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16 Attorneys for Plaintiff CAO Lighting, Inc.

17 **IN THE UNITED STATES DISTRICT COURT**
18 **CENTRAL DISTRICT OF CALIFORNIA**

19 CAO LIGHTING, INC.,

20 Plaintiff,

21 v.

22 SIGNIFY N.V. (F/K/A PHILIPS
23 LIGHTING N.V.) and SIGNIFY
24 NORTH AMERICA CORPORATION
(F/K/A PHILIPS LIGHTING NORTH
AMERICA CORPORATION),

25 Defendants.
26

Case No. 2:21-CV-08972-AB-SP

FIRST AMENDED COMPLAINT FOR:

INFRINGEMENT OF U.S. PATENT

NO. 6,465,961

[DEMAND FOR JURY TRIAL]

1 Plaintiff CAO LIGHTING, INC. (“CAO Lighting”) files this Complaint against
2 Defendants SIGNIFY N.V. (formerly known as PHILIPS LIGHTING N.V.) and
3 SIGNIFY NORTH AMERICA CORPORATION (formerly known as PHILIPS
4 LIGHTING NORTH AMERICA CORPORATION) (collectively, “Defendants”) and
5 alleges as follows:

6 **PRELIMINARY STATEMENT**

7 1. This is a patent infringement action under the patent laws of the United
8 States, Title 35 of the United States Code and, as such, this Court has exclusive subject
9 matter jurisdiction under 28 U.S.C. §§ 1338(a) and 1331. Plaintiff alleges that Defendants
10 have infringed one or more claims of U.S. Patent No. 6,465,961 (the ‘961 Patent).

11 **PARTIES**

12 2. Plaintiff CAO Lighting, Inc. is a corporation with its principal place of
13 business at 4628 West Skyhawk Drive, West Jordan, Utah 84084. CAO Lighting, Inc. is
14 a wholly owned subsidiary of the CAO Group, Inc.

15 3. On information and belief, Defendant Signify N.V. (f/k/a Philips Lighting
16 N.V.) is a publicly traded company organized under the laws of the Netherlands. It has a
17 principal place of business at High Tech Campus 48, 5656 AE Eindhoven, The
18 Netherlands. On information and belief, Philips Lighting N.V. made, used, sold, offered
19 for sale in the United States, or imported into the United States, lighting products,
20 including LED lighting products, under the brand name “Philips.” On information and
21 belief, following amendment of its articles of association, Philips Lighting N.V. changed
22 its name to Signify N.V. in or around May 2018 and has continued to make, use, sell,
23 offer for sale in the United States, or import into the United States, lighting products,
24 including LED lighting products, under the brand name “Philips.”

25 4. Defendant Signify North America Corporation (f/k/a Philips Lighting North
26 America Corporation) is a privately held corporation organized under the laws of the
27 State of Delaware. It has a principal place of business at 200 Franklin Square Drive,
28 Somerset, New Jersey 08873. On information and belief, Philips Lighting North

1 America Corporation. made, used, sold, offered for sale in the United States, or imported
2 into the United States, lighting products, including LED lighting products, under the
3 brand name “Philips.” On information and belief, Philips Lighting North America
4 Corporation changed its name to Signify North America Corporation in or around May
5 2018 and has continued to make, use, sell, offer for sale in the United States, or import
6 into the United States, lighting products, including LED lighting products, under the
7 brand name “Philips.”

8 5. On information and belief, Signify North America Corporation is a wholly-
9 owned subsidiary of Signify N.V. and it, directly or through its affiliates, imports into
10 the United States and/or sells after importation into the United States certain LED
11 lighting products accused herein of infringing the '961 Patent, including products
12 manufactured abroad by, or on behalf of, Signify N.V.

13 6. On information and belief, Signify North America Corporation operates a
14 place of business in this District located at 1375 E. Locust Street, Ontario, CA 91761.

15 7. Signify N.V. and Signify North America Corporation collectively are
16 referred to as “Signify” or “Defendants.”

17 8. As a result of the above, Signify N.V. and Signify North America
18 Corporation are liable jointly, severally, or in the alternative with respect to the same
19 series of transactions or occurrences, and questions of fact common to both of them will
20 arise in this action, consistent with 35 U.S.C. § 299.

21 **JURISDICTION AND VENUE**

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

24 10. This Court has exclusive subject matter jurisdiction under 28 U.S.C. §§
25 1338(a) and 1331.

26 11. This Court has personal jurisdiction over Defendants because they have
27 committed acts within this District giving rise to this action, and have established
28 minimum contacts with this forum such that the exercise of jurisdiction over Defendants

1 would not offend traditional notions of fair play and substantial justice. Defendants,
2 directly and through subsidiaries or intermediaries, have committed acts of infringement
3 in this District by, among other things, importing, offering to sell, and selling LED
4 lighting products that infringe the asserted '961 Patent. Signify North America
5 Corporation operates a place of business in this District. Signify North America
6 Corporation is a wholly owned corporation of Signify N.V., which is a foreign
7 corporation that controls the accused infringing LED lighting products sold or offered
8 for sale by Signify North America Corporation and controls or acts jointly with Signify
9 North America Corporation in the marketing, sale, or offer for sale of the accused LED
10 lighting products.

11 12. Notably, Signify N.V. “operates in many countries,” including the U.S.,
12 “via its subsidiaries and affiliated companies as well as a limited number of branch
13 offices, which primarily act under the Signify trade name.” *See Annual Report 2020*,
14 SIGNIFY, at 62, <https://www.signify.com/static/2020/signify-annual-report-2020.pdf>
15 (last visited April 6, 2022); *see also Annual Report 2021*, SIGNIFY, at 63,
16 <https://www.signify.com/static/2021/signify-annual-report-2021.pdf> (last visited April
17 6, 2022.)¹ As the parent company of about 150 subsidiaries operating in 74 countries,
18 including the U.S., Signify N.V. participates in the management and operations of three
19 divisions for Signify products: Division Digital Solutions, Division Digital Products,
20 and Division Conventional Products. *See Annual Report 2020*, SIGNIFY, at 29. In
21 particular, among other duties, “[t]he Board of Management is responsible for the
22 establishment and adequate functioning of a system of governance, risk management
23 and internal controls in the company.” *Id.* at 77 (Statement of the Board of Management
24 of Signify N.V.); *see also Annual Report 2021*, SIGNIFY, at 79. Moreover, the Board of
25 Management is the “chief operating decision maker” of the operating segments which

26 _____
27 ¹ These reports are hereinafter referred to as *Annual Report 2020* and *Annual Report*
28 *2021*, respectively and refer to the above-mentioned weblinks. All dates of last visitation
of these websites were April 6, 2022.

