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Company Profile

Wuhan Raycus Fiber Laser Technologies Co.,Ltd. (hereinafter referred to as “Raycus", stock code: 300747.SZ) is a key high-tech enterprise of China Torch Program, specializing in R&D, production and sales of fiber lasers and its key components and materials, with a National Key Field Innovation Team for High-Power Fiber Lasers and Central and Local Governments Joint Engineering Research Center for Fiber Laser Technology. We are a R&D, production and service provider for fiber lasers with global influence vertically integrating materials, components and complete machines. We provide various types of fiber laser products and application solutions for laser manufacturing equipment integrators, as well as technical research and development services and customized products for our customers.

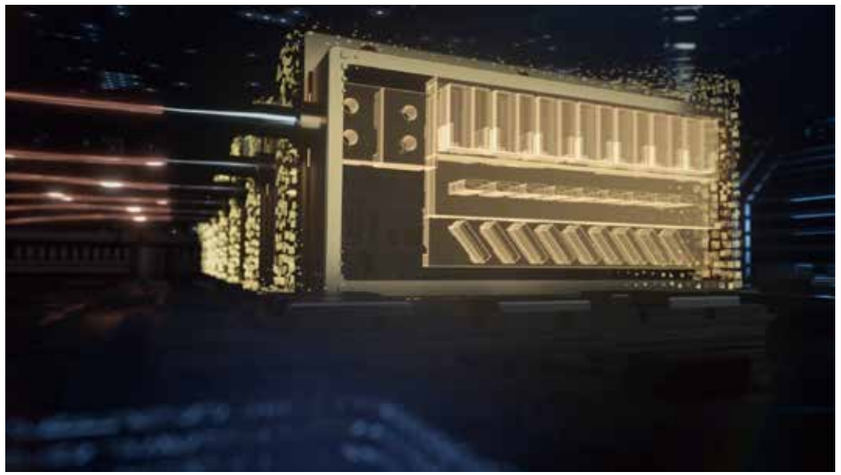
Raycus is a leader in China’ s fiber laser industry. As the first domestic company with lasers as its main business to be listed, in 2016, we took the lead in formulating China’ s fiber laser industry standard JB/T12632-2016 "Fiber Laser". Our company has won many honors for our excellent R&D strength and outstanding innovation ability, and has built a high brand awareness. In 2020, Raycus participated in the formulation of China’ s first international standard for laser products " Industrial Fiber Laser Parameter Requirements and Test Methods ", further enhancing the company's domestic and global influence.

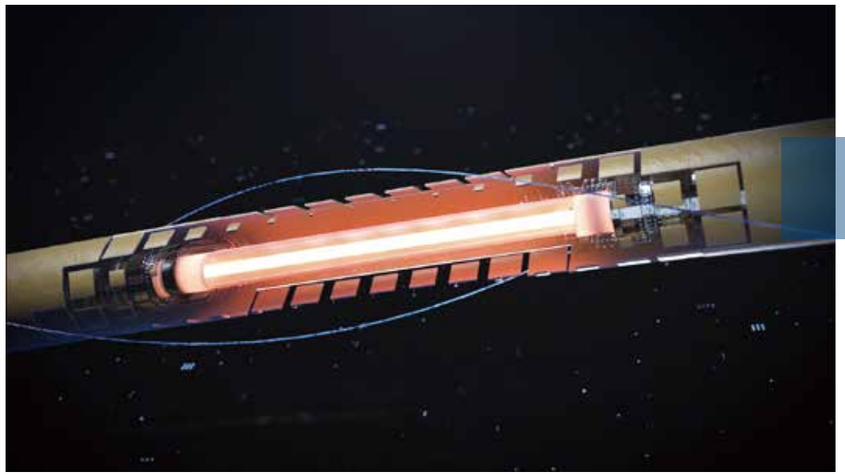
While our technical research and development strength has always maintained a leading level in the domestic industry, Raycus continues to innovate and make breakthroughs. By continuously upgrading our product line and product quality, we have earned the recognition of customers worldwide.

