

Unparalleled Characterization and Calibration



The concept of HELIOS Uniform Luminance & Radiance Systems is to provide a whole new level of knowledge about the radiometric performance of each system. Our calibration laboratories have been designed to ensure fast, repeatable, COMPLETE testing of each system with industry-leading uncertainty.

HELIOS calibrations first start by matching CCTs on the lamps as closely as possible. Then multiple spectral radiance measurements are done for each lamp and for several levels of operation over the dynamic range of the system. Data from the detector, or multiple detectors or spectrometers are gather during each measurement. Each HELIOS system is then measured again for spatial and angular uniformity on each lamp, multiple lamps and over several levels of operation. This extensive and unique level of product characterization gives Labsphere the ability to establish a full operational checkout and ensure performance across multiple systems, multiple system batches and establish understood and repeatable product norms.

In addition to our innovative testing systems, we also offer optional additional services on our core double-monochromator based system for world-class uncertainty. This system also provides us with a foundation for HELIOS testing system speed and accuracy.

Our goal is to provide you the testing data, product consistency and highest level of performance and uncertainty on every HELIOS product that current technology allows. HELIOS system characterization is provided whether you buy one system or a product suite for your whole enterprise from R&D to Production to Field Use.

VALUE

Fast, automatic and semi-automatic test stations for each HELIOS system

Characterization and calibration in almost every relevant state of use for each system at no additional charge

Uniformity verification over all lamps and levels

Database of archived calibration tied to system serial numbers for each tracking and re-calibration

Unique characterizations to each HELIOS Family of systems that suit relevant application and industry needs

A true-dark lab for low-level testing and certification

All data provided in Excel format and PDF (Certificates) on USB stick for use with HELIOSense software

World-Class calibration standards laboratory with over 35 years of Labsphere experience

Existing System Re-Calibrations

When it comes time to renew your system certification and commissioning, HELIOS provides quick and efficient re-calibration services grouped by the family of the system that you purchased. This enables you to quickly calculate the cost of ownership going forward.

VALUE

Similar suite of calibrations to the original system calibrations

Each calibration includes QTH replacements as part of our service to make sure you're working at peak condition

Plasma Lamps and Xenon Lamp replacements can be ordered as options

HELIOS common calibrations allows Labsphere the ability to quickly turn the system so you can keep working

We also offer electronic calibration as an option to make sure our detectors, power supplies and other electronic items are all in compliance

Out-Of-Tolerance Reports (OOTR) can also be ordered for either optical or electronic calibrations. OOTR compares your system in an "as-received" state to your original calibration, so you have a record of any offsets that may have happened during your use. We report on the OOTR before we place any new calibrations on the system