1 are “components of Signify’s business activities.” *Annual Report 2020*, SIGNIFY, at 90;
2 *Annual Report 2021*, SIGNIFY, at 101.

3 13. On information and belief, Signify N.V. maintains a corporate presence in
4 the United States via at least Signify N.V.’s wholly-owned (indirectly) and controlled
5 U.S.-based subsidiary Signify North America Corporation, among other subsidiaries
6 and affiliates. *See Annual Report 2020*, SIGNIFY, at 107 (listing Signify North America
7 Corporation as a 100% owned and consolidated company); *see also Annual Report*
8 *2021*, SIGNIFY, at 107. As alleged above, Signify North America Corporation is
9 organized under the laws of the state of Delaware, with its principal place of business
10 located at 200 Franklin Square Drive, Somerset, New Jersey 08873.

11 14. On information and belief, Signify NA is wholly owned by the Genlyte
12 Group Inc. (“Genlyte”), a corporation organized under the laws of Delaware and having
13 its principal office in 200 Franklin Square Drive, Somerset NJ 00873. Genlyte is wholly
14 owned by Signify Holding B.V., a corporation organized under the laws of The
15 Netherlands. And Signify Holding B.V. is wholly owned by Defendant Signify N.V.
16 Genlyte is engaged in the business of manufacturing and selling luminaires and lighting
17 fixtures.

18 15. On information and belief, Signify states that it “is the world leader in
19 lighting.” *Annual Report 2020*, SIGNIFY, at 2; *Annual Report 2021*, SIGNIFY, at 2.
20 Signify has seven manufacturing sites in the United States. *Annual Report 2020*,
21 SIGNIFY, at 28; *Annual Report 2021*, SIGNIFY, at 31. Signify also holds €2.26 billion
22 EUR (about \$2.76 billion U.S. dollars) worth of tangible and intangible assets in the
23 United States. *See Annual Report 2020*, SIGNIFY, at 101; *see also Annual Report 2020*,
24 SIGNIFY, at 102 (specifying €2.31 billion EUR).

25 16. On information and belief, in 2020, Signify N.V. acquired Cooper
26 Lighting, LLC (“Cooper Lighting”) as a consolidated and controlled subsidiary. *See*
27 *Annual Report 2020*, SIGNIFY, at 23, 106-107 (identifying Cooper Lighting as a
28 material acquisition). Cooper Lighting provides “professional lighting, lighting controls,

1 and connected lighting.” *Id.* at 23. Cooper Lighting is a limited liability company
2 headquartered in Peachtree City, Georgia and provides its products under the “Halo,
3 McGraw, Metalux and StreetWorks” brands. *Id.* at 106. Signify N.V. recognizes that its
4 “overall risk profile changed with the acquisition of US-based Cooper Lighting in 2020”
5 and that “[a]s a result, Signify is more exposed to ... developments in the North
6 American market.” *See Annual Report 2021, SIGNIFY*, at 78. According to Signify
7 N.V., the “increased importance of the US is recognized and taken into consideration in
8 the annual strategic planning process and risk assessment. ... Not only [is Signify N.V.]
9 focused on getting the right talent to drive the success of the US business, but also the
10 Divisions and Functions are expected to spend a disproportionate amount of time and
11 energy on ensuring a successful US business.” *Id.*

12 17. On information and belief, Signify N.V. controls its consolidated
13 subsidiaries identified at least in Signify’s *Annual Report 2020* and *Annual Report 2021*,
14 including, but not limited to, Signify North America Corporation (U.S. based) and
15 Cooper Lighting (U.S. based). *See Annual Report 2020, SIGNIFY*, at 107 (identifying
16 Signify’s “material subsidiaries” and stating that “[t]he Consolidated financial statements
17 comprise the assets and liabilities of approximately 150 legal entities.”). In that report it
18 states, in relevant part, “[t]he Consolidated financial statements comprise the financial
19 statements of Signify N.V. and all subsidiaries it controls (i.e., when it is exposed, or has
20 rights, to variable returns from its involvement with the investee and has the ability to
21 affect those returns through its power over the investee).” *Id.* at 91. The report further
22 adds that “[s]ubsidiaries are fully consolidated from the date that control commences
23 until the date that control ceases.” *Id.* Each of the listed consolidated subsidiaries, by
24 nature of being controlled by Signify N.V., is an agent and/or alter ego of Signify N.V.

25 18. Upon information and belief, Signify N.V.’s business dealings and/or
26 influence in the U.S. is only expanding. For example, in late 2021, Signify N.V.
27 announced that it had signed a definitive agreement to acquire U.S.-based company
28 Fluence for 272 million dollars, to strengthen its Agriculture lighting growth platform in

1 North America. Signify has stated that “[t]his acquisition enables [it] to capture the full
2 potential of the US market for bio-based and non-bio-based crops....” *See Annual*
3 *Report 2021*, SIGNIFY, at 8 & 26.

4 19. Signify N.V. also touts the use of Signify lighting products in various U.S.
5 markets. For instance, Signify N.V. has highlighted that Honeywell’s Charlotte HQ has
6 incorporated Signify lighting systems. *See Annual Report 2021*, SIGNIFY, at 26.