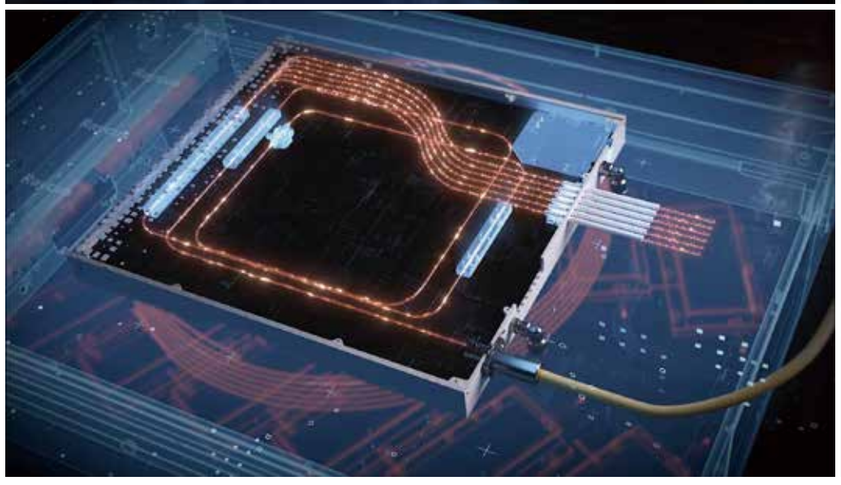
Talent and Technology Advantages

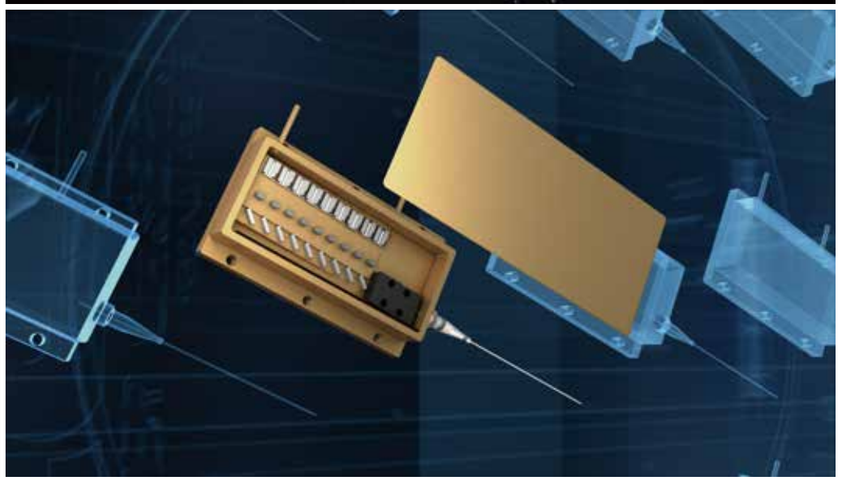
Raycus has always focused on talents and innovation, and has continuously consolidated its master and Ph.D. high-level R&D team with industry-leading technical experts as the core to provide a strong talent guarantee for building a world-class laser company.In 2020, Raycus issued a draft equity incentive plan to further boost the implementation of the talent strategy.

Raycus attaches great importance to product R&D and technological innovation, and has established a complete R&D management system. Meanwhile, a research and development center has been established by integrating innovative resources, continuously exploring and researching the technical directions involved in multiple types of products, vigorously strengthening pre-research and key technology research, and relying on new technologies to lead the future development trends. As of the end of 2022, Raycus and its subsidiaries have a total of 796 patents.









Industrial Chain Vertical Integration

Raycus has mastered the key technologies and mass production capabilities of core components and materials of fiber laser through independent research and development, technological innovation and industrial mergers and acquisitions. Through the vertical integration of the upstream industrial chain of fiber lasers and the establishment of a manufacturing center, Raycus comprehensive competitiveness is growing rapidly.

The establishment of Wuhan headquarters and R&D center, Huangshi intelligent manufacturing industry base, Wuxi manufacturing center, Shanghai ultra fast laser R&D center and Jiaxing R&D center have enhanced our R&D and production capabilities and expanded our industrial layout.

