

# USS-800S Stepped Uniform Source Systems

Exceptional uniform radiance for the test and calibration of imaging and non-imaging devices



## Accurate

The USS-800S Systems are sensor calibration systems designed to provide stepped exceptional luminance output values of 70500, 31000 or 3000 cd/m<sup>2</sup> depending on the system configuration, for imaging and non-imaging systems. A built-in photopic response photodetector monitors the source luminance. Each system provides calibrations that are traceable to the National Institute of Standards and Technology (NIST).

The USS-800S Systems feature an 8 inch diameter integrating sphere with a 2 inch exit port suitable for portable imaging systems and arrays. The sphere is coated with highly reflective Spectrafect<sup>®</sup> coated interior that provides a better than 98% uniformity. Both durable and highly stable over time, Spectrafect coating ensures the consistent integration of light over the lifetime of your sphere.

## Flexible design

The USS-800S Systems yield high returns on investment by facilitating system modifications, upgrades and enhancements. A broad choice of light sources allow users to swap lamps in order to choose the appropriate configuration to meet their radiance performance requirement. Spectrafect coated port accessories allow users to reduce the port size of their sphere to match their applications.

## Features and reporting

- Stepped radiance output of 70500, 31000 or 3000 cd/m<sup>2</sup>
- Spectrafect interior provides >98% radiance uniformity
- Radiometric and photometric calibration reports
- NIST Traceable luminance calibration
- Backed by an ISO 9000:2001 registered quality management system

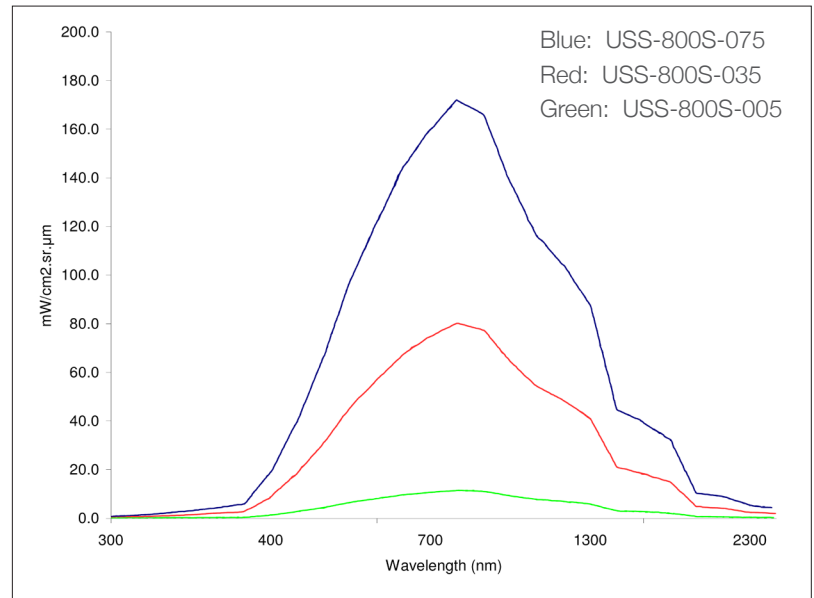
## Applications

- Ideal for calibrating:
  - Imaging radiometers
  - Telespectroradiometers
  - Small-area remote sensing devices
- Cameras
- Displays

## Easy to use

A durable port framed exit port allows for the repetitious mounting of devices under test. The USS-800 systems are operated through a control chassis that features a regulated DC constant current power supply and an SC 6000 radiometer/controller that provides accurate monitoring and control of the exit port luminance. Digital readout of the source output is displayed on an LCD display located on the front panel of the SC 6000. Ethernet ports are included for optional computer interface.

## Spectral Radiance Plot



## Ordering Information

### Model and Description

USS-800C 8 inch Continuous Uniform Source System

### USS-800C-035R

AS-02711-100

### USS-800C-075R

AS-02711-200

### Systems Include:

8 inch Uniform Source Sphere, USS-800-SF  
 External Halogen Lamp Supply, EHLS-100-35R, 75R  
 Preset Power Supply, LPS-100-0307, 0625  
 Photopic Detector, SDA-050-P-RTA-CX  
 Variable Attenuator, VA-100-MIC  
 Radiometer/Photometer, SC 6000  
 Luminance Calibration, SCC-LU

