UNITED STATES INTERNATIONAL TRADE COMMISSION
WASHINGTON, DC

In the Matter of:	Investigation No. 337-TA- ___
Certain Light-Emitting Diodes and Products Containing Same	

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

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APPENDIX OF ADDITIONAL MATERIALS

As required by 19 C.F.R. § 210.12(c), a certified copy of each of the prosecution histories of the patents-at-issue, including the references cited therein, is submitted in the following appendices:

- Appendix A – Prosecution history of U.S. Patent No. 6,812,500 B2
- Appendix B – Technical references cited in the prosecution history of U.S. Patent No. 6,812,500 B2
- Appendix C – Prosecution history of U.S. Patent No. 7,078,732 B1
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- Appendix G – Prosecution history of U.S. Patent No. 7,345,317 B1
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- Appendix Q – Prosecution history of U.S. Patent No. 7,427,806 B2
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I. INTRODUCTION

1. OSRAM GmbH requests that the United States International Trade Commission ("USITC" or "Commission") commence an investigation pursuant to 19 U.S.C. § 1337(a)(1)(B) (alternatively, referred to herein as "Section 337") to remedy the unlawful importation into the United States, sale for importation into the United States, sale within the United States, and/or offer for sale within the United States of certain light-emitting diodes (LEDs) and/or products containing LEDs, including, for example, Samsung branded liquid crystal displays (LCDs) incorporating LEDs (collectively, "the Accused Products").

2. On information and belief, the proposed Respondents, Samsung Electronics Co., Ltd., Samsung Electronics America, Inc., Samsung LED Co., Ltd., and Samsung LED America, Inc. (collectively, "Samsung") have engaged in unfair acts in violation of Section 337 through the unlicensed importation, sale for importation, and/or sale within the United States after importation of Accused Products that directly and/or indirectly infringe one or more claims of U.S. Patent Nos. 6,812,500 B2 (the '500 patent); 7,078,732 B1 (the '732 patent); 7,126,162 B2 (the '162 patent); 7,345,317 B2 (the '317 patent); 7,629,621 B2 (the '621 patent); 6,459,130 B1 (the '130 patent); 6,927,469 B2 (the '469 patent); 7,199,454 B2 (the '454 patent); and 7,427,806 B2 (the '806 patent) (collectively, "the patents-at-issue").

3. Complainant OSRAM GmbH is a leading researcher and manufacturer of optoelectronic components, including LEDs. OSRAM Opto Semiconductors Inc. (OSRAM-OS U.S.) and OSRAM Sylvania Inc. (OSRAM Sylvania) (collectively, "OSRAM U.S.") are U.S. subsidiaries of OSRAM GmbH. OSRAM GmbH,

OSRAM-OS U.S., and OSRAM Sylvania are collectively referred to herein as "OSRAM."

4. OSRAM was founded over 100 years ago, and is one of the two largest lighting manufacturers in the world. Light from OSRAM shines in about 150 countries. OSRAM has 40,000 employees worldwide, supplying customers around the globe from its 46 production sites in 17 countries.

5. OSRAM is a high-tech company in the lighting industry, and has maintained a strong commitment to research and development, particularly in the field of LEDs. Business in this area is growing rapidly and has taken on major strategic importance.

6. LEDs are an energy-efficient "green" technology. Over two-thirds of OSRAM's sales now come from energy-efficient products. OSRAM's milestones in the development of LED technology include the first surface-mounted LEDs and the first LEDs that emit white light (white LEDs) using conversion technology. These innovative technologies are the subject of the patents asserted in this Complaint.

7. There is enormous demand in the lighting industry for the technologies developed by OSRAM, in part because white LEDs are becoming the most widespread type of LED. Typical applications include backlighting of LCD displays, interior and exterior vehicle lighting, and LEDs are now being used increasingly for general illumination. Indeed, in the area of general illumination, Samsung itself recently announced the introduction of LED lamp products into the U.S. market. (See **Exhibit 114.**)

8. With several thousand patents and patent applications, OSRAM holds a strong intellectual property position in the field of LED technology. As a result of the enormous demand for the technologies developed by OSRAM, and in particular the

OSRAM white LED conversion technology, OSRAM has licensed many major companies in the United States and around the world.

9. OSRAM U.S. has engaged in significant investment in plant and equipment, significant employment of labor, and/or substantial investment in engineering, research and development relating to products protected by the patents-at-issue.

10. On information and belief, the Samsung Accused Products infringe at least the following claims of the patents-at-issue:

Patent Number	Asserted Claims
6,812,500 B2	1, 3-5, 7, 11, 13-15, 17, 21, 27, 32, 34, 35, 37, 38, 40, 42, 48, 54, 63, and 67
7,078,732 B1	1-3, 7, 18, 30, and 32
7,126,162 B2	1-4, 6-9, 11, 12, 15-24, 26, and 38
7,345,317 B2	1, 3, 5-10, 13-20, 25-28, and 31-35
7,629,621 B2	1, 2-7, 9, 11-37, 40-47, and 50-54
6,459,130 B1	1, 3, 5, 6, 8, 9, 11, 13, 14, 16-19, 21, and 22
6,927,469 B2	1-6 and 9
7,199,454 B2	1-6, 8, 10, 11, 13, 15, 16, 19, and 20
7,427,806 B2	1, 5, 6, 8-10, 15-17, and 20

11. A certified copy of the '500 patent accompanies this complaint as **Exhibit 1**. OSRAM GmbH owns by assignment the entire right, title, and interest in this patent. (See **Exhibit 10**.)

12. A certified copy of the '732 patent accompanies this complaint as **Exhibit 2**. OSRAM GmbH owns by assignment the entire right, title, and interest in this patent. (See **Exhibit 11**.)

13. A certified copy of the '162 patent accompanies this complaint as **Exhibit 3**. OSRAM GmbH owns by assignment the entire right, title, and interest in this patent. (See **Exhibit 12**.)

14. A certified copy of the '317 patent accompanies this complaint as **Exhibit 4**. OSRAM GmbH owns by assignment the entire right, title, and interest in this patent. (See **Exhibit 13**.)