Development History

2007

Wuhan Raycus Fiber Laser Technologies Co.Ltd was established.

2008

Raycus launched the 10W pulsed all-fiber laser, and undertook the national S&T support program and special national key projects.

2009

Raycus launched the 100W CW fiber laser.

2010

Raycus product of 25W pulsed fiber laser was selected as a national key new product.

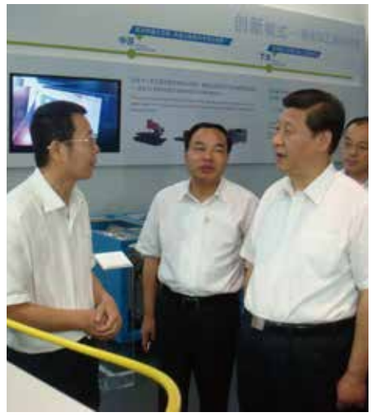
2011

500-1000W CW fiber laser was developed successfully and put into mass production.

2012

4000W CW fiber laser passed the appraisement of S&T achievements.

President Hu Jintao granted an interview to Dr. Yan Dapeng from Raycus during his visit to Optics Valley.



2013

President Xi Jinping granted an interview to Dr.Yan Dapeng, the vice-president and chief engineer of Raycus, during his visit to Optics Valley, Wuhan.

The first 10,000W CW fiber laser of China was developed successfully with the core technology of 10000w fiber laser.

2014

Raycus' patent for invention won the Excellence Award of the16th China Patent.

2015

Raycus completed its shareholding reform and changed its name to Wuhan Raycus Fiber Laser Technologies Co.,Ltd.

2016

The JB/T12632-2016 Fiber Laser standard drafted by Raycus was released officially as the first fiber laser industry standard of China.

Raycus 20kW fiber laser and its core components project was selected as the "Technical Innovation Special Project" of Hubei Province .

High beam quality 10,000-watt fiber laser was selected as the National Science and Technology Innovation Achievement Exhibition.

Development History

2017

The National High Technology Research and Development Program “High-Efficiency High-Power Fiber Laser" initiated by Raycus passed the technical acceptance .

The 2017 National Key R&D Program "Additive Manufacturing and Laser Manufacturing" key special project "Key Technologies and Industrialization of Industrial High-Power Fiber Lasers", was launched and led by Raycus Laser.

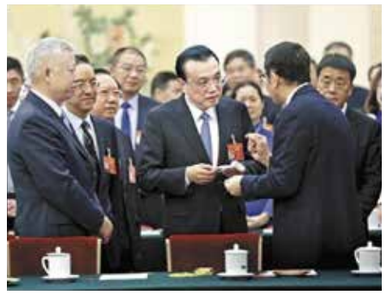
Raycus RAYCUS fiber laser series won the title of “Hubei Famous Brand Product” in 2017.

2018

Raycus (stock code:300747.SZ)was officially listed on the stock market.

The R&D project of 20kW fiber laser and its core device passed the acceptance.

Established a wholly-owned subsidiary - Wuxi Raycus Fiber Laser Technology Co.Ltd.
Nominated by the 5th China Industry Awards



2019

Dr. Yan Dapeng, deputy to the National People's Congress and vice president of Raycus Laser showed the company’s products to Premier Li Keqiang.

Acquired 51% equity of Gauss Laser expanded the technical research of ultrafast lasers.

2020

Raycus participated in the formulation of the standard "Industrial Fiber Laser Parameter Requirements and Test Methods" which has officially become the international standard for this category.

Raycusis on the list of 2020 National Innovation Demonstration Enterprises.

The second phase of the infrastructure project of Raycus High Power Fiber Laser Industrial Park officially started.

2021

The national major scientific instrument and equipment development project of “The R&D and Application Project of High-frequency Composite Ultrasonic Scanning Probe Microscope” passed the comprehensive acceptance.

The first ultra-high-power 100 kW fiber laser in China independently developed and manufactured by Raycus was delivered to University of South China in Hengyang .

2022

Raycus launched high-end R-series laser products.

Huangshi Intelligent Manufacturing Industrial Base put into use.

