

# RS-10D Uniform Light Source

## PRODUCT SUMMARY

Gamma Scientific's RS-10D uniform light source is a precision source of radiant flux, used primarily to calibrate light measuring instrumentation and as stimuli to measure detection devices.

Conservative design and rigid quality standards make Gamma Scientific sources the ones by which others are judged. These sources may be used as standards of irradiance or radiance, traceable to the National Institute of Standards Technology (NIST).

To maintain almost constant radiant flux output, tungsten halogen lamps are used exclusively. To power the sources, ultra-stable constant-current supplies utilize precision shunt current measurement and comparison circuits built into the source housing.

When used with its RS-70-X accessories, the RS-10D light source can be an absolute reference for producing standard outputs in luminance units of footlamberts, lamberts, candelas/m<sup>2</sup>, horizontal candlepower (candelas), and spectral radiance units of microwatts/cm<sup>2</sup> \* nm \* steradian or illuminance units of lumens, footcandles, lumens/m<sup>2</sup> (lux), and spectral irradiance units of microwatts/(cm<sup>2</sup> \* nm) or Watts/(m<sup>2</sup> \* nm) at a given distance.

With special filters and attenuators, different color temperatures, spectral outputs and intensities can be generated. Calibrations in photometric and/or spectroradiometric units are supplied and are traceable to NIST.



### FEATURES

- *NIST-traceable*
- *Built-In timer showing elapsed time*
- *200-hour calibration/1 year*
- *Calibrate spectroradiometers, radiometers and photometers*
- *Calibrate detector responsivity*
- *Measure reflectance and transmittance*
- *Tungsten halogen lamps for stable output*
- *Calibration reports in units of luminance, radiance, illuminance, and irradiance*

### APPLICATIONS

- *RS-70-1 Filter holder*
- *RS-70-2 Diffuser (radiance standard)*
- *RS-70-3 narrow band filters*
- *RS-70-4 Aperture*
- *RS-70-5 Reflectance plaque holder*
- *CRT Phosphor simulation filters*



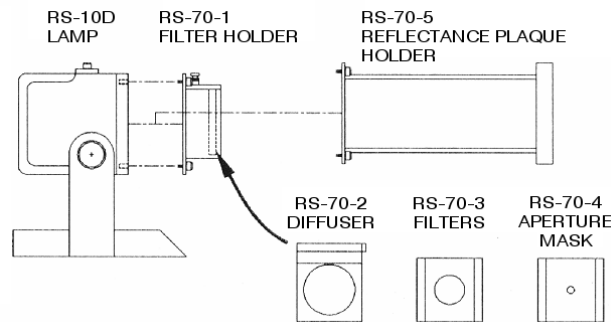
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# RS-10D Calibration Light Source

## SPECIFICATIONS



**RS-10D Spectral Irradiance Head**

<b>Calibrated Wavelength Range @ Data Interval</b>	300-1100 nm @ 10 nm
<b>Calibration Interval</b>	200 hr or 1 year
<b>Output, Nominal Irradiance at 25 cm</b>	W/cm <sup>2</sup> · nm 8.0 x 10 <sup>-9</sup> at 300 nm 7.5 x 10 <sup>-7</sup> at 550 nm 2.0 x 10 <sup>-6</sup> at 800 nm 2.2 x 10 <sup>-6</sup> at 1100 nm
<b>Output, Nominal Illuminance at 25 cm</b>	592 lm/m <sup>2</sup> (LUX) 55 lm/ft <sup>2</sup> (fc)
<b>Nominal Radiance with RS-70-2 Diffuser</b>	W/cm <sup>2</sup> · sr · nm 6.2 x 10 <sup>-9</sup> at 300 nm 1.0 x 10 <sup>-6</sup> at 550 nm 9.0 x 10 <sup>-6</sup> at 800 nm 6.5 x 10 <sup>-5</sup> at 1100 nm
<b>Nominal Luminance with RS-70-2 Diffuser</b>	850 cd/m <sup>2</sup> (250 fL)
<b>Correlated Color Temp.</b>	2856 ± 20K Reported to ± 7K
<b>Correlated Color Temp. with RS-70-2 Diffuser</b>	2575 ± 50K Reported to ± 7K
<b>Uniformity of Diffuser</b>	± 3% over 25 mm
<b>NIST Standards of Irradiance Output Uncertainty</b>	± 2.5%
<b>Uniformity of Exit Port</b>	± 0.75%
<b>Uniformity of Irradiance Plane Normal to Exit Port</b>	± 2% over 50 mm diameter at 25 cm
<b>Size</b>	Height: 203 mm (8.0 in) Length: 197 mm (7.8 in) Width: 175 mm (6.9 in) Weight: 2.8 kg (6.25 lbs)
<b>Regulator Type</b>	Constant Current
<b>Output Current</b>	4A Maximum
<b>Current Accuracy, Long Term</b>	Better than .05%
<b>Settability</b>	Better than .02%
<b>Temperature Drift</b>	Less than ± .25% / 10°C
<b>Temperature Range</b>	15°C to 35°C
<b>Humidity</b>	10% - 85% non-condensing
<b>Regulation</b>	Less than ± .02% change for 10 Volt line change
<b>Thermal drift After 8 Minute Warmup</b>	Less than .01%
<b>Current Ramp On/Off Time</b>	Approximately 30 seconds
<b>Power</b>	30 Watts Maximum
<b>Line Voltage</b>	100-240VAC, 50-60 Hz



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