15. A certified copy of the '621 patent accompanies this complaint as **Exhibit 5**. OSRAM GmbH owns by assignment the entire right, title, and interest in this patent. (See **Exhibit 14**.)

16. A certified copy of the '130 patent accompanies this complaint as **Exhibit 6**. OSRAM GmbH owns by assignment the entire right, title, and interest in this patent. (See **Exhibit 15**.)

17. A certified copy of the '469 patent accompanies this complaint as **Exhibit 7**. OSRAM GmbH owns by assignment the entire right, title, and interest in this patent. (See **Exhibit 16**.)

18. A certified copy of the '454 patent accompanies this complaint as **Exhibit 8**. OSRAM GmbH owns by assignment the entire right, title, and interest in this patent. (See **Exhibit 17**.)

19. A certified copy of the '806 patent accompanies this complaint as **Exhibit 9**. OSRAM GmbH owns by assignment the entire right, title, and interest in this patent. (See **Exhibit 19**.)

20. As required by Section 337(a)(2) and defined by Section 337(a)(3), an industry in the United States relating to the patents-at-issue exists by virtue of at least OSRAM's,

including OSRAM U.S.'s, significant investment in plant and equipment, significant employment of labor and capital, and/or substantial investment in the exploitation with respect to the patents-at-issue.

21. OSRAM seeks a permanent exclusion order pursuant to Section 337(d) excluding the importation of Accused Products manufactured by or for Samsung. OSRAM also seeks a cease-and-desist order pursuant to Section 337(f) directing Samsung to immediately cease the importation into the United States, sale for importation into the United States, and sale in the United States after importation of Accused Products. OSRAM also requests that the cease-and-desist order direct Samsung to immediately cease the demonstration, sale, offer for sale, use, and movement or shipment of United States inventory of Accused Products.

II. COMPLAINANT

22. OSRAM GmbH is a German Gesellschaft mit beschränkter Haftung organized and existing under the laws of Germany. OSRAM GmbH maintains its principal place of business at Hellabrunner Strasse 1, 81543 Munich, Germany. Information about OSRAM GmbH is available on its website: http://www.osram.com.

23. OSRAM GmbH is the owner by assignment of all right, title, and interest in and to the '500 patent, the '732 patent, the '162 patent, the '317 patent, the '621 patent, the '130 patent, the '469 patent, the '454 patent, and the '806 patent. (See **Exhibits 10-18**.)

III. PROPOSED RESPONDENTS

1. Samsung Electronics Co., Ltd.

24. On information and belief, Samsung Electronics Co., Ltd. (SEC) is a corporation organized and existing under the laws of the Republic of Korea and has its principal place of business at 1320-10, Seocho 2-dong, Seocho-gu, Seoul, 137-857, Republic of Korea. (See **Exhibit 19**, at 49.)

25. On information and belief, SEC designs, develops, manufactures, markets, and/or sells Accused Products. (See **Exhibit 19**, at 30-37.)

26. On information and belief, Accused Products are manufactured overseas, and SEC and others then import Accused Products into the United States, sell Accused Products for importation into the United States, and/or sell Accused Products after they have been imported into the United States. (See **Exhibit 20**.)

27. On information and belief, SEC directs Accused Products to the United States through established distribution channels knowing that these products are imported into, sold, offered for sale, and/or used within the United States. (See **Exhibit 21**.)

2. Samsung Electronics America, Inc.

28. On information and belief, Samsung Electronics America, Inc. (SEA) is a wholly-owned subsidiary of SEC, and is organized and existing under the laws of New York with its principal place of business at 85 Challenger Rd., Ridgefield Park, New Jersey. (See **Exhibit 19**, at 49.)

29. On information and belief, SEA directly or indirectly imports, distributes, markets, sells, and/or operates Accused Products manufactured by or for SEC or its affiliates. (See **Exhibit 22**.)

3. Samsung LED Co., Ltd.

30. On information and belief, Samsung LED Co., Ltd. (SLED) is a joint venture of SEC and Samsung Electro-Mechanics Co., Ltd., and is organized and existing under the laws of the Republic of Korea with its principal place of business at 206, Cheomdansaneop Road, Yeongtong-gu, Suwon City, Gyeonggi Province 443-743, Republic of Korea. (See **Exhibit 23**.)

31. On information and belief, SLED designs, develops, manufactures, markets, and/or sells Accused Products. (See **Exhibit 24**, at 36.)

32. On information and belief, Accused Products are manufactured overseas, and SLED and others then import Accused Products into the United States, sell Accused Products for importation into the United States, and/or sell Accused Products after they have been imported into the United States.

33. On information and belief, SLED directs Accused Products to the United States through established distribution channels knowing that these products are imported into, sold, offered for sale, and/or used within the United States. (See **Exhibit 25**.)

4. Samsung LED America, Inc.

34. On information and belief, Samsung LED America, Inc. (SLED-America) is organized and existing under the laws of Georgia with its principal place of business at 6 Concourse Pkwy NE, Atlanta, Georgia. (See **Exhibit 26**, at 2.)

35. On information and belief, SLED-America directly or indirectly imports, distributes, markets, sells, and/or operates Accused Products manufactured by or for SLED or its affiliates. (See **Exhibit 25**.)

IV. PRODUCTS-AT-ISSUE

36. The Samsung Accused Products include certain LEDs and products containing LEDs, including, for example, LCD displays incorporating LEDs, designed, operated, distributed, sold, and/or offered for sale by or for Samsung. Examples of the Samsung Accused Products are listed below and described in the attached claim charts. Photographs of certain examples of the Samsung Accused Products are attached as **Exhibits 31-33**.

V. PATENTS-AT-ISSUE

1. Luminescence Conversion Patents

a) The '500 Patent

(1) Identification and ownership of the '500 patent

37. U.S. Patent No. 6,812,500 B2, entitled "Light-Radiating Semiconductor Component with a Luminescence Conversion Element," issued on November 4, 2004, to inventors Ulrike Reeh, Klaus Höne, Norbert Stath, Günter Waitl, Peter Schlotter, Jürgen Schneider, and Ralf Schmidt. The '500 patent remains in full force and effect, and OSRAM GmbH owns by assignment the entire right, title, and interest in the '500 patent. (See **Exhibit 10**.)

