

Full RGB Single Longitudinal 457 nm Blue + 532 nm Green + 640 nm Red, Mode Parallel Output Laser Set



1. General Information

Item	Specification
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Product Type	CW Single Longitudinal Mode (SLM) DPSS Laser Set with 3-wavelength parallel output
Configuration	457 nm Blue + 532 nm Green + 640 nm Red, parallel beam output
Required Quantity	1 Full RGB Laser Set
Application	Scientific Research, Holography, Precision Interferometry, Optical Measurement, Spectroscopy Analysis

2. Independent Wavelength & Power Specifications (Parallel Output Channels)

The laser system integrates three independent single-longitudinal-mode laser beams with **parallel output**. All three channels comply with the identical ultra-high precision optical indicators listed in Clause 3.

Channel	Central Wavelength	Output Optical Power
Blue Laser	457 nm	≥ 200 mW (Preferred: 300 mW)
Green Laser	532 nm	~ 500 mW
Red Laser	640 nm (639 nm acceptable alternative)	~ 500 mW

3. Unified Full-Channel Strict Optical & Stability Specifications

Mandatory Rule: All three parallel output channels (457 nm / 532 nm / 640 nm) shall fully satisfy the same technical standards below. No parameter degradation is permitted for green and red channels. All tests are performed at 25 °C room temperature with 8-hour continuous mode-hop-free operation.

Technical Parameter	Requirement
Operating Mode	Continuous Wave (CW)
Longitudinal Mode	Single Longitudinal Mode (SLM), single

	frequency, mode-hop-free
Coherence Length	> 10 m (Manufacturer must provide official measured/specified value)
Spatial Mode / Beam Quality	TEM fundamental mode, $M^2 < 1.1$
Power Stability	< 3%
Beam Diameter (at Aperture)	< 1 mm
Beam Symmetry (at Aperture)	> 0.90:1
Full Beam Divergence Angle	< 1.5 mrad
Polarization State	Linear & Vertical Polarization, Polarization Ratio > 100:1
RMS Noise (20 Hz – 20 MHz)	< 1%
Peak-Peak Noise (20 Hz – 20 MHz)	< 2%
Wavelength Stability (± 2 °C, 8 Hours)	< 1 pm