高功率
High Power

半导体激光器和系统制造商
Semiconductor Laser and System Manufacturer

HAN'S TCS
大族天成半导体

北京大族天成半导体技术有限公司

www.tc-semi.com

Version 2019

Company Profiles

公 司 简 介

Han's TianCheng Semiconductor Co.,Ltd., founded in November 2011 in Beijing Development Area, is a subsidiary company of Han's Laser. Han's TianCheng has advanced research, technological infrastructure and experience in the development and production of diode lasers with self-developed technology, especially in fiber coupled laser modules. Han's TianCheng provides high power semiconductor laser products which are widely used in the fields such as material processing, diode-pumped solid-state pumping, fiber laser pumping, laser display, medical application and scientific research. We have been approved in the certification of ISO9001:2015 and Hi-tech enterprise.

Han's TianCheng dedicates to the development of high brightness fiber coupled diode laser modules with output power up to thousands of watts, and the wavelength from UV to near infrared. We can also provide special wavelength and multi-wavelength products, and other customized products and OEM services.

北京大族天成半导体技术有限公司是深圳市大族激光科技产业集团股份有限公司控股的子公司，成立于2011年11月，位于北京经济技术开发区。公司主要从事高功率半导体激光器组件及系统的研发、生产和销售。公司拥有从管芯封装到光纤耦合封装完整的设备和生产线，是极具实力的高端半导体激光器产品制造商。公司已通过ISO9001:2015质量管理体系认证及国家级高新企业认证。

大族天成提供高品质的半导体激光器产品，广泛用于工业加工、激光显示、医疗、科研等多个领域。公司的核心业务是向固体激光器、光纤激光器的生产厂商和科研单位提供高功率半导体激光器泵源模块，为有激光焊接、熔覆、材料表面处理等需求的工业领域用户提供高功率密度的光源模块和系统。

大族天成致力于高亮度光纤耦合半导体激光器模块技术的开发，产品功率从几瓦到千瓦级。波长覆盖紫外波段到近红外波段，并可为客户定制特殊波长或多波长产品。我们可以提供多种可选择的封装形式和附加功能，并提供客户定制产品研发和咨询服务。

Contact us

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We Chat

Catalogue

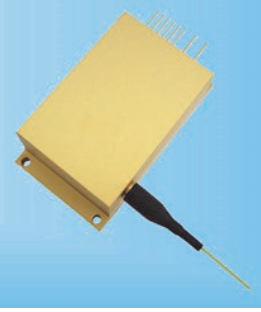
Product center

Pumping Source

793nm Fiber-Coupled Diode Lasers

Applications

Pumping Source for Solid-state Laser



	Typical Value						Units
Parameters (25℃)[1]							
Center Wavelength	793						nm
Center Wavelength Tolerance	±3	±3	±3	±3	±3	±3	nm
CW Output Power	**8**	**16**	**30**	**40**	**80**	**140**	W
Spectral Width (90% of Power)	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	nm
Wavelength Shift with Temperature	0.3	0.3	0.3	0.3	0.3	0.3	nm/℃
Threshold Current	0.5	0.5	0.5	0.5	0.5	0.8	A
Operating Current	2.7	2.7	2.7	3.0	5.0	5.0	A
Operating Voltage	6.8	13.6	25.5	30.0	31.0	57.2	V
Slope Efficiency	3.6	7.2	13.5	16.0	16.0	33.3	W/A
Power Conversion Efficiency	44	44	44	44	48	48	%
Fiber Characteristics[2]							
Core Diameter	105	105	105	105	200	200	μm
Cladding Diameter	125	125	125	125	220	220	μm
Buffer Diameter	250	250	250	250	500	500	μm
Numerical Aperture	0.22	0.22	0.22	0.22	0.22	0.22	-
Fiber Length	1.0						m
Fiber Connector[2]	Bare Fiber, SMA905, FC/PC						-
Accessories							
Monitor Photodiode	None	None	Optional	Optional	Optional	Optional	-
Packaging							
Package Model	T4R	CK	D1	DK	DK	D2	-
Absolute Ratings							
Operating Temperature	+10~+40						℃
Operating Relative Humidity	<75						%
Storage Temperature	-20~+80						℃
Storage Relative Humidity	<90						%
Lead Soldering Temperature, 10s max	<250						℃

[1].Base temperature 25℃.

