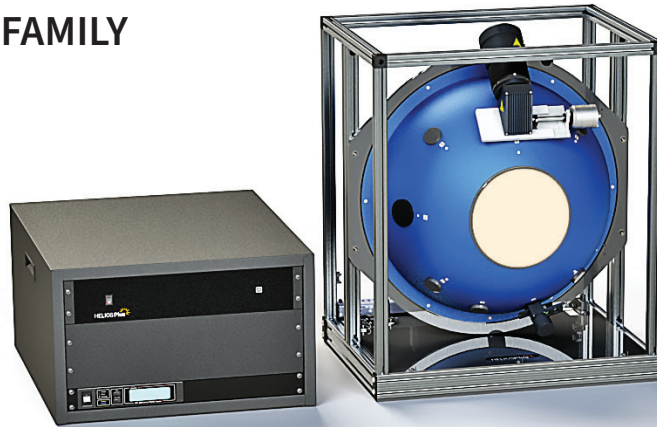


HELIOS[®] Plus

Variable Output Systems for Basic Testing Needs

HELIOSPlus-VM V FAMILY



Dynamic manual systems with variable levels

The HELIOSPlus-VM, V Family systems are simple yet complete turn-key systems with excellent dynamic range. A single lamp, manual attenuator and detector give you ability to completely characterize your sensor/imager over its full dynamic range. The V Family is based on the same components as the more advanced D, A and L family systems allowing for easy upgrades as your test needs expand. The V Family systems are robust foundation for starting your testing lab.

Value:

- Great all-round source system for simple sensor testing
- Straight-forward operation with high performance
- High level of absolute characterization
- Spare ports and future upgrade capability
- Easy to upgrade to other system options or family configurations

Performance:

- 3000K QTH 250 - 2500 nm black-body like spectrums
- Good Dynamic Light Range:
 - >Albedo 1.5 (AM 1.5) down to moonlight levels
 - Cameras and sensors >14bit, actual 15bit (93dB)
 - Manual level control

V Family: Variable Modular

Model Number	USLR-V12F-NDNN-P	USLR-V08F-NDNN-P
Smart Part Number	V3ND-NNNN-NNSL-NS00-0000-P	V3ND-NNNN-NNSL-NS00-0000-P
OPTICAL PERFORMANCE SPECIFICATIONS		
Spatial Luminance Uniformity over Exit Port (f/4) - All Lamps On	+/-1%	+/-1%
Angular Uniform FOV (Full Angle) - Degrees / F# / NA - All Lamps On	+/-2.0% - 35° / 0.85 / 0.6	+/-2.0% - 35° / 0.85 / 0.6
Expected Luminance Output: cd/m ²	11,500	29,000
Expected Illuminance at Port: lux	36,000	91,000
Est. Peak Radiance: W/m ² -sr-um @ 0.95 um	350	760
Est. Peak Irradiance @ Port: Photons/s-m ² -um @ 0.95um	1.50E+21	3.60E+21
Minimum Resolution: lux	7.20E+01	1.82E+00
Number of Steps in System Range	1.00E+04	1.00E+04
Dynamic Range/Bits/dB	5.00E+04/15/93	5.00E+04/15/93
Approximate Correlated Color Temperature (QTH)	3000K +/-50K	3000K +/-50K
Typical Lamp Lifetimes (hrs)	>500	>500
Est. Lamp Degradation Over Lifetime (% & CCT Shift)	-10% & +/-200K	-10% & +/-200K
Est. Output Degradation over 50hrs (% & CCT Shift)	-1.0% & +/-20K	-1.0% & +/-20K
INTEGRATING SPHERE		
Coating / Material	Spectrafect®	Spectrafect
Sphere Internal Diameter: Inches (Centimeters)	12 (30)	8 (20)
Frame Type	12 in Cage	8 in Cage
Output Port Size: Inches (Centimeters)	4 (10)	2 (5)
SYSTEM COMPONENTS		
QTH Lamps Internal (# , Wattage)	None	None
QTH Lamps External (#, Wattage)	(1) 150	(1) 100
Power Supplies (# - Model)	(1) LPS-400	(1) LPS-400
Variable Attenuator	VA-012	VA-012
Monitor Detector(s)	SD-S1	SD-S1
Detector Filters (in Filter Holder)	Photopic	Photopic
System Software	HELIOsense	HELIOsense
STANDARD SYSTEM CALIBRATIONS (NIST Traceable)		
Luminance	Yes	Yes
Correlated Color Temp (All lamps matched & w/VA position)	Yes	Yes
Spectral Radiance (350-2400 nm)	Yes	Yes
Exit Port Spatial Uniformity	Yes	Yes
Exit Port Angular Uniformity	Yes	Yes
Operational Duration of Calibration	50 hrs	50 hrs

