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**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 19258.3-2026

**Ultraviolet radiation sources for germicidal purposes - Part 3:
Excimer ultraviolet radiation sources**

杀菌用紫外辐射源 第3部分：准分子紫外辐射源

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5 Technical Requirements

5.1 Safety Requirements The safety of radiation sources should comply with the requirements of GB/T 47714.

5.2 External Dimensions The external dimensions of the radiation source should conform to the manufacturer's specifications.

5.3 Startup Features The radiation source should have good start-up characteristics, the peak start-up voltage should meet the requirements of the manufacturer's specifications, and the start-up time should not exceed 3 seconds.

5.4 Power The measured power of the radiation source connected to the matching control device should not exceed $\pm 10\%$ of the rated power.

5.5 Ultraviolet Irradiance The ultraviolet irradiance of the radiation source should not be less than 90% of the value specified in Table 1.

5.6 Ultraviolet irradiance maintenance rate and lifetime The maintenance rate of ultraviolet irradiance for 2000 hours should not be less than 80%, and the average lifetime of the radiation source should not be less than 5000 hours.

5.7 Clutter Ratio The clutter ratio of modular radiation sources should be less than 3%.

6 Test Methods

6.1 General conditions for the experiment Unless otherwise specified, the test conditions shall comply with the requirements of 4.1.1,

4.1.3 and below in GB/T 43817-2024. When a matching control device is required for testing, the radiation source should be powered by a power supply or a dedicated power source under the condition of connecting the matching control device. The device is directly powered, and the output voltage, current or power of the power supply or special device should be stable within $(100 \pm 0.2)\%$ of the rated value. The matching control device used in the test should be specified by the manufacturer or client of the radiation source. The

matching control device used in the test should be included in the measurement report. illustrate. When measuring, an ultraviolet radiation lux meter calibrated by a nationally recognized metrology department should be used, and the accuracy of the measuring instrument used should not be lower than that of the standard.

0.5 class (for electrostatic high voltage meters, the class should be no lower than 1.5). The UV probe response of the UV radiometer should be within the UV-C band (including...). (222nm). The cosine characteristics and nonlinear error of the ultraviolet detector should meet the standard requirements described in JJG879-2015.

6.2 External Dimensions The external dimensions of the radiation source are measured using measuring instruments with an accuracy of not less than 0.05 mm.

6.3 Startup Features Connect the radiation source to the matching control device, turn on the power, and use a timing device to record the time required for the radiation source to fully start up and remain operational.

6.4 Power Connect the radiation source to the matching control device, turn on the power, and use a power meter to measure the radiation.

6.5 Ultraviolet Irradiance The control device for connecting the radiation source shall be tested according to GB/T 43817. During measurement, the probe shall be directly facing the center of the radiation source, and the probe shall be in contact with the radiation source. The source distance is 1000mm.

6.6 Ultraviolet irradiance maintenance rate and lifetime The radiation source was ignited according to the specified time and the duration was recorded. In the ultraviolet irradiance maintenance rate test, the irradiance was measured at 2000 hours according to the method specified in GB/T 43817. Measure the ultraviolet irradiance and calculate the ultraviolet irradiance maintenance rate. Radiation sources damaged by accidental mechanical failure or ignition failure should not be included in the calculation at the test results. Within the ignition point life test, the power supply should be turned off twice per day, for no less than 1 hour each time. The time the power supply is turned off is not included in the ignition point life. The lifespan of a single radiation source is calculated as the cumulative lifespan from ignition point to "burnout" or when the ultraviolet radiation maintenance rate drops to the value specified in this document. The time calculation assumes that the average lifespan is based on the ultraviolet radiation maintenance rate of n ($n \geq 10$) radiation sources meeting the requirements of this document and continuing to burn until 50% is achieved. The calculation of the time it takes for a radiation source to reach the lifetime of a single radiation source.

6.7 Clutter Ratio After measuring the ultraviolet radiation power according to the method specified in GB/T 43817, calculate the clutter ratio according to formula (1).

6.8 Mark Inspection The correctness and clarity of the radiation source markings are checked visually. The durability of the markings is checked by wiping them with a damp cloth for 15 seconds, allowing them to dry, and then... Wipe with a cloth soaked in hexane for 15 seconds. After the test, the mark should still be clearly visible.

7 Inspection Rules

7.1 Producers shall conduct delivery inspection and type inspection on the products they produce.

7.2 The radiation sources for acceptance inspection shall be uniformly sampled from the same model of radiation sources produced in each shift. Acceptance inspection shall be conducted in accordance with GB/T 2828.1. The inspection items, sampling plan, inspection level and acceptance quality limit shall be implemented in accordance with the provisions of Table 2.

7.3 Radiation sources for type testing shall be uniformly sampled from radiation sources that have passed acceptance testing, at least once a year. Whenever production is suspended for half a year... Type testing should be conducted when the radiation source has been used for more than one year, or when the design, process, or materials of the radiation source are changed or may affect the performance of the radiation source. Type testing shall be conducted according to the single sampling plan of discrimination level I in GB/T 2829, including the test items, nonconforming quality level, and sample size. The quantity and non-conformity judgment array shall be determined in accordance with the provisions of Table 3. If the type test fails, production and acceptance should be stopped until a new type test is passed before production and acceptance can be resumed.

8 Markings and Packaging

8.1 General requirements for marking The markings on radiation sources should meet the requirements of Table 4 and should be clear and secure. Packaging/instructions and product catalogs should be marked with the corresponding information as required in Table 4.

8.2 Packaging Requirements Radiation sources should be individually packaged, and each package should have a certificate of conformity or a stamp of conformity, and then be packed together in a box. The number of radiation sources inside the box should be marked on the packaging box. The packaging box should contain a product certificate or a certificate of conformity stamp, and the inspection date should be affixed. The packaging should be safe and reliable.