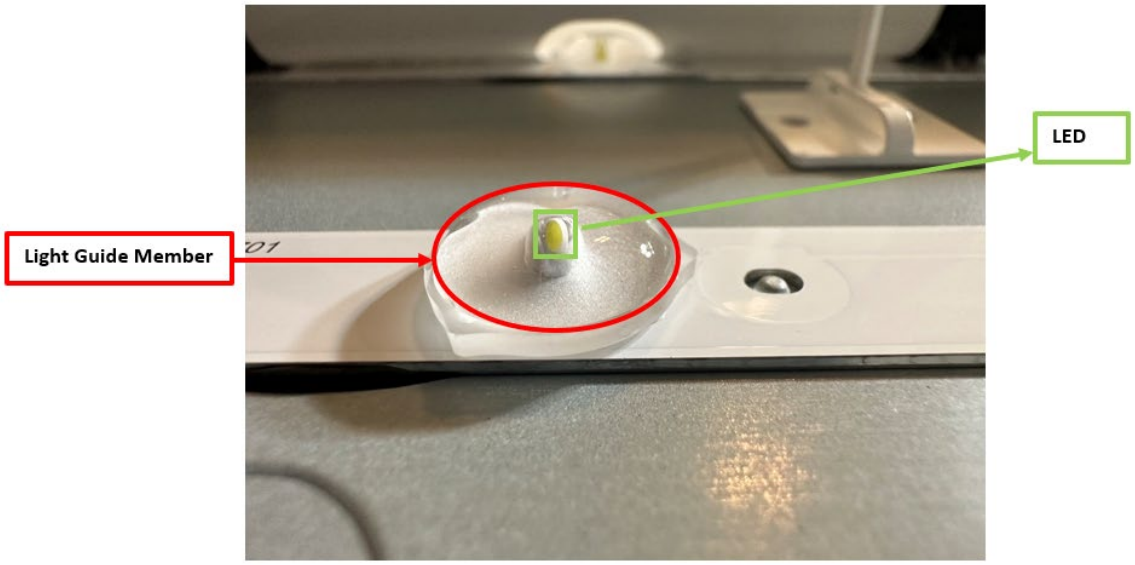
[6] *See e.g.* https://thelec.net/news/articleView.html?idxno=2871

covered by the '380 Patent, including, for example, Hisense LCD LED, LED, ULED, QLED, MINI-LED ULED, and MINI-LED QLED televisions. As an example, the 50U6H model Hisense television infringes at least claim 1 of the '380 Patent.

60. For example, Defendants have and continue 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.

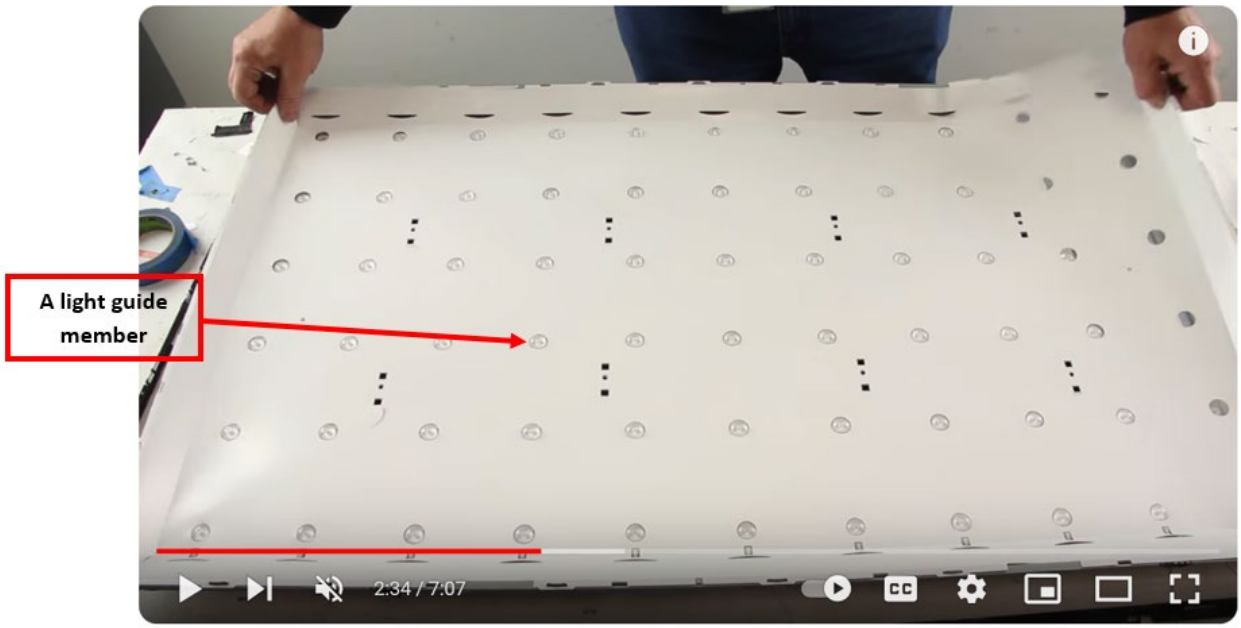
61. The Accused Products comprise a light guide member outputting surface light upward. For example. Hisense , such as Hisense 50' LED TV (included but not limited to), include multiple LEDs for backlighting, that allow a display screen to create an image. Each LED in the backlight module includes a 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: Teardown Images for Hisense Model:50U6H)



Source: Teardown Images for Hisense (Model:50U6H)

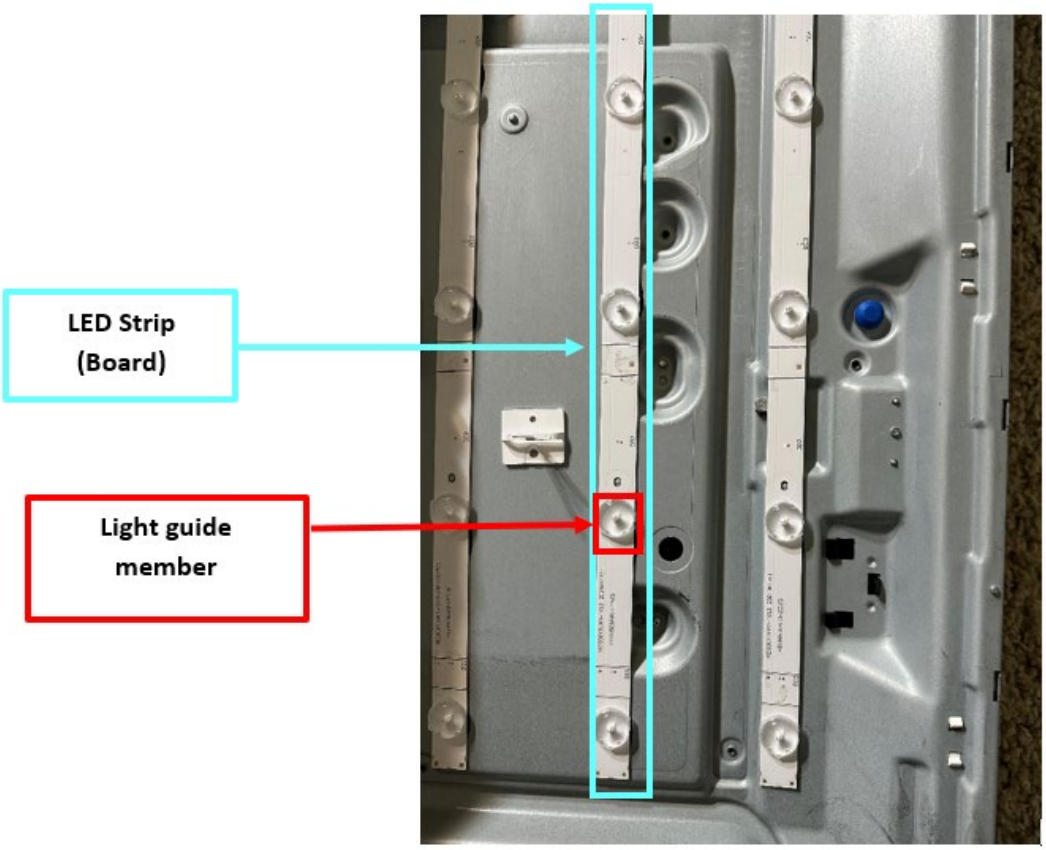
Source: https://www.youtube.com/watch?v=WpbyzsTNGB8 Timestamp:0:22, last accessed date: January 18, 2024.



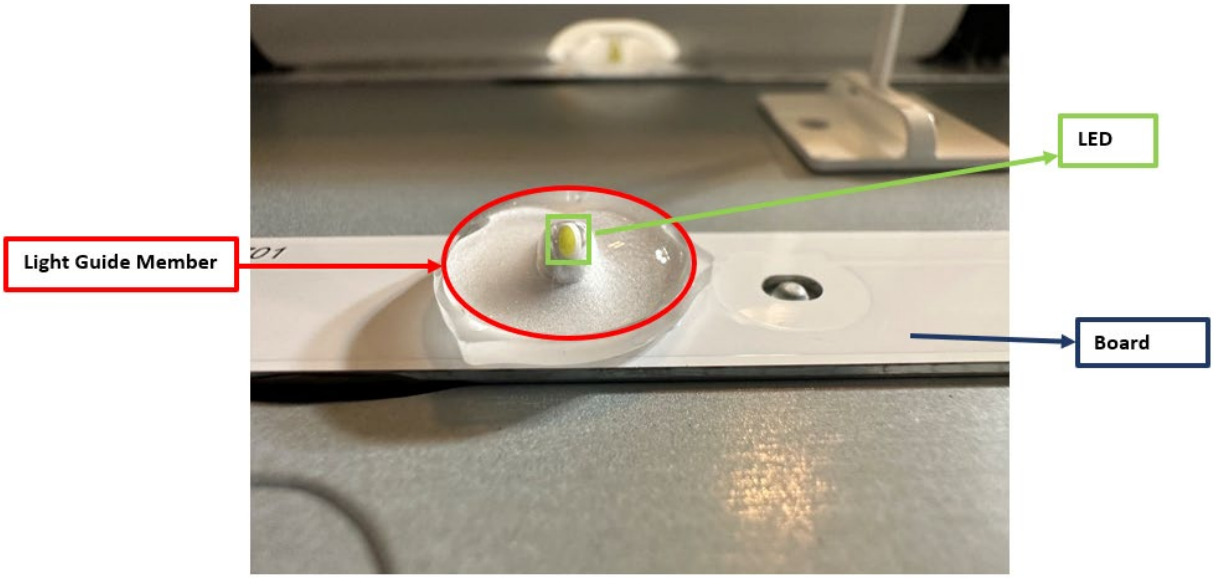
Source: https://www.youtube.com/watch?v=WpbyzsTNGB8, Timestamp:2:34, last accessed date: January 18, 2024

62. The Accused Products comprise a board disposed to a first side of the light guide member. For example, the Hisense product, such as Hisense 50' LED TV (included but not limited

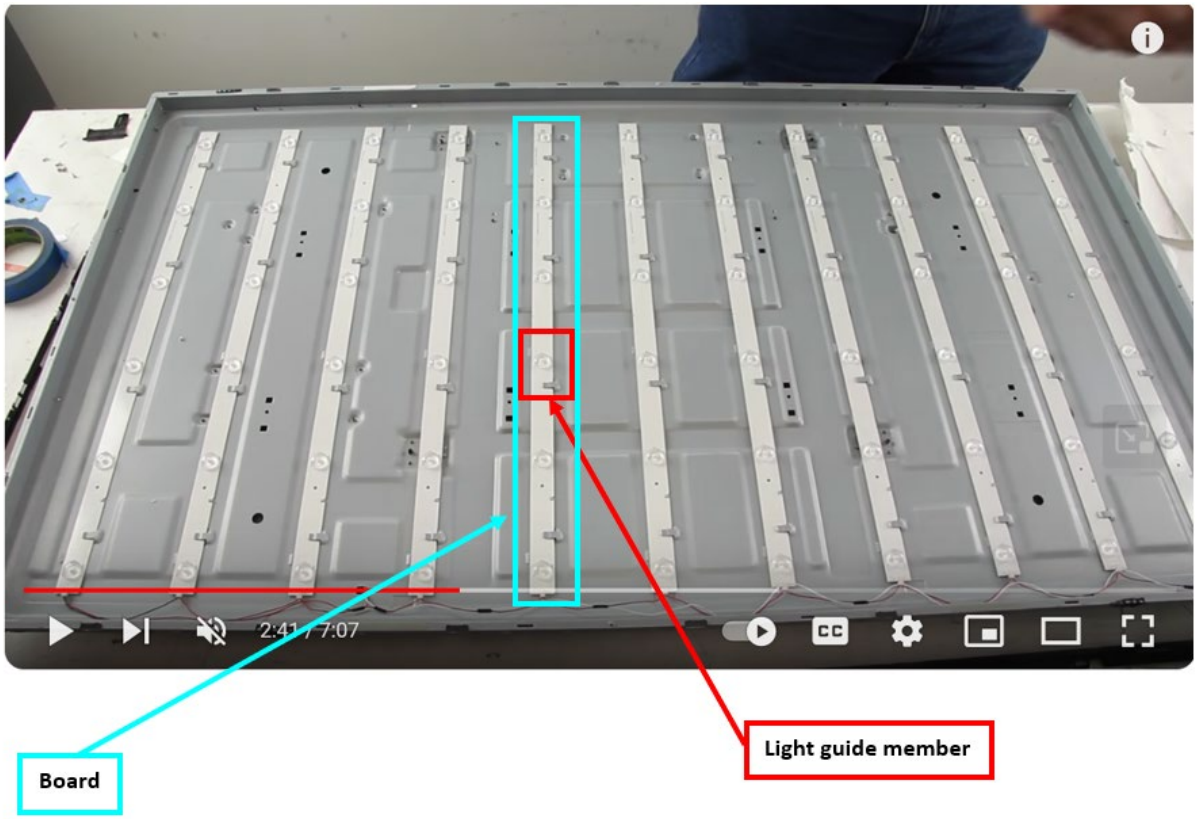
to), include a LED strip (i.e., a board). The LED strip consists of multiple LEDs, where each LED has a transparent glass cover (i.e., the light guide member) covering the LED and connected or disposed to the LED strip (i.e., disposed to a first side), as shown below.



Teardown Images for Hisense (Model:50U6H)

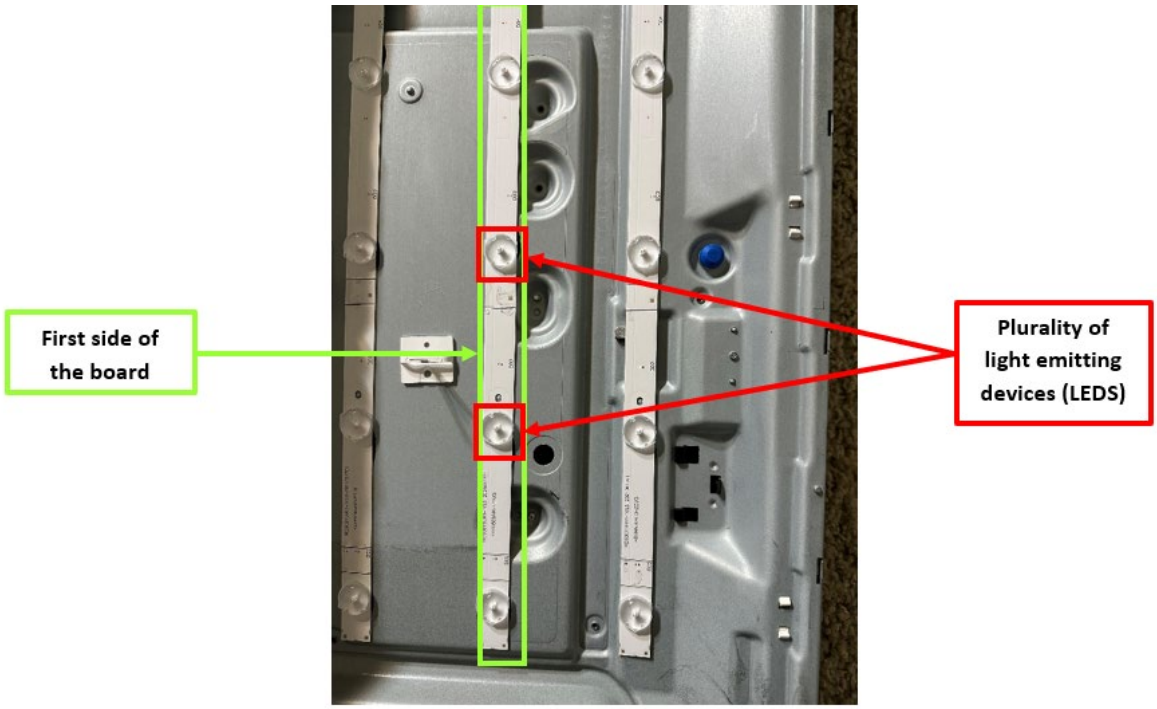


Teardown Images for Hisense (Model:50U6H)



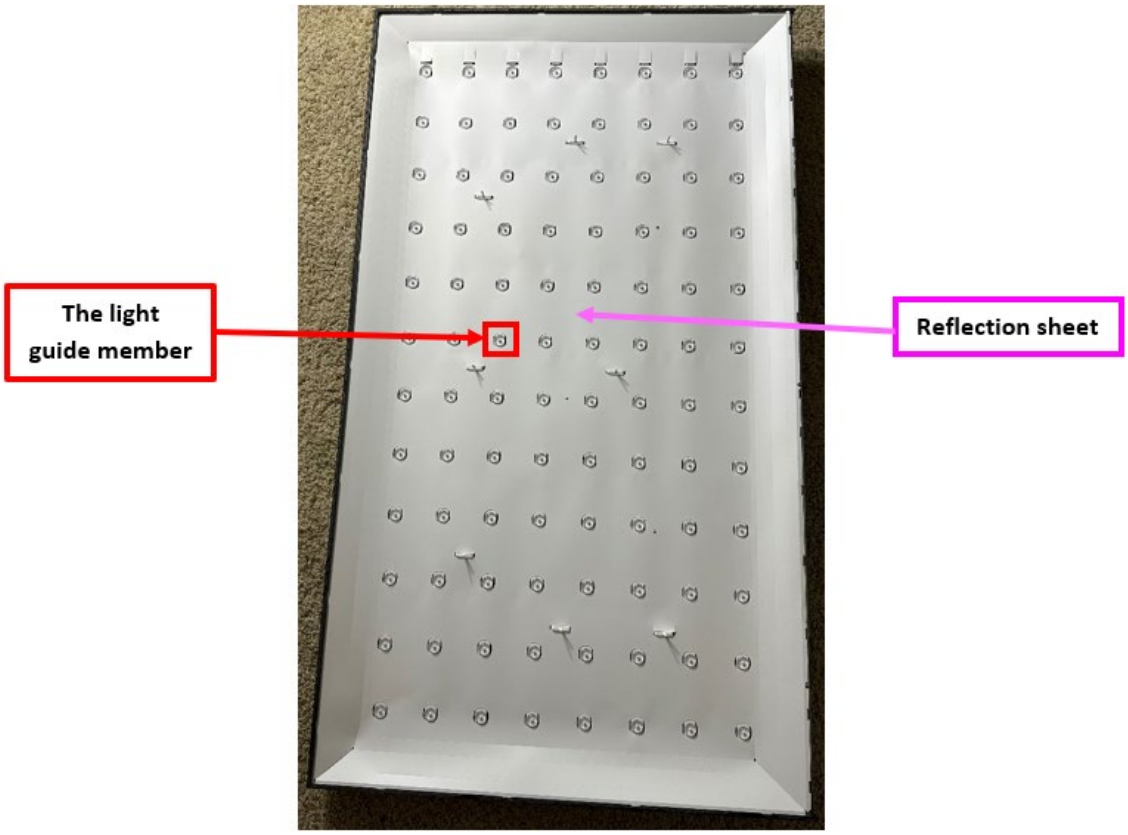
https://www.youtube.com/watch?v=WpbyzsTNGB8, Timestamp:2:41, last accessed date: January 18, 2024

63. The Accused Products comprise a plurality of light-emitting devices mounted on a first side of the board. For example, the Hisense products, such as Hisense 50' LED TV (included but not limited to), 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.

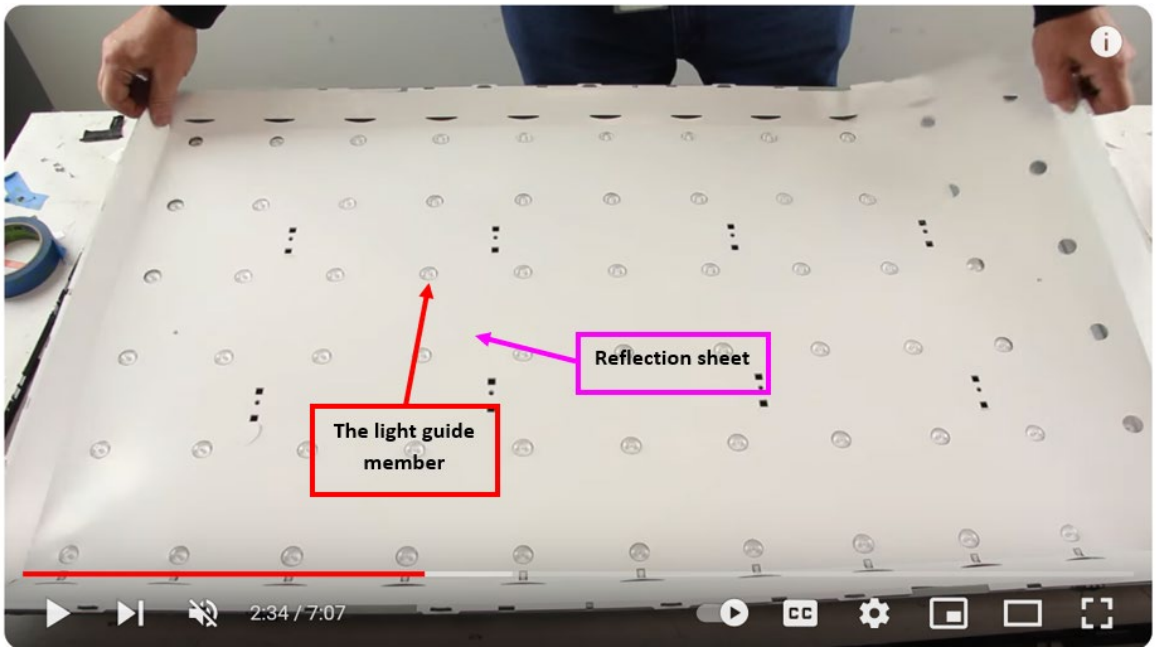


Teardown Images for Hisense (Model:50U6H)

64. The Accused Products comprise a reflection sheet under the light guide member, for example, Hisense products such as Hisense 50' LED TV (included but not limited to) 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.



