

# OL 700-70

*Integrating Sphere Reflectance Attachment*



The OL 700-70 is used with the OL Series 770 Multi-Channel Spectroradiometers to measure the diffuse reflectance of materials over the UV-VIS-NIR wavelength region. The attachment utilizes fiber optic coupled input and output ports, and a 6" diameter integrating sphere. It is mounted in a convenient, rugged stand for tabletop or laboratory benchtop use, eliminating the need for mounting rods or fixtures. Sample measurement spot size is 5 mm, and due to the unique sample holder design, there is no limit to the actual size of the sample. Although the OL 700-70 was designed specifically for use with the OL 770, it can also be used with other spectroradiometers equipped with a fiber optic input.

SPECIFICATIONS	
<b>Spectral Measurement Range</b>	200 to 2500 nm
<b>Sphere Diameter</b>	6"
<b>Sample Size</b>	1" Minimum to Unlimited
<b>Sample Illuminated Area</b>	5 mm
<b>Illumination Incident Angle</b>	10°
<b>Scattered Light</b> <i>(Black Trap Sample)</i>	< 1%
<b>Dimensions</b>	7" W x 13"D x 9" H <i>(17.78 cm x 33.02 cm x 22.86 cm)</i>
<b>Weight</b>	8 lbs. (3.63 kg)

Data Sheet: B092 Dec 2020 | Rev A

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

## Design Features



- **ULTRA-FAST MEASUREMENT OF SAMPLES**

The entire spectrum, plus chromaticity and other essential optical parameters, is measured in a fraction of a second.

- **COMPLETE FLEXIBILITY**

Light to and from the sample is carried by flexible fiber optics, so the OL 700-70 can be easily positioned relative to your samples.

- **SAMPLES CAN BE HORIZONTAL OR VERTICAL**

The OL 700-70 is designed to operate both horizontally and vertically, so it can match the orientation of your samples.

- **ANY SIZE SAMPLES**

Remove the sample holder and place the sample against the flat surface. The sample can be as big as you like. You can even place the OL 700-70 port-down onto a sample, e.g. a table, and measure its reflectance.

- **ACCURATE RESULTS**

All the features needed for the most accurate measurements are included. You get the benefits of sample self-absorption compensation, low stray light, double beam geometry, ultra-stable stable light source, and near-ideal Lambertian sampling – all critical for accurate measurements.

- **SPECULAR COMPONENTS INCLUDED OR EXCLUDED**

Make measurements of all types of samples, with diffuse only or diffuse + specular (mirror-like) results.

- **EASY-TO-USE SOFTWARE**

The software guides you through making measurements, data storage, and reports with just a simple mouse-click.

- **MICROSOFT WORD<sup>®</sup> AND EXCEL<sup>®</sup> COMPATIBLE**

The system is designed to work with Microsoft Word<sup>®</sup> and Excel<sup>®</sup>, allowing infinite flexibility.

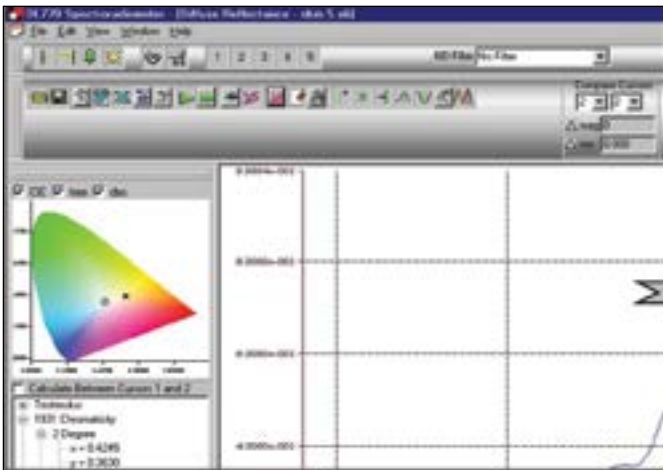
An accurate, double-beam design is achieved with a manually controlled, optical beam switch. The double-beam design enables the user to use the significantly more accurate “comparison method” of measuring diffuse reflectance. This method compensates for changes in the spectral efficiency of the integrating sphere due to self-absorption and reflectance properties of the measurement sample when placed on the measurement port.

