

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

EDEN PARK ILLUMINATION, INC., LARSON ELECTRONICS LLC.
FAR UV TECHNOLOGIES, INC. and USHIO AMERICA, INC.,
Petitioners,

v.

S. EDWARD NEISTER,
Patent Owner.

Case IPR2023-00695
Patent 11,246,951

PETITIONERS' REPLY

LIST OF EXHIBITS

Exhibit	Description
1001	U.S. Patent No. 11,246,951
1002	Prosecution History of U.S. Patent No. 11,246,951
1003	Declaration and Curriculum Vitae of Oliver R. Lawal
1004	U.S. Patent Publication No. 2003/0031586 to Eckhardt et al. (“Eckhardt”)
1005	Sosnin et al., <i>New bactericidal UV light sources: excilamps</i> , PROC. SPIE 5483, Atomic and Molecular Pulsed Lasers V, (3 May 2004)
1006	National Institute for Occupational Safety and Health, “A Recommended Standard for Occupational Exposure to Ultraviolet Radiation” (1992).
1007	Health and Environmental Effects of Ultraviolet Radiation: A Summary of Environmental Health Criteria 160 Ultraviolet Radiation (1995)
1008	U.S. Provisional App. No. 60/593,626
1009	PCT App. No. PCT/US2006/003393
1010	Declaration and Curriculum Vitae of June Ann Munford
1011	U.S. Patent Publication No. 2002/0146343 to Jenkins et al.
1012	HEALTH PHYSICS SOC’Y, <i>Ultraviolet Radiation and Public Health</i> , POSITION STATEMENT OF THE HEALTH PHYSICS SOC’Y (July 1998), https://web.archive.org/web/20000601171859/http://hps.org/documents/ultravioletradiation.pdf
1013	U.S. Patent Publication No. 2003/0153962 to Cumbie
1014	Int’l Publication No. WO87/02256 to Wilkinson
1015	U.S. Patent No. 6,283,986 to Johnson
1016	U.S. Patent No. 6,254,625 to Rosenthal et al.
1017	Thai et al., <i>Ultraviolet Light C in the Treatment of Chronic Wounds with MRSA: A Case Study</i> , 48 OSTOMY WOUND MGMT., no. 11, at 52–60 (Nov. 2002)
1018	U.S. Patent No. 5,364,645 to Lagunas-Solar et al.
1019	U.S. Patent Publication No. 2005/0079096 to Brown-Skrobot et al.
1020	Kogelschatz et al., <i>High-intensity sources of incoherent UV and VUV excimer radiation for low-temperature materials processing</i> , 168 APPLIED SURFACE SCI., May–June 2000, at 29
1021	HARVEY LODISH ET AL., MOLECULAR CELL BIOLOGY 651 (Sara Tenney et al. eds., 4th ed. 2001)

1022	James R. Bolton and Karl G. Linden, <i>Standardization of Methods for Fluence (UV Dose) Determination in Bench-Scale UV Experiments</i> , 129 J. OF ENV'T ENG'G 209 (March 2003)
1023	U.S. Patent No. 5,572,091 to Langer et al.
1024	U.S. Patent Publication No. 2005/0173652 to Ressler
1025	K982082, 510(K) SUMMARY: DERMA-WAND, NAT'L BIOLOGICAL CORP. (Oct. 28, 1998), https://www.accessdata.fda.gov/cdrh_docs/pdf/K982082.pdf
1026	Prosecution History of U.S. Patent No. 9,700,642
1027	Second Amended Complaint for Patent Infringement, <i>High Energy Ozone LLC et al. v. Larson Electronics LLC</i> , Case No. 3:21-cv-01166, Dkt. No. 67 (N.D. Tex. March 9, 2022)
1028	First Amended Complaint for Patent Infringement, <i>High Energy Ozone LLC et al. v. Eden Park Illumination, Inc.</i> , Case No. 3:22-cv-00425, Dkt. No. 50 (N.D. Tex. March 25, 2022)
1029	Second Amended Complaint for Patent Infringement, <i>High Energy Ozone LLC et al. v. Far UV Technologies</i> , Case No. 3:22-cv-00280, Dkt. No. 52 (N.D. Tex. March 25, 2022)
1030	"SPIE Conference Proceedings" website printout of https://spie.org/publications/conference-proceedings?SSO=1 (last accessed March 6, 2023)
1031	"About SPIE" website printout of https://spie.org/about-spie (last accessed March 6, 2023)
1032	Ian A. Ramsay et al., <i>The Synergistic Effect of Excimer and Low-Pressure Mercury Lamps on the Disinfection of Flowing Water</i> , 63 J. FOOD PROT. 1529 (2000)
1033	<i>Memorandum: Interim Procedure for Discretionary Denials in AIA Post-Grant Proceedings with Parallel District Court Litigation</i> (June 21, 2022) ("Director's Memo")
1034	Order Granting Joint Motion to Consolidate Related Actions for Pretrial, <i>High Energy Ozone LLC et al. v. Larson Electronics LLC</i> , Case No. 3:21-cv-01166, Dkt. No. 63 (N.D. Tex. March 8, 2022)
1035	Order Granting Joint Motion for Stay, <i>High Energy Ozone LLC et al. v. Larson Electronics LLC</i> , Case No. 3:21-cv-01166, Dkt. No. 77 (N.D. Tex. April 13, 2022)
1036	U.S. Patent No. 5,843,374 to Sizer et al.
1037	Sosnin et al., <i>The Effects of UV Irradiation and Gas Plasma Treatment on Living Mammalian Cells and Bacteria: A Comparative</i>

