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Viavi Solutions Inc.*

**UNITED STATES DISTRICT COURT  
NORTHERN DISTRICT OF CALIFORNIA**

VIAVI SOLUTIONS INC.,

Plaintiff,

v.

OPTRONTEC INC., LG INNOTEK CO.,  
LTD., LG ELECTRONICS, INC., and LG  
ELECTRONICS U.S.A., INC.,

Defendants.

Case No. 3:19-cv-07578

**COMPLAINT**

**DEMAND FOR JURY TRIAL**

**COMPLAINT**

Plaintiff Viavi Solutions Inc. (“Viavi”) hereby makes this complaint against Defendants Optrontec Inc. (“Optrontec”), LG Innotek Co., Ltd. (“LG Innotek”), LG Electronics, Inc. (“LG Electronics”), and LG Electronics U.S.A., Inc. (“LG Electronics USA”) (LG Innotek, LG Electronics and LG Electronics USA will collectively be referred to as the “LG Defendants” and all defendants will be referred to as “Defendants”) as follows:

**NATURE OF ACTION**

1  
2 1. This is a patent infringement action. Viavi seeks damages and injunctive relief  
3 for Defendants' infringement of Viavi's patented technology in the United States.

**INTRADISTRICT ASSIGNMENT**

4  
5 2. This is an Intellectual Property action and shall be assigned on a district-wide  
6 basis pursuant to Civil L.R. 3-2(c) and this Court's Assignment Plan.

**FACTUAL BACKGROUND**

7  
8 3. Viavi, formerly part of JDS Uniphase Corporation, is a pioneer and world leader  
9 in the fields of three-dimensional (3D) motion sensing technology, light management, and  
10 optical coatings, among others.

11 4. The inventions disclosed in U.S. Patent Nos. 9,588,269 ("the '269 patent"),  
12 9,945,995 ("the '995 patent"), and 10,222,526 ("the '526 patent") (collectively "the Asserted  
13 Patents") (Exhibits 1-3) and exemplified in Viavi's state-of the art optical filters are indicative of  
14 Viavi's status as a world leader in 3D motion sensing technology.

15 5. In a typical gesture-recognition system, a light source emits near-infrared light  
16 towards a user. An optical filter is used to transmit the emitted light that is reflected by the user  
17 to the 3D image sensor, while substantially blocking ambient light. A 3D image sensor then  
18 detects the emitted light to provide a 3D image of the user. A processing system then analyzes  
19 the 3D image to recognize a gesture made by the user.

20 6. The inventors of the Asserted Patents conceived of a superior optical filter for  
21 such a use. The patented filter design provides a deep suppression of unwanted ambient light, so  
22 that the filters can be used under a wide variety of extreme light conditions. The patented filter  
23 design uses hydrogenated silicon material (which has a relatively high refractive index over the  
24 near-infrared wavelength range) to achieve superior optical performance, a desired reduction in  
25 filter thickness, and a reduced center wavelength shift with a change in incidence angle. Viavi  
26 has invested years of research and development into its 3D motion sensing technology, and has  
27 been awarded several related patents, including the Asserted Patents, for its efforts.  
28

1           7.       As described in the Asserted Patents, Viavi's filter design offers improvements  
2 over those previously known in the art. For example, it uses less layers, has thinner coatings and  
3 therefore costs less to produce and is smaller in size than prior filters. In addition, the reduction  
4 in center wavelength shift helps to reduce light transmission outside of the filter's designed  
5 passband, thereby increasing signal to noise ratios allowing for better system performance.

6           8.       Based on these inventions, Viavi was the first company to offer a commercial  
7 optical filter using hydrogenated silicon for 3D motion sensing. Viavi has enjoyed significant  
8 commercial success with its patented filter design, and that success is reflective of the electronic  
9 consumer product industry recognizing and replicating features of Viavi's patented technology.  
10 In fact, Viavi's innovative optical filters won the 2017 Fierce Innovation Award for the Telecom  
11 category, which seeks to recognize "groundbreaking solutions" and "the most evolutionary and  
12 revolutionary technologies" in the industry. Exhibit 4. Through multiple generations of  
13 increasing performance and decreasing cost, Viavi has remained the industry's leading supplier  
14 of high-performance filters for motion sensing systems in consumer electronics.

15           9.       Mobile device manufacturers like LG Electronics, and its suppliers including LG  
16 Innotek and Optrontec, have incorporated Viavi's patented filter design into their optical filters  
17 to produce high-end mobile phones featuring facial and gesture recognition technology.

#### 18                           **LG DEFENDANTS' INFRINGING PRODUCTS**

19           10.      On information and belief, LG Electronics and LG Electronics USA makes, uses,  
20 offers for sale, sells, and imports into the United States, mobile phones such as at least the LG  
21 G8 ThinQ mobile phone with 3D motion sensing and gesture recognition modules that include  
22 the patented technology.

