

**UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF TEXAS**

HIGH ENERGY OZONE LLC d/b/a)
FAR-UV STERILRAY and S. EDWARD)
NEISTER,)
) Case No. 3:21-cv-01166-M
Plaintiffs,) 3:22-cv-425-M
) 3:22-cv-280-M
v.)
) **JURY TRIAL DEMANDED**
FAR UV TECHNOLOGIES, et al.)
)
Defendant.)

PLAINTIFFS' SECOND AMENDED COMPLAINT

Plaintiffs High Energy Ozone LLC d/b/a Far-UV Sterilray (“HEO3”) and S. Edward Neister (“Mr. Neister”) (collectively, “Plaintiffs”) file this Second Amended Complaint for patent infringement and demand for jury trial for infringement of U.S. Patent Nos. 8,975,605, 9,700,642 and 11,246,951:

INTRODUCTION

1. More than fifteen years ago, physicist S. Edward Neister developed and patented methods for deactivating or destroying harmful microorganisms using a new spectrum of ultraviolet (UV) light. Mr. Neister's methods included the development and use of Krypton-Chloride excimer lamps that emit a peak wavelength at 222 nm in conjunction with other wavelengths. Unlike the 254 nm UV light—which had been used for decades for sanitization but was dangerous to

humans—applying 222 nm UV light does not penetrate human skin or eyes, making it far better and more useful than traditional lamps and methods of use.

2. Mr. Neister’s patented technology became the foundation for the family business. Mr. Neister and his brother John Neister originally founded the company that would become HEO3 in 2005 in a small town in New Hampshire. HEO3 produces and sells lamps designed to perform Mr. Neister’s patented methods of killing harmful microorganisms.

3. The global COVID-19 pandemic took the world by surprise in early 2020, but the hard work of and vision by the Neister brothers anticipated such a crisis. Their Excimer Wave Sterilray™ technology, products, and patented methods positioned HEO3 to be a global leader in UV light disinfection technology, providing sanitization devices to aid in the fight against the disease.

4. As a result of the pandemic, interest in UV light disinfection technology reached new heights. Market entrants sprung forth to capitalize on sanitization using far-UV light in the 222 nm range – including through unauthorized use of HEO3’s patented technology.

5. HEO3’s patented technology asserted in this case includes U.S. Patent Nos. 8,975,605, 9,700,642, and 11,246,951 true and correct copies of which are attached hereto as Exhibits 1-3, respectively.

6. Defendant Far UV Technologies (“Far UV”), founded in 2016, is one such company trading on HEO3’s patented technology. As described below, multiple Far UV products utilize HEO3’s patented systems and methods.

7. To protect its hard-earned intellectual property rights, HEO3 sent notice letters to Far UV and third-party purchasers of infringing products, to notify them of HEO3’s patents and to offer to open licensing discussions. But still Far UV refused to cease its infringing activities. This suit followed.

NATURE OF THE ACTION

8. This is an action for infringement of U.S. Patent Nos. 8,975,605 (“the ’605 patent”), 9,700,642 (“the ’642 patent”) and 11,246,951 (“the ’951 patent”) (collectively, the “Asserted Patents”) pursuant to the Patent Laws of the United States of America, 35 U.S.C. §§ 100, *et seq.*

PARTIES

9. Plaintiff HEO3 is a company organized and existing under the laws of the State of New Hampshire with its principal place of business at 30 Centre Road, Suite 6, Somersworth, NH 03878.

10. Plaintiff S. Edward Neister resides and works in the state of New Hampshire. He is the founder of HEO3 and its Chief Technology Officer.

11. On information and belief, Defendant Far UV is a corporation organized and existing under the laws of the State of Missouri with its principal place of business at 7208 Wornall Rd, Suite 210, Kansas City, MO 64114.

JURISDICTION AND VENUE

12. This Court has subject matter jurisdiction over this action under at least 28 U.S.C. §§ 1331, 1338.

13. This Court has personal jurisdiction over Far UV because it is incorporated in the State of Missouri. On information and belief, Far UV maintains its principal place of business in this District.

14. Venue is proper in this District under 28 U.S.C. §§ 1391(b)-(c) and 1400(b) because Far UV maintains its principal place of business in this District and has committed acts of infringement in this District.

FACTUAL BACKGROUND

HEO3's 222 nm UV Technology

15. Although the sun emits UV light, the wavelengths of UV light that are used in the patented invention do not come from nature on Earth. UV light as 222 nm, for example, does not reach the Earth—those wavelengths are completely absorbed by the atmosphere.

16. Specific bandwidths of UV light, including 222 nm, is created by devices containing special gases called “excimer” lamps. Excimer lamps can be

designed to produce different wavelengths of light based upon the type and combination of inert gases or elements within them.

17. Modern-day excimers can contain inert gases like Krypton and Chlorine to produce 222 nm wavelengths of UV light. The Krypton-Chloride (KrCl) molecule does not exist under normal atmospheric conditions. It cannot be extracted from air. Instead, it must be created by humans using precise techniques under tightly monitored conditions.

18. HEO3 is a leading developer of disinfection equipment using 222 nm UV technology. HEO3's disinfection technology provides a safe and environmentally-sound means of disinfection using far UV-light to kill bacteria, viruses, mold, and fungi in seconds or less. It has been validated by over 40 third-party labs as having a greater than 99.99% effective kill rate.

19. HEO3's technology permits users to sterilize surfaces without harsh chemicals. Additionally, unlike more commonly used UV sterilization techniques, HEO3's technology is mercury-free and does not produce ozone – a significant advance in terms of safety and environmental impact.

20. HEO3 offers a wide range of products utilizing its 222 nm UV technology. These include, for example: luminaire fixtures; air and surface disinfection units for disinfecting ambient air and surfaces in a room; surface disinfection rails and disinfection wands for disinfecting surfaces and air; pathogen

reduction boxes for disinfecting high-touch items (such as handheld medical equipment) that can be placed inside the boxes; and airduct units for disinfecting air passing through HVAC units.