Teardown Images for Hisense (Model:50U6H)

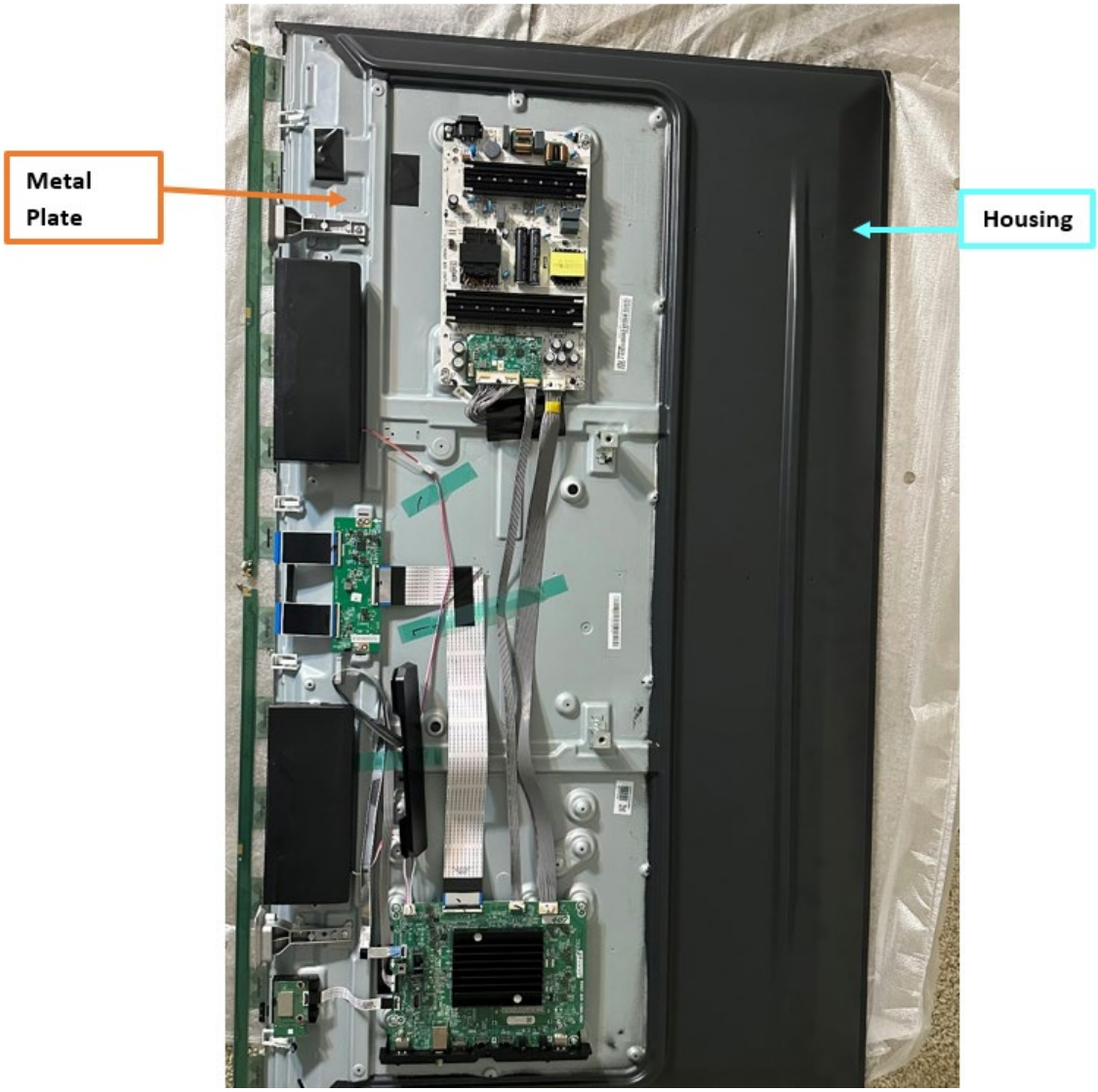


https://www.youtube.com/watch?v=WpbyzsTNGB8, Timestamp:2:34, last accessed date: January 18, 2024

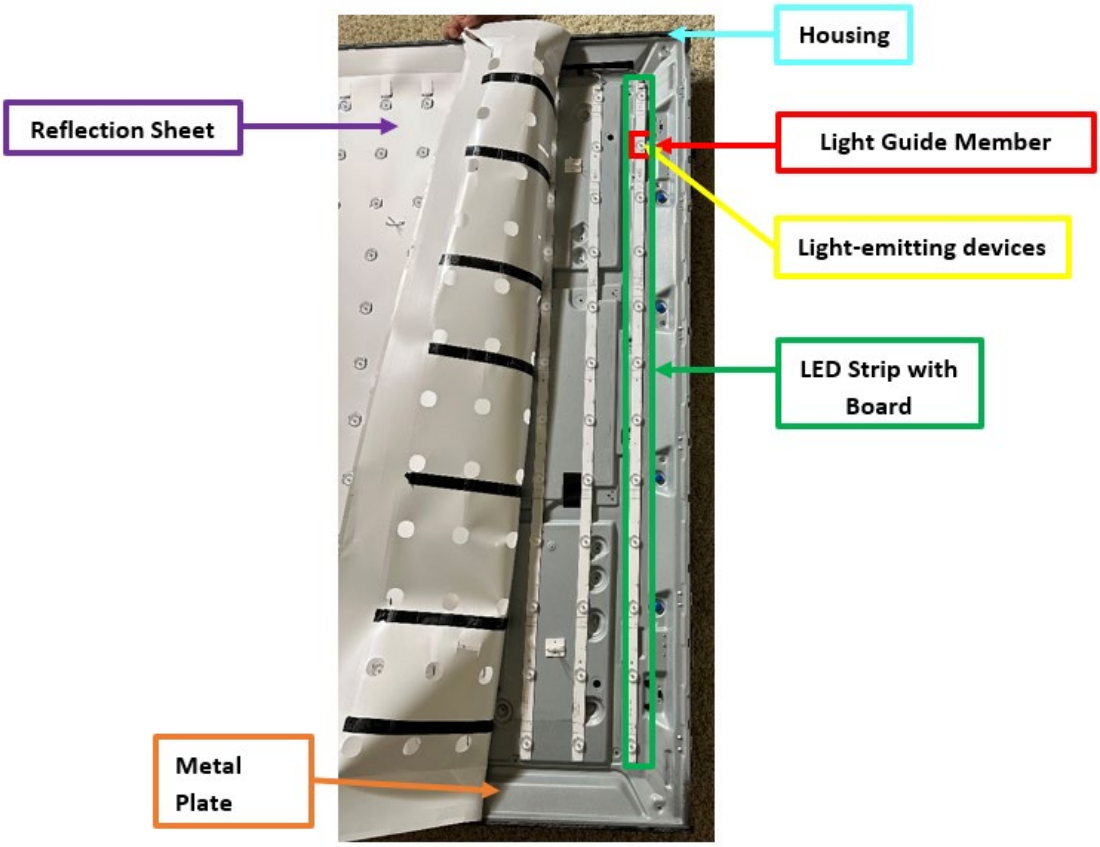
65. The Accused Products comprise a housing receiving the light guide member, the light-emitting devices, the board, and the reflection sheet, for example, the Hisense products such as Hisense 50' LED TV (included but not limited to) include a plurality of light-emitted devices mounted on the front side (i.e., first side) of the LED strip (i.e., board), as shown below.

66. The Accused Products comprise a housing receiving the light guide member, the light-emitting devices, the board, and the reflection sheet. For example, the Hisense 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 light-guide member, the light-emitting devices, the LED strip, and the reflection sheet, as shown below.

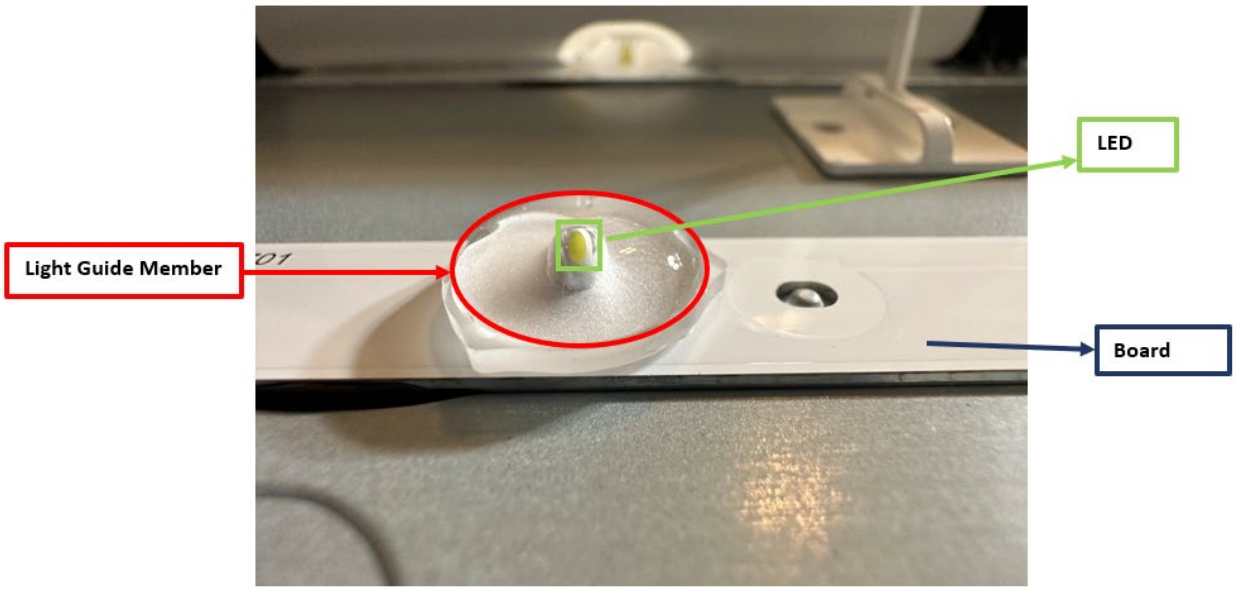
https://www.youtube.com/watch?v=WpbyzsTNGB8, Timestamp: 0:37, last accessed date: January 18, 2024



Teardown Images for Hisense (Model:50U6H)

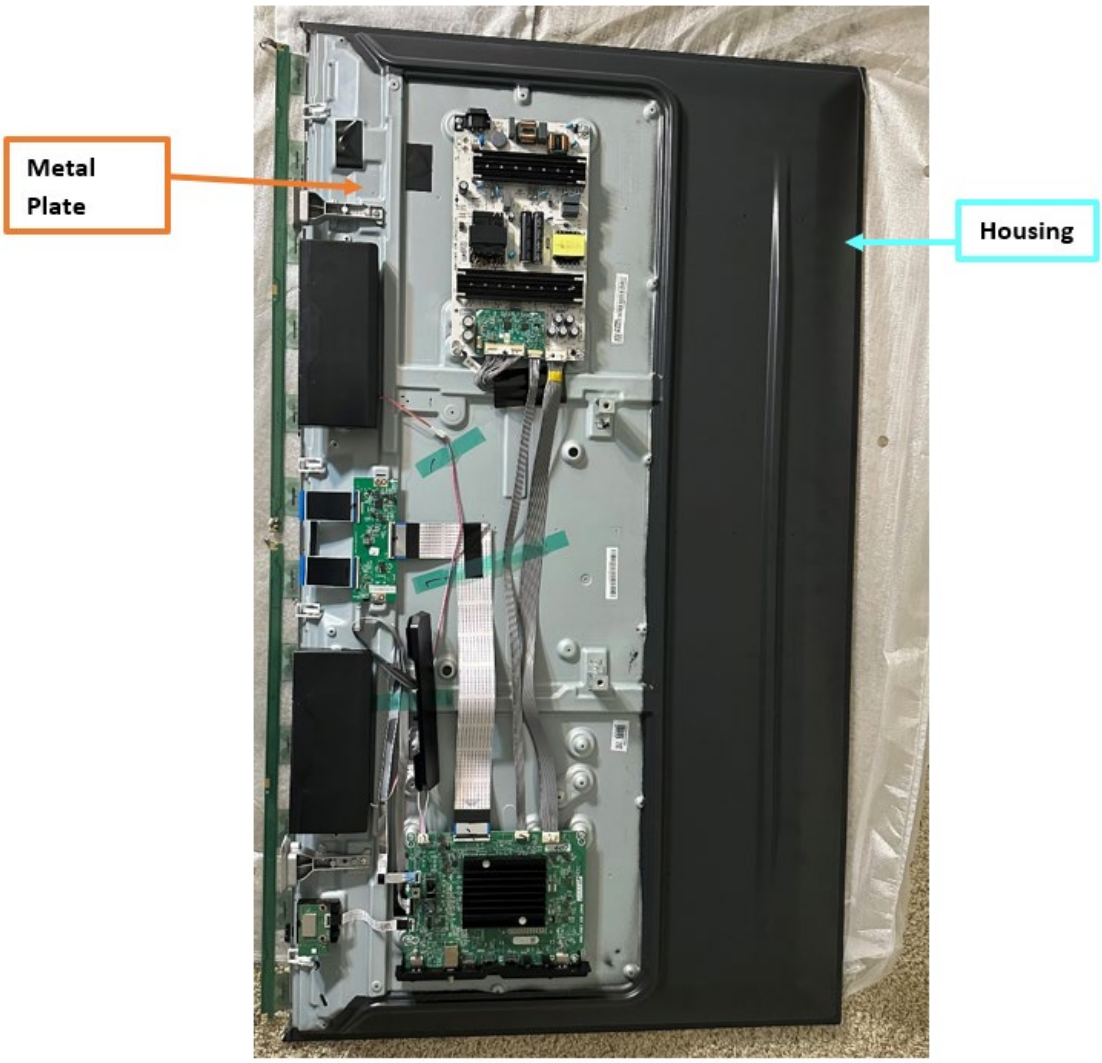


Teardown Images for Hisense (Model:50U6H)

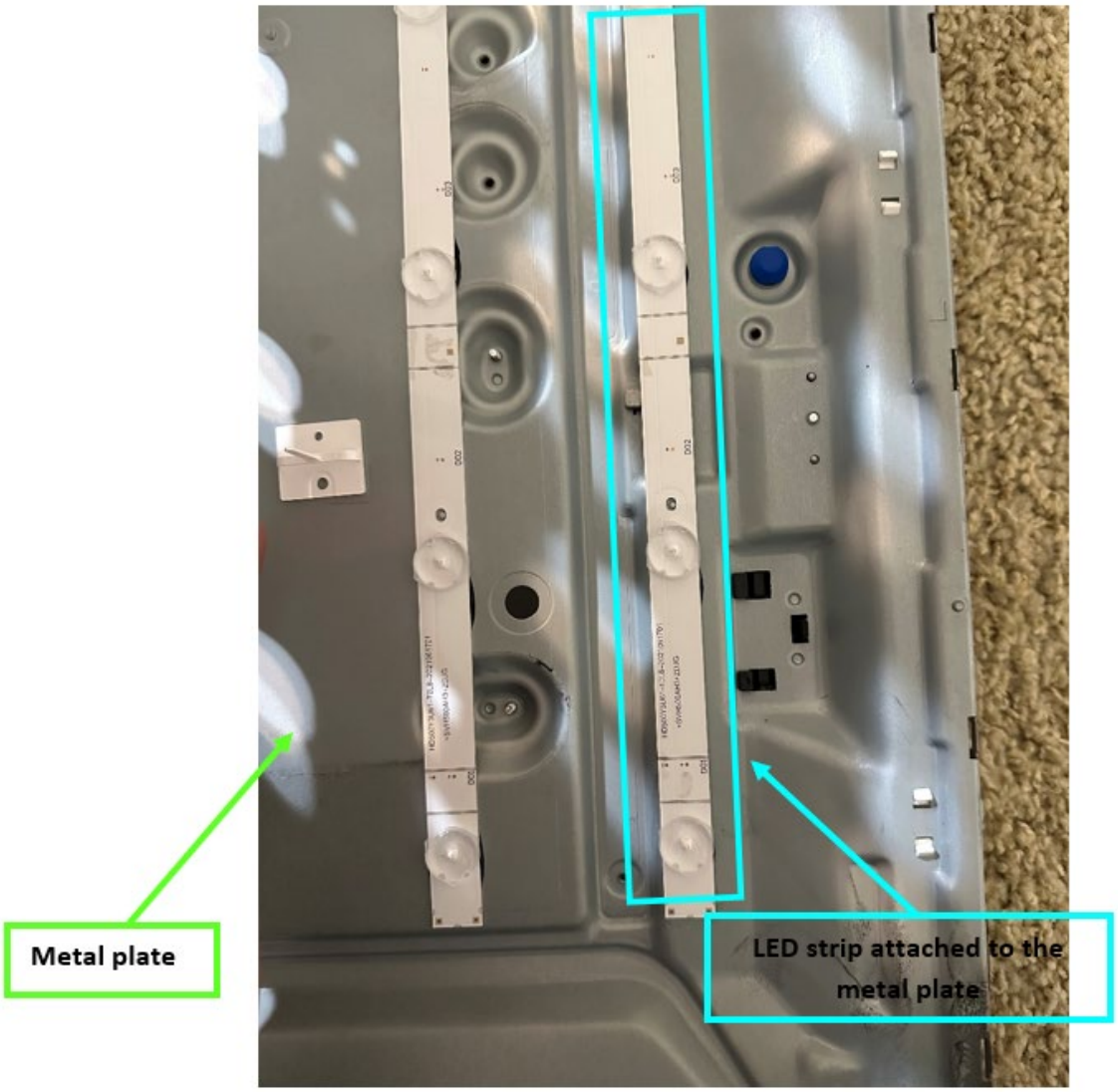


Teardown Images for Hisense (Model:50U6H)

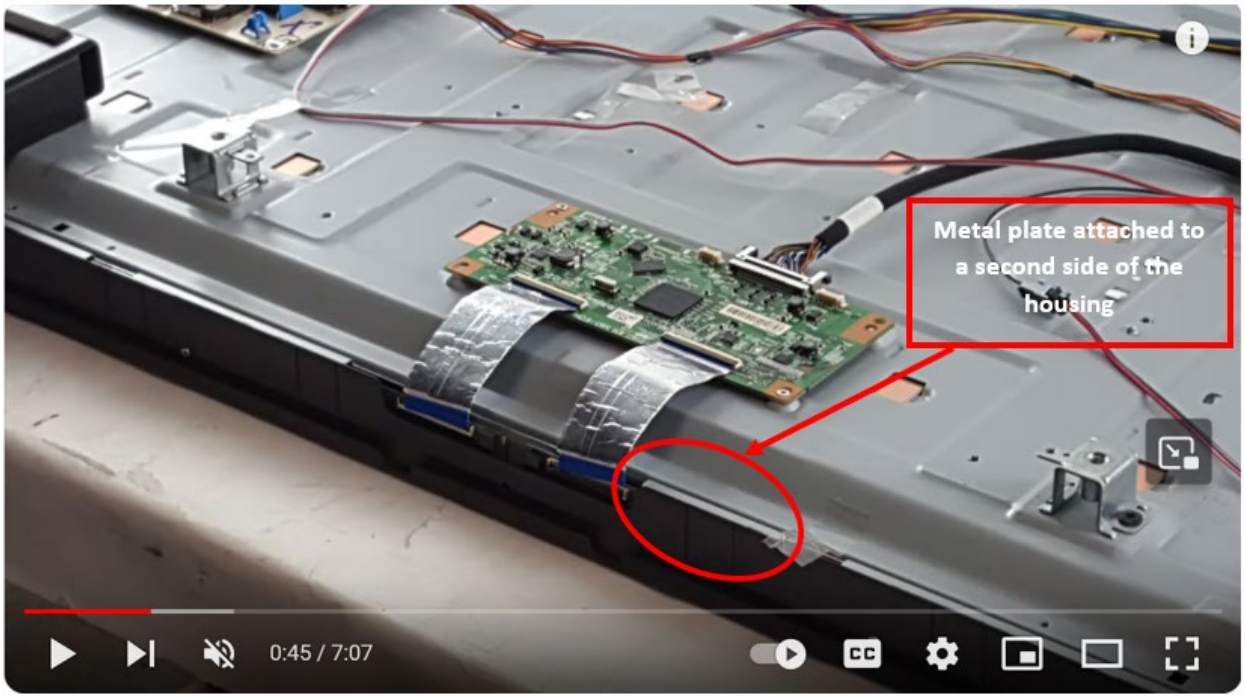
67. The Accused Products comprise a metal plate attached to a second side of the board and a first side of the housing. For example, For example, the Hisense products include the exterior housing, which is the black covering and frame around the TV metal plate. Below the housing there is a metal plate (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.