(2) Non-technical description of the '500 patent[1]

38. The '500 patent generally relates to a light-radiating semiconductor component having a semiconductor body that emits light in a first wavelength range of blue, green, and/or ultraviolet light, electrical terminals connected to the semiconductor body, and a luminescence conversion element that converts some of this light to a

[1] The text of this Complaint and the sections providing non-technical descriptions of the patents-at-issue are not intended to construe either the specification or the claims of the patents-at-issue.

second, different wavelength range. The converted light and the light emitted from the semiconductor combine to produce polychromatic light (e.g., white light). The luminescence conversion element can be produced from silicone and can contain inorganic luminescent material selected from, inter alia, garnets, and orthosilicates doped with rare earth elements.

(3) Foreign counterparts

39. A list of foreign counterparts to the '500 patent is attached as **Exhibit 27**.

b) The '732 Patent

(1) Identification and ownership of the '732 patent

40. U.S. Patent No. 7,078,732 B1, entitled "Light-Radiating Semiconductor Component with a Luminescence Conversion Element," issued on July 18, 2006, to inventors Ulrike Reeh, Klaus Höne, Norbert Stath, Günter Waitl, Peter Schlotter, Jürgen Schneider, and Ralf Schmidt. The '732 patent remains in full force and effect, and OSRAM GmbH owns by assignment the entire right, title, and interest in the '732 patent. (See **Exhibit 11**.)

(2) Non-technical description of the '732 patent

41. The '732 patent generally relates to a white light-emitting semiconductor component having a semiconductor body that emits blue light and a luminescence conversion layer that converts some of this light to light of a different wavelength range of green, yellow, or red light. The unconverted blue light from the semiconductor passes through the luminescence conversion layer along with the radiation of a different wavelength from the luminescence conversion layer. Accordingly, the semiconductor emits white light.

(3) Foreign counterparts

42. A list of foreign counterparts to the '732 patent is attached as **Exhibit 27**.

c) The '162 Patent

(1) Identification and ownership of the '162 patent

43. U.S. Patent No. 7,126,162 B2, entitled "Light-Radiating Semiconductor Component with a Luminescence Conversion Element," issued on October 24, 2006, to inventors Ulrike Reeh, Klaus Höne, Norbert Stath, Günter Waitl, Peter Schlotter, Jürgen Schneider, and Ralf Schmidt. The '162 patent remains in full force and effect, and OSRAM GmbH owns by assignment the entire right, title, and interest in the '162 patent. (See **Exhibit 12**.)

(2) Non-technical description of the '162 patent

44. The '162 patent generally relates to a light-radiating semiconductor component having a semiconductor body that emits blue, green, and/or ultraviolet light and a luminescence conversion element that converts some of this light to a different color. The converted light and the light emitted from the semiconductor body combine to produce a light output that has a mixture of colors which is substantially homogenous for different radiation directions.

(3) Foreign counterparts

45. A list of foreign counterparts to the '162 patent is attached as **Exhibit 27**.

d) The '317 Patent

(1) Identification and ownership of the '317 patent

46. U.S. Patent No. 7,345,317 B2, entitled "Light-Radiating Semiconductor Component with a Luminescence Conversion Element," issued on March 18, 2008, to inventors

Ulrike Reeh, Klaus Höne, Norbert Stath, Günter Waitl, Peter Schlotter, Jürgen Schneider, and Ralf Schmidt. The '317 patent remains in full force and effect, and OSRAM GmbH owns by assignment the entire right, title, and interest in the '317 patent. (See **Exhibit 13**.)

(2) Non-technical description of the '317 patent

47. The '317 patent generally relates to a light-radiating semiconductor component having a semiconductor body that emits light in a first wavelength range of blue, green, and/or ultraviolet and a luminescence conversion element applied directly to the semiconductor body that converts some of this light to a second, different wavelength range. The converted light and the light emitted from the semiconductor combine to produce a light output having a mixture of colors.

(3) Foreign counterparts

48. A list of foreign counterparts to the '317 patent is attached as **Exhibit 27**.

e) The '621 Patent

(1) Identification and ownership of the '621 patent

49. U.S. Patent No. 7,629,621 B2, entitled "Light-Radiating Semiconductor Component with a Luminescence Conversion Element," issued on December 8, 2009, to inventors Ulrike Reeh, Klaus Höne, Norbert Stath, Günter Waitl, Peter Schlotter, Jürgen Schneider, and Ralf Schmidt. The '621 patent remains in full force and effect, and OSRAM GmbH owns by assignment the entire right, title, and interest in the '621 patent. (See **Exhibit 14**.)

(2) Non-technical description of the '621 patent

50. The '621 patent generally relates to a light-radiating semiconductor component having a semiconductor body that emits light in a first wavelength range of blue, green, and/or ultraviolet and a luminescence conversion element that converts some of this light to a second, different wavelength range. The converted light and the light emitted from the semiconductor combine to produce a light output having a mixture of colors which contains perceptible amounts of light in both the first and second wavelength ranges.

(3) Foreign counterparts

51. A list of foreign counterparts to the '621 patent is attached as **Exhibit 27**.

2. LED Packaging Patents

a) The '130 Patent

(1) Identification and ownership of the '130 patent

52. U.S. Patent No. 6,459,130 B1, entitled "Optoelectronic Semiconductor Component," issued on October 1, 2002, to inventors Karlheinz Arndt, Herbert Brunner, Franz Schellhorn, and Günter Waitl. The '130 patent remains in full force and effect, and OSRAM GmbH owns by assignment the entire right, title, and interest in the '130 patent. (See **Exhibit 15**.)

