

689nm 50mW DPSS NIR Single Frequency Laser



● Product Description

689/698/813/857nm lasers are specifically designed for deployment in systems utilizing rubidium transitions. With outstanding beam characteristics, ultra-stable output, and an ultra-compact package, they are ideal for demanding applications requiring these wavelengths.

● Product features

Single frequency narrow linewidth; Continuous wave output; All solid-state design; Low noise performance

● Part Number

MP-DPSS-689-50

● Application area

Cold atom physics | Quantum simulation | Precision measurement |
Quantum communication | Scientific instruments

● Core parameters

Wavelength	Output Power	Spectral Bandwidth
689.4nm	50mW	$\leq 200\text{kHz}$

● General Parameters

Detailed Parameters

Parameter	MP-DPSS-6	MP-DPSS-6	MP-DPSS-7	MP-DPSS-81	MP-DPSS-85
	89-50	98-200	80-400	3-200	7-200
Output Power	Up to 50mW	Up to 200mW	Up to 400mW	Up to 200mW	
Wavelength	689.4 nm	698 nm	780 nm	813 nm	857nm
Spectral Width	$\leq 200\text{kHz}$				
Spatial Mode	TEM00				
Spectral Stability	<100fm (over >8 hours operation)				
Coherence Length	>100 m				
Output Power Stability	$\leq 1.0\%$ (over >8 hours operation, peak to peak)				
Output Power Noise	$\leq 0.1\%$ RMS(10Hz-10MHz)				
Beam	1.0 mrad.diffraction-limited				

Divergence	
Beam Diameter at Output Aperture	0.8-1.2 mm
Beam Pointing Stability	$\leq 5 \text{ } \mu\text{rad}/^{\circ}\text{C}$
Laser Head Dimensions	210x100×80 mm
Control Unit Dimensions	180×50×60mm
Ambient Temperature Range	18-30°C
Laser	$\pm 1.5^{\circ}\text{C}$

Head Interface Stability	
Storage Tempera ture	0-50°C
Humidity	0-50 %non-condensing
Laser Head	Hermetically sealed
Integrated Features	
Plug-and -play USB connecti on	Integrated heat sink
Multi-fun ction control software	Remote diagnostic support
Optional Accessories	
Heat sink	Fan-assisted air cooling or water-cooled thermoelectric chiller
External manual	0-100%, continuous



power	
control	

Warranty

12-month warranty for the laser head and controller.

Optional Configurations