21. HEO3 does business under the tradename Far UV Sterilray™ and its products feature Mr. Neister's patented Excimer Wave Sterilray™ Technology. Customers across the globe use Excimer Wave Sterilray™ products to create safer work, home, and medical environments.

22. As described on its website, HEO3's goal is to reduce the spread of infections and the burdens of such illnesses on our healthcare system. Over the past year alone, HEO3 has been approached by numerous and diverse organizations—including NFL teams, airlines, and robotic companies that specialize in the disinfection of office spaces, military barracks, public transportation, and hospitals—that have expressed interest in using HEO3's technology to help prevent spread of COVID-19.

23. HEO3's 222 nm UV technology is described and claimed in the Asserted Patents, on which Mr. Neister is the sole inventor. Mr. Neister has worked in the field of laser and UV light technology for over six decades. Mr. Neister drew on his decades of experience to develop HEO3's 222 nm UV technology claimed in the Asserted Patents.

24. Prior to Mr. Neister's inventions, UV disinfection methods typically used light at 254 nm generated by mercury-based lamps. As described in, *e.g.*, the '605 patent, Mr. Neister discovered that single line wavelengths emitted from an "excimer" lamp—a lamp using inert gases to generate photons at wavelengths matching the maximum absorption bands for DNA nitrogenous bases, proteins, amino acids, and other component bonds of microorganisms—could be significantly more effective than standard 254 nm photons for destroying DNA. As described in the '605 patent, "[k]ill action times are reduced from 10's to 100's of seconds to times of 0.1 seconds." Ex. 1 at 4:65-67.

25. One of the wavelengths Mr. Neister found to be particularly useful for disinfection was 222 nm, falling within the "far-UV" range. HEO3's Excimer Wave Sterilray™ products utilize photons at this wavelength, amongst others.

26. Recognizing Mr. Neister's discoveries, the United States Patent and Trademark Office ("USPTO") issued the Asserted Patents. Mr. Neister is the sole inventor of the Asserted Patents and related applications that are currently pending.

Far UV's Sterilization Products

27. In or around 2016, Far UV began manufacturing and selling products that perform Mr. Neister's patented processes for destroying or deactivating the DNA or RNA (*i.e.*, the organic bonds and proteins) of microorganisms on substances or surfaces of the Asserted Patents.

28. Far UV makes and sells the accused Krypton Shield product. *See* Ex. 4, Far UV website – Krypton Shield, available at <https://faruv.com/disinfection-floor-lamp/>. Far UV markets it as a “portable disinfection floor lamp,” encouraging its customers to “move it to any location to disinfect your most occupied and high-traffic areas.” *Id.* Far UV’s website states the Krypton Shield product yields “over 3 log (99.9%) cumulative disinfection” and “kill[s] up to 99.9% of SARS-CoV-2 (the virus causing COVID-19), along with many other pathogens.” *Id.* Far UV describes the Krypton Shield product as using “Optical Output 222nm Wavelength (Far UV),” and states that “Far UV light (at 222nm) is a safe UV wavelength for human exposure.” *Id.*

29. Far UV makes and sells the accused Krypton-11 Product. Far UV markets it as a “disinfection light [that] can be used within any budget to increase the safety of occupants in any environment,” and as a “practical, safe, and effective disinfection method in sanitizing air and surfaces while space is occupied.” *See* Ex. 5, Far UV website – Krypton-11, available at <https://www.boeing.com/confident-travel/story.html?id=uv-wand>. Far UV’s website states the Krypton-11 product yields “over 3 log+ (99.9%) disinfection.” *Id.* Far UV describes the Krypton-11 product as using “Optical Output: 222nm Wavelength (Far UV),” and states that “Far UV (at 222nm) is a safe UV wavelength for human exposure.” *Id.*

30. Far UV makes and sells the accused Krypton-36 Product. Far UV markets it as a “disinfection light [that] can be used within any budget to increase the safety of occupants in any environment,” and as a “practical, safe, and effective disinfection method in sanitizing air and surfaces while space is occupied.” *See* Ex. 6, Far UV website – Krypton-36, available at <https://faruv.com/far-uv-disinfection-light-krypton-36/>. Far UV’s website states the Krypton-36 product yields “over 3 log+ (99.9%) disinfection.” *Id.* Far UV describes the Krypton-36 product as using “Optical Output: 222nm Wavelength (Far UV),” and states that “Far UV light (at 222nm) is a safe UV wavelength for human exposure.” *Id.*

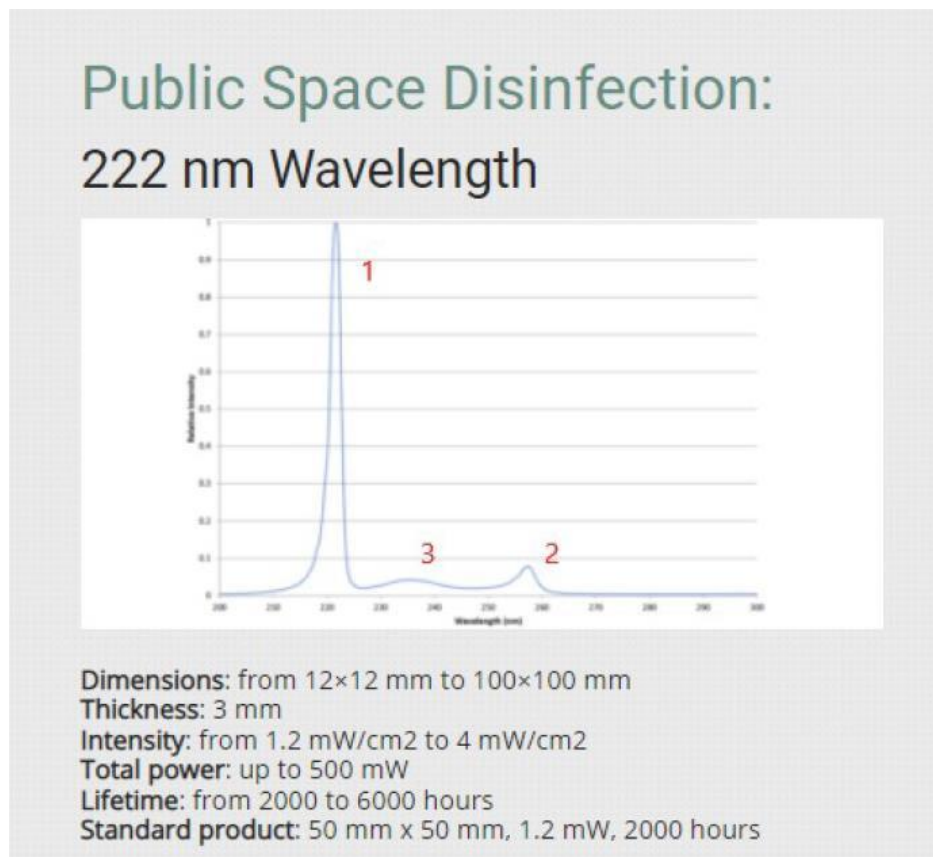
31. Far UV makes and sells the accused Krypton-M product. Far UV markets it as a “handheld wand [that] helps prevent the spread of bacteria and pathogens by disinfecting high-touch surfaces.” *See* Ex. 7, Far UV website – Krypton-M, available at <https://faruv.com/far-uv-disinfection-wand-krypton-m/>. Far UV’s website states the Krypton-M product “achieve[s] up to 99.9% disinfection.” *Id.* Far UV describes the Krypton-M product as using a “222nm light source.” *Id.*