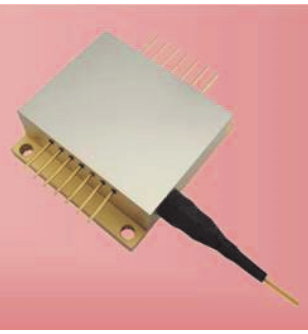
[2].Customized fiber and connector available.

Pumping Source

808nm/880nm Fiber-Coupled Diode Lasers

Applications

Pumping Source for Solid-state Laser



	Typical Value									Units
Parameters (25℃)[1]										
Center Wavelength	808	808	808	808	808	808	878.6	878.6	878.6	nm
Center Wavelength Tolerance	±3	±3	±3	±3	±3	±3	±0.5	±0.5	±0.5	nm
CW Output Power	**7**	**20**	**30**	**40**	**50**	**120**	**30**	**72**	**120**	W
Spectral Width (90% of Power)	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<0.5	<0.5	<0.5	nm
Wavelength Shift with Temperature	0.3	0.3	0.3	0.3	0.3	0.3	0.02	0.02	0.02	nm/℃
Threshold Current	1.8	1.8	1.8	1.8	1.8	1.8	1.0	1.0	1.0	A
Operating Current	8.0	10.5	10.5	10.5	9.5	9.5	9.5	9.5	10	A
Operating Voltage	1.8	3.5	5.3	7.0	10.5	26.1	7.2	16.0	31	V
Slope Efficiency	1.1	2.2	3.2	4.1	6.5	15.8	3.5	9.8	13.3	W/A
Power Conversion Efficiency	50	50	50	50	50	49	45	45	42	%
Fiber Characteristics[2]										
Core Diameter	105	400	400	400	400	400	400	400	400	μm
Cladding Diameter	125	440	440	440	440	440	440	440	440	μm
Buffer Diameter	250	700	700	700	700	700	700	700	700	μm
Numerical Aperture	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	-
Fiber Length	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	m
Fiber Connector	Bare Fiber, SMA905									-
Accessories										
Monitor Photodiode	None									-
Packaging										
Package Model	T1	T2	T3	T4R	CH	C2A	T4R	C5	DK	-
Absolute Ratings										
Operating Temperature	+10~+40									℃
Operating Relative Humidity	<75									%
Storage Temperature	-20~+80									℃
Storage Relative Humidity	<90									%
Soldering Temperature, 10s max	<250									℃

[1] Base temperature 25℃.

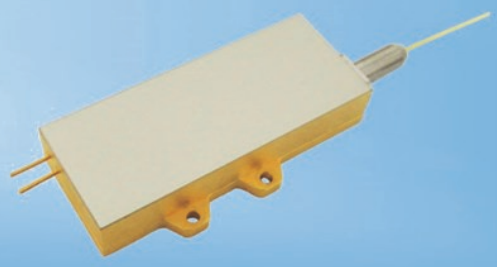
[2] Customized fiber and connector available.

Pumping Source

915nm Fiber-Coupled Diode Lasers

Applications

Pumping Source for Fiber Laser and Solid-state Laser



	Typical Value				Units
Parameters (25℃)[1]					
Center Wavelength	915				nm
Center Wavelength Tolerance	±10				nm
CW Output Power	**10**	**20**	**30**	**70**	W
Spectral Width (90% of Power)	<6.0				nm
Wavelength Shift with Temperature	0.3				nm/℃
Feedback Protection(1030-1100nm)	>40				dB
Threshold Current	0.7	0.7	0.7	0.7	A
Operating Current	11.5	11.5	11.5	11.5	A
Operating Voltage	1.7	3.5	5.4	12.5	V
Slope Efficiency	0.9	1.8	2.7	6.6	W/A
Power Conversion Efficiency	50	50	50	50	%
Fiber Characteristics[2]					
Core Diameter	105	105	105	105	μm
Cladding Diameter	125	125	125	125	μm
Buffer Diameter	250	250	250	250	μm
Numerical Aperture	0.22	0.22	0.22	0.22	-
Fiber Length	1.0				m
Fiber Connector[2]	Bare Fiber, SMA905, FC/PC				-
Accessories					
Monitor Photodiode	None	None	None	None	-
Packaging					
Package Model	R2	T2	T3	CH	-
Absolute Ratings					
Operating Temperature	+10~+40				℃
Operating Relative Humidity	<75				%
Storage Temperature	-20~+80				℃
Storage Relative Humidity	<90				%
Soldering Temperature, 10s max	<250				℃

[1] Base temperature 25℃.