(2) Non-technical description of the '130 patent

53. The '130 patent generally relates to a radiation-emitting and/or receiving semiconductor component in which a radiation-emitting and/or receiving semiconductor is secured in a trough formed in a chip carrier part of the component's leadframe and is surrounded by an encapsulation. The trough has a reflective inner

surface that reflects radiation that is either emitted and/or received by the semiconductor.

(3) Foreign counterparts

54. A list of foreign counterparts to the '130 patent is attached as **Exhibit 27**.

b) The '469 Patent

(1) Identification and ownership of the '469 patent

55. U.S. Patent No. 6,927,469 B2, entitled "Surface Mountable Light Emitting or Receiving Device," issued on August 9, 2005, to inventors Karlheinz Arndt, Herbert Brunner, Franz Schellhorn, and Günter Waitl. The '469 patent remains in full force and effect, and OSRAM GmbH owns by assignment the entire right, title, and interest in the '469 patent. (See **Exhibit 16**.)

(2) Non-technical description of the '469 patent

56. The '469 patent generally relates to a surface mountable device having a chip carrier part, a trough positioned at the chip carrier part having a reflective inner surface, a semiconductor secured in the trough, a connection part located some distance away from the chip carrier part which is electrically connected to the semiconductor, and an encapsulation. The chip carrier part is used to provide an electrical and/or thermal connection.

(3) Foreign counterparts

57. A list of foreign counterparts to the '469 patent is attached as **Exhibit 27**.

c) The '454 Patent

(1) Identification and ownership of the '454 patent

58. U.S. Patent No. 7,199,454 B2, entitled "Optoelectronic Semiconductor Component," issued on April 3, 2007, to inventors Karlheinz Arndt, Herbert Brunner, Franz Schellhorn, and Günter Waitl. The '454 patent remains in full force and effect, and OSRAM GmbH owns by assignment the entire right, title, and interest in the '454 patent. (See **Exhibit 17**.)

(2) Non-technical description of the '454 patent

59. The '454 patent generally relates to semiconductor component having a chip carrier part, a radiation-emitting and/or receiving semiconductor which is secured on the chip carrier part, and an encapsulation covering the semiconductor. The chip carrier part projects from the component.

(3) Foreign counterparts

60. A list of foreign counterparts to the '454 patent is attached as **Exhibit 27**.

d) The '806 Patent

(1) Identification and ownership of the '806 patent

61. U.S. Patent No. 7,427,806 B2, entitled "Semiconductor Component Emitting and/or Receiving Electromagnetic Radiation, and Housing Base for Such a Component," issued on September 23, 2008, to inventors Karlheinz Arndt, Georg Bogner, Bert Braune, and Günter Waitl. The '806 patent remains in full force and effect, and OSRAM GmbH owns by assignment the entire right, title, and interest in the '806 patent. (See **Exhibit 18**.)

(2) Non-technical description of the '806 patent

62. The '806 patent is directed to a semiconductor component with an improved housing base body that houses a semiconductor light-emitting or light-receiving chip, and comprises a recess in which the chip can be encapsulated by an encapsulant. The recess further comprises, from inside out, a chip well in which the semiconductor chip is secured, a wall whose apex lies below the level of the surface of the housing base body, and a trench that runs at least partway around the chip well.

(3) Foreign counterparts

63. A list of foreign counterparts to the '806 patent is attached as **Exhibit 27**.

VI. UNFAIR ACTS OF THE PROPOSED RESPONDENTS

64. On information and belief, the proposed Respondents directly or indirectly import into the United States, sell for importation into the United States, and/or sell in the United States after importation certain LEDs, or products containing LEDs, that infringe one or more of the patents-at-issue in violation of 35 U.S.C. § 271(a). (See Section III.)

65. On information and belief, the Samsung Accused Products infringe the patents-at-issue, including without limitation the following: (1) LEDs infringe claims 1, 4, 5, 7, 11, 13, 15, 17, 21, 27, 37, 38, 40, 42-44, 48, 54, 63, and 67 of the '500 patent, claims 1-3, 7, 18, 30, and 32 of the '732 patent, claims 1-4, 6, 7, 12, 15-24, and 26 of the '162 patent, claims 1, 3, 5-10, 25-28, and 31-35 of the '317 patent, claims 1, 3-5, 7, 9, 11, 27, 35-37, and 40-44 of the '621 patent, claims 1, 2, 5, 6, and 9 of the '469 patent, claims 1, 2, 4, 5, 8, 10, and 19 of the '454 patent, and claims 1, 5, 6, 8-10, 15-17, and 20 of the '806 patent; and (2) LCD displays incorporating LEDs infringe

claims 3, 11, 13-15, 17, 21, 27, 32, 34, 35, 37, 54, and 63 of the '500 patent, claims 1-3, 6-9, 11, 12, 15-24, and 26-38 of the '162 patent, claims 1, 3, 5-10, 13-20, 25-28, and 31-35 of the '317 patent, claims 1, 2, 4-7, 9, 11-18, 20-37, 40-47, and 50-54 of the '621 patent, claims 1, 3, 5, 6, 8, 9, 11, 13, 14, 16-19, 21, and 22 of the '130 patent, claims 1-6 and 9 of the '469 patent, and claims 1-6, 8, 10, 11, 13, 15, 16, 19, and 20 of the '454 patent.

66. The infringing Samsung Accused Products are being manufactured, assembled, packaged, and/or tested overseas, specifically, at least in Korea and China. (See **Exhibits 28-31**.) These same Accused Products are then being imported into the United States, operated and tested in the United States, sold for importation into the United States, and/or sold after importation in the United States. (See **Exhibits 31-33**.) The aforesaid acts of Samsung constitutes direct infringement of at least claims 1, 3-5, 7, 11, 13-15, 17, 21, 27, 32, 34, 35, 37, 38, 40, 42, 48, 54, 63, and 67 of the '500 patent; claims 1-3, 7, 18, 30, and 32 of the '732 patent; claims 1-4, 6-9, 11, 12, 15-24, 26, and 38 of the '162 patent; claims 1, 3, 5-10, 13-20, 25-28, and 31-35 of the '317 patent; claims 1, 2-7, 9, 11-37, 40-47, and 50-54 of the '621 patent; claims 1, 3, 5, 6, 8, 9, 11, 13, 14, 16-19, 21, and 22 of the '130 patent; claims 1-6 and 9 of the '469 patent; claims 1-6, 8, 10, 11, 13, 15, 16, 19, and 20 of the '454 patent; and claims 1, 5, 6, 8-10, 15-17, and 20 of the '806 patent.