System Calibrations by Configuration

				Spectral	Luminance SD-S1 Current Record Filter (3) &	Luminance	VA Pos vs. Spectrum -	VA Manual vs. Spectrum	VA Pos. vs. Spectrum -	VA Manual vs. Spectrum		VA Manual vs. Spectrum	Uniformity	Uniformity	Uniformity Spatial with	Uniformity Spatial w/ manual VA	Low Level	Low Level	Low Level	Spectromet	InGaAs	Ex-InGaAs	UV Xenon
NEW CATALOG NAMES	NEW SMART PARTS	Set CCT	Set Pinhole	Radiance	Pinoles (3)	SD-L1	QTH	QTH	Xenon	Xenon	Plasma	Plasma	Spatial	Angular	VA Level	Level	Luminance	Spec. Rad	Uniformity	er File	Response	Response	Spectral
USLR-D20F-NANS	D5NA-NSNN-N1SR-NS00-0000	4	1	5	5	1	1						5	5	1								
USLR-D20F-NDNN	D5ND-NNNN-NNSR-NS00-0000	4	1	5	5		1						5	5	1								
USLR-D20F-NMNN	D5NM-NNNN-N1SR-NS00-0000	4	1	5	5			1					5	5		1							
USLR-D12F-NANS	D3NA-NSNN-N1SR-NS00-0000	3	1	4	4	1	1						4	4	1								
USRL-D12L-NANS	D4NA-NSPN-N1SR-NS00-0000	3	1	4	4		1						4	4	1								
USLR-D12F-NDNN	D3ND-NNNN-NNSR-NS00-0000	3	1	4	4		1						4	4	1								
USLR-D12L-NDNN	D4ND-NNNN-NNSR-NS00-0000	3	1	4	4		1						4	4	1								
USLR-D12F-NMNN	D3NM-NNNN-NNSR-NS00-0000	3	1	4	4			1					4	4		1							
USLR-D12L-NMNN	D4NM-NNNN-NNSR-NS00-0000	3	1	4	4			1					4	4		1							
USLR-D08F-NANS	D1NA-NSNN-N1SR-NS00-0000	2	1	3	3		1						3	3	1								
USLR-D08L-NANS	D2NA-NSNN-N1SR-NS00-0000	2	1	3	3		1						3	3	1								
USLR-D08F-NDNN	D1ND-NNNN-NNSR-NS00-0000	2	1	3	3		1						3	3	1								
USLR-D08L-NDNN	D2ND-NNNN-NNSR-NS00-0000	2	1	3	3		1						3	3	1								
USLR-D08F-NMNN	D1NM-NNNN-NNSR-NS00-0000	2	1	3	3			1					3	3		1							
USLR-D08L-NMNN	D2NM-NNNN-NNSR-NS00-0000	2	1	3	3			1					3	3		1							
USLR-L20F-NBNL	L5NB-NLNN-NNLR-NS00-0000	5	1		5	5	1										1	1	1				
USLR-L12F-NBNL	L3NB-NLNN-NNLR-NS00-0000	5	1		5	5	1										1	1	1				
USLR-L12L-NBNL	L4NB-NLNN-NNLR-NS00-0000	5	1		5	5	1										1	1	1				
USLR-L08F-NBNL	L1NB-NLNN-NNLR-NS00-0000	4	1		4	4	1										1	1	1				
USLR-LOSL-NBNL	L2NB-NLNN-NNLR-NS00-0000	4	1		4	4	1										1	1	1				
OSEN EGGE NEINE	LEND NEW WILL NOOF GOOD		-		-	-	-										-	-	-				_
USLR-A20F-XAN2	A5XA-N2NN-NNAR-NS00-0000	3	1	3	3		1		1				3	3	3					1			
USLR-A20F-XDN2	A5XD-N2NN-NNAR-NS00-0000	3	1	3	3		1		1				3	3	3					1			+
USLR-A20F-XMN2	A5XM-N2NN-NNAR-NS00-0000	3	1	3	3		-	1	-	1			3	3	3					1			_
USLR-A20F-PAN2	A5PA-N2NN-NNAR-NS00-0000	3	1	3	3		1	-		-	1		3	3	3					1			_
USLR-A20F-PDN2	A5PD-N2NN-NNAR-NS00-0000	3	1	3	3		1				1		3	3	3					1			
USLR-A20F-PMN2	A5PM-N2NN-NNAR-NS00-0000	3	1	3	3		-	1		1	-	1	3	3	3					1			
USLR-A12F-XAN2	A3XA-N2NN-NNAR-NS00-0000	3	1	3	3		1	-	1	-		-	3	3	3					1			_
USLR-A12L-XAN2	A4XA-N2NN-NNAR-NS00-0000	3	1	3	3		1		1				3	3	3					1			_
USLR-A12L-UAN1	A4UA-N1NN-NNAR-NS00-0000	3	1	3	3		1		1				3	3	3					1			1
USLR-A12F-XDN2	A3XD-N2NN-NNAR-NS00-0000	3	1	3	3		1		1				3	3	3					1			-
USLR-A12L-XDN2	A4XD-N2NN-NNAR-NS00-0000	3	1	3	3		1		1				3	3	3					1			_
USLR-A12L-UDN1	A4UD-N1NN-NNAR-NS00-0000	3	1	3	3		1		1				3	3	3					1			1
USLR-A12F-XMN2	A3XM-N2NN-NNAR-NS00-0000	3	1	3	3		1	1	1	1			3	3	3					1			
USLR-A12L-XMN2	A4XM-N2NN-NNAR-NS00-0000	3	1	3	3			1		1			3	3	3					1			
USLR-A12L-UMN1	A4UM-N1NN-NNAR-NS00-0000	3	1	3	3			1		1			3	3	3					1			1
USLR-A12F-PAN2	A3PA-N2NN-NNAR-NS00-0000	3	1	3	3		1	1		1	1		3	3	3					1			1
USLR-A12L-PAN2	A4PA-N2NN-NNAR-NS00-0000	3	1	3	3		1				1		3	3	3					1			
USLR-A12F-PDN2	A3PD-N2NN-NNAR-NS00-0000	3	1	3	3		1				1		3	3	3					1			
USLR-A12L-PDN2	A4PD-N2NN-NNAR-NS00-0000	3	1	3	3		1				1		3	3	3					1			_
USLR-A12F-PMN2	A3PM-N2NN-NNAR-NS00-0000	3	1	3	3		1	1			-	1	3	3	3					1			
USLR-A12L-PMN2	A4PM-N2NN-NNAR-NS00-0000	3	1	3	3		-	1				1	3	3	3					1			
OSEN-ATZE-1 WINZ	ANT WENGENIN-INVANCINGOUGH	,	1	,	,			-				-	,	,	,					-			_
USLR-V20F-NMNN	V5NM-NNNN-NNSL-NS00-0000	1	1	1	1			1					1	1	1								_
USLR-V12F-NMNN	V3NM-NNNN-NNSL-NS00-0000	1	1	1	1			1					1	1	1								
USLR-V12F-NMNN USLR-V08F-NMNN	V1NM-NNNN-NNSL-NS00-0000	1	1	1	1			1					1	1	1								-
OSEK-VUSF-INIVINN	A TIAIAL-MINIMIA-ININ 2F-IN 200-0000	1	1	1	1		-	1					1	1	1					-			
USLR-S20F-NNSN	S5NN-SNNN-NNSL-NS00-0000	4	1	5	5		-	-					5	5						-			
USLR-S2UF-NNSN USLR-S12F-NNSN	S3NN-SNNN-NNSL-NS00-0000 S3NN-SNNN-NNSL-NS00-0000	4	1	5	5		-						5	5						-			
USLR-S12F-NNSN USLR-S08F-NNSN	S1NN-SNNN-NNSL-NS00-0000	3	1	4	4		-	-					4	4						-			
USLR-S08F-NNSN USLR-S08F-NN3N	S1NN-3NNN-NNSL-NS00-0000 S1NN-3NNN-NNSL-NS00-0000	1	1	1	1		-	-					1	1						-			
USLR-S08F-NN3N USLR-S08F-NN7N	S1NN-3NNN-NNSL-NS00-0000 S1NN-7NNN-NNSL-NS00-0000	1 1	1	1	1		-						1	1						-			-
USEK-SUBF-INIV/IV	2TMM-1MMM-MM2F-M200-0000	1	1	1	1								1	1									