7 20. Upon information and belief, Signify N.V. is aware that some of its
8 products are sold in California and caters to the California market. For example, Signify
9 N.V. has a supplier sustainability performance program based on a Supplier
10 Sustainability Declaration (“SSD”) that “forms an integral part of [its] supplier
11 contracts.” Among other things, the SSD requires that Signify’s suppliers comply with
12 the California Transparency in Supply Chains Act. *See Annual Report 2020*, SIGNIFY,
13 at 147; *See Annual Report 2021*, SIGNIFY, at 146.

14 21. Through offers to sell, sales, imports, distributions, and other related
15 agreements with affiliates, distributors, and customers operating in and maintaining a
16 significant business presence in the U.S. and/or via their subsidiaries maintaining such a
17 presence, including via wholly owned (indirectly), consolidated, and controlled
18 subsidiaries Signify North America Corporation, Genlyte, and Cooper Lighting, Signify
19 N.V. does business in the U.S., the state of California, and in this District.

20 22. On information and belief, Defendant Signify N.V. is subject to this Court’s
21 specific and general personal jurisdiction pursuant to due process and/or the California
22 Long Arm Statute, due at least to its substantial business in this State, including: (A)
23 based on at least part of its own infringing activities or those committed vicariously
24 through and/or in concert with its alter egos, intermediaries, agents, distributors,
25 importers, customers, subsidiaries, and/or consumers alleged herein which purposefully
26 avail the Defendant of the privilege of conducting those activities in this state and this
27 judicial district and, thus, submits itself to the jurisdiction of this court; and (B)
28 regularly doing or soliciting business, engaging in other persistent conduct targeting

1 residents of California, and/or deriving substantial revenue from infringing goods
2 offered for sale, sold, and imported and services provided to and targeting California
3 residents vicariously through and/or in concert with its alter egos, intermediaries,
4 agents, distributors, importers, customers, subsidiaries, and/or consumers. For example,
5 Signify N.V. is related to, owns, and/or controls consolidated subsidiaries (such as U.S.-
6 based Signify North America Corporation, U.S.-based Genlyte, and U.S.-based Cooper
7 Lighting) that have a significant business presence, including by conducting activities
8 vicariously through or in concert with other related entities, in the U.S. and in
9 California. Such a presence and activities further the development, design, manufacture,
10 importation, distribution, sale, and use of infringing Signify products in California. As
11 one example of such activities, Signify N.V.'s wholly owned and controlled, U.S.-based
12 subsidiary Signify North America Corporation, which manages its North America
13 operations and is based in the United States, has offices and employees in California at
14 least at 1375 E. Locust St., Ontario, CA, 91761. *See* Dun & Bradstreet Website,
15 [https://www.dnb.com/business-directory/company-](https://www.dnb.com/business-directory/company-profiles.signify_north_america_corporation.b7134bcc5233f43b9ab60c3fbc85cc79.html)
16 [profiles.signify_north_america_corporation.b7134bcc5233f43b9ab60c3fbc85cc79.html](https://www.dnb.com/business-directory/company-profiles.signify_north_america_corporation.b7134bcc5233f43b9ab60c3fbc85cc79.html)
17 (last visited April 6, 2022). Through direction and control of its subsidiaries, Signify
18 N.V. has committed acts of direct and/or indirect patent infringement within California,
19 and elsewhere in the United States, giving rise to this action and/or has established
20 minimum contacts with California such that personal jurisdiction over Signify N.V.
21 would not offend traditional notions of fair play and substantial justice.

22 23. Upon information and belief, Defendant Signify N.V. controls or otherwise
23 directs and authorizes all activities of its subsidiaries, including, but not limited to
24 Signify North America Corporation, Genlyte, and Cooper Lighting, which, have a
25 significant business presence in California. Directly and via at least its subsidiaries, who
26 act as agents and/or alter egos of Signify N.V., and via intermediaries, such as affiliates,
27 distributors, and customers, Signify N.V. has placed and continues to place infringing
28 Signify products into the U.S. stream of commerce. Signify N.V. has placed such

1 products into the stream of commerce with the knowledge and understanding that such
2 products are, will be, and continue to be sold, offered for sale, and/or imported into this
3 judicial district and the State of California. *See Litecubes, LLC v. Northern Light*
4 *Products, Inc.*, 523 F.3d 1353, 1369-70 (Fed. Cir. 2008) (“[T]he sale [for purposes of §
5 271] occurred at the location of the buyer.”); *see also Semcon IP Inc. v. Kyocera*
6 *Corporation*, No. 2:18-cv-00197-JRG, 2019 WL 1979930, at *3 (E.D. Tex. May 3,
7 2019) (denying accused infringer’s motion to dismiss because plaintiff sufficiently
8 plead that purchases of infringing products outside of the United States for importation
9 into and sales to end users in the U.S. may constitute an offer to sell under § 271(a)).

10 24. On information and belief, Defendant Signify N.V. utilizes established
11 distribution channels to distribute, market, offer for sale, sell, service, and warrant
12 infringing products directly to consumers, including offering such products for sale via
13 its own websites—www.philipshue.com and www.usa.lighting.philips.com. *See, e.g.,*
14 *Choose a bulb – LED*, PHILIPS,
15 [https://www.usa.lighting.philips.com/consumer/choose-a-](https://www.usa.lighting.philips.com/consumer/choose-a-bulb/products/bulb#filters=STANDARD_BULB_SU%2CFK_BULBS_LED&sliders=&support=&price=&priceBoxes=&page=&layout=)
16 [bulb/products/bulb#filters=STANDARD_BULB_SU%2CFK_BULBS_LED&sliders=&](https://www.usa.lighting.philips.com/consumer/choose-a-bulb/products/bulb#filters=STANDARD_BULB_SU%2CFK_BULBS_LED&sliders=&support=&price=&priceBoxes=&page=&layout=)
17 [support=&price=&priceBoxes=&page=&layout=](https://www.usa.lighting.philips.com/consumer/choose-a-bulb/products/bulb#filters=STANDARD_BULB_SU%2CFK_BULBS_LED&sliders=&support=&price=&priceBoxes=&page=&layout=). Signify N.V.’s corporate website also
18 provides links for consumers and professionals to access on-line stores operated by the
19 Signify group of companies. *See, e.g., For Consumers*, SIGNIFY,
20 <https://www.signify.com/global/our-offers/for-consumers> (providing links for purchase
21 of various lighting products). Moreover, Signify N.V. utilizes its subsidiaries and
22 intermediaries, such as Signify China, Signify HK, Signify Netherlands, and Signify
23 Poland and other subsidiaries Signify North America Corporation, Genlyte, WiZ, and
24 Cooper Lighting, to design, develop, import, distribute, and service infringing lighting
25 products. The infringing Signify lighting products have been sold in retail stores, both
26 brick and mortar and online, within this judicial district and in California. *See, e.g.,*
27 *Where to Buy*, PHILIPS, <https://www.usa.lighting.philips.com/consumer/where-to-buy>
28 (providing links to purchase Philips lighting products online or at Home Depot or

