

ICS 17.180
CCS A 60

JJG

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

JJG 755-2015

Replacing JJG 755-1991

**Ultraviolet Irradiance Working Standard Apparatus
(English Translation)**

Issued on: December 7, 2015

Implemented on: June 7, 2016

**Issued by: General Administration of Quality Supervision, Inspection and
Quarantine**

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Introduction

JJF1001 "General Metrology Terms and Definitions", JJF1032 "Terminology and Definitions of Optical Radiometry" JJF1059.1 "Measurement Uncertainty Assessment and Representation" and JJF1002 "National Metrological Verification Rules" Constitute the basic norms that support the revision of this Code.

Compared with JJG 755-1991, in addition to editorial changes, the main technical changes are as follows.

--- Remove the "SUV-1" in the new procedure, change the UV radiation illuminometer to "working reference UV radiation illuminometer" (See 3);

- on the basis of preserving the four bands of the original procedure (the UVB band of the original procedure is named in this procedure UV-310, UVA2 band named UV-365, UVC band named UV-254), the new International Lighting Commission the three bands proposed by CIE are. UV-A, UV-B and UV-C (see 4.1);

--- Modification of the composition of the UV spectrum radiation illumination comparison device structure diagram (see 6.1.1.3 image 3);

--- change the UV radiation intensity of the work of the reference device annual change rate, the working standard UV radiation illuminator zero Value error, long wave response error, cosine characteristic (directional response) error, nonlinear error, shift error, fatigue Error, relative indication error and other technical indicators (see 4.2 ~ 4.9) and the test method (see 6.3.3 ~ 6.3.10);

- An example of measurement uncertainty assessment has been modified (see Appendix C).

The previous release of this order is.

--- JJG 755-1991.

Verification procedure for the reference device of ultraviolet radiation

1 Scope

This procedure applies to the first test of the UV radiation exposure reference device, subsequent verification and inspection.

2 reference file

This procedure refers to the following documents.

JJG 384 Spectral Radiance Illumination Standard Lamp for dated references, only the dated edition applies to this specification; references that are not dated, The latest version (including all modifications) applies to this specification.

3 Overview

International Council on Illumination CIE will be ultraviolet radiation is divided into UV-A (315nm ~ 400nm), UV-B (280nm ~ 315nm) and UV-C (100nm ~ 280nm) three bands. Due to 100nm ~ 200nm UV radiation is strongly absorbed in the air, so for the UV-C band, this procedure only consider. 200nm ~ 280nm Wavelength range.

UV Radiation Illumination Work Benchmark Each band consists of three working reference UV radiation illuminometers. jobs the standard UV radiation illuminance meter is the transmission of UV-A, UV-B, UV-C, UV-A1, UV-365, UV-UV-254 and other wavelengths of ultraviolet radiation standard value of the standard instruments, mainly by the detector, amplifier circuit and display instruments composition. Where the detector is typically composed of a photodetector, a filter (band-pass glass or interference filter), and a diffuser group to make. Figure 1 is a schematic diagram of the general composition of the operating reference UV radiation illuminometer detector, whose magnitude is measured by spectral Radiometric comparison of alternative methods Trace to spectral radiance Illumination national benchmarks.

Figure 1 Schematic diagram of the general composition of the working reference ultraviolet radiation illuminance detector

4 Measurement performance requirements

4.1 Spectral response and band division of the device UV-A band. 315nm ~ 400nm, peak wavelength $\lambda_{\text{peak}} = 365\text{nm} \pm 5\text{nm}$ UV-B band. 280nm ~ 315nm, peak wavelength $\lambda_{\text{peak}} = 297\text{nm} \pm 5\text{nm}$ UV-C band..200nm ~ 280nm, peak wavelength $\lambda_{\text{peak}} = 254\text{nm} \pm 5\text{nm}$ UV-A1 band. 320nm ~ 390nm, peak wavelength $\lambda_{\text{peak}} = 365\text{nm} \pm 5\text{nm}$ UV-365 band. peak wavelength $\lambda_{\text{peak}} = 365\text{nm} \pm 2\text{nm}$, peak half height width $\Delta\lambda \leq 10\text{nm}$