

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

**LARGAN PRECISION CO., LTD.,**

**Plaintiff,**

**v.**

**ABILITY OPTO-ELECTRONICS  
TECHNOLOGY CO., LTD.;  
NEWMAX TECHNOLOGY CO., LTD.;  
AND HP INC.**

**Defendants.**

**Case No. \_\_\_\_\_**

**JURY TRIAL DEMANDED**

**COMPLAINT FOR PATENT INFRINGEMENT**

Plaintiff Largan Precision Co., Ltd. (“Largan”) files this complaint for patent infringement against Defendants Ability Opto-Electronics Technology Co., Ltd.; Newmax Technology Co., Ltd.; and HP Inc. (collectively, “Defendants”), and asserts as follows:

**THE PARTIES**

1. Largan is the world’s largest supplier of high-end imaging lenses for smartphones. Largan’s lenses can be found in Apple iPhones, as well as in a wide array of other consumer electronic products, including notebook computers, laptop computers, tablets, webcams, and scanners, from a variety of end-product manufacturers.

2. Innovation has been the cornerstone of Largan’s success in the imaging lens industry. When other manufacturers were still using glass, Largan pioneered the design and production of plastic aspherical lenses. Largan’s innovations have continued as phones and computers have become smaller and imaging capability in these devices has become indispensable. To address the ever-growing need for compact, high-performance imaging lenses,

Largan has developed new technologies, for which it has sought patent protection in the United States and elsewhere. Largan currently holds 668 United States patents.

3. These patents include the four patents-in-suit here: U.S. Patent Nos. 7,274,518 (“the ’518 Patent”); 8,395,691 (“the ’691 Patent”); 8,988,796 (“the ’796 Patent”); and 9,146,378 (“the ’378 Patent”) (collectively, “the patents-in-suit”).

4. Largan is a Taiwanese corporation with its principal place of business located at No. 11, Jingke Road, Nantun District, Taichung City 40852, Taiwan. Largan was founded in 1987 and has been publicly listed on the Taiwan Stock Exchange since 2002.

5. On information and belief, Defendant Ability Opto-Electronics Technology Co., Ltd. (“AOET”) is a Taiwanese corporation with its principal place of business located at 2F, No. 33, Keya Road, Daya District, Taichung City 428, Taiwan.

6. On information and belief, Newmax Technology Co., Ltd. (“Newmax”) is a Taiwanese corporation with its principal place of business located at No. 37, Jiadong Road, Waipu District, Taichung City 438, Taiwan.

7. On information and belief, Defendant HP Inc. (“HP”) is a Delaware corporation with its principal place of business located at 1501 Page Mill Road, Palo Alto, CA 94304.

#### **JURISDICTION AND VENUE**

8. This is a complaint for patent infringement that arises under the laws of the United States, Title 35 of the United States Code.

9. This Court has subject-matter jurisdiction over this action under 28 U.S.C. §§ 1331 and 1338.

10. This Court has personal jurisdiction over Defendant AOET in this action because AOET has committed acts within the Eastern District of Texas giving rise to this action and has established minimum contacts with this forum such that the exercise of jurisdiction over AOET

would not offend traditional notions of fair play and substantial justice. Defendant AOET, directly and through subsidiaries or intermediaries (including distributors, resellers, and others), has committed and continues to commit acts of infringement in this District by, among other things, offering to sell and selling products that infringe the patents-in-suit.

11. This Court has personal jurisdiction over Defendant Newmax in this action because Newmax has committed acts within the Eastern District of Texas giving rise to this action and has established minimum contacts with this forum such that the exercise of jurisdiction over Newmax would not offend traditional notions of fair play and substantial justice. Defendant Newmax, directly and through subsidiaries or intermediaries (including distributors, resellers, and others), has committed and continues to commit acts of infringement in this District by, among other things, offering to sell and selling products that infringe the patents-in-suit.

12. This Court has personal jurisdiction over Defendant HP in this action because HP has committed acts within the Eastern District of Texas giving rise to this action and has established minimum contacts with this forum such that the exercise of jurisdiction over HP would not offend traditional notions of fair play and substantial justice. Defendant HP, directly and through subsidiaries or intermediaries (including distributors, resellers, and others), has committed and continues to commit acts of infringement in this District by, among other things, offering to sell and selling products that infringe the patents-in-suit. HP is registered to do business in the State of Texas and has appointed CT Corporation System, 1999 Bryan St., Ste. 900, Dallas, TX 75201 as its agent for service of process.

13. On information and belief, HP has regular and established places of business in Texas and this District. Without limitation, these include HP's campus in Plano, Texas, located

at 6080 Tennyson Parkway, Suite 400, Plano, TX 75024, and/or 5400 Legacy Drive, Plano, TX 75024. Additionally, the “Service Center Locator” on HP’s website indicates that HP has authorized service centers for “Consumer Desktops and Notebooks” located at 1201 E Spring Creek Parkway Suite C-130, Plano, TX, 75074; 1920 Eldorado Parkway, Suite 600, McKinney, TX, 75069; and 6205 Coit Road Suite 336, Plano, TX 75024. Further, HP has committed patent infringement in this District; solicits and induces customers/users in this District, including via its website at [www.hp.com](http://www.hp.com); and has customers/users who are residents of this District and who purchase, acquire, and/or use HP’s infringing products in this District.

14. Based on the above, venue is proper in the Eastern District of Texas under 28 U.S.C. §§ 1391(b)–(c) and 1400.

15. Joinder of the Defendants is also proper under 35 U.S.C. § 299 because Largan’s right to relief is asserted against Defendants jointly, severally, or in the alternative with respect to or arising out of the same transaction, occurrence, or series of transactions or occurrences relating to the making, using, importing into the United States, offering for sale, or selling of the same accused products or processes, including imaging lenses and HP products incorporating imaging lenses; and questions of fact common to all Defendants will arise in the action.

### **BACKGROUND**

16. AOET is a direct competitor of Largan. And this isn’t the first case Largan has brought to stop AOET’s infringement of Largan’s intellectual property rights.

17. In December 2017, Taiwan’s Intellectual Property Court awarded Largan 1.52 billion Taiwanese dollars (roughly \$50 million) for AOET’s misappropriation of Largan’s trade secrets. International press coverage hailed the outcome as the largest-ever award for trade secret misappropriation in Taiwan.