32. Far UV makes and sells the accused Krypton-PLUS product. Far UV markets it as a “handheld wand [that] helps prevent the spread of bacteria and pathogens by disinfecting high-touch surfaces.” *See* Ex. 8, Far UV website – Krypton-PLUS, available at <https://faruv.com/far-uv-disinfection-wand-krypton-plus/>. Far UV’s website states the Krypton-PLUS product “achieve[s] up to 99.9%

disinfection.” *Id.* Far UV describes the Krypton-PLUS product as using a “222nm light source.” *Id.*

33. On information and belief, Far UV’s Krypton Shield, Krypton-11, Krypton 36, Krypton-M, and Krypton-PLUS Products (collectively, “the Accused Products”) incorporate far-UV lamps from third party Eden Park Illumination. *See, e.g.*, Ex. 9, Far UV website (listing Eden Park Illumination as a “Trusted Partner[] and Affiliation[]”), available at <https://faruv.com/>.

34. Eden Park’s website displays a graph that shows multiple UV wavelengths (peaks) are present in light from its 222 nm UV lamps:



See, e.g., Ex. 10, Eden Park website (annotations added), available at <https://edenpark.com/>.

Far UV's Willful Infringement

35. On or around June 13-15, 2018, John Neister attended the 54th APIC Annual Conference & Technical Exhibit in Minneapolis, MN ("APIC Show"). At the APIC Show, John Neister met PJ Piper, Far UV's CEO (then known as Anticipate Ventures), at Hepacart, Inc.'s ("Hepacart") booth. Mr. Piper observed two of HEO3's SterilrayTM lamps running in an exhibit of a Hepacart product. He also read a poster about HEO3's SterilrayTM Autonomous Disinfection Robot. Mr. Piper and Mr. John Neister discussed the sourcing of HEO3's lamps, and Mr. John Neister informed Mr. Piper that HEO3 manufactured its own lamps in New Hampshire. Mr. John Neister also informed Mr. Piper that HEO3 had issued patents covering its technology. Accordingly, Far UV has been on notice of the Asserted Patents at least as early as June 2018.

36. On information and belief, Far UV also gained awareness of the Asserted Patents from its current Vice President of Sales and Engineering, Mr. Michael Clark, who participated in licensing discussions with HEO3 while at another company in March 2018.

37. On June 19, 2018, Counsel for HEO3 sent a letter (attached as Exhibit 11) to Anticipate Ventures, d/b/a Far UV Technologies, identifying HEO3's issued

patents and currently pending application and notifying Far UV that its products may infringe those patents. The letter further informed Far UV that its website appeared to be improperly using a photo of a Far-UV SterilrayTM lamp. The letter also invited Far UV to “discuss licensing and/or further cooperation” to develop 222 nm technology. On the same day, Mr. John Neister sent an email (attached as Exhibit 11) to Mr. Piper including wording from the letter. Far UV did not cease its infringing activities.

38. Over the course of 2020 and beyond, in the wake of the global COVID-19 pandemic, interest in and promotion of UV sterilization technology dramatically increased. Seeking to stop the unauthorized use of its technology, HEO3 sent notice letters to purchasers of infringing products to notify these end users of their own potential infringement. HEO3 has also sought to enforce its patents in a lawsuit against Healthe, Inc. (“Healthe”) (Case No. 6:20-cv-2233, pending in the Middle District of Florida), where Healthe products are alleged to infringe the Asserted Patents by utilizing Eden Park’s 222 nm lamps.

39. On March 3, 2021, counsel for Far UV sent HEO3 a letter in response to HEO3’s infringement claims. Despite the June 2018 letter and HEO3’s more recent notice letters and enforcement action, Far UV refused to engage in licensing discussions or to cease its infringement. Far UV’s willful infringement continues to this day.

COUNT I
(Infringement of U.S. Patent No. 8,975,605)

40. Plaintiffs incorporate by reference the allegations of paragraphs 1-40 as if fully set forth herein.

41. The '605 patent, entitled "Method and Apparatus for Producing a High Level of Disinfection in Air and Surfaces," was duly and legally issued by the USPTO on March 10, 2015. *See* Ex. 1.

42. Mr. Neister is the owner of all rights, title, and interest in and to the '605 patent and HEO3 is its exclusive licensee. Mr. Neister and HEO3 are entitled to sue for past and future infringement.

43. Far UV received actual notice of the '605 patent at least as early as the filing of its Complaint, and on information and belief received notice of the '605 patent at least as early as June 2018, when Mr. John Neister informed Mr. Piper of HEO3's patents at the APIC Show, and when HEO3's counsel and Mr. John Neister sent Far UV correspondence notifying Far UV of HEO3's patents.