Teardown Images for Hisense (Model:50U6H)

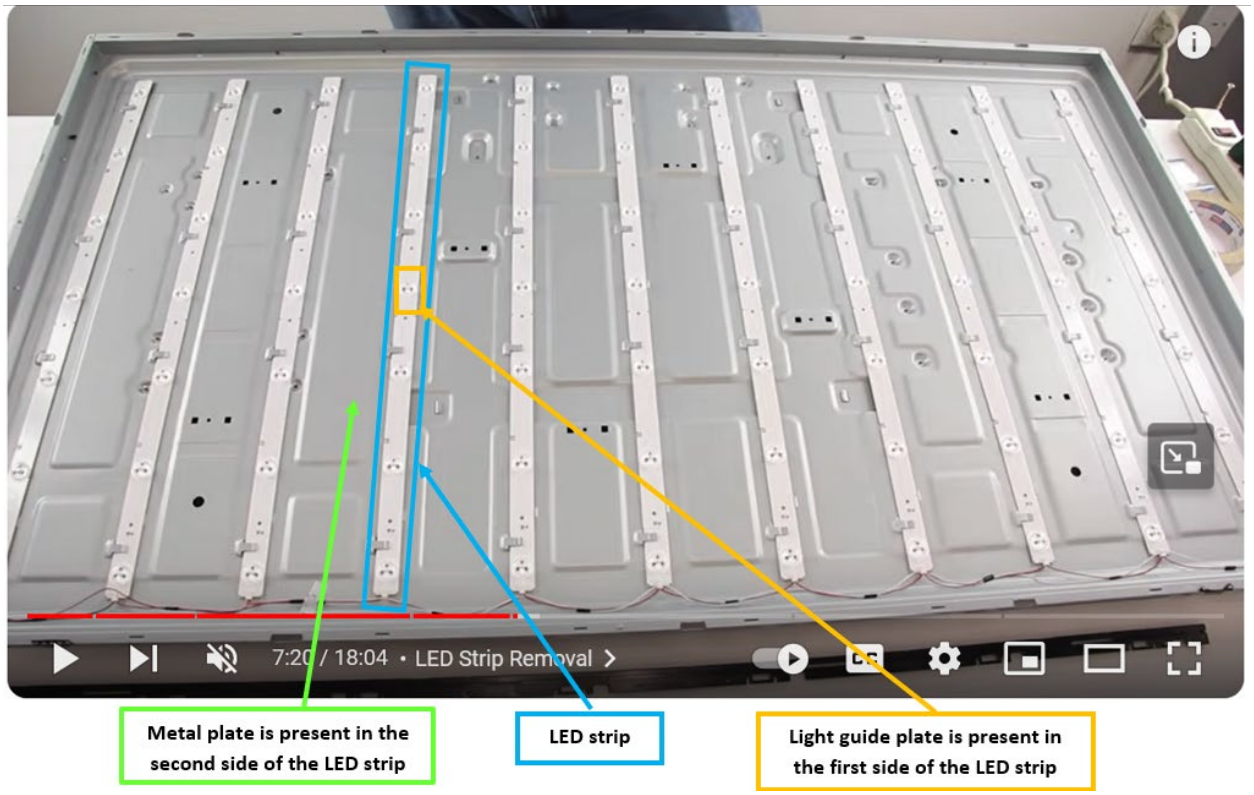


Teardown Images for Hisense (Model:50U6H)



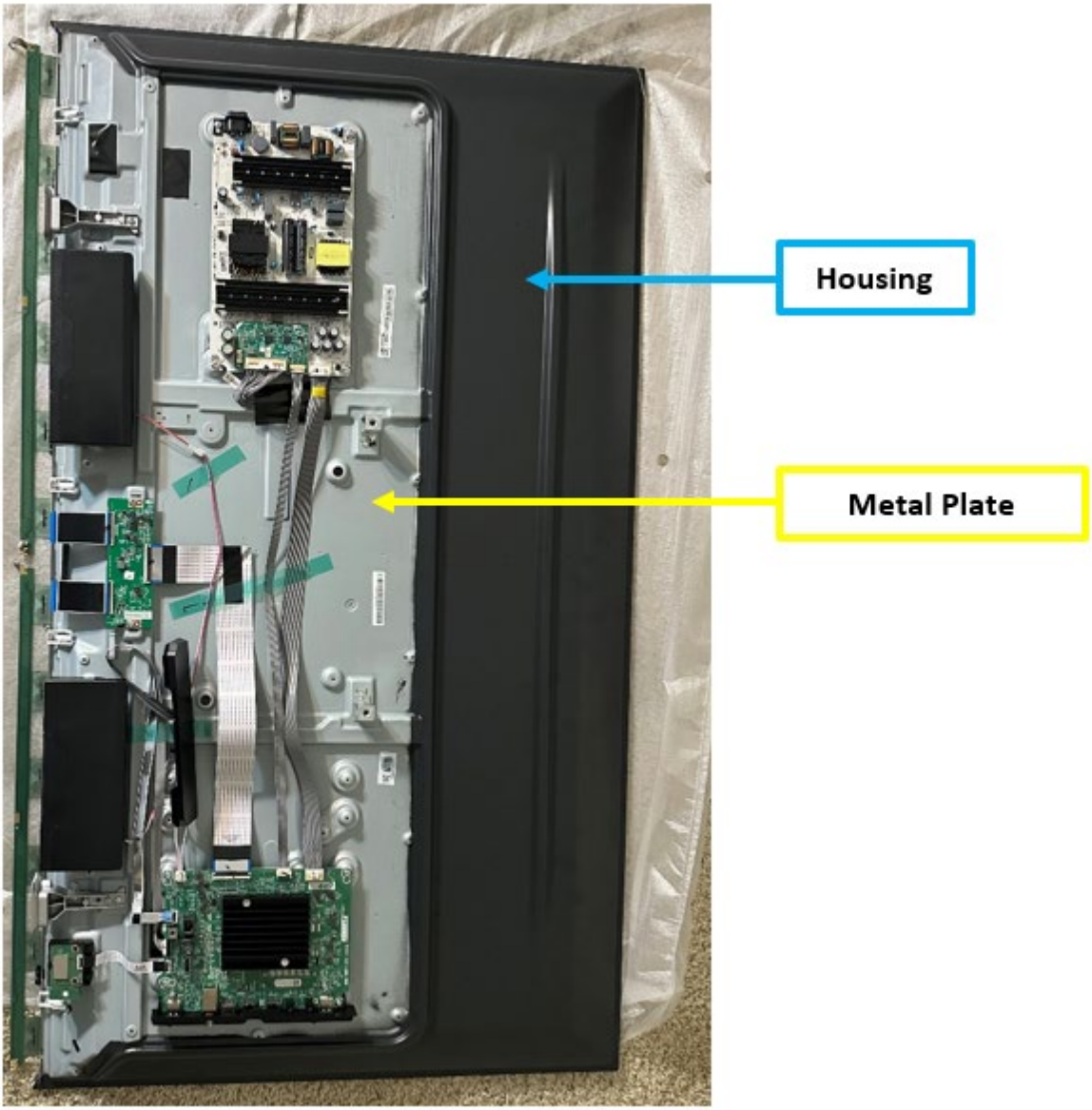
Source: https://www.youtube.com/watch?v=WpbyzsTNGB8, Timestamp: 0:45, last accessed date: January 18, 2024

68. 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 Hisense 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.

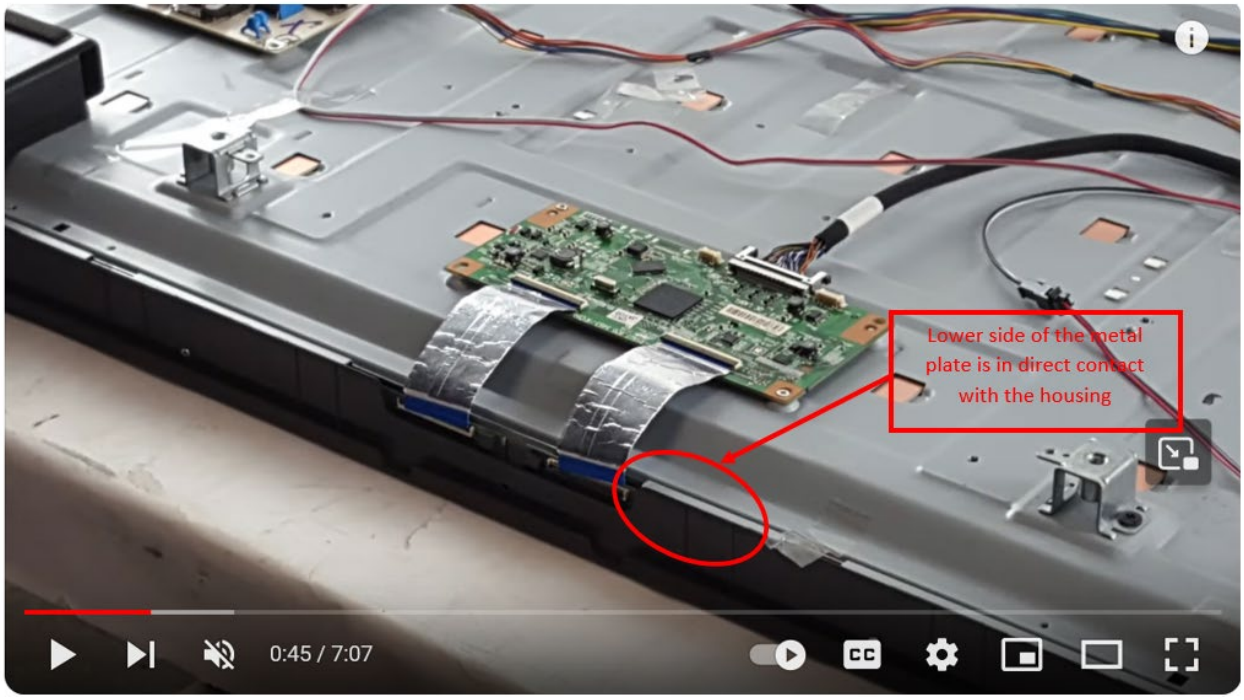


https://www.youtube.com/watch?v=mwAnYR08maQ, Timestamp:7:20, last accessed date: January 18, 2024

69. 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 Hisense 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.

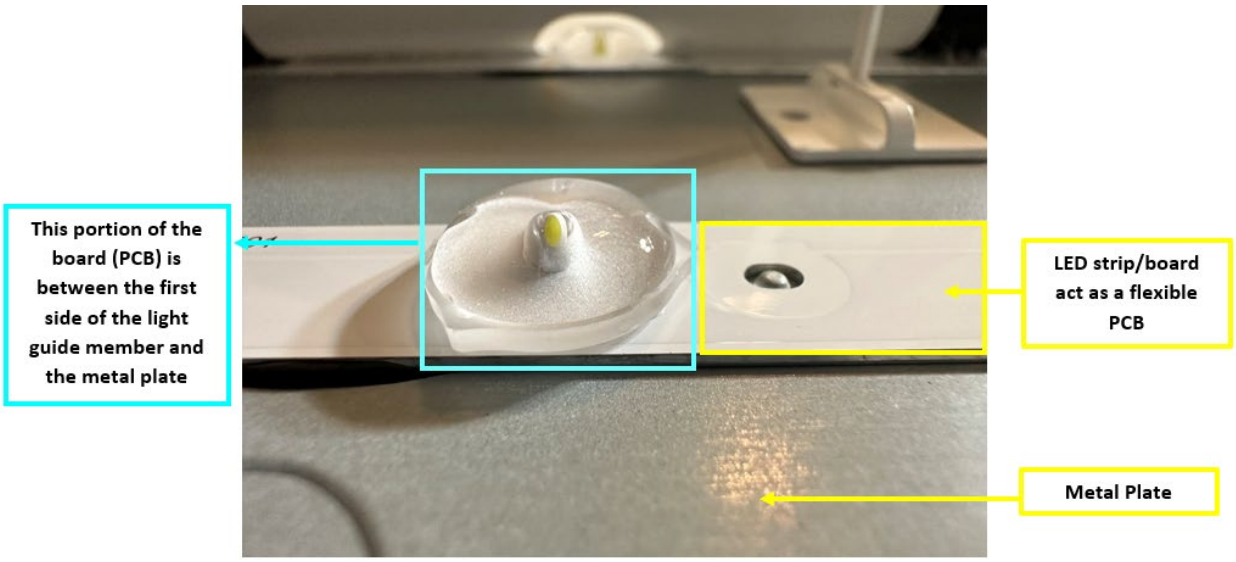


Teardown Images for Hisense (Model:50U6H)



Source: https://www.youtube.com/watch?v=WpbyzsTNGB8, Timestamp: 0:45, last accessed date: January 18, 2024

70. 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 Hisense products include a 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.

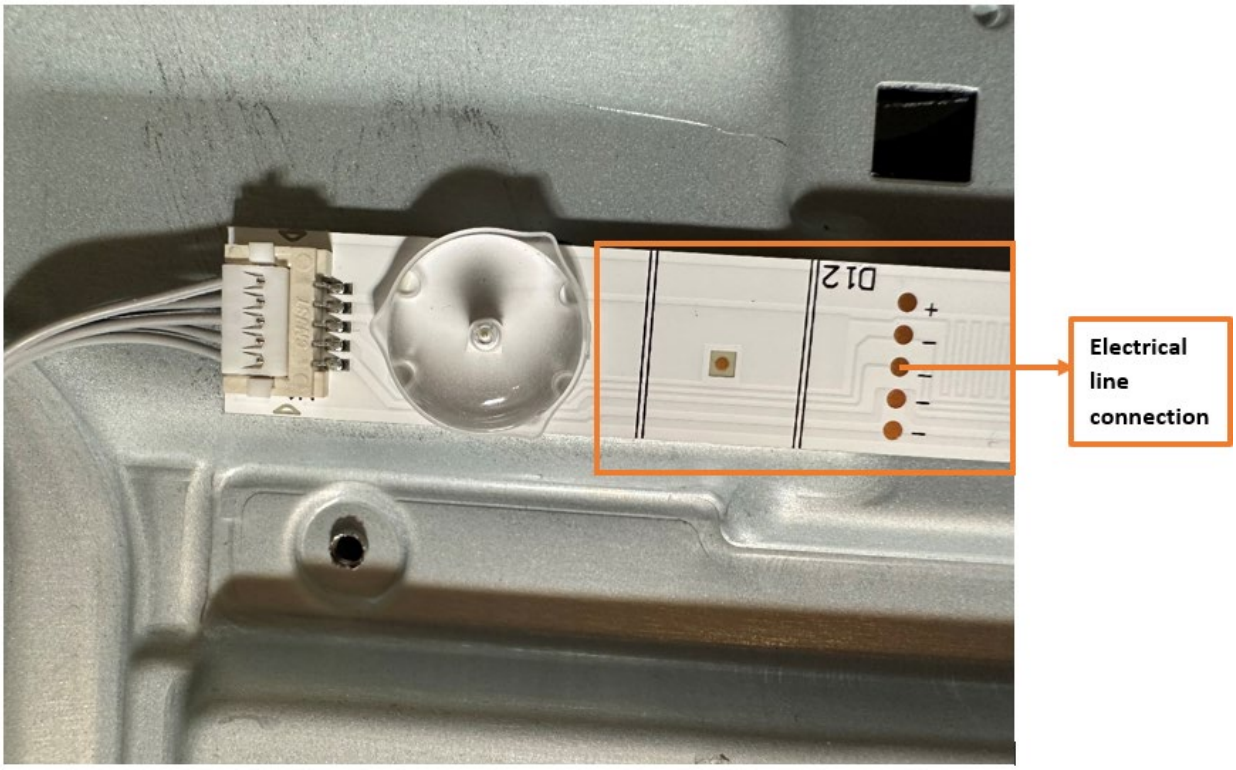


Source: Teardown Images for Hisense (Model:50U6H)

Source: https://www.youtube.com/watch?v=WpbyzsTNGB8, Timestamp:2:34, last accessed date: January 18, 2024, Exhibit A, Fig. 22.

71. 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 Hisense

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 LEDs present on the LED strip as shown below.



Source: Teardown Images for Hisense (Model:50U6H)

72. Defendants have indirectly infringed and continue 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 Defendants' customers and end-users, in this District and elsewhere in the United States. For example, Defendants' 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 Products. Defendants induce this direct infringement through their 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 Defendants' inducement, Defendants' customers and end-users use the Accused Products in a way Defendants intend and they directly infringe the '380 Patent. Defendants perform 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.

73. Defendants have indirectly infringed and continue 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. Defendants' 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 Defendants to be especially made or adapted for use in the infringement of the '380 Patent. Defendants perform these affirmative acts with knowledge of the '380 Patent and with intent, or willful blindness, that they cause the direct infringement of the '380 Patent.

74. Defendants have willfully infringed, and continue to willfully infringe, the '380 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. For example, upon

information and belief, Defendants have known of LGI's patents, including the '380 Patent, at least since they were widely publicized during and after LG Innotek's sale to Suzhou Lekin Semiconductor.[7]

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

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

COUNT III
(Infringement of the '200 Patent)

77. Paragraphs 1 through 43 are incorporated by reference as if fully set forth herein.

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

79. Defendants infringe, contribute to the infringement of, and/or induce 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.

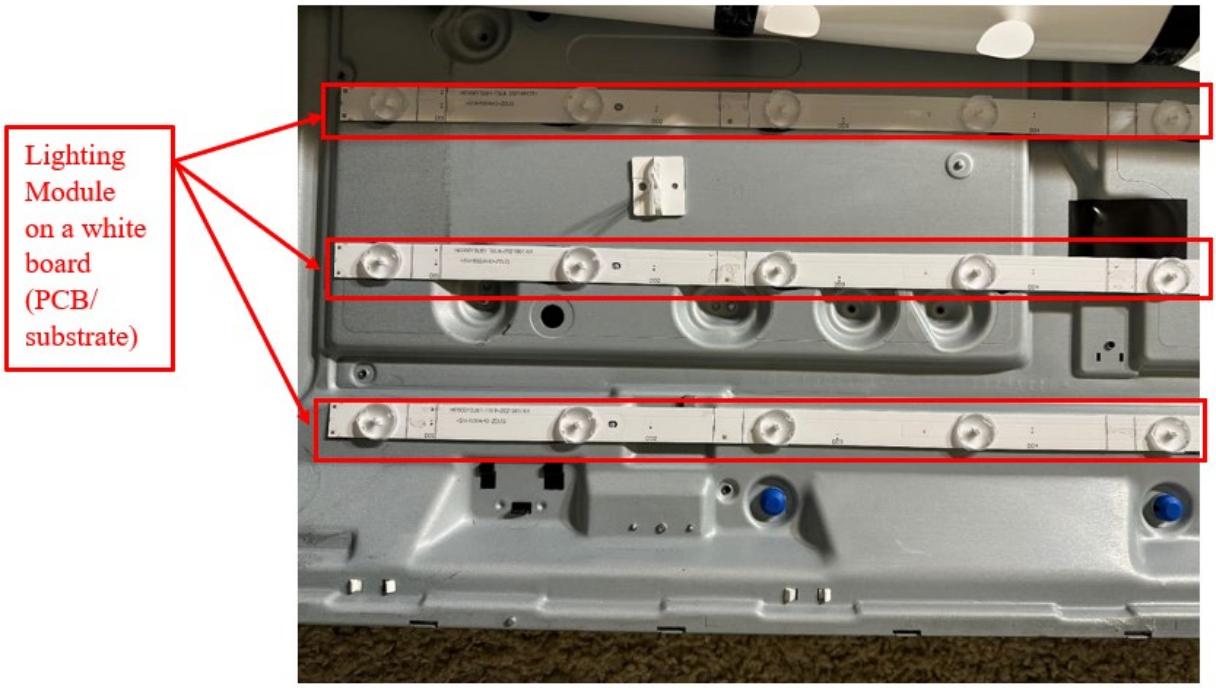
80. Defendants have directly infringed and continue to directly infringe the '200 Patent, either literally or under the doctrine of equivalents, without authority and in violation of 35 U.S.C. § 271, by making, using, offering to sell, selling, and/or importing into the United States products that satisfy 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

[7] *See e.g.* https://thelec.net/news/articleView.html?idxno=2871

covered by the ’200 Patent including, for example, Hisense LCD LED, LED, ULED, QLED, MINI-LED ULED, and MINI-LED QLED televisions. As an example, the 50U6H model infringes at least claim 1 of the ’200 Patent.

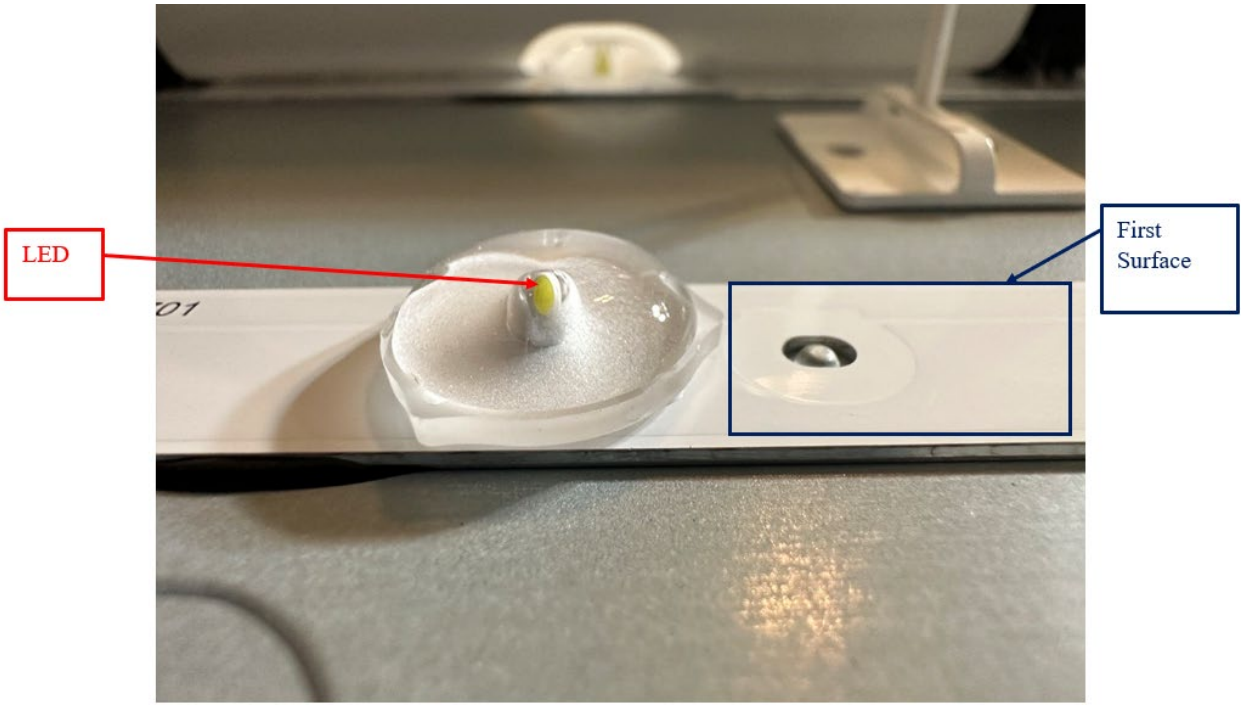
81. For example, Defendants have and continue to directly infringe at least claim 1 of the ’200 Patent by making, using, offering to sell, selling, and/or importing into the United States products that comprise a lighting module comprising: a substrate; a plurality of light emitting diodes on a first 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.