18. As these media reports recounted, that litigation began nearly four years earlier and stemmed from AOET's hiring away of several engineers from Largan. AOET convinced those engineers to disclose protected Largan information and used that misappropriated information to file patent applications seeking to capture ownership over Largan's own trade secrets. Because of this, the court's award also transferred ownership of a set of Taiwanese patents filed by AOET to Largan.

19. Besides the civil proceedings at Taiwan's Intellectual Property Court, Largan also filed a December 2012 criminal complaint in Taiwan against AOET, the former Largan engineers that AOET had hired, and AOET's then General Manager Andy Lo. As the international press reported, the public prosecutor filed an indictment in Taichung District Court in April 2015, after completing the criminal investigation. The indictment charged AOET for copyright violations, and the engineers and Mr. Lo for copyright violations and disclosure of commercial or industrial secrets, among other charges. These criminal proceedings remain pending.

20. After Largan learned of AOET's trade secret theft, Largan also discovered that AOET and other companies were producing lens systems that infringed Largan's United States patents.

21. Largan notified AOET that its 877C and 798 series lens products infringed several Largan United States patents, including the '691 Patent, via August 9 and 12, 2013 letters.

22. On August 9, 2013, Largan also notified manufacturers, including HP, that AOET's 877C and 798 series and another company's lens products may infringe Largan patents, including the '691 patent.

23. Additional discussions and a meeting between Largan and AOET followed, but ultimately AOET did not agree to license Largan's patents at that time.

24. Largan initiated United States district court patent infringement actions against Genius Electronic Optical Co., Ltd. in June 2013 and Samsung Electronics in November 2013. Largan eventually resolved those suits in 2016 through settlements.

25. While these suits and the trade secret case proceeded, Largan continued to investigate AOET's patent infringement. Although AOET repeatedly stated in its annual reports starting in 2015 that it considered the United States "the main market" for its products, tracing infringing lenses to end-products sold in the United States is complicated by the lengthy supply chains of end-product manufacturers (i.e., imaging-lens manufacturers may sell lenses to module integrators in Asia, who sell finished cameras to system integrators in Asia, and so on).

26. As part of its investigation, Largan thus enlisted the support of a computed tomography ("CT") scanner (like the type used in medical care) to confirm its belief that AOET's lenses were infringing and were incorporated into end products sold in the United States.

27. Largan's investigation revealed that HP had incorporated AOET's infringing lenses, or infringing lenses from another manufacturer, into at least 15 HP products sold in the United States, including the HP Spectre Folio, and 14 models of HP Pavilion, Envy, Omen, EliteBook, and ZBook computers.

28. Largan shared these findings with HP in March 2019. In particular, Largan informed HP that these 15 products infringed five Largan patents, including the '518, '691, and '796 Patents. Largan provided HP with CT scans of the suspected AOET lenses and an element-by-element comparison of the lenses used in the HP products and Largan's patents.

29. Largan continued to investigate and continued to identify more infringing products. And, on April 3, 2019, Largan informed HP that several models of HP EliteBooks and ZBooks, as well as many other HP products, also infringed the '378 patent.

30. A series of communications between Largan and HP during the next few months confirmed Largan's understanding that that AOET and other Largan direct competitors, including Newmax, were supplying infringing lenses for certain HP products sold in the United States, including some of the 15 that Largan had first identified to HP.

31. As such, Largan notified AOET in a May 20, 2019 letter of its infringement of Largan's '518 and '691 Patents through the incorporation of AOET lenses in HP products. Largan also included the CT scans of the AOET lenses used in the HP products and asked AOET to identify the AOET product models shown in the images.

32. AOET responded that it was uncertain as to Largan's concerns. AOET requested a comparison analysis from Largan—an odd ask given that AOET had the detailed schematics for its own products, while Largan did not and had to use a CT scanner and other testing to make its infringement determinations.

33. Largan promptly sent AOET the charts that it had sent to HP, nonetheless, and noted its understanding that AOET should have received copies of them previously from HP. Largan also followed up one week later, noting that AOET had sufficient technical data to verify its products and the item-by-item claim charts, but received no timely response.

34. In an effort to end what Largan perceived as AOET's obfuscation, Largan asked HP to identify the AOET lens models used in the identified HP products, and for additional information identifying the lens suppliers for the HP products containing multiple cameras.

35. HP demurred, responding that it would now defer to AOET. This response ignored that Largan was seeking knowledge that HP would have and that AOET seemed unwilling to provide regarding which HP products contained which lenses.

36. In August 2019, Largan updated AOET on Largan's understanding of the HP products and AOET components that infringed Largan's patents, including the '796 Patent. Largan again asked AOET to identify AOET lens models used in the HP products, noted that HP had given permission for AOET to do so, and copied HP on these communications.

37. Rather than respond to this request, AOET instead sent a response to Largan's earlier May 20 infringement notice, and denied infringement.

38. Also in August 2019, Largan notified Newmax that lenses Newmax was providing to HP and that had been incorporated into HP products were infringing Largan's patents, including at least the '796 and '378 Patents. This notice included Largan's CT scans of Newmax lenses and an explanation of Largan's understanding of the specific HP products incorporating those lenses.

39. Further communications between Largan and Newmax followed a similar pattern to those between Largan and AOET. Largan copied HP on the infringement notice to Newmax. But Newmax stated that it could not "clarify" the "patent infringement issue" unless Largan provided the names of the Newmax product models at issue—i.e., information available to and in the control of Newmax and/or HP, not Largan.

40. With AOET, Newmax, and HP each declining to take responsibility for the ongoing and willful infringement of Largan's intellectual property, Largan brings this case to enforce its duly-earned United States patent rights.



**COUNT ONE**  
**INFRINGEMENT OF U.S. PATENT NO. 7,274,518**

41. Largan re-alleges and incorporates by reference paragraphs 1–40 above.

42. On September 25, 2007, the United States Patent and Trademark Office (“USPTO”) duly and legally issued U.S. Patent No. 7,274,518, entitled “Optical System for Taking Image.” Largan is the owner of the ’518 Patent, a true and correct copy of which is attached hereto as *Exhibit A*.

