

# OL 770-SPECTRORADIOMETERS

*The OL Series 770 Spectroradiometers provide a modular system that can be configured for various measurement types. Lightweight and portable, the OL Series 770 provides high-precision, fast, and accurate research-grade measurements to meet the most demanding requirements without compromising quality, consistency, and precision.*



The [OL Series 770 Spectroradiometer](#) is a high-speed spectral measurement tool for a variety of scientific and industrial applications. It is an array-based multi-channel spectroradiometer with an internal spectrograph, detector, and all control electronics housed in one rugged, portable enclosure. The OL 770 is completely computer controller via either RS-232 or Universal Serial port (USB) interface.

The internal spectrograph of the OL Series 770 is based on an aberration corrected, concave, flat field grating. The precision optics of the spectrograph deliver low stray light, high spectral resolution, and excellent wavelength accuracy. Various wavelength range gratings are available in the visible, ultraviolet, and near infrared regions. Optical input into the spectrograph is made via fiber optic connector. An interchangeable slit is provided in the entrance port on the front panel. The standard slit size is 100 microns (0.10 mm), and other slit sizes are available for varying the optical bandwidth.

The OL Series 770 includes a spectrograph, thermoelectrically cooled CCD array sensor (standard configuration), NIST- traceable internal reference lamp, power supply, and control electronics packaged in a convenient, portable enclosure. The spectrograph is factory aligned for optimum spectral performance and calibrated for wavelength. The internal reference lamp enables the end user to perform routine calibrations and create new calibration files for each setup. Light from various optical accessories, such as integrating spheres, luminous intensity receptors,

reflectance and transmittance accessories, and goniometers is transmitted to the OL 770 via a fiber optic connection. Various types and sizes of fiber optic probes are available to meet specific applications. The front panel consists of the power switch, LED status indicators, and connections to the internal reference lamp source. The optical input port has a removable collar holding the fiber optic and slit. The user-interchangeable slit is placed between the fiber optic ferrule and the entrance port to the internal spectrograph.

## Design Features



- High speed USB interface
- 25+ spectral scans/second
- Low stray light performance
- High spectral resolution
- High dynamic range
- Value monitor for pass/fail testing
- 0.3 nm wavelength accuracy (*VIS system only*)
- Research-grade precision
- Windows-compatible application software
- Auto-merge for Microsoft® Word and Excel
- Custom programming compatibility via ActiveX® Control Software Development Kit
- Lightweight and portable

## Application Features



- LED measurement
- Display testing
- L-I-V
- On-line high-speed production testing
- Spectral irradiance measurements
- Spectral radiance measurements
- Reflectance/ transmittance
- NVIS

## Software Features



The Windows-based application software provides for all setup, measurement, data, and control functions, and is Microsoft® Word and Microsoft® Excel compatible. And ActiveX® control is available for custom programming.

- Real-time graphics utility
- Custom report templates
- MS Excel and Word compatible direct reporting
- Display, log, and store resultant data
- Comparison cursors
- Cursor snap-to-peak/-valley
- Expandable CIE high resolution plots
- Accumulation graphs for time studies
- Tristimulus – 2° XYZ, 10° XYZ
- Value monitor with pass/ fail settings
- 1931 Chromaticity – 2° xyz, 10° xyz
- 1960 Chromaticity – 2° uv, 10° uv
- 1976 Chromaticity – 2° u'v', 10° u'v'
- Lab Luv – Illuminants A,B,C,D65; 2° Lab Luv, 10° Lab Luv
- Color rendering index (CRI)
- Full spectral measurements at all goniometric angles (+/- 90°)
- Polar plots of intensity and chromaticity values

A variety of accessories are available for the OL Series 770 to meet your measurement needs:

- OL 15AB LED Receptor for Averaged LED Intensity
- OL 610 CCD Imaging Telescope
- OL 700-10 USB Precision LED Power Supply
- OL 700-22 Pulsed Xenon Flash Source
- OL 700-23 Dual Output High Stability Xenon Source
- OL 700-30 LED Goniometer
- OL 700-70 Integrating Sphere Diffuse Reflectance Attachment
- OL 700-71 Reflectance/ Transmittance Attachment
- OL 700-73 Solid Transmittance Attachment
- OL 700-74 Liquid Transmittance Attachment
- OL 700-86VP Vacuum Pump Assembly
- OL 700-88TC Liquid Cooled Temperature Controller
- OL 700-FCS Field Calibration Source
- OL 770-15Q Neutral Density Filter holder
- OL 1272-LED Partial and Total Flux Integrating Sphere
- OL IS-670-LED 6" Integrating Sphere

We also offer a variety of integrating spheres, filters, LED holders, probes, slits, and lenses. Please contact the factory for details.



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**Data sheet: B221 Dec 2020 | Rev A**

As part of our policy of continuous product improvement, we reserve the right to change specifications at any time.

**> 90% AT 650 NM**

<b>Wavelength Range</b> <i>(Standard)</i>	200 – 780 nm <i>(UV/VIS)</i> 380 – 780 nm <i>(VIS)</i> 380 – 1100 nm <i>(VIS/NIR)</i>
<b>Optional Wavelengths</b>	Consult Factory
<b>Wavelength Accuracy</b>	± 0.3 nm
<b>Spectroradiometric Accuracy</b>	< 2.0%
<b>Optical Bandwidth</b> <i>(w/ 100 Micron Slit)</i>	3.5 nm
<b>Spectral Resolution</b>	≈ 0.4 <i>(VIS)</i> ≈ 0.6 nm <i>(UV)</i> ≈ 0.7 <i>(IR)</i>
<b>Slits</b> <i>(User Interchangeable)</i>	100 Micron <i>(Standard)</i> 50, 200, & 350 micron <i>(Optional)</i>
<b>Optical Input</b>	Fiber Optic
<b>Optical Aperture</b>	f/2
<b>Operating Temperature</b>	0 to 30°C
<b>Operating Humidity</b>	0 to 90% <i>(Non-condensing)</i>
<b>Detector Technology</b>	TE-cooled Back-thinned 2-dimensional CCD Array
<b>Detector Cooling Temperature</b>	-10° C
<b>Quantum Efficiency</b>	> 90% at 650 nm
<b>Chromaticity Accuracy</b>	± 0.0015 x,y
<b>Chromaticity Repeatability</b> <i>(Temperature Stabilized Blue LED)</i>	± 0.00015 x ± 0.0002 y
<b>Stray Light</b> <i>(Tungsten Source)</i>	2.5E <sup>-4</sup>
<b>Integration Time</b>	20 ms – 60 s
<b>A/D Resolution</b>	16 bits
<b>A/D Rate</b>	250 kHz
<b>Power Input</b>	100/115/220/230 Vac
<b>Interface</b>	USB, RS-232
<b>Dimensions</b>	7¼" x 13½" x 13" <i>(18.4 cm x 33.6 cm x 33.0 cm)</i>
<b>Weight</b>	22.5 lbs <i>(10.2 kg)</i>

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