82. The Accused Products comprise a lighting module which comprises a substrate. For example, the Accused Products (including Hisense 50’ LED TV but not limited to) 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.

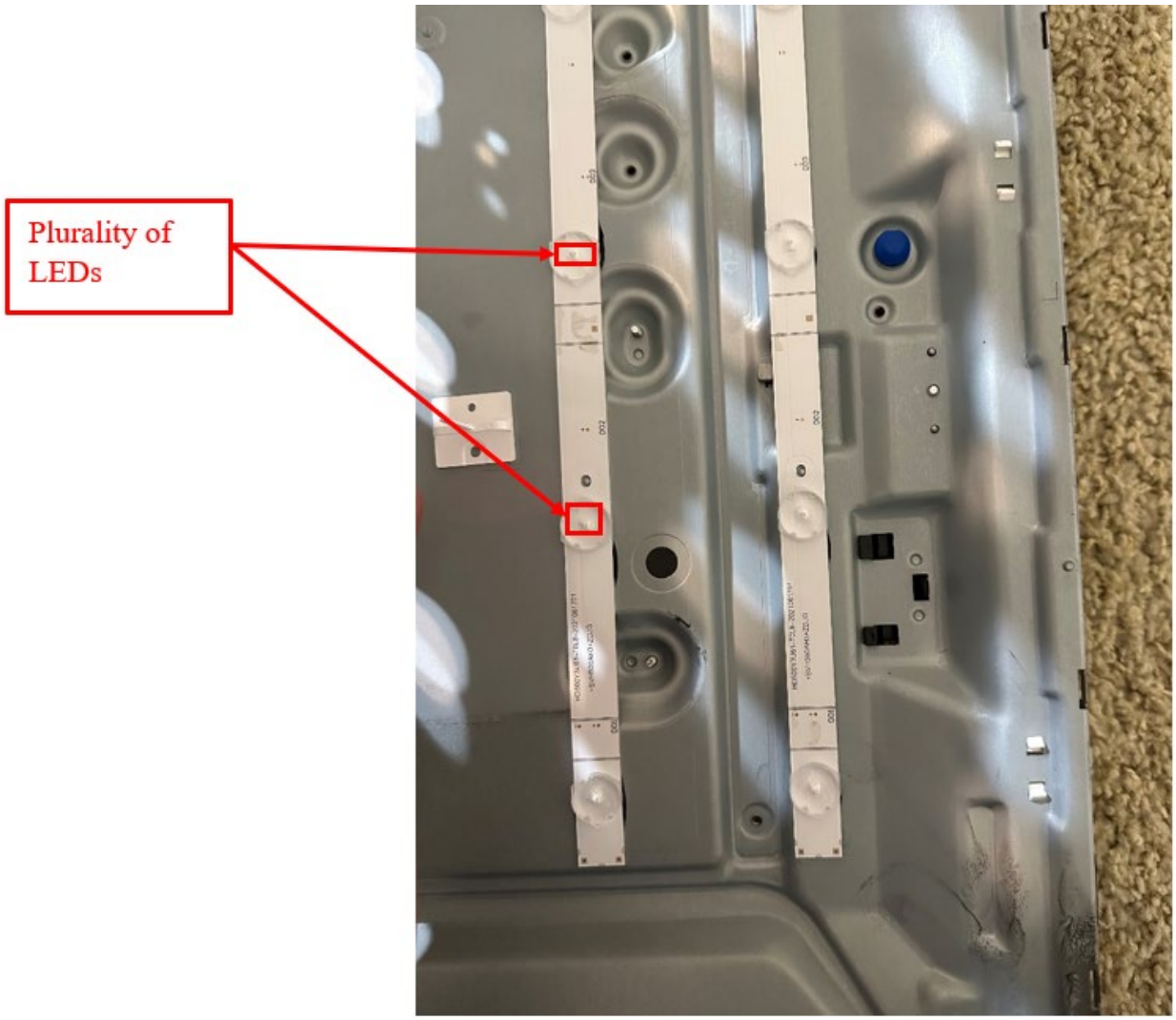


Teardown Images for Hisense (Model:50U6H)

83. The Accused Products comprise a plurality of light emitting diodes on a first surface of the substrate. For example, the Accused Products (including Hisense 50' LED TV but not limited to) 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.

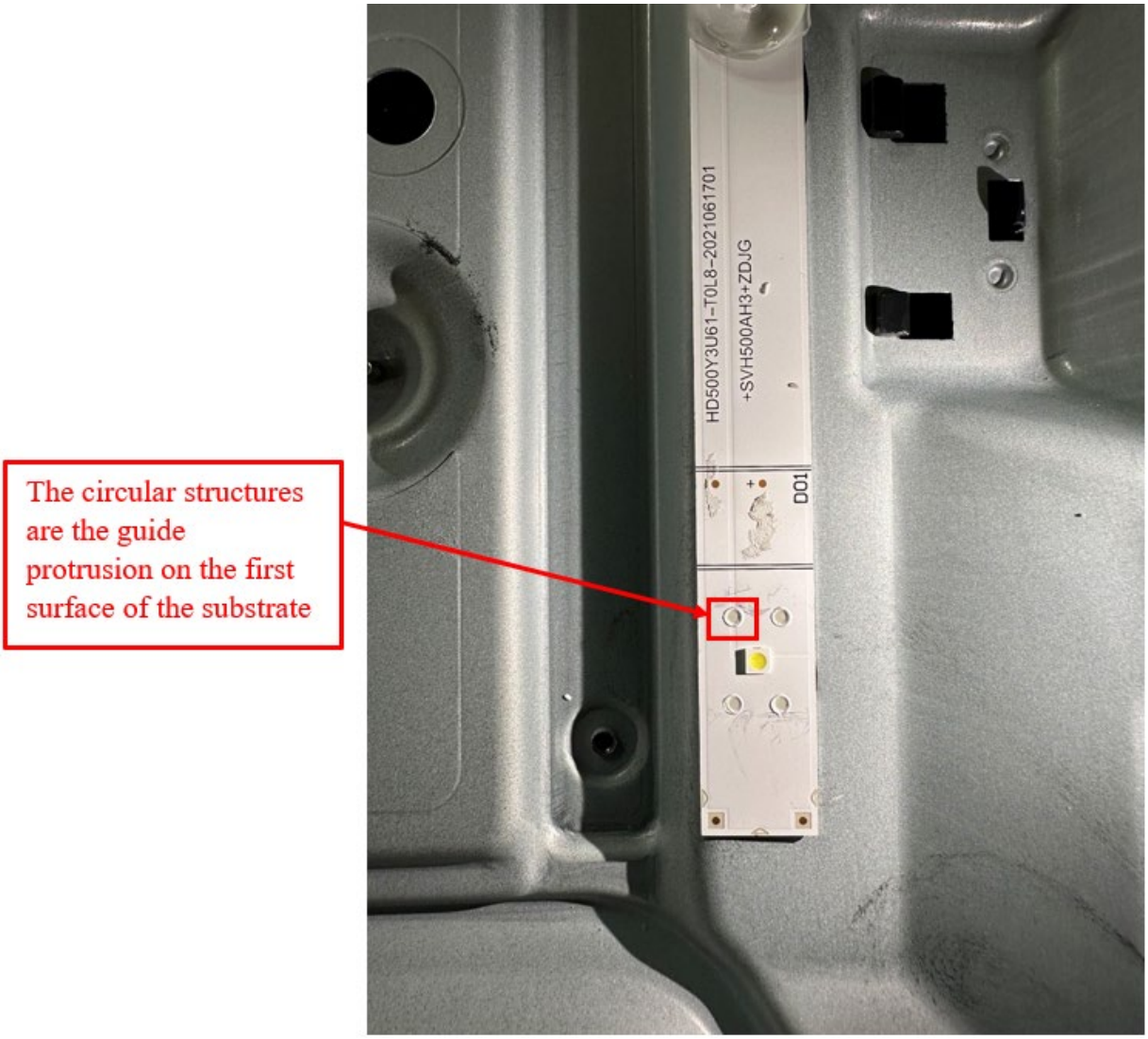


Teardown Images for Hisense (Model:50U6H)



Teardown Images for Hisense (Model:50U6H)

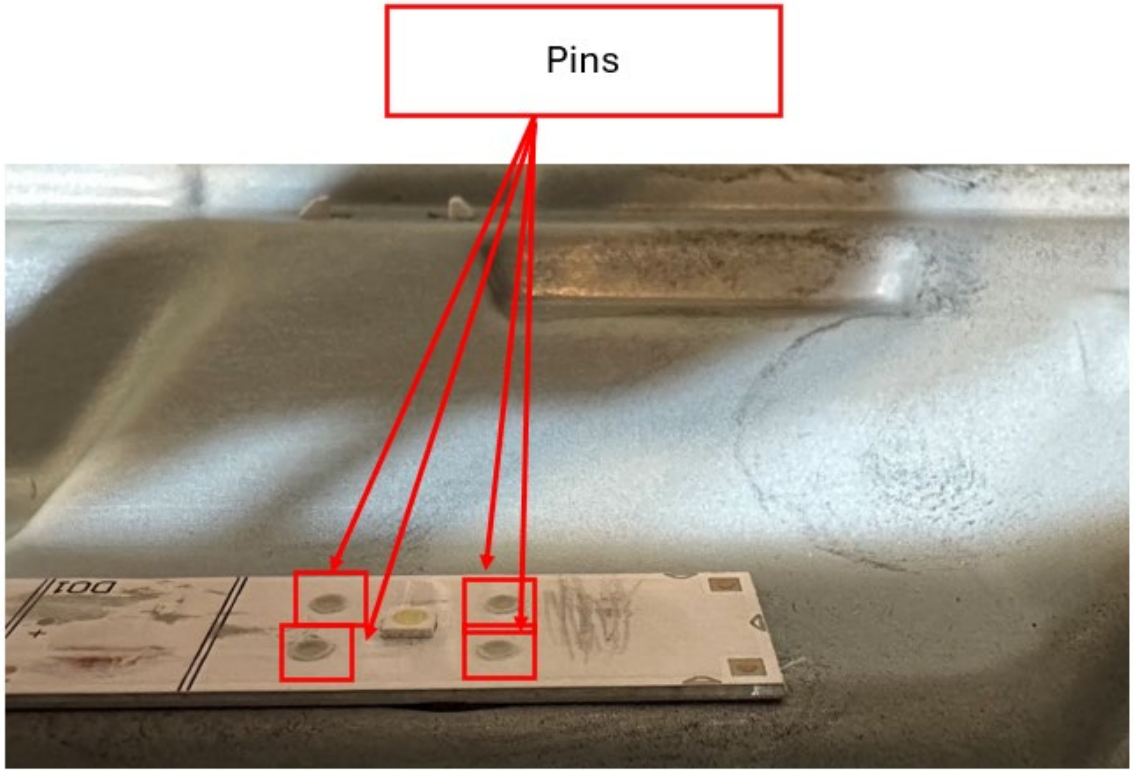
84. The Accused Products comprise at least one guide protrusion on the first surface of the substrate. For example, the Accused Products (including Hisense 50' LED TV but not limited to) consist of multiple guides (i.e., guide protrusion) on the front surface (i.e., first surface) of the LED strip, as shown below.



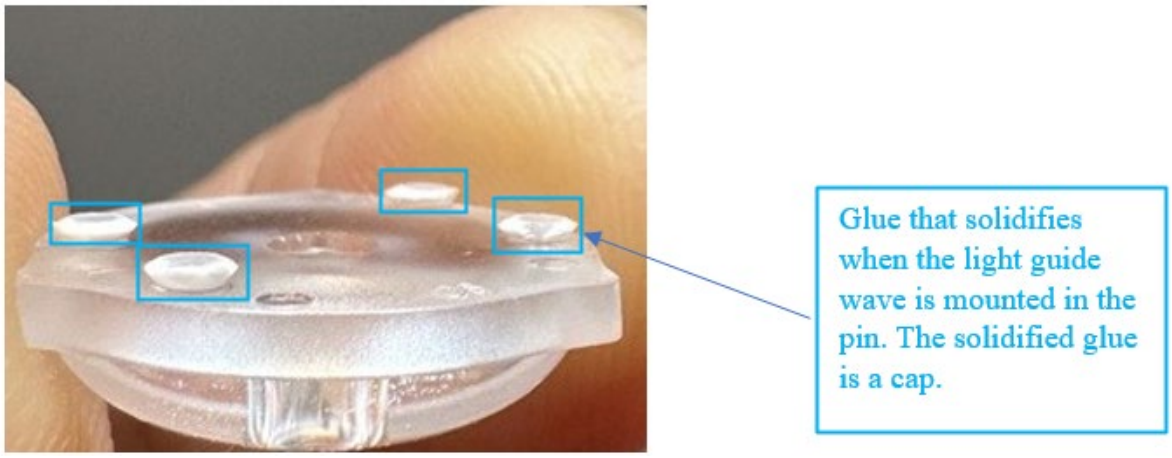
Teardown Images for Hisense (Model:50U6H)

85. 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 Hisense 50' LED TV but not limited to) 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. Thus, the pin of the light guide protrudes through the guide protrusion. Also, since the height of the guide

protrusion is less than the LED, the height of the guide pin appears to be less than the height of the LED.



Teardown Images for Hisense (Model:50U6H)



Teardown Images for Hisense (Model:50U6H)

86. Defendants have indirectly infringed and continue 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 Defendants’ customers and end-users, in this District and elsewhere in the United States. For example, Defendants’ 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 Accused Products. Defendants induce this direct infringement through their 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 Defendants’ inducement, Defendants’ customers and end-users use the Accused Products in a way Defendants intend and they directly infringe the ’200 Patent. Defendants perform 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.

87. Defendants have indirectly infringed and continue 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. Defendants’ 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 Defendants to be especially made or adapted for use in the infringement of the ’200 Patent. Defendants perform these affirmative acts with knowledge of the ’200 Patent and with intent, or willful blindness, that they cause the direct infringement of the ’200 Patent.

88. Defendants have willfully infringed, and continue to willfully infringe, the ’200 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. For example, upon information and belief, Defendants have known of LGI’s patents, including the ’200 Patent, at least since they were widely publicized during and after LG Innotek’s sale to Suzhou Lekin Semiconductor.[8]

89. LGI has suffered damages as a result of Defendants’ direct and indirect infringement of the ’200 Patent in an amount to be proved at trial.

90. LGI has suffered, and will continue to suffer, irreparable harm as a result of Defendants’ infringement of the ’200 Patent, for which there is no adequate remedy at law, unless Defendants’ infringement is enjoined by this Court.

COUNT IV
(Infringement of the ’122 Patent)

91. Paragraphs 1 through 43 are incorporated by reference as if fully set forth herein.

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

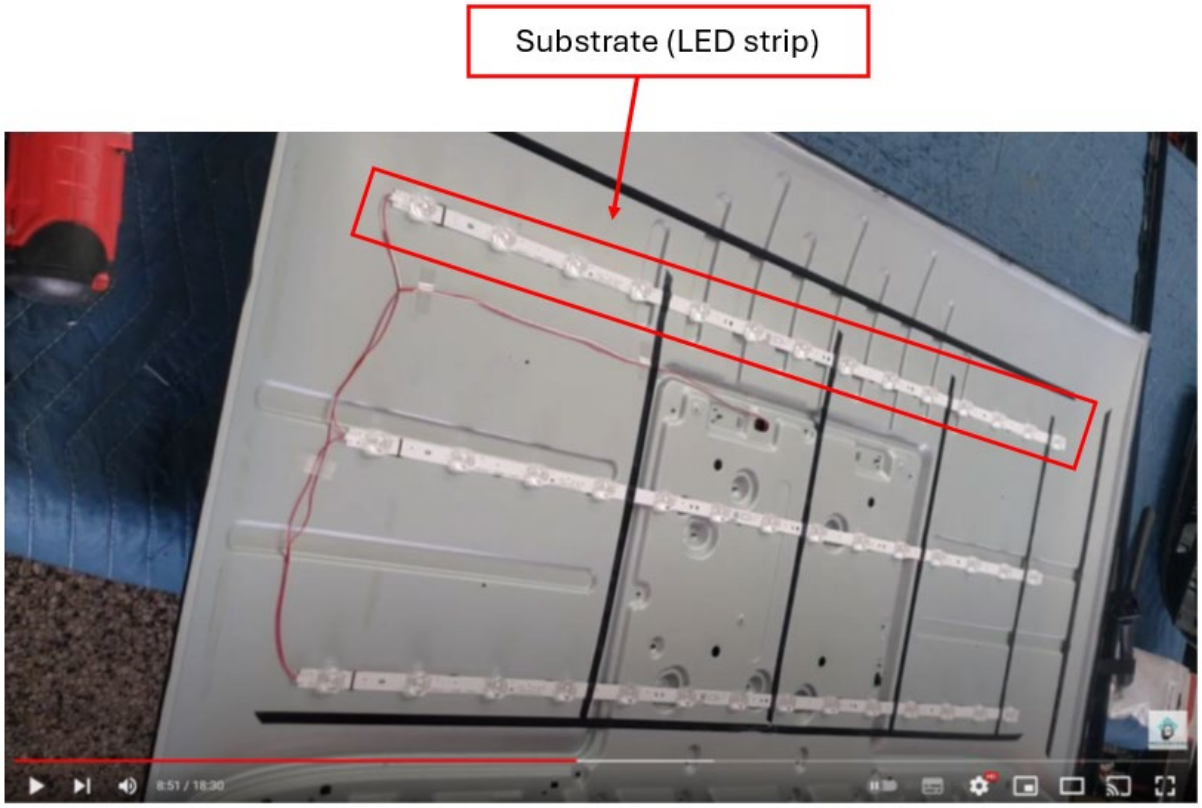
[8] *See e.g.* https://thelec.net/news/articleView.html?idxno=2871

93. Defendants infringe, contribute to the infringement of, and/or induce 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.

94. Defendants have directly infringed and continue 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, Hisense LCD LED, LED, ULED, QLED, MINI-LED ULED, and MINI-LED QLED televisions. As an example, the Hisense model 50R6E3 television infringes at least claim 1 of the ’122 Patent.

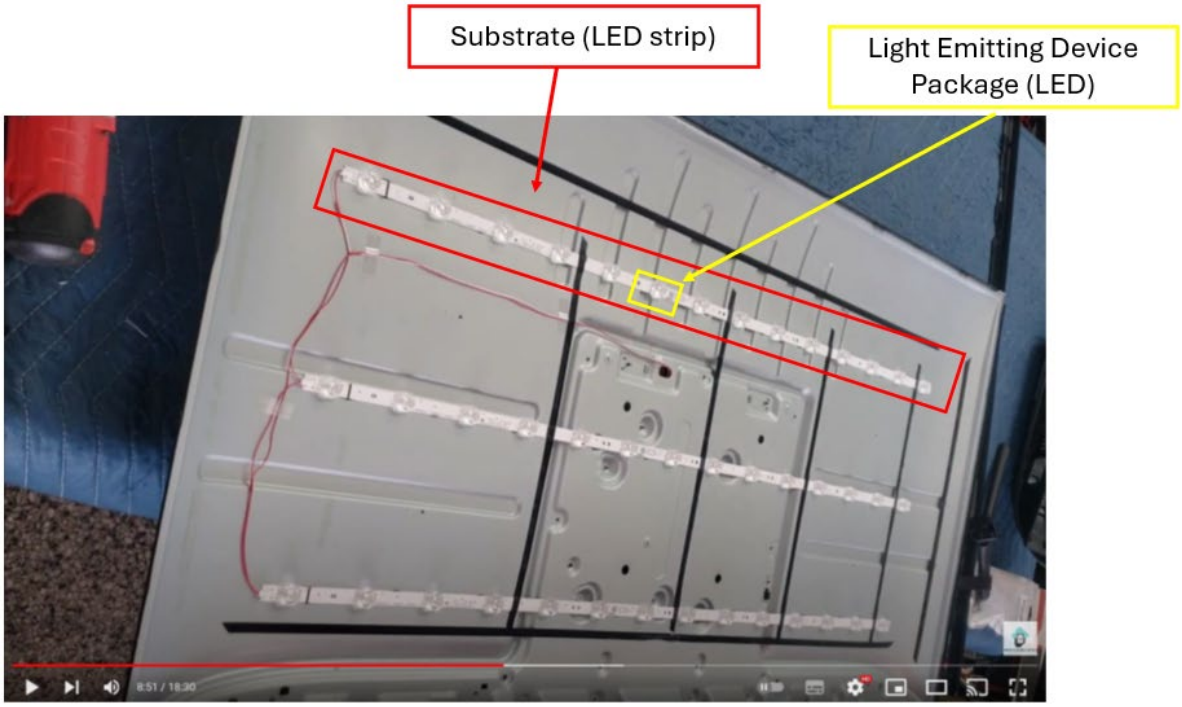
95. For example, Defendants have and continue to directly infringe at least claim 1 of the ’122 Patent by making, using, offering to sell, selling, and/or importing into the United States products that comprise A light emitting apparatus comprising: a substrate; a light emitting device package on the 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.