44. Far UV has directly infringed—literally and/or under the doctrine of equivalents—the '605 patent by making, using, selling, offering for sale in the United States, and/or importing into the United States sanitization equipment that practice one or more claims of the '605 patent, including but not limited to the Accused Products.

45. For example, claim 1 of the '605 patent recites:

1. A process for destroying or deactivating the DNA organic bonds and proteins of microorganisms comprising the steps of:

generating photons of at least two single line wavelengths from a non-coherent light source selected from the group consisting of at least two wavelengths being of 222 nm, 254 nm, and 282 nm;

directing the photons to a substance to be disinfected, whereby the photons destroy or deactivate the DNA organic bonds and proteins of microorganisms;

exposing the surface to be disinfected to the generated photons of at least two wavelengths, wherein the exposing achieves a ninety percent kill of microorganisms in a time period of less than one second.

46. Based upon publicly available information, the accused Krypton Shield product practices each limitation of and infringes at least claim 1 of the '605 patent. On information and belief, Far UV's Krypton Shield product uses 222 nm light sources from Eden Park Illumination, and as indicated on the Eden Park website, these produce UV light in multiple wavelengths, including 222 nm and 254 nm. *See* Exs. 4, 9-10.

47. Light from the Krypton Shield product is "direct[ed] . . . to a substance to be disinfected, whereby the photons destroy or deactivate the DNA organic bonds and proteins of microorganisms." *See* Ex. 1, '605 patent at Claim 1. Far UV markets the Krypton Shield product "to disinfect your most occupied and high-traffic areas." Ex. 4.

48. On information and belief, exposure to light from the Krypton Shield product “achieves a ninety percent kill of microorganisms in a time period of less than one second.” *See* Ex. 1, ’605 patent at Claim 1. Far UV markets the Krypton Shield as yielding “over 3 log (99.9%) cumulative disinfection” and “kill[ing] up to 99.9% of SARS-CoV-2 (the virus causing COVID-19), along with many other pathogens.” Ex. 4.

49. Based on publicly available information, the accused Krypton-11 product infringes at least claim 1 of the ’605 patent. On information and belief, Far UV’s Krypton-11 product uses 222 nm light sources from Eden Park Illumination, and as indicated on the Eden Park website, these produce UV light in multiple wavelengths, including 222 nm and 254 nm. *See* Exs. 5, 9-10.

50. Light from the Krypton-11 product is “direct[ed] . . . to a substance to be disinfected, whereby the photons destroy or deactivate the DNA organic bonds and proteins of microorganisms.” *See* Ex. 1, ’605 patent at Claim 1. Far UV markets the Krypton-11 product as a “practical, safe, and effective disinfection method in sanitizing air and surfaces while space is occupied.” Ex. 5.

51. On information and belief, exposure to light from the Krypton-11 product “achieves a ninety percent kill of microorganisms in a time period of less than one second.” *See* Ex. 1, ’605 patent at Claim 1. Far UV markets the Krypton-11 product as yielding “over 3 log+ (99.9%) disinfection.” Ex. 5.

52. Based on publicly available information, the accused Krypton-36 product infringes at least claim 1 of the '605 patent. On information and belief, Far UV's Krypton-36 product uses 222 nm light sources from Eden Park Illumination, and as indicated on the Eden Park website, these produce UV light in multiple wavelengths, including 222 nm and 254 nm. *See* Exs. 6, 9-10.

53. Light from the Krypton-36 product is "direct[ed] . . . to a substance to be disinfected, whereby the photons destroy or deactivate the DNA organic bonds and proteins of microorganisms." *See* Ex. 1, '605 patent at Claim 1. Far UV markets the Krypton-36 product as a "practical, safe, and effective disinfection method in sanitizing air and surfaces while space is occupied." Ex. 6.

54. On information and belief, exposure to light from the Krypton-36 product "achieves a ninety percent kill of microorganisms in a time period of less than one second." *See* Ex. 1, '605 patent at Claim 1. Far UV markets the Krypton-36 product as yielding "over 3 log+ (99.9%) disinfection." Ex. 6.

55. Based on publicly available information, the accused Krypton-M product infringes at least claim 1 of the '605 patent. On information and belief, Far UV's Krypton-M product uses 222 nm light sources from Eden Park Illumination, and as indicated on the Eden Park website, these produce UV light in multiple wavelengths, including 222 nm and 254 nm. *See* Exs. 7, 9-10.

56. Light from the Krypton-M product is “direct[ed] . . . to a substance to be disinfected, whereby the photons destroy or deactivate the DNA organic bonds and proteins of microorganisms.” *See* Ex. 1, ’605 patent at Claim 1. Far UV markets the Krypton-M product as a “handheld wand [that] helps prevent the spread of bacteria and pathogens by disinfecting high-touch surfaces.” Ex. 7.

57. On information and belief, exposure to light from the Krypton-M product “achieves a ninety percent kill of microorganisms in a time period of less than one second.” *See* Ex. 1, ’605 patent at Claim 1. Far UV markets the Krypton-M product as “achieve[ing] up to 99.9% disinfection.” Ex. 7.

58. Based on publicly available information, the accused Krypton-PLUS product infringes at least claim 1 of the ’605 patent. On information and belief, Far UV’s Krypton-PLUS product uses 222 nm light sources from Eden Park Illumination, and as indicated on the Eden Park website, these produce UV light in multiple wavelengths, including 222 nm and 254 nm. *See* Exs. 8, 9-10.

59. Light from the Krypton-M product is “direct[ed] . . . to a substance to be disinfected, whereby the photons destroy or deactivate the DNA organic bonds and proteins of microorganisms.” *See* Ex. 1, ’605 patent at Claim 1. Far UV markets the Krypton-M product as a “handheld wand [that] helps prevent the spread of bacteria and pathogens by disinfecting high-touch surfaces.” Ex. 7.

60. On information and belief, exposure to light from the Krypton-M product “achieves a ninety percent kill of microorganisms in a time period of less than one second.” *See* Ex. 1, ’605 patent at Claim 1. Far UV markets the Krypton-M product as “achieve[ing] up to 99.9% disinfection.” Ex. 7.

