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COREPHOTONICS, LTD.

UNITED STATES DISTRICT COURT

NORTHERN DISTRICT OF CALIFORNIA

COREPHOTONICS, LTD. Plaintiff, vs. APPLE INC. Defendant.	Civil Action No. 3:19-cv-4809 **COMPLAINT FOR PATENT INFRINGEMENT** **DEMAND FOR JURY TRIAL**

COMPLAINT

1. Plaintiff Corephotonics, Ltd. ("Corephotonics") hereby submits its Complaint against Defendant Apple Inc. ("Apple") and alleges as follows:

NATURE OF THE ACTION

2. This is a civil action for infringement under the patent laws of the United States, 35 U.S.C. § 1, *et seq*.

3. The United States Patent and Trademark Office duly and legally issued U.S. Patent 9,661,233 (the "'233 patent"), entitled "Dual Aperture Zoom Digital Camera," on May 23, 2017. Corephotonics is the legal owner of the '233 patent by assignment. A true and correct copy of the '233 patent is attached hereto as Exhibit A.

4. The United States Patent and Trademark Office duly and legally issued U.S. Patent 10,230,898 (the "'898 patent"), entitled "Dual Aperture Zoom Camera With Video Support And Switching / Non-Switching Dynamic Control," on March 12, 2019. Corephotonics is the legal owner of the '898 patent by assignment. A true and correct copy of the '898 patent is attached hereto as Exhibit B.

5. The United States Patent and Trademark Office duly and legally issued U.S. Patent 10,288,840 (the "'840 patent"), entitled "Miniature Telephoto Lens Module And A Camera Utilizing Such A Lens Module," on May 14, 2019. Corephotonics is the legal owner of the '840 patent by assignment. A true and correct copy of the '840 patent is attached hereto as Exhibit C.

6. The United States Patent and Trademark Office duly and legally issued U.S. Patent 10,317,647 (the "'647 patent"), entitled "Miniature Telephoto Lens Assembly," on June 11, 2019. Corephotonics is the legal owner of the '647 patent by assignment. A true and correct copy of the '647 patent is attached hereto as Exhibit D.

7. The United States Patent and Trademark Office duly and legally issued U.S. Patent 10,324,277 (the "'277 patent"), entitled "Miniature Telephoto Lens Assembly," on June 18, 2019. Corephotonics is the legal owner of the '277 patent by assignment. A true and correct copy of the '277 patent is attached hereto as Exhibit E.

8. The United States Patent and Trademark Office duly and legally issued U.S. Patent 10,330,897 (the "'897 patent"), entitled "Miniature Telephoto Lens Assembly," on June 25, 2019. Corephotonics is the legal owner of the '897 patent by assignment. A true and correct copy of the '897 patent as-issued, together with a certificate of correction dated July 23, 2019, is attached hereto as Exhibit F.

9. The United States Patent and Trademark Office duly and legally issued U.S. Patent 10,225,479 (the "'479 patent"), entitled "Dual Aperture Zoom Digital Camera," on March 5, 2019. Corephotonics is the legal owner of the '479 patent by assignment. A true and correct copy of the '479 patent is attached hereto as Exhibit G.

10. The United States Patent and Trademark Office duly and legally issued U.S. Patent 10,015,408 (the "'408 patent"), entitled "Dual Aperture Zoom Digital Camera," on July 3, 2018. Corephotonics is the legal owner of the '408 patent by assignment. A true and correct copy of the '408 patent is attached hereto as Exhibit H.

11. The United States Patent and Trademark Office duly and legally issued U.S. Patent 10,356,332 (the "'332 patent"), entitled "Dual Aperture Zoom Camera With Video Support And Switching / Non-Switching Dynamic Control," on July 16, 2019. Corephotonics is the legal owner of the '332 patent by assignment. A true and correct copy of the '332 patent is attached hereto as Exhibit I.

12. The United States Patent and Trademark Office duly and legally issued U.S. Patent 10,326,942 (the "'942 patent"), entitled "Dual Aperture Zoom Digital Camera," on June 18, 2019. Corephotonics is the legal owner of the '942 patent by assignment. A true and correct copy of the '942 patent is attached hereto as Exhibit J.