1 Walmart stores, which each have multiple locations in this judicial district and
2 elsewhere in California).

3 25. On information and belief, Signify N.V. purposefully places infringing
4 Signify products in established distribution channels in the stream of commerce by
5 contracting with national retailers who sell Signify’s products in the U.S., including in
6 California and this judicial district. Signify N.V., directly or through its subsidiaries and
7 affiliates, contracts with these companies with the knowledge and expectation that
8 Signify products will be imported, distributed, advertised, offered for sale, and sold in
9 the U.S. market. *See Icon Health & Fitness, Inc. v. Horizon Fitness, Inc.*, 2009 WL
10 1025467, at (E.D. Tex. 2009) (finding that “[a]s a result of contracting to manufacture
11 products for sale in” national retailers’ stores, the defendant “could have expected that it
12 could be brought into court in the states where [the national retailers] are located”). For
13 example, at least Home Depot, Walmart, and Amazon.com offer for sale and sell Signify
14 products, in and specifically for the U.S. market, via their own websites or retail stores
15 located in and selling their products to consumers in California and this judicial district.
16 *See, e.g.*, HOME DEPOT, [https://www.homedepot.com/b/Search/N-5yc1vZbm79/Ntk-
17 Extended/Ntt-philips?Ntx=mode+matchpartialmax&NCNI-5](https://www.homedepot.com/b/Search/N-5yc1vZbm79/Ntk-Extended/Ntt-philips?Ntx=mode+matchpartialmax&NCNI-5) (last visited April 6, 2022)
18 (showing large selection of Signify’s Philips LED lighting products for sale and in stock
19 at a Home Depot location in Los Angeles, California (Home Depot Store #1048 at
20 Wilshire/Union) in this judicial district). Signify N.V., directly and through its
21 subsidiaries and affiliates, also provides multiple types of application software for
22 download and use in conjunction with and as part of its wireless lighting devices: the
23 “Philips Hue App” is used in conjunction with Philips Hue products and the “WiZ App”
24 is used in conjunction with WiZ products as well as Philips Smart Lighting products.
25 Both the Philips Hue App and the WiZ App are available via digital distribution
26 platforms by Apple Inc. and Google. *See, e.g.*, *Philips Hue*, GOOGLE PLAY,
27 [https://play.google.com/store/apps/details?id=com.philips.lighting.hue2&hl=en_US&gl=
28 =US](https://play.google.com/store/apps/details?id=com.philips.lighting.hue2&hl=en_US&gl=US) (last visited April 6, 2022) (offering the application for download and indicating

1 that the application is offered by “Signify Netherlands B.V.”); *WiZ*, GOOGLE PLAY,
2 https://play.google.com/store/apps/details?id=com.tao.wiz&hl=en_US&gl=US (last
3 visited April 6, 2022) (offering the application for download and indicating that the
4 application is offered by “WiZ Connected Lighting Company Limited”).

5 26. Based on Signify N.V.’s connections, relationships, supply contracts, and
6 other agreements, with subsidiaries in the Signify group of companies (including, but
7 not limited to Signify North American Corporation, Genlyte, WiZ, Cooper Lighting,
8 Signify China, Signify HK, Signify Netherlands, and Signify Poland,), U.S.-based
9 national retailers, distributors, and digital distribution platforms, Signify N.V. knows
10 that California, including this District, is a termination point of the established
11 distribution channel, namely online and brick and mortar stores offering Signify
12 products, including under the Philips Hue, WiZ, and Cooper Lighting brands, and
13 software to consumers in California. Signify N.V., therefore, has purposefully directed
14 its activities at California and this District, and should reasonably anticipate being
15 brought in this Court, at least on this basis. *See Ultravision Technologies, LLC v.*
16 *Holophane Europe Limited*, 2020 WL 3493626, at *5 (E.D. Tex. 2020) (finding
17 sufficient to make a *prima facie* showing of personal jurisdiction allegations that
18 “Defendants either import the products to [the forum state] themselves or through a
19 related entity”); *see also Bench Walk Lighting LLC v. LG Innotek Co., Ltd et al.*, Civil
20 Action No. 20-51-RGA, 2021 WL 65071, at *7-8 (D. Del., Jan. 7, 2021) (denying
21 motion to dismiss for lack of personal jurisdiction based on the foreign defendant
22 entering into supply contract with U.S. distributor and the distributor sold and shipped
23 defendant’s products from the U.S. to a customer in the forum state).

24 27. In the alternative, this Court has personal jurisdiction over Signify N.V.
25 under Federal Rule of Civil Procedure 4(k)(2), because the claims for patent
26 infringement in this action arise under federal law, Signify N.V. is not subject to the
27 jurisdiction of the courts of general jurisdiction of any state, and exercising jurisdiction
28 over Signify N.V. is consistent with the U.S. Constitution.

1 28. Venue is proper as to Defendant Signify North America Corporation in this
2 District under 28 U.S.C. §§ 1391(b), 1391(c), and 1400(b) because Defendant Signify
3 North America Corporation has committed acts of patent infringement in this District
4 and maintains a regular and established place of business in this District, located at 1375
5 E. Locust Street, Ontario, CA 91761.

