SpectrALL
Spectra-RGB
Precision RGB Reference Sources

High brightness RGB uniform source. Stable and repeatable references with peak wavelength and system configurations available to match testing needs – from the benchtop to production!

Trusted test data
Labsphere is a recognized leader in traceable reference sources. Our precision RBG reference sources are engineered for the high-performance requirements in image sensor research, waveguide characterization, and imaging colorimeter calibration for development, production testing, and calibration programs.

Repeatable, reproducible results – Every Time!
With Labsphere's proprietary diffuse reflectance material, Spectralon®, screened and binned LED sources, and thermally controlled source modules, long term repeatability and reproducibility are ensured.

Self-contained, simple and reliable
Labsphere's platform is engineered to operate seamlessly in the lab as well as automated test platforms. Commissioning software provides intuitive setup while a universal command interface ensures easy integration into test equipment and sequences. Internal monitoring provides system performance and health feedback in real time. The software allows scripting of specific set points for testing sequences that can be programed for your unique applications and testing requirements.

Wavelength precision
Our precision RBG reference sources are thermally controlled with mechanical attenuators that enable repeatable peak wavelength stability. The temperature control and mechanical attenuators enable more repeatable and wavelength- stable performance. These systems will stay within the 10 nm wavelength range.

Key Performance

- Fast rise and settling times between RGB test conditions
- High luminance level and uniformity
- Form factor for production tester integration
- Peak wavelength stability

Features

- High speed attenuators for fast spectral transitioning
- Spectral radiance monitoring for confidence in color and peak wavelength stability
- Ability for user calibration and characterization optimization over the life of the product

Specifications

Key Parameters	
Luminance Range:	50 - 2,000,000 nits (cd/m^2) at 6500K CCT
Wavelength Shift:	± 5 nm (over Luminance Range from 10% to 90% available output)
Clear Field of View (FoV) at Port:	45 mm x 65 mm x 75° full angle (H x W x Diagonal)
Spatial Luminance Uniformity:	Greater than 97% uniformity (evaluated over 90% clear aperture)
Angular Luminance Uniformity:	96% (over ± 30°, evaluated at center)
Luminance Stability - Short Term:	± 1.0% P-P, 1 min.
Luminance Stability - Long Term:	± 2.0% P-P, 1 hr.

Spectral Performance	
Wavelength Repeatability:	± 2 nm (same system, day to day)
Peak Wavelength Stability:	< 1 nm over 1 hour at steady state, ± 5 nm from 10% to 90% output

Spectral Output	Nominal *(Initial Tolerance Range)*
Red Peak Wavelength:	624 nm *(619 - 629 nm)*
Green Peak Wavelength:	519 nm *(514 - 524 nm)*
Blue Peak Wavelength:	447 nm *(442 - 452 nm)*, 470 nm *(465 - 475 nm)*

Output Luminance Options	
Red Channel:	> 300k or > 600k nits (cd/m^2)
Green Channel:	> 650k or > 1.3M nits
Blue Channel:	> 250k or > 500k nits

Control and Calibration	
Luminance Adjustability:	LED Current Control 16 bit and Variable Attenuator Control ~14 bit
Variable Attenuator Speed:	< 1 sec (open to closed)
Thermal Control:	TEC and Liquid Cooling
Spectral Monitor:	Multispectral Detector
Internal Calibration Source:	Spectral Radiance Transfer Source

Mechanical	
Luminance Port Diameter Options:	16 mm, 20 mm, and 25.4 mm
Luminance Port Orientation:	Up, Down, and Side (feet and mounting interfaces provided)
RGB Source Dimensions:	27.6 x 27.6 x 26.4 cm (10.88 x 10.88 x 10.38 in.) (H x W x D)
RGB Source Weight:	13 kg (28.7 lbs.)
Heat Exchanger Dimensions:	17.1 x 30.5 x 8.3 cm (6.75 x 12.00 x 3.25 in.) (H x W x D)
Heat Exchanger Weight:	5.7 kg (12.5 lbs.)
Heat Exchanger Positioning Options:	Flexible (1, 2, 3, and 6 m tubing lengths available)

