



# Unparalleled Characterization and Calibration



## Fast, repeatable testing

HELIOS® Uniform Luminance and Radiance Systems provide a whole new level of knowledge about the radiometric performance of each system. Today's technologies and application complexities demand insight, characterization and data of system performance over its entire dynamic range and each operating mode. Our calibration laboratories have been designed to ensure fast, repeatable, COMPLETE testing of each system with industry-leading uncertainty.

HELIOS calibrations start by matching CCTs on the lamps as closely as possible. Next, 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 gathered 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. It gives our customers unparalleled access to characterizations they need to test effectively with our systems.

## HELIOS Calibration Advantages

- Fast, automatic and semi-automatic test stations for each HELIOS system
- Characterization and calibration in almost every relevant state of use for each system
- Database of archived calibration tied to system serial numbers for tracking performance and re-calibration ("as received" out of tolerance options)
- 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 at night vision levels
- All data provided in Excel format and PDF Certificates on USB stick for use with HELIOSense and other software
- World-Class calibration standards laboratory with over 35 years of Labsphere experience

## Existing System Calibrations and Cost of Ownership

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.

- Similar suite of calibrations to the original system calibrations
  - BASIC Systems recalibrations options are cited below
  - ADVANCED System data package can be released as an option
- Each calibration includes QTH and Xenon lamp replacements as part of our service to make sure you're working at peak condition
  - Plasma Lamps replacements can be ordered as options
- HELIOS common calibrations allow Labsphere the ability to quickly turn the system on planned services
- 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.

# Calibrations Options

## BASIC

Included and standard with every HELIOS system the BASIC level calibration which includes the following measurements:

- All QTH system lamps set to common CCT (except Xenon and Plasma)
- Reported Luminance, Radiance and CCT for Xenon or Plasma lamp at highest output
- Luminance, Spectral Radiance, Angular and Spatial Uniformity at highest system output setting (1 each)
- System detector responsivities at all pinhole, filter and dark settings
- Physical certificates and a USB Key with digital certificate and data versions

The HELIOS-CAL-ADV can be ordered after the system is delivered if the user needs additional system characterization information on a system with BASIC calibration. System does not need to be return to Labsphere for this release (within 1 year of order or 50 hours of calibrated lamp use).

In addition to our innovative testing systems, we also offer optional additional services on our core double-monochromator based system for <1% ( $2\sigma$ ) world-class uncertainty (ANSI Z540 and ISO 17025 Compliant).

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.

## 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 your system and laboratory.

### Features

- Professional assessment of the overall condition of system
- Relamping the sphere with before and after measurements
- Power supply calibration option
- NIST traceable measurements with reported uncertainty
- Calibration is certified on-site
- Minimal downtime with flexible scheduling

### Learn More

Contact your local rep or go to [www.labsphere.com/products/services/on-site-calibration-services/](http://www.labsphere.com/products/services/on-site-calibration-services/) to download more information.

## ADVANCED

As an optional quoted line item, the user can order the HELIOS-CAL-ADV (AS-03095-000) which releases ALL of the HELIOS characterization advantage:

- All QTH system lamps set to common CCT (except Xenon and Plasma)
  - Spectral Radiance, Luminance, CCT and detector responsivities reported with each individual system lamp
  - External lamps will have spectral radiance, luminance, CCT and detector responsivities reported at 100%, 75%, 50% and 25% of Variable Attenuator levels
- Reported Luminance, Spectral Radiance and CCT for each Xenon or Plasma lamp.
  - External Xenon or Plasma lamps will have spectral radiance, luminance, CCT and detector responsivities reported at 100%, 75%, 50% and 25% of Variable Attenuator levels
- Luminance, Spectral Radiance, Angular and Spatial Uniformity at highest system output setting (all attenuators set to 100% open)
- System detector(s) responsivities at all pinhole, filter and dark settings
- Digital capture raw-pixel data files on HELIOS uniformity scans
- Physical certificates and a USB Key with digital certificate and data versions