6 29. Venue is proper as to Defendant Signify N.V., a foreign corporation
7 organized under the laws of The Netherlands, in this District pursuant to 35 U.S.C. §
8 1391(c)(3), which provides that “a defendant not resident in the United States may be
9 sued in any judicial district, and the joinder of such a defendant shall be disregarded in
10 determining whether the action may be brought with respect to other defendants.”

11 **BACKGROUND**

12 30. CAO Lighting is the owner by assignment of the '961 Patent. A true and
13 correct copy of the '961 Patent is attached hereto as Exhibit A.

14 31. The '961 Patent is directed to a semiconductor light source, such as LED
15 chips or LED arrays, for illuminating a physical space. CAO Lighting and its founder
16 and CEO, Dr. Densen Cao, Ph.D., are innovation leaders and have created many
17 fundamental technologies in LED lighting.

18 32. CAO Lighting makes, markets, and sells LED lighting products under the
19 brand names LuxemBright® and Dynasty®. CAO Lighting's products provide energy
20 saving solid state lighting solutions to signage and commercial lighting applications.
21 LuxemBright® LED Signage systems provide sign owners with the best in-class value
22 LED lighting solutions. Its potted and rugged design, with the addition of through hole
23 LED lamps, makes the LuxemBright® LEDs usable outdoors in any harsh weather
24 environment. The system offers different configurations for complete solutions for all
25 types of signage lighting. Dynasty® LED Lighting products provide commercial, retail
26 and general lighting applications. The energy savings and long life advantages are
27 through CAO Lighting's extensive LED product family. Dynasty® LED is the only
28 packaged LED light source to offer a 360 degree beam and removable base. CAO

1 Lighting's Dynasty[®] Candelabra lamp, offers the same look and efficacy as traditional
2 incandescent candelabras. However, this product only uses a little more than 3 watts of
3 electricity. The Dynasty[®] lamp series can directly replace existing incandescent and
4 compact fluorescence to have the same efficacy, but saves more than 60% of energy.

5 33. CAO Lighting was formerly a division of the CAO Group. Dr. Cao founded
6 the CAO Group in 2000. This innovative company became a force in creating products
7 that could be considered foundational in every dental practice. Based on his LED
8 research, Dr. Cao introduced the first commercial LED curing light with a distribution
9 partner. The use of LED curing lights saves \$6,000 per dentist per year on average. After
10 the introduction of curing lights, Dr. Cao took his knowledge of light-emitting
11 technology and moved on to lasers. He invented the first compact diode soft-tissue laser
12 that was manufactured and sold by the CAO Group. Dr. Cao's research and expertise in
13 light-emitting diode technology also led him into LED lighting. His research in long-
14 lasting and energy-efficient LED lighting has been foundational in replacement bulbs
15 that, up to that point in time, were incandescent, fluorescent, and halogen. For example,
16 Dr. Cao invented LED light sources with omnidirectional or targeted directional light
17 emission and improved heat management. These methods are widely adopted in today's
18 efficient LED lighting products. Dr. Cao also has pioneered LEDs as light sources for
19 detecting forensic evidence in different fields. The CAO Group's branded product,
20 UltraLite ALS[®], is an industry standard and leading brand of forensic lights that has
21 benefitted criminal investigations worldwide.

22 34. Dr. Cao, who has a Ph.D. in materials science and engineering from the
23 University of Utah in Salt Lake City, is a named inventor on approximately 160 patents
24 and patent applications in the fields of LED curing lights, diode lasers, and LED
25 lighting.

26 35. In 2013, the LED lighting division of the CAO Group was spun off into
27 CAO Lighting, Inc., a wholly owned subsidiary. The '961 Patent was assigned to CAO
28 Lighting on October 26, 2016, and the assignment included all rights, title, and interest

1 in the '961 Patent, including the right to sue for past or current infringement and collect
2 any royalties or damages for infringement.

3 **OVERVIEW OF THE PATENT-IN-SUIT**

4 36. The '961 Patent, titled "Semiconductor Light Source using a Heat Sink with
5 a Plurality of Panels," was issued by the United States Patent and Trademark Office on
6 October 15, 2002. The invention of the '961 Patent is especially useful for partially or
7 fully illuminating a space occupied by or viewed by humans, such as residential spaces,
8 commercial spaces, outdoor spaces, the interior or exterior of a vehicle, and the like.

9 37. CAO Lighting owns all rights, title and interest in the '961 Patent, including
10 the right to recover all past and future damages for infringement of the '961 Patent.

11 38. At the time of the invention of the '961 Patent, LEDs were used primarily
12 in low intensity applications, such as panel displays, signal lighting, and other
13 instrumentation purposes. '961 Patent, col. 1:13-16.

14 39. At the time of the invention of the '961 Patent, and still today, LED light
15 sources were desirable because they provided a high efficiency light source that used
16 substantially less energy and created less heat than typical prior art light sources such as
17 incandescent and halogen lights. '961 Patent, col. 1:16-20. However, semiconductor
18 light sources prior to Dr. Cao's invention had not been successfully and economically
19 used to illuminate physical spaces. '961 Patent, col. 1:20-22. Furthermore, at the time of
20 Dr. Cao's invention, arranging a sufficient number of LED modules to generate the
21 desired high light intensity took an excessive amount of physical space and created
22 unmanageable amounts of heat. '961 Patent, col. 1:26-29. Consequently, prior to Dr.
23 Cao's invention, LED-based light sources were not suitable for replacing traditional
24 tungsten light bulbs. '961 Patent, col. 1:30-32. The traditional incandescent and
25 fluorescent light sources at the time of Dr. Cao's invention had high-energy
26 consumption, high heat generation, and short useful life compared to Dr. Cao's
27 invention. '961 Patent, col. 1:50-54.

28 40. The invention of the '961 Patent was directed to a semiconductor (e.g.,

1 LED) light source for use in illuminating spaces used by humans with a single color
2 light in the visible range and which would efficiently dissipate the heat produced by the
3 light source. '961 Patent, col. 1:46-50.