AS-02465-000  
 AS-02630-035  
 AS-02600-307  
 AS-02522-301  
 AS-02455-000  
 AS-02702-000  
 SCC-LU

AS-02465-000  
 AS-02630-075  
 AS-02600-625  
 AS-02522-301  
 AS-02455-000  
 AS-02702-000  
 SCC-LU

### Model and Description

USS-800S 8 inch Stepped Uniform Source System

### USS-800S-005

AS-02710-100

### USS-800S-035

AS-02710-200

### USS-800S-075

AS-02710-300

### System Includes:

8 inch Uniform Source Sphere, USS-800-SF  
 Internal Halogen Lamp Supply, IHLS-100-005, 035, 075  
 Preset Power Supply, LPS-100-0042, 0307, 0625  
 Photopic Detector, SDA-050-P-RTA-CX  
 Radiometer/Photometer, SC 6000  
 Luminance Calibration, SCC-LU

AS-02465-000  
 AS-02631-005  
 AS-02600-042  
 AS-02522-301  
 AS-02702-000  
 SCC-LU

AS-02465-000  
 AS-02631-035  
 AS-02600-307  
 AS-02522-301  
 AS-02702-000  
 SCC-LU

AS-02465-000  
 AS-02631-075  
 AS-02600-625  
 AS-02522-301  
 AS-02702-000  
 SCC-LU

# System Properties and Performance

## System Specifications

|  | USS-800S-005 | USS-800S-035 | USS-800S-075 |
|--|--------------|--------------|--------------|
| Sphere Diameter:                                     | 8 in (20 cm) | 8 in (20 cm) | 8 in (20 cm) |
| Exit Port Diameter:                                  | 2 in (5 cm)  | 2 in (5 cm)  | 2 in (5 cm)  |
| Sphere Coating Reflectance:                          | 98%          | 98%          | 98%          |
| Luminance Range: (cd/m <sup>2</sup> )                | 3000         | 31000        | 70500        |
| Luminance Range: (ft-L)                              | 850          | 9200         | 20600        |
| Illuminance Range: (lux)                             | 9400         | 97000        | 220000       |
| Peak Radiance: (mW/cm <sup>2</sup> -sr-μm at 0.9 μm) | 11           | 77           | 166          |
| Luminance Uniformity*:                               | >98%         | >98%         | >98%         |

\* Applies at maximum radiance, uniformity may vary at lower radiance levels.

## Detector

|              | VI Filter Silicon Photodiode |
|--------------|------------------------------|
| Active Area: | 5.7 mm <sup>2</sup>          |
| Range:       | Visible                      |
| f1':         | 4%                           |
| Connector:   | BNC                          |

## Radiometer/Photometer

|                        | SC 6000                |
|------------------------|------------------------|
| Power Requirements:    | 110./220 VAC, 50/60 Hz |
| Current Dynamic Range: | 1 pA – 1 mA            |
| Voltage Dynamic Range: | 10 mVdc – 50 Vdc-      |
| Computer Interface:    | Ethernet               |

## Lamp Assemblies

|                    | IHLS-100-005 | IHLS-100-035 | IHLS-100-075 |
|--------------------|--------------|--------------|--------------|
| Power:             | Qty 1, 5 W   | Qty 1, 35 W  | Qty 1, 75 W  |
| Color Temperature: | 3000K        | 3000K        | 3000K        |

## Power Supplies

|                        | LPS-100-0042                                  | LPS-100-0307                                  | LPS-100-0625                                  |
|------------------------|---|---|---|
| Power Requirements:    | 110./220 VAC, 50/60 Hz                        | 110./220 VAC, 50/60 Hz                        | 110./220 VAC, 50/60 Hz                        |
| Current Stability:     | 0.42 A +/- 0.1%                               | 3.07 A +/- 0.1%                               | 6.25 A +/- 0.1%                               |
| Current Rise Time:     | 20 s  | 20 s  | 20 s  |
| Weight:                | 6.5 lbs (2.9 kg)                              | 6.5 lbs (2.9 kg)                              | 6.5 lbs (2.9 kg)                              |
| Dimension: (W x D x H) | 8.3 x 10.5 x 3.5 in<br>(21.1 x 26.7 x 8.9 cm) | 8.3 x 10.5 x 3.5 in<br>(21.1 x 26.7 x 8.9 cm) | 8.3 x 10.5 x 3.5 in<br>(21.1 x 26.7 x 8.9 cm) |
| Compliance:            | CE  | CE  | CE  |

## Recommended Computer Requirements

|                   |              |
|-------------------|--------------|
| Operating System: | XP Pro       |
| Drives:           | CD-ROM Drive |
| Ports:            | TCP/IP       |

## Optional Calibrations

|  |                      |
|--|----------------------|
| Standard Spectral Radiance Calibrations: | USC-SR (300-2400 nm) |
| Radiance Calibration:                    | SCC-RA               |
| Exit Port Luminance Uniformity Mapping:  | USC-PM               |
| Illuminance Calibration:                 | SCC-IL               |
| Custom Spectral Radiance Calibrations    | Optional             |