

HELIOS® Plus-AMA A Family Blue Sun Source

Albedo Sunlight Levels and Halogen Spectrums for Full Testing Solutions

Great solution for “Test As You Fly” applications

Accurate calibration and characterization of hyperspectral and multispectral cameras and sensors of demands real-world conditions — yet, historically, identifying a consistent calibration source with sufficient blue spectrum has proven difficult —until now.

The HELIOS® Plus-AMA, A-Family systems represent the pinnacle of uniform source technology. Designed specifically to achieve precise calibration and characterization of hyperspectral and multispectral sensors. This approach enables remote sensing devices to operate at their highest performance levels possible.

Blue Sun provides strong blue spectrum output with excellent temporal stability. Its smooth visible spectrum enables reliable long-term testing and minimizes spectral mismatch.

Highlights

- Ultra stable Solar-like spectrum
- Minimized spectral gradients
- Scalable for size and dynamic range
- Whisper quiet closed loop thermal control



Applications

- Hyperspectral Imager Calibration: IEEE 4001-2025 Ready
- Multispectral Imager Calibration
- Solar Projection Source
- Camera Flat- fielding
- Camera Response Calibration
- Ocean Color Measurements

Value

- Flexible for R&D and lab testing
- Includes Labsphere’s CDS series spectrometer corrected for spectral stray light
- Easy to configure
- Provides precise absolute characterization

Performance

- Test as you fly: Calibrated for 350 – 2400 nm solar and QTH spectrums
- Adjustable CCT and spectrum: 3000K–9000K
- Wide dynamic range: Albedo 0 (AM 0) to night vision, with flexible resolution and adjustability

Ordering Information and Specifications

Model Number:

USLR-A20F-BAN2-P

Part Number:

AA-01623-000

Optical Performance Specifications

UNIFORMITY (EACH LAMP OR COMBINED)

Spatial Luminance Uniformity over Exit Port (f/4) - All Lamps On:

+/-1.0%

Angular Uniform FOV (Full Angle) - Degrees / F# / NA - All Lamps On:

+/-2.0% - 35° / 0.85 / 0.6

QTH Only

Expected Luminance Output: cd/m²

3850

Expected Illuminance at Port: lux

12000

Est. Peak Radiance: W/m²-sr- μ m @ 0.95 μ m

100

Est. Peak Irradiance @ Port: Photons/s- m² - μ m @ 0.95 μ m

4.70E+20

Minimum Resolution: lux

1.20E-03

Approximate Correlated Color Temperature: (QTH) (K)

3000K \pm 50K

Typical Lamp Lifetimes: (hrs.)

>500

Warm Up Time: (minutes)

30

Est. Output Degradation over 50hrs: (% & CCT Shift)

-1.0% & \pm 20K

Est. Lamp Degradation Over Lifetime: (% & CCT Shift)

Better than -10% & \pm 200K

Blue Sun Only

Thermal Control Type:

Active TEC with Liquid Cooling

Expected Luminance Output: cd/m²

19000

Expected Illuminance at Port: lux

62500

Est. Peak Radiance: W/m²-sr- μ m @ 0.425 μ m

500

Minimum Resolution: lux

6.25E-03

Approximate Correlated Color Temperature: Blue Sun (K)

7800K \pm 400K

Typical Lamp Lifetimes: (hrs.)

>10000 hrs.

Warm Up Time: (minutes)

5

Output Stability: (3 hours) (%)

< \pm 0.025%

Est. Lamp Degradation Over Lifetime: (% & CCT Shift)

Better than L90 (-10%) & \pm 1000K

Blue Sun & QTH (Both Full Open VA)

Expected Luminance Output: (cd/m²)

23500

Expected Illuminance at Port: (lux)

75000

Est. Peak Radiance: (W/m²-sr- μ m)

500 @ 0.425 μ m

Approximate Correlated Color Temperature: (Blue Sun & QTH)

3000K - 7800K \pm 100K (Range by blending of both sources)

Attenuators

Type:

VAA (QTH) and VAA-Black (Blue Sun)

Number of Steps in Attenuator Range:

2.00E+06

Dynamic Range: (Steps/Bits/dB - Full Range of System) (both lamps)

4.41E+07/25/76

Integrating Sphere

Coating / Material:

Spectrafect®

Sphere Internal Diameter: (Inches (Meters))

20 (0.5)

Frame Type:

20 inch 80/20 cage

Output Port Size: (Inches (Meters))

8 (0.2032)



System Components

QTH Lamps Internal: (# - Wattage)	NA
QTH Lamps External: (# - Wattage)	1 - 150W
Blue Sun Configuration:	1 - Blue Sun VAA MC
Power Supplies: (# - Model)	Multiple or Multichannel LPS
Variable Attenuators: (# - Model)	2 - VAA-220A, VAA-220B
Monitor Detector(s):	SD-S1
Detector Filters: (in Filter Holder)	Photopic
System Software:	HELIOsense
Spectral Radiance Monitor: (Type, Calibration Spectral Range)	CDS-800, 350 - 1000 nm

Standard System Calibration (NIST Traceable)

Luminance:	Yes
Correlated Color Temp: (All lamps matched & w/VA position)	Yes
QTH Only Spectral Radiance: (350-2400nm)	Yes
Blue Sun Only Spectral Radiance: (350-2400nm)	Yes
QTH & Blue Sun Spectral Radiance: (350-2400nm) & CDS	Yes
Exit Port Spatial Uniformity:	Yes
Exit Port Angular Uniformity:	Yes
Operational Duration of Calibration: (Blue Sun/QTH)	NA / 50 hrs.

