Stingray 140W Industrial Fiber-Coupled Laser Diode

Key Features

- 140W output power
- High reliability
- 106.5µm aperture
- 0.22 NA Fiber
- Isolated electrical contacts

Applications

- Fiber laser pumping
- Material processing
- Graphic arts

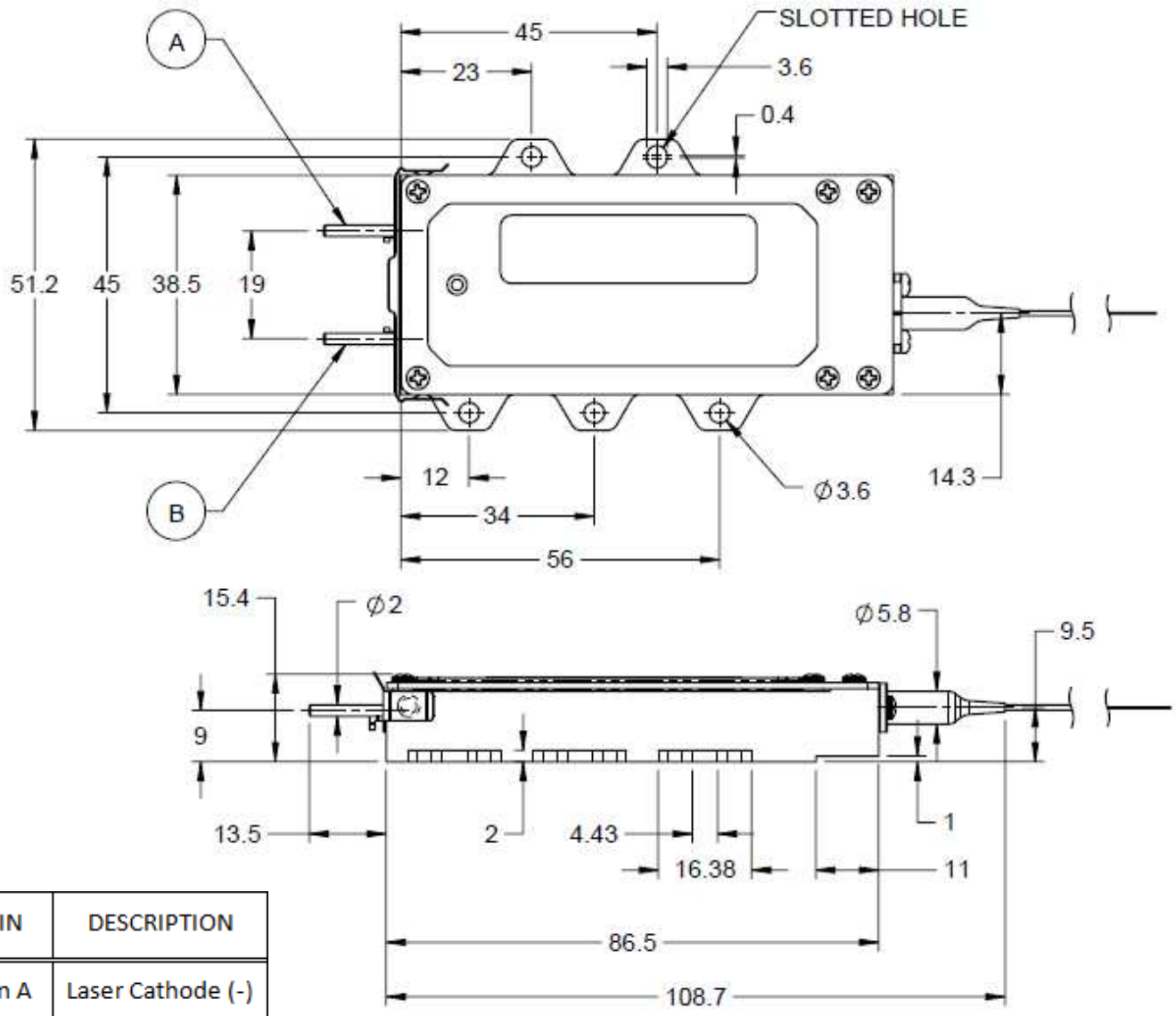
JDSU Stingray pump offers up to 140W from a 106.5um fiber output. Stingray employs the latest-generation Sirius chip optimized for reliability at high peak power. The Stingray platform leverages a long history of fiber-coupled packages (e.g., L4), incorporating a highly-reliable design in a scalable commercial product.

Stingray multimode pump modules offer high brightness, small size and simplified thermal management. Similar to L4 package, the diodes operate independently as distributed heat sources, allowing air or water cooled architectures with predictable high reliability.

Stingray is the ultimate solution for the fiber laser pumping market offering all necessary technical attributes in a platform that is cost effective by leveraging our JDSU manufacturing in China.

JDSU Dimensional Specification

(Specifications are in mm unless otherwise noted.)



PIN	DESCRIPTION
Pin A	Laser Cathode (-)
Pin B	Laser Anode (+)

JDSU Parametric Specification[1]

Parameter	Symbol	Minimum	Typical	Maximum	Units
Laser Characteristics @ 140W Output Power					
Maximum Operating Current Set Point (BOL)	$I_{op,\ BOL}$	---	---	13.0	A
Maximum Operating Voltage at I=13A (BOL)	$V_{op,max}$	---	---	25.0	V
Electrical-to-Optical Conversion Efficiency at $I_{op,\ BOL}$ Set Point	PCE (140W)	42	48	---	%
Wavelength range at Iop (98% of power within band)	λ	908	---	928	nm
	λ	928	---	950	nm
Wavelength shift with temperature		---	0.3	---	nm/C
Back reflection isolation 1060-1100nm		30	---	---	dB
Light within 0.15NA		---	95%	---	
Fiber Characteristics					
Fiber core diameter (Nufern P/N FUD-4130)	d_c	105µm	106.5µm	108µm	
Fiber numerical aperture	NA	0.20	0.22	0.24	
Fiber cladding diameter	d_{cl}	124µm	125µm	126µm	
Fiber buffer diameter	d_b	230µm	245µm	260µm	
Fiber loose tubing diameter	d_j	0.75mm	---	1.05mm	
Total Fiber length	L_f	1.6m	--	---	
Fiber loose tubing length	L_t	0.7m	--	0.9m	
Fiber bend radius		30mm	---	---	
Fiber Termination			None		
Fiber axial pull force, 15sec		---	---	5N	
Fiber side pull force, 15sec				2.5N	

1. All electrical and optical performance data referenced at 35°C (case temperature) and Iop Beginning of Life (BOL), unless specified. Note: Cold plate typically needs to be chilled to 25°C-30°C to maintain 35°C pump case temperature.

Environmental Requirements

Environmental	Min	Max	Units	Notes
Case operating temperature (base of laser housing)	10	50	C	Mounting feet can be used to approximate base temperature
Storage and transportation temperature (non-operating)	-30	75	C	Non-condensing under operation and storage
Electrostatic Discharge (ESD)		500	V	HBM
Maximum Voltage between any pin and package		75	V	
RoHS 6/6	Compliant			