43. The ’518 Patent generally is directed to addressing increasing needs for compact, high-resolution imaging lenses. At the time, conventional high-resolution optical systems in mobile phone cameras usually consisted of an assembly of four imaging lenses, with the first two lenses being spherical lenses glued together to eliminate chromatic aberration. *E.g.*, ’518 Patent at 1:21–25. But these systems had significant disadvantages, since the arrangement of the spherical lens limited the flexibility of the optical system and could not easily be made smaller. Additionally, the gluing process for glass lenses made manufacturing difficult and limited performance. *See, e.g., id.* at 1:25–31. Accordingly, the ’518 Patent disclosed a new four-lens optical system, where the first lens is an aspherical lens that provides strong positive refractive power, and the second lens serves to balance and correct aberrations in the system. The ’518 Patent also details, among other things, desired shapes of individual lenses in the system, radii of curvature, Abbe numbers, focal lengths, and refractive indices.

44. The ’518 Patent is valid and enforceable under the United States Patent Laws.

45. Defendant HP has infringed and is infringing, either literally or under the doctrine of equivalents, at least claim 1 of the ’518 Patent in violation of 35 U.S.C. § 271 *et seq.*, directly and/or indirectly, by making, using, offering for sale, or selling in the United States, and/or importing into the United States without authority or license, products that incorporate infringing

lens systems supplied by AOET and/or Newmax, including without limitation the HP Spectre Folio, Pavilion X360 14M-BA, Pavilion X360 14-BA, Pavilion X360 14T-BA, EnvyX360, Omen X17, Omen 17, and ChromeBook X360 11 G1 EE. On information and belief, HP knew or should have known of the '518 Patent and of its infringement, including by way of this lawsuit and, earlier, by way of the notice that Largan provided in March 2019 and/or Largan's marking of products embodying the '518 Patent starting on January 20, 2012.

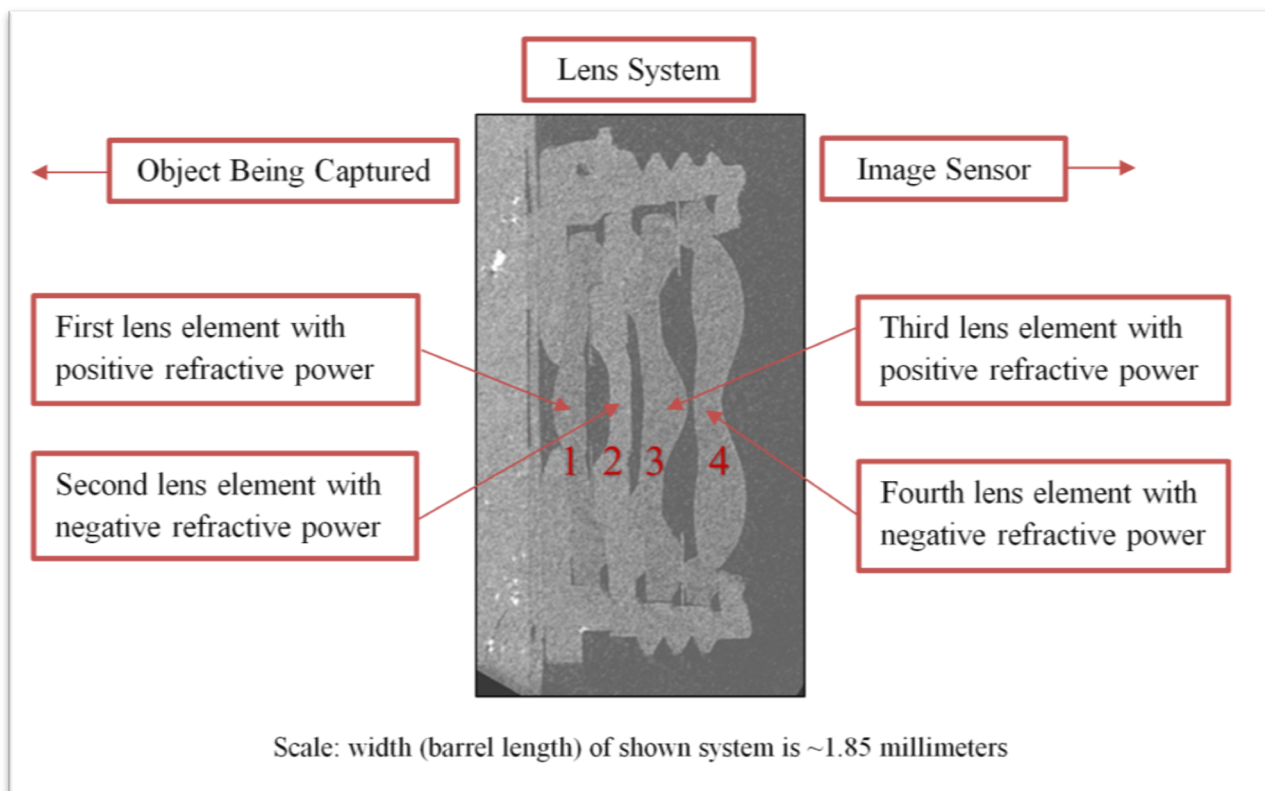
46. Defendant AOET has infringed and is infringing, either literally or under the doctrine of equivalents, at least claim 1 of the '518 Patent in violation of 35 U.S.C. § 271 *et seq.*, directly and/or indirectly, by making, using, offering for sale, or selling in the United States, and/or importing into the United States without authority or license, infringing lens systems, including without limitation those systems incorporated into the HP products enumerated above. Additionally, AOET has been and/or currently is an active inducer of infringement of the '518 Patent under 35 U.S.C. § 271(b) and a contributory infringer of the '518 Patent under 35 U.S.C. § 271(c). On information and belief, AOET knew or should have known of the '518 Patent and of its infringement, including by way of this lawsuit and, earlier, by way of the notice that Largan provided in May 2019, Largan's marking of products embodying the '518 Patent starting on January 20, 2012, and/or through AOET's communications with HP. AOET provided the accused infringing lens systems at least to HP and, on information and belief, instructions to use such lens systems in an infringing manner while being on notice of (or willfully blind to) the '518 Patent and the infringement. Thus, on information and belief, AOET knew or should have known of the '518 Patent and of its own infringing acts, or deliberately took steps to avoid learning of those facts, and knowingly and intentionally encouraged and aided at least HP to directly infringe the '518 Patent. In addition, the accused infringing lens systems are known by

AOET to be specifically made or adapted for use in an infringing manner, and are not staple articles with substantial noninfringing uses.