4 41. The '961 Patent was subject to two merged *Inter Partes* reexaminations
5 (95/000,680 and 95/002,324) and an *Ex Parte* reexamination (90/012,957). During the
6 *inter partes* reexaminations, original claims 1-7 and 10-20 of the '961 Patent were
7 canceled. During the *ex parte* reexamination, original claims 8 and 9 were cancelled. An
8 *Ex Parte* Reexamination Certificate (10279th) was issued on September 2, 2014, in
9 which new claims 21-103 were determined to be patentable. A true and correct copy of
10 the *Ex Parte* Reexamination Certificate is attached hereto as Exhibit B. The merged *inter*
11 *partes* reexaminations continued and eventually an *Inter Partes* Reexamination
12 Certificate (1421st) was issued on May 11, 2017. A true and correct copy of the *Inter*
13 *Partes* Reexamination Certificate is attached hereto as Exhibit C.

14 42. The '961 Patent expired on August 24, 2021. The '961 Patent is valid and
15 enforceable at least prior to its expiration on August 24, 2021.

16 **DEFENDANTS' INFRINGING CONDUCT**

17 43. Prior to the expiration of the '961 Patent on August 24, 2021, Defendants
18 infringed, literally and/or under the doctrine of equivalents, one or more claims of the
19 '961 Patent in this judicial district and elsewhere in the United States, including, at least,
20 Claim 21 of the '961 Patent, by making, using, selling, offering to sell, and/or importing
21 LED lighting products, including LED indoor luminaires, LED outdoor luminaires, and
22 LED lamps (collectively, "Accused Products").

23 44. Prior to the name change from Philips Lighting North America Lighting to
24 Signify North America Lighting, the Accused Products were offered for sale or sold in
25 the United States, or imported into the United States, by Philips Lighting North America
26 Corporation under the "Philips" brand name. Subsequent to the name change, Signify
27 North America Corporation continued to offer for sale or sell the Accused Products
28 under the "Philips" brand name.

1 45. Prior to the name change from Philips Lighting N.V. to Signify N.V., the
2 Accused Products were offered for sale or sold in the United States, or imported into the
3 United States, by Philips Lighting N.V. under the “Philips” brand name. Subsequent to
4 the name change, Signify N.V. continued to offer for sale or sell the Accused Products
5 under the “Philips” brand name.

6 46. For example, the Accused Products are various LED lamps and tubes,
7 including incandescent replacement lamps, fluorescent replacement lamps, and HID
8 replacement lamps, such as:

- 9 • LED Bulbs (including A-Type or A-Shape lamps)
- 10 • LED Globes
- 11 • LED Reflector and Spot lamps (including R20, R30, BR30, BR40,
12 MR11, MR16, PAR20, PAR20, PAR38) lamps
- 13 • LED tube or linear fluorescent replacement lamps (T8)
- 14 • LED compact fluorescent (CFL) and Plug-In (PL) replacement lamps
- 15 • LED HID replacement lamps

16 47. The Accused Products also are various indoor and outdoor LED luminaires,
17 including industrial HID and fluorescent replacement luminaires, utility luminaires,
18 outdoor luminaires, recessed downlights, and troffers, such as:

- 19 • Recessed and surface luminaires
- 20 • Industrial luminaires
- 21 • General purpose linear luminaires
- 22 • Downlights
- 23 • Track lighting
- 24 • Road and urban lighting
- 25 • Floodlighting
- 26 • Bollards
- 27 • Tunnel and underpass luminaires
- 28 • Landscape luminaires

- 1 • Wall Mount luminaires
- 2 • Site and Area luminaires
- 3 • Garage and Canopy luminaires
- 4 • Architectural linear luminaires

5 **PRIOR NEGOTIATIONS WITH DEFENDANTS**

6 48. In or around September 2010, Dr. Cao contacted Daniel Gaudet, Senior
7 Director SSL Licensing, for Philips, regarding the LED lighting patents owned (at that
8 time) by CAO Group, including the '961 Patent. Subsequently, on November 4, 2010,
9 Mr. Gaudet wrote Dr. Cao that “Philips might be interested in the ‘lighting’ patents. Are
10 you able to provide us with a proposal? If so, please direct it and any further information
11 that you may have to Mark Beloborodov”

12 49. Philips and CAO subsequently executed a Non-Disclosure Agreement in or
13 about November 2010.

14 50. Thereafter, Philips and CAO entered into discussions relating to Dr. Cao’s
15 LED lighting patents, including the '961 Patent. As part of these discussions, Dr. Cao
16 identified multiple Philips LED lighting products—including LED A-lamps, MR16
17 lamps, PAR lamps, and Candelabra lamps—that were covered by Dr. Cao’s LED lighting
18 patents, including the '961 Patent.

19 51. In or about January 2011, Philips offered to purchase certain LED lighting
20 patents and patent applications owned (at that time) by CAO Group. The offer was
21 declined by CAO Group.

22 52. Subsequently, the '961 Patent was asserted against several LED lighting
23 companies in litigation; the '961 Patent went through multiple reexaminations at the
24 USPTO; an *ex parte* reexamination certificate was issued in September 2014; and
25 litigation regarding the '961 Patent against other LED lighting companies continued and
26 continue to this day.

27 53. On or about September 9, 2020, CAO Lighting (the present owner of the
28 '961 Patent) sent a letter to Mr. Eric Rondolat, CEO of Signify North America

1 Corporation, to renew discussions regarding the '961 Patent. In this letter, CAO
2 Lighting identified at least an A19 LED lamp (model no. 9A19/LED/927/P/E26/ND
3 4/4FB T20 as infringing on at least claim 21 of the '961 Patent.

4 54. Upon information and belief, Defendants never responded to CAO
5 Lighting's September 9, 2020.