67. On information and belief, Samsung knowingly contributes to the infringement of at least claims 1, 3-5, 7, 11, 13-15, 17, 21, 27, 32, 34, 35, 37, 38, 40, 42, 48, 54, 63, and 67 of the '500 patent; claims 1, 3, 5, 6, 8, 9, 11, 13, 14, 16-19, 21, and 22 of the '130 patent; claims 1-6 and 9 of the '469 patent; and claims 1-6, 8, 10, 11, 13, 15, 16, 19,

and 20 of the '454 patent by offering to sell within the United States, selling within the United States, and/or importing into the United States Accused Products used to perform the claimed methods and knowing that the Accused Products are especially made or adapted for infringing use and are not staple articles or commodities of commerce suitable for substantial non-infringing use.

68. On information and belief, Samsung actively and knowingly induces the infringement, with the intent to cause infringement, of at least claims 1, 3-5, 7, 11, 13-15, 17, 21, 27, 32, 34, 35, 37, 38, 40, 42, 48, 54, 63, and 67 of the '500 patent; claims 1, 3, 5, 6, 8, 9, 11, 13, 14, 16-19, 21, and 22 of the '130 patent; claims 1-6 and 9 of the '469 patent; and claims 1-6, 8, 10, 11, 13, 15, 16, 19, and 20 of the '454 patent by, among other things, providing the Accused Products along with directions, demonstrations, guides, manuals, training for use, and/or other materials that encourage and facilitate the infringing use by another.

69. On information and belief, Samsung had notice and knowledge, through communications with OSRAM, of the patents identified in the previous two paragraphs prior to the date of the date of filing of this complaint.

70. A claim chart demonstrating how claims 2, 3, 4, and 5 of the '500 patent read onto the SLHNNWH511N0 High Power LED is attached as **Exhibit 34**. This claim chart references documentation attached as part of **Exhibit 35**.

71. A claim chart demonstrating how claims 1 of the '500 patent read onto the SPMWHT520A White LED is attached as **Exhibit 36**. This claim chart references documentation attached as part of **Exhibit 37**.

72. A claim chart demonstrating how claim 3 of the '500 patent reads onto the UN32D5500 LED HDTV is attached as **Exhibit 38**. This claim chart references documentation attached as part of **Exhibit 39**.

73. A claim chart demonstrating how claim 1 of the '732 patent reads onto the SPMWHT520A White LED is attached as **Exhibit 40**. This claim chart references documentation attached as part of **Exhibit 41**.

74. A claim chart demonstrating how claims 1, 15, 20, and 26 of the '162 patent read onto the SPMWHT520A White LED is attached as **Exhibit 42**. This claim chart references documentation attached as part of **Exhibit 43**.

75. A claim chart demonstrating how claims 1, 15, 20, and 26 of the '162 patent read onto the UN32D5500 LED HDTV is attached as **Exhibit 44**. This claim chart references documentation attached as part of **Exhibit 45**.

76. A claim chart demonstrating how claim 1 of the '317 patent reads onto the SPMWHT520A White LED is attached as **Exhibit 46**. This claim chart references documentation attached as part of **Exhibit 47**.

77. A claim chart demonstrating how claim 1 of the '317 patent reads onto the UN32D5500 LED HDTV is attached as **Exhibit 48**. This claim chart references documentation attached as part of **Exhibit 49**.

78. A claim chart demonstrating how claims 1 and 12 of the '621 patent read onto the SPMWHT520A White LED is attached as **Exhibit 50**. This claim chart references documentation attached as part of **Exhibit 51**.

79. A claim chart demonstrating how claims 1 and 12 of the '621 patent read onto the UN32D5500 LED HDTV is attached as **Exhibit 52**. This claim chart references documentation attached as part of **Exhibit 53**.

80. A claim chart demonstrating how claims 1, 8, and 16 of the '130 patent reads onto the UN32D5500 LED HDTV is attached as **Exhibit 54**. This claim chart references documentation attached as part of **Exhibit 55**.

81. A claim chart demonstrating how claim 1 of the '469 patent reads onto the SLHNNWW511N0 is attached as **Exhibit 56**. This claim chart references documentation attached as part of **Exhibit 57**.

82. A claim chart demonstrating how claim 1 of the '469 patent reads onto the UN32D5500 LED HDTV is attached as **Exhibit 58**. This claim chart references documentation attached as part of **Exhibit 59**.

83. A claim chart demonstrating how claim 1 of the '454 patent reads onto the SLHNNWW511N0 is attached as **Exhibit 60**. This claim chart references documentation attached as part of **Exhibit 61**.

84. A claim chart demonstrating how claims 1 and 11 of the '454 patent reads onto the UN32D5500 LED HDTV is attached as **Exhibit 62**. This claim chart references documentation attached as part of **Exhibit 63**.

85. A claim chart demonstrating how claims 1 and 8 of the '806 patent reads onto the SLHNNWW511N0 is attached as **Exhibit 64**. This claim chart references documentation attached as part of **Exhibit 65**.

VII. SPECIFIC INSTANCES OF UNFAIR IMPORTATION AND SALE

86. On information and belief, the Samsung Accused Products are imported into the United States, sold for importation into the United States, and/or sold after they are imported into the United States.

87. On information and belief, the Samsung Accused Products are manufactured, assembled, and packaged, and/or tested in Korea and China. (See **Exhibits 28-31**.) The Samsung Accused Products are then imported into the United States, operated and tested in the United States, sold for importation into the United States, and/or sold after importation into the United States by Samsung and others. (See **Exhibits 31-33**.)

