



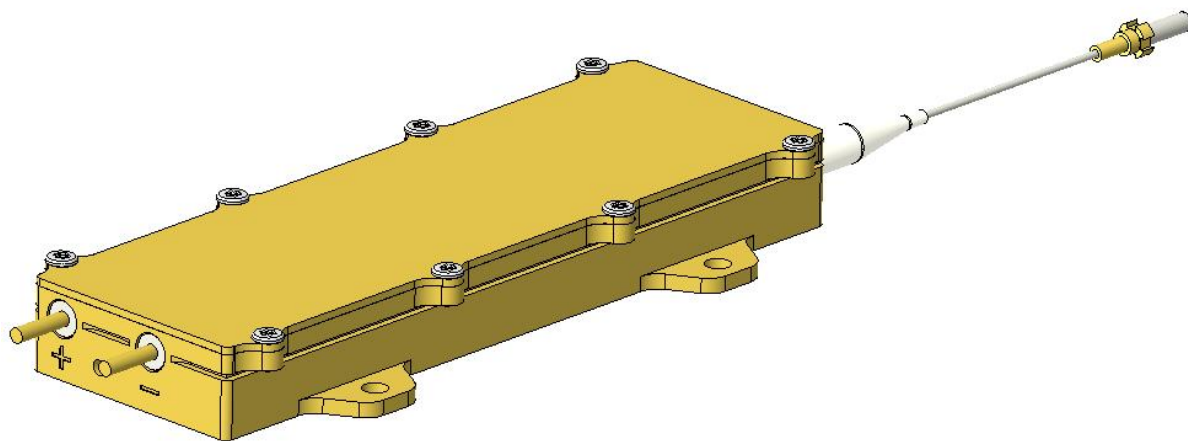
苏州奥镭光电科技有限公司

光纤耦合半导体激光模块

FIBER COUPLED DIODE LASER MODULE

280W 976nm 135/155 μ m 产品

PN: DG-20XH-19X-280-976-13522-V-T1



Version	Change Items	Released Date
V1.0	Initial	2025.10.20

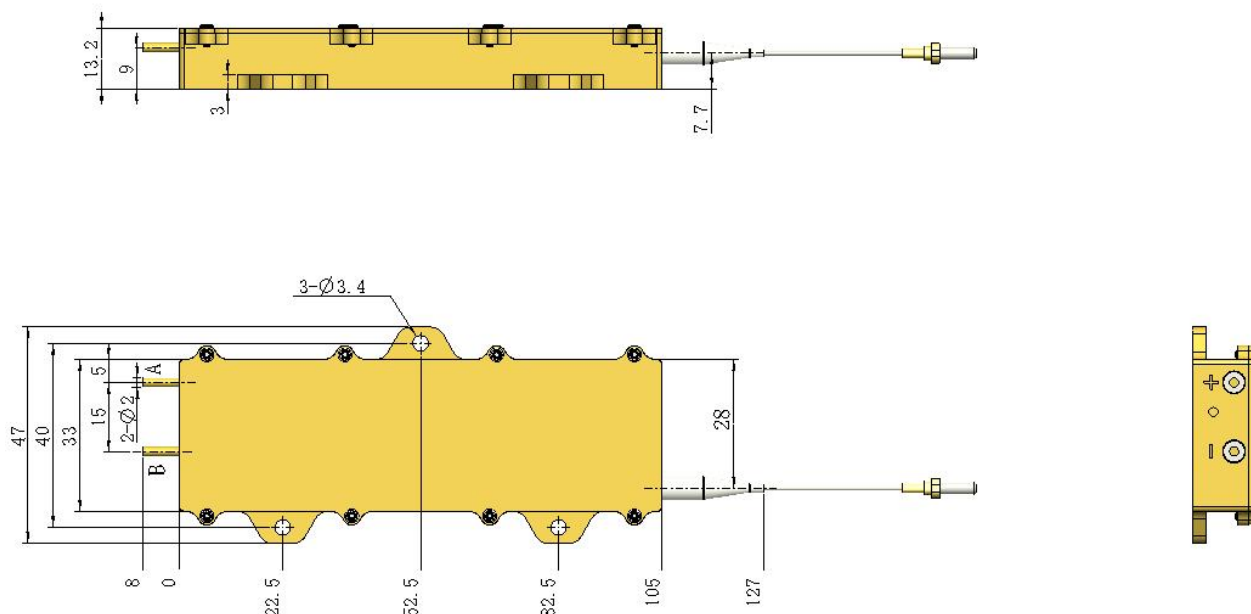
DATASHEET REV 1

苏州奥镭光电科技有限公司
Suzhou Allasers photoelectric Technology Co.LTD

主要特性 Key Features: ● 高亮度/ High Brightness ● 高电光转换效率/ High E-O Conversion ● 高可靠性/ High Reliability		应用领域 Application: ● 光纤激光泵浦/Fiber Laser Pump		
光学参数 ¹ / Optical Parameters ¹	单位/ Unit	最小值/ Min	典型值/ Typical	最大值/ Max
输出功率/ CW Output Power	W	280		
中心波长 ² / Central Wavelength ²	nm	976±1		
光谱宽度 / Spectral Width (FWHM)	nm		0.5	0.6
数值孔径@95%功率@I _{max} / NA@95%Power@I _{max}	-		0.17	0.175
锁波电流范围/ Locked Current	A	8-IOP (SMSR≥20dB)		
光纤芯径/Fiber Core Diameter	μm	135		
光纤包层/ Fiber Cladding Diameter	μm	155		
光纤数值孔径 /Fiber NA	-	0.22±0.02		
光纤长度/ Fiber Length	m	1.8	2	
光纤保护管/Fiber Protective Tubes	mm		0.9	
光纤输出头/ Fiber Connector	-	Φ2.5mm陶瓷插芯		
防反射波段/ Back Reflection Isolation Wavelength	nm	1040		1200
防反射隔离度/ Back Reflection Isolation	dB	30		
电学性能/ Electrical Parameters		最小值/ Min	典型值/Typical	最大值/ Max
电光转换效率/ Conversion Efficiency	%		52	
阈值电流/ Threshold Current	A		1.5	
工作电流 ³ / Operating Current ³	A		17	19
工作电压/ Operating Voltage	V		29	31
热学性能/ Thermal Parameters		参考值/ Reference value		
工作温度 ⁴ / Operating Temperature Range ⁴	°C	25±3		