13. Apple has infringed and continues to infringe one or more claims of each of the '233 patent, the '898 patent, the '840 patent, the '647 patent, the '277 patent, the '897 patent, the '479 patent, the '408 patent, the '332 patent, and the '942 patent (collectively the "Asserted Patents"), at least by importing, using, selling, and/or offering to sell the iPhone 7 Plus, iPhone 8 Plus, iPhone X, iPhone Xs, and/or iPhone Xs Max (the "Accused Products"), as set forth in detail below. Corephotonics seeks, among other things, monetary damages and injunctive relief.

THE PARTIES

14. Plaintiff Corephotonics is a company organized and existing under the laws of the State of Israel with its principal place of business at 25 HaBarzel St., Tel Aviv 6971035, Israel.

15. Defendant Apple is a corporation organized and existing under the laws of the State of California with its principal place of business at 1 Infinite Loop, Cupertino, California.

JURISDICTION AND VENUE

16. This Court has subject matter jurisdiction over Corephotonics' claims for patent infringement pursuant to the 28 U.S.C. §§ 1331 and 1338(a).

17. Apple is subject to this Court's personal jurisdiction because Apple resides and has its primary place of business within this District. This Court also has personal jurisdiction over Apple because Apple has committed and induced acts of patent infringement and has regularly and systematically conducted and solicited business in this District by and through at least its sales and offers for sale of Apple products and services, and other contractual arrangements with Apple customers and third parties using such Apple products and services located in and/or doing business in this District.

18. Venue is proper in this District under 28 U.S.C. §§ 1391(b) and 1400(b) because Apple resides in this District, has a regular and established place of business in this District, and has committed acts of infringement in this District.

INTRADISTRICT ASSIGNMENT

19. This action for patent infringement is assigned on a district-wide basis under Civil L.R. 3-2(c).

FACTUAL ALLEGATIONS

A. Corephotonics' Dual Camera Technology Innovations

20. Corephotonics is a pioneer in the development of dual camera technologies for mobile devices. Corephotonics was founded in 2012 to develop the next generation of mobile phone cameras. Its founders brought with them decades of experience in the fields of optics and miniature digital cameras and were led by Dr. David Mendlovic, a Professor at Tel Aviv University and former Chief Scientist of the Israeli Ministry of Science.

21. Corephotonics' dual-aperture camera technology changes the way smartphones take pictures by using advanced lens design and sophisticated computational optics. The advanced lens design is used to create a miniature telephoto lens that can fit within the confines of a modern, thin smartphone but still provide the superior image quality and light sensitivity demanded by smartphone consumers.

22. Corephotonics' innovative dual-aperture camera technology uses two fixed-focal length lenses, a wide-angle lens as typically found in smartphones with single-aperture cameras, and a miniature telephoto lens. Traditional optical zoom is accomplished by using a variable focal length lens assembly. At the small formats required for smartphones, however, it is difficult to reliably include movable components, so smartphones were stuck with small, fixed lenses. This means that in a typical single-aperture smartphone camera, all zoom functionality is provided with digital zoom, *i.e.*, a processor digitally modifies the image to create a magnified but poorer resolution image. With Corephotonics' dual-aperture camera technology, by contrast, the second camera with telephoto lens provides much higher optical resolution than the wide-angle camera. Images from both of these cameras can also be processed by computational algorithms to create an effectively greater level of zoom without degrading image quality by combining digital and optical zoom.

23. For video, which captures thirty or more frames per second, Corephotonics discovered that implementing image fusion for each frame demands higher than normal processing resources and power. At the same time, the beneficial pixel finesse achieved by image fusion is less observable at the rapid frame rate of HD video due to human perception limits. Corephotonics thus developed technology for dual-aperture cameras where image fusion is only used when taking still pictures, but not for video. In video, when zooming in, digital zoom is used first on the image from the wide-angle camera only and then switched to the image from the telephoto camera only. When zooming back out, a similar transition happens from using the telephoto camera only, switching back to the wide-angle camera only. This approach conserves resources and power. Because the two lenses are different and necessarily view the subject from different points of view,

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