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



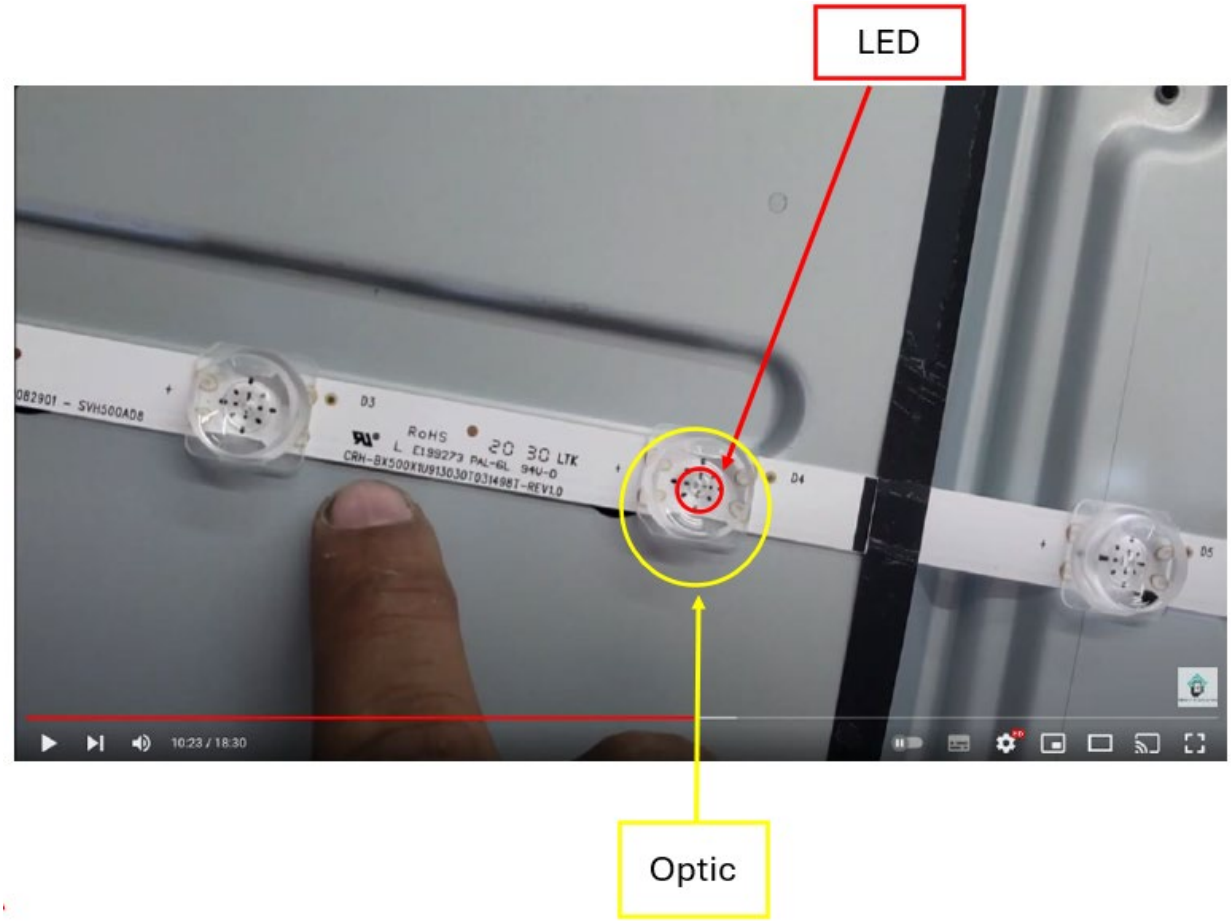
https://youtu.be/sJ5cZtFxUi8?si=WldJ1OVrasFyjD7y&t=531, Timestamp 08:51, last accessed date: June 6, 2024

97. The Accused Products comprise a light emitting device package on the substrate, for example, the LED packages on the LED strip of the 50R6E3.



https://youtu.be/sJ5cZtFxUi8?si=WldJ1OVrasFyjD7y&t=531, Timestamp 08:51, last accessed date: June 6, 2024

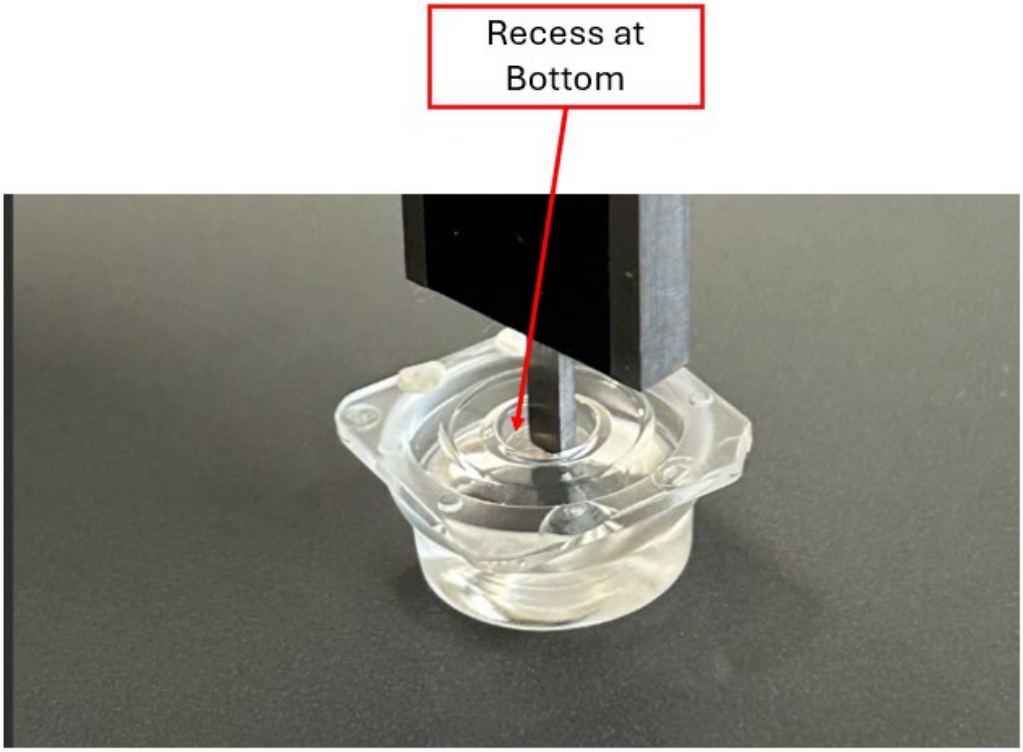
98. The Accused Products comprise a lens supported by the substrate, the lens being disposed on the light emitting device package, *e.g.* optics disposed over the LED packages of the LED strips, as shown above.



https://youtu.be/sJ5cZtFxUi8?si=WldJ1OVrasFyjD7y&t=531, Timestamp 10:23, last accessed date: June 6, 2024.

99. 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:

Id.



[9]

Teardown Images for Hisense (Model: 50R6E5)in Lumense teardown.

100. Defendants have indirectly infringed and continue 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 Defendants' customers and end-users, in this District and elsewhere in the United States. For example, Defendants' 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 Accused Products. Defendants induce this direct infringement through their 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

[9] On information and belief, the pictured Hisense model 50R6E5 is substantially similar to the Hisense model 50R6E3 for the purposes of the claimed limitations.

suggesting that they use the Accused Products in an infringing manner, including technical support, marketing, product manuals, advertisements, and online documentation. Because of Defendants' inducement, Defendants' customers and end-users use the Accused Products in a way Defendants intend and they directly infringe the '122 Patent. Defendants perform 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.

101. Defendants have indirectly infringed and continue 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. Defendants' 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 Defendants to be especially made or adapted for use in the infringement of the '122 Patent. Defendants perform these affirmative acts with knowledge of the '122 Patent and with intent, or willful blindness, that they cause the direct infringement of the '122 Patent.

102. Defendants have willfully infringed, and continue to willfully infringe, the '122 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. For example, upon information and belief, Defendants have known of LGI's patents, including the '122 Patent, at

least since they were widely publicized during and after LG Innotek's sale to Suzhou Lekin Semiconductor.[10]

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

104. LGI has suffered, and will continue to suffer, irreparable harm as a result of Defendants' infringement of the '122 Patent, for which there is no adequate remedy at law, unless Defendants' infringement is enjoined by this Court.

COUNT V
(Infringement of the '307 Patent)

105. Paragraphs 1 through 43 are incorporated by reference as if fully set forth herein.

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

107. Defendants infringe, contribute to the infringement of, and/or induce 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.

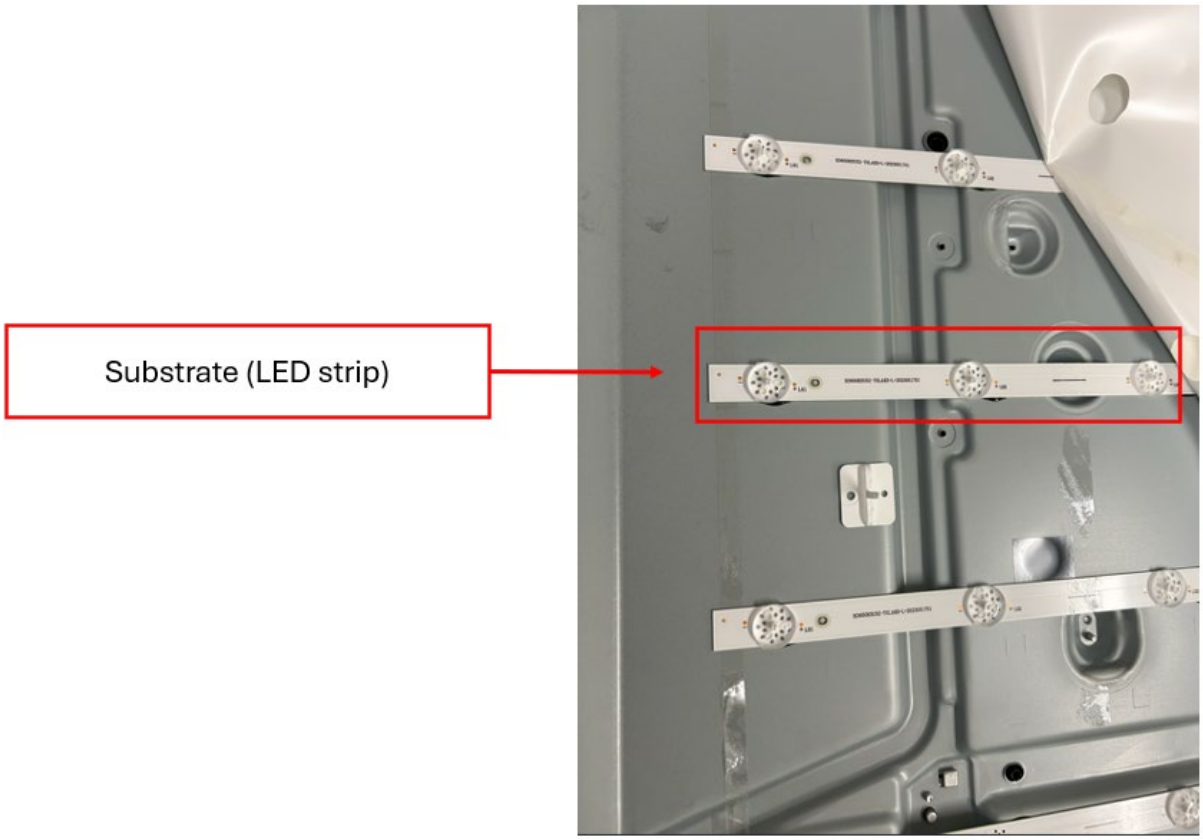
108. Defendants have directly infringed and continue to directly infringe the '307 Patent, either literally or under the doctrine of equivalents, without authority and in violation of 35 U.S.C. § 271, by making, using, offering to sell, selling, and/or importing into the United States products that satisfy 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, Hisense LCD LED, LED, ULED, QLED,

[10] *See e.g.* https://thelec.net/news/articleView.html?idxno=2871

MINI-LED ULED, and MINI-LED QLED televisions. As an example, the Hisense model 65U6HF television infringes at least claim 1 of the ’307 Patent.

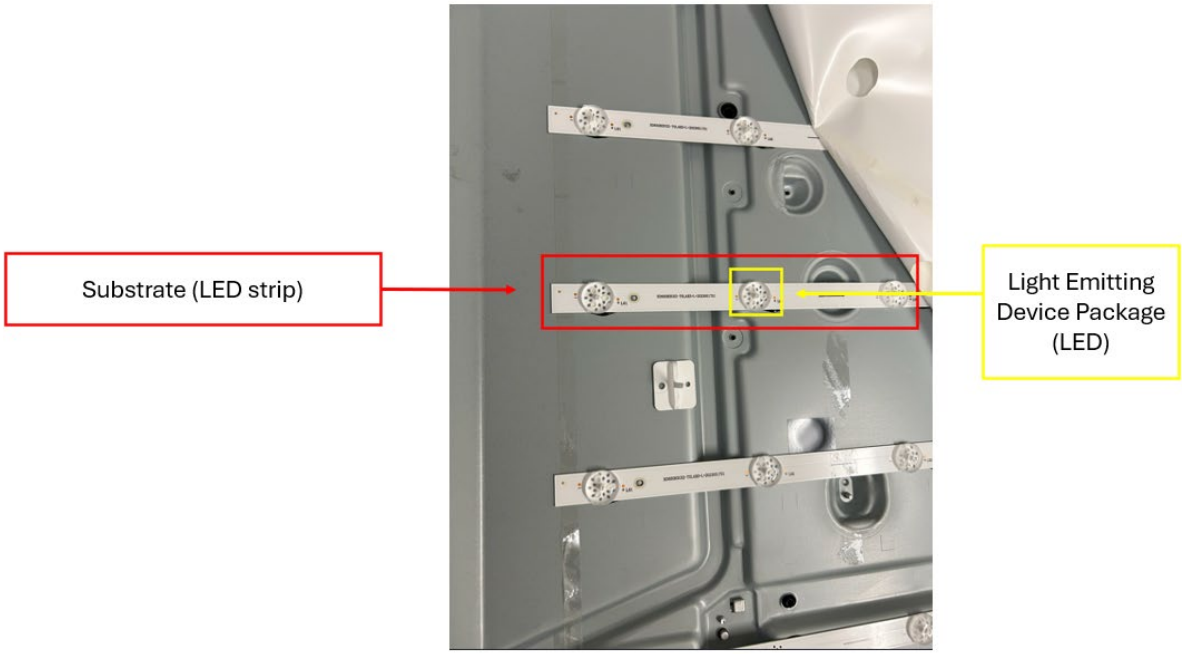
109. For example, Defendants have and continue to directly infringe at least claim 1 of the ’307 Patent by making, using, offering to sell, selling, and/or importing into the United States products that comprise a light emitting apparatus, comprising: a substrate; a light emitting device package on the 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.

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



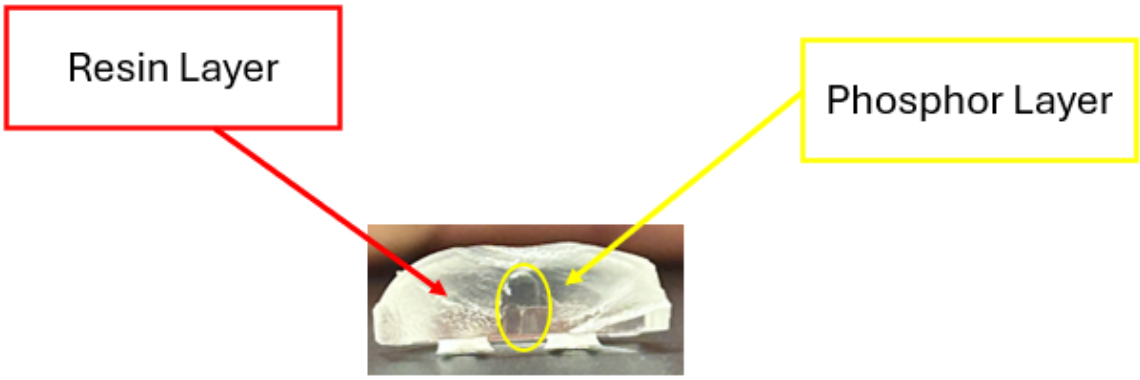
Teardown Images for Hisense (Model: 65U6HF)

111. The Accused Products comprise a light emitting device package on the substrate, *e.g.*, LED packages on the LED strips of the 65U6HF.



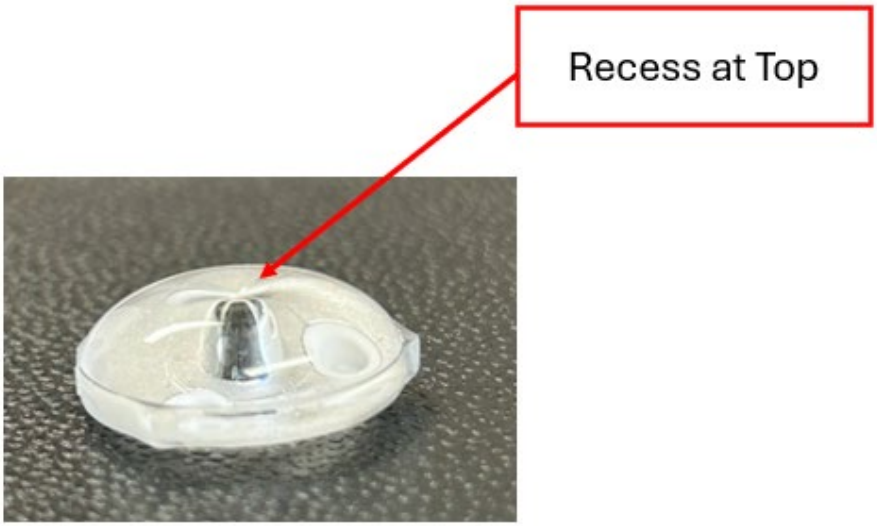
Id.

112. 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 50R6E3 comprise a plurality of LED packages which each comprise, upon information and belief, a package body on the substrate, an 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.

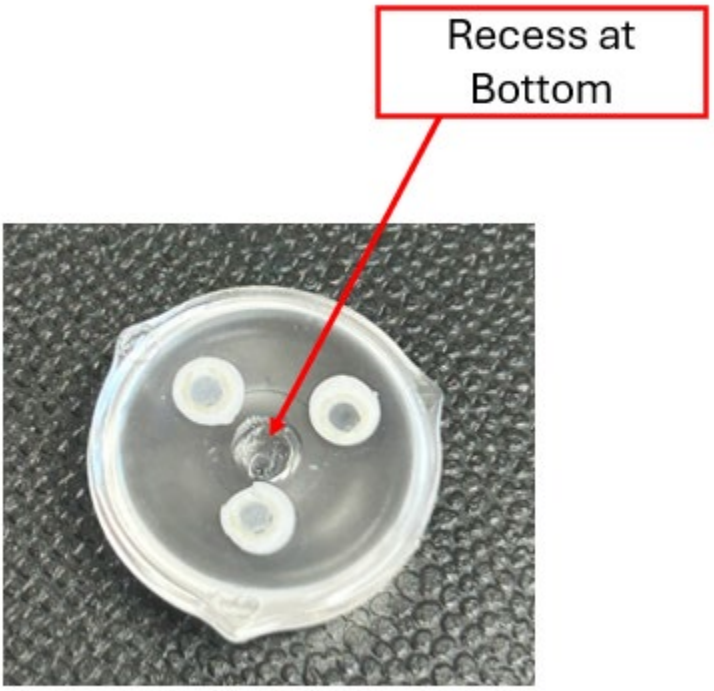


Id.

113. 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:



Id.



Id.

114. Defendants have indirectly infringed and continue 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 Defendants' customers and end-users, in this District and elsewhere in the United States. For example, Defendants' 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 Accused Products. Defendants induce this direct infringement through their 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

Defendants' inducement, Defendants' customers and end-users use the Accused Products in a way Defendants intend and they directly infringe the '307 Patent. Defendants perform 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.

115. Defendants have indirectly infringed and 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. Defendants' 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 Defendants to be especially made or adapted for use in the infringement of the '307 Patent. Defendants perform these affirmative acts with knowledge of the '307 Patent and with intent, or willful blindness, that they cause the direct infringement of the '307 Patent.

116. Defendants have willfully infringed, and continue to willfully infringe, the '307 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. For example, upon information and belief, Defendants have known of LGI's patents, including the '307 Patent, at least since they were widely publicized during and after LG Innotek's sale to Suzhou Lekin

Semiconductor.[11]

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

118. LGI has suffered, and will continue to suffer, irreparable harm as a result of Defendants' infringement of the '307 Patent, for which there is no adequate remedy at law, unless Defendants' infringement is enjoined by this Court.

COUNT VI
(Infringement of the '729 Patent)

119. Paragraphs 1 through 43 are incorporated by reference as if fully set forth herein.

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

121. Defendants infringe, contribute to the infringement of, and/or induce 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.