23           11.      On information and belief, LG Electronics' G8 ThinQ mobile phone contains 3D  
24 camera modules made by LG Innotek, which include optical filters supplied by Optrontec.

25           12.      LG Innotek has publicly referred to its 3D application in its 3D module as "Time  
26 of Flight" or "ToF," and has publicly stated that LG Electronics' G8ThinQ mobile phone would  
27 house its ToF 3D module to implement gesture recognition technology. Exhibit 5.  
28

**OPTRONTEC'S INFRINGING OPTICAL FILTER**

13. On information and belief, LG Innotek sources the optical filters for its 3D module from Optrontec. Exhibit 6. Optrontec itself has publicly stated it is “the only producer of bandpass filters for 3D sensing using the ToF method” and it “has the only 3D sensing filter production technology in Korea,” where LG Electronics’ G8 ThinQ mobile phone and its components are manufactured. Exhibits 7, 8, and 9. According to Optrontec, its “camera image sensor filter (IR filter) and optical lenses are sold to global smartphone manufacturers such as Samsung Electronics and LG Electronics” (Exhibit 7), and it is the “exclusive supplier of the optical filter to Samsung and LG Electronics.” Exhibit 6.

14. On information and belief, Defendants knew or were willfully blind to the Asserted Patents and of the infringing nature of the Optrontec filters discussed in more detail below, in view of the ongoing litigation between Viavi and Optrontec concerning infringement of foreign counterparts to the Asserted Patents in the Republic of Korea (Case No. 2019 KaHap 514417).

**PARTIES**

15. Viavi is a Delaware corporation with its principal place of business and headquarters in this District at 6001 America Center Drive, Sixth Floor, San Jose, California 95002. Viavi also maintains its state-of-the-art research and development facility and a major production facility in this District in Santa Rosa, California.

16. On information and belief, Optrontec is a company organized under the laws of the Republic of Korea, with its principal place of business and headquarters located at 19-15 Pyeongsan-ro 8beon-gil, Uichang-gu, Changwon, Gyeongnam, 51398, Republic of Korea.

17. On information and belief, LG Electronics is a Korean corporation with its principal place of business and headquarters located at LG Electronics Twin Towers, 128 Yeoui-daero, Yeongdeungpo-gu, Seoul 07336, Republic of Korea.

18. On information and belief, LG Electronics USA, which is a wholly owned subsidiary of LG Electronics, is a Delaware corporation with its principal place of business and headquarters located at 1000 Sylvan Avenue, Englewood Cliffs, NJ 07632. LG Electronics USA

1 is in the business of, among other things, marketing mobile phones including the LG G8 ThinQ  
2 mobile phones in the United States, and providing sales and marketing support for those phones  
3 in the United States on behalf of LG Electronics. To aid with its mission, LG Electronics USA  
4 operates the LG Silicon Valley Lab in this District, which according to LG Electronics USA is  
5 focused on LG Electronics' next generation of consumer electronic products. Exhibit 10.

6 19. On information and belief, LG Innotek is a Korean corporation with its principal  
7 place of business and headquarters located at 17F, LG Seoulstation Bldg., 98 Huam-ro, Jung-gu,  
8 Seoul, 04637 Republic of Korea. On information and belief, LG Electronics is the parent and  
9 majority shareholder of LG Innotek.

#### 10 JURISDICTION AND VENUE

11 20. This action arises under the United States Patent Act, codified at 35 U.S.C. § 1 et  
12 seq., and in particular, 35 U.S.C. §§ 271 and 281-285.

13 21. This Court has original jurisdiction over the subject matter of this action under 28  
14 U.S.C. §§ 1331 and 1338(a) because the claims arise under the patent laws of the United States.

15 22. This Court has personal jurisdiction over LG Electronics USA because it has the  
16 minimum contacts with this District such that the exercise of jurisdiction over them would not  
17 offend traditional notions of fair play and substantial justice. LG Electronics USA is present  
18 within California and this District, conducts regular and systematic business in California and  
19 this District, has purposefully availed itself of the privileges of conducting business in California  
20 and this District, has transacted and continues to transact business in this District, has committed  
21 acts of infringement in this District, continues to commit acts of infringement in this District, and  
22 Viavi's cause of action arises directly from LG Electronics USA's contacts and activities in  
23 California and this District.

24 23. Venue is proper for LG Electronics USA under 28 U.S.C. §§ 1391(b), 1391(c),  
25 and 1400(b) because LG Electronics USA has a regular and established place of business in this  
26 District. It also has transacted and continues to transact business in this District, advertise and  
27 solicit business in this District, and has committed and continues to commit acts of infringement  
28 in this District.

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