47. Defendant Newmax has infringed and is infringing, either literally or under the doctrine of equivalents, at least claim 1 of the '518 Patent in violation of 35 U.S.C. § 271 et seq., directly and/or indirectly, by making, using, offering for sale, or selling in the United States, and/or importing into the United States without authority or license, infringing lens systems, including without limitation those systems incorporated into the HP products enumerated above. Additionally, Newmax has been and/or currently is an active inducer of infringement of the '518 Patent under 35 U.S.C. § 271(b) and a contributory infringer of the '518 Patent under 35 U.S.C. § 271(c). On information and belief, Newmax knew or should have known of the '518 Patent and of its infringement, including by way of this lawsuit and, earlier, by way of Largan's marking of products embodying the '518 Patent starting on January 20, 2012, and/or through Newmax's communications with HP. Newmax provided the accused infringing lens systems at least to HP and, on information and belief, instructions to use such lens systems in an infringing manner while being on notice of (or willfully blind to) the '518 Patent and the infringement. Thus, on information and belief, Newmax knew or should have known of the '518 Patent and of its own infringing acts, or deliberately took steps to avoid learning of those facts, and knowingly and intentionally encouraged and aided at least HP to directly infringe the '518 Patent. In addition, the accused infringing lens systems are known by Newmax to be specifically made or adapted for use in an infringing manner, and are not staple articles with substantial noninfringing uses.

48. As just one non-limiting example, the four lens element system supplied by AOET and/or Newmax that is incorporated in the HP Spectre Folio infringes claim 1 of the '518

Patent. The below CT scan, as well as additional testing and measurement data, confirms that this lens system meets each and every claim element of at least claim 1 of the '518 Patent.



49. On information and belief, including the allegations above showing knowledge and intent, Defendants' infringement has been and continues to be deliberate, willful, and in reckless disregard of Largan's patent rights.

50. Largan has been, and continues to be, damaged by Defendants' infringement of the '518 Patent.

## COUNT TWO INFRINGEMENT OF U.S. PATENT NO. 8,395,691

51. Largan re-alleges and incorporates by reference paragraphs 1–40 above.

52. On March 12, 2013, the USPTO duly and legally issued U.S. Patent No. 8,395,691, entitled “Optical Image-Capturing Lens Assembly.” Largan is the owner of the ’691 Patent, a true and correct copy of which is attached hereto as *Exhibit B*.

53. The ’691 Patent also is generally directed to addressing the ever-increasing demand for compact, high-resolution imaging lenses. At the time, many compact imaging lens assemblies in portable electronic products used three lens elements, but these conventional systems weren’t suitable for higher-end lens modules. *E.g.*, ’691 Patent at 1:30–42. Conventional systems used four imaging lenses, with the first two lenses being glass spherical lenses glued together to eliminate chromatic aberration. *E.g.*, ’691 Patent at 1:42–46. But these systems had significant disadvantages, since the arrangement of the spherical lens limited the flexibility of the optical system and could not easily be made smaller. Additionally, the gluing process for glass lenses made manufacturing difficult and ultimately limited performance. *See, e.g., id.* at 1:46–53. Accordingly, the ’691 Patent disclosed a new four-lens optical system that could reduce the size of the lens assembly while also achieving an enlarged field of view and higher resolution. *E.g., id.* at 2: 53–56. The ’691 Patent thus details, among other things, the desired shapes of individual lenses in the system, distance between the object-side surface of the first lens and the electronic sensor, focal lengths, Abbe numbers, image height, and lens thicknesses at optical axis.

54. The ’691 Patent is valid and enforceable under the United States Patent Laws.

55. Defendant HP has infringed and is infringing, either literally or under the doctrine of equivalents, at least claim 21 of the ’691 Patent in violation of 35 U.S.C. § 271 *et seq.*, directly and/or indirectly, by making, using, offering for sale, or selling in the United States, and/or importing into the United States without authority or license, products that incorporate infringing lens systems supplied by AOET and/or Newmax, including without limitation the HP

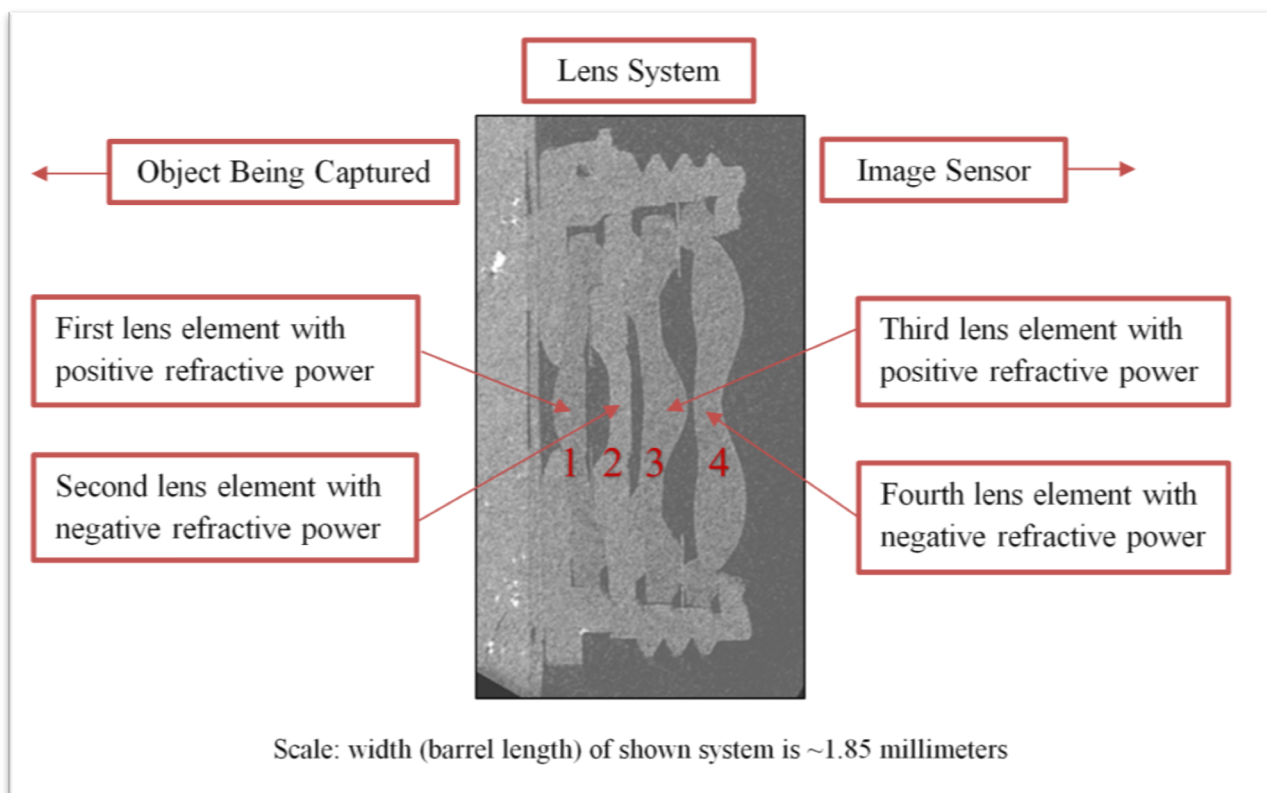
Spectre Folio, Pavilion X360 14M-BA, Pavilion X360 14-BA, Pavilion X360 14T-BA, Envoy X360, Omen X 17, Omen 17, and ChromeBook X360 11 G1 EE. On information and belief, HP knew or should have known of the '691 Patent and of its infringement, including by way of this lawsuit and, earlier, by way of the notices that Largan provided in August 2013 and March 2019, Largan's marking of products embodying the '691 Patent starting on March 22, 2013, and/or through HP's communications with AOET.