Spectral Radiance Calibration Service On-site Service for Recalibration and Servicing of Uniform Source Systems SERVICE RECOMMENDED IF System lamps have been operated for more than 50 hours System is more than two years old SERVICE FEATURES System has operated or been stored in dusty environment Professional assessment of the overall Quality Management System mandates annual calibrations on critical condition of system Relamping the sphere with before and after measurement equipment Monitor detector disagrees with the original calibration certificate Power supply calibration option NIST traceable measurements with reported Calibration is certified on-site Minimal downtime with flexible scheduling The baseline of an FEL Target Irradiance which is within 1.8-2.3% is the basis for our primary calibration at our laboratory. Reference values can be provided upon request. The measurements are accomplished by referencing a calibrated Spectralon* target of known diffuse reflectance factor that is irradiated by an FEL type tungsten halogen spectral irradiance lamp standard. The Spectralon* target becomes the reference source of spectral radiance expressed as: $L_{DUT} = \frac{S_{DUT}L_{ref}}{S_{ref}} = \frac{S_{DUT}}{S_{ref}} * \frac{\beta \rho_{43}E_{e0}\left(\frac{I_{e}}{c_{e0}}\right)^{M_{2}}\left(1 - \alpha\Delta t\right) * 50^{2}}{\pi * t. fn^{2} - \cdots - \frac{\alpha^{2}}{2}}$ Expression of Radiance Uncertainty for Radiometric Transfer with Spectral Radiometer S_{DCT} is the spectral response of the spectral radiometer to the customer DUT $L_{\lambda} = \frac{E_{\lambda}\rho_{\lambda}}{\pi} \qquad (mW/cm^2 \ sr \ nm)$

The spectral radius is then used to calibrate the field service spectroadiometer. The spectral radius cist show used to calibrate the field service spectroadiometer. The spectroardiometer spectral radius responsivity is a chieved by scanning and collecting the spectral radius or of the irradiated target and recording the responses. The spectral radius responsivity calibration is performed on a full range UV-VIS-NiRI dispersive spectroadiometer. The spectral measurements are performed with this FUV positioned spectral measurements are performed with this FUV positioned to the spectral resourcements are performed with this FUV positioned spectral resourcements are performed with this FUV positioned for the spectral resourcements are performed as the first form of the control of the spectral resourcements are performed to the control of the spectral resourcements are performed to the control of the spectral resourcements are performed to the control of the spectral resourcements are performed to the control of the spectral resourcements are performed to the control of the spectral resourcements are performed to the control of the spectral resourcements are performed to the control of the spectral resourcements are performed to the control of the spectral resourcements are performed to the spectral resourcements are performe

On-Site Calibration Services

You've made a large capital investment in a specialized optical system – let us keep it running for you in world class condition!

We'll Come To You.

Learn More:

Contact your local rep or go to www.labsphere.com/products/services/on-site-calibration-services/ to download more information.



