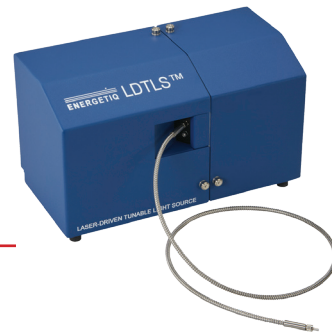


TLS-EQ-9-S

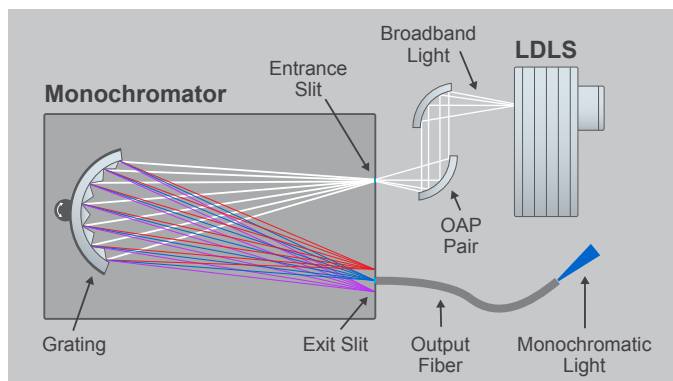
Laser-Driven Tunable Light Source



Overview

The TLS-EQ-9-S is a flexible wavelength tunable light source (TLS) built around Energetiq's Laser-Driven Light Source (LDLS®) platform. This exciting technology provides a wide wavelength range of tunability, high spectral resolution, fast wavelength scanning, and an extremely long lifetime with the added benefit of a convenient fiber-coupled output.

Principle of Operation



Consumable Components

Part Number	Lifetime	Description
EQ-9-RB	10,000 hours	Replacement Bulb (Not Field Replaceable)
EQ-9-RW-BK7	10,000 hours	EQ-9 Replacement Window (Not Field Replaceable)
Fiber Optic Cable	10,000 hours	Available fibers listed in the Accessories section

Properties

Wavelength Range	380 nm – 1100 nm
Scan Speed	<20 ms per 2 nm step
Numerical Aperture (1.5 mm Output fiber)	0.39 NA
Bulb Lifetime	10,000 hours
Laser Class	Class 1 (IEC 60825-1: 2014)

Typical Performance

Maximum in-band flux*	3.5 mW at 882 nm
Average in-band flux*	1.1 mW
Spectral Resolution (bandwidth, FWHM)	6.0 nm

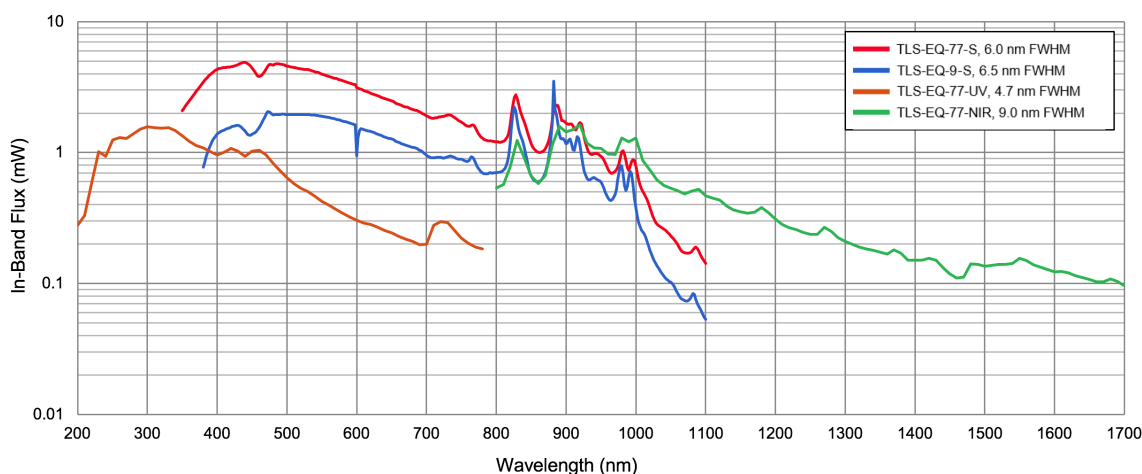
*1500 μ m core diameter fiber optic cable

Models

The TLS models provide a scalable solution covering a broad wavelength range from UV through visible to NIR.

