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Find the *Ocean Optics LS-1-LL-B* at our website: *Click HERE*

LS-1 Tungsten Halogen Light Source



The **LS-1 Tungsten Halogen Light Source** is a versatile white-light source optimized for the VIS-NIR (360-2500 nm). The lamp offers high color temperature, highly efficient output and long life in a compact, economical package. The LS-1 is available with a 900-hour, 3100 K bulb or a 10,000-hour, 2800 K bulb.

The LS-1 features an SMA 905 Connector for easy coupling to Ocean Optics fiber optic spectrometers and accessories, including optical fibers, cuvette holders and probes

LS-1 Features

VIS-NIR spectral range (360-2000 nm). Useful for chemical analysis, reflectivity of solid objects and color measurement

High color temperature, efficient output

Available with color-correcting and signal-attenuating accessories for

user-controlled manipulation of light source output.

900-hour or 10,000-hour bulbs

Included with the LS-1 are a 1/2" OD BG-34 filter for color correction and Teflon diffusing disks for attenuation of light source output. The LS-1 comes with a 12 VDC power supply (a European power supply is also available) and a power cord.

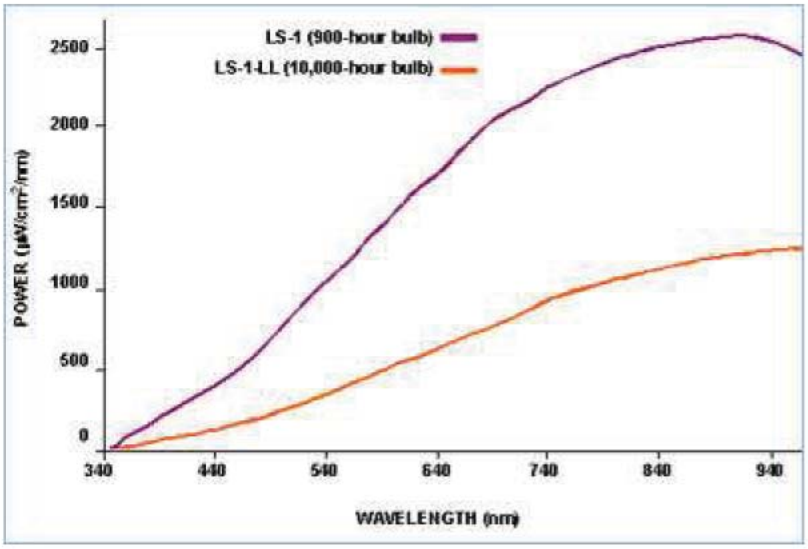
The LS-1 features an SMA 905 Connector for easy coupling to Ocean Optics fiber optic spectrometers and accessories, including optical fibers, cuvette holders and probes. What's more, a built-in slot accepts loose optical filters up to 3 mm in thickness. Either LS-1 version can be installed with spectrometers and other devices into a multi-device rack unit or desktop box.

Included with the LS-1 are two accessories that may be useful for certain measurements. The 1/2" OD BG-34 filter can be installed into the light source to enhance the signal in the blue region relative to the red and NIR regions (see the first graph below). This filter also has an attenuating effect so that users should adjust spectrometer integration times (by as much as 2-3 times longer) to achieve desired signal amplitude.

Three Teflon disks of various thickness are also available. These disks are used to create a diffuse source that is optimal for coupling into fibers and attenuating the overall signal when spectrometer saturation is an issue and other attenuation methods (such as adjusting spectrometer integration times) are impractical or undesirable. The disks attenuate approximately 50%, 75% and 99% of the signal, respectively. With a disk installed, the change in lamp output during the warm-up period is slightly more noticeable than without the disk. However, the time to achieve stabilized output (~30 minutes) is unaffected.

LS-1 and LS-1-LL Spectral Output

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User's Tips:

The LS-1 bulb is housed in a glass envelope that cuts off light <360 nm. The LS-1 should not be used for applications where illumination <360 nm is required.

The raw data (or scope mode) referred to in the graph above is the raw voltage coming out of the A/D converter, which is part of the spectrometer system.

Though the LS-1 emits energy to 2.5 µm, its use with Ocean Optics spectrometers is limited by the spectrometer's detector response, which cuts off at ~1100 nm.

LS-1 Specifications

Spectral range:	360-2500 nm
Dimensions:	9.0 cm x 5.0 cm x 3.2 cm; 3.5" x 2.0" x 1.25"
Power input:	12 VDC/800 mA; 7-28 VDC/0.4-2 amps
Power output:	6.5 watts
Bulb life:	900 hours (standard); 10,000 hours (long-life)
Bulb color temperature:	3100 K (900-hour bulb); 2800 K (10,000-hour bulb)
Output to bulb:	5 volts/1.3 amps

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Output regulation:	0.2% voltage
Time to stabilized output:	~20 minutes
Stability:	decay rate is ~0.1%/hour of the output power
Bulb output:	7400 foot-candles (7.4MSCP)
Internal filter accessory:	BG-34 conversion filter
External filter slot:	accepts filters up to 3 mm thickness
Spectral attenuation:	50%, 75% and 99% with PTFE disk accessories
Connector:	SMA 905

* If used with an Ocean Optics spectrometer, the LS-1's practical spectral range is limited to the spectral response of the detector -- for the USB2000, approximately 1100 nm (1.1 µm).

LS-1 Ordering Information

Item Code	Product
LS-1	Tungsten Halogen Light Source with 900-hour bulb, 12 VDC power supply, BG-34 color-correcting filter and Teflon diffusing disks.
LS-1-LL	Long-life Tungsten Halogen Light Source with 10,000-hour bulb, 12 VDC power supply, BG-34 color-correcting filter and Teflon diffusing disks.
R-LS-1	Rack-mounted LS-1 Tungsten Halogen Light Source; BG-34 color-correcting filter and Teflon diffusing disks are included.
R-LS-1-LL	Rack-mounted Long-life LS-1-LL Tungsten Halogen Light Source; BG-34 color-correcting filter and Teflon diffusing disks are included.

LS-1 Accessories

Item Code	Product
LS-1-B	900-hour replacement bulb for LS-1
LS-1-LL-B	10,000-hour replacement bulb for LS-1-LL
OF2-LS	Filter set designed for use with LS-1 includes BG-34, GG395 and OG550 filters, as well as Teflon diffusing disks.
FCBARREL	0.25" diameter barrel accommodates optical fibers with FC terminations; replaces standard SMA port on LS-1 Tungsten Halogen Light Source.
LS-1-CAL	NIST-traceable Calibrated Tungsten Halogen Light Source (300-1050 nm) with 900-hour bulb (3100 K) and regulated 12

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VDC power supply. **Note: The LS-1-CAL is NOT intended for use as an illumination source.**



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