Raycus Won the title of“Hubei Top 100 High-tech Enterprises”

Marketing and After-Sales Service Advantages

Raycus carries out business in more than 40 countries and regions and its high-quality products and premium services have won the recognition of many well-known enterprises in the world. Raycus has a strong sales and technical support team, which can timely solve the problems encountered by domestic customers; Moreover, Raycus also focuses on creating a global service system. We have already set up overseas service centers in Türkiye, Russia, Germany, South Korea, Thailand, Malaysia, Brazil, India and Vietnam.

Global Headquarter
Wuhan

Branches and Offices
Wuxi, Guangzhou, Shenzhen, Jinan, Taiwan

Service Centers
Xiangyang, Zhengzhou, Chengdu, Xi'an, Shenzhen, Dongguan, Foshan, Ningde, Huizhou, Putian, Suzhou, Wenzhou, Hefei, Jinhua, Shaoxing,Shenyang,Weifang, Handan, Jining, Cangzhou,Suqian

Overseas service centers
Türkiye, Russia, Germany (CW laser & Pulsed laser), India, South Korea, Vietnam, Thailand, Malaysia, Brazil

Overseas service centers planned for construction in 2023:
Japan, Australia, Mexico,Italy

Small-volume Q-switched Pulsed Fiber Laser

Introduction

Raycus 20-200W small-volume Q-switched pulsed fiber laser series is developed by Raycus for handheld laser marking and cleaning equipment and systems. This series of pulsed lasers has the advantages of small size, easy integration, high peak power, and high single pulse energy. It excels in applications such as marking, fine machining and laser cleaning on metallic and non-metallic materials.

All core components of 20-200W Q-switched series pulsed fiber lasers are independently developed by Raycus. The product has high reliability. Its good compatibility has been widely recognized by the market, and the product quality has reached the state-of-the-art level.

Typical Applications

Material Processing	Metal Film Cutting&Piercing
Marking	Metal Drawing
Deep Carving	Texturing
Cleaning	Silicon Processing
Precision Welding	Resistance Adjustment
Micro-Processing	ITO Film Etching

Characteristic

- Highly stable laser output
- Small size
- High single-pulse energy
- High marking efficiency
- Short pulse setup time
- High reliability
- Maintenance-free

Model	RFL-P20QA	RFL-P30QA	RFL-P100QA	RFL-P200QA
Optical Properties				
Average Output Power(W)	20	30	100	200
Central Wavelength(nm)	1064			
Repetition Frequency Range (kHz)	30-60		20-200	
Output Power Instability	<5%			
Output Characteristics				
Output Beam Diameter(mm)	5~8			
M^2	<1.6			
Polarization State	Random			
Pulse Width (ns)	120-150 @30KHZ	120-150 @40KHZ	160-200 @65KHZ	180-220 @130KHZ
Max.Single Pulse Energy(mJ)	0.67	0.75	1.5	
Delivery Cable Length(m)	3 (Customizable)			
Electrical Characteristics				
Power Supply (VDC)	24			48
Power Range(%)	10~100			
Other Characteristics				
Dimensions(mm) W*H *D	133×90×193		210×80×313	265×100×375
Cooling	Air-cooled			
Operating Temperature(°C)	0-40			

Marking

Marking

Material Processing

Cleaning

Q-Switched Pulsed Fiber Lasers

Introduction

The 20-100W Q-switched pulsed fiber laser series launched by Raycus is the industrial-grade marking and micromachining laser . This series of pulsed lasers have the characteristics of high peak power, high single-pulse energy, and optional spot diameter. Marking, precision machining, graphic engraving and other fields. In the marking application field, the cost is lower and the performance is more stable than the traditional laser.