HELIOS-CAL-ADV	RS-HELIOS	Advanced HELIOS System Calibration Package Upgrade	AS-03095-000
<b>D-Family Recalibrations</b>			
H-D-OCAL	SYSTEMS - HELIOS	D-Family Optical Calibration Service. Includes lamp replacements. Electronics calibration must be purchased separately. OTR Reports must be purchased separately. Basic HELIOS Calibration Included.	AS-03050-000
H-D-ECAL	SYSTEMS - HELIOS	Electronics Recalibration of HELIOS D System Power Supplies, Detectors and other system rack electronics.	AS-03050-001
H-D-OOTR	SYSTEMS - HELIOS	Optical Out of Tolerance Report for D System. Comparison of Incoming System State to Last Calibration State. Based on Basic HELIOS Calibration.	AS-03050-002
H-D-EOTR	SYSTEMS - HELIOS	Electronics Out of Tolerance Report for D System. Comparison of Incoming System State to Last Calibration State.	AS-03050-003
<b>A-Family Recalibrations</b>			
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. Basic HELIOS Calibration Included.	AS-03050-100
H-A-ECAL	SYSTEMS - HELIOS	Electronics Recalibration of HELIOS A System Power Supplies, Detectors and other system rack electronics	AS-03050-101
H-A-OOTR	SYSTEMS - HELIOS	Optical Out of Tolerance Report for A System. Comparison of Incoming System State to Last Calibration State. Based on Basic HELIOS Calibration.	AS-03050-102
H-A-EOTR	SYSTEMS - HELIOS	Electronics Out of Tolerance Report for A System. Comparison of Incoming System State to Last Calibration State	AS-03050-103
<b>L-Family Recalibrations</b>			
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. Basic HELIOS Calibration Included.	AS-03050-200
H-L-ECAL	SYSTEMS - HELIOS	Electronics Recalibration of HELIOS L System Power Supplies, Detectors and other system rack electronics	AS-03050-201
H-L-OOTR	SYSTEMS - HELIOS	Optical Out of Tolerance Report for L System. Comparison of Incoming System State to Last Calibration State. Based on Basic HELIOS Calibration.	AS-03050-202
H-L-EOTR	SYSTEMS - HELIOS	Electronics Out of Tolerance Report for L System. Comparison of Incoming System State to Last Calibration State	AS-03050-203
<b>V-Family Recalibrations</b>			
H-V-OCAL	SYSTEMS - HELIOS	V-Family Optical Calibration Service. Includes lamp replacements. Electronics calibration must be purchased separately. OTR Reports must be purchased separately. Basic HELIOS Calibration Included.	AS-03050-300
H-V-ECAL	SYSTEMS - HELIOS	Electronics Recalibration of HELIOS V System Power Supplies, Detectors and other system rack electronics	AS-03050-301
H-V-OOTR	SYSTEMS - HELIOS	Optical Out of Tolerance Report for V System. Comparison of Incoming System State to Last Calibration State. Based on Basic HELIOS Calibration.	AS-03050-302
H-V-EOTR	SYSTEMS - HELIOS	Electronics Out of Tolerance Report for V System. Comparison of Incoming System State to Last Calibration State	AS-03050-303
<b>S-Family Recalibrations</b>			
H-S-OCAL	SYSTEMS - HELIOS	S-Family Optical Calibration Service. Includes lamp replacements. Electronics calibration must be purchased separately. OTR Reports must be purchased separately. Basic HELIOS Calibration Included.	AS-03050-401
H-S-ECAL	SYSTEMS - HELIOS	Electronics Recalibration of HELIOS S System Power Supplies, Detectors and other system rack electronics	AS-03050-402
H-S-OOTR	SYSTEMS - HELIOS	Optical Out of Tolerance Report for S System. Comparison of Incoming System State to Last Calibration State. Based on Basic HELIOS Calibration.	AS-03050-403
H-S-EOTR	SYSTEMS - HELIOS	Electronics Out of Tolerance Report for S System. Comparison of Incoming System State to Last Calibration State	AS-03050-404
H-S-ONSITE	SYSTEMS - HELIOS	S-Family 1-Day On-Site Calibration Service (Single Sources). Includes Optical and Electrical Certified Calibrations. OTRs must be ordered separately. Travel, Shipping and Expenses will be estimate and billed separately	AS-03050-400