PUBLIC VERSION

UNITED STATES INTERNATIONAL TRADE COMMISSION
WASHINGTON, D.C.

In the Matter of	
CERTAIN ACTIVE MATRIX OLED DISPLAY DEVICES AND COMPONENTS THEREOF	**Investigation No. 337-TA-3518**

FIRST AMENDED COMPLAINT UNDER SECTION 337 OF THE TARIFF ACT OF 1930, AS AMENDED

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I. INTRODUCTION

1. This Complaint is filed by Complainant Solas OLED Ltd. ("Solas" or "Complainant") pursuant to Section 337 of the Tariff Act of 1930, as amended, 19 U.S.C. § 1337 ("Section 337"). OLED is an acronym for organic light emitting diode.

2. Complainant brings this action to remedy violations of Section 337 arising from the unlawful and unauthorized importation into the United States, the sale for importation into the United States, and/or the sale within the United States after importation, of certain active matrix OLED display devices, and components thereof (the "Accused Products") that infringe one or more of the Asserted Claims of United States Patent Nos. 7,573,068 ("the '068 Patent," attached as Exhibit 2) and 7,868,880 ("the '880 Patent," attached as Exhibit 3) (collectively, the "Asserted Patents").

3. Complainant asserts that the Accused Products infringe at least the following claims of one or more Asserted Patents in violation of Section 337(a)(1)(B)(i), either literally or under the doctrine of equivalents:

Asserted Patent	Asserted Claims[1]
'068 Patent	**13** and 14-17
'880 Patent	**2**, **3**, 4-24, **25**, and 26-40

Table 1. The Asserted Claims.

4. OLED displays are revolutionizing electronic devices today. Devices using OLED displays enhance a user's viewing experience by allowing for the visual depiction of perfect blacks as well as colors with high contrast—without distortion. OLED displays naturally emit light and

[1] Independent claims are in bold.

have the ability to turn off completely. Due to OLED display's inherent design, devices are thinner, lighter, and more flexible than ever before. This is because OLED displays use fewer components. OLED displays are the trendiest and best displays available on the market today.

5. But just a few decades ago, OLED display technology was in its infancy. OLED displays have since undergone significant improvements to enhance the user experience for consumers throughout the world.

6. Due to the vision of the companies who developed and those who improved on OLED display technology, this technology has enjoyed rapid developments and improvements. Research and development engineers have logged countless hours, working to push this technology to the forefront of today's display market. Improvements to this technology can be highly technical, for example, and can relate to improved designs to the operation of drive control to improved designs of transistor array substrates. These advancements to the various aspects of the technology—each building a little on a related advancement before it—get us to the highly advanced state of OLED displays we enjoy today.

7. These achievements range from designing the fundamental building blocks, which enable the operation of OLED display technology, to designing critical enhancements, which improves important aspects of the user experience and functionality of the OLED display. This investigation into a violation of Section 337 is about the latter: patented improvements—which took years of research and millions of dollars in investments to develop, and which are infringed by the Proposed Respondents' Accused Products.

8. The Proposed Respondents are BOE Technology Group Co. Ltd., Beijing BOE Display Technology Co., Ltd., BOE Technology America Inc. (collectively, "BOE"); and Samsung Electronics Co., Ltd., Samsung Electronics America, Inc., Samsung Display Co., Ltd. (collectively, "Samsung") (collectively "Proposed Respondents").

9. As set forth in this Complaint, each of the Proposed Respondents imports into the United States, sells for importation into the United States, and/or sells in the United States after importation Accused Products that directly infringe the Asserted Patents, and/or indirectly infringe the Asserted Patents by induced or contributory infringement.

10. Complainant seeks, as relief for the unfair acts of the Proposed Respondents, the following: (i) institution of an investigation into Proposed Respondents' violations; (ii) a public hearing; (iii) a limited exclusion order barring from entry into the United States the Accused Products that infringe one or more of the Asserted Patents; (iv) a permanent cease and desists order prohibiting the importation, sale, sale for importation, offer for sale, and soliciting of the sale in the United States, of the Accused Products that infringe one or more the Asserted Patents; (v) the imposition of a bond during the 60-day Presidential review period pursuant to 19 U.S.C. § 1337(j); and (vi) such other relief as the Commission deems proper.

11. A domestic industry exists as the result of activities and investments in the United States related to products that practice the Asserted Patents. These activities include the current and ongoing significant and substantial domestic investments in plant, equipment, labor, and capital of Solas's licensee eMagin Corporation ("eMagin").

II. THE PARTIES

A. Complainant and Domestic Industry Partner

12. Complainant Solas OLED Ltd. is an Irish company, having its principal place of business at Suite 23, The Hyde Building, Carrickmines, Dublin 18, Ireland. Solas is the sole owner by assignment of all right, title, and interest in each Asserted Patent. *See* Exs. 4, 5, and7.

13. Solas's domestic licensee is eMagin, headquartered at 700 South Drive, Suite 201, Hopewell Junction, NY 12533. *See* Ex. 8C. eMagin has a non-exclusive license to practice the'068, and '880 Patents, each of which relate to OLED displays. *See* Ex. 9C.

14. Founded in 1996, eMagin Corporation is the first and leading manufacturer of the world's brightest active matrix OLED displays. eMagin serves a number of industries and developed OLED display technology that enables the next generation of display technology in a variety of fields, including search and rescue, firefighting, the military, and aviation. eMagin's Hopewell Junction, New York location includes the company's corporate and engineering headquarters, as well as its cleanroom and manufacturing facilities. In addition, eMagin has an engineering and product development location in Santa Clara, California.

15. eMagin has dedicated millions of U.S. dollars to engineering, development, and technical service and support of various OLED display products in the United States. Substantially all of its manufacturing and engineering activities are based in the United States. As evidence of eMagin's innovative research and development, eMagin is the winner of the prestigious 2000 SID (Society for Information Display) Information Display Magazine, Display of the Year, Gold Award for technology advancement in the development of the company's OLED display technology. In its history, eMagin unveiled the world's highest efficiency, bright white OLED display publicly, showing that OLEDs could provide a high quality bright white image and generate high resolution moving images with quality gray scale control. eMagin also unveiled the world's first full-color active matrix OLED microdisplay, which showed the first near product-quality color moving images using OLED display technology. eMagin further publicly displayed the world's highest resolution microdisplay prototype for its time, featuring over 1.5 million color elements.

16. eMagin's OLED products, including the exemplary SXGA-096 OLED Domestic Industry Product, reflect the significant research and development that eMagin has poured into OLED display technology. This product is an active matrix OLED display that is intended for applications that demand high brightness, high resolution, high image quality, compact size, and

low power. The product features eMagin's proprietary OLED display technology offering extended life and luminance performance. It features eMagin's proprietary "Deep Black" architecture that ensures off-pixels are truly black, automatically optimizes contrast under all conditions, and delivers improved pixel uniformity. In addition to the flexible matrix addressing circuity, it includes technology which provides extended dimming range. Its technology also significantly reduces motion artifacts in high speed scene changes. Further, its design minimizes the number of board interconnections and connector size and reduces electromagnetic emissions.