88. Accused Products have been imported and can be purchased in the United States. Attached as **Exhibits 32 and 33** are receipts from the purchase, in the United States of the following Samsung LEDs: SPMWHT520A and SLHNNWW511N0. The aforesaid Samsung Accused Products are manufactured in Korea or China. (See **Exhibits 28-30**.) Distributors sell such Samsung Accused Products for purchase in the United States. (See, e.g., **Exhibits 32 and 33**.)

89. Attached as **Exhibit 331** are receipts and photographs of the UN32D5500 LED HDTV incorporating LEDs and bearing the "MADE IN CHINA" designation. Distributors sell such Samsung Accused Products for purchase in the United States. (See **Exhibit 21**.)

VIII. HARMONIZED TARIFF SCHEDULE ITEM NUMBERS

90. On information and belief, the Samsung Accused Products are believed to fall within at least the following classification of the Harmonized Tariff Schedule of the United

States: HTUS 8541 and subsections thereof (including 8541.40.20); HTUS 8528 and subsections thereof (including 8528.59.15, 8528.59.20, 8528.59.25, 8528.59.30.50, 8528.72.62, 8528.72.64, 8528.72.68, and 8528.72.72.50); and HTUS 8517 and subsections thereof (including 8517.12.20-80). The Harmonized Tariff Schedule numbers are for illustrative purposes only, and are not intended to be restrictive of the scope of the Accused Products.

IX. LICENSEES

91. A list of licensees of the patents-at-issue is attached to this complaint as **Confidential Exhibit 66C**.

X. DOMESTIC INDUSTRY

92. There is a domestic industry, as defined under 19 U.S.C. § 1337(a)(3)(A), (B), and (C), comprising significant investments in plant and equipment, significant employment of labor and capital, and substantial exploitation of the patents-at-issue, including engineering, research and development, and licensing.

1. Technical Aspects

93. OSRAM's domestic industry products covered by the claims of the patents-at-issue include: (1) white LEDs; (2) white LEDs using chip-level conversion (CLC) technology; (3) Dragon LEDs; (4) Advanced Power TOPLEDs; and (5) Advanced Power TOPLED Plus LEDs, as described below. OSRAM, through its domestic subsidiaries, distributes, markets, and offers for domestic sale these LEDs, and/or products containing these LEDs, in the United States.

a) White LEDs

94. OSRAM's white LEDs practice the inventions claimed in at least the '500, '162, and '621 patents. OSRAM offers white LEDs in a number of different product families including, e.g., the TOPLED, Mini TOPLED, Power TOPLED, Advanced Power TOPLED, Dragon, OLSON, CERAMOS, OSTAR, PointLED, SmartLED, and CHIPLED families.

95. The Golden Dragon Plus LUW W5AM is one example of OSRAM's white LEDs. Charts applying exemplary claims of the '500 and '621 patents to the LUW W5AM are contained within **Exhibits 67 and 75**. Labeled figures to be read with these charts are attached as **Exhibit 68 and 76**. Datasheets and other publications with technical information for the LUW W5AM are attached as **Exhibits 89 and 90C**.

96. The Power TOPLED LW E6SG is another example of OSRAM's white LEDs. A chart applying an exemplary claim of the '162 patent to the LW E6SG is contained within **Exhibit 71**. Labeled figures to be read with this chart are attached as **Exhibit 72**. A datasheet with technical information for the LW E6SG are attached as **Exhibit 91**.

b) White LEDs with CLC technology

97. There are two technologies used in OSRAM's white LEDs to produce white light. In one technology, known as volume conversion, the semiconductor that emits blue light is surrounded by a casting or molding material where particles that are dispersed in the material absorb light from the semiconductor and emit light, e.g., yellow light, such that the combined light output appears white to the human eye. The other technology, known as chip-level conversion (CLC), involves applying a layer of

material containing the conversion particles directly on top of the blue light-emitting semiconductor.

98. White LEDs using CLC technology practice the inventions claimed in the '732 and '317 patents. One example of a white LED that uses CLC technology is the Golden Dragon Plus LUW W5AM. Charts applying exemplary claims of the '732 and '317 patents to the LUW W5AM are contained within **Exhibits 69 and 73**. Labeled figures to be read with these charts are attached as **Exhibits 70 and 74**. Datasheets and other publications with technical information for this product are attached as **Exhibits 89 and 90C**. As demonstrated by reference to the LUW W5AM product in this section and the section above, a product using CLC technology to produce white light not only practices the '732 and '317 patents, it also practices the '500, '162, and '621 patents, discussed above.

c) Dragon LEDs

99. OSRAM's Dragon LEDs, which include a leadframe structure, practice the inventions claimed in the '130, '469, '454, and '806 patents. One example of OSRAM's Dragon LEDs is the Golden Dragon Plus LUW W5AM. Charts applying exemplary claims of the '130, '469, '454, and '806 patents to the LUW W5AM are contained within **Exhibits 77, 79, 85, and 87**. Labeled figures to be read with these charts are attached as **Exhibit 78, 80, 86, and 88**. Datasheets and other publications with technical information for this product are attached as **Exhibits 89 and 90C**.

100. Dragon LEDs are available in a variety of colors including, e.g., red, yellow, green, blue, and white. As demonstrated by the reference to a white Dragon LED in this section and in the sections above, white Dragon LEDs not only practice

the '130, '469, '454, and '806 patents, but also the '500, '162, and '621 patents and patents relating to CLC technology, as discussed above.

d) Advanced Power TOPLEDs

101. OSRAM's Advanced Power TOPLEDs, which include a leadframe structure, practice the invention claimed in the '454 patent. One example of OSRAM's Advanced Power TOPLEDs is the Advanced Power TOPLED LCW G6CP. A chart applying an exemplary claim of the '454 patent to the LCW G6CP is contained within **Exhibit 81**. Labeled figures to be read with this chart are attached as **Exhibit 82**. Datasheets and other publications with technical information for this product are attached as **Exhibit 92 and 93C**.