The angle of incidence from the input port to the measurement port is 10°, and the reflected specular component may be included or excluded due to a removable light trap. When the specular component is to be included in the measurement, a PTFE coated plug is installed in place of the light trap. This optical design also enables the user to measure specular reflectance at a fixed angle of incidence of 10°.

A calibrated standard of diffuse reflectance and a built-in lamp used for illumination of the sample are provided for calibration and measurements. Control of the illumination source is imbedded in

the application software, and software prompts fully guide the user through the calibration and measurements procedure.

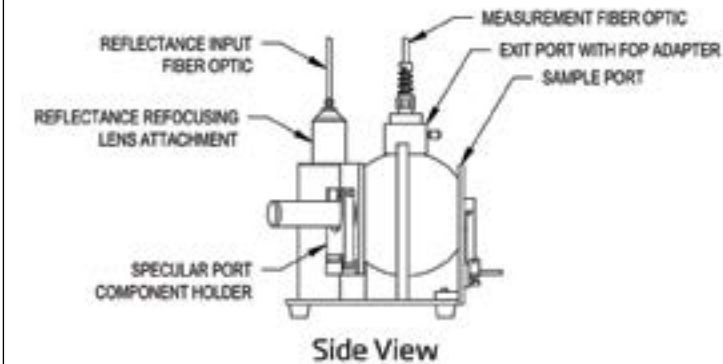
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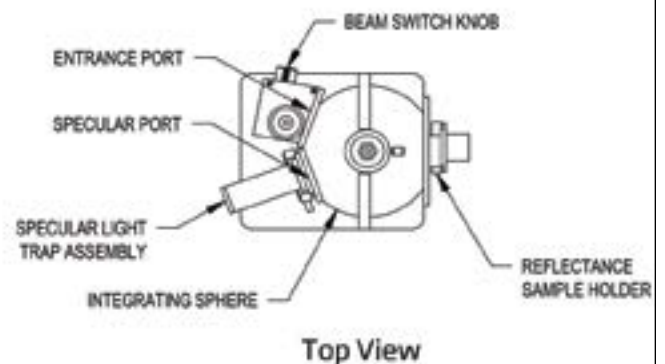
Spectral Data Plot using OL 770 Multi-Channel Spectroradiometer

Wavelength (nm)	OL 770 Spectral Tables mW	μW	μJ/s	Reflectance Data	Reference source data Ref source = 5 Normalized Ref Source
300	0.01368	0.000379	0.0045	7.0700E-02	300 1.00
301	0.011602	4.28E-05	0.007083	7.3360E-02	301 1.00
302	0.011642	4.69E-05	0.007745	7.1900E-02	302 1.00
303	0.011802	5.16E-05	0.008001	7.3000E-02	303 1.00
304	0.011996	5.72E-05	0.008415	7.3600E-02	304 1.00
305	0.012236	0.000064	0.01056	7.4600E-02	305 1.00
306	0.012535	7.23E-05	0.011966	7.4600E-02	306 1.00
307	0.012893	8.22E-05	0.013656	7.6800E-02	307 1.00
308	0.013301	9.35E-05	0.015580	7.6800E-02	308 1.00
309	0.013753	0.000196	0.01773	7.6100E-02	309 1.00
310	0.014243	0.00012	0.02006	7.6100E-02	310 1.00
311	0.014762	0.000136	0.022511	7.7900E-02	311 1.00
312	0.015333	0.000151	0.025020	7.7900E-02	312 1.00
313	0.015959	0.00017	0.02828	7.9000E-02	313 1.00
314	0.016641	0.000189	0.03244	7.9000E-02	314 1.00

Automatically Export OL770 Data into an Excel Spreadsheet Template



Side View



Top View

**OPTRONIC**<sup>®</sup>  
LABORATORIES

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