V Family: Variable Modular

Model Number	USLR-V20F-NMNN-P	USLR-V12F-NMNN-P	USLR-V08F-NMNN-P
Smart Part Number	V5NM-NNNN-NNSL-NS00-0000-P	V3NM-NNNN-NNSL-NS00-0000-P	V1NM-NNNN-NNSL-NS00-0000-P
OPTICAL PERFORMANCE SPECIFICATIONS			
Spatial Luminance Uniformity over Exit Port (f/4) - All Lamps On	+/-1%	+/-1%	+/-1%
Angular Uniform FOV (Full Angle) - Degrees / F# / NA - All Lamps On	+/-2.0% - 35° / 0.85 / 0.6	+/-2.0% - 35° / 0.85 / 0.6	+/-2.0% - 35° / 0.85 / 0.6
Expected Luminance Output: cd/m ²	3,800	11,500	29,000
Expected Illuminance at Port: lux	12,000	36,000	91,000
Est. Peak Radiance: W/m ² -sr-um @ 0.95 um	100	350	760
Est. Peak Irradiance @ Port: Photons/s-m ² -um @ 0.95um	4.70E+20	1.50E+21	3.60E+21
Minimum Resolution: lux	2.40E-01	7.20E-01	1.82E+00
Number of Steps in System Range	1.00E+04	1.00E+04	1.00E+04
Dynamic Range/Bits/dB	5.00E+04/15/93	5.00E+04/15/93	5.00E+04/15/93
Approximate Correlated Color Temperature (QTH)	3000K +/-50K	3000K +/-50K	3000K +/-50K
Typical Lamp Lifetimes (hrs)	>500	>500	>500
Est. Lamp Degradation Over Lifetime (% & CCT Shift)	-10% & +/-200K	-10% & +/-200K	-10% & +/-200K
Est. Output Degradation over 50hrs (% & CCT Shift)	-1.0% & +/-20K	-1.0% & +/-20K	-1.0% & +/-20K
INTEGRATING SPHERE			
Coating / Material	Spectrafect®	Spectrafect	Spectrafect
Sphere Internal Diameter: Inches (Meters)	20 (0.5)	12 (0.3)	8 (0.2)
Frame Type	20 in Cage	12 in Cage	8 in Cage
Output Port Size: Inches (Meters)	8 (0.2)	4 (0.1)	2 (0.05)
SYSTEM COMPONENTS			
QTH Lamps Internal (# , Wattage)	None	None	None
QTH Lamps External (#, Wattage)	(1) 150	(1) 150	(1) 100
Power Supplies (# - Model)	(1) LPS-350	(1) LPS-350	(1) LPS-350
Variable Attenuator	VA-MM	VA-MM	VA-MM
Monitor Detector(s)	SD-S1	SD-S1	SD-S1
Detector Filters (in Filter Holder)	Photopic	Photopic	Photopic
System Software	HELIOSense	HELIOSense	HELIOSense
STANDARD SYSTEM CALIBRATIONS (NIST Traceable)			
Luminance	Yes	Yes	Yes
Correlated Color Temp (All lamps matched & w/VA position)	Yes	Yes	Yes
Spectral Radiance (350-2400 nm)	Yes	Yes	Yes
Exit Port Spatial Uniformity	Yes	Yes	Yes
Exit Port Angular Uniformity	Yes	Yes	Yes
Operational Duration of Calibration	50 hrs	50 hrs	50 hrs