6 **PRIOR AND PENDING LITIGATION REGARDING THE '961 PATENT**

7 55. On May 10, 2011, CAO Group, Inc. (the previous owner of the '961 Patent)
8 asserted the '961 Patent, among other patents, against several LED lighting companies in
9 the United States District Court for the District of Utah, Case No. 2:11-cv-426-DB (the
10 "Utah Action"). Two defendants—GE Lighting and OSRAM Sylvania, Inc.—filed
11 requests for *inter partes* reexamination of the asserted patents, including the '961 Patent.
12 The *inter partes* reexaminations on the '961 Patent (Control Nos. 95/000,680 and
13 95/002,324) were subsequently merged. The Utah Action was stayed pending those *inter*
14 *partes* reexaminations. OSRAM Sylvania, Inc. subsequently filed a request for *ex parte*
15 reexamination of the '961 Patent (Control No. 90/012,957).

16 56. During the *inter partes* reexaminations, original claims 1-7 and 10-20 of
17 the '961 Patent were canceled. During the *ex parte* reexamination, original claims 8 and
18 9 were cancelled. An *Ex Parte* Reexamination Certificate (10279th) was issued on
19 September 2, 2014, in which new claims 21-103 were determined to be patentable. The
20 merged *inter partes* reexaminations continued and eventually an *Inter Partes*
21 Reexamination Certificate (1421st) was issued on May 11, 2017.

22 57. On October 28, 2016, CAO Lighting filed suit against Light Efficient
23 Design in the District of Idaho alleging infringement of the '961 Patent, Case No. 1:16-
24 cv-482-BLW (the "Light Efficient Design Action"). That case was subsequently
25 transferred to the Northern District of Illinois and assigned civil case number 1:17-cv-
26 07359. On April 3, 2019, the Court entered a Memorandum Opinion setting forth the
27 Court's construction of contested claim language. The Light Efficient Design case was
28 dismissed pursuant to a settlement on October 8, 2020.

1 58. The Utah Action was dismissed without prejudice on or about May 12, 2020.

2 59. On May 20, 2020, CAO Lighting (now the owner of the '961 Patent) filed
3 suit against General Electric Company and Consumer Lighting (U.S.) LLC d/b/a GE
4 Lighting in the District of Delaware, Case No. 1:20-cv-681-MN (the "GE Action"). On
5 May 22, 2020, CAO Lighting filed suit against OSRAM Sylvania, Inc. and LEDVANCE
6 LLC in the District of Delaware, Case No. 1:20-cv-690-MN (the "OSRAM Action"). The
7 GE Action and OSRAM Action (collectively, the "Delaware Actions") have been
8 consolidated for pretrial purposes. The Court held a claim construction hearing on March
9 24, 2022 and ruled at the hearing on the construction of eight out of nine disputed claim
10 terms. To date, those rulings are reflected only in a rough transcript of the proceedings
11 and have not been formally entered on the docket. The Delaware Actions remain pending.

12 60. On June 3, 2020, CAO Lighting filed suit against Feit Electric Co., Inc. in
13 this District, Case No. 2:20-cv-4296-AB-SP (the "Feit Action"). On September 1, 2021,
14 the Honorable André Birotte, Jr., District Judge, entered a claim construction order on
15 certain terms in the '961 Patent in the Feit Action. The Feit Action remains pending.

16 **COMPLIANCE WITH 35 U.S.C. § 287(a)**

17 61. Throughout the relevant period of time, CAO Lighting has complied with
18 the provisions of 35 U.S.C. § 287(a) by marking substantially all packaging for any
19 covered LED lighting products made or sold by CAO Lighting (or its predecessor-in-
20 interest CAO Group, Inc.). CAO Lighting marked product packaging as a reasonable
21 and appropriate alternative means of marking under 35 U.S.C. § 287(a), given, among
22 other things, the variances of product structure, space constraints on products, and
23 underlying notice of patented protection. CAO Lighting and its parent, CAO Group,
24 Inc., have had a consistent practice of marking the packaging of products that they
25 reasonably believed incorporated the claimed invention of one or more of the asserted
26 '961 Patent. CAO Lighting and its parent, CAO Group, created product packaging
27 templates which identified the '961 Patent. The packaging templates were delivered to
28 the manufacturing companies that produced and packaged the relevant LED lighting

1 products. The product packaging identified the relevant asserted '961 Patent in a manner
2 visible to customers, competitors, and the public at large. CAO Lighting and/or CAO
3 Group reviewed sample LED lighting products produced in accordance with their
4 instructions at the time of their production, and confirmed that the appropriate patent
5 numbers affixed to the packaging of the products sold to customers and end users.

6 62. As a result of the allegations set for in paragraphs 48 through 54 above,
7 actual notice of infringement of the '961 Patent was provided to Defendants.

8 63. Based on the foregoing allegations of actual notice and constructive notice,
9 CAO Lighting has complied with the provisions of 35 U.S.C. § 287(a).

10 **COUNT I: INFRINGEMENT OF THE '961 PATENT**

11 64. Paragraphs 1 through 63 are incorporated by reference as if fully set forth
12 herein.

13 65. Defendants have directly infringed, literally or by the doctrine of
14 equivalents, at least Claim 21 of the '961 Patent in this District and elsewhere in the
15 United States.

16 66. Upon information and belief, Defendants have made, used, sold, or offered
17 for sale, or imported into the United States, multiple lines of lighting products that fall
18 within the scope of one or more of the claims of the '961 Patent (including Claim 21),
19 including, at least, the Accused Products, and further including at least the Philips-
20 branded LED lamps, LED indoor luminaires, and LED outdoor luminaires, and also
21 including any product numbers, SKUs, or item numbers of such lighting products
22 offered for sale or sold at any time in the last six years, infringe, literally or under the
23 doctrine of equivalents, at least Claim 21 of the '961 Patent.

