

### PEARL™ HIGH-EFFICIENCY SERIES



The Pearl™ high-efficiency series delivers up to 50 Watts from a 400 or 600 micron fiber and has been specifically designed to meet the requirements of laser pumping, materials processing and medical applications.

The Pearl™ product family offers unparalleled reliability and efficiency by coupling nLIGHT's high-brightness nXLT™ single emitters with a proprietary optical design for efficient fiber coupling.

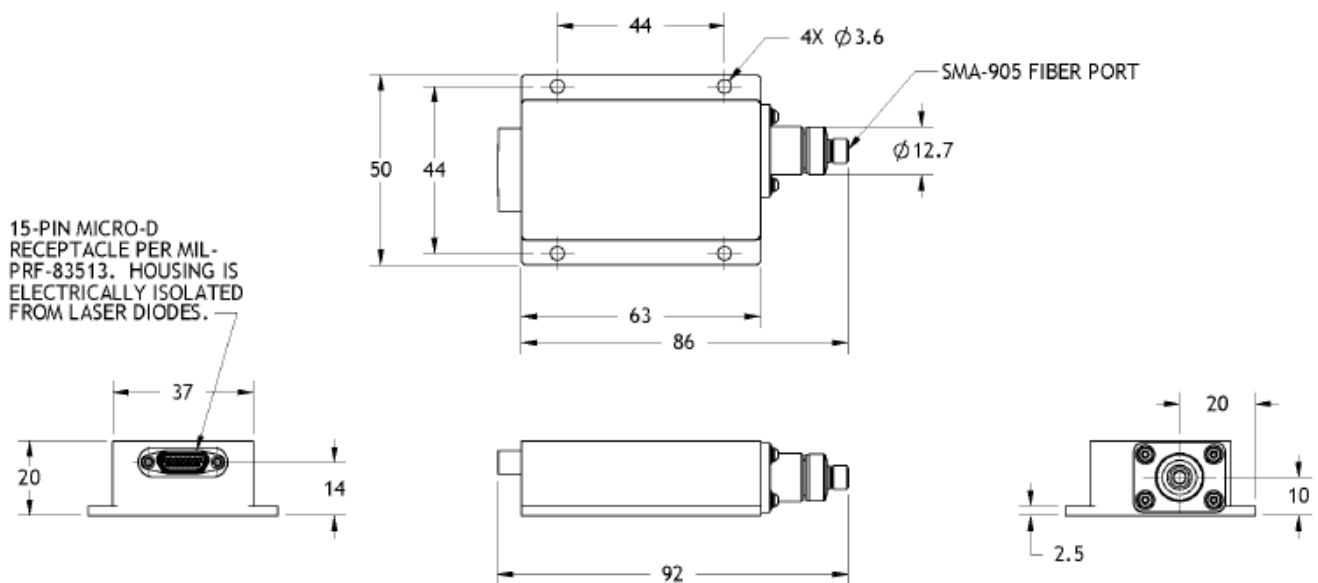
#### Applications

- DPSS laser pumping
- Fiber laser pumping
- Disc laser pumping
- Dental
- Dermatology
- Materials processing
- Illumination
- Projection display
- Entertainment

#### Features

- Single emitter diodes with nXLT™ diode protection
- >50% wall-plug efficiency
- nDure™ detachable fiber
- Plug and play

#### Package dimensions



### Typical device specification

		P430-0808	P440-0808	P450-0808
<b>Optical</b>				
Center wavelength	nm	808	808	808
Center wavelength tolerance	nm	± 3	± 3	± 3
CW output power	W	30	40	50
Fiber core diameter	µm	400	400	400
Beam divergence	NA <sup>1</sup>	0.18	0.18	0.18
Spectral width (FWHM)	nm	< 3	< 3	< 3
Slope efficiency	W / A	6.2	8.2	10.3
<b>Electrical</b>				
Power conversion efficiency	%	48	48	48
Threshold current	A	1.0	1.0	1.0
Operating current	A	5.8	5.8	5.8
Operating voltage	V	11.0	14.5	18.2
Series resistance	Ω	0.20	0.25	0.30
<b>Mechanical</b>				
Storage temperature range <sup>2</sup>	°C	-30 to +60	-30 to +60	-30 to +60
Mass	gr	< 450	< 450	< 450
<b>Thermal</b>				
Thermal resistance <sup>3</sup>	°C / W	0.4	0.3	0.2
Operating temperature	°C	+15 to +35	+15 to +35	+15 to +35
Wavelength temperature coefficient <sup>4</sup>	nm / °C	0.28	0.28	0.28

<sup>1</sup> Numerical aperture (NA) is the sine of the half-angle encircling 90% of the optical energy from the fiber.

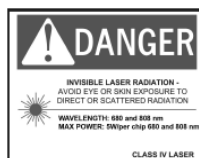
<sup>2</sup> A non-condensing environment is required for storage and operation.

<sup>3</sup> Thermal resistance is the diode junction temperature shift per incremental Watt of heat load.

<sup>4</sup> The wavelength temperature coefficient is the wavelength shift per °C change at the diode junction.

#### CFR Regulation

These components do not comply with the federal regulation (Title 21 CFR, Chapter 1, Subchapter J) as administered by the Center for Device and radiological Health. Purchaser acknowledges that their products must comply with these regulations before they can be sold to an end-user.



#### Notice

nLIGHT continually improves its products to provide our customers with outstanding quality and reliability. nLIGHT may make changes to specifications and product descriptions at any time, without notice. In addition, nLIGHT offers a limited warranty to ensure customer satisfaction. For complete details, please contact your nLIGHT sales representative.