

## TC 2.9 Standards Committee – Larry Fletcher – Chair 1-30-25

### Relevant UV standards, test methods and guidelines

Standard	Description
ANSI 2000:2023	HSI whole room surface disinfection Healthcare
ASTM-WK81750	Standard method of test for evaluating emissions of byproducts of greatest health concern (ozone, formaldehyde, and ultrafine particles) created by portable air cleaners when indoor-relevant levels of challenge compounds are present. (NIST)
California SB1308	Ozone Safe Air Cleaners (no air cleaners that emit over 5 ppb O3 includes UV systems)
CSA C22.2 No. 60335-2-27	Household and similar electrical appliances - Safety - Part 2- 27: Particular requirements for appliances for skin exposure to optical radiation
IES-LM94	Low pressure lamp irradiance measurement
ANSI/AHAM AC-5-2022	Method for Assessing the Reduction Rate of Key Bioaerosols by Portable Air Cleaners Using an Aerobiology Test Chamber
ANSI/IES LM-78	Total Luminous Flux Measurement of Lamps using an Integrating Sphere Photometer
ANSI/IES LM-92	Optical and Electrical Measurement of Ultraviolet LEDs
ANSI/IES LM-93	Optical And Electrical Measurements of Far UV-C Excimer Sources
ANSI/IES RP-27	Recommended Practice for Photobiological Safety for Lamps and Lamp Systems-Measurement Techniques
ANSI/IES RP-44	Recommended Practice: Ultraviolet Germicidal Irradiation (UVGI)
ASHRAE 185.1	Method of Testing UV-C Lights for Use in Air-Handling Units or Air Ducts to Inactivate Airborne Microorganisms
ASHRAE 185.2	Method of Testing Ultraviolet Lamps for Use in HVAC&R Units or Air Ducts to Inactivate Microorganisms on Irradiated Surfaces
ASHRAE 185.3	Method of Testing In-Room Devices and Systems for Micro- organism Removal or Inactivation in a Chamber
ASHRAE 185.4	Method of Testing In-Room Ultraviolet Devices and Systems for Microbial Inactivation on Surfaces in a Test Room
ASHRAE 241	Control Of Infectious Aerosols
ASTM 3135-18	Standard Practice for Determining Antimicrobial Efficacy of Ultraviolet Germicidal Irradiation Against Microorganisms on Carriers with Simulated Soil

CSA C22.2 No. 187:20	Electrostatic air cleaners - Used by CARB for all in-duct air cleaners
GPC 37P	Guidelines for the Application of Upper-Air (Upper Room) Ultraviolet Germicidal (UV-C) Devices to Control the Transmission of Airborne Pathogens
IEC 62471-6	Photobiological Safety of Lamps And Lamp Systems - Part 6: Ultraviolet Lamp Products
IES LM-79	Optical and Electrical Measurements of Solid-State Lighting Products
IES LM-80	Measuring Luminous Flux and Color Maintenance of LED Packages, Arrays, And Modules
IES LM-90	Measuring Luminous Flux Waveforms for Use in Temporal Light Artifact (TLA) Calculations
ISO 15714	Method of evaluating the UV dose to airborne microorganisms transiting in-duct ultraviolet germicidal irradiation devices
ISO 15752-20	UV-C devices -- Measurement of the output of a UV-C lamp
ISO 15858	UV-C Devices: Safety Information
ISO/AWI 17597	Test Method for Measuring in-duct Airborne Microorganisms Inactivation Effectiveness (AMIE) (UNDER DEVELOPMENT) ISO/TC 142
UL 153	Standard for Portable Electric Luminaires
UL 1598	Luminaires
UL 1995	Heating and Cooling Equipment
UL 2998	Environmental Claim Validation Procedure (ECVP) for Zero Ozone Emissions from Air Cleaners
UL 60335-2-19	Outline of Investigation for Robotic Germicidal Equipment
UL 60335-2-40	Household and Similar Electrical Appliances - Safety - Part 2-40: Particular Requirements for Electrical Heat Pumps, Air-Conditioners and Dehumidifiers <u>manufacturers</u>
UL 61010-10	Safety Requirements for Electrical Equipment (healthcare and lab settings)
UL 867	Electrostatic Air Cleaners - New proposed changes that would require UV stability testing on materials exposed to UV
UL 8802	Outline of Investigation for UV Germicidal Equipment and Systems, now requiring skin exposure limits
UL 8803	Outline of Investigation for Portable UV Germicidal Equipment with Uncontained UV Sources