Part Number	Description	Wavelength Range
TLS-EQ-9-S	Tunable light source with EQ-9 LDLS, optimized for visible and NIR wavelengths	380 nm – 1100 nm
TLS-EQ-77-S	Tunable light source with EQ-77 LDLS, optimized for visible and NIR wavelengths	350 nm – 1100 nm
TLS-EQ-77-UV	Tunable light source with EQ-77 LDLS, optimized for UV wavelengths	200 nm – 770 nm
TLS-EQ-77-NIR	Tunable light source with EQ-77 LDLS, optimized for NIR wavelengths	800 nm – 1700 nm

In-Band Light Flux Comparison *Average in-band light flux with standard output fibers. For reference only.*



Accessories

Part Number	Description
TLS-FIBER-1500-09M-SMA-SMA	Standard fiber included with system (1.5 mm dia., 0.9 M length, Output termination: SMA)
TLS-FIBER-1500-2M-FC-SMA	Replacement fiber (1.5 mm dia., 2 M length, Output termination: FC)
TLS-FIBER-1500-10M-FC-SMA	Replacement fiber (1.5 mm dia., 10 M length, Output termination: FC)
TLS-EQ-9-SLIT-KIT	Kit of removable monochromator slits (3 sizes, 2 of each size)

Slit Size	Bandwidth (FWHM) [nm]	Typical In-band flux [mW]**
1 mm*	6	1.1
0.5 mm	3.5	0.65
0.25 mm	2	0.22
0.1 mm	1.5	0.04

*Standard slit size shipped with system
**At approximately 500 nm

Facility Requirements

Electrical	100-240 VAC, single phase 50-60 Hz 140 W max. (LDLS) 50 W max. (TLS monochromator)
Cooling	No auxiliary cooling required
Nitrogen Purge	Recommended. Grade 4.8 or higher, filtered to 5µm; 20 psig ±2
Ambient Temperature	15-35 °C

Physical Specifications

System Dimensions (H x W x D)	244 x 360 x 284 mm
System Weight	7.6 kg

User Interface

The system interfaces with Windows operating system through a Mini USB connector. Software includes basic controls, and enhanced user interface and Dynamic Link Library (*.dll) for custom control.

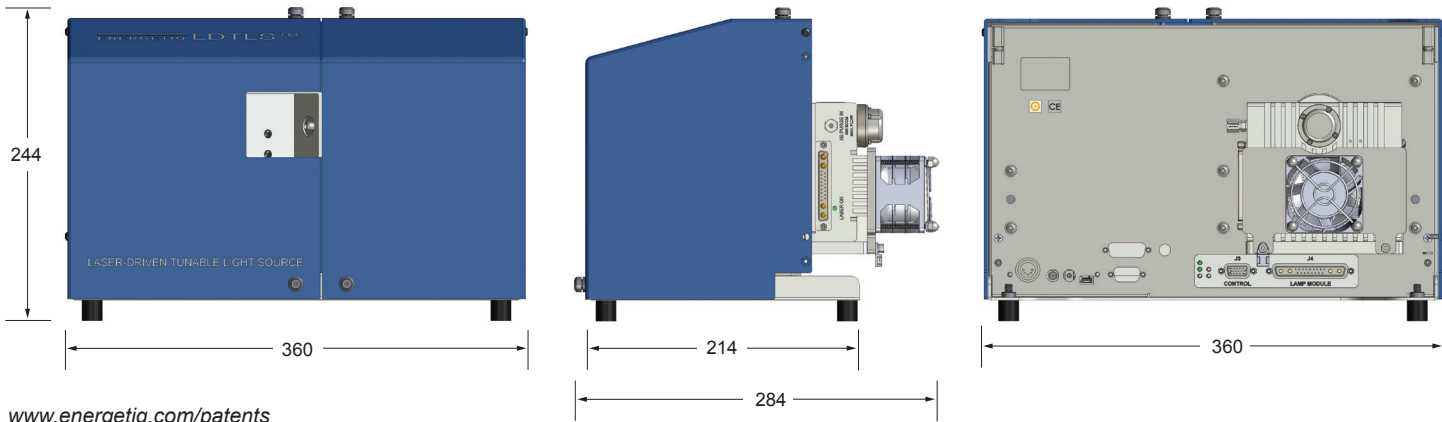
TLS can be used in two modes: go-to-wavelength or cycle/sweep. The user is also able to adjust the filter wheel transition for the order sorting filter via the software.

Position	Light Path
1	Closed
2	Open
3	Order sorting filter, 593 nm long wavelength pass

During a wavelength sweep, it is recommended that you transition to the order sorting filter position (position 3) for wavelengths of **620 nm and greater**.

System Dimensions (Unit: mm)

Drawings are for reference only and are not to scale. STEP file available.



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