[2] Customized fiber and connector available.

*Other wavelength 900~980nm available.

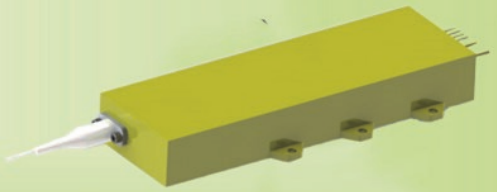
Pumping Source

High Power 915nm Fiber-Coupled Diode Lasers

Applications

Pumping Source for Fiber Laser and Solid-state Laser

Material Processing



	Typical Value				Units
Parameters (25℃)*					
Center Wavelength	915				nm
Center Wavelength Tolerance	±10				nm
CW Output Power	**80**	**170**	**180**	**260**	W
Spectral Width (90% of Power)	<6.0				nm
Wavelength Shift with Temperature	0.3				nm/℃
Feedback Protection(1030-1100nm)	>40				dB
Light within 0.16 NA	95%	95%	-	-	
Threshold Current	0.7	0.6	0.9	1.1	A
Operating Current	11.5	11.5	19.0	19.0	A
Operating Voltage	14.0	31.0	19.3	26.3	V
Slope Efficiency	7.4	16.3	10.2	14.3	W/A
Power Conversion Efficiency	50	50	51	51	%
Fiber Characteristics[2]					
Core Diameter	105	105	135	200	μm
Cladding Diameter	125	125	155	220	μm
Buffer Diameter	250	250	300	500	μm
Numerical Aperture	0.22	0.22	0.22	0.22	-
Fiber Length	1.0				m
Fiber Connector[2]	Bare Fiber, SMA905, FC/PC				-
Accessories					
Monitor Photodiode	None	Optional	Optional	Optional	-
Package Model	CK	DK	C6	C2A	-
Absolute Ratings					
Operating Temperature	+10~+40				℃
Operating Relative Humidity	<75				%
Storage Temperature	-20~+80				℃
Storage Relative Humidity	<90				%
Soldering Temperature, 10s max	<250				℃

[1] Base temperature 25℃.

[2] Customized fiber and connector available.

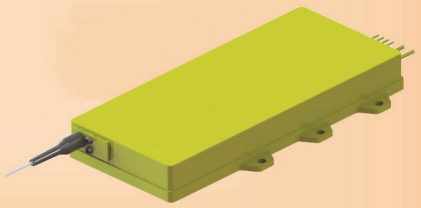
*Other wavelength 900~980nm available.

Pumping Source

976nm Wavelength Stabilized Fiber-Coupled Diode Lasers

Applications

Pumping Source for Fiber Laser and Solid-state Laser



	Typical Value						Units
Parameters (25℃)[1]							
Center Wavelength	976						nm
Center Wavelength Tolerance	±0.5						nm
CW Output Power	10	14	27	60	100	140	W
Spectral Width (90% of Power)	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	nm
Wavelength Shift with Temperature	0.02						nm/℃
Feedback Protection(1030-1100nm)	>40						dB
Threshold Current	1.0	0.6	0.5	0.6	0.5	0.6	A
Operating Current	12.8	9.0	9.0	9.2	9.0	10.0	A
Operating Voltage	1.7	3.4	6.6	13.0	24.5	31.0	V
Slope Efficiency	0.8	1.6	3.3	7.0	11.8	15.0	W/A
Power Conversion Efficiency	50	50	50	50	45	45	%
Fiber Characteristics[2]							
Core Diameter	105	105	105	105	105	105	μm
Cladding Diameter	125	125	125	125	125	125	μm
Buffer Diameter	250	250	250	250	250	250	μm
Numerical Aperture	0.22	0.22	0.22	0.22	0.22	0.22	-
Fiber Length	1.0						m
Fiber Connector[2]	Bare Fiber, SMA905, FC/PC						-
Accessories							
Monitor Photodiode	Optional	None	None	None	Optional	Optional	-
Packaging							
Package Model	T1	T4R	T4R	CK	D1	DK	-
Absolute Ratings							
Operating Temperature	+10~+40						℃
Operating Relative Humidity	<75						%
Storage Temperature	-20~+80						℃
Storage Relative Humidity	<90						%
Soldering Temperature, 10s max	<250						℃

[1] Base temperature 25℃.