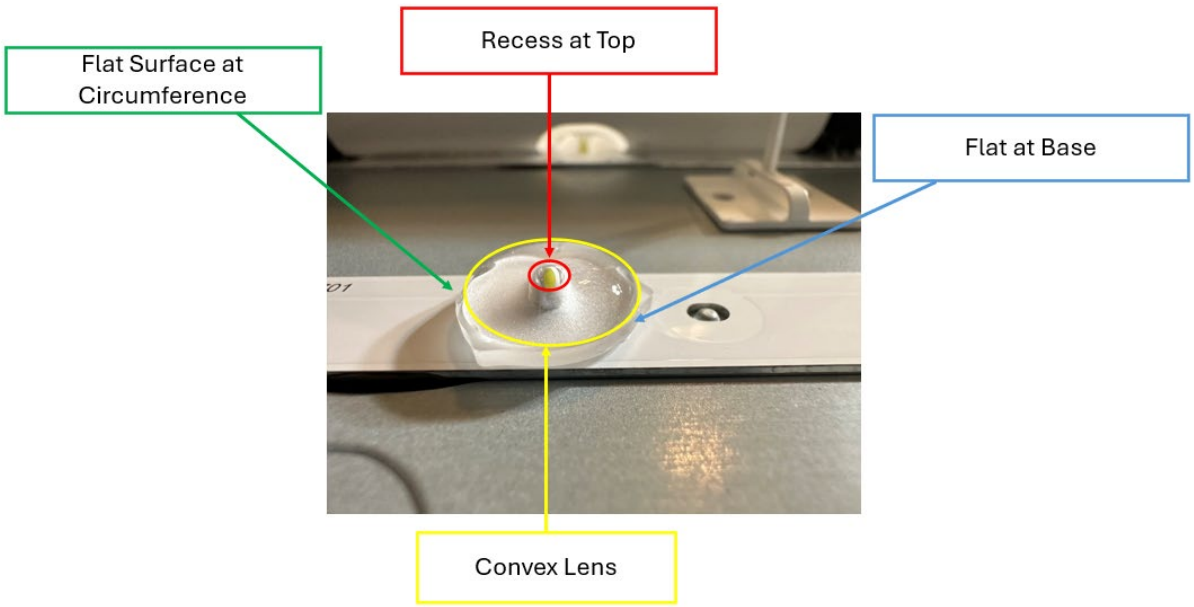
122. Defendants have directly infringed and continue to directly infringe the '729 Patent, either literally or under the doctrine of equivalents, without authority and in violation of 35 U.S.C. § 271, by making, using, offering to sell, selling, and/or importing into the United States products that satisfy 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, Hisense LCD LED, LED, ULED, QLED, MINI-LED ULED, and MINI-LED QLED televisions. As an example, The Hisense model 50U6H

[11] *See e.g.* https://thelec.net/news/articleView.html?idxno=2871

television infringes at least claim 1 of the ’729 Patent.

123. For example, Defendants have and continue 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.

124. 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 50U6H comprises SVH500AH3 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:



Teardown Images for Hisense (Model:50U6H)

125. 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.*

126. 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 50U6H, 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

127. Defendants have indirectly infringed and continue 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 Defendants' customers and end-users, in this District and elsewhere in the United States. For example, Defendants' 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 Accused Products. Defendants induce this direct infringement through their 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 Defendants' inducement, Defendants' customers and end-users use the Accused Products in a way Defendants intend and they directly infringe the '729 Patent. Defendants perform 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.

128. Defendants have indirectly infringed and continue 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. Defendants' 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 Defendants to be especially

made or adapted for use in the infringement of the ’729 Patent. Defendants perform these affirmative acts with knowledge of the ’729 Patent and with intent, or willful blindness, that they cause the direct infringement of the ’729 Patent.

129. Defendants have willfully infringed, and continue to willfully infringe, the ’729 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. For example, upon information and belief, Defendants have known of LGI’s patents, including the ’729 Patent, at least since they were widely publicized during and after LG Innotek’s sale to Suzhou Lekin Semiconductor.[12]

130. LGI has suffered damages as a result of Defendants’ direct and indirect infringement of the ’729 Patent in an amount to be proved at trial.

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

COUNT VII
(Infringement of the ’093 Patent)

132. Paragraphs 1 through 43 are incorporated by reference as if fully set forth herein.

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

134. Defendants infringe, contribute to the infringement of, and/or induce 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

[12] *See e.g.* https://thelec.net/news/articleView.html?idxno=2871

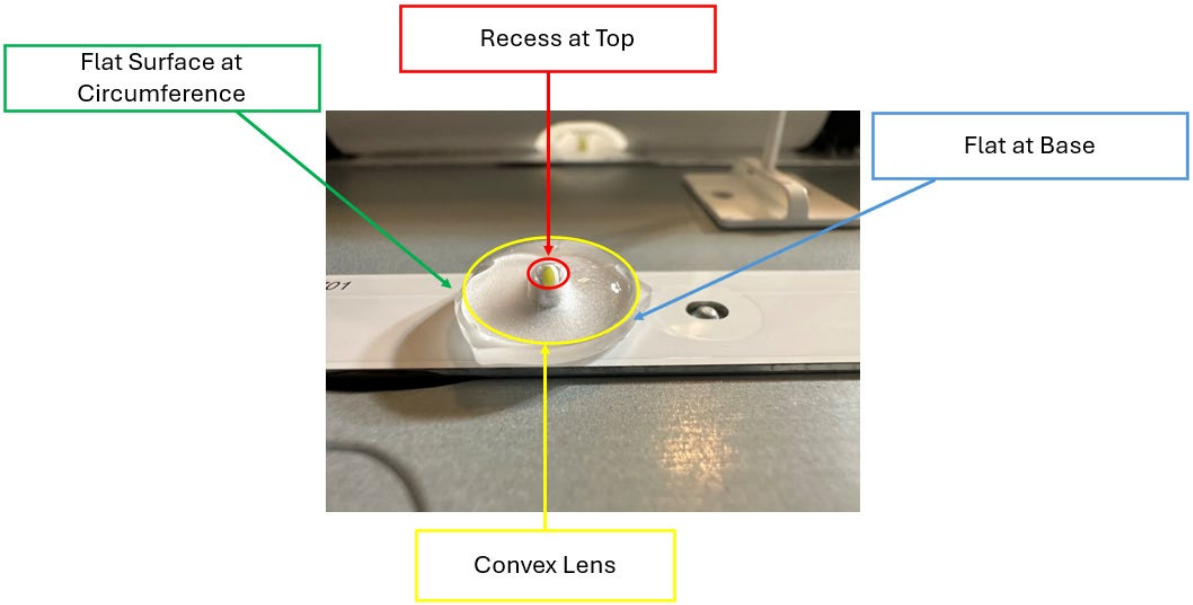
’093 Patent including, but not limited to, at least the Accused Products.

135. Defendants have directly infringed and continue 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 ’093 Patent including, for example, Hisense LCD LED, LED, ULED, QLED, MINI-LED ULED, and MINI-LED QLED televisions. As an example, the Hisense model 50U6H television infringes at least claim 1 of the 093 Patent.

136. For example, Defendants have and continue to directly infringe at least claim 1 of the ’093 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.

137. 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:



Teardown Images for Hisense - 50" Class U6H Series Quantum ULED 4K UHD Smart Google TV (Model:50U6H), Exhibit C

138. 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.*

139. 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 50U6H, 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.

140. 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 50U6H, 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.

141. Defendants have indirectly infringed and continue 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 Defendants’ customers and end-users, in this District and elsewhere in the United States. For example, Defendants’ 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 Accused Products. Defendants induce this direct infringement through their 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 Defendants' inducement, Defendants' customers and end-users use the Accused Products in a way Defendants intend and they directly infringe the '093 Patent. Defendants perform 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.

142. Defendants have indirectly infringed and continue 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. Defendants' 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 Defendants to be especially made or adapted for use in the infringement of the '093 Patent. Defendants perform these affirmative acts with knowledge of the '093 Patent and with intent, or willful blindness, that they cause the direct infringement of the '093 Patent.

143. Defendants have willfully infringed, and continue 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. For example, upon information and belief, Defendants have known of LGI's patents, including the '093 Patent, at least since they were widely publicized during and after LG Innotek's sale to Suzhou Lekin Semiconductor.[13]

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

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

COUNT VIII
(Infringement of the '744 Patent)

146. Paragraphs 1 through 43 are incorporated by reference as if fully set forth herein.

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

148. Defendants infringe, contribute to the infringement of, and/or induce 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.

149. Defendants have directly infringed and continue to directly infringe the '744 Patent, either literally or under the doctrine of equivalents, without authority and in violation of 35 U.S.C.

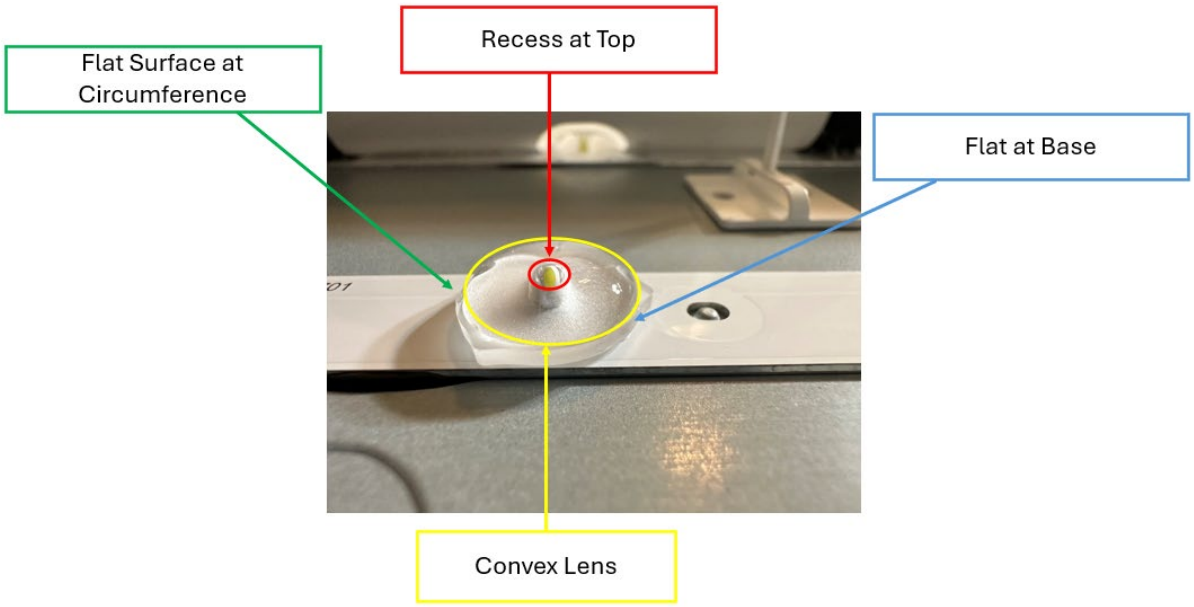
[13] *See e.g.* https://thelec.net/news/articleView.html?idxno=2871

§ 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, Hisense LCD LED, LED, ULED, QLED, MINI-LED ULED, and MINI-LED QLED televisions. As an example, the Hisense model 50U6H television infringes at least claim 1 of the ‘744 Patent.

150. For example, Defendants have and continue 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 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.

151. 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:



Teardown Images for Hisense (Model:50U6H)

152. 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.*

153. 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.

154. For example, upon information and belief, the lens of the 50U6H, 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.

155. Defendants have indirectly infringed and continue 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 Defendants’ customers and end-users, in this District and elsewhere in the United States. For example, Defendants’ 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 Accused Products. Defendants induce this direct infringement through their 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 Defendants’ inducement, Defendants’ customers and end-users use the Accused Products in a way Defendants intend and they directly infringe the ’744 Patent. Defendants perform 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.

156. Defendants have indirectly infringed and continue 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. Defendants' 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 Defendants to be especially made or adapted for use in the infringement of the '744 Patent. Defendants perform these affirmative acts with knowledge of the '744 Patent and with intent, or willful blindness, that they cause the direct infringement of the '744 Patent.

157. Defendants have willfully infringed, and continue to willfully infringe, the '744 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. For example, upon information and belief, Defendants have known of LGI's patents, including the '744 Patent, at least since they were widely publicized during and after LG Innotek's sale to Suzhou Lekin Semiconductor.[14]

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

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

[14] *See e.g.* https://thelec.net/news/articleView.html?idxno=2871

COUNT IX
(Infringement of the ’048 Patent)

160. Paragraphs 1 through 43 are incorporated by reference as if fully set forth herein.

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

162. Defendants infringe, contribute to the infringement of, and/or induce 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.

163. Defendants have directly infringed and continue 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, Hisense LCD LED, LED, ULED, QLED, MINI-LED ULED, and MINI-LED QLED televisions. As an example, the Hisense model 65U6HF television infringes at least claim 1 of the ’048 Patent.

164. For example, Defendants have and continue 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.

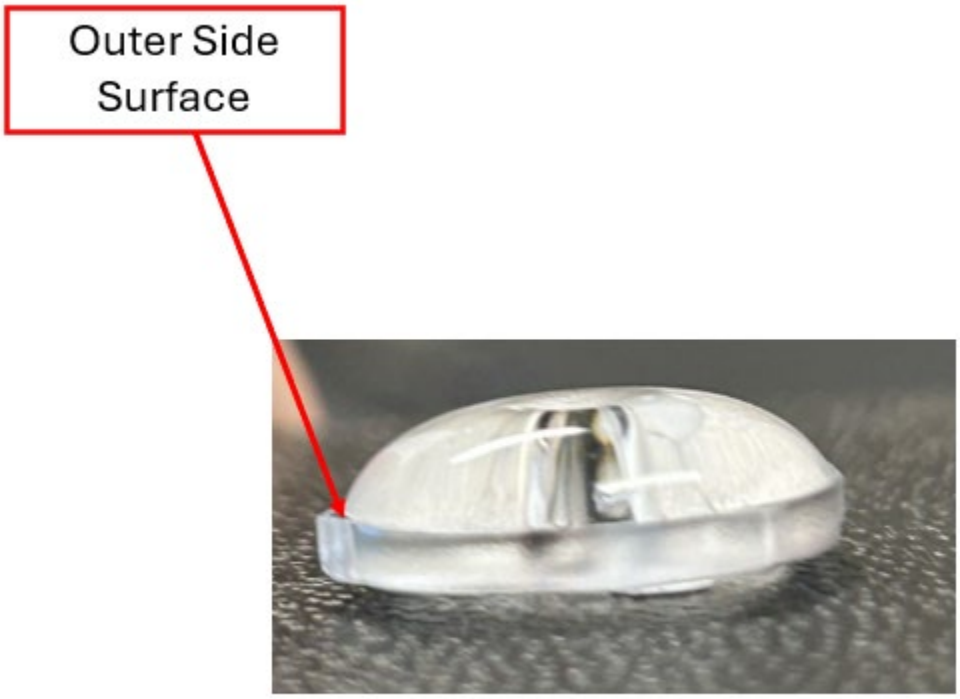
165. The Accused Products comprise a substrate, such as an LED strip.

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

Teardown Images for Hisense (Model:50U6H)

167. The Accused Products comprise a lens on the light emitting device, *e.g.*, optics disposed over LEDs of the LED strips of an 65U6HF.

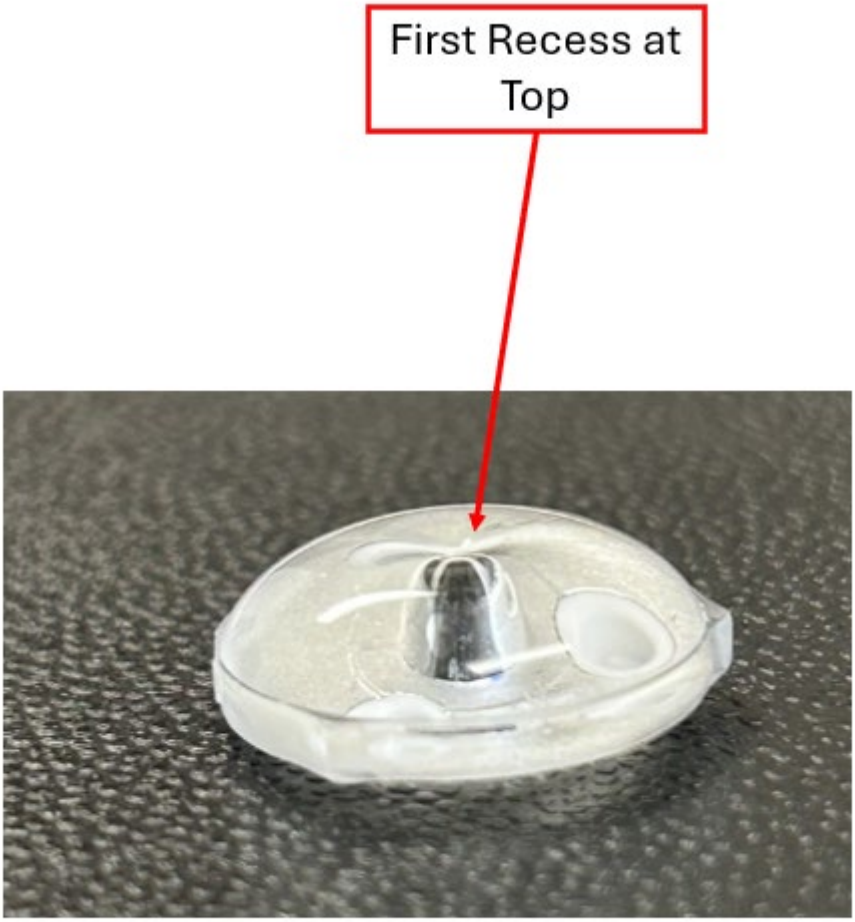
168. The Accused Products comprise an apparatus wherein the lens includes a center portion, a peripheral portion surrounding the center portion, and a side portion surrounding the peripheral portion and having an outer side surface, as shown below for the strips of an 65U6HF:



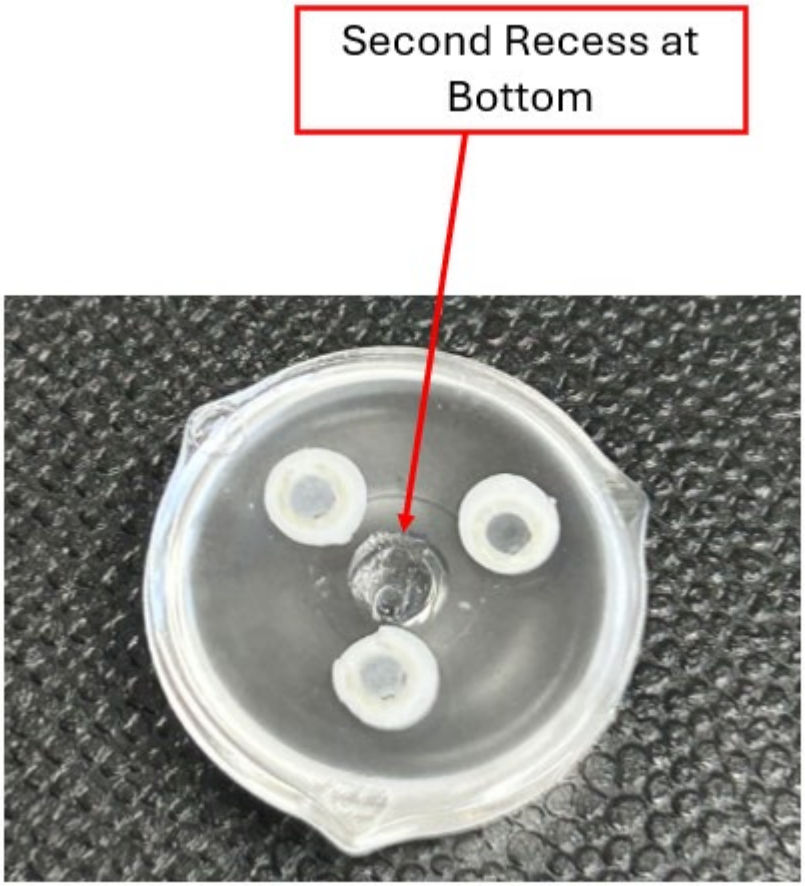
[15]

169. Teardown Images for Hisense (Model: 65U6HF)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.

[15] On information and belief, the pictured Hisense model 65U6HF is substantially similar to the Hisense model 50U6H for the purposes of the claimed limitations.



Teardown Images for Hisense (Model: 65U6HF)



170. Teardown Images for Hisense (Model: 65U6HF)The Accused Products comprise an apparatus wherein the first recess has an inwardly-concave curvature shape, as shown above for the 65U6HF LEDs.

171. 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 65U6HF LEDs.

172. 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 65U6HF LEDs.

173. 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 65U6HF LEDs, as shown above.

174. 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 65U6HF LEDs, as shown above.

175. Defendants have indirectly infringed and continue 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 Defendants’ customers and end-users, in this District and elsewhere in the United States. For example, Defendants’ 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 Accused Products. Defendants induce this direct infringement through their 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 Defendants’ inducement, Defendants’ customers and end-users use the Accused Products in a way Defendants intend and they directly infringe the ’048 Patent. Defendants perform 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.

176. Defendants have indirectly infringed and continue 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.

Defendants' 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 Defendants to be especially made or adapted for use in the infringement of the '048 Patent. Defendants perform these affirmative acts with knowledge of the '048 Patent and with intent, or willful blindness, that they cause the direct infringement of the '048 Patent.

177. Defendants have willfully infringed, and continue to willfully infringe, the '048 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. For example, upon information and belief, Defendants have known of LGI's patents, including the '048 Patent, at least since they were widely publicized during and after LG Innotek's sale to Suzhou Lekin Semiconductor.[16]

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

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

[16] *See e.g.* https://thelec.net/news/articleView.html?idxno=2871

COUNT X
(Infringement of the ’183 Patent)

180. Paragraphs 1 through 43 are incorporated by reference as if fully set forth herein.

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

182. Defendants infringe, contribute to the infringement of, and/or induce 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.

183. Defendants have directly infringed and continue 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, Hisense LCD LED, LED, ULED, QLED, MINI-LED ULED, and MINI-LED QLED televisions. As an example, the Hisense model 50U6H television infringes at least claim 1 of the ’183 Patent.