17. In recent years, an explosion of imported, unlicensed products that infringe the innovative Asserted Patents has significantly eroded eMagin's market standing and injured eMagin's domestic industry related to the Asserted Patents. Complainant Solas, as owner of the Asserted Patents and a portfolio of other touch-technology and display patents, has partnered with eMagin to undertake the task of counteracting these unfair and unlawful acts. The partnership between Solas and eMagin is intended to protect and increase American-made goods and American jobs, including jobs at eMagin's essential New York and California locations, as well as to assist eMagin in gaining a competitive edge over foreign companies and domestic companies that conduct engineering, research and development, and manufacturing operations outside the United States. Even though eMagin is the only U.S.-based manufacturer of OLED microdisplays, it faces strong competition from foreign companies, including China-based KoPin Corp., BOE, China-based Yunnan OLiGHTEK Opto-Electronic Technology Co., Ltd., and France-based MicroOLED, as well as some of the Proposed Respondents. *See* Ex. 10 (eMagin 2019 Form 10-K) at 12. Many of these competitors are much larger companies that have more deployable capital to develop products as well as legacy infrastructure and other efficiencies, derived in part from their lower operational costs outside the United States, that give them an unfair advantage over the U.S.-based, smaller eMagin in the OLED market. *Id.*

18. eMagin has provided confidential technical and financial documents relating to the Domestic Industry products and related investments. eMagin is contractually obligated to cooperate in discovery to produce necessary technical and financial documents relating to the Domestic Industry products and related investments. *See* Ex. 9C at Section 2. In addition, eMagin will produce a witness for deposition and relating to the Domestic Industry products and investments. *See* Ex. 9C at Section 2.

B. Proposed Respondents

1. BOE

19. BOE Technology Group Co. Ltd. is a corporation organized under the laws of the People's Republic of China. Its principal place of business is at No.12 Xihuanzhong Rd, BDA, Beijing, 100176, People's Republic of China, with offices in the United States including at 4660 La Jolla Village Drive Suite 1070, San Diego, CA 92122, and 220329 State Highway 249 Suite 180, Houston, TX 77070.

20. On information and belief, BOE Technology Group Co. Ltd. produces certain Accused Products abroad, including in China, that are then sold for importation into the United States, imported into the United States, and/or sold within the United States after importation. *See* Exs. 11-12.

21. Beijing BOE Display Technology Co., Ltd. is a corporation organized under the laws of the People's Republic of China. Its principal place of business is at No.118 Jinghaiyi Rd, BDA, Beijing, 100176, People's Republic of China.

22. On information and belief, Beijing BOE Display Technology Co., Ltd., a subsidiary of BOE Technology Group Co. Ltd., produces certain Accused Products abroad, including in China, that are then sold for importation into the United States, imported into the United States, and/or sold within the United States after importation. *See* Exs. 11-12.

23. BOE Technology America, Inc. is a corporation organized under the laws of the State of California. Its principal place of business is at 2350 Mission College Blvd, Suite 600, Santa Clara, CA 95054.

24. On information and belief, BOE Technology America, Inc., a subsidiary of BOE Technology Group Co. Ltd., produces certain Accused Products abroad, including in China, that are then sold for importation into the United States, imported into the United States, and/or sold within the United States after importation. *See* Exs. 11-12.

25. BOE Technology Group Co. Ltd., Beijing BOE Display Technology Co., Ltd., and BOE Technology America, Inc. are collectively referred to as "BOE."

26. Upon information and belief, components of the BOE Accused Products, including the active matrix OLED display, are provided to Motorola by BOE.[2] On further information and belief, these components are produced by BOE abroad, including in China, and are then sold for importation into the United States, imported into the United States, and/or sold within the United States after importation. *See* Exs. 11-12.

2. Samsung

27. Samsung Electronics Co., Ltd. is a publicly traded corporation organized under the laws of South Korea. It has its principal place of business at 129 Samsung-Ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 443-742, South Korea.

28. On information and belief, Samsung Electronics Co., Ltd. produces certain Accused Products abroad, including in Vietnam, that are then sold for importation into the United

[2] *See, e.g.*, https://tech.sina.com.cn/mobile/n/n/2019-11-15/doc-iihnzahi1097754.shtml; https://www.oled-info.com/boe-we-supplied-foldable-oleds-huawei-mate-x-and-motorola-razr; https://www.gizchina.com/2019/11/15/boe-is-the-manufacturer-of-motorola-razr-and-think-x1-foldable-displays/.

States, imported into the United States, and/or sold within the United States after importation, including through its subsidiary Samsung Electronics America, Inc. *See* Exs. 17-18.

29. Samsung Electronics America, Inc. is a corporation organized under the laws of the State of New York. Its principal place of business is at 85 Challenger Rd., Ridgefield Park, New Jersey 07660.

30. On information and belief, Samsung Electronics America, Inc., a wholly owned subsidiary of Samsung Electronics Co., Ltd., produces certain Accused Products abroad, including in Vietnam, that are then sold for importation into the United States, imported into the United States, and/or sold within the United States after importation. *See* Exs. 17-18.

31. Samsung Display Co., Ltd. is a corporation organized under the laws of Korea. Its principal place of business is at 1 Samsung-Ro, Giheung-gu, Yongin-si, Gyeonggi-Do, 17113, South Korea.

32. On information and belief, Samsung Display Co., Ltd., a subsidiary of Samsung Electronics Co., Ltd., produces certain Accused Products abroad, including in Vietnam, that are then sold for importation into the United States, imported into the United States, and/or sold within the United States after importation. *See* Exs. 17-18.

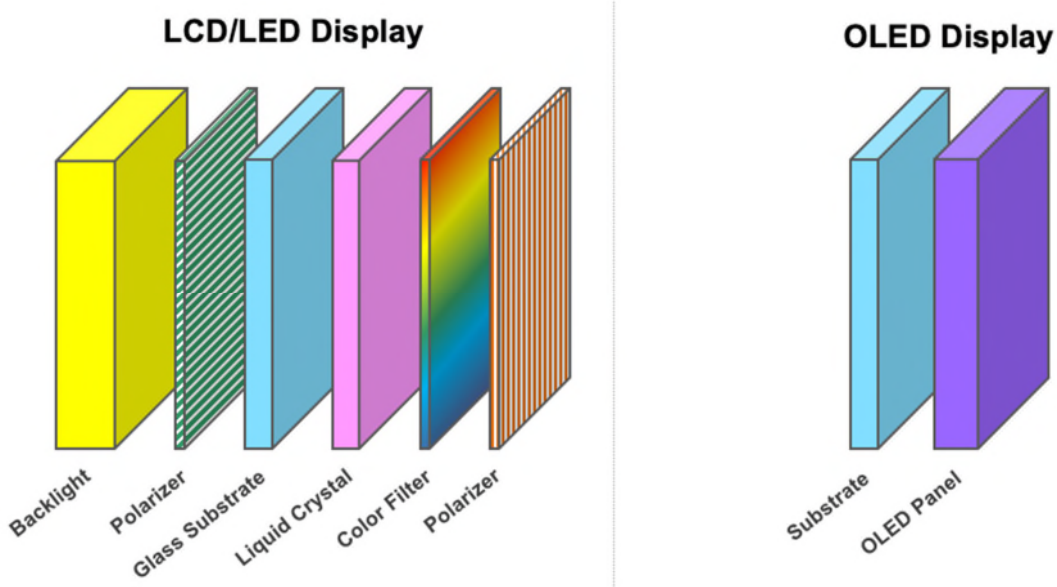
33. Samsung Electronics Co., Ltd., Samsung Electronics America, Inc., and Samsung Display Co., Ltd. are collectively referred to as "Samsung."

III. THE TECHNOLOGY AND PRODUCTS AT ISSUE

34. Pursuant to 19 C.F.R. §§ 210.10(b)(1) and 210.12(a)(12), the categories of products accused of infringing one or more of the Asserted Patents are electronic devices containing active matrix OLED displays and components thereof, such as mobile phones and tablets with active matrix OLED displays.

