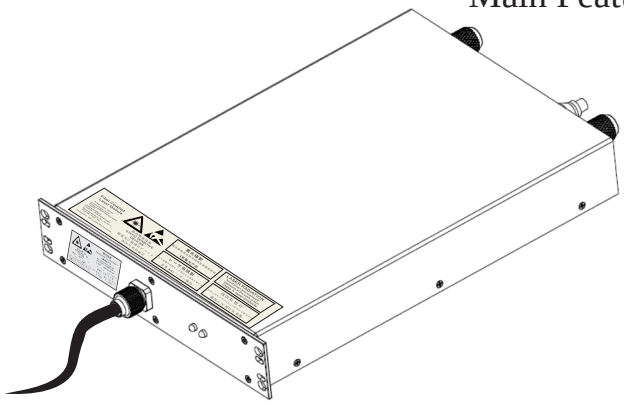
High Power 50W 405nm Fiber Coupled Laser Module
LY4050-10AS Series



Main Features

- 50W High Power
- High Reliability
- High Cost-effective
- Low power consumption
- UV Resistant Fiber Coupling
- Miniaturized/ Modular

Application Scenarios:

PCB Plate Making

Fluorescence Excitation

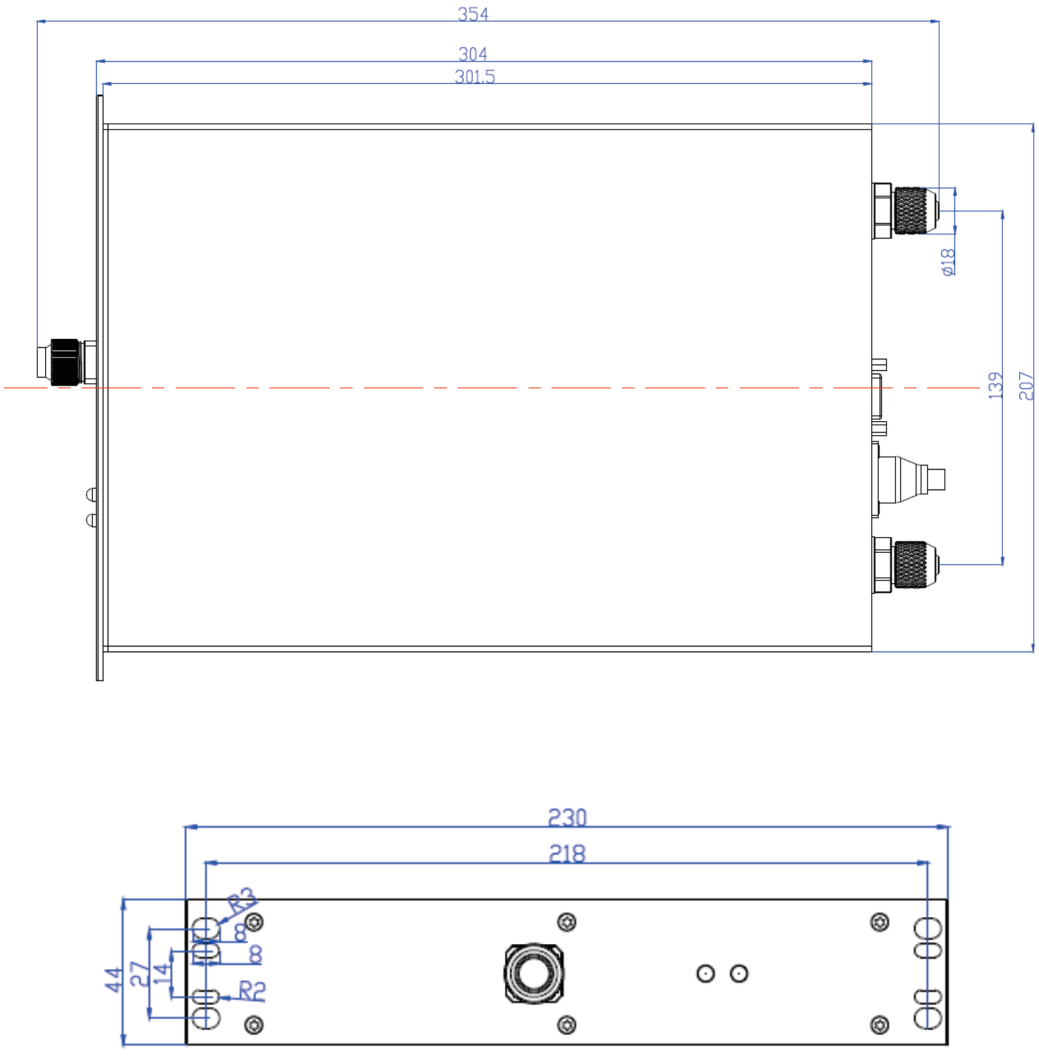
Material Processing

Biochemical Research

BULASER's LY4050-10AS fiber laser module provides 50W laser power through 105 μm bundled fiber; the module provides high brightness, small size and easy-to-use thermal management through distributed laser diodes, making the water-cooled architecture with predictable high reliability.