61. Far UV indirectly infringes the ’605 patent as provided by 35 U.S.C. § 271(b) by actively inducing others, including customers who purchase and use the Accused Products, to commit direct infringement of one or more claims of the ’605 patent.

62. Far UV’s affirmative acts of providing at least manuals, training, guides, marketing material, and/or demonstrations induces customers to use the Accused Products in a manner intended by Far UV to cause direct infringement of the ’605 patent.

63. Far UV performed the acts that constitute inducement with knowledge or at least willful blindness that the induced acts would constitute infringement. At least through the filing of this Complaint, Far UV has received actual notice that its customers directly infringe the ’605 patent and that its own acts induce such infringement. On information and belief, Far UV received actual knowledge that its customers directly infringe the ’605 patent at least as early as June 2018, when John Neister spoke with Far UV’s CEO, Mr. Piper, at the APIC Show and informed him of HEO3’s patents. On June 19, 2018, counsel for HEO3 sent Far UV a letter, and

Mr. John Neister sent Mr. Piper an email, informing Far UV of the '605 patent and Far UV's infringement.

64. Far UV also indirectly infringes the '605 patent as provided by 35 U.S.C. § 271(c) by contributing to infringement of one or more claims of the '605 patent by others, including Far UV's customers who purchase and use the Accused Products.

65. Far UV's affirmative acts of selling infringing sanitization products and providing those products to customers contribute to the infringement of the '605 patent. The Accused Products are specially made or adapted for use in infringement of the '605 patent and are not staple articles of commerce suitable for substantial noninfringing use.

66. Far UV contributed to the infringement of others with knowledge or at least willful blindness that the Accused Products are specially made or adapted for use in an infringement of the '605 patent and are not staple articles of commerce suitable for substantial noninfringing use. At least through the filing of this Complaint, and on information and belief at least as early as June 2018, Far UV has received actual notice that its acts constitute contributory infringement.

67. Far UV's infringement has been and continues to be willful and in reckless disregard for the '605 patent, without any reasonable basis for believing that it had a right to engage in the infringing conduct.

68. Far UV's continued infringement of the '605 Patent has damaged and will continue to damage Plaintiffs, who offer directly competing products. Far UV's acts have caused, and unless restrained and enjoined, will continue to cause, irreparable injury and damage to Plaintiffs for which there is no adequate remedy at law.

COUNT II
(Infringement of U.S. Patent No. 9,700,642)

69. Plaintiffs incorporate by reference the allegations of paragraphs 1-68 as if fully set forth herein.

70. The '642 patent, entitled "Method and Apparatus for Sterilizing and Disinfecting Air and Surfaces and Protecting a Zone from External Microbial Contamination," was duly and legally issued by the USPTO on July 11, 2017. *See* Ex. 2.

71. Mr. Neister is the owner of all rights, title, and interest in and to the '642 patent and HEO3 is its exclusive licensee. Mr. Neister and HEO3 are entitled to sue for past and future infringement.

72. Far UV received actual notice of the '642 patent at least as early as the filing of its Complaint, and on information and belief received notice of the '642 patent at least as early as June 2018, when Mr. John Neister informed Mr. Piper of HEO3's patents at the APIC Show, and when HEO3's counsel and Mr. John Neister sent Far UV correspondence notifying Far UV of HEO3's patents.

73. Far UV has directly infringed—literally and/or under the doctrine of equivalents—the '642 patent by making, using, selling, offering for sale in the United States, and/or importing into the United States sanitization equipment that practice one or more claims of the '642 patent, including but not limited to the Accused Products.

74. For example, claim 1 of the '642 patent recites:

1. A process for destroying a DNA or RNA of a microorganism on a substance or surface comprising the steps of:

generating photons of at least one wavelength corresponding to a peak adsorption wavelength of DNA or RNA, the at least one wavelength being at least one of 222 nm and 282 nm;

directing the photons to the substance or surface to be disinfected, whereby the photons are selected to destroy a plurality of chemical bonds within the DNA or RNA of the microorganisms; and

wherein the substance or surface to be disinfected is human or animal skin.

75. Based on publicly available information, the accused Krypton Shield product practices each limitation of and infringes at least claim 1 of the '642 patent. Far UV describes its Krypton Shield product as using a 222 nm light source. Ex. 4.

76. Light from the Krypton Shield product is “direct[ed] . . . to the substance or surface to be disinfected, whereby the photons are selected to destroy a plurality of chemical bonds within the DNA or RNA of the microorganisms.” *See* Ex. 2, '642 patent at claim 1. Far UV markets the Krypton Shield product “to disinfect your most occupied and high-traffic areas.” Ex. 4.

77. The Krypton Shield is used “wherein the substance or surface to be disinfected is human or animal skin.” *See* Ex. 2, ’642 patent at claim 1. Far UV markets the Krypton Shield to disinfect areas that are “occupied.” Ex. 4. Accordingly, when used in “occupied” areas as directed on the Far UV website, the Krypton Shield product directs photons used for disinfection to exposed human skin.

78. Based on publicly available information, the accused Krypton-11 product infringes at least claim 1 of the ’642 patent. Far UV describes its Krypton-11 product as using a 222 nm light source. Ex. 5.

79. Light from the Krypton-11 product is “direct[ed] . . . to the substance or surface to be disinfected, whereby the photons are selected to destroy a plurality of chemical bonds within the DNA or RNA of the microorganisms.” *See* Ex. 2, ’642 patent at claim 1. Far UV markets the Krypton-11 product as a “practical, safe, and effective disinfection method in sanitizing air and surfaces.” Ex. 5.

80. The Krypton-11 product is used “wherein the substance or surface to be disinfected is human or animal skin.” *See* Ex. 2, ’642 patent at claim 1. Far UV markets the Krypton-11 product to disinfect “your most occupied and high-traffic areas.” Ex. 5. Accordingly, when used in “occupied” areas as directed on the Far UV website, the Krypton-11 product directs photons used for disinfection to exposed human skin.

