

# SPARC

## Source for Photometric And Radiometric Calibration

Simple Uniform Sources  
of Luminance and Radiance  
for test and calibration of imaging  
and non-imaging devices



### Speed and accuracy in a simple design

SPARC series of Uniform Source Systems are designed for flat fielding and calibrating cameras and sensors for photometric and radiometric responses from low to high light levels. SPARC yields high fidelity measurements while keeping the user experience simple and affordable with turnkey features and excellent dynamic range. A great all-around uniform source system for simple camera and sensor testing.

Spectralon®, a highly diffuse material inside the sphere, provides stable reflectance and repeatability over the lifetime of the system. The integrating sphere and control electronics are housed in a single enclosure for easy portability, and production ready features such as automation, and easy-to-use software interface with user defined and selectable light levels.

A 6 inch diameter integrating sphere with a 2 inch exit port, precision automated variable attenuator, and built in photopic response photodetector allows for continuous adjustability and good dynamic range up to 80,000 cd/m<sup>2</sup>.

The automated VA allows the user to quickly and accurately drive to a preset or selected luminance value. For cameras with wide angle FOV's, SPARC features our WAF (Wide Angle Field Of View) domes as optional items. A built in photopic response detector continuously monitors the source luminance. Each system comes with a uniformity mapping and National Institute of Standards and Technology (NIST) traceable spectral radiance and luminance calibrations.

### Types of test

- Luminance Responsivity
- Image Validation and Correction
- Uniformity
- Flat Fielding
- Variable CCT

### Ideal for calibrating

- CCD and CMOS cameras
- Small area remote sensing devices
- Electronic imaging devices
- Medical endoscopes
- Ambient light sensors
- Security cameras

# Specifications and Ordering Information

Model	SPARC-A06L	SPARC-A06F		
Part Number:	AA-01578-001	AA-01578-000		
<b>System Specifications</b>				
Sphere Diameter: (ID)	6 inch (5.3 inches)	6 inch		
Exit Port Diameter:	2 inch	2 inch		
Sphere Coating:	Spectralon®	Spectrafect®		
Estimated Uniformity*: Spatial (Angular 10°)	98% (95%)	98% (95%)		
Dimensions: (approximate)	39 cm x 32 cm x 30 cm (L x W x H)	39 cm x 32 cm x 30 cm (L x W x H)		
Weight: (approximate)	14 Kg	14 Kg		
<b>Estimated QTH Performance*</b>				
Approximate Correlated Color Temperature: CCT	2856K +/- 50K	3000K +/- 50K	2856K +/- 50K	3000K +/- 50K
Expected Maximum Illuminance at Port: Lux (ft-cd)	126,000 (11,700)	204,300 (18,980)	92,700 (8,610)	150,000 (13,930)
Expected Maximum Luminance Output: cd/m <sup>2</sup> (fL)	40,000 (12,000)	65,000 (19,000)	40,000 (8,000)	48,000 (13,500)
Peak Radiance: W/m <sup>2</sup> sr um @0.95um	1,440	1,980	990	1,350
Typical Lamp Lifetime: hrs	>500		>500	
<b>System Components</b>				
External QTH Lamp:	Yes		Yes	
Monitor Detector:	SD-S1, Silicon		SD-S1, Silicon	
Detector Filter:	Photopic		Photopic	
System Software:	Yes		Yes	
<b>Automated Variable Attenuator*</b>				
Number of Steps in Attenuator Range:	1.20E+04		1.20E+04	
Dynamic Range/Bits/dB - Full Range of System:	4.85E+04/15/93		4.85E+04/15/93	
<b>Standard System Calibrations (NIST traceable)</b>				
Luminance:	Yes		Yes	
Correlated Color Temp: (All lamps matched & w/VA position)	Yes		Yes	
QTH Spectral Radiance: (350 - 2400 nm)	Yes		Yes	
Exit Port Spatial Uniformity:	Yes		Yes	
Exit Port Angular Uniformity:	Yes		Yes	
Recommended Re-Lamp and Calibration: (QTH)	Annually		Annually	

## Optional Accessories

- 1.5 inch port reducer - This option will increase system luminance levels.
- WAF dome for wide angle field of view cameras

\* Preliminary specifications subject to change pending testing.