存储温度/ Storage Temperature Range	°C	-40 to 70		
温漂系数/ Wavelength Temperature Coefficient	nm/°C	~0.01		
盖板温度/ Lid Temperature	°C			75 (25°C冷板)
光纤温度/Fiber Temperature	°C			45 (25°C冷板)
光纤管嘴温度/ Fiber-Snout Temperature	°C			45 (25°C冷板)
壳体温度/ Temperature	°C			50 (25°C冷板)
其他参数/Other parameters		最小值/ Min	典型值/ Typical	最大值/ Max
重量/ Weight	g		100	
焊接温度/ Soldering Temperature	°C			300
焊接时间/ Welding Time	Sec			10

- ¹ 在水冷 25摄氏度下测得。Tested at 25°C water-cooled heat sink.
- ² 可根据客户需求定制。Others available upon request.
- ³ 超规格使用会导致激光器寿命下降。Reduced lifetime if used above nominal operating condition.
- ⁴ 激光波长会随热沉工作温度变化产生漂移。Laser wavelength would shift when heat sink operating temperature is changed.

外形尺寸/ Dimensions (mm)



使用说明 Application Notes:

- 输出激光是不可见光，使用时须遵守 IEC 四级激光标准安全规范，避免激光直接或间接照射眼睛；
The laser beam is invisible, please follow the standard safety procedures for IEC Class 4 lasers, avoid eyes exposure to radiation.
- 静电击穿导致半导体激光器失效，激光器安装人员须经过培训，操作时须佩戴防静电手腕带，工作台需接地；在供电连接头与激光器连接前，正负极应处于短接状态；
ESD cause diode laser failure, The operator should be trained, wearing ESD grounding straps and the work surface should be grounded. The positive and negative poles shall be connected before the power supply is connected with the laser.
- 电流过冲可能损坏激光器，驱动电源须稳定无过冲。
The current overshoot may damage the laser, and the driving power must be stable without overshoot.