81. Based on publicly available information, the accused Krypton-36 product infringes at least claim 1 of the '642 patent. Far UV describes its Krypton-36 product as using a 222 nm light source. Ex. 6.

82. Light from the Krypton-36 product is “direct[ed] . . . to the substance or surface to be disinfected, whereby the photons are selected to destroy a plurality of chemical bonds within the DNA or RNA of the microorganisms.” *See* Ex. 2, '642 patent at claim 1. Far UV markets the Krypton-36 product as a “practical, safe, and effective disinfection method in sanitizing air and surfaces.” Ex. 6.

83. The Krypton-36 product is used “wherein the substance or surface to be disinfected is human or animal skin.” *See* Ex. 2, '642 patent at claim 1. Far UV markets the Krypton-36 product as a “practical, safe, and effective disinfection method in sanitizing air and surfaces while space is occupied.” Ex. 6. Accordingly, when used in “occupied” areas as directed on the Far UV website, the Krypton-11 product directs photons used for disinfection to exposed human skin.

84. Based on publicly available information, the accused Krypton-M product infringes at least claim 1 of the '642 patent. Far UV describes its Krypton-M product as using a 222 nm light source. Ex. 7.

85. Light from the Krypton-M product is “direct[ed] . . . to the substance or surface to be disinfected, whereby the photons are selected to destroy a plurality of chemical bonds within the DNA or RNA of the microorganisms.” *See* Ex. 2, '642

patent at claim 1. Far UV markets the Krypton-M product as a “handheld wand [that] helps prevent the spread of bacteria and pathogens by disinfecting high-touch surfaces.” Ex. 7.

86. On information and belief, the Krypton-M product is used “wherein the substance or surface to be disinfected is human or animal skin.” *See* Ex. 2, ’642 patent at claim 1. Far UV markets its “Krypton™ Far UV lights at 222nm” as “the first human and animal safe, practical, and effective countermeasure for the pathogens leading to infectious disease in occupied spaces.” Ex. 9. Far UV’s website also describes 222 nm light as “Safe for Humans” and states that “Krypton Far UV (222 nm) light does not penetrate beyond the outermost layer of human and/or animal skin or eyes. . . . Krypton Far UV (222 nm) . . . can sanitize occupied spaces without those risks to adverse effects to human tissue.” Ex. 13, Far UV website – Technology, available at <https://faruv.com/krypton-far-uv-222-nm/>. Accordingly, a consumer viewing Far UV’s website would be encouraged to use the Krypton-M product on human or animal skin.

87. Based on publicly available information, the accused Krypton-PLUS product infringes at least claim 1 of the ’642 patent. Far UV describes its Krypton-PLUS product as using a 222 nm light source. Ex. 8.

88. Light from the Krypton-PLUS product is “direct[ed] . . . to the substance or surface to be disinfected, whereby the photons are selected to destroy a

plurality of chemical bonds within the DNA or RNA of the microorganisms.” *See* Ex. 2, ’642 patent at claim 1. Far UV markets the Krypton-PLUS product as a “handheld wand [that] helps prevent the spread of bacteria and pathogens by disinfecting high-touch surfaces.” Ex. 8.

89. On information and belief, the Krypton-PLUS product is used “wherein the substance or surface to be disinfected is human or animal skin.” *See* Ex. 2, ’642 patent at claim 1. Far UV markets its “Krypton™ Far UV lights at 222nm” as “the first human and animal safe, practical, and effective countermeasure for the pathogens leading to infectious disease in occupied spaces.” Ex. 9. Far UV’s website also describes 222 nm light as “Safe for Humans” and states that “Krypton Far UV (222 nm) light does not penetrate beyond the outermost layer of human and/or animal skin or eyes. . . . Krypton Far UV (222 nm) . . . can sanitize occupied spaces without those risks to adverse effects to human tissue.” Ex. 13. Accordingly, a consumer viewing Far UV’s website would be encouraged to use the Krypton-M product on human or animal skin.

90. Far UV indirectly infringes the ’642 patent as provided by 35 U.S.C. § 271(b) by actively inducing others, including customers who purchase and use the Accused Products, to commit direct infringement of one or more claims of the ’642 patent.

91. Far UV's affirmative acts of providing at least manuals, training, guides, marketing materials, and/or demonstrations induces customers to use the Accused Products in a manner intended by Far UV to cause direct infringement of the '642 patent.

92. Far UV performed the acts that constitute inducement with knowledge or at least willful blindness that the induced acts would constitute infringement. At least through the filing of this Complaint, Far UV has received actual notice that its customers directly infringe the '642 patent and that its own acts induce such infringement. On information and belief, Far UV received actual knowledge that its customers directly infringe the '642 patent at least as early as June 2018, when John Neister spoke with Far UV's CEO, Mr. Piper, and informed him of HEO3's patents. On June 19, 2018, counsel for HEO3 sent Far UV a letter, and Mr. John Neister sent Mr. Piper an email, informing Far UV of the '642 patent and Far UV's infringement.

93. Far UV also indirectly infringes the '642 patent as provided by 35 U.S.C. § 271(c) by contributing to infringement of one or more claims of the '642 patent by others, including Far UV's customers who purchase and use the Accused Products.

94. Far UV's affirmative acts of selling infringing sanitization products and providing those products to customers contribute to the infringement of the '642 patent. The Accused Products are specially made or adapted for use in infringement

of the '642 patent and are not staple articles of commerce suitable for substantial noninfringing use.

95. Far UV contributed to the infringement of others with knowledge or at least willful blindness that the Accused Products are specially made or adapted for use in an infringement of the '642 patent and are not staple articles of commerce suitable for substantial noninfringing use. At least through the filing of this Complaint, and on information and belief at least as early as June 2018, Far UV has received actual notice that its acts constitute contributory infringement.

96. Far UV's infringement has been and continues to be willful and in reckless disregard for the '642 patent, without any reasonable basis for believing that it had a right to engage in the infringing conduct.

97. Far UV's continued infringement of the '642 patent has damaged and will continue to damage Plaintiffs, who offer directly competing products. Far UV's acts have caused, and unless restrained and enjoined, will continue to cause, irreparable injury and damage to Plaintiffs for which there is no adequate remedy at law.