184. For example, Defendants have and continue 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.

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

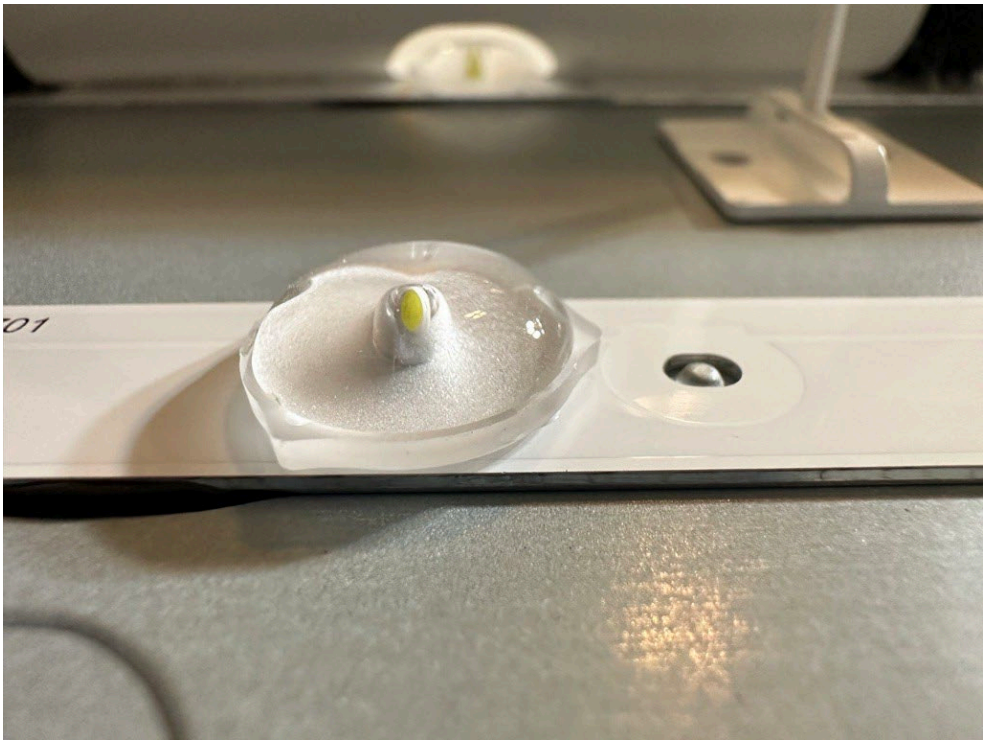
186. The Accused Products comprise a light emitting device on the substrate, such as an LED mounted on an LED strip.

Teardown Images for Hisense (Model:50U6H)

187. 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.

188. 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 50U6H includes an encapsulant resin layer over a phosphor layer.

189. 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*:



Teardown Images for Hisense (Model:50U6H)

190. 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 SVH500AH3 LED strips of an 50U6H.

191. 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 SVH500AH3 LED strips of an 50U6H.

192. 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 SVH500AH3 LED strips of an 50U6H.

193. Defendants have indirectly infringed and continue 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 Defendants’ customers and end-users, in this District and elsewhere in the United States. For example, Defendants’ 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. Defendants induce this direct infringement through their 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 Defendants’ inducement, Defendants’ customers and end-users use the Accused Products in a way Defendants intend and they directly infringe the ’183 Patent. Defendants perform 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.

194. Defendants have indirectly infringed and continue 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. Defendants' 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 Defendants to be especially made or adapted for use in the infringement of the '183 Patent. Defendants perform these affirmative acts with knowledge of the '183 Patent and with intent, or willful blindness, that they cause the direct infringement of the '183 Patent.

195. Defendants have willfully infringed, and continue to willfully infringe, the '183 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. For example, upon information and belief, Defendants have known of LGI's patents, including the '183 Patent, at least since they were widely publicized during and after LG Innotek's sale to Suzhou Lekin Semiconductor.[17]

[17] *See e.g.* https://thelec.net/news/articleView.html?idxno=2871

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

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

COUNT XI
(Infringement of the '378 Patent)

198. Paragraphs 1 through 43 are incorporated by reference as if fully set forth herein.

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

200. Defendants infringe, contribute to the infringement of, and/or induce 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.

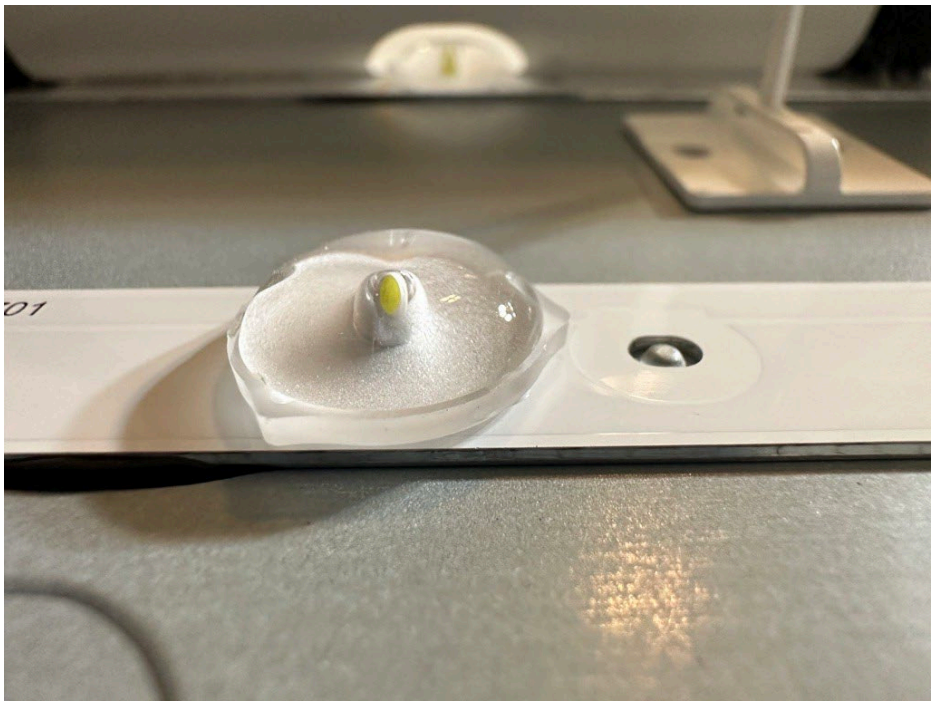
201. Defendants have directly infringed and continue to directly infringe the '378 Patent, either literally or under the doctrine of equivalents, without authority and in violation of 35 U.S.C. § 271, by making, using, offering to sell, selling, and/or importing into the United States products that satisfy 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, Hisense LCD LED, LED, ULED, QLED, MINI-LED ULED, and MINI-LED QLED televisions. As an example, the Hisense model 50U6H infringes at least claim 1 of the '378 Patent.

202. For example, Defendants have and continue 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.

203. 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 SVH500AH3 LED strips of an 50U6H.

Teardown Images for Hisense (Model:50U6H)



Teardown Images for Hisense (Model:50U6H)

204. 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 50U6H comprise at least three legs.

205. 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 SVH500AH3 LED strips of an 50U6H.

206. 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 SVH500AH3 LED strips of an 50U6H.

207. 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 SVH500AH3 LED strips of an 50U6H.

208. 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 SVH500AH3 LED strips of an 50U6H.

209. Defendants have indirectly infringed and continue 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 Defendants’ customers and end-users, in this District and elsewhere in the United States. For example, Defendants’ 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 Accused Products. Defendants induce this direct infringement through their 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 Defendants' inducement, Defendants' customers and end-users use the Accused Products in a way Defendants intend and they directly infringe the '378 Patent. Defendants perform 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.

210. Defendants have indirectly infringed and continue 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. Defendants' 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 Defendants to be especially made or adapted for use in the infringement of the '378 Patent. Defendants perform these affirmative acts with knowledge of the '378 Patent and with intent, or willful blindness, that they cause the direct infringement of the '378 Patent.

211. Defendants have willfully infringed, and continue to willfully infringe, the '378 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. For example, upon information and belief, Defendants have known of LGI's patents, including the '378 Patent, at least since they were widely publicized during and after LG Innotek's sale to Suzhou Lekin Semiconductor.[18]

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

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

COUNT XII
(Infringement of the '823 Patent)

214. Paragraphs 1 through 43 are incorporated by reference as if fully set forth herein.

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

216. Defendants infringe, contribute to the infringement of, and/or induce 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.

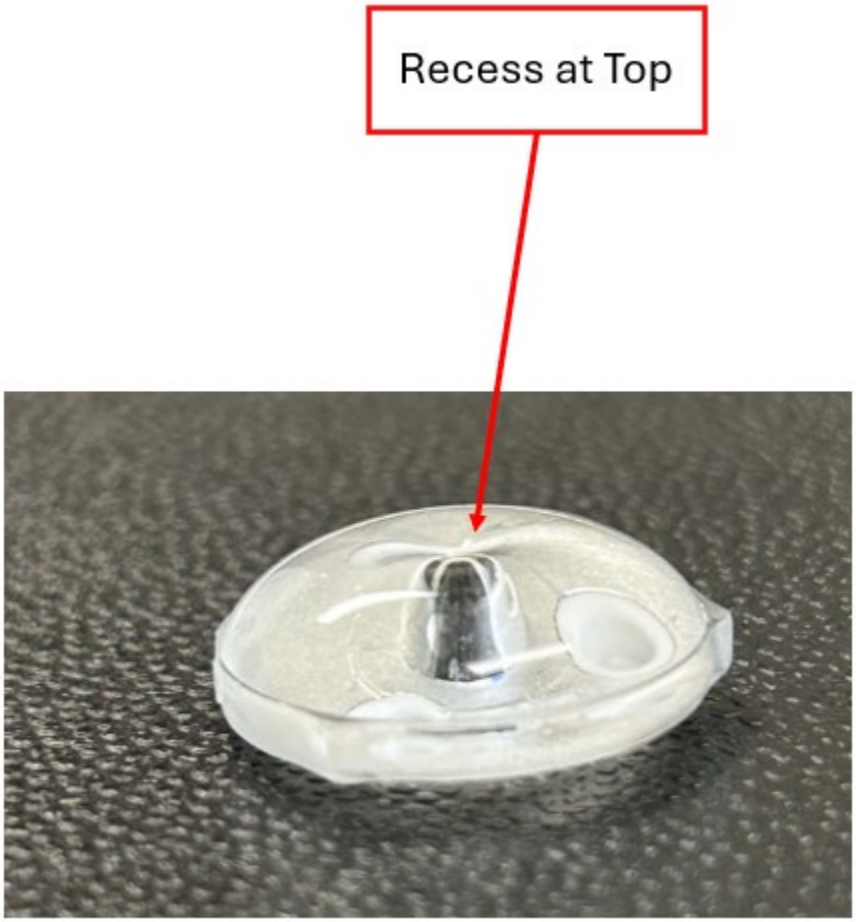
217. Defendants have directly infringed and continue to directly infringe the '823 Patent, either literally or under the doctrine of equivalents, without authority and in violation of 35 U.S.C. § 271, by making, using, offering to sell, selling, and/or importing into the United States products that satisfy each and every limitation of one or more claims of the '823 Patent. Upon information

[18] *See e.g.* https://thelec.net/news/articleView.html?idxno=2871

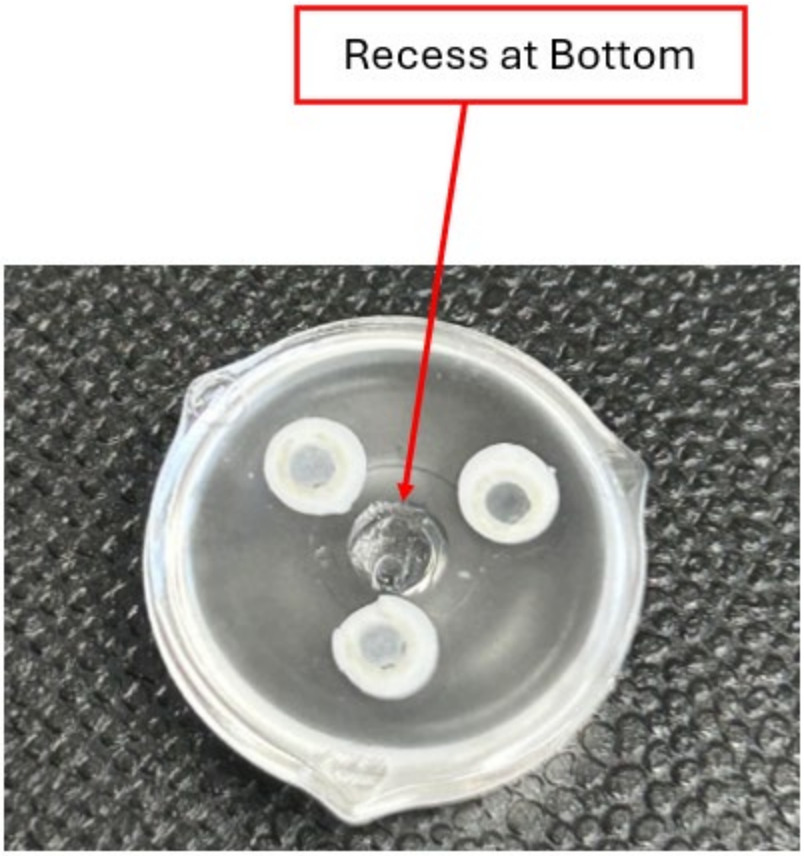
and belief, these products include the Accused Products that practice the methods and systems covered by the ’823 Patent including, for example, Hisense LCD LED, LED, ULED, QLED, MINI-LED ULED, and MINI-LED QLED televisions. As an example, the Hisense model 50U6H infringes at least claim 1 of the ’823 Patent.

218. For example, Defendants have and continue 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.

219. 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 65U6HF.



Teardown Images for Hisense (Model: 65U6HF)



Id.

220. 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.

221. 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.

222. 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.

223. Defendants have indirectly infringed and continue to indirectly infringe one or more claims of the ’823 Patent, as provided by 35 U.S.C. § 271(b), by knowingly and intentionally inducing infringement by others, such as Defendants’ customers and end-users, in this District and elsewhere in the United States. For example, Defendants’ 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 Accused Products. Defendants induce this direct infringement through their 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 Defendants’ inducement, Defendants’ customers and end-users use the Accused Products in a way Defendants intend and they directly infringe the ’823 Patent. Defendants perform 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.

224. Defendants have indirectly infringed and continue 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. Defendants’ 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 Defendants to be especially made or adapted for use in the infringement of the ’823 Patent. Defendants perform these affirmative acts with knowledge of the ’823 Patent and with intent, or willful blindness, that they cause the direct infringement of the ’823 Patent.

225. Defendants have willfully infringed, and continue to willfully infringe, the ’823 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. For example, upon information and belief, Defendants have known of LGI’s patents, including the ’823 Patent, at least since they were widely publicized during and after LG Innotek’s sale to Suzhou Lekin Semiconductor.[19]

226. LGI has suffered damages as a result of Defendants’ direct and indirect infringement of the ’823 Patent in an amount to be proved at trial.

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

COUNT XIII
(Infringement of the ’778 Patent)

228. Paragraphs 1 through 43 are incorporated by reference as if fully set forth herein.

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

[19] *See e.g.* https://thelec.net/news/articleView.html?idxno=2871

230. Defendants infringe, contribute to the infringement of, and/or induce 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 ’778 Patent including, but not limited to, at least the Accused Products.

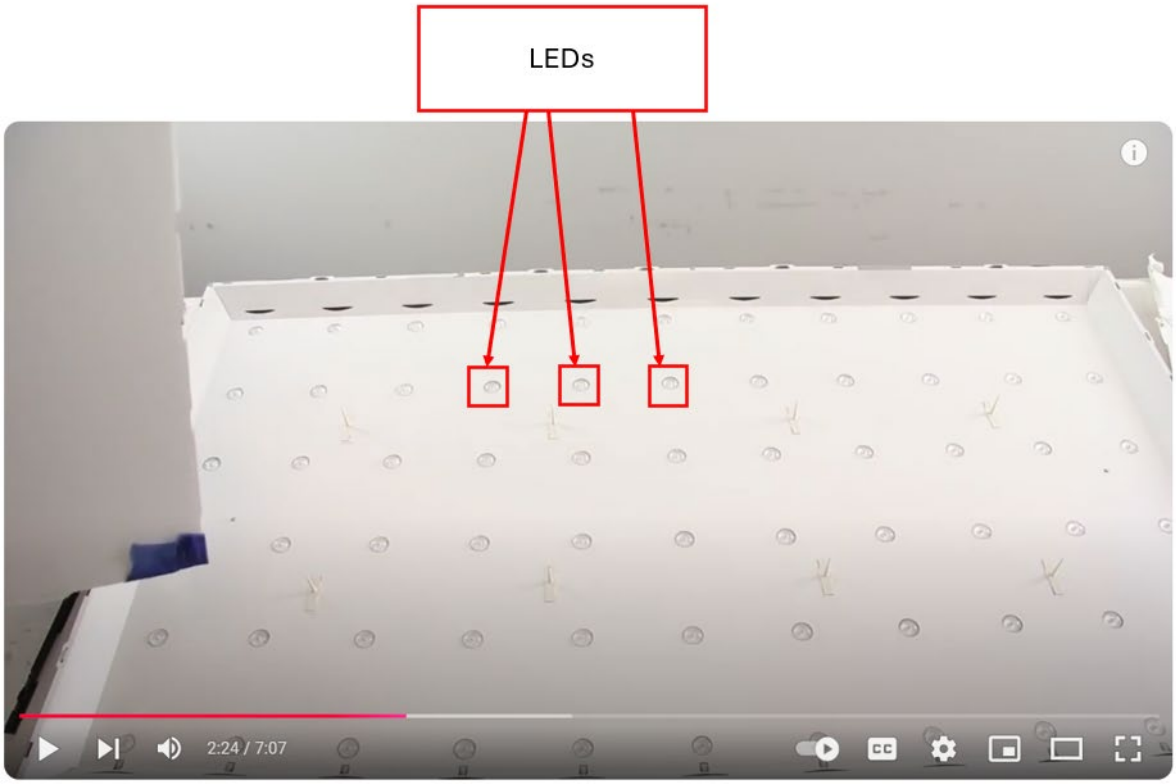
231. Defendants have directly infringed and continue to directly infringe the ’778 Patent, either literally or under the doctrine of equivalents, without authority and in violation of 35 U.S.C. § 271, by making, using, offering to sell, selling, and/or importing into the United States products that satisfy 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, Hisense LCD LED, LED, ULED, QLED, MINI-LED ULED, and MINI-LED QLED televisions. As an example, the Hisense model 50R6E3 infringes at least claim 1 of the ’778 Patent.

232. For example, Defendants have and continue 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.

233. The Accused Products comprise a light guide plate.

https://www.youtube.com/watch?v=WpbyzsTNGB8, Timestamp: 2:19, last accessed: Dec. 18, 2024

234. 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).



https://www.youtube.com/watch?v=WpbyzsTNGB8, Timestamp: 2:24, last accessed: Dec. 18, 2024

235. The Accused Products comprise an optical sheet on a top surface of the light guide plate, as shown below.

https://www.youtube.com/watch?v=WpbyzsTNGB8, Timestamp: 2:19, last accessed: Dec. 18, 2024

236. 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, as shown below.

Id.

237. 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.

238. Defendants have indirectly infringed and continue 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 Defendants' customers and end-users, in this District and elsewhere in the United States. For example, Defendants' 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 Accused Products. Defendants induce this direct infringement through their 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 Defendants' inducement, Defendants' customers and end-users use the Accused Products in a way Defendants intend and they directly infringe the '778 Patent. Defendants perform 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.

239. Defendants have indirectly infringed and continue 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. Defendants' 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 Defendants to be especially made or adapted for use in the infringement of the '778 Patent. Defendants perform these affirmative acts with knowledge of the '778 Patent and with intent, or willful blindness, that they cause the direct infringement of the '778 Patent.

240. Defendants have willfully infringed, and continue to willfully infringe, the '778 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. For example, upon information and belief, Defendants have known of LGI's patents, including the '778 Patent, at least since they were widely publicized during and after LG Innotek's sale to Suzhou Lekin Semiconductor.[20]

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

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

COUNT XIV
(Infringement of the '537 Patent)

243. Paragraphs 1 through 43 are incorporated by reference as if fully set forth herein.

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

245. Defendants infringe, contribute to the infringement of, and/or induce 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.

246. Defendants have directly infringed and continue 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

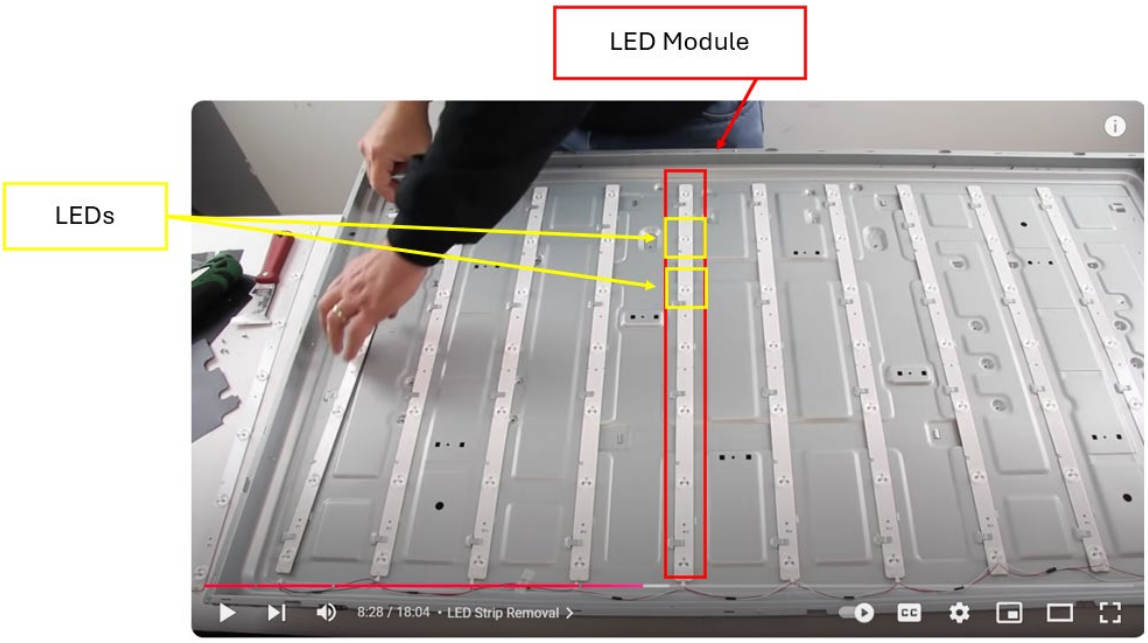
[20] *See e.g.* https://thelec.net/news/articleView.html?idxno=2871

and belief, these products include the Accused Products that practice the methods and systems covered by the ’537 Patent including, for example, Hisense LCD LED, LED, ULED, QLED, MINI-LED ULED, and MINI-LED QLED televisions. As an example, the Hisense 50K model infringes at least claim 1 of the ’537 Patent.