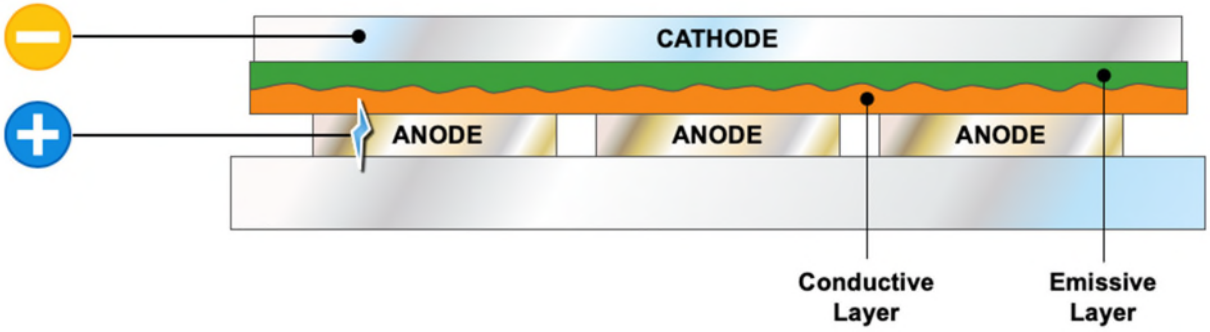
35. Proposed Respondents infringe the Asserted Patents through the sale for importation into the United States, importation into the United States, and/or sale within the United States after importation of such Accused Products. Exemplary identifications of such infringing products are provided in Section V below.

36. LCDs (Liquid Crystal Displays) create an image using a backlight and many layers of components (polarizers, liquid crystals, color filters, etc.), where the liquid crystal operates to block or allow white light (from the backlight) to pass through for a particular pixel, where if white light is allowed to pass through, it is then filtered through a color filter to provide a red, green, or blue pixel that comprises a display image. An LED (Light Emitting Diode) display has the same structure as LCDs, with the only difference being that an LED display uses an LED backlight, whereas LCDs use a fluorescent backlight. An OLED display does not require a backlight because the OLED structure includes colored elements that emit their own red, green, or blue light.



37. OLED displays have at least the following advantages: they provide for perfect blacks and colors with high contrast and no distortion and they are also thinner, lighter, and more flexible.

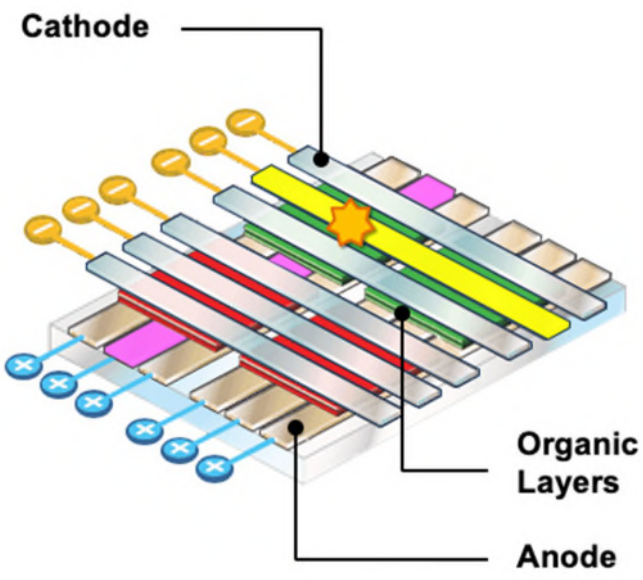
38. An individual OLED includes one or more layers of organic material sandwiched between two electrodes—the anode (positive charge) and the cathode (negative charge).



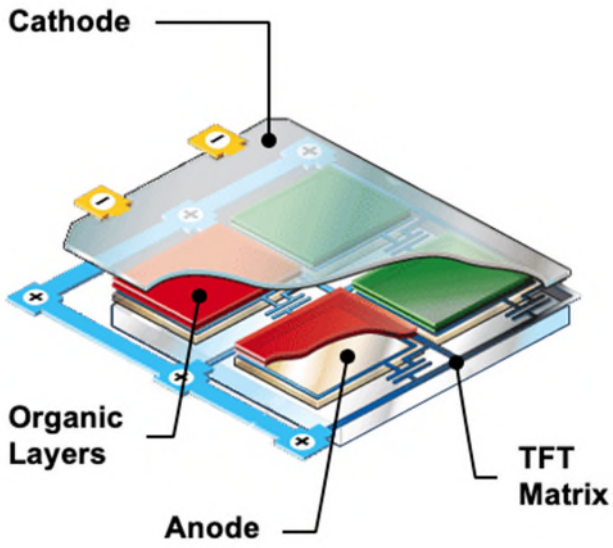
39. As background, voltage is the difference in electric potential between two points and is typically measured in volts. Current is the rate of flow of electric charge, which is measured in amperes. For many devices, voltage and current are directly proportional. According to Ohm's Law: $V = IR$ (voltage = current*resistance).

40. Electrical current flows from the anode to the cathode, so electrons move in the opposite direction from the cathode to the anode. The flow of current gives electrons to the emissive layer and removes electrons from the conductive layer. Removing electrons from the conductive layer leaves holes that need to be filled with the electrons in the emissive layer. The holes jump to the emissive layer and recombine with the electrons. As the electrons drop into the holes, they release their extra energy as light. The more current that is supplied, the more electrons flow, thus resulting in brighter light.

41. In passive matrix OLEDs, strips of anode are arranged perpendicular to strips of cathode with organic layers in between. Intersections of the cathode and anode make up the pixels where light is emitted. External circuitry applies voltages to selected strips of anode and cathode, turning on pixels. The following is an illustration of a passive matrix OLED:

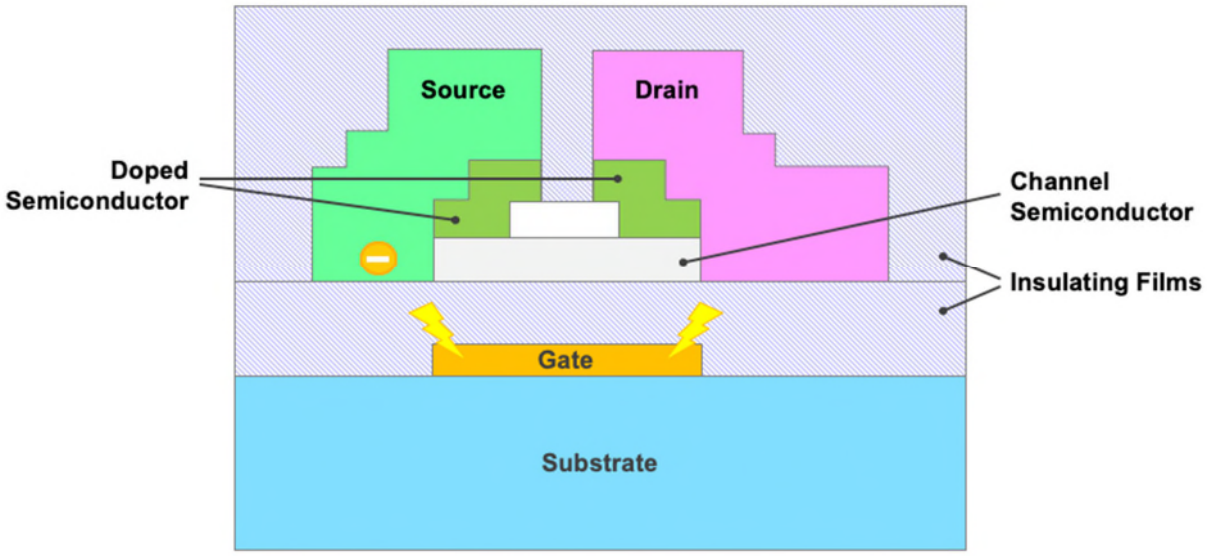


42. In active matrix OLEDs, the anode layer is instead divided up into individual pixels and overlaps a thin film transistor ("TFT") matrix. The TFT matrix itself is circuitry that determines which pixels are turned on, resulting in faster refresh rates and the consumption of less power, which is ideal for high-resolution displays like TVs and smartphones. The following is an illustration of an active matrix OLED:

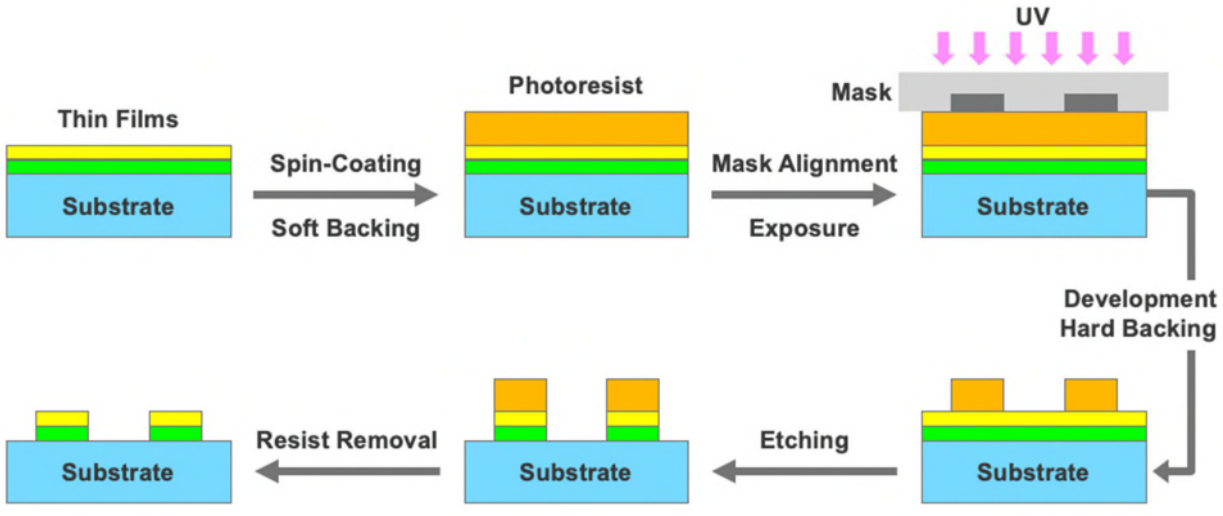


43. An active matrix OLED panel has a matrix of pixel circuits, with one circuit driving each of the OLED pixels. Each pixel circuit in the matrix contains multiple TFTs. The following

is a depiction of a typical TFT, which includes a source, drain, and a gate:



44. As the following image shows, the formation of the TFT matrix is a complex process, which includes depositing various thin film layers, applying photoresist and mask material on selected surfaces, which would allow desired structures to be created through an etching process that removes film layers where no mask was applied:



45. The Asserted Patents relate to the active matrix OLED display technology described above. The technologies protected by the Asserted Patents were developed to overcome

the drawbacks associated with conventional OLED technology and to improve their capabilities. The Asserted Patents cover different aspects of OLED displays, including improving the designs for transistor array substrates (’068 Patent), and improving a driving technique that increases the writing period of EL elements for image accuracy (’880 Patent). Section IV, below, identifies the Asserted Patents in detail, along with a further description of the technology covered by each.

IV. THE ASSERTED PATENTS

46. The Asserted Patents generally relate to active matrix OLED displays. Active matrix OLED displays are used in many high-tech products, including televisions and monitors, smart watches, mobile phones, laptop computers, and other consumer-electronics products.

47. The identification, ownership, non-technical description, foreign counterparts, and licensees for each Asserted Patent are identified below.

A. U.S. Patent No. 7,573,068

1. Identification of the Patent and Ownership

48. The ’068 Patent, titled “Transistor Array Substrate and Display Panel,” issued on August 11, 2009, naming Satoru Shimoda, Tomoyuki Shirasaki, Jun Ogura, and Minoru Kumagai as the inventors. Ex. 2 (’068 Patent) at 1. The ’068 Patent is based on U.S. Patent Application No. 11/232,368 filed September 21, 2005. *Id.* at 1. The ’068 Patent claims priority to Japanese Foreign Application Nos. 2004-273532 filed September 21, 2004, 2004-273580 filed September 21, 2004, and 2005-269434 filed September 16, 2005. *Id.* The expiration date of the ’068 Patent is October 30, 2027. A certified copy of the ’068 Patent is attached as Exhibit 2.

49. This Complaint is accompanied by a certified copy of the prosecution history for the ’068 Patent, three additional copies of the prosecution history, and four copies of each patent and applicable pages of each technical reference mentioned in the prosecution history for the ’068 Patent. *See* Appx. B1 and B2.

50. Solas owns by assignment all rights, title, and interest in the ’068 Patent. *See* Exs. 4, 7.

2. Nontechnical Description of the Patent

51. The ’068 Patent concerns improved designs for transistor array substrates, containing an array of driving transistors and associated lines and interconnections necessary to their operation. Such arrays of driving transistors are needed, for example, to drive active matrix displays utilizing organic EL elements. In prior art arrays, the materials, dimension, and arrangement of the transistor components, lines, and interconnections meant that the arrays suffered from undesirably large resistances and voltage drops, impairing the operation of driving transistors and the quality of the displayed image, particularly when applied to EL elements. The ’068 Patent teaches and claims improved designs for transistor arrays, particularly for use with EL elements, with different arrangements of transistors, lines, interconnections, and electrodes, as well as with different dimensions or materials for such structures than those used in the prior art. Claim 13 of the ’068 Patent is exemplary and claims the following:

3. Foreign Counterparts of the Patent

52. The following foreign patents and patent applications correspond to the ’068 Patent: (a) Korean Patent Application No. KR20050087577A (issued as Korean Patent No. KR100735977B1 on June 28, 2007); (b) Taiwanese Patent Application No. TW94132283A (issued as Taiwanese Patent No. TWI279752B on April 21, 2007); (c) Chinese Patent Application No. CN200510106398A (issued as Chinese Patent No. CN100595819C on March 24, 2010); (d) Chinese Patent Application No. CN200810083217A (issued as Chinese Patent No. CN101266945B on February 22, 2012); (e) Japanese Patent Application No. JP2004273532A (issued as Japanese Patent No. JP4379278B2 on December 9, 2009); (f) Japanese Patent Application No. JP2004273532A (issued as Japanese Patent No. JP4379278B2 on December 9,

2009); and (g) Japanese Patent Application No. JP22008231811A (issued as Japanese Patent No. JP5040867B2 on October 3, 2012).

53. To the best of Solas's knowledge, information, and belief, there are no other foreign patents issued or foreign patent applications pending, filed, abandoned, withdrawn, or rejected corresponding to the '068 Patent.

4. Licensees

54. All licensees to the '068 Patent are identified in Confidential Exhibit 8C. *See also* Ex. 36C. There are no other known licenses relating to the '068 Patent.

B. U.S. Patent No. 7,868,880

1. Identification of the Patent and Ownership

55. The '880 Patent, titled "Display Apparatus and Drive Control Method Thereof," issued on January 11, 2011, naming Tsuyoshi Ozaki and Jun Ogura as the inventors. Ex. 3 ('880 Patent) at 1. The '880 Patent is based on U.S. Patent Application No. 11/438,967 filed May 23, 2006. *Id.* The '880 Patent claims priority to Japanese Foreign Application Nos. 2005-150566 filed May 24, 2005 and 2005-153382 filed May 26, 2005. *Id.* The expiration date of the '880 Patent is April 13, 2029. A certified copy of the '880 Patent is attached as Exhibit 3.

56. This Complaint is accompanied by a certified copy of the prosecution history for the '880 Patent, three additional copies of the prosecution history, and four copies of each patent and applicable pages of each technical reference mentioned in the prosecution history for the '880 Patent. *See* Appx. C1 and C2.