56. Defendant AOET has infringed and is infringing, either literally or under the doctrine of equivalents, at least claim 21 of the '691 Patent in violation of 35 U.S.C. § 271 *et seq.*, directly and/or indirectly, by making, using, offering for sale, or selling in the United States, and/or importing into the United States without authority or license, infringing lens systems, including without limitation those systems incorporated into the HP products enumerated above. Additionally, AOET has been and/or currently is an active inducer of infringement of the '691 Patent under 35 U.S.C. § 271(b) and a contributory infringer of the '691 Patent under 35 U.S.C. § 271(c). On information and belief, AOET knew or should have known of the '691 Patent and of its infringement, including by way of this lawsuit and, earlier, by way of the notices that Largan provided in August 2013 and May 2019, Largan's marking of products embodying the '691 Patent starting on March 22, 2013, and/or AOET's prosecution of its U.S. Patent No. 9,097,860 (during which an August 4, 2015 Office Action cited the pre-grant patent application that issued as the '691 Patent). AOET provided the accused infringing lens systems at least to HP and, on information and belief, instructions to use such lens systems in an infringing manner while being on notice of (or willfully blind to) the '691 Patent and the infringement. Thus, on information and belief, AOET knew or should have known of the '691 Patent and of its own infringing acts, or deliberately took steps to avoid learning of those facts, and knowingly and

intentionally encouraged and aided at least HP to directly infringe the '691 Patent. In addition, the accused infringing lens systems are known by AOET to be specifically made or adapted for use in an infringing manner, and are not staple articles with substantial noninfringing uses.

57. Defendant Newmax has infringed and is infringing, either literally or under the doctrine of equivalents, at least claim 21 of the '691 Patent in violation of 35 U.S.C. § 271 et seq., directly and/or indirectly, by making, using, offering for sale, or selling in the United States, and/or importing into the United States without authority or license, infringing lens systems, including without limitation those systems incorporated into the HP products enumerated above. Additionally, Newmax has been and/or currently is an active inducer of infringement of the '691 Patent under 35 U.S.C. § 271(b) and a contributory infringer of the '691 Patent under 35 U.S.C. § 271(c). On information and belief, Newmax knew or should have known of the '691 Patent and of its infringement, including by way of this lawsuit and, earlier, by way of Largan's marking of products embodying the '691 Patent starting on March 22, 2013, and/or Newmax's prosecution of its U.S. Patent No. 10,007,096 (during which a June 28, 2017 Office Action cited the pre-grant patent application that issued as the '691 Patent) and/or through its communications with HP. Newmax provided the accused infringing lens systems at least to HP and, on information and belief, instructions to use such lens systems in an infringing manner while being on notice of (or willfully blind to) the '691 Patent and the infringement. Thus, on information and belief, Newmax knew or should have known of the '691 Patent and of its own infringing acts, or deliberately took steps to avoid learning of those facts, and knowingly and intentionally encouraged and aided at least HP to directly infringe the '691 Patent. In addition, the accused infringing lens systems are known by Newmax to be specifically made or adapted for use in an infringing manner, and are not staple articles with substantial noninfringing uses.

58. As just one non-limiting example, the four lens element system supplied by AOET and/or Newmax that is incorporated in the HP Spectre Folio infringes claim 21 of the '691 Patent. The below CT scan, as well as additional testing and measurement data, confirms that this lens system meets each and every claim element of at least claim 21 of the '691 Patent.



59. On information and belief, including the allegations above showing knowledge and intent, Defendants' infringement has been and continues to be deliberate, willful, and in reckless disregard of Largan's patent rights.

60. Largan has been, and continues to be, damaged by Defendants' infringement of the '691 Patent.

### COUNT THREE INFRINGEMENT OF U.S. PATENT NO. 8,988,796

61. Largan re-alleges and incorporates by reference paragraphs 1–40 above.



62. On March 24, 2015, the USPTO duly and legally issued U.S. Patent No. 8,988,796, entitled “Image Capturing Lens System, Imaging Device and Mobile Terminal.” Largan is the owner of the ’796 Patent, a true and correct copy of which is attached hereto as *Exhibit C*.

63. The ’796 Patent also is generally directed to addressing the ever-increasing demand for compact, high-resolution imaging lenses. At the time, many compact imaging lens assemblies in portable electronic products used three lens elements, but these conventional systems weren’t suitable for higher-end lens modules. *E.g.*, ’796 Patent at 1:26–33. Other conventional systems used four imaging lenses, but these systems had difficulty obtaining a large field of view while maintaining a short total track length. Further, they were unfavorable for resolving power and illumination in the peripheral region of an image, and thus were limited in quality. *E.g., id.* at 1:34–41. Accordingly, the ’796 Patent disclosed a new four-lens optical system to overcome those disadvantages, with detailed descriptions of, among other things, the desired shapes of individual lenses in the system, focal lengths, axial distance between object-side surface of first lens and the image-side surface of fourth lens, central lens thickness, radii of curvature, Abbe numbers, and f-numbers.

