



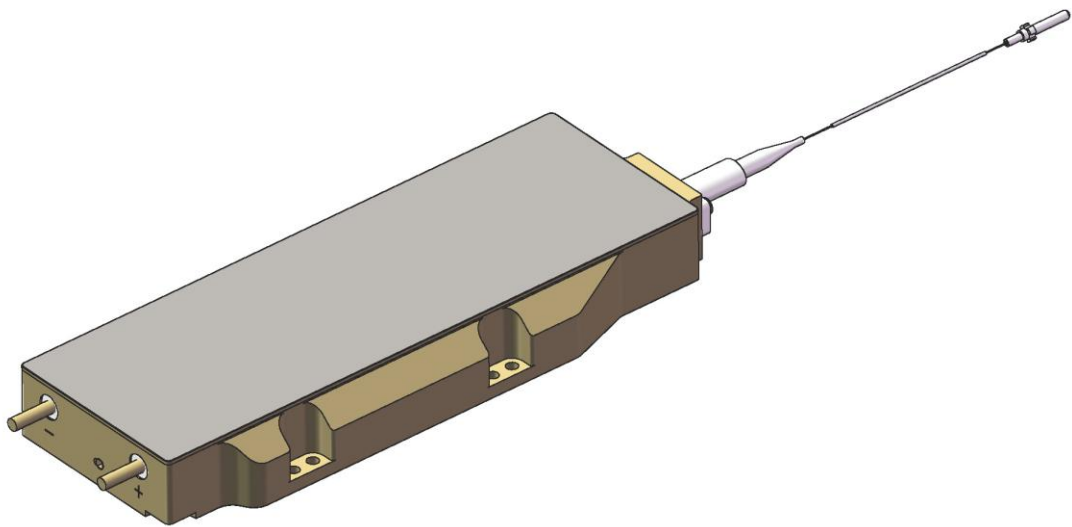
度亘光电科技（南通）有限公司

光纤耦合半导体激光模块

FIBER COUPLED DIODE LASER MODULE

450W 976nm 135/155μm 产品

PN: DG-Z23-21X-450-976-135



版本号	新编/修订内容	修订日期
A0	新编	2026.01.07

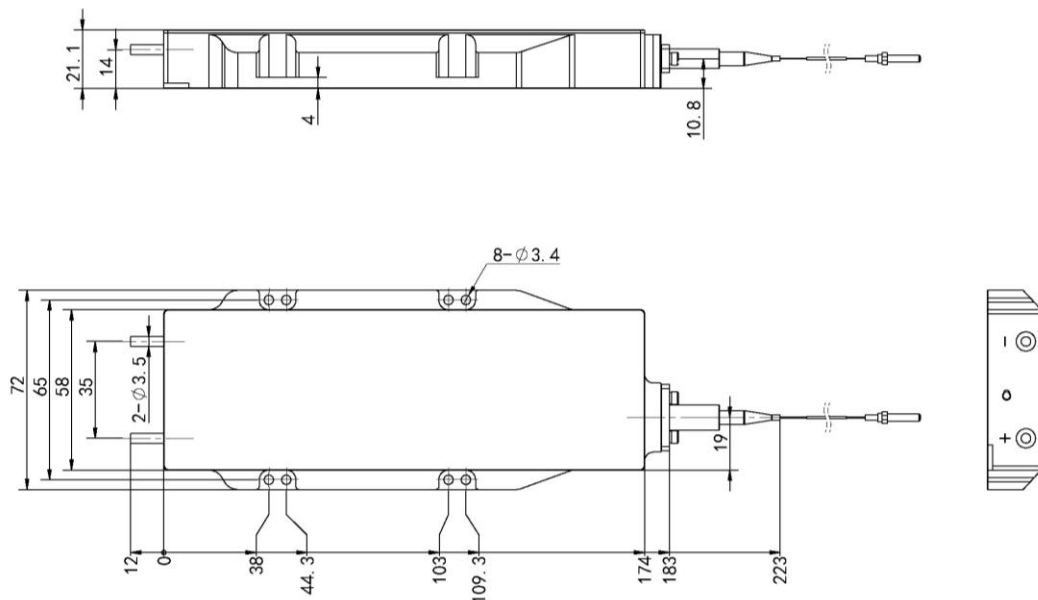
主要特性 Key Features: ● 高亮度/ High Brightness ● 高电光转换效率/ High E-O Conversion ● 高可靠性/ High Reliability		应用领域 Application: ● 光纤激光泵浦/Fiber Laser Pump		
光学参数 ¹ / Optical Parameters ¹	单位/ Unit	最小值/ Min	典型值/ Typical	最大值/ Max
连续输出功率@30A/ CW Output Power@30A	W	450	470	
中心波长@30A ² / Central Wavelength@30A ²	nm	976±3		
光谱宽度/ Spectral Width (FWHM)	nm		4	6
数值孔径@95%功率/ NA @ 95% Power	-		0.18	
光纤芯径/Fiber Core Diameter	μm	135		
光纤双包层/ Dual-clade Fiber Diameter	μm	155		
光纤数值孔径 /Fiber NA	-	0.22		
光纤盘绕直径/Optical fiber winding diameter	cm	≥15		
光纤长度/ Fiber Length	m	1.5	2.0	
光纤输出头/ Fiber Connector	-	FC		
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	%		48	
阈值电流/ Threshold Current	A		1.4	
工作电流 ³ / Operating Current ³	A			30
工作电压/ Operating Voltage	V	31.5	32.5	33.5
热学性能/ Thermal Parameters		参考值/ Reference value		
工作温度 ⁴ / Operating Temperature Range ⁴	℃	0 to 45(管壳温度)		
存储温度/ Storage Temperature Range	℃	-40 to 85		
光纤温度/Fiber Temperature Range	℃	≤40		
壳体温度/Package Housing Temperature Range	℃	≤45		
管嘴温度/Boot Temperature Range	℃	≤45		
盖板温度/Lid cover Temperature Range	℃	≤50		
温漂系数/ Wavelength Temperature Coefficient	nm/℃	0.35		
其他参数/Other parameters		最小值/ Min	典型值/ Typical	最大值/ Max
重量/ Weight	Kg		1.6	
焊接温度/ Soldering Temperature	℃			350
焊接时间/ Welding Time	Sec			10

¹ 在水冷 25 摄氏度下测得; Tested at 25℃ 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.