57. Solas owns by assignment all rights, title, and interest in the '880 Patent. *See* Exs. 5, 7.

2. Nontechnical Description of the Patent

58. The ’880 Patent relates to improved driving of a light-emitting device. The ’880 Patent describes a novel method and apparatus that seeks to solve the problem of carrying out drive control corresponding with changes to the characteristics of the organic EL elements. Organic light-emitting diodes (“OLED”) are devices that have these light-emitting EL elements. These devices perform drive control so that the organic EL elements emit light at the desired brightness by writing data (gate voltages) across the gates and transistors. This drive control directs the flow of current to the organic EL elements based on the brightness of the supplied image data. Generally, the light-emitting efficiency of organic EL elements gradually falls with continued illumination as a result of the flow of current as resistance gradually increases. Conventional devices cannot measure voltages across the terminals of the organic EL elements nor effectively detect changes in the characteristics of the organic EL elements, making it not possible to carry out drive control corresponding with changes to the characteristics of the organic EL elements. The ’880 Patent addresses this problem.

3. Foreign Counterparts of the Patent

59. The following foreign patents and patent applications correspond to the ’880 Patent: (a) European Patent Application No. EP06756661A (issued as European Patent No. EP1889249B1 on May 22, 2013); (b) European Patent Application No. EP10177936A (issued as European Patent No. EP2267691B1 on February 12, 2014); (c) Korean Patent Application No. KR20077018434A (issued as Korean Patent No. KR100962768B1 on June 10, 2010); (d) Taiwanese Patent Application No. TW95118192A (issued as Taiwanese Patent No. TWI328398B on August 1, 2010); (e) Chinese Patent Application No. CN200680004494A (issued as Chinese Patent No. CN101283391B on March 23, 2011); (f) International Patent Application No. PCT/JP2006/310616 (Published as International Patent Application No. WO2006126703A3);

(g) Japanese Patent Application No. JP2005150556A; and (h) Japanese Patent Application No. JP2005153382A (issued as Japanese Patent No. JP5110341B2 on December 26, 2012).

60. To the best of Solas's knowledge, information, and belief, there are no other foreign patents issued or foreign patent applications pending, filed, abandoned, withdrawn, or rejected corresponding to the '880 Patent.

4. Licensees

61. All licensees to the '880 Patent are identified in Confidential Exhibit 8C. *See also* Ex. 36C. There are no other known licenses relating to the '880 Patent.

V. UNLAWFUL AND UNFAIR ACTS OF THE PROPOSED RESPONDENTS

62. Solas asserts that the Proposed Respondents directly infringe, literally or under the doctrine of equivalents, and/or actively induce the infringement infringe at least the following claims of the Asserted Patents, in violation of 35 U.S.C. §§ 271(a), (b), and/or (c) and Section 337(a)(1)(B)(i):

Respondent	'068 Patent	'880 Patent
BOE	13-17	2-40
Samsung	13-17	2-40

Table 2. The Asserted Claims by Respondent.

A. BOE

1. Infringement of the '068 Patent

63. On information and belief, BOE imports, sells for importation, and/or sells within the United States after importation certain Accused Products and/or certain OLED display components of the Accused Products (the "BOE Accused Products"), such as the Motorola Edge, Edge+, RAZR, RAZR2, One Zoom, Moto z4, Moto z3 OLED smartphones, that directly infringe, literally and/or under the doctrine of equivalents, at least claims 13-17 of the '068 Patent. The BOE Accused Products satisfy all claim limitations of at least claims 13-17 of the '068 Patent at the time of importation into the United States.

64. BOE also knowingly and intentionally induces infringement of at least claims 13-17 of the ’068 Patent in violation of 35 U.S.C. § 271(b). Through the filing and service of this Complaint, and also through the filing and service of the related District Court complaint referenced in Section VIII, BOE has had knowledge of the ’068 Patent and the infringing nature of the BOE Accused Products. Despite this knowledge of the ’068 Patent, BOE continues to actively encourage and instruct its customers and end users (for example, through its user manuals and online instruction materials on its website) to use the BOE Accused Products in ways that directly infringe the ’068 Patent. BOE does so knowing and intending that its customers and end users will commit these infringing acts. BOE also continues to import, sell for importation, and/or sell in the United States the BOE Accused Products, despite its knowledge of the ’068 Patent, thereby specifically intending for and inducing its customers to infringe the ’068 Patent through the customers’ normal and customary use of the BOE Accused Products.

65. A claim chart comparing independent claim 13 of the ’068 Patent to a representative BOE Accused Product, the Motorola Edge, and including photographs and drawings where applicable, is attached as Exhibit 19.

2. Infringement of the ’880 Patent

66. On information and belief, BOE imports, sells for importation, and/or sells within the United States after importation certain Accused Products and/or certain OLED display components of the Accused Products (the “BOE Accused Products”), such as the Motorola Edge, Edge+, RAZR, RAZR2, One Zoom, Moto z4, Moto z3 OLED smartphones, that directly infringe, literally and/or under the doctrine of equivalents, at least claims 2-40 of the ’880 Patent. Upon information and belief, components of the BOE Accused Products, including the active matrix

OLED display, are provided to Motorola by BOE.[3] The BOE Accused Products satisfy all claim limitations of at least claims 2-40 of the ’880 Patent at the time of importation into the United States.

67. BOE also knowingly and intentionally induces infringement of at least claims 2-40 of the ’880 Patent in violation of 35 U.S.C. § 271(b). Through the filing and service of this Complaint, and also through the filing and service of the related District Court complaint referenced in Section VIII, BOE has had knowledge of the ’880 Patent and the infringing nature of the BOE Accused Products. Despite this knowledge of the ’880 Patent, BOE continues to actively encourage and instruct its customers and end users (for example, through its user manuals and online instruction materials on its website) to use the BOE Accused Products in ways that directly infringe the ’880 Patent. BOE does so knowing and intending that its customers and end users will commit these infringing acts. BOE also continues to import, sell for importation, and/or sell in the United States the BOE Accused Products, despite its knowledge of the ’880 Patent, thereby specifically intending for and inducing its customers to infringe the ’880 Patent through the customers’ normal and customary use of the BOE Accused Products.

68. A claim chart comparing independent claims 2, 3, and 25 of the ’880 Patent to a representative BOE Accused Product, the Motorola Edge, and including photographs and drawings where applicable, is attached as Exhibit 20.

[3] *See, e.g.*, https://tech.sina.com.cn/mobile/n/n/2019-11-15/doc-iihnzahi1097754.shtml; https://www.oled-info.com/boe-we-supplied-foldable-oleds-huawei-mate-x-and-motorola-razr; https://www.gizchina.com/2019/11/15/boe-is-the-manufacturer-of-motorola-razr-and-think-x1-foldable-displays/.

B. Samsung

1. Infringement of the ’068 Patent

69. On information and belief, Samsung imports, sells for importation, and/or sells within the United States after importation certain Accused Products (the “Samsung Accused Products”), such as the Galaxy J7, Galaxy J3, Galaxy J2, Galaxy A6, Galaxy A6 Plus, Galaxy S7, Galaxy S7 Edge, Galaxy S7 Active, Galaxy S8, Galaxy S8+, Galaxy S8 Active, Galaxy Fold, Galaxy Z Fold2 5G Galaxy A80, Galaxy A71 5G, Galaxy A71 5G UW, Galaxy A51, Galaxy A51 5G, Galaxy A51 5G UW, Galaxy A50, Galaxy A20, Galaxy S9, Galaxy S9+, Galaxy S10, Galaxy S10+, Galaxy S10 5G, Galaxy S10 Lite, Galaxy S10e, Note 8, Note 9, Note 10, Note 10 5G, Note 10+, Note 10+ 5G, Galaxy S20, Galaxy S20+, Galaxy S20 5G, Galaxy S20 Ultra 5G, Galaxy Note20 5G, Galaxy Note20 Ultra 5G, Galaxy Z Flip, Galaxy Z Flip 5G, the Edge, Edge+, RAZR, RAZR2, One Zoom, Moto z4, and Moto z3, that directly infringe, literally and/or under the doctrine of equivalents, at least claims 13-17 of the ’068 Patent. The Samsung Accused Products satisfy all claim limitations of at least claims 13-17 of the ’068 Patent at the time of importation into the United States.

