

RS-12 Calibration Light Source

PRODUCT SUMMARY

The RS-12 is an NIST-traceable calibration light source. The RS-12 can be used as a white light standard of spectral radiance or luminance. The insertion of the filter/aperture assembly transforms the unit into an NVIS display simulation source approximating a green cockpit display with a designed level of near-infrared output against which a spectroradiometer or radiometer can be calibrated. The reduction of near infrared output from the tungsten-halogen lamp reduces the effects of stray light within the monochromator portion of a spectroradiometer. The RS-12 has a three-inch exit diameter with uniformity of $\pm 3\%$.

Three calibrations and certificates are supplied with the RS-12. First, a white light source calibration is performed from 380 to 1100 nm. Nominal luminance output is 700 footlamberts. Correlated color temperature is set at $2856\text{ K} \pm 25\text{ K}$. The second calibration is with the filter inserted with nominal luminance output of 45 footlamberts. The third calibration is with the filter and aperture. Nominal output is 1 footlambert and 10^{-10} AR (ANVIS Radiance).

Certificates consist of color analysis, tristimulus values, chromaticity coordinates, color space parameters and five luminance values.

Please contact Gamma Scientific for additional information on the other Gamma light measurement or standard lamp systems. In addition to our standard products, we offer a variety of special instrumentation and design services to meet your application requirements



FEATURES

- *Standard of spectral radiance and luminance*
- *RS-12B white light standard without NVIS requirements*
- *Correlated color temperature of $2856\text{ K} \pm 25\text{ K}$*
- *3-inch diffuse exit diameter with $\pm 3\%$ uniformity*
- *ANVIS Output with 10^{-10} AR*
- *NIST traceable*



GAMMA SCIENTIFIC

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SPECIFICATIONS

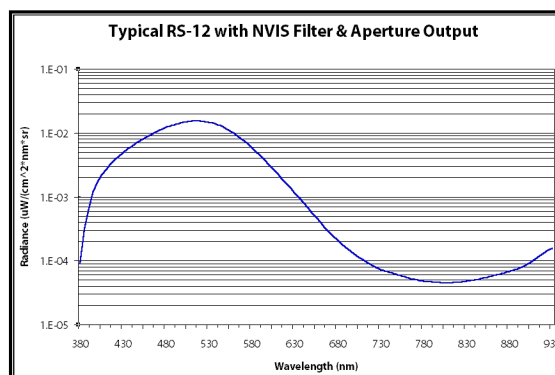
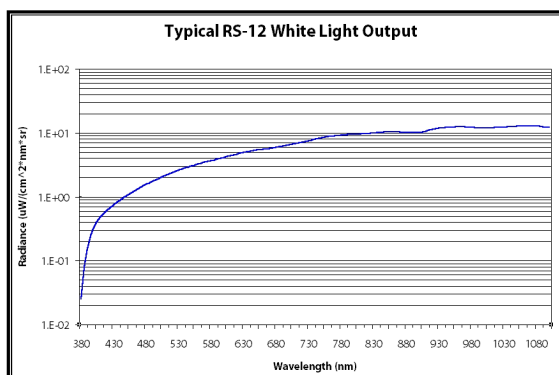
RS-12 Spectral Irradiance Head

Calibrated Wavelength Range:	380-1100 nm
Data Interval:	5 nm
Output, Nominal	Radiance of Diffuser $2.5 \times 10^{-8} \text{ W}/(\text{cm}^2 \cdot \text{nm} \cdot \text{sr})$ at 380 nm $3.0 \times 10^{-6} \text{ W}/(\text{cm}^2 \cdot \text{nm} \cdot \text{sr})$ at 550 nm $9.5 \times 10^{-6} \text{ W}/(\text{cm}^2 \cdot \text{nm} \cdot \text{sr})$ at 800 nm $1.2 \times 10^{-5} \text{ W}/(\text{cm}^2 \cdot \text{nm} \cdot \text{sr})$ at 1100 nm Luminance of Diffuser $2398 \text{ cd}/\text{m}^2$ $700 \text{ fL}(\text{cd}/\text{ft}^2)$ Luminance with ANVIS Filter $488 \text{ cd}/\text{m}^2$ $140 \text{ fL}(\text{cd}/\text{ft}^2)$ Luminance with ANVIS Filter and Low Level Aperture $6.6 \text{ cd}/\text{m}^2$ $1.9 \text{ fL}(\text{cd}/\text{ft}^2)$ NVIS "A" Radiance with ANVIS Filter and Low Level Aperture $450 \times 10^{-10} \text{ NVIS "A" Radiance}$
Correlated Color Temperature:	2856±25K
Uniformity of Diffuser:	±3% over 65 mm
Output Uncertainty With Respect to NIST Standards of Irradiance:	±2.5%
Size:	Height: 203 mm (8.0 in) Length: 197 mm (7.8 in) Width: 216 mm (8.5 in) Weight: 2.8 kg (6.25 lb)

RS-3 Lamp Monitor and Control

Regular Type	Constant current
Measurement Technique	Poggendorf comparison method
Meter	Null type (zero center)
Output Current	4A maximum
Current Accuracy, Long Term	Better than .05%
Stability	Better than .02%
Temperature Drift	Less than ± .25% / 10°C
Temperature Range	15°C to 35°C
Humidity	10% - 85% non-condensing
Regulation	Less than ± .02% change for 10-volt line change
Thermal drift After 8 Minute Warmup	Less than 0.01%
Current Ramp On/Off Time	Approximately 30 seconds
Power	90 watts maximum
Line Voltage	105/125 VAC and 210/250 VAC, 50-60 Hz
Size	Length: 368 mm (14.5 in) Width: 218 mm (8.6 in) Height: 152 mm (6 in) Weight: 5 kg (11 lbs)

Typical RS-12 Spectral Power Distributions



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