64. The ’796 Patent is valid and enforceable under the United States Patent Laws.

65. Defendant HP has infringed and is infringing, either literally or under the doctrine of equivalents, at least claim 21 of the ’796 Patent in violation of 35 U.S.C. § 271 *et seq.*, directly and/or indirectly, by making, using, offering for sale, or selling in the United States, and/or importing into the United States without authority or license, products that incorporate infringing lens systems supplied by AOET and/or Newmax, including without limitation the HP Pavilion X360, EliteBook 735 G5, EliteBook 745, EliteBook 755, EliteBook 830 G5, EliteBook

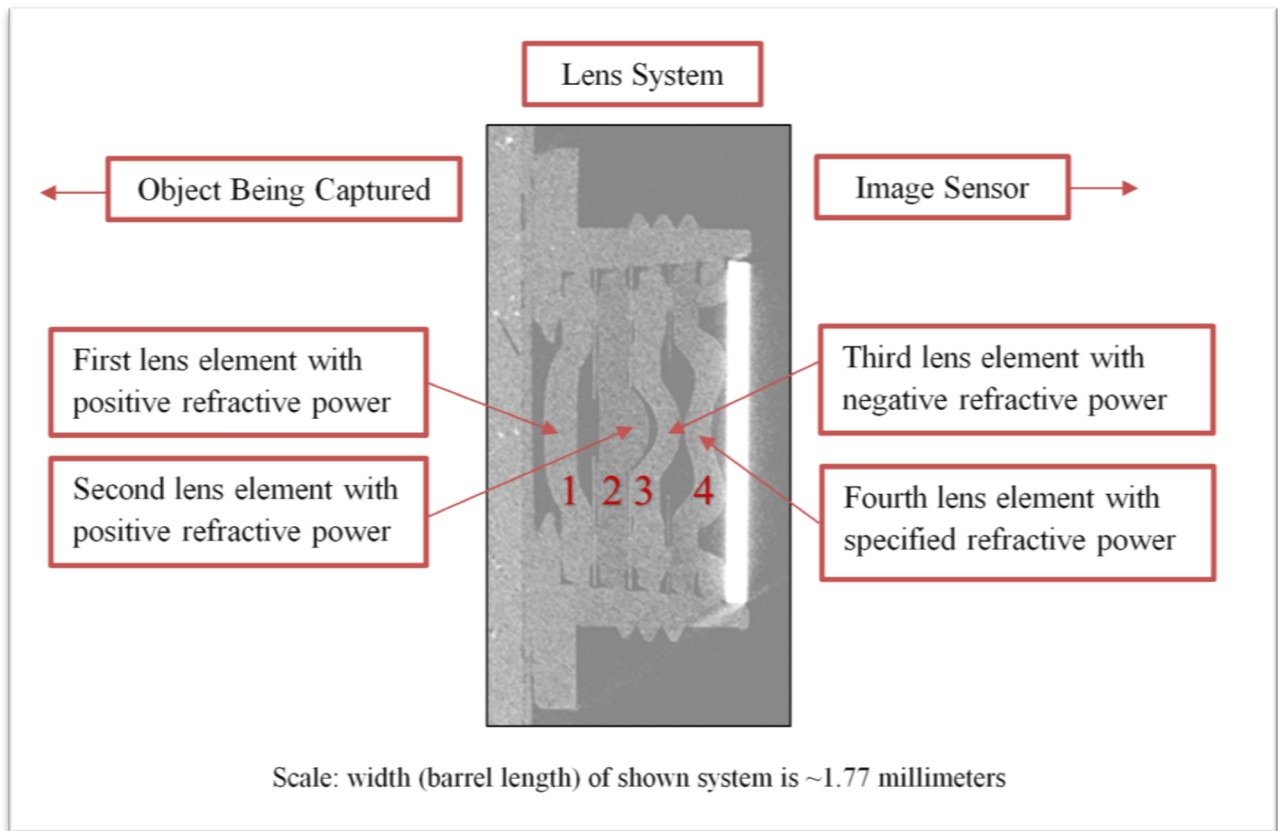
840 G5, EliteBook 850 G5, EliteBook 1050 G1, ZBook 14u G5, ZBook 15 G5, ZBook 15u G5, ZBook x2 G4, ZBook 17 G5, ZBook Studio X360 G5, ZBook Studio G5, ProBook X360 11 G3 EE, Omen 15, Omen 15t, Elite x2 1012 G2, Elite x2 1013 G3, Pro x2 612 G2, Spectre x2 12, HP x2 210 G2, Pavilion Notebook 15, Pavilion Notebook 15t, Pavilion Notebook 17, Pavilion Notebook 17t, Pavilion Gaming 15, and Envy 15. On information and belief, HP knew or should have known of the '796 Patent and of its infringement, including by way of this lawsuit and, earlier, by way of the notice that Largan provided in March 2019 and/or through its communications with AOET and/or Newmax.

66. Defendant AOET has infringed and is infringing, either literally or under the doctrine of equivalents, at least claim 21 of the '796 Patent in violation of 35 U.S.C. § 271 *et seq.*, directly and/or indirectly, by making, using, offering for sale, or selling in the United States, and/or importing into the United States without authority or license, infringing lens systems, including without limitation those systems incorporated into the HP products enumerated above. Additionally, AOET has been and/or currently is an active inducer of infringement of the '796 Patent under 35 U.S.C. § 271(b) and a contributory infringer of the '796 Patent under 35 U.S.C. § 271(c). On information and belief, AOET knew or should've known of the '796 Patent and of its infringement, including by way of this lawsuit and, earlier, by way of the notice that Largan provided in August 2019 and/or through its communications with HP. AOET provided the accused infringing lens systems at least to HP and, on information and belief, instructions to use such lens systems in an infringing manner while being on notice of (or willfully blind to) the '796 Patent and the infringement. Thus, on information and belief, AOET knew or should have known of the '796 Patent and of its own infringing acts, or deliberately took steps to avoid learning of those facts, and knowingly and intentionally encouraged and aided at least HP to

directly infringe the '796 Patent. In addition, the accused infringing lens systems are known by AOET to be specifically made or adapted for use in an infringing manner, and are not staple articles with substantial noninfringing uses.