102. Advanced Power TOPLEDs are also available in a variety of colors. White Advanced Power TOPLEDs, such as the LCW G6CP, not only practice the '454 patent, they also practice the '500, '162, and '621 patents and patents relating to CLC technology, as discussed above.

e) Advanced Power TOPLED Plus LEDs

103. OSRAM's Advanced Power TOPLED Plus LEDs, which include a leadframe structure, practice the invention claimed in the '454 patent. One example of OSRAM's Advanced Power TOPLED Plus LEDs is the Advanced Power TOPLED Plus LUW G5GP. A chart applying an exemplary claim of the '454 patent to the LUW G5GP is contained within **Exhibit 83**. Labeled figures to be read with this chart are attached as **Exhibit 84**. Datasheets and other publications with technical information for this product are attached as **Exhibit 94 and 95**.

104. Advanced Power TOPLED Plus LEDs are similarly available in a variety of colors. White Advanced Power TOPLED Plus LEDs, such as the LUW G5GP, not only practice the '454 patent, they also practice the '500, '162, and '621 patents, as discussed above.

2. Economic Aspects

105. OSRAM-OS U.S. is a subsidiary of OSRAM GmbH, and is organized under the laws of California with its principal place of business at 1150 Kifer Road, Suite 100, Sunnyvale, California 94086, and having a facility in Northville, Michigan. OSRAM-OS U.S. provides application engineering, marketing, distribution, and sales within the United States for LEDs that are protected by the patents-at-issue, as well as provides a variety of related products, accessories, and services, including warranty and customer support. OSRAM-OS U.S. has substantial activities in the United States, and it is increasing its activities in the United States as demand for its products grows. **Confidential Exhibit 96C** includes information regarding OSRAM-OS U.S.'s LED revenue.

106. A summary of FY 2009/2010 sales of white LEDs, white LEDs using CLC technology, and Dragon LEDs accompanies this Complaint as **Confidential Exhibit 97C**, and an apportionment of the sales of these LEDs in comparison to OSRAM-OS U.S.'s total LED sales and total sales is included in **Confidential Exhibit 97C**. Significant growth in demand for white LEDs is expected as these devices begin to replace traditional lighting sources, i.e., incandescent and fluorescent light bulbs, for general-purpose lighting in homes and offices. Moreover, the Advanced Power TOPLED Plus is a fairly new product for white color that was released about 18

months ago. It is used in lighting and in automobiles, and OSRAM-OS U.S. expects its volume to increase.

107. OSRAM Sylvania is a subsidiary of OSRAM GmbH, and it is organized under the laws of Delaware with its principal place of business at 100 Endicott Street, Danvers, Massachusetts 01923. OSRAM Sylvania has facilities throughout the United States. Information about OSRAM Sylvania is available on its website: http:/www.sylvania.com.

108. OSRAM Sylvania researches and develops, manufactures, markets, distributes, and sells within the United States modules containing LEDs that are protected by the patents-at-issue. It also provides a variety of related products, accessories, and services including warranty and customer support. (See **Exhibits 98-100.**)

109. OSRAM Sylvania's modules are used in a wide variety of applications, including automotive lighting, professional lighting, and consumer lighting. In addition to its Danvers headquarters, OSRAM Sylvania has a facility focusing on automotive lighting in Hillsboro, NH; a plant in St. Mary's, PA that assembles LED products; a new facility in Exeter, NH that will install converter plates for white LEDs; a 54 Cherry Hill location (in Danvers, MA) involved in research and development with LEDs; and a 71 Cherry Hill location (in Beverly, MA) that also focuses on research and development with LEDs.

110. Information about modules sold by the Automobile Lighting Group covered by the patents-at-issue is contained in **Confidential Exhibit 101C**. Information containing modules sold by the Professional Lighting Group covered by the patents-at-issue is contained in **Confidential Exhibit 102C**.

111. Both last fiscal year and this fiscal year, OSRAM Sylvania's Consumer Lighting Group sold modules containing OSLON white LEDs and Golden Dragon Plus LEDs. These products include the D11 Post Top Retrofit (Golden Dragon Plus LED) and the D6 Post Top Retrofit (OSLON white LED). Information concerning these modules, including their use of the LEDs that practice the patents-at-issue, is included in **Confidential Exhibit 103C**.

a) Significant investment in plant and equipment

112. OSRAM-OS U.S. invests significantly in plant and equipment used in applications engineering for LEDs covered by the patents-at-issue. **Confidential Exhibit 104C** contains a listing of the Sunnyvale and Northville facilities' costs, including rent, operating expenses, electricity, insurance, and property tax. **Confidential Exhibit 104C** also contains information regarding the apportionment of these facility costs to OSRAM's domestic industry products that practice the patents-at-issue.

113. OSRAM-OS U.S. spent significant funds to acquire equipment used in application engineering of LEDs. **Confidential Exhibit 105C** contains the acquisition costs associated with this equipment and other building and facility costs, including the apportionment of the equipment acquisition costs attributed to OSRAM's domestic industry products that practice the patents-at-issue.

114. OSRAM Sylvania also invests significantly in plant and equipment used for manufacturing of LEDs and products containing LEDs covered by the patents-at-issue. **Confidential Exhibit 106C** includes plant and equipment information regarding OSRAM Sylvania's Hillsboro facility, including information regarding square footage and investment in equipment relating to LEDs. **Confidential Exhibit**

107C includes plant and equipment information regarding OSRAM Sylvania's Exeter facility, including information regarding square footage and investments in equipment dedicated to LEDs. **Confidential Exhibit 108C** includes plant and equipment information regarding OSRAM Sylvania's St. Mary's facility, including square footage and manufacturing costs. **Confidential Exhibit 109C** includes plant and equipment information regarding OSRAM Sylvania's 54 Cherry Hill facility, including information regarding square footage dedicated to LEDs and investment dollars allocated to LEDs. **Confidential Exhibit 110C** includes plant and equipment information regarding OSRAM Sylvania's 71 Cherry Hill facility, including square footage and capital expenditures on LEDs.

