

## LRD-405-PF SERIES INFORMATION SHEET

The LRD-0405 Series of Collimated Diode (Semiconductor) Lasers are ideal for applications requiring a short wavelength of 405nm and output power levels of <math><5\text{mW}</math> to <math>>300\text{mW}</math> with a high level of long-term output power stability and long operating lifetime at an aggressively competitive cost.

These lasers are commonly used for various scientific applications involving fluorescence excitation, as well as PIV, spectral analysis, and a broad spectrum of other applications. The driver is available as a complete FDA-compliant system or as an O.E.M. component with significantly reduced dimensions in 80-260VAC, 12VDC, or 5VDC input voltage. Please ask for an information sheet for other models.



### KEY FEATURES:

- Air cooled – no need for water cooling or external chiller
- Lightweight, compact design
- Efficient Diode Laser technology runs on standard AC power (85 – 264 V, 47 – 63 Hz)
- >10,000 hours continuous maintenance-free operating life
- 30kHz TTL modulation (input via BNC connector)<sup>1</sup>
- 30kHz analog modulation (input via BNC connector)<sup>2</sup>
- Adjustable output power via lockable dial
- LED display showing LD current, laser cavity temperature
- FDA CDRH Compliant Class IIIb / Class IV enclosure
- 48-hour replacement coverage available for an additional fee

### CUSTOM OPTIONS:

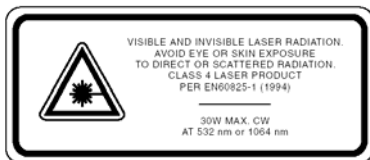
- Fiber coupling – The LRD-0405 series can be fiber-coupled to the customer's choice of fiber optic cable; the most common types of connectors are FC and SMA-905. Unless otherwise specified, armored fiber will be used to avoid damage during transport and use. Please see the fiber coupling efficiency chart on Page 4 to ensure sufficient output power for your application.
- Custom optics – The output beam can be shaped per the customer's requirements, including customizable beam diameter, divergence and ellipticity. Line-generating optics can be installed to match the customer's requirements.
- Operating Voltage – By special request, the LRD-0405 series can be configured to run on either AC or DC current at nearly any voltage that the customer requires.

<sup>1</sup> Output may not reach full power as per specifications when modulating at this speed

<sup>2</sup> Output power variation adjustment may not be linear with dial

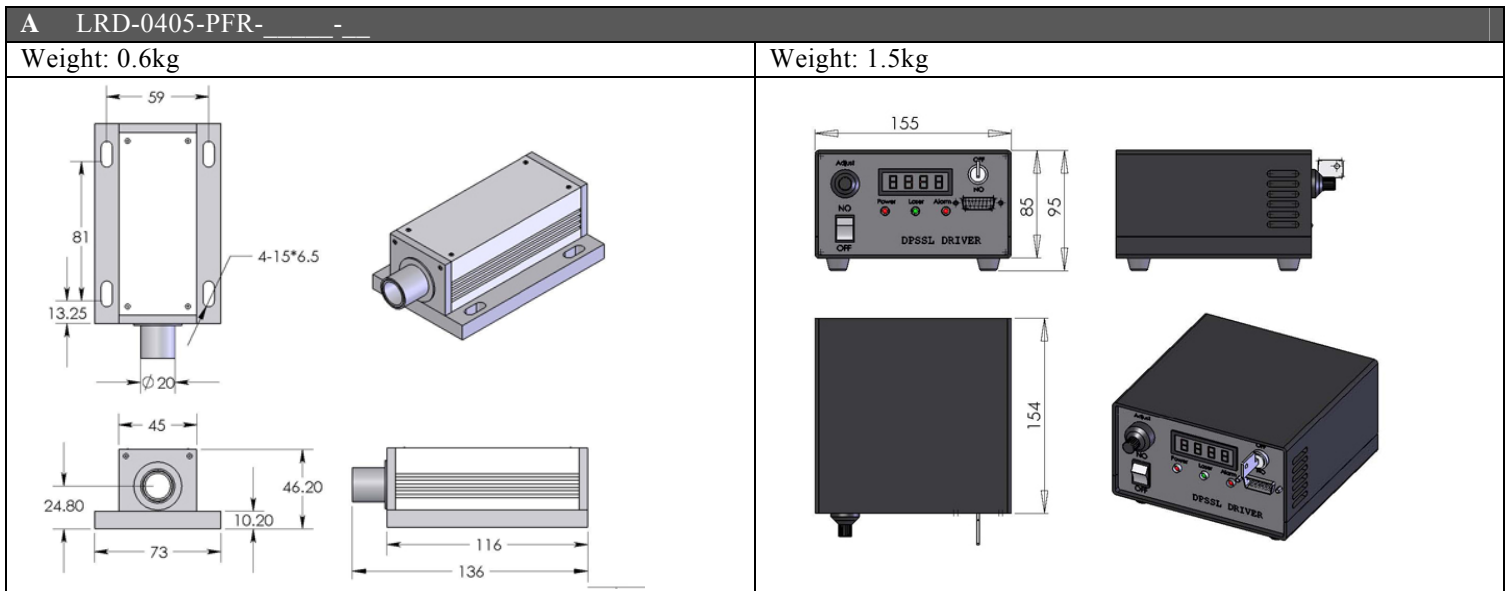
**SPECIFICATIONS:** (Please see model number/ SKU reference table on Page 4 for full model number/SKU.)

