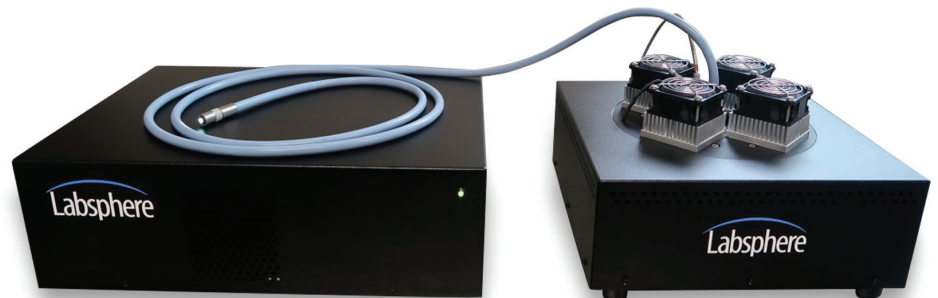


# SpectrALL

## Spectra-FT Fine Tunable Visible-NIR Spectral Fiber Illuminator

Highly uniform source  
of spectral irradiation  
that can accurately  
reproduce almost  
any spectrum from  
390 nm to 1000 nm



### Trusted test data

Labsphere is a recognized leader in calibration sources. Our solid state tunable sources are engineered for the high performance requirements in sensor and materials research, development and production testing and illumination.

### Save money, save space

One instrument produces unlimited spectrums. The fiber illuminator is a compact and robust instrument designed to easily mount in a production test station with active spectral feedback and user recalibration features.

### Repeatable, reproducible results

With Labsphere's diffuse reflectance material, Spectralon®, and thermal-controlled LED module, long term repeatability and reproducibility are ensured.

### Applications:

- Machine Vision Illumination
- Endoscope Source
- Hyperspectral Imaging Source
- Materials Research

# Features and Applications

## Features:

- Resolution and accuracy – 32 channels in the Visible and NIR
- User spectral optimization – quickly simulate any spectrum
- Create and match the combination of multiple spectrums
- Performance metrics – built-in spectral fidelity metric  $A'$  and color performance matching metrics of any simulated spectra
- Built-in spectrometer monitor and feedback loop to ensure accurate spectral output and correction for every wavelength channel
- Built-in user spectral flux reference for user recalibration
- Extended use life with built in user recharacterization and calibration features
- No down time returning unit for recalibration
- DC constant current drivers and thermal control for continuous stable performance
- Liquid light guide illumination
- Exceptional uniform spectral irradiance
- Quick integration – compact and robust for tester and production line integration

## Calibration\*

The spectral flux from the source is monitored with an embedded spectroradiometer. The system includes a stable quartz tungsten halogen reference source used to recalibrate the spectral flux responsivity of the spectroradiometer at the discretion of the user. This ensures continuous accurate spectral monitoring of the performance of the systems.

## Active Feedback Control\*

Achieve reproducible results with the active feedback control feature enabled. The calibrated embedded spectroradiometer can be used to measure and correct for any spectral flux changes due to ambient conditions, inter reflections during test or long term drift, ensuring stability and optimal performance over time. Unlike broadband monitors the spectral feedback measures the total spectral distribution and corrects for individual LED input to the total spectral output.

## System LED Characterization\*

Limit down time by not having to return your source to the supplier for recharacterization with this embedded analytical feature! Characterization data are used to create the underlying predictive output model of the tunable calibration source system used for optimizing the spectral radiance to desired target spectra. The characterization feature is performed with the internal spectroradiometer of the tunable calibration source. The user can use this feature after long term use to recalibrate the spectral radiance of the source.

\*applies to Labsphere's tunable calibration sources with the embedded spectroradiometer

## Specifications and Ordering Information

<b>Model Number:</b>	<b>FT-2300-F</b>
<b>Order Number:</b>	<b>AA-01577-003</b>
Source Geometry:	Liquid Fiber Guide
Long Term Stability:	+/- 1%
Short Term Stability:	+/- 0.1% COV after 500 msec
Initial Warm-Up Time:	500 msec
Operating Temp:	20 - 40°C, 0 - 70% RH
Optical Geometry:	Labsphere Integrating Hemisphere Technology
Flux Range:	0 to 300 $\mu$ W/nm from 390 to 1000 nm (spectrum dependent)
Spectral Range:	390 to 1000 nm
Spectral Output:	32 channels, 84 LEDs 375 nm, 385 nm, 395 nm, 405 nm, 420 nm, 435 nm, 450 nm, 460 nm, 470 nm, 490 nm, 505 nm, 520 nm, 590 nm, 620 nm, 630 nm, 645 nm, 660 nm, 680 nm, 700 nm, 720 nm, 740 nm, 760 nm, 780 nm, 810 nm, 830 nm, 850 nm, 880 nm, 910 nm, 940 nm, 980 nm, Lime Green, Amber, and Calibration Lamp Visible resolution ~ 15 nm, NIR resolution ~ 50 nm (typical channel spacing)
Color Accuracy:	0.001 - 0.003
Spectral Bandwidth:	Typical: Visible 20 nm FWHM, NIR 50 nm FWHM
CCT Range:	1900K to 40000K
Preset Spectra:	CIE Illuminants A, B, C, D50, D55, D65, D75, E, 3000K-BB, 4000K-BB, 5000K-BB Custom preset spectra upon request NO LIMITS to the spectra the customer can upload and optimize output
Electrical Resolution:	16 bit DAC for channel current drivers
LED Control:	DC constant current
<b>Software:</b>	<b>Includes full spectral calibration with spectral fitting, preset storage, real-time optical feedback, radiometric and photometric units supported, user optimization, and recharacterization and recalibration programs</b>
Interface Connectors:	USB 2.0 Type B
Interface Protocol:	TPC Command Sets
Triggering:	TTL
Supported Operating System:	Windows
Input Voltage and Power:	110 to 240 VAC at 50 - 60 Hz
Dimensions:	Source: H 23 cm, W 30 cm, D 30 cm Power Module: H 14 cm, W 43 cm, D 31 cm