70. Samsung also knowingly and intentionally induces infringement of at least claims 13-17 of the ’068 Patent in violation of 35 U.S.C. § 271(b). Through the filing and service of this Complaint, and also through the filing and service of the related District Court complaint referenced in Section VIII, Samsung has had knowledge of the ’068 Patent and the infringing nature of the Samsung Accused Products. Despite this knowledge of the ’068 Patent, Samsung continues to actively encourage and instruct its customers and end users (for example, through its user manuals and online instruction materials on its website) to use the Samsung Accused Products in ways that directly infringe the ’068 Patent. Samsung does so knowing and intending that its customers and end users will commit these infringing acts. Samsung also continues to import, sell

for importation, and/or sell in the United States the Samsung Accused Products, despite its knowledge of the ’068 Patent, thereby specifically intending for and inducing its customers to infringe the ’068 Patent through the customers’ normal and customary use of the Samsung Accused Products.

71. Claim charts comparing independent claim 13 of the ’068 Patent to two representative Samsung Accused Products, the Samsung Galaxy S20 5G and Motorola Edge, and including photographs and drawings where applicable, are attached as Exhibits 24 and 19.

2. Infringement of the ’880 Patent

72. On information and belief, Samsung imports, sells for importation, and/or sells within the United States after importation certain Accused Products (the “Samsung Accused Products”), such as the Galaxy J7, Galaxy J3, Galaxy J2, Galaxy A6, Galaxy A6 Plus, Galaxy S7, Galaxy S7 Edge, Galaxy S7 Active, Galaxy S8, Galaxy S8+, Galaxy S8 Active, Galaxy Fold, Galaxy Z Fold2 5G Galaxy A80, Galaxy A71 5G, Galaxy A71 5G UW, Galaxy A51, Galaxy A51 5G, Galaxy A51 5G UW, Galaxy A50, Galaxy A20, Galaxy S9, Galaxy S9+, Galaxy S10, Galaxy S10+, Galaxy S10 5G, Galaxy S10 Lite, Galaxy S10e, Note 8, Note 9, Note 10, Note 10 5G, Note 10+, Note 10+ 5G, Galaxy S20, Galaxy S20+, Galaxy S20 5G, Galaxy S20 Ultra 5G, Galaxy Note20 5G, Galaxy Note20 Ultra 5G, Galaxy Z Flip, Galaxy Z Flip 5G, Edge, Edge+, RAZR, RAZR2, One Zoom, Moto z4, and Moto z3, that directly infringe, literally and/or under the doctrine of equivalents, at least claims 2-40 of the ’880 Patent. The Samsung Accused Products satisfy all claim limitations of at least claims 2-40 of the ’880 Patent at the time of importation into the United States.

73. Samsung also knowingly and intentionally induces infringement of at least claims 2-40 of the ’880 Patent in violation of 35 U.S.C. § 271(b). Through the filing and service of this Complaint, and also through the filing and service of the related District Court complaint

referenced in Section VIII, Samsung has had knowledge of the ’880 Patent and the infringing nature of the Samsung Accused Products. Despite this knowledge of the ’880 Patent, Samsung continues to actively encourage and instruct its customers and end users (for example, through its user manuals and online instruction materials on its website) to use the Samsung Accused Products in ways that directly infringe the ’880 Patent. Samsung does so knowing and intending that its customers and end users will commit these infringing acts. Samsung also continues to import, sell for importation, and/or sell in the United States the Samsung Accused Products, despite its knowledge of the ’880 Patent, thereby specifically intending for and inducing its customers to infringe the ’880 Patent through the customers’ normal and customary use of the Samsung Accused Products.

74. Claim charts comparing independent claims 2, 3, and 25 of the ’880 Patent to two representative Samsung Accused Products, the Samsung Galaxy S20 5G and Motorola Edge, and including photographs and drawings where applicable, is attached as Exhibit 25 and 20.

VI. SPECIFIC INSTANCES OF IMPORTATION

A. BOE

75. On information and belief, the BOE Accused Products are manufactured outside of the United States and sold for importation into the United States, imported into the United States, and/or sold within the United States after importation. For example, Exhibit 11 is a receipt from Motorola.com showing the purchase of Motorola Edge Solar Black, 6+256 SS (“Motorola Edge”) for delivery to an address in the United States. Exhibit 12 contains photograph(s) of the product and/or product packaging, delivered to an address in the United States, indicating on the Motorola Edge packaging “Phone Made in China.”

B. Samsung

76. On information and belief, the Samsung Accused Products are manufactured outside of the United States and sold for importation into the United States, imported into the United States, and/or sold within the United States after importation. For example, Exhibit 17 is a receipt from Amazon.com showing the purchases of Samsung Galaxy S20 5G ("Samsung Galaxy S20 5G") for delivery to an address in the United States. Exhibit 18 contains photograph(s) of the product and/or product packaging, delivered to an address in the United States, indicating that the is "Manufactured in Vietnam." As another example, Exhibit 11 is a receipt from Motorola.com showing the purchase of Motorola Edge Solar Black, 6+256 SS ("Motorola Edge") for delivery to an address in the United States. Exhibit 12 contains photograph(s) of the product and/or product packaging, delivered to an address in the United States, indicating on the Motorola Edge packaging "Phone Made in China."

VII. CLASSIFICATION OF THE ACCUSED PRODUCTS UNDER THE HARMONIZED TARIFF SCHEDULE

77. The Accused Products are classified under at least the following subheadings of the Harmonized Tariff Schedule of the United States: 8517.62.00 and 8517.70.00 (smartphones); and 8471.30.01, 8471.41.01, 8471.49.00, and 8471.50.01 (tablets). These classifications are exemplary in nature and not intended to restrict the scope of any exclusion order or other remedy ordered by the Commission.

VIII. RELATED LITIGATION

78. Complainant Solas OLED Ltd. is filing complaints in the United States District Court for the Western District of Texas against the Proposed Respondents concurrently with the filing of the instant Complaint, alleging infringement of one or more claims of the '068 and '880 Patents, the same patents that have been asserted in this Complaint.

79. Further, the ’068 Patent is currently involved in litigation in the United States District Court for the Western District of Texas against the LG and Sony Respondents, *Solas OLED Ltd. v. LG Display Co., Ltd., et al.*, Case Nos. 6:19-cv-00236-ADA, *Solas OLED Ltd. v. Apple Inc.*, 6:19-cv-00537-ADA. The ’068 Patent is also involved in litigation in the United States District Court for the Western District of Texas against: Apple, Inc., *Solas OLED Ltd. v. Apple Inc.*, case no. 6:19-cv-00537-ADA; Dell Technologies Inc., *Solas OLED Ltd. v. Dell Technologies Inc.*, case no. 6:20-cv-00841-ADA; and Motorola Mobility LLC, *Solas OLED Ltd. v. Motorola Mobility LLC*, case no. 6:20-cv-00842-ADA. The ’068 Patent is also involved in two non-instituted *Inter Partes* Review proceedings before the USPTO Patent Trial and Appeal Board, case no. IPR2020-01238, which was filed by the LG Display, and case no. IPR2020-01546, which was filed by Apple, Inc. [redacted]

80. The ’068 Patent was involved in litigation in the United States District Court for the Western District of Texas against HP Inc., *Solas OLED Ltd. v. HP Inc.*, case no. 6:19-cv-00631-ADA. This litigation was dismissed without prejudice in August 2020.