24 67. Claim 21 of the '961 Patent is dependent upon claim 8, which depends from
25 claim 7, which in turn depends from Claim 1. As noted, although claims 1, 7 and 8 were
26 cancelled during reexamination of the '961 Patent, claim 21 was found patentable. Claim
27 21, as well as claims 1, 7 and 8 from which Claim 21 depends, are set forth below:
28

1 **Claim 1.** A semiconductor light source for emitting light to illuminate a
2 space used by humans, the semiconductor light source comprising:
3 an enclosure, said enclosure being fabricated from a material substantially
4 transparent to white light,
5 an interior volume within said enclosure,
6 a heat sink located in said interior volume,
7 said heat sink being capable of drawing heat from one or more
8 semiconductor devices,
9 said heat sink having a plurality of panels on it suitable for mounting
10 semiconductor devices thereon,
11 said panels on said heat sink being oriented to facilitate emission of light
12 from the semiconductor light source in desired directions around the
13 semiconductor light source,
14 at least one semiconductor chip capable of emitting light mounted on one
15 of said panels,
16 said semiconductor chip being capable of emitting monochromatic light,
17 said semiconductor chip being selected from the group consisting of light
18 emitting diodes, light emitting diode arrays, laser chips, LED modules, laser
19 modules, and VCSEL chips, and
20 a coating for converting monochromatic light emitted by said chip to white
21 light.

22 **Claim 7.** A device as recited in claim 1 wherein said chip includes
23 a substrate on which epitaxial layers are grown,
24 a buffer layer located on said substrate, said buffer layer serving to mitigate
25 differences in material properties between said substrate and other epitaxial layers,
26 a first cladding layer serving to confine electron movement within the chip,
27 said first cladding layer being adjacent said buffer layer,
28 an active layer, said active layer emitting light when electrons jump to a valance

1 state,

2 a second cladding layer, said second cladding layer positioned so that said
3 active layer lies between cladding layers, and

4 a contact layer on which an electron may be mounted for powering said
5 chip.

6 **Claim 8.** A device as recited in claim 7 further comprising a first and a
7 second reflective layers, each of said first and second reflective layers being
8 located on opposite sides of said active layer, said reflective layers serving to
9 reflect light emitted by said active layer.

10 **Claim 21.** The semiconductor light source as recited in claim 8, wherein:
11 said at least one semiconductor chip is a light emitting diode (LED) chip
12 configured to output light at greater than 40 milliwatts, and
13 said LED chip is configured to emit monochromatic visible light

14 68. A non-limiting example of the nature of Defendants' infringing LED
15 lighting products is the Philips LED 100W replacement A19 Non-Dimmable bulb, Item
16 No. 13.5A19/LED/850.FR/P/ND. Attached hereto as First Amended Exhibit D is a chart
17 showing how each element of Claim 21 of the '961 Patent is met by this exemplary
18 Accused product. First Amended Exhibit D takes into account the claim construction
19 rulings referenced in paragraphs 57, 59, and 60 above.

20 69. To the extent that other LED lighting products offered for sale or sold by
21 Defendants have the same or substantially the same configuration as the Accused
22 Products identified herein, those other LED lighting products are also accused of
23 infringing at least claim 21 of the '961 Patent.

24 70. To the extent that any of the above identified Accused Products have been
25 sold or offered for sale under a different model number, item number, or SKU, including
26 but not limited to LED lighting products sold by retailers under private labels, those
27 products are also accused of infringing at least claim 21 of the '961 Patent.

28 71. To the extent that any of the model numbers of the above listed Accused

1 Products have been sold under different designations indicating the quantity of the bulbs
2 in the package (such as “/2”, “/3”, “/4” for a 2-pack, 3-pack, 4-pack), or sold as a
3 blisterpack (such as “BP”), such model numbers referring to the same type of light bulb
4 are also accused of infringing at least claim 21 of the ’961 Patent.

5 72. CAO Lighting reserves the right to identify additional product models of
6 light bulbs sold by Defendants that infringe at least one claim of the ’961 Patent as the
7 case progresses, for example, through discovery. Accordingly, the products identified
8 above are representative accused products only.

9 73. Defendants have engaged in the manufacture, use, sale, offer for sale
10 and/or importation of the aforementioned Accused Products, including the
11 Representative Accused Product, in the United States, without the permission, license or
12 consent of CAO Lighting.

13 74. Defendants’ acts of infringement have been and continue to be willful,
14 intentional, and deliberate. Upon information and belief, Defendants have intentionally
15 and deliberately infringed the ’961 Patent and in disregard for the ’961 Patent by making,
16 having made, using, importing, and offering for sale products that infringe the ’961
17 Patent. Upon information and belief, the risks of infringement of the ’961 Patent were
18 known to Defendants and/or were obvious under the circumstances that the infringement
19 risks should have been known. Upon information and belief, Defendants have not
20 attempted any design or sourcing changes to avoid the risks of infringement of the ’961
21 Patent. Defendants have acted despite an objectively high likelihood that their past and
22 continuing actions constituted infringement of the ’961 Patent, and this objectively-
23 defined risk was known or should have been known to Defendants. Defendants have
24 actual knowledge of the ’961 Patent and knew that their conduct constituted
25 infringement.

26 75. By reason of Defendants’ acts of infringement, CAO Lighting has suffered
27 damages. At a minimum, by reason of the aforementioned acts of infringement, CAO
28 Lighting is entitled to recover a reasonable royalty.

PRAYER FOR RELIEF

WHEREFORE, CAO Lighting respectfully requests the Court enter judgment in its favor and against Defendants as follows:

- a) Declaring Defendants has directly infringed infringing the '961 Patent;
- b) Declaring that Defendants' infringement has been willful;
- c) Awarding CAO Lighting damages sufficient to compensate for Defendants' infringement in an amount no less than a reasonable royalty, and that such damages be trebled pursuant to 35 U.S.C. § 284;
- d) Declaring that this case is exceptional under 35 U.S.C. § 285;
- e) Awarding all costs and expenses of this action, including reasonable attorney fees to CAO Lighting;
- f) Awarding pre-judgment and post-judgment interest to CAO Lighting; and
- g) Awarding to CAO Lighting all other further relief as the Court may deem, just, necessary and proper.

DEMAND FOR JURY TRIAL

CAO Lighting demands a trial by jury on all matters herein so triable.

Dated: April 8, 2022

BARNES & THORNBURG LLP

By: */s/ Roya Rahmanpour*

Todd G. Vare
 Jeff M. Barron
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