[2] Customized fiber and connector available.

* Other wavelengths available, such as 808 nm, 981 nm.

Medical and Cosmetology

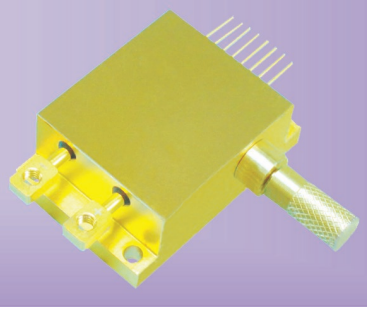
808nm/980nm/1064nm/1470nm Fiber-Coupled Diode Lasers

Applications

Laser Scalpel

Hair Removal

Dental Treatment



	Typical Value							Units
Parameters (25℃)[1]								
Center Wavelength	808	808	808	980	980	1064	1470	nm
Center Wavelength Tolerance	±10							nm
CW Output Power	**15**	**30**	**100**	**15**	**35**	**30**	**15**	W
Spectral Width (90% of Power)	<6.0							nm
Wavelength Shift with Temperature	0.3							nm/℃
Threshold Current	1.8	1.8	1.8	0.7	0.7	0.9	0.7	A
Operating Current	9.0	9.0	11.0	9.0	10.5	12.0	10.0	A
Operating Voltage	3.6	7.2	22.8	3.6	7.2	4.7	8.2	V
Slope Efficiency	2.0	4.0	13.5	1.8	3.6	2.7	1.6	W/A
Power Conversion Efficiency	45	45	49	46	46	53	18	%
Fiber Characteristics[2]								
Core Diameter	200	200	400	200	200	200	200	μm
Cladding Diameter	220	220	440	220	220	220	220	μm
Buffer Diameter	500	500	700	500	500	500	500	μm
Numerical Aperture	0.22							-
Fiber Length	1.0							m
Fiber Conector[2]	SMA905							-
Accessories								
Aiming Laser(650nm)[3]	Optional							-
TE Cooler	None							-
Monitor Photodiode	Optional	Optional	None	Optional	Optional	Optional	Optional	-
Fiber Connector Detector	Optional	Optional	None	Optional	Optional	Optional	None	-
Protection Window	Optional	Optional	None	Optional	Optional	Optional	None	
Packaging								
Package Model	G3	G5	C2A	G3	G5	G3	C5	-
Absolute Ratings								
Operating Temperature	+10~+40							℃
Operating Relative Humidity	<75							%
Storage Temperature	-20~+80							℃
Storage Relative Humidity	<90							%
Soldering Temperature, 10s max	<250							℃

[1] Base temperature 25℃.

[2] Customized fiber and connector available.

[3] Optional built-in constant power circuit, 5V power supply needed. Blue or green aiming beam available.

* Other wavelengths UV to near-infrared available: 405nm, 635nm etc.