81. The ’068 Patent is currently involved in litigation in the United States District Court for the Eastern District of Texas against the Samsung Respondents, *Solas OLED Ltd. v. Samsung Electronics Co., Ltd.*, Case No. 2:20-cv-00307-JRG.

82. Other than the litigations specified above, to Complainant’s knowledge, the Asserted Patents are not and have not been the subject of any current or prior litigation.

IX. DOMESTIC INDUSTRY

83. A domestic industry exists under Section 337(a)(2) and 337(a)(3). In particular, a domestic industry exists as a result of eMagin’s (a Solas licensee) significant investment in plant

and equipment and significant employment of labor and capital with respect to eMagin products ("eMagin DI Products") that practice and are protected by the Asserted Patents. 19 U.S.C. § 1337(a)(3)(A)-(B). On September 4, 2020, Solas and eMagin entered into a definitive license agreement. Pursuant to Commission Rule 210.12(a)(9)(iv), Complainant has attached as Confidential Exhibit 9C a copy of the definitive license agreement. A domestic industry exists under Section 337(a)(2) and 337(a)(3) at least based on eMagin's significant investments during the last four months of 2020. [redacted] A domestic industry exists under Section 337(a)(2) and 337(a)(3) also exists based on eMagin's significant investments since April 2, 2018, and since April 26, 2019.

A. Technical Prong

84. eMagin makes significant and substantial investments in plant and equipment, labor and capital, and engineering and research and development with respect to products that practice one or more claims of the Asserted Patents (the "eMagin Domestic Industry Products"), including the eMagin BlazeTorch, 2k Display, DSVGA, SXGA120, VGA, as well as the exemplary eMagin Domestic Industry Product, eMagin SXGA-096. The eMagin Domestic Industry Products practice at least the following claims of the Asserted Patent shown in Table 3:

Asserted Patents	Exemplary Domestic Industry Claim(s)[4]	Exemplary Domestic Industry Product
7,573,068	**13**	eMagin SXGA-096
7,868,880	**2**, 3, **25**	eMagin SXGA-096

Table 3. Exemplary Domestic Industry Claims

85. Claim charts demonstrating how the exemplary eMagin Domestic Industry Product practice these claims of the Asserted Patents are attached as Exhibits 29 and 30.

B. Economic Prong

86. A domestic industry as defined by 19 U.S.C. § 1337(a)(3)(A)-(B) exists in the United States with respect to the eMagin Domestic Industry Products that practice the Asserted Patents. eMagin has made significant investments in plant and equipment, significant employment of labor and capital, and substantial investments in exploitation of the Asserted Patents in the United States with respect to the eMagin Domestic Industry Products.

87. eMagin is fully licensed to practice each of the Asserted Patents. *See* Ex. 9C. Within the United States, eMagin designs, develops, manufactures, sells, and supports products that use technology protected by the Asserted Patents.

88. eMagin was founded in 1996 and is headquartered in Hopewell Junction, New York. eMagin is a leader in touch and gesture technology. eMagin's Hopewell Junction headquarter campus is the nerve center and worldwide headquarters for all of its OLED display-related products and businesses.

89. eMagin has invested—and eMagin continues to invest—in the United States millions of dollars per year in labor and capital, plant and equipment, and research and development relating to the eMagin Domestic Industry Products. The eMagin Domestic Industry

[4] Independent claims shown in bold.

Products account for approximately [redacted] of eMagin's total domestic investments. *See* Ex. 31C (eMagin 2020 sales data). Through November 2020, eMagin has invested approximately [redacted] in research and development alone directed to the eMagin Domestic Industry Products. *Id.*

90. eMagin has over 15 years of experience designing, engineering, and manufacturing active matrix OLED microdisplays at its engineering and manufacturing facilities located in Hopewell Junction, New York, which includes a state-of-the-art, former-IBM cleanroom/manufacturing facility for developing, researching, and manufacturing active matrix OLED devices. *See* Ex. 32 (https://www.emagin.com/about/manufacturing-operations). At the Hopewell Junction location, eMagin leases approximately 42,000 square feet of space, where it houses its own equipment for OLED microdisplay fabrication and research and development, including a 16,300 square foot class 10 clean room space, additional lower level clean room testing space, assembly space, and administrative offices. *See* Ex. 10 (eMagin 2019 Form 10-K) at 11. Facilities services provided by the lessor at eMagin's expense include eMagin's clean room, pure gases, high purity de-ionized water, compressed air, chilled water systems, and waste disposal support. *Id.* eMagin additionally leases approximately 2,000 square feet of office space for design and product development in Santa Clara, California. *Id.* at 30.

91. Additionally, eMagin purchased $1.1 million and $2.3 million in 2019 and 2018, respectively, of additional equipment mainly related to manufacturing operations to meet expected active matrix OLED microdisplay product demand, including new equipment to increase manufacturing capacity and yield, address critical production points, and replace older equipment. *Id.* at 11. Members of the research and development team and manufacturing engineers work daily to resolve yield and production issues. *Id.* Maintenance is regularly applied and enhanced to improve machine performance. Ex. 10 at 11. In Q2 and Q3 2020, eMagin purchased additional key tooling and equipment to support manufacturing of the active matrix OLED microdisplay

products, and eMagin expects to continue purchasing tooling and equipment as part of a three year program. *See* Ex. 34 (eMagin Q2 2020 Results) at 3, 5; *see also* Ex. 35 (eMagin Q2 2020 Results) at 4. eMagin estimates that approximately [redacted] of these investments are directed to the eMagin Domestic Industry Products. *See* Ex. 31C.

92. Further, eMagin made the following improvements (minus accumulated depreciation) in equipment, furniture, and leasehold improvements, which was a net $8.1M and $8.9M in 2019 and 2018 respectively, as shown below. Ex. 10. at F-14. Further shown below, in 2020, eMagin's net equipment, furniture, and leasehold improvements were $7.9M through Q1, $7.8M through Q2, and $8.1M through Q3. *See* Ex. 33 (eMagin Q1 2020 Results) at 4; *see also* Ex. 34 at 10-11; Ex. 35 at 8-9.

Note 8 – Equipment, Furniture and Leasehold Improvements

Equipment, furniture and leasehold improvements consist of the following (in thousands):

	December 31,	
	2019	**2018**
Computer hardware and software	$ 893	$ 800
Lab and factory equipment	17,482	17,107
Furniture, fixtures and office equipment	59	48
Assets under capital leases	116	66
Construction in progress	2,668	2,114
Leasehold improvements	60	22
Total equipment, furniture and leasehold improvements	21,278	20,157
Less: accumulated depreciation	(13,178)	(11,236)
Equipment, furniture and leasehold improvements, net	$ 8,100	$ 8,921

	March 31, 2020	December 31, 2019
ASSETS		
Current assets:		
Cash and cash equivalents	$ 3,138	$ 3,515
Accounts receivable, net	3,737	3,966
Unbilled accounts receivable	470	155
Inventories	8,821	8,832
Prepaid expenses and other current assets	1,344	1,130
Total current assets	17,510	17,598
Equipment, furniture and leasehold improvements, net	7,926	8,100
Operating lease right - of - use assets	3,545	3,729
Intangibles and other assets	133	160
Total assets	$ 29,114	$ 29,587

	June 30, 2020	December 31, 2019
ASSETS		
Current assets:		
Cash and cash equivalents	$ 5,447	$ 3,515
Accounts receivable, net	6,085	3,966
Unbilled accounts receivable	16	155
Inventories	8,470	8,832
Prepaid expenses and other current assets	1,389	1,130
Total current assets	21,407	17,598
Equipment, furniture and leasehold improvements, net	7,817	8,100
Operating lease right - of - use assets	3,358	3,729
Intangibles and other assets	130	160
Total assets	$ 32,712	$ 29,587

	September 30, 2020	December 31, 2019
ASSETS		
Current assets:		
Cash and cash equivalents	$ 10,283	$ 3,515
Restricted cash	1,800	-
Accounts receivable, net	3,178	3,966
Unbilled accounts receivable	31	155
Inventories	8,133	8,832
Prepaid expenses and other current assets	1,796	1,130
Total current assets	25,221	17,598
Equipment, furniture and leasehold improvements, net	8,147	8,100
Operating lease right - of - use assets	3,166	3,729
Intangibles and other assets	128	160
Total assets	$ 36,662	$ 29,587

93. eMagin continues to spend capital on plant and equipment in the form of lease agreements of facilities and equipment from third parties, including $4.3M in such contractual

obligations for the year 2020 and over $3.5M for the four years thereafter, as shown below. Ex. 10 at 40. Again, eMagin estimates that approximately [redacted] of these investments are directed to the eMagin Domestic Industry Products. *See* Ex. 31C.