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Dimensions (Unless otherwise stated, dimensions are in mm)

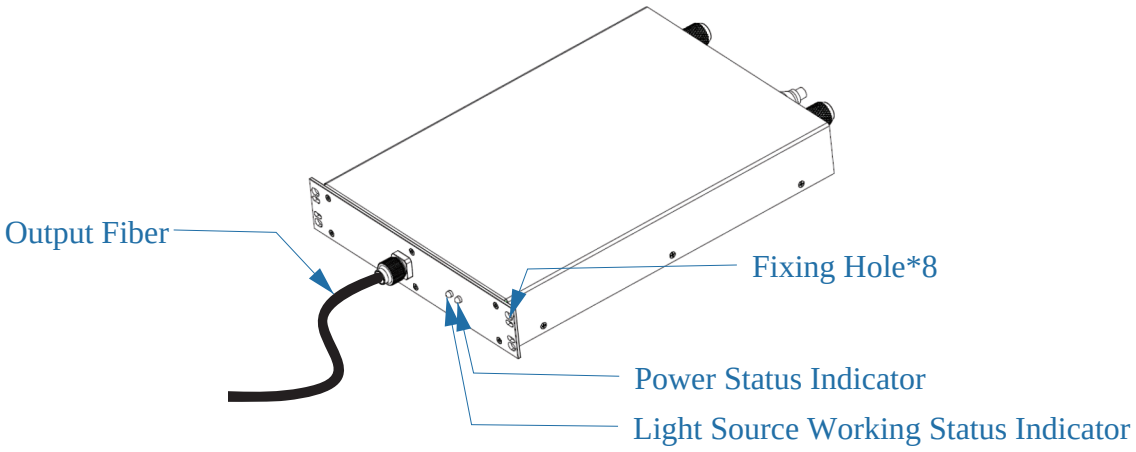


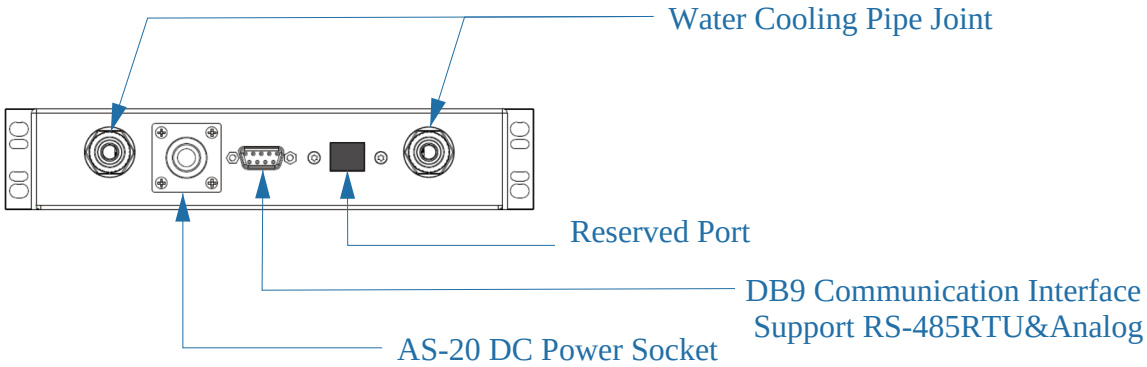
Note: The water pipe is equipped with inner diameter Φ6.5-Φ8mm/outer diameter Φ10mm hose

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Interface Description

(The following specifications are for reference only and are subject to change without notice)





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Electrical Connections

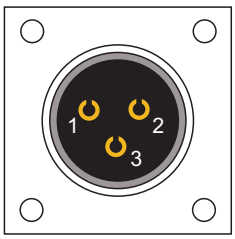
(The following specifications are for reference only and are subject to change without notice)

AS-20 Pins Description:

1.DC24V

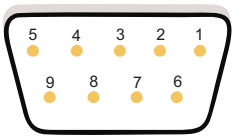
2.GND

3.Earthing

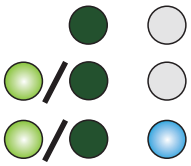


DB9 Pins Description:

1.AI1
2.AI1
3.A 485+
4.B 485-
5.G
6.SGND
7.Pul1
8.Pul1
9.DGND



Indicator Status:



Not powered on

Powered on

Light source is working

High Power 50W 405nm Fiber Coupled Laser Module
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Specifications (The following specifications are for reference only and are subject to change without notice)

Parameter	Symbol	Min	Typ	Max	Unit
Working Voltage	V_f	-	24	26	V
Working Current (Total)	$I_{op(s)}$	-	14	15	A
Single Channel Working Current (Single diode)	$I_{op(E)}$	-	0.6	-	A
Laser Power	P_o	-	50	52	W
Relevance	Correl	0.98	0.99	1	I/Po
Wavelength	λ_p	402	405	408	nm
Slope Efficiency	η_d	1.5	2.0	-	W/A
ESD	V_{esd}	-	-	500	V
Cooling Medium	R	-	Purified water	-	H2o
Ambient Temperature	T_a	18	22	25	℃
Storage Temperature	T_{stg}	-30	25	70	℃
Water Temperature	T_c	18	19	22	℃
Water Pressure	WP	-	0.2	0.5	Mpa
Flow Rate	F_r	15	-	-	Liter / min
Humidity	RH	-	55%	70%	%RH

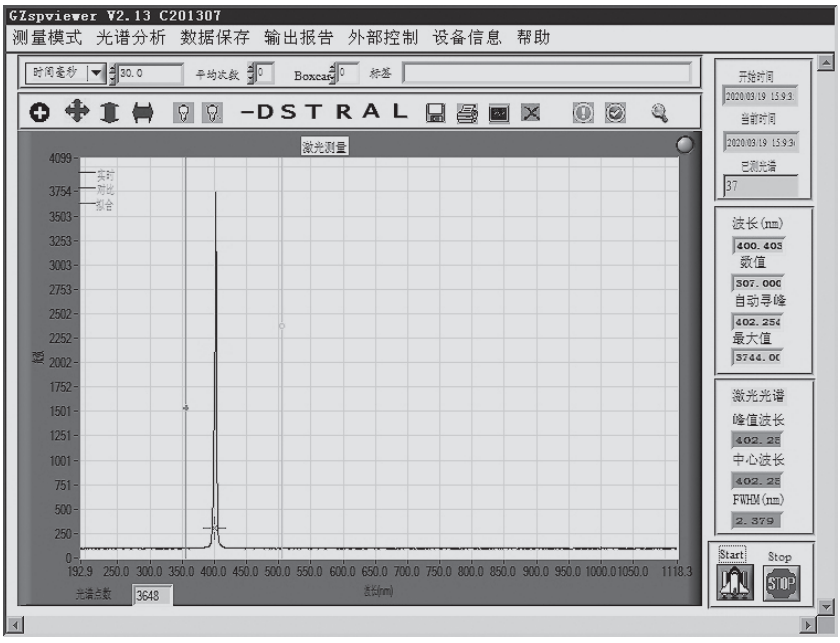
Note: Please use non-conductive deionized purified water as the coolant, and please replace it regularly (2 months/time). (Humidity: 50%-70%RH non-condensing state)

High Power 50W 405nm Fiber Coupled Laser Module
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Specifications

(The following specifications are for reference only and are subject to change without notice)

Parameter	Symbol	Min	Typ	Max	Unit
Fiber Bend Radius	R_b	-	80	-	mm
Fiber Axial Pull	N_{apf}	-	-	2	kgf
Fiber Core Diameter	D_c	-	105	-	μm
Numerical Aperture	NA	0.20	0.22	0.24	
Fiber Bundle Diameter	D_{bc}	-	1.1	-	mm
Fiber Length	L_f	-	1.5	-	m
Fiber Interface	OFS	-	SMA905	-	



Laser Wavelength Test Chart

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Safe Operation

(Safety matters, please read carefully)

The laser light emitted by the 405nm laser contains ultraviolet light, which may be harmful to the human eye. Avoid viewing the fiber end face directly or viewing the collimated beam along its optical axis while the device is operating.

Use beyond the maximum ratings may result in device failure or a safety hazard. A high-quality power supply is required to prolong device life. (The diode laser may be damaged due to excessive ripple voltage or switching surge. When using, the power connector should be connected and then connected to the main power supply.)

The temperature needs to be monitored, and an increase in temperature will accelerate the degradation of device performance or even damage. Therefore, it is recommended to pay attention to reducing the temperature of the laser module to meet the requirements. For example: if the enclosure is operated at 35° C instead of 25°C, the life expectancy will be reduced by more than four times; When storing at low temperature, please drain the water in the equipment to prevent the pipes from freezing.

Incorrect ID settings can cause the device to fail to connect. And please note that one device cannot use two or more laser modules with the same ID.



Device ID number, this ID number can be changed by software

BULASER's statement: All reverse engineering is prohibited!