

Dual Spectrum Stabilized Fiber Coupled Laser Source

(784.5 & 785.5nm for SERDS)



DATASHEET

BUY NOW



The DSFL 785 nm Spectrum Stabilized Fiber Coupled Laser Source outputs powerful and extremely stable dual wavelength lasers through a single fiber output connector that is ideal for Shifted Excitation Raman Difference Spectroscopy (SERDS), a method that effectively reduces the fluorescence interference in Raman Spectroscopy. The unit contains two fiber-coupled high-power diode that is spectrally narrowed and wavelength-stabilized by incorporating a Volume Bragg Grating (VGB). It outputs over 300 mW and 500mW at both 784.5 nm and 785.5nm wavelength having wavelength stabilized within 0.5 nm. This laser source contains a unique high-power fiber-optic switch with internal beam dump, which permits rapid on-and-off switching between the two wavelengths, while ensuring that no laser emission emerges from the FC/PC connector output port in between measurements. It is easy to operate from the front panel or via PC through a USB interface.

Extreme care should be taken when operating this unit to avoid potentially hazardous exposure to both eyes and skin. Users should wear eye protection when operating this unit and should avoid exposure to the output beam.

Features

- High Reliability
- High Stability
- Cost Effective

Applications

- R&D Applications
- Instrumentations
- Sensors

Specifications

Parameter	Min	Typical	Max	Unit
Wavelength		785		nm
Center Wavelength Tolerance	-0.5	0	0.5	nm
Output Power		300		mW
		500		mW
Linewidth		0.1	0.15	nm
Power Consumption		1	3	W
CDRH Class	Class IV			
Humidity	<80, no-condensing			%
Operating Temperature	10 ~ 35			°C
Storage Temperature	-40 ~ 85			°C
Fiber Type	105 μ m Core, NA 0.22			
Fiber Connector	FC/PC			

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Mechanical Dimension

*Product dimensions may change without notice. This is sometimes required for non-standard specifications.

Ordering Information (Part Number) System

	☐	☐ ☐ ☐ ☐	☐	☐	☐	☐
Prefix	Package	Wavelength	Laser Type	Fiber Type	Optical Power	Connector ^[1]
DSFL-	Standard = 1 Special = 0	785 nm = 0785 1600 nm = 1600	Phase Grating = 1	105 μm =1 Special =0	300mW = 1 500mW = 2	FC/PC = 1

[1]. The default connector configuration uses fiber with 0.9 mm buffer protection. The connector cannot be installed directly onto bare fiber because the bare fiber is prone to damage during shipping. However, the connector can be assembled on bare fiber if a 3 cm protective loose tube is added for reinforcement. The customer may remove this protective tube after testing. The optical power handling of a standard connector is less than 0.5 W for SMF-28 fiber and decreases further for smaller-core fibers.

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Application Notes

Fiber Core Alignment

Note that the minimum attenuation for these devices depends on excellent core-to-core alignment when the connectors are mated. This is crucial for shorter wavelengths with smaller fiber core diameters that can increase the loss of many decibels above the specification if they are not perfectly aligned. Different vendors' connectors may not mate well with each other, especially for angled APC.

Fiber Cleanliness

Fibers with smaller core diameters ($<5\text{ }\mu\text{m}$) must be kept extremely clean, contamination at fiber-fiber interfaces, combined with the high optical power density, can lead to significant optical damage. This type of damage usually requires re-polishing or replacement of the connector.

Maximum Optical Input Power

Due to their small fiber core diameters for short wavelength and high photon energies, the damage thresholds for device is substantially reduced than the common 1550nm fiber. To avoid damage to the exposed fiber end faces and internal components, the optical input power should never exceed 20 mW for wavelengths shorter 650nm. We produce a special version to increase the handling by expanding the core side at the fiber ends.