	<i>Approach</i> , 32 IEEE TRANSACTIONS ON PLASMA SCI. 1544 (Aug. 2004) (“Sosnin IEEE”)
1038	Clauß, M., Mannesmann, R. and Kolch, A., Photoreactivation of Escherichia coli and Yersinia enterocolitica after Irradiation with a 222 nm Excimer Lamp Compared to a 254 nm Low-pressure Mercury Lamp, 33 ACTA HYDROCHIMICA ET HYDROBIOLOGICA 579 (Dec. 2005)
1039	Von Sonntag, <i>Disinfection by free radicals and UV-radiation</i> , 4 WATER SUPPLY 11 (1986)
1040	Frederick L. Gates, <i>A study of the bactericidal action of ultra violet light. III. The absorption of ultra violet light by bacteria</i> , 14 J. GEN. PHYSIOLOGY 31 (1930)
1041	Declaration of Dr. Casey M. Kraning in Support of Admission of <i>Pro Hac Vice</i>

In accordance with the Scheduling Order (Paper 17), Petitioners Eden Park Illumination, Inc., Larson Electronics LLC, Far UV Technologies, Inc., and Ushio America, Inc., respectfully submit this Reply in IPR2023-00695 relating to the IPR of U.S. Patent No. 11,246,951 (“the ’951 patent”). The Petition (Paper 5) identified a single ground of invalidity, with Ground 1 challenging the validity of claims 1-5 and 7-18 as obvious over Eckhardt in view of Sosnin and the knowledge of a person of ordinary skill in the art (“POSITA”). *See* Pet. at 17-50.

In the Institution Decision (“ID”), the Board reviewed the Petition’s evidence and analysis, the arguments made in Patent Owner’s Preliminary Response (Paper 10)¹, and the rebuttal arguments made in Petitioners’ authorized Reply (Paper 12). Patent Owner neglected to file a timely Sur-reply, and the Board denied Patent Owner’s Motion for Leave to Submit its Sur-Reply Out of Time (Paper 13). *See* Paper 15. In the ID, the Board concluded that Petitioners had “established a reasonable likelihood that it would prevail in showing the unpatentability of at least one claim challenged in the Petition.” on the claims

¹ Patent Owner filed a Corrected Patent Owner’s Preliminary Response on July 13, 2023 (Paper 11) that corrected an exhibit citation. *Compare* Paper 10 at 7 with Paper 11 at 7.

challenged in the Petition. ID (Paper 16) at 2; *see also id.*, 8-33. Patent Owner did not file a Patent Owner Response (“POR”).

Three weeks after the POR deadline, in accordance with the Scheduling Order’s instruction that “[i]f Patent Owner elects not to file a response, Patent Owner must arrange a conference call with the parties and the Board,” (Paper 17 at 9), Patent Owner requested and was granted a conference call with the Board on January 5, 2024. At that time, Patent Owner informed the Board that it did not intend to put in any evidence to oppose the Petition.

Patent Owner’s decision follows the Board’s finding in a related IPR in which substantially identical claims were found unpatentable by the Board. *See* IPR2022-00381, Paper 55 at 3 (PTAB Nov. 14, 2023) (“[W]e hold that Petitioner has demonstrated by a preponderance of the evidence that claims 1–10 and 12–18 of the ’642 patent and Patent Owner’s proposed contingent substitute claims 19–25 are not patentable, and we deny Patent Owner’s [Revised Motion to Amend].”). Similarly, the Board likewise found all challenged claims unpatentable in yet a third proceeding between the parties. *See* IPR2022-00582, Paper 32 at 2 (PTAB Oct. 24, 2023). While Patent Owner timely filed Notices of Appeal of both Final Written Decisions, Patent Owner has failed to meet the Federal Circuit’s deadlines to submit its Entry of Appearance, Certificate of Interest, and Docketing Statement. *See Neister v. Eden Park Illumination, Inc. et al.*, C.A. No. 24-1374,

D.I. 18 (Fed. Cir. Feb. 9, 2024) (“Notice to Appellant S. Edward Neister: The record of this case indicates that no Entry of Appearance under FCR 47.3(b), Certificate of Interest under FCR 47.4, and Docketing Statement under FCR 47.6 has been filed. Failure to file required documents may result in dismissal or other action as deemed appropriate by the court.”); *Neister v. Eden Park Illumination, Inc. et al.*, C.A. No. 24-1317, D.I. 15 (Fed. Cir. Feb. 15, 2024) (same). Patent Owner’s failure to appear in these appeals indicates to Petitioners that Patent Owner does not intend to further challenges the findings of unpatentability made by the Board in these related proceedings.

Here, given that Patent Owner has not raised **any** arguments challenging the Petition’s evidence and analysis in this IPR proceeding, this Reply does not address or raise any substantive arguments. *See also* Paper 17, 9 (“Patent Owner is cautioned that any arguments not raised in the response may be deemed waived.”).

On this record, in view of the Petition’s substantial—**and undisputed**—evidence, Petitioners respectfully request that the Board issue a Final Written Decision finding the Challenged Claims unpatentable.

Respectfully submitted,

Date: March 5, 2024

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CERTIFICATION UNDER 37 CFR § 42.24

Under the provisions of 37 CFR § 42.24(d), the undersigned hereby certifies that the word count for the foregoing Petitioners' Reply totals 656 words, which is less than the 5,600 allowed under § 42.24(c)(1).

Respectfully submitted,

Date: March 5, 2024

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CERTIFICATE OF SERVICE

Pursuant to 37 CFR § 42.6(e)(4), the undersigned certifies that on March 5, 2024, a complete and entire copy of this Petitioners' Reply were provided via email, to the Patent Owner by serving the email correspondence addresses of record as follows:

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