D is the calibration distance of the FEL x is the lateral tilting offset of the distance measurement, and z is the offset of the between the target and the center and the reference plane of the target

"Calibration reference L., is the spectral radiance of the calibration reference β is the angular dependence of the reflectance factor ρ is the Spectralion' target spectral reflectance factor that the spectral reflectance factor as the Spectralion' target spectral reflectance factor as the SE is the spectral ingulariance of the FE. I reference standard Is the FE. Operating current M is FE. I irradiance relationship factor (1 - αΔρ is the FE. tungsten halogen lamp aging factor the spectral resistance and sections as the SE. The spectral resistance is set of the SE. The



D-FAMILY RECALIBRATIONS

		D-Family Optical Calibration Service. Includes lamp replacements. Electronics	
	SYSTEMS - HELIOS	calibration must be purchased separately. OTR Reports must be purchased	
H-D-OCAL		separately.	
	SYSTEMS - HELIOS	Electronics Recalibration of HELIOS D System Power Supplies, Detectors and other	
H-D-ECAL	STOTENIO - TILLIOS	system rack electronics	
	SYSTEMS - HELIOS	Optical Out of Tolerance Report for D System. Comparison of Incoming System State	
H-D-OOTR	STOTENIO - TILLIOG	ot Last Calibration State	
	SYSTEMS - HELIOS	Electronics Out of Tolerance Report for D System. Comparison of Incoming System	
H-D-EOTR	STOTEINIS - FIELIOS	State ot Last Calibration State	



A-FAMILY RECALIBRATIONS

H-A-OCAL	SYSTEMS - HELIOS	A-Family Optical Calibration Service. Includes lamp replacements and spectrometer wavelength verification. Electronics calibration must be purchased separately. OTR Reports must be purchased separately.	
H-A-OCAL		Electronics Recalibration of HELIOS A System Power Supplies, Detectors and other	
H-A-ECAL	SYSTEMS - HELIOS	system rack electronics	
H-A-OOTR	SYSTEMS - HELIOS	Optical Out of Tolerance Report for A System. Comparison of Incoming System State ot Last Calibration State	
H-A-EOTR	SYSTEMS - HELIOS	Electronics Out of Tolerance Report for A System. Comparison of Incoming System State ot Last Calibration State	



L-FAMILY RECALIBRATIONS

H-L-OCAL	SYSTEMS - HELIOS	L-Family Optical Calibration Service. Includes lamp replacements. Electronics calibration must be purchased separately. OTR Reports must be purchased separately.	
H-L-ECAL	ISYSTEMS - HELIOS	Electronics Recalibration of HELIOS L System Power Supplies, Detectors and other system rack electronics	
H-L-OOTR	ISYSTEMS - HELIOS	Optical Out of Tolerance Report for L System. Comparison of Incoming System State ot Last Calibration State	
H-L-EOTR	ISYSTEMS - HELIOS	Electronics Out of Tolerance Report for L System. Comparison of Incoming System State ot Last Calibration State	



V-FAMILY RECALIBRATIONS

		V-Family Optical Calibration Service. Includes lamp replacements. Electronics	
	SYSTEMS - HELIOS	calibration must be purchased separately. OTR Reports must be purchased	
H-V-OCAL		separately.	
	SYSTEMS - HELIOS	Electronics Recalibration of HELIOS V System Power Supplies, Detectors and other	
H-V-ECAL	3131LIVIS - TILLIOS	system rack electronics	
	SYSTEMS - HELIOS	Optical Out of Tolerance Report for V System. Comparison of Incoming System State	
H-V-OOTR	3131LIVIS - TILLIOS	ot Last Calibration State	
	SYSTEMS - HELIOS	Electronics Out of Tolerance Report for V System. Comparison of Incoming System	
H-V-EOTR	3131LIVIS - HELIOS	State ot Last Calibration State	



S-FAMILY RECALIBRATIONS

		S-Family 1-Day On-Site Calibration Service (Single Sources). Includes Optical and	
	SYSTEMS - HELIOS	Electrical Certified Calibrations. OTRs must be ordered separately. Travel, Shipping	
H-S-ONSITE		and Expenses will be estimated and billed separately	
		S-Family Optical Calibration Service. Includes lamp replacements. Electronics	
	SYSTEMS - HELIOS	calibration must be purchased separately. OTR Reports must be purchased	
H-S-OCAL		separately.	
	SYSTEMS - HELIOS	Electronics Recalibration of HELIOS S System Power Supplies, Detectors and other	
H-S-ECAL	3131EM3 - HELIOS	system rack electronics	
	SYSTEMS - HELIOS	Optical Out of Tolerance Report for S System. Comparison of Incoming System State	
H-S-OOTR	STSTEMS - HELIOS	ot Last Calibration State	
	SYSTEMS - HELIOS	Electronics Out of Tolerance Report for S System. Comparison of Incoming System	
H-S-EOTR	STSTEMS - HELIOS	State ot Last Calibration State	