COUNT III
(Infringement of U.S. Patent No. 11,246,951)

98. Plaintiffs incorporate by reference the allegations of paragraphs 1-97 as if fully set forth herein.

99. The '951 patent, entitled "Method and Apparatus for Sterilizing and Disinfecting Air and Surfaces and Protecting a Zone from External Microbial Contamination," issued on February 15, 2022. *See* Ex. 3.

100. Mr. Neister is the owner of all rights, title, and interest in and to the '951 patent and HEO3 is its exclusive licensee. Mr. Neister and HEO3 are entitled to sue for past and future infringement.

101. Far UV has received actual notice of the '951 patent at least as early as the filing of the Second Amended Complaint, and on information and belief, Far UV received actual notice at least as early as June 2018, when Mr. John Neister informed Mr. Piper of HEO3's patents at the APIC show, and when HEO3's counsel and Mr. John Neister sent Far UV correspondence notifying Far UV of HEO3's patents and then pending applications.

102. U.S. Patent Application No. 15/645,480 ("the '480 application") issued as the '951 patent. On December 13, 2018, the USPTO published the '480 application. Since that time, all the papers in the '480 application prosecution file have been available to the public.

103. On December 24, 2021, the USPTO allowed claims 1, 3, 6-8, 10, 12-13, 22-23, and 28-35 of the '480 application.

104. On January 4, 2022 Plaintiffs paid the issue fee and on January 6, 2022, the Patent Office verified the same.

105. Far UV has directly infringed—literally and/or under the doctrine of equivalents—the ’951 patent by making, using, selling, offering for sale in the United States, and/or importing into the United States sanitization equipment that practice one or more claims of the ’951 patent, including but not limited to the Accused Products.

106. For example, Claim 1 of the ’951 patent recites:

1. A process for destroying a DNA or RNA of a microorganism on a substance or on a surface comprising the steps of:

generating photons of a wavelength corresponding to a peak absorption wavelength of proteins, or DNA, or RNA, the wavelength being 222 nm;

directing the photons to a substance or surface to be disinfected, whereby the photons are generated to destroy a plurality of chemical bonds within the proteins, DNA, or RNA of the microorganism; and

wherein the substance or surface to be disinfected is human or animal tissue.

107. Based on publicly available information, the accused Krypton Shield product practices each limitation of and infringes at least claim 1 of the ’951 patent. Far UV describes its Krypton Shield product as using a 222 nm light source. Ex. 4.

108. Light from the Krypton Shield product is “direct[ed] . . . to a substance or surface to be disinfected, whereby the photons are generated to destroy a plurality of chemical bonds within the proteins, DNA, or RNA of the microorganism.” *See* Ex. 3, ’951 patent at claim 1. Far UV markets the Krypton Shield product “to disinfect your most occupied and high-traffic areas.” Ex. 4.

109. The Krypton Shield is used “wherein the substance or surface to be disinfected is human or animal tissue.” *See* Ex. 3, ’951 patent at claim 1. Far UV markets the Krypton Shield to disinfect areas that are “occupied.” Ex. 4. Accordingly, when used in “occupied” areas as directed on the Far UV website, the Krypton Shield product directs photons used for disinfection to exposed human tissue.

110. Based on publicly available information, the accused Krypton-11 product infringes at least claim 1 of the ’951 patent. Far UV describes its Krypton-11 product as using a 222 nm light source. Ex. 5.

111. Light from the Krypton-11 product is “direct[ed] . . . to a substance or surface to be disinfected, whereby the photons are generated to destroy a plurality of chemical bonds within the proteins, DNA, or RNA of the microorganism.” *See* Ex. 3, ’951 patent at claim 1. Far UV markets the Krypton-11 product as a “practical, safe, and effective disinfection method in sanitizing air and surfaces.” Ex. 5.

112. The Krypton-11 product is used “wherein the substance or surface to be disinfected is human or animal skin.” *See* Ex. 3, ’951 patent at claim 1. Far UV markets the Krypton-11 product for use as a “practical, safe, and effective disinfection method in sanitizing air and surfaces while space is occupied.” Ex. 5. Accordingly, when used in “occupied” areas as directed on the Far UV website, the Krypton-11 product directs photons used for disinfection to exposed human skin.

113. Based on publicly available information, the accused Krypton-36 product infringes at least claim 1 of the '951 patent. Far UV describes its Krypton-36 product as using a 222 nm light source. Ex. 6.

114. Light from the Krypton-36 product is “direct[ed] . . . to a substance or surface to be disinfected, whereby the photons are generated to destroy a plurality of chemical bonds within the proteins, DNA, or RNA of the microorganism.” *See* Ex. 3, '951 patent at claim 1. Far UV markets the Krypton-36 product as a “practical, safe, and effective disinfection method in sanitizing air and surfaces.” Ex. 6.

115. The Krypton-36 product is used “wherein the substance or surface to be disinfected is human or animal skin.” *See* Ex. 3, '951 patent at claim 1. Far UV markets the Krypton-36 product for use as a “practical, safe, and effective disinfection method in sanitizing air and surfaces while space is occupied.” Ex. 6. Accordingly, when used in “occupied” areas as directed on the Far UV website, the Krypton-11 product directs photons used for disinfection to exposed human skin.

116. Based on publicly available information, the accused Krypton-M product infringes at least claim 1 of the '951 patent. Far UV describes its Krypton-M product as using a 222 nm light source. Ex. 7.

117. Light from the Krypton-M product is “direct[ed] . . . to a substance or surface to be disinfected, whereby the photons are generated to destroy a plurality of chemical bonds within the proteins, DNA, or RNA of the microorganism.” *See*

Ex. 3, '951 patent at claim 1. Far UV markets the Krypton-M product as a “handheld wand [that] helps prevent the spread of bacteria and pathogens by disinfecting high-touch surfaces.” Ex. 7.

