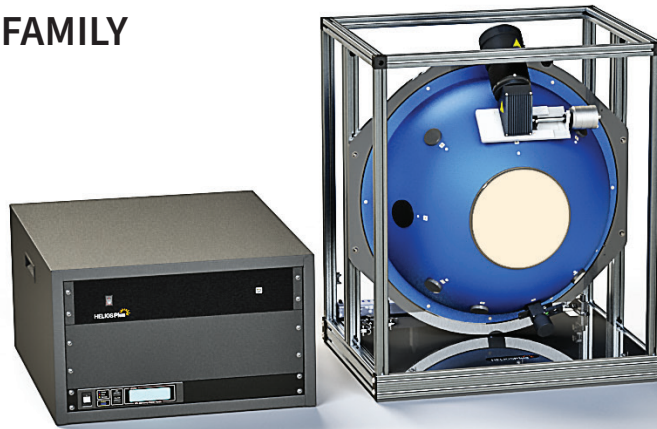# HELIOS®Plus
Variable Output Systems for Basic Testing Needs

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 Smart Part Number	USLR-V12F-NMNN-P V3NM-NNNN-NNSL-NS00-0000-P	USLR-V12F-NDNN-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/m2	11,500	11,500
Expected Illuminance at Port: lux	36,000	36,000
Est. Peak Radiance: W/m2-sr-um @ 0.95 um	350	350
Est. Peak Irradiance @ Port: Photons/s-m2-um @ 0.95 um	1.50E+21	1.50E+21
Minimum Resolution: lux	1.64E-01	3.00E+00
Number of Steps in System Range	1.00E+04	1.20E+04
Dynamic Range/Bits/dB	5.00E+4/16/93	1.20E+04/14/81
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	Spectraflect	Spectraflect
Sphere Internal Diameter: Inches (Meters)	12 (0.3)	12 (0.3)
Frame Type	12 in Cage	12 in Cage
Output Port Size: Inches (Meters)	4 (0.1)	4 (0.1)
SYSTEM COMPONENTS		
QTH Lamps Internal (# , Wattage)	None	None
QTH Lamps External (#, Wattage)	(1) 150	(1) 150
Power Supplies (# - Model)	(1) LPS-350	(1) LPS-350
Variable Attenuator	VA-MM	VAD-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

Labsphere