

TLS-EQ-77-S

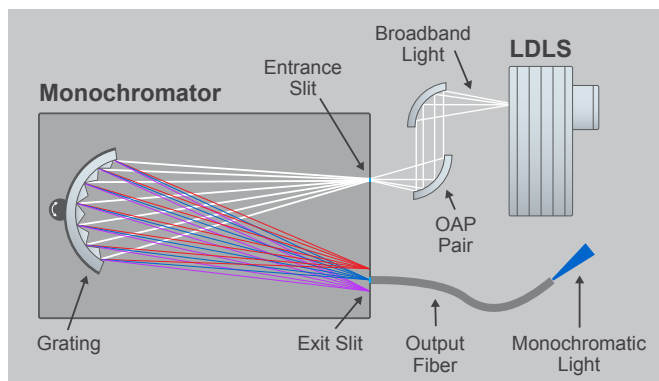
Laser-Driven Tunable Light Source



Overview

The TLS-EQ-77-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-77-RB5	10,000 hours	Replacement Bulb (Not Field Replaceable)
EQ-77-RW-BK7	10,000 hours	EQ-77 Replacement Window (Not Field Replaceable)
Fiber Optic Cable	10,000 hours	Available fibers listed in the Accessories section

Properties

Wavelength Range	350 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)
Compliance	CE Mark

Typical Performance

Maximum in-band flux*	4.9 mW at 440 nm
Average in-band flux*	2.3 mW
Spectral Resolution (bandwidth, FWHM)**	6.5 nm

*1500 μ m core diameter fiber optic cable

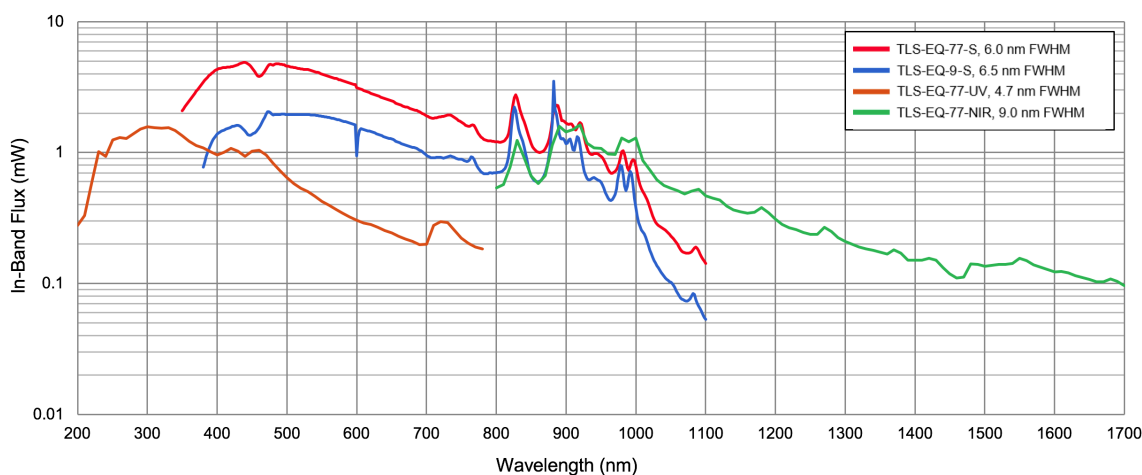
**Standard configuration. Contact us for other bandwidth options.

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)

User Interface

The system interfaces with Windows operating system through a Mini USB connector. Software includes basic controls, an 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. The table below describes the system’s filter wheel positions.

Position	Light Path
1	Closed
2	Open
3	Order sorting filter, 575 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 **600 nm and greater**.

Facility Requirements

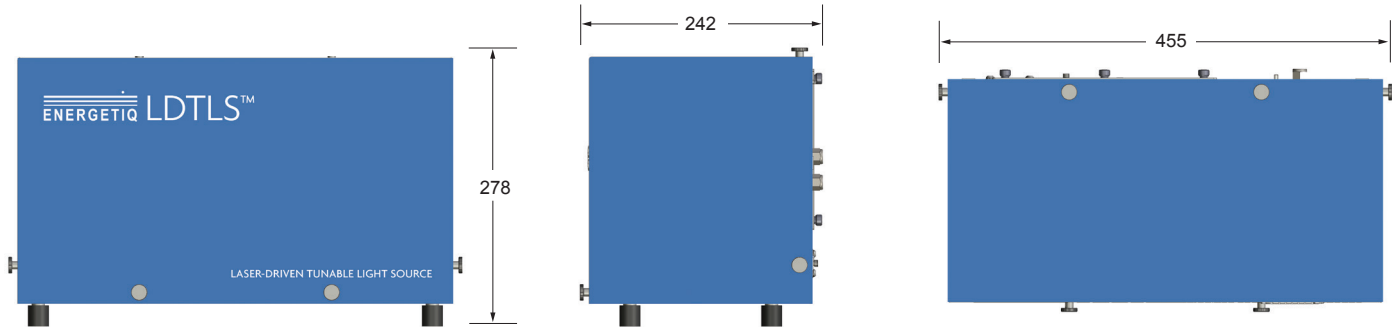
Electrical	100-240 VAC, single phase 50-60 Hz 350 W max. (LDLS) 50 W max. (TLS monochromator)
Cooling (System)	≥ 0.5 liter/minute, 18-30 °C, 100 psig (0.69 MPa) max. inlet pressure
Cooling (Controller)	No auxiliary cooling required
Nitrogen Purge	Recommended. Grade 4.8 or higher, filtered to 5µm; 20 psig ±2
Ambient Temperature	15-35 °C

Physical Specifications

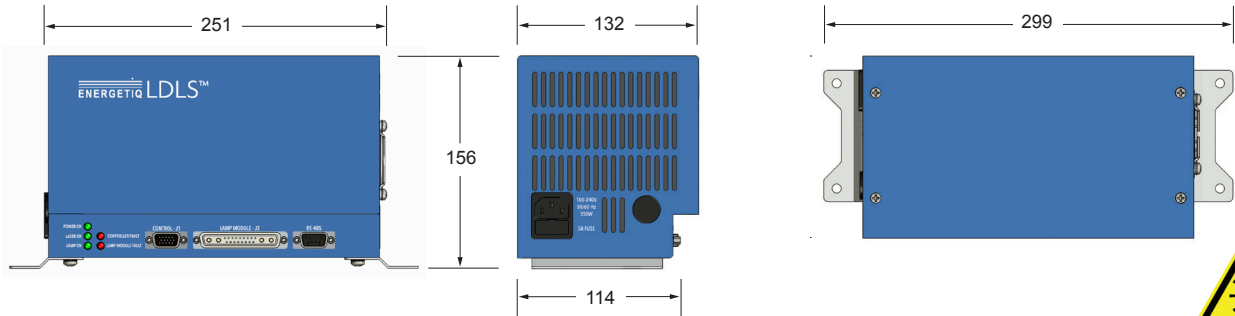
System Dimensions (H x W x D)	278 x 455 x 242 mm
System Weight	16.6 kg
Controller Dimensions (H x W x D)	156 x 299 x 132 mm
Controller Weight	2.9 kg

System Dimensions (Unit: mm)

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



Controller Dimensions (Unit: mm)



www.energetiq.com/patents