67. Defendant Newmax has infringed and is infringing, either literally or under the doctrine of equivalents, at least claim 21 of the '796 Patent in violation of 35 U.S.C. § 271 et seq., directly and/or indirectly, by making, using, offering for sale, or selling in the United States, and/or importing into the United States without authority or license, infringing lens systems, including without limitation those systems incorporated into the HP products enumerated above. Additionally, Newmax has been and/or currently is an active inducer of infringement of the '796 Patent under 35 U.S.C. § 271(b) and a contributory infringer of the '796 Patent under 35 U.S.C. § 271(c). On information and belief, Newmax knew or should have known of the '796 Patent and of its infringement, including by way of this lawsuit and, earlier, by way of the notice that Largan provided in August 2019 and/or Newmax's prosecution of its Taiwan patent application TW 201312151 (during which a foreign counterpart to the '796 patent was cited on June 22, 2017). Newmax provided the accused infringing lens systems at least to HP and, on information and belief, instructions to use such lens systems in an infringing manner while being on notice of (or willfully blind to) the '796 Patent and the infringement. Thus, on information and belief, Newmax knew or should have known of the '796 Patent and of its own infringing acts, or deliberately took steps to avoid learning of those facts, and knowingly and intentionally encouraged and aided at least HP to directly infringe the '796 Patent. In addition, the accused infringing lens systems are known by Newmax to be specifically made or adapted for use in an infringing manner, and are not staple articles with substantial noninfringing uses.

68. As just one non-limiting example, the four lens element system supplied by AOET and/or Newmax that is incorporated in the HP Pavilion X360 infringes claim 21 of the '796 Patent. The below CT scan, as well as additional testing and measurement data, confirms that this lens system meets each and every claim element of at least claim 21 of the '796 Patent.



69. On information and belief, including the allegations above showing knowledge and intent, Defendants' infringement has been and continues to be deliberate, willful, and in reckless disregard of Largan's patent rights.

70. Largan has been, and continues to be, damaged by Defendants' infringement of the '796 Patent.

#### COUNT FOUR INFRINGEMENT OF U.S. PATENT NO. 9,146,378

71. Largan re-alleges and incorporates by reference paragraphs 1–40 above.

72. On September 29, 2015, the USPTO duly and legally issued U.S. Patent No. 9,146,378, entitled “Image Capturing Lens Assembly, Image Capturing Device and Mobile Terminal.” Largan is the owner of the ’378 Patent, a true and correct copy of which is attached hereto as *Exhibit D*.

73. The ’378 Patent also is generally directed to addressing the ever-increasing demand for compact, high-resolution imaging lenses, specifically in the context of three-lens systems. The lenses on the outside of conventional three-lens optical systems had a positive refractive power, while the middle lens has a negative refractive power. But these systems had difficulty obtaining a large field of view while maintaining a short total track length. *E.g.*, ’378 Patent at 1:31–39. Accordingly, the ’378 Patent disclosed a new three-lens optical system to overcome those disadvantages, with detailed descriptions of, among other things, the desired shapes of individual lenses within the system, focal lengths, axial distance between the stop and the image-side surface of the third lens, axial distance between the object-side surface of the first lens and the image-side surface of the third lens, central lens thicknesses, entrance pupil diameter, axial distance between the object-side surface of the first lens element and an image plane, radii of curvature, and image height.

74. The ’378 Patent is valid and enforceable under the United States Patent Laws.

75. Defendant HP has infringed and is infringing, either literally or under the doctrine of equivalents, at least claim 1 of the ’378 Patent in violation of 35 U.S.C. § 271 *et seq.*, directly and/or indirectly, by making, using, offering for sale, or selling in the United States, and/or importing into the United States without authority or license, products that incorporate infringing lens systems supplied by AOET and/or Newmax, including without limitation the HP EliteBook 735 G5, EliteBook 830 G5, EliteBook 840 G3, EliteBook 840 G5, EliteBook 840r G4, EliteBook

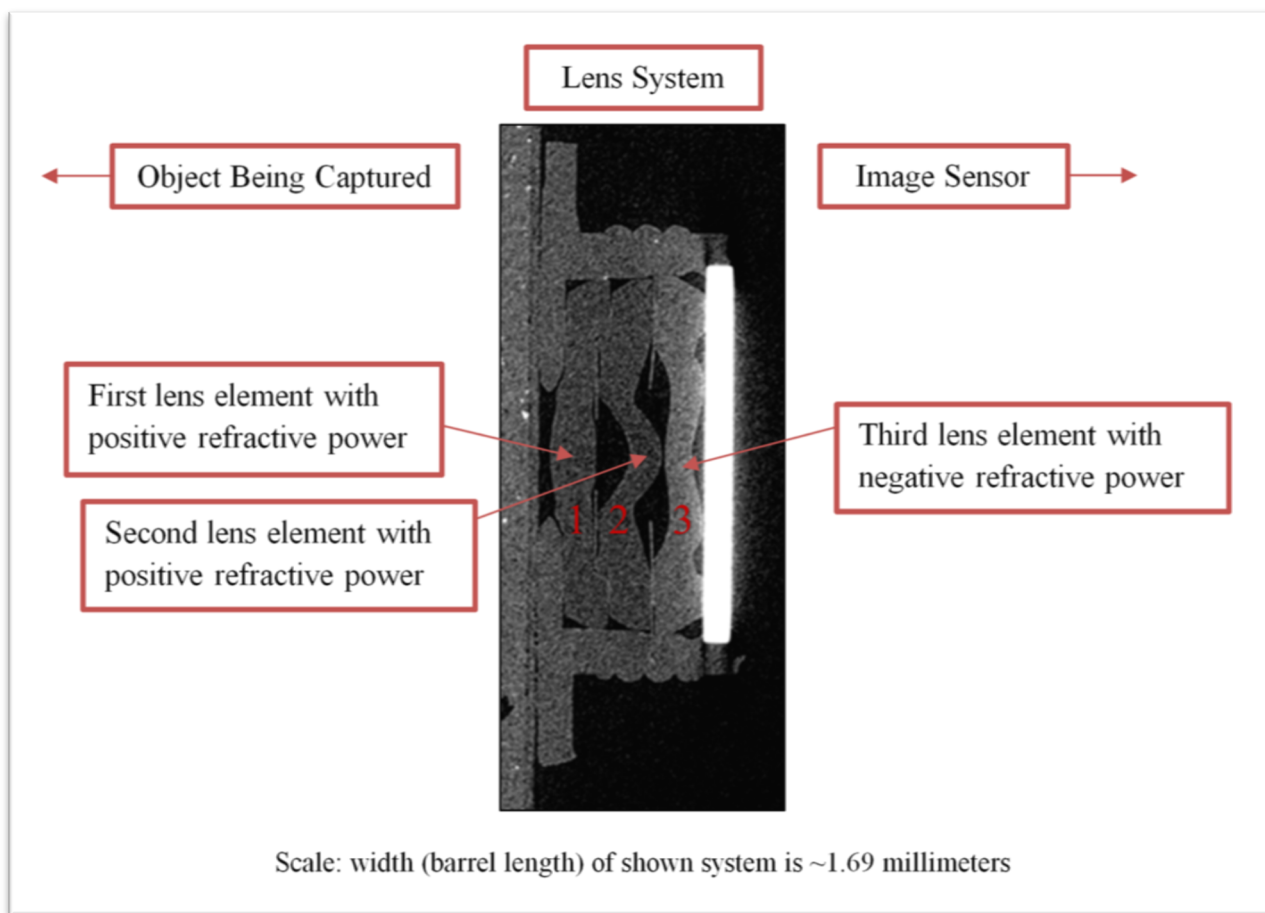
850 G5, EliteBook 1050 G1, ZBook 14u G5, ZBook 15u G5, ZBook 15 G5, ZBook Studio X360 G5, ZBook Studio G5, Zbook 17 G5, ProBook 430 G5, ProBook 440 G5, ProBook 450 G5, ProBook 455 G5, ProBook 470 G5, ProBook X360 440 G1, ProBook 640 G5, ProBook 650G5, ChromeBook 11 G7, and ChromeBook 11A G6 EE. On information and belief, HP knew or should have known of the '378 Patent and of its infringement, including by way of this lawsuit and, earlier, by way of the notice that Largan provided in April 2019 and/or through its communications with AOET.