Electrical and Control	
Power Input:	100 - 240 VAC, 50/60 Hz, <12 A
Command Control Interface:	RS-232 (over USB)

Safety and Environmental	
Certification:	CE Certified
Operating Temperature:	15 - 35°C

Spectra-RGB Precision Source (Silver) Ordering Information:

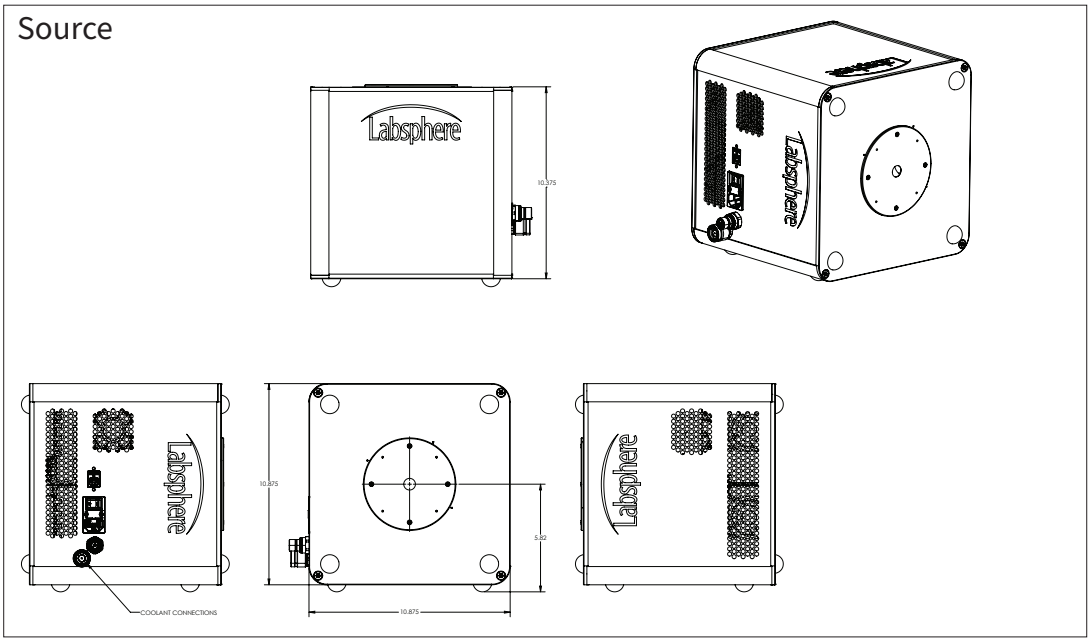
Choose one from each column

Family	Level	Sphere Diameter	Exit Port Size	Cooling and Line Length	Red Peak Wavelength (Nom. Initial Tolerance) & Max. Luminance	Green Peak Wavelength (Nom. Initial Tolerance) & Max. Luminance	Blue Peak Wavelength (Nom. Initial Tolerance) & Max. Luminance	Attenuator	Monitor
Spectra-RGB	**S** | Silver	**SD10** | 10 cm	EP16 | 16 mm	CL1 | 1 m	**R624T05L0300** | 624 nm *(619 - 629)* 300k nits	**G519T05L0650** | 519 nm *(514 - 524)* 650k nits	**B447T05L0250** | 447 nm *(442 - 452)* 250k nits	**VA** - Variable Attenuator	**DETFB** - Via Detector
			EP20 | 20 mm	**CL2** | 2 m	R624T05L0600 | 624 nm *(619 - 629)* 600k nits	G519T05L1300 | 519 nm *(514 - 524)* 1.3M nits	B447T05L0500 | 447 nm *(442 - 452)* 500k nits		
			EP25 | 25 mm	CL3 | 3 m			B470T05L0250 | 470 nm *(465 - 475)* 250k nits		
				CL6 | 6 m			B470T05L0500 | 470 nm *(465 - 475)* 500k nits		

Ordering Example: Spectra-RGB-S-SD10-EP20-CL2-R624T05L0300-G519T05L0650-B447T05L0250-VA-DETFB
Standard Features: Variable Light Attenuator, Detector Monitor

Product Dimensions

Source



Heat Exchanger