115. OSRAM Sylvania's Specialty Products business unit, which contains the automotive and display optics business units, also invested in significant labor and capital regarding the OSRAM LEDs that practice that patents-at-issue. **Confidential Exhibit 111C** contains information regarding sales of products containing OSRAM LEDs and the research and development resources, in human hours, devoted to these products.

b) Significant employment of labor and capital

116. OSRAM-OS U.S. employs significant labor and capital to its applications engineering and distribution, sales, and marketing of white LEDs, white LEDs using CLC technology, Dragon LEDs, Advanced Power TOPLED, and Advanced Power TOPLED Plus LEDs. Information regarding OSRAM-OS U.S.'s significant employment of labor and capital is contained in **Confidential Exhibit 105C**,

including the apportionment of the labor and capital attributed to products covered by the patents-at-issue.

117. OSRAM Sylvania also employs significant labor and capital for researching and developing, manufacturing, and selling modules containing LEDs covered by the patents-at-issue. **Confidential Exhibit 106C** includes labor and capital expenses regarding OSRAM Sylvania's Hillsboro facility. **Confidential Exhibit 107C** includes labor and capital expenses regarding OSRAM Sylvania's Exeter facility, which entirely relates to white LEDs. **Confidential Exhibit 108C** includes labor and capital expenses regarding OSRAM Sylvania's St. Mary's facility. **Confidential Exhibit 109C** includes labor and capital expenses regarding OSRAM Sylvania's 54 Cherry Hill facility. **Confidential Exhibit 110C** includes labor and capital expenses regarding OSRAM Sylvania's 71 Cherry Hill facility.

c) Substantial investment in exploitation, including engineering, research and development, and licensing

118. The paragraphs above detail OSRAM's investment in plant, equipment, space, and personnel for engineering. OSRAM invests substantially in exploitation of LEDs covered by the patents-at-issue in the United States. For example, OSRAM-OS U.S. expends substantial investment capital in the application engineering of its LEDs, including investment in acquiring equipment for application engineering and employees to work on the application engineering, as depicted in **Confidential Exhibit 105C**.

119. OSRAM Sylvania also invests substantially in exploitation of OSRAM LEDs that practice the patents-at-issue. OSRAM Sylvania has invested in plants, equipment, and employment at five locations throughout the United States to work with the LEDs

that practice the patents-at-issue. See **Confidential Exhibits 106C-110C**. As further described in **Confidential Exhibits 108C and 110C**, OSRAM Sylvania's two Cherry Hill locations are involved in research and development and/or testing of LEDs.

120. OSRAM Sylvania's Specialty Products business unit, which contains the automotive and display optics business units, also devotes substantial research and development resources to products containing LEDs covered by the patents-at-issue. Further information regarding the Specialty Products business unit's investment of person hours toward this research and development is contained in **Confidential Exhibit 111C**. Furthermore, OSRAM Sylvania recently opened an expanded clean room dedicated to solid-state research and has received research and product development awards from the U.S. Department of Energy, which will fund a research project regarding white LEDs. See **Exhibit 112**.

121. Besides its own domestic industry activities in the United States, OSRAM has invested substantial resources toward licensing its patented technology, and OSRAM's licensees engage in domestic industry activities in the United States. **Confidential Exhibit 113C** provides a listing of OSRAM's licensees that, upon information and belief, have engaged in substantial domestic industry activities in the United States, and identifies at least one facility in the United States for each licensee. **Confidential Exhibit 113C** also includes information identifying a third party whose products contain LEDs manufactured to OSRAM's specifications using technology covered by the patents-at-issue.

XI. RELATED LITIGATION

122. The '500 patent was subject to litigation in Citizen Elecs. Co. v. OSRAM GmbH, Civil Action No. 1:2005-cv-00112 (D.D.C. 2005). The court dismissed Citizen's declaratory judgment action based on jurisdictional grounds.

123. The '162 patent and the '500 patent were subject to litigation in OSRAM GmbH v. Citizen Watch Co., Civil Action No. 1:2006-cv-00710 (D. Del. 2006). This matter settled before any substantive briefing or orders regarding the patents.

124. Concurrent with the filing of this Complaint, OSRAM is initiating another suit against Samsung in the U.S. District Court for the District of Delaware. That suit is based on a complaint asserting infringement of the patents-at-issue.

125. Concurrent with the filing of this Complaint, OSRAM is filing another complaint with the International Trade Commission based on the infringement of many of the patents asserted in this Complaint by LG Electronics, Inc., and related entities.

126. Concurrent with the filing of this Complaint, OSRAM is filing another suit against LG Electronics, Inc. and related entities in the U.S. District Court for the Northern District of California. That suit is based on a complaint asserting infringement of many of the patents asserted in this Complaint.

XII. RELIEF REQUESTED

WHEREFORE, by reason of the foregoing, OSRAM respectfully requests that the United States International Trade Commission:

a. institute an immediate investigation pursuant to Section 337 of the Tariff Act of 1930, as amended, into the unlawful importation into the United States, the sale for importation into the United States, and/or the sale within the United States

after importation by Samsung of certain LEDs and products containing LEDs, including LCD displays incorporating LEDs that infringe one or more claims of the United States patents-at-issue;

b. determine that there has been a violation of Section 337;

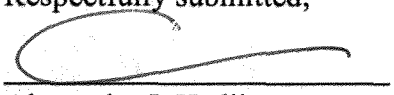
c. issue a permanent exclusion order pursuant to Section 337(d) excluding from entry into the United States all Accused Products manufactured, imported, sold, or sold for importation by or on behalf of the named Samsung entities or any of their affiliates, subsidiaries, other related business entities, or their successors or assigns that infringe one or more claims of the United States patents-at-issue;

d. issue a permanent cease-and-desist order pursuant to Section 337(f) prohibiting the named Samsung entities and their affiliates, subsidiaries, successors, or assigns from importing, selling, servicing, marketing, advertising, demonstrating, distributing, offering for sale, transferring, including moving or shipping inventory, in the United States, and soliciting U.S. agents or distributors for any imported Accused Products that infringe one or more claims of the United States patents-at-issue; and

e. issue such other and further relief as the Commission deems appropriate.

Dated: June 3, 2011

Respectfully submitted,



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