247. For example, Defendants have and continue 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.

248. The Accused Products comprise a backlight unit. For example, the back of a Hisense Model 50K television.

249. The Accused Products comprise a backlight unit which comprises a light emitting diode (LED) module comprising an LED. For example, the Hisense 50k contains



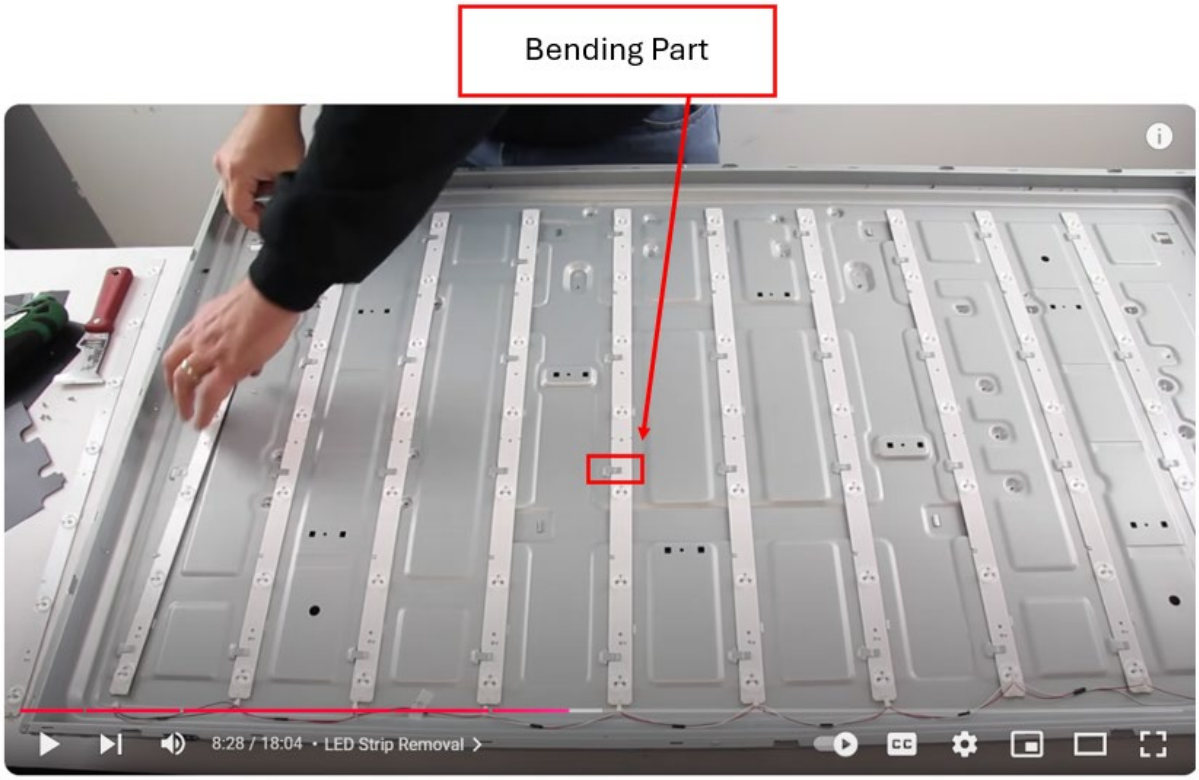
https://www.youtube.com/watch?v=WpbyzsTNGB8, Timestamp: 8:26, last accessed: Dec. 18, 2024.

250. The Accused Products’ backlight unit also comprises a case supporting the LED

module. For example, the Hisense 50K model contains a metal chassis that supports the LED module.

Id.

251. The Accused Products' backlight unit also comprises a bending part that guides and fixes an end portion of the LED module. For example, the 50K Model has pliable plastic clips that guides and fixes, the LED module.



Id.

252. The Accused Products' backlight unit also comprises a fixing part fixing the LED module to the case. For example, the Hisense 50K model contains holes on the its LED module such that they can be fastened to the case, as shown below.

Id.

253. Defendants have indirectly infringed and continue 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 Defendants' customers and end-users, in this District and elsewhere in the United States. For example, Defendants' 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 Accused Products. Defendants induce this direct infringement through their 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

Defendants' inducement, Defendants' customers and end-users use the Accused Products in a way Defendants intend and they directly infringe the '537 Patent. Defendants perform 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.

254. Defendants have indirectly infringed and continue 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. Defendants' 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 Defendants to be especially made or adapted for use in the infringement of the '537 Patent. Defendants perform these affirmative acts with knowledge of the '537 Patent and with intent, or willful blindness, that they cause the direct infringement of the '537 Patent.

255. Defendants have willfully infringed, and continue to willfully infringe, the '537 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. For example, upon information and belief, Defendants have known of LGI's patents, including the '537 Patent, at least since they were widely publicized during and after LG Innotek's sale to Suzhou Lekin

Semiconductor.[21]

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

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

COUNT XV
(Infringement of the '411 Patent)

258. Paragraphs 1 through 43 are incorporated by reference as if fully set forth herein.

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

260. Defendants infringe, contribute to the infringement of, and/or induce 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.

261. Defendants have directly infringed and continue 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, Hisense LCD LED, LED, ULED, QLED, MINI-LED ULED, and MINI-LED QLED televisions. As an example, the Hisense model 75QD7N television infringes at least claim 1 of the '411 Patent.

[21] *See e.g.* https://thelec.net/news/articleView.html?idxno=2871

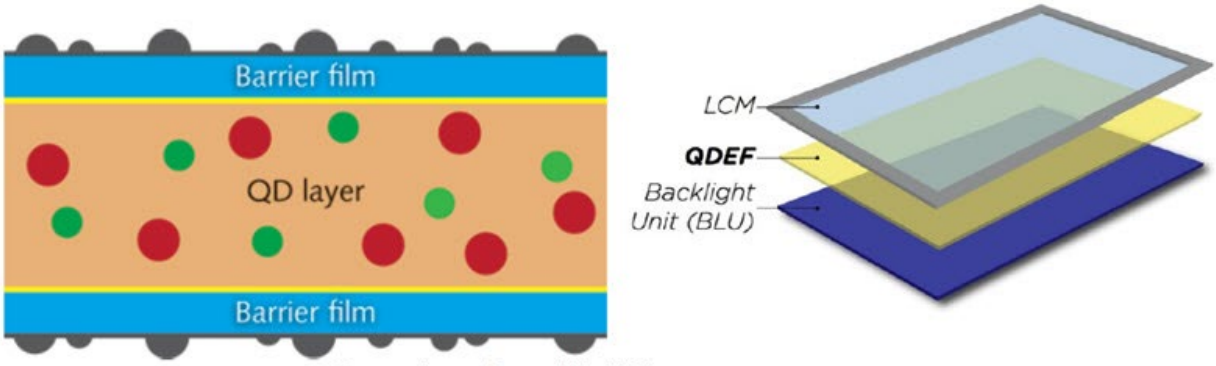
262. For example, Defendants have and continue to directly infringe at least claim 1 of the ’411 Patent by making, using, offering to sell, selling, and/or importing into the United States products that comprise a photoluminescent sheet comprising: a resin layer; a phosphor configured to convert a wavelength 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.

263. The Accused Products comprise a resin layer. For example, the 75QD7N is a quantum dot television which, upon information and belief, comprises a photoluminescent sheet including a resin layer between its backlight and panel:

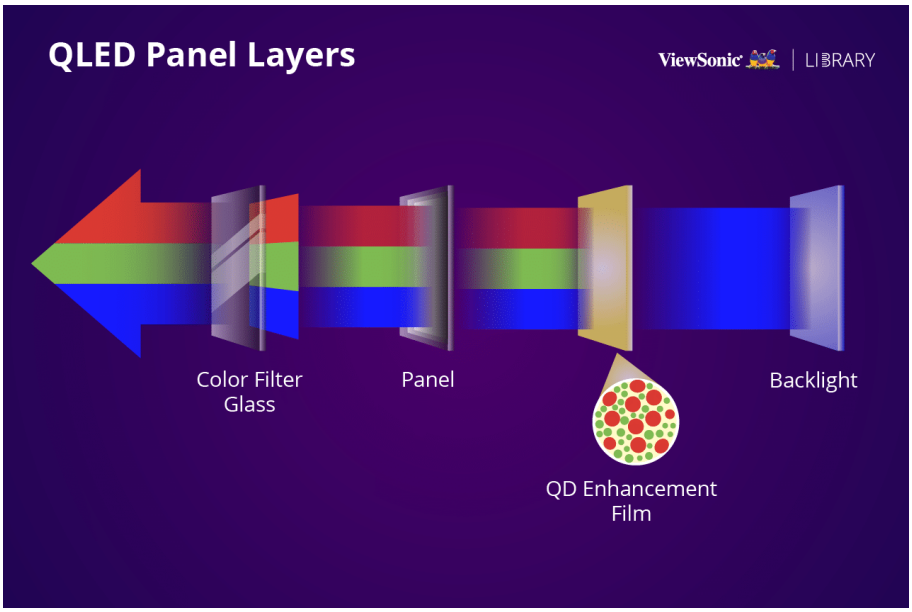
What is QLED?

QLED is short for Quantum Light Emitting Diode. QLED TVs have a backlight made up of thousands of LED lights, and in front of it sits a quantum dot color film that enhances color and makes the brightness much better.
QLED TVs are among the best TVs out there, with incredible clarity and a picture that makes movie nights as good as going to the movies—but maybe not movie popcorn butter good. Much like Keenan Jonas.

https://www.hisense-usa.com/blog/oled-vs-qled-vs-uled-what-s-the-difference



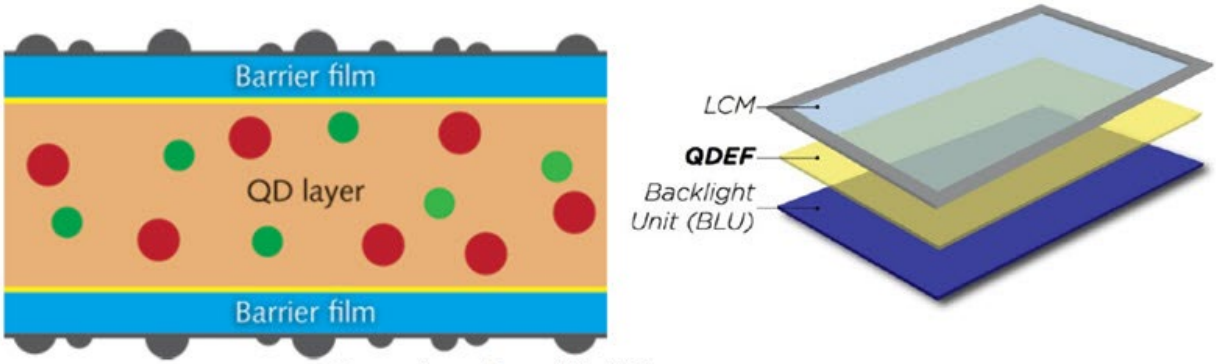
Source: Laser Focus World, Nanosys



264. 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 75QD7N comprises a QD enhancement film which includes a phosphor configured to convert a wavelength of light from an LED.[22]

265. 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 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.

[22] *See e.g.* https://www.idtechex.com/en/research-article/quantum-dots-evolving-downconverter-technology-beyond-phosphors/15633



Source: Laser Focus World, Nanosys

266. 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.

267. Defendants have indirectly infringed and continue 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 Defendants’ customers and end-users, in this District and elsewhere in the United States. For example, Defendants’ 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 Accused Products. Defendants induce this direct infringement through their 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 Defendants’ inducement, Defendants’ customers and end-users use the Accused Products in a way Defendants intend and they directly infringe the ’411 Patent. Defendants perform 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.

268. Defendants have indirectly infringed and continue 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. Defendants’ 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 Defendants to be especially made or adapted for use in the infringement of the ’411 Patent. Defendants perform these affirmative acts with knowledge of the ’411 Patent and with intent, or willful blindness, that they cause the direct infringement of the ’411 Patent.

269. Defendants have willfully infringed, and continue to willfully infringe, the ’411 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. For example, upon information and belief, Defendants have known of LGI’s patents, including the ’411 Patent, at least since they were widely publicized during and after LG Innotek’s sale to Suzhou Lekin Semiconductor.[23]

270. LGI has suffered damages as a result of Defendants’ direct and indirect infringement of the ’411 Patent in an amount to be proved at trial.

[23] *See e.g.* https://thelec.net/news/articleView.html?idxno=2871

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

COUNT XVI
(Infringement of the '352 Patent)

272. Paragraphs 1 through 43 are incorporated by reference as if fully set forth herein.

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

274. Defendants infringe, contribute to the infringement of, and/or induce 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.

275. Defendants have directly infringed and continue 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, Hisense LCD LED, LED, ULED, QLED, MINI-LED ULED, and MINI-LED QLED televisions. As an example, the Hisense model 75QD7N television infringes at least claim 1 of the '352 Patent.

276. For example, Defendants have and continue 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

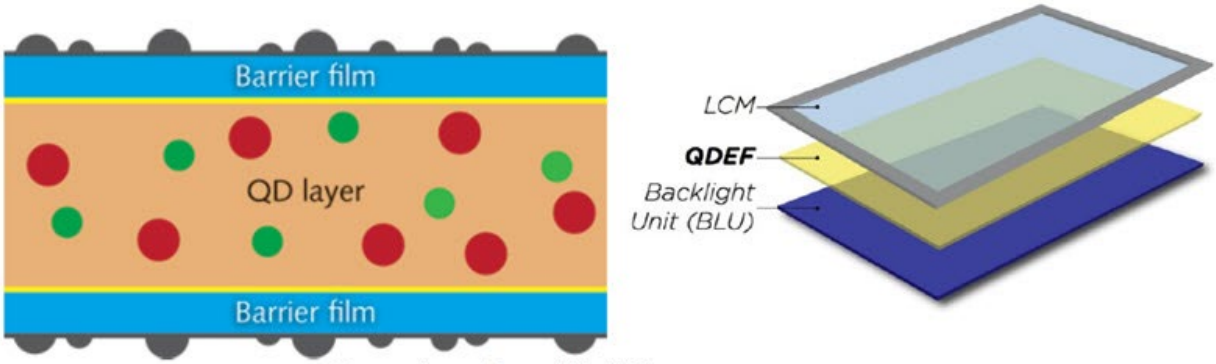
layer; an additive configured to disperse the phosphor in the resin layer; a first protective film of uniform thickness on a top surface of the resin layer, wherein the first protective film is formed of a transparent synthetic resin which is not curable by light; and a second protective film of uniform 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.

277. The Accused Products comprise a resin layer. For example, the 75QD7N is a quantum dot television which, upon information and belief, comprises a photoluminescent sheet including a resin layer between its backlight and panel:

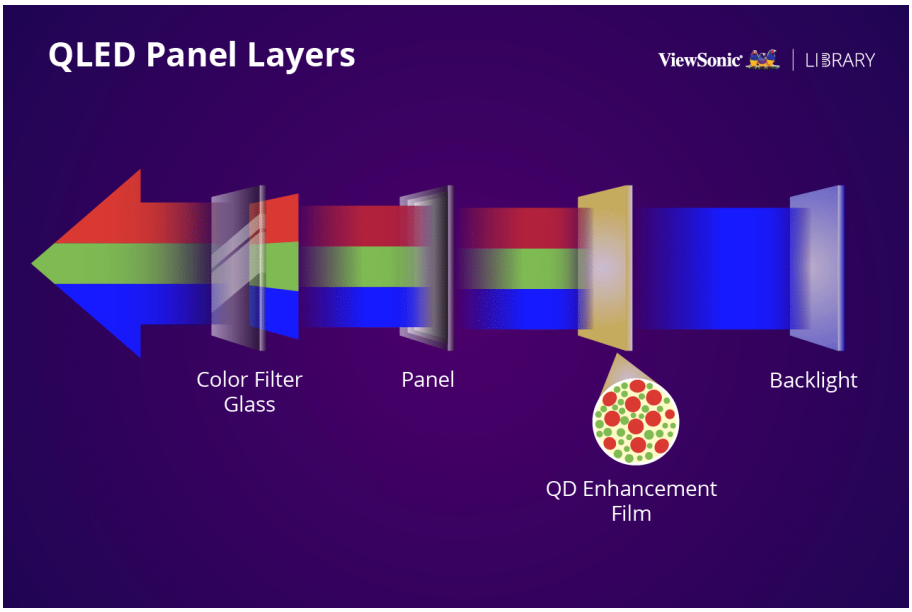
What is QLED?

QLED is short for Quantum Light Emitting Diode. QLED TVs have a backlight made up of thousands of LED lights, and in front of it sits a quantum dot color film that enhances color and makes the brightness much better.
QLED TVs are among the best TVs out there, with incredible clarity and a picture that makes movie nights as good as going to the movies—but maybe not movie popcorn butter good. Much like Keenan Jonas.

https://www.hisense-usa.com/blog/oled-vs-qled-vs-uled-what-s-the-difference



Source: Laser Focus World, Nanosys



278. 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 75QD7N comprises a QD enhancement film which includes a phosphor configured to convert a wavelength of light from an LED.[24]

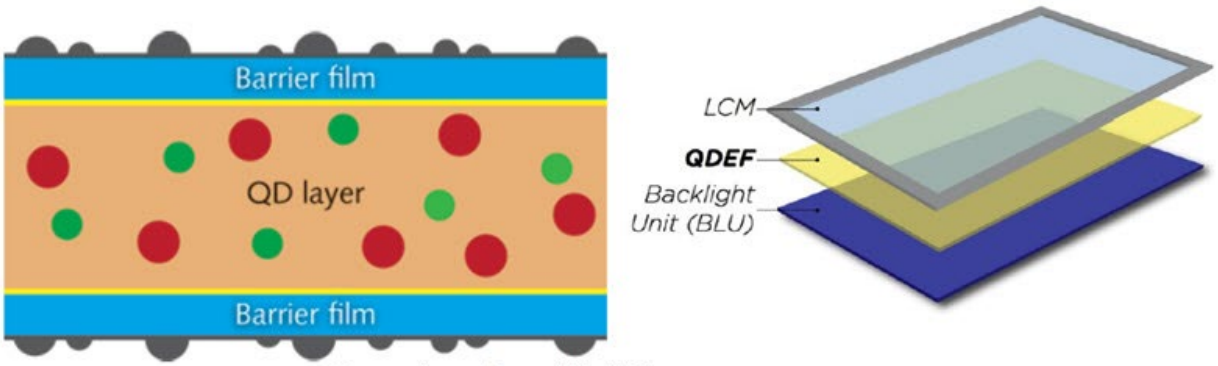
279. The Accused Products comprise a curing agent in the resin layer. For example, upon information and belief, the quantum dot resin layer includes a UV curing agent, such as a silicone-based curing agent.

280. The Accused Products comprise an additive configured to disperse the phosphor in the resin layer. For example, upon information and belief, the 75QD7N comprises a silicone surface additive and/or other rheological additive to disperse phosphor in the resin layer.

281. 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

[24] *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

282. Defendants have indirectly infringed and continue 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 Defendants’ customers and end-users, in this District and elsewhere in the United States. For example, Defendants’ 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 Accused Products. Defendants induce this direct infringement through their 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 Defendants’ inducement, Defendants’ customers and end-users use the Accused Products in a way Defendants intend and they directly infringe the ’352 Patent. Defendants perform 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.

283. Defendants have indirectly infringed and continue 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. Defendants’ 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 Defendants to be especially made or adapted for use in the infringement of the ’352 Patent. Defendants perform these affirmative acts with knowledge of the ’352 Patent and with intent, or willful blindness, that they cause the direct infringement of the ’352 Patent.

284. Defendants have willfully infringed, and continue to willfully infringe, the ’352 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. For example, upon information and belief, Defendants have known of LGI’s patents, including the ’352 Patent, at least since they were widely publicized during and after LG Innotek’s sale to Suzhou Lekin Semiconductor.[25]

285. LGI has suffered damages as a result of Defendants’ direct and indirect infringement of the ’352 Patent in an amount to be proved at trial.

[25] *See e.g.* https://thelec.net/news/articleView.html?idxno=2871

286. LGI has suffered, and will continue to suffer, irreparable harm as a result of Defendants' infringement of the '352 Patent, for which there is no adequate remedy at law, unless Defendants' 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 Defendants as follows:

a. Entry of judgment declaring that Defendants directly and/or indirectly infringes one or more claims of each of the Patents-in-Suit;

b. Entry of judgment declaring that Defendants' infringement of the Patents-in-Suit is willful;

c. An order awarding damages sufficient to compensate Plaintiff for Defendants' 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: January 17, 2025

Respectfully submitted,

/s/ *Vincent J. Rubino, III*

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