Contractual Obligations

The following chart describes our outstanding contractual obligations as of December 31, 2019 (in thousands):

	Payments Due by Period				
	Total	1 Year	2-3 Years	4-5 Years	Thereafter
Operating lease obligations	$ 4,579	$ 1,063	$ 2,068	$ 1,448	$ -
Finance lease obligations	46	20	26	-	-
ABL Facility (a)	2,954	2,954	-	-	-
Equipment purchase obligations	272	272	-	-	-
Purchase obligations (b)	3,264	3,264	-	-	-
Total	$ 11,115	$ 7,573	$ 2,094	$ 1,448	$ -

(a) The Company's ABL Facility matures in 2020 and is classified as a current liability. Amount includes annual renewal fee.
(b) The majority of purchase orders outstanding contain no cancellation fees except for minor re-stocking fees or reimbursements due to contract manufacturers for components purchased in anticipation of a scheduled production run that are subsequently cancelled.

94. eMagin employs in-house product development and research and development staff to develop innovative active matrix OLED products and solutions for its military, commercial, and medical customers. *See* Ex. 10. eMagin's research and development has led to a patent portfolio of nearly 80 patents and pending applications related to OLED technology. *See id.* at 12. eMagin's dedication to innovation is evidenced by its general allocation of 10% of revenue and 20% of in-house staff solely to research and development. *See* Ex. 32. In 2019 and 2018, eMagin expensed $5.048 million and $6.694 million, respectively, to research and development, which constituted 19% and 26% of net revenue in 2019 and 2018, respectively. *See* Ex. 10 at 37. eMagin's research and development expenses were higher in the second quarter of 2020, primarily reflecting a focus on projects related to active matrix OLED microdisplay product and technology. Ex. 34 at 6. In the first three quarters of 2020, eMagin expensed $4.313 million to research and development, which constituted 19.8% of net revenue for Q1–Q3 of 2020. *See* Ex. 35 at 12.

95. The majority of eMagin's revenue is derived from sales of active matrix OLED microdisplay products. *See* Ex. 10. at 40. Through November 2020, eMagin's product sales of

active matrix OLED microdisplays and other components totaled [redacted] approximately [redacted] of which is from products sales of the eMagin Domestic Industry Products. Ex. 31C. eMagin's product sales of active matrix OLED microdisplays and other components totaled $24.589 million and $23.322 million in 2019 and 2018, respectively. *See* Ex. 10 at 36. eMagin's product sales of active matrix OLED microdisplays and other components totaled $18,872 million for the first three quarters of 2020. *See* Ex. 35 at 13. Despite disruptions resulting from the Covid-19 pandemic, this is an over $1.1 million increase from the prior year's revenue. *See id*. eMagin's strategy is to strengthen its technology leadership position and expertise in active matrix OLED technology and silicon wafer design. Ex. 10 at 9. It plans to continue participating in U.S. government funded and commercial contract research and development programs to allow it to continue to advance its technology. *Id.* eMagin employs a number of individuals, to support its objectives. As of December 2019, eMagin had a total of 96 employees, of which 94 were full time. *Id.* at 13.

96. The industry in which eMagin operates is highly competitive. *See id.* at 12. eMagin's "ability to compete successfully" depends in part on "product or technology introductions by" its foreign and domestic competitors. *See id.* Protecting eMagin's United States investments will help support eMagin's competitiveness in its industry.

X. RELIEF REQUESTED

97. Proposed Respondents have infringed and will continue to infringe the Asserted Patents as specified in Sections V and VI above, unless the Commission prohibits the importation into and sale within the United States after importation of the Accused Products.

98. Accordingly, Solas respectfully requests that the United States International Trade Commission:

a) Institute an immediate investigation pursuant to Section 337(b)(1) of the Tariff Act of 1930, as amended, 19 U.S.C. § 1337, into Proposed Respondents' violations of Section 337 arising from the sale for importation into the United States, importation, and/or sale within the United States after importation of certain active matrix OLED display devices and components thereof that infringe the Asserted Patents;

b) Schedule and conduct a hearing, pursuant to 19 U.S.C. § 1337 (c), for purposes of receiving evidence and hearing arguments concerning whether Proposed Respondents have violated Section 337 and, following the hearing, determine that Proposed Respondents have violated Section 337;

c) Issue a permanent limited exclusion order, pursuant to 19 U.S.C. § 1337(d)(1), excluding from entry into the United States certain active matrix OLED display devices and components thereof that are imported, sold for importation, or sold after importation by the Proposed Respondents or any of their affiliate companies, parents, subsidiaries, licensees, or other related business entities, or their successors or assigns that infringe one or more claims of the Asserted Patents, including, without limitation, the specific Accused Products identified in this Complaint and the exhibits hereto;

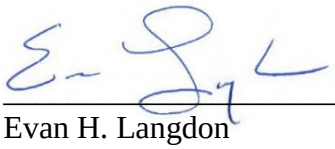
d) Issue permanent orders, pursuant to 19 U.S.C. § 1337(f), directing Proposed Respondents and any of their principals, stockholders, officers, directors, employees, agents, distributors, controlled (whether by stock ownership or otherwise) and majority-owned business entities, successors, and assigns to cease and desist from importing, selling, selling for importation, offering for sale, using, demonstrating, promoting, marketing, and/or advertising in the United States Respondents' active matrix OLED display devices and components thereof that infringe one or more claims of the Asserted Patents, including, without limitation, the specific Accused Products identified in this Complaint and the exhibits hereto;

e) Impose a bond on importation and sales of infringing products during the 60-day Presidential review period pursuant to 19 U.S.C. § 1337(j); and

f) Grant all such other and further relief as it deems appropriate under the law, based upon the facts complained of herein and as determined by the investigation.

Dated: January 5, 2021

Respectfully submitted,



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Counsel for Complainant Solas OLED Ltd.

VERIFICATION TO COMPLAINT

I, Ciaran O'Gara, declare, in accordance with 19 C.F.R. §§ 210.4 and 210.12(a) as follows:

1. I am the Director at the Solas OLED Ltd. and am duly authorized to sign this Complaint;

2. I have read the Complaint and I am aware of its contents;

3. The Complaint is not being presented for any improper purpose, such as to harass or to cause unnecessary delay or needless increase in the cost of litigation;

4. To the best of my knowledge, information, and belief founded upon reasonable inquiry, the claims and legal contentions of the Complaint are warranted by existing law or a non-frivolous argument for the extension, modification, or reversal of existing law or the establishment of new law; and

5. The allegations and other factual contentions made in the Complaint have evidentiary support or are likely to have evidentiary support after a reasonable opportunity for further investigation or discovery.

I declare under the penalty of perjury under the laws of the United States of America that the foregoing is true and correct.

Executed on January 5, 2021 in
Dublin, Ireland

Ciaran O'Gara