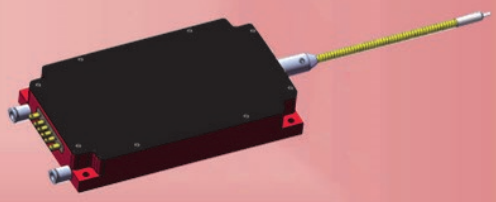
Medical and Cosmetology

High Power Fiber-Coupled Diode Lasers

Applications

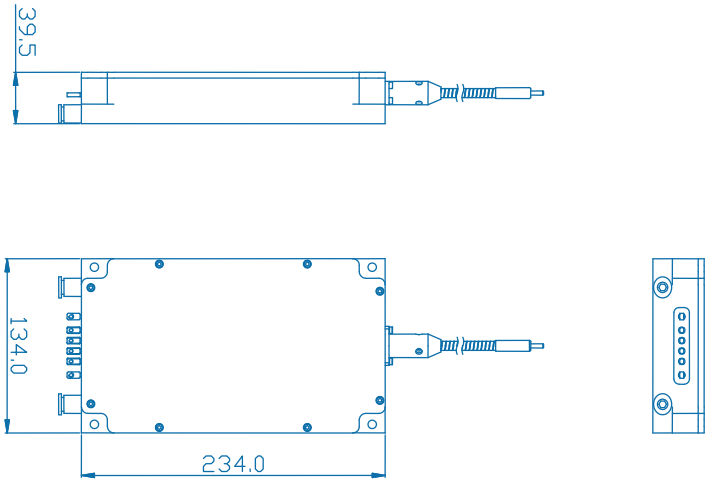
Laser Scalpel

Hair Removal



	Typical Value				Units
Parameters (25℃)					
Center Wavelength	755	808	808	1064	nm
Center Wavelength Tolerance	±10				nm
CW Output Power	**400**	**400**	**600**	**350**	W
Spectral Width (90% of Power)	<10.0				nm
Wavelength Shift with Temperature	0.35				nm/℃
Fiber Characteristics					
Core Diameter	400	400	400	400	μm
Fiber Length	2.0	2.0	2.0	2.0	m
Fiber Connector	SMA905				-
Accessories					
Thermistor	Optional	Optional	Optional	Optional	-
Protection Window	Optional	Optional	Optional	Optional	-
Packaging					
Package Model	M3	M1	M3	M3	-
Absolute Ratings					
Operating Temperature	+10~+40				℃
Operating Relative Humidity	<75				%
Storage Temperature	-20~+80				℃
Storage Relative Humidity	<90				%
Soldering Temperature, 10s max	<250				℃

Dimension (mm)



808nm 9XXnm Fiber-Coupled Diode Lasers

Applications

- Plastic Welding
- Metal Welding
- Illumination and Night Vision
- Material Surface Treatment

	Typical Value						Units
Parameters (25℃)[1]							
Center Wavelength	808	808	9XX	9XX	9XX	9XX	nm
Center Wavelength Tolerance	±10	±10	±10	±10	±10	±10	nm
CW Output Power	**30**	**55**	**35**	**80**	**120**	**400**	W
Spectral Width (90% of Power)	<6.0						nm
Wavelength Shift with Temperature	0.3						nm/℃
Threshold Current	1.8	1.8	0.7	0.7	0.5	0.7	A
Operating Current	9.0	9.0	10.5	11.0	10.0	11.0	A
Operating Voltage	7.2	13.8	7.2	14.6	24.5	75	V
Slope Efficiency	4.0	7.6	3.6	7.8	12.5	39	W/A
Power Conversion Efficiency	45	45	45	45	49	49	%
Fiber Characteristics[2]							
Core Diameter	200	200	200	200	200	200	μm
Cladding Diameter	220	220	220	220	220	220	μm
Buffer Diameter	500	500	500	500	500	500	μm
Numerical Aperture	0.22	0.22	0.22	0.22	0.22	0.22	-
Fiber Length	1.0	1.0	1.0	1.0	1.0	1.0	m
Fiber Connector	SMA905, FC/PC					D80	-
Accessories							
Aiming Laser(650nm)[2]	Optional						-
Monitor Photodiode	Optional						-
Packaging							
Package Model	C5	C5	C5	C5	D1	SK2	-
Absolute Ratings							
Operating Temperature	+10~+40						℃
Operating Relative Humidity	<75						%
Storage Temperature	-20~+80						℃
Storage Relative Humidity	<90						%
Soldering Temperature, 10s max	<250						℃

[1] Base temperature 25℃.

[2] Optional built-in constant power circuit, 5V power supply needed. Blue or green aiming beam available.