Dimensional Drawing Reference (see below)		A
Model	LRD-0405-	PFR-____-__
Wavelength (nm)		405 (+/-5)
Actual Centre Wavelength (nm)		406.4
Output Power		<5 mW >10 mW >30 mW >50 mW >100 mW >150 mW >200 mW >300 mW
Output Power Stability <sup>3</sup> (RMS/4 hrs.)		<5%, <3%, <1%
Warm-up time (min)		<5
M <sup>2</sup> Factor		-
Beam Divergence (mrad)		<0.5
Beam diameter at aperture (mm)		~4.0
Beam height from base (mm)		24.8
Spectral linewidth (nm)		-
Polarization ratio		-
Pointing stability after warm-up (mrad)		<0.05
Operating temperature (°C)		10-35
Transverse Mode		Near TEM <sub>00</sub>
MTTF (hours)		>10,000
Limited Warranty		1 year
Operating Mode		CW
Power Supply		90-264VAC



<sup>3</sup> Stability values guaranteed only after operating continuously at full power for a minimum of 5 minutes.

**DIMENSIONAL DRAWINGS (please refer to model number in specifications chart above):**



**FIBER COUPLING OPTIONS:**

1. Fiber connector only: Please specify connector type (SMA-905 or FC) and the core diameter of the fiber you will be using.
2. Permanent coupling: Fiber cable will be aligned for maximum efficiency and permanently bonded in place to ensure reliability.
3. Detachable coupling: Fiber cable will be removable from coupler and can be swapped for a different cable. As this allows some variability in alignment, coupling efficiency will be slightly less than outlined below.

Fiber Type:	Single Mode	Multi Mode	Multi Mode	Multi Mode
<b>Core Diameter:</b>	4-9µm	≥100µm	≥200µm	≥400µm
<b>Coupling Efficiency:</b>	[not available on Diode lasers, only on DPSSL lasers]	>30%	>60%	>80%
<b>Example using &gt;100mW laser:</b>	-N/A-	>30mW fiber output	>60mW fiber output	>80mW fiber output

FOR FURTHER INQUIRIES PLEASE CONTACT:

**LASERGLOW TECHNOLOGIES**

216-5 Adrian Ave.  
Toronto, ON, M6N5G4  
Canada

Tel. (416) 729-7976  
Fax (480) 247-4864

[sales@laserglow.com](mailto:sales@laserglow.com)  
[www.laserglow.com](http://www.laserglow.com)