Precision Photonics

Cutting Edge Engineering at the Speed of Light

Compact Semiconductor Green Laser

AIMPICO compact DPSS laser systems deliver narrow-linewidth, diffraction-limited output across visible and near-infrared wavelengths — engineered for laboratory, clinical, and OEM environments where beam quality, coherence, and long-term power stability are essential.

Built on diode-pumped solid-state technology, AIMPICO DPSS lasers produce a highly coherent TEM_{00} beam with polarisation ratios exceeding 100:1 and spectral linewidth below 0.1 nm. The all-solid-state architecture requires no gas handling, no electrode replacement, and no periodic realignment, delivering a maintenance-free platform rated for over 10,000 hours of continuous operation. Active closed-loop power stabilisation maintains output within ±1% RMS across the full operating temperature range, with the laser source, drive electronics, and thermal management integrated into a single compact enclosure.

Applications

- Fluorescence microscopy
- Medical diagnostics & Point-of-care product
- OEM instrument
- Optogenetics
- Advanced research
- Spectroscopy

Key Feature Highlights

• **TEM_{00} mode with Superb Beam Quality**	Diffraction-limited output for precise fiber coupling, spectrometer slit filling, and confocal microscopy
• **Narrow Linewidth & High Polarization**	High spectral purity and defined polarization state for spectroscopy, interferometry, holography and scattering experiments
• **Stable Output (±1% RMS)**	Active closed-loop control ensures consistent power across the full operating range
• **All Solid-State, Maintenance-Free Design**	No gas handling, no electrode replacement, no realignment — > 10,000-hour operational lifetime
• **Compact, Integration-Ready Platform**	Laser source, drive electronics, and thermal management in a single enclosure with TTL and analogue modulation

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Technical Specification

OPTICAL PARAMETERS

Center Wavelength	532 nm ± 1 nm
Operating Mode	Continuous Wave
Output Power	1 – 500mW, 1,000 – 1,500 mW
Power Stability (rms, 4 hours±3℃)	< 1%
Transverse Mode	TEM_{00}
Beam Quality (M^2)	< 1.2
Beam Divergence (full angle)	< 1.5 mrad
Beam Diameter at the aperture ($1/e^2$)	< 1.0 mm
Polarization Ratio	> 100:1, horizontal (vertical optional)
Pointing stability (over 2 hours after warm-up and ±3°C)	< 50 µrad
Pointing stability over temperature	< 8 µrad/°C

ELECTRICAL PARAMETERS

Power Consumption	15 (typical), < 25 W (40 °C)
Modulation Options	DC-1kHz, 1kHz-10kHz, 10kHz-30kHz optional; TTL/Analog optional
Compatible Power Supply (100-240VAC)	LPS-IV/LPS-V/LPS-VI/LPS-OEM-II

MECHANICAL PARAMETERS

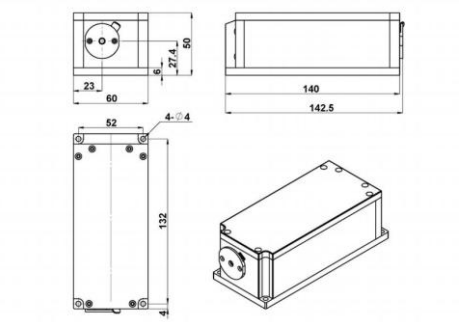
Dimensions	142.5(L) × 60(W) × 50(H) mm^3
Weight	1.0 kg
Beam Height from Base Plate	27.4 mm

ENVIRONMENTAL

Operating Temperature	10 – 35 °C
Laser Warmup Time	< 5 min
Expected Lifetime	> 10,000 hours

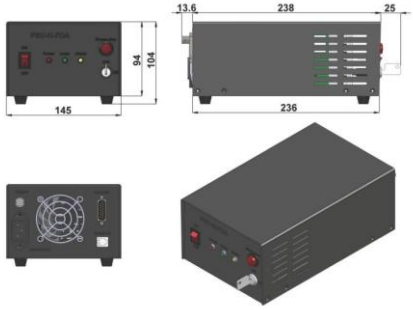
Mechanical Drawings

Laser Head[1]



142.5 (L) × 60(W) × 50(H) mm^3, 1.0kg

Compatible Power Supply (LPS-IV[2])



276.6(L) × 145(W) × 103.6(H) mm^3, 2.3kg

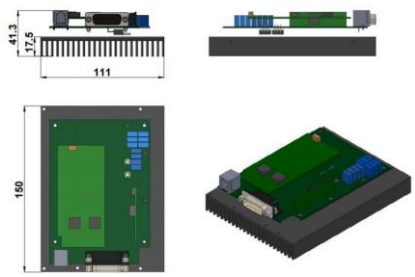
Compatible Power Supply (LPS-V[3])

273.6(L) × 145(W) × 106(H) mm^3, 2.3kg

Compatible Power Supply (LPS-VI[3])

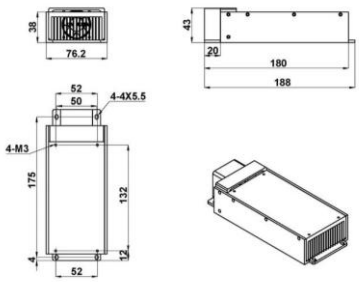
188(L) × 145(W) × 83(H) mm^3, 1.2kg

Compatible Power Supply (LPS-OEM-II[3])



150(L) × 111(W) × 41.3(H) mm^3, 0.8kg

Heat Sink (HS-IV[4])



188(L) × 76.2(W) × 38(H) mm^3, 1.25kg

Product Certifications

[1]: Laser head needs to be used with a heat sink with good heat dissipation
[2,3]: Sold separately.
[2]: Fixed output power.
[3]: Output power adjustable 10-100%.
[4]: Optional; sold separately.

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