High Power Visible Light

400~700nm RGB Fiber-Coupled Diode Lasers

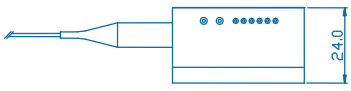
Applications

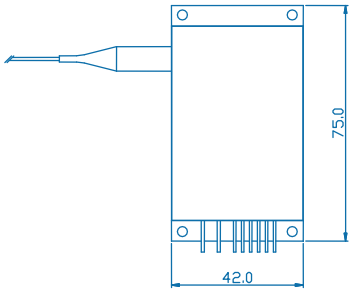
- 3D Printing
- None-mask Lithography, LDI
- Medical
- Laser Display
- Material Processing

	Typical Value							Units
	Low Power			High Power				
Parameters (25℃)								
Center Wavelength	450	520	635	405	440~460	520	635~640	nm
CW Output Power	**6**	**4**	**4**	**10~30**	**30~50**	**35**	**10~35**	W
Fiber Characteristics								
Core Diameter	105			400~1200				μm
Fiber Connector	SMA905 or Customized							-
Packaging								
Package Form	C1T			V2				-
Cooling	Water Cooling /Air Cooling							-
Driver	Optional			Optional				-
Absolute Ratings								
Operating Temperature	+10~+40							℃
Operating Relative Humidity	<75							%
Storage Temperature	-20~+80							℃
Storage Relative Humidity	<90							%
Soldering Temperature, 10s max	<250							℃

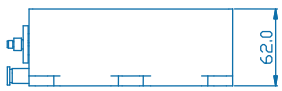
Dimension (mm)

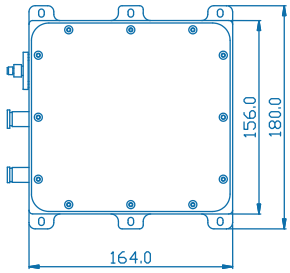
C1T





V2





High Power Blue Laser System

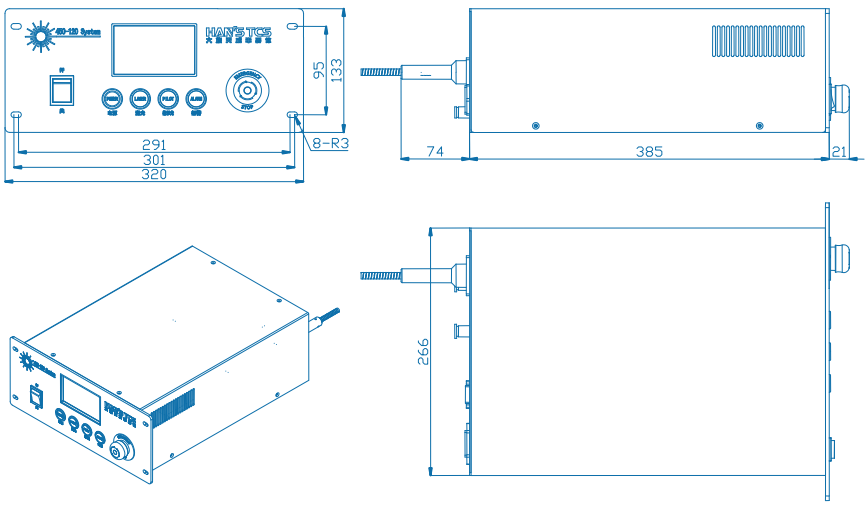
Applications

- Medical
- Material Processing
- Laser Display

	Typical Value	Units
Parameters (25℃)		
Center Wavelength	450	nm
Center Wavelength Tolerance	±10	nm
CW Output Power	**120**	W
Fiber Characteristics		
Core Diameter	200	μm
Fiber Length	5.0	m
Fiber Connector	D80	-
Accessories		
Monitor Photodiode	Optional	-
Packaging		
Package dimension	320× 133× 385	mm
Cooling	Water Cooling	
Absolute Ratings		
Operating Temperature	+10~+40	℃
Operating Relative Humidity	<75	%
Storage Temperature	-20~+80	℃
Storage Relative Humidity	<90	%
Soldering Temperature, 10s max	<250	℃

Package Dimension (mm)

Dimension (mm)



