

# TLS-EQ-77-NIR

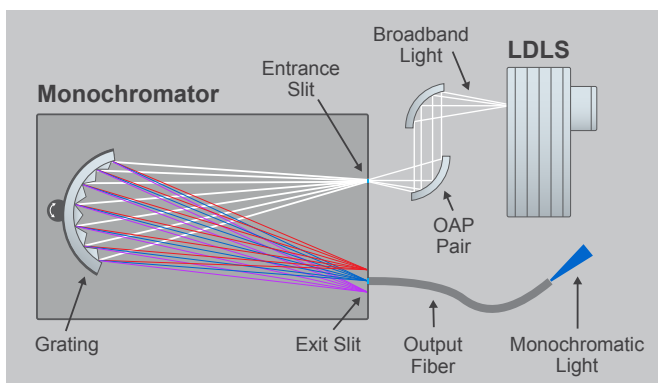
## Laser-Driven Tunable Light Source



### Overview

The TLS-EQ-77-NIR 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	800 nm – 1700 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*	1.6 mW at 920 nm
Average in-band flux*	0.44 mW
Spectral Resolution (bandwidth, FWHM)	9 nm

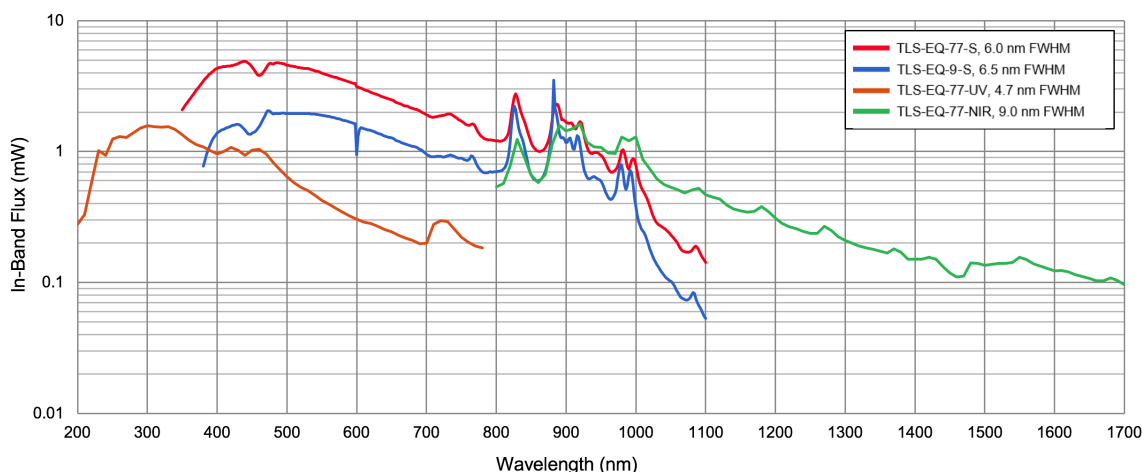
\*1500  $\mu$ m core diameter fiber optic cable

### 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-1500-09 M-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.

Position	Light Path
1	Closed
2	Order sorting filter, 760 nm long wavelength pass
3	Order sorting filter, 1,000 nm long wavelength pass

During a wavelength sweep, it is recommended that you use position 2 for wavelengths between **800 nm and 1299 nm** and transition to position 3 for wavelengths of **1300 nm or greater**.

Facility Requirements

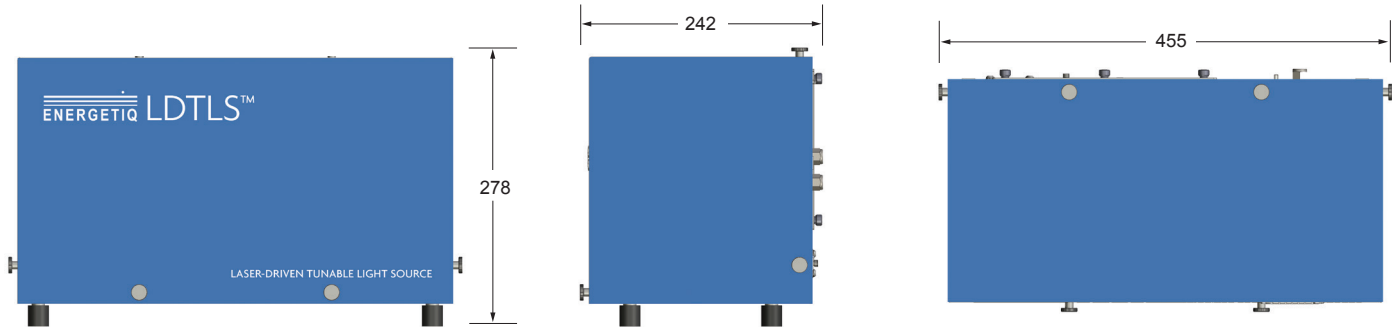
Electrical	100-240 VAC, single phase 50-60 Hz 350 W max. (LDLS) 50 W max. (TLS monochromator)
Cooling (System)	≥ 0.5 liter/minute, 18-30 °C, 100 psig (0.69 MPa) max. inlet pressure
Cooling (Controller)	No auxiliary cooling required
Nitrogen Purge	Recommended. Grade 4.8 or higher, filtered to 5 µm.20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

Physical Specifications

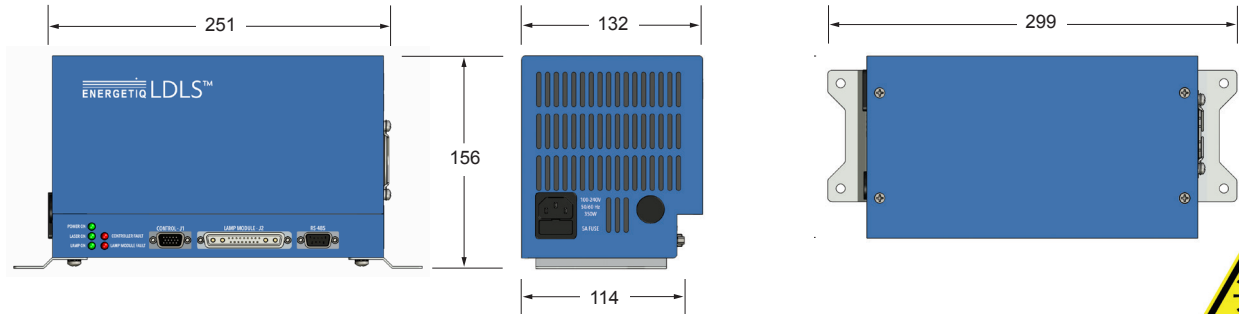
System Dimensions (H x W x D)	278 x 455 x 242 mm
System Weight	16.6 kg
Controller Dimensions (H x W x D)	156 x 299 x 132 mm
Controller Weight	2.9 kg

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](http://www.energetiq.com/patents)