118. On information and belief, the Krypton-M product is used “wherein the substance or surface to be disinfected is human or animal skin.” *See* Ex. 3, '951 patent at claim 1. Far UV markets its “Krypton™ Far UV lights at 222nm” as “the first human and animal safe, practical, and effective countermeasure for the pathogens leading to infectious disease in occupied spaces.” Ex.9, Far UV website, Technology, available at <https://faruv.com/krypton-far-uv-222-nm/>. Accordingly, a consumer viewing Far UV’s website would be encouraged to use the Krypton-M product on human or animal tissue.

119. Based on publicly available information, the accused Krypton-PLUS product infringes at least claim 1 of the '951 patent. Far UV describes its Krypton-PLUS product as using a 222 nm light source. Ex. 8.

120. Light from the Krypton-PLUS product is “direct[ed] . . . to the substance or surface to be disinfected, whereby the photons are generated to destroy a plurality of chemical bonds within the proteins, DNA, or RNA of the microorganism.” *See* Ex. 3, '951 patent at claim 1. Far UV markets the Krypton-PLUS product as a “handheld wand [that] helps prevent the spread of bacteria and pathogens by disinfecting high-touch surfaces.” Ex. 8.

121. On information and belief, the Krypton-PLUS product is used “wherein the substance or surface to be disinfected is human or animal skin.” *See* Ex. 3, ’951 patent at claim 1. Far UV markets its “Krypton™ Far UV lights at 222nm” as “the first human and animal safe, practical, and effective countermeasure for the pathogens leading to infectious disease in occupied spaces.” Ex.9 Far UV’s website also describes 222 nm light as “Safe for Humans” and states that “Krypton Far UV (222 nm) light does not penetrate beyond the outermost layer of human and/or animal skin or eyes. . . . Krypton Far UV (222 nm) . . . can sanitize occupied spaces without those risks to adverse effects to human tissue.” Ex. 13 Accordingly, a consumer viewing Far UV’s website would be encouraged to use the Krypton-M product on human or animal tissue.

122. Far UV indirectly infringes the ’951 patent as provided by 35 U.S.C. § 271(b) by actively inducing others, including customers who purchase and use the Accused Products, to commit direct infringement of one or more claims of the ’951 patent.

123. Far UV’s affirmative acts of providing at least manuals, training, guides, marketing materials, and/or demonstrations induces customers to use the Accused Products in a manner intended by Far UV to cause direct infringement of the ’951 patent.

124. Far UV performed the acts that constitute inducement with knowledge or at least willful blindness that the induced acts would constitute infringement. At least through the filing of this Complaint, Far UV has received actual notice that its customers directly infringe the '951 patent and that its own acts induce such infringement. On information and belief, Far UV received actual knowledge that its customers directly infringe the (then pending) '951 patent at least as early as June 2018, when John Neister spoke with Far UV's CEO, Mr. Piper, and informed him of HEO3's patents. On June 19, 2018, counsel for HEO3 sent Far UV a letter, and Mr. John Neister sent Mr. Piper an email, informing Far UV of the (then pending) '951 patent and Far UV's infringement. Exs. 11-12.

125. Far UV also indirectly infringes the '951 patent as provided by 35 U.S.C. § 271(c) by contributing to infringement of one or more claims of the '951 patent by others, including Far UV's customers who purchase and use the Accused Products.

126. Far UV's affirmative acts of selling infringing thin 222 nm UV lamps and providing them to customers contribute to the infringement of the '951 patent. The Accused Products are specially made or adapted for use in infringement of the '951 patent and are not staple articles of commerce suitable for substantial noninfringing use.

127. Far UV contributed to the infringement of others with knowledge or at least willful blindness that the Accused Product is specially made or adapted for use in an infringement of the '951 patent and is not a staple article of commerce suitable for substantial noninfringing use. At least through the filing of the Second Amended Complaint, and on information and belief at least as early as June 2018, Far UV has received actual notice that its acts constitute contributory infringement.

128. Far UV's infringement has been and continues to be willful and in reckless disregard for the '951 patent, without any reasonable basis for believing that it had a right to engage in the infringing conduct.

129. Far UV's continued infringement of the '951 patent has damaged and will continue to damage Plaintiffs, who offer directly competing products. Far UV's acts have caused, and unless restrained and enjoined, will continue to cause, irreparable injury and damage to Plaintiffs for which there is no adequate remedy at law.

PRAYER FOR RELIEF

WHEREFORE, Plaintiffs respectfully request the following relief:

- a) For entry of judgment by this Court against Far UV and in favor of Plaintiffs in all respects, including that:
 - 1. Far UV has and continues to directly infringe and/or indirectly infringe, by way of inducement and/or contributory infringement, the Asserted Patents; and
 - 2. Far UV's infringement of the Asserted Patents was and continues to be willful;
- b) An Order permanently enjoining Far UV, its officers, agents, servants, employee, and attorneys, all parent, subsidiary, and affiliate corporations and other related business entities, and all other persons or entities acting in concert, participation, or in privy with one or more of them, and their successors and assigns, from infringing, contributing to the infringement of, or inducing others to infringe the Asserted Patents;
- c) For damages arising from Far UV's infringement of the Asserted Patents, together with pre-judgment and post-judgment interest, and that such damages be trebled as provided by 35 U.S.C. § 284;

- d) For damages arising from Larson's infringement of the '480 application (which issued as the '951 patent on February 15, 2022) under 35 U.S.C. § 154(d);
- e) An Order declaring that Plaintiffs are the prevailing parties and that this is an exceptional case, awarding Plaintiffs their costs, expenses, disbursements, and reasonable attorney fees under 35 U.S.C. § 285 and all other applicable statutes, rules, and common law; and
- f) Such other and further relief as this Court may deem just and proper.

DEMAND FOR JURY TRIAL

Plaintiffs respectfully request a trial by jury on all issues triable thereby.

Date: March 25, 2022

Respectfully submitted,

/s/ Brent P. Ray

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S. Edward Neister*

CERTIFICATE OF SERVICE

I hereby certify that on March 25, 2022, I electronically filed the foregoing document with the Clerk of the Court by using the CM/ECF system, which will send a notice of electronic filing to all counsel of record.

/s/ Brent P. Ray

Brent P. Ray