76. Defendant AOET has infringed and is infringing, either literally or under the doctrine of equivalents, at least claim 1 of the '378 Patent in violation of 35 U.S.C. § 271 *et seq.*, directly and/or indirectly, by making, using, offering for sale, or selling in the United States, and/or importing into the United States without authority or license, infringing lens systems, including without limitation those systems incorporated into the HP products enumerated above. Additionally, AOET has been and/or currently is an active inducer of infringement of the '378 Patent under 35 U.S.C. § 271(b) and a contributory infringer of the '378 Patent under 35 U.S.C. § 271(c). On information and belief, AOET knew or should have known of the '378 Patent and of its infringement, including by way of this lawsuit and, earlier, by way of AOET's prosecution of its U.S. Patent No. 9,729,771 (during which a November 4, 2016 Office Action cited the pre-grant application that issued as the '378 Patent), AOET's prosecution of its U.S. Patent Nos. 9,709,772; 9,753,251; 9,690,073; and 9,784,944 (during each of which the '378 Patent's pre-grant application was cited), and/or through its communications with HP. AOET provided the accused infringing lens systems at least to HP and, on information and belief, instructions to use such lens systems in an infringing manner while being on notice of (or willfully blind to) the '378 Patent and the infringement. Thus, on information and belief, AOET knew or should have

known of the '378 Patent and of its own infringing acts, or deliberately took steps to avoid learning of those facts, and knowingly and intentionally encouraged and aided at least HP to directly infringe the '378 Patent. In addition, the accused infringing lens systems are known by AOET to be specifically made or adapted for use in an infringing manner, and are not staple articles with substantial noninfringing uses.

77. Defendant Newmax has infringed and is infringing, either literally or under the doctrine of equivalents, at least claim 1 of the '378 Patent in violation of 35 U.S.C. § 271 et seq., directly and/or indirectly, by making, using, offering for sale, or selling in the United States, and/or importing into the United States without authority or license, infringing lens systems, including without limitation those systems incorporated into the HP products enumerated above. Additionally, Newmax has been and/or currently is an active inducer of infringement of the '378 Patent under 35 U.S.C. § 271(b) and a contributory infringer of the '378 Patent under 35 U.S.C. § 271(c). On information and belief, Newmax knew or should have known of the '378 Patent and of its infringement, including by way of this lawsuit and, earlier, by way of the notice that Largan provided in August 2019 and/or through its communications with HP. Newmax provided the accused infringing lens systems at least to HP and, on information and belief, instructions to use such lens systems in an infringing manner while being on notice of (or willfully blind to) the '378 Patent and the infringement. Thus, on information and belief, Newmax knew or should have known of the '378 Patent and of its own infringing acts, or deliberately took steps to avoid learning of those facts, and knowingly and intentionally encouraged and aided at least HP to directly infringe the '378 Patent. In addition, the accused infringing lens systems are known by Newmax to be specifically made or adapted for use in an infringing manner, and are not staple articles with substantial noninfringing uses.

78. As just one non-limiting example, the three lens element system supplied by AOET and/or Newmax that is incorporated in the HP EliteBook 830 G5 infringes claim 1 of the '378 Patent. The below CT scan, as well as additional testing and measurement data, confirms that this lens system meets each and every claim element of at least claim 1 of the '378 Patent.



79. On information and belief, including the allegations above showing knowledge and intent, Defendants' infringement has been and continues to be deliberate, willful, and in reckless disregard of Largan's patent rights.

80. Largan has been, and continues to be, damaged by Defendants' infringement of the '378 Patent.



**PRAYER FOR RELIEF**

WHEREFORE, Plaintiff Largan demands judgment against Defendants, including their affiliates, officers, agents, servants, employees, and all persons in active concert or participation with them, as follows:

A. An award to Plaintiff Largan of such damages under 35 U.S.C. § 284 as proven against Defendants for infringement of the '518 Patent, '691 Patent, '796 Patent, and '378 Patent, together with pre-judgment and post-judgment interest;

B. A permanent injunction prohibiting Defendants from further acts of infringement of the '518 Patent, '691 Patent, '796 Patent, and '378 Patent;

C. A declaration that Defendants have willfully infringed the '518 Patent, '691 Patent, '796 Patent, and '378 Patent;

D. Under 35 U.S.C. § 284, an increase in the award of damages to Plaintiff Largan up to three times the amount of its actual damages for Defendants' willful infringement;

E. Under 35 U.S.C. § 285, an award to Plaintiff Largan of its reasonable attorney's fees and the costs of this action; and

F. Such other and further relief as this Court deems just and appropriate.

**JURY DEMAND**

Under Federal Rule of Civil Procedure 38(b), Plaintiff Largan demands a trial by jury.

Dated: September 25, 2019

Respectfully submitted,

/s/ Alan M. Fisch

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