High Power System

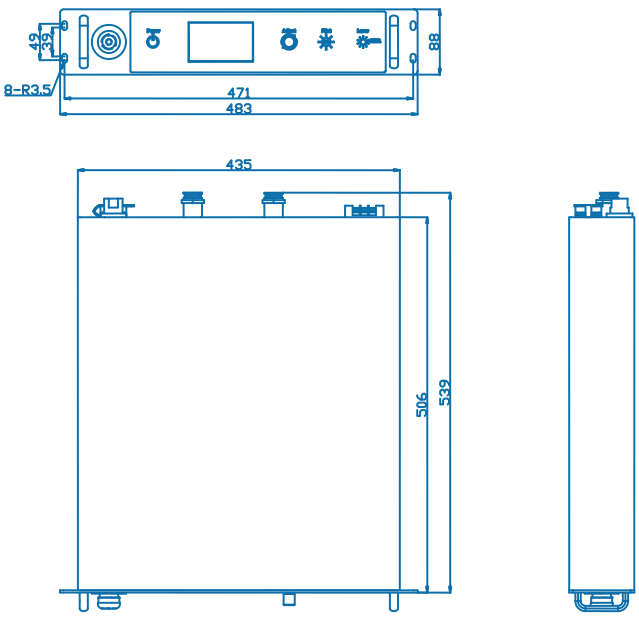
Application

- Metal Welding
- Laser Cladding
- Laser Surface Heat Treatment

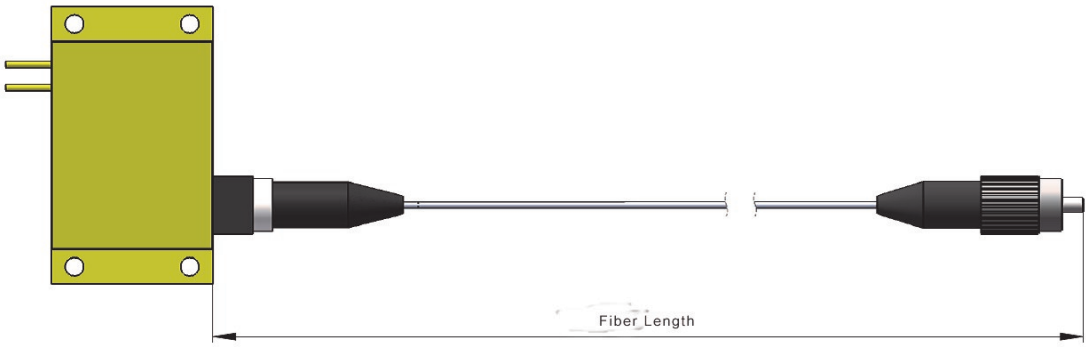
	Typical Value	Units
Parameters (25℃)		
Center Wavelength	9XX~1070	nm
CW Output Power	1000~3000	W
Fiber Characteristics		
Core Diameter	300~600	μm
Fiber Port	QBH	-
Packaging		
Package Dimension	483 × 50 × 750	mm
Driver	Optional	-
Cooling	Water Cooling	-
Absolute Ratings		
Operating Temperature	+15~+40	℃
Operating Relative Humidity	<75	%
Storage Temperature	5~50	℃
Storage Relative Humidity	<90	%

- ◊ 110V~220V AC power supply
- ◊ Operating current set locally or remotely by RS485 port
- ◊ Over-temperature protection
- ◊ Other customized functions

Dimension (mm)



Fiber Length Definition



Type Definition

M□□□±□□－□□－□ □□□/□□－□□－□

Accessory *

Package model*

Fiber numerical aperture

Fiber core diameter

Fiber or Connector *

Output power

Tolerance of center wavelength

Center wavelength

* Accessory: T - TE cooler, A - Aiming laser, P - Monitor photodiode, K - Fiber connector detector

* Package model: T1, T2, T3, T4, T4S, CH, CK, G4, C1, D1, M1 ……

* Fiber or Connector: F - Fiber output, D - Detachable connector

Example:

M808±3-14-D200-22-G4T-TAPK

M	-	Module
808	-	Center wavelength: 808nm
3	-	Tolerance of center wavelength: 3nm
14	-	Output power: 14W
D200/22	-	Detachable Connector for 200μm/0.22NA fiber
G4T	-	Package model: G4T
TAPK	-	TE cooler, aiming laser, monitor photodiode and fiber connector detector integrated

Scan the QR code for more product informations

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