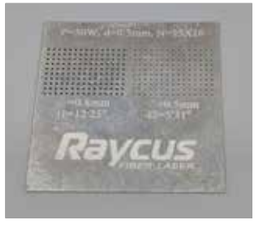
Typical Applications

Material Processing	Metal Film Cutting&Piercing
Marking	Metal Drawing
Deep Carving	Texturing
Cleaning	Silicon Processing
Precision Welding	Resistance Adjustment
Micro-Processing	ITO Film Etching

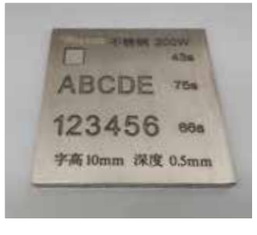
Characteristic

- Highly stable laser output
- High single-pulse energy
- High marking efficiency
- Short pulse setup time
- High reliability
- Maintenance-free operation

Model	RFL-P20QB	RFL-P30QB	RFL-P50QB	RFL-P60QB	RFL-P70QB	RFL-P100QB
Optical Properties						
Average Output Power(W)	20	30	50	60	70	100
Central Wavelength(nm)	1064					
Repetition Frequency Range (kHz)	20-60	30-60	50-100	55-100	60-100	80-120
Output Power Instability	<5%					
Output Characteristics						
Output Beam Diameter(mm)	5~8					
M^2	<1.6					
Polarization State	Random					
Pulse Width (ns)	120-150 @20KHZ	120-150 @30KHZ	120-150 @50KHZ	120-150 @55KHZ	200-240 @60KHZ	200-250 @80KHZ
Max.Single Pulse Energy(mJ)	1			1.1		1.2
Delivery Cable Length(m)	3 (Customizable)					
Electrical Characteristics						
Power Supply (VDC)	24					
Power Range(%)	10~100					
Other Characteristics						
Dimensions(mm) W*H *D	215×95×278		340×95×260			
Cooling	Air-cooled					
Operating Temperature(°C)	0-40					



Precision punching



Deep carving

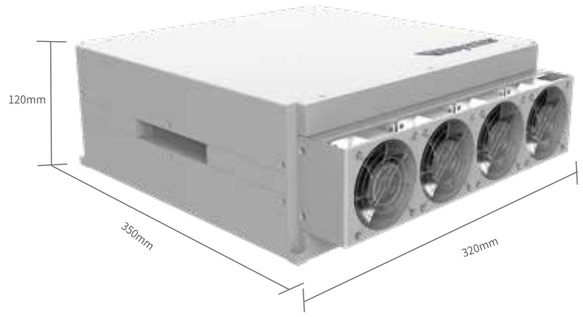
Aluminum deep carving

Brass deep carving

MOPA Fiber Lasers

Introduction

The brand-new MOPA fiber laser launched by Raycus has a variety of pulse width options, including high average power (20-350W), high-peak power (≤15kW) and 2-500ns variety of pulse width, adjustable repetition frequencies of 1-4000kHz, available first pulse, CW model Customizable, online modifiable pulse width and other characteristics. It is ideal for industrial applications in the field of solar photovoltaic, thin film cutting, sheet material cutting, welding, surface cleaning of materials, excellent marking and material deepening, etc.



Characteristic

Uniform Control Interface

Wide Modulation Frequency Range

Variety of Pulse width

Customize Pulse Width

Available first pulse

High Beam Quality

Air Cooling System

Typical Applications

Coating removal

Scribing

Precision Marking

Precision Cleaning

Precision Cutting

Anodic Aluminum Etching

Deep Carving

Surface Treatment

Color marking

Anodic Aluminum Etching

Film cuttng

Precision welding

Model	RFL-P20MX	RFL-P30MX	RFL-P60MX	RFL-P70MX	RFL-P100MX	RFL-P120MX	RFL-P200MX	RFL-P250MX	RFL-P300MX	RFL-P350MX
Optical Properties										
Nominal Output Power(W)	20	30	60	70	100	120	200	250	300	350
Central Wavelength (nm)	1064±5									
Repetition Frequency Range(kHz)	1-2000						1-4000			
Output Power Instability	<5%									
Output Characteristics										
Output Beam Diameter (mm)	7±1									
M^2	<1.5		<1.6							
Polarization State	Random									
Pulse Width (ns)	2-500 (Customizable)		10-350 (Customizable)							
Max. Single Pulse Energy (mJ)	0.71	1	1.5							
Delivery Cable Length (m)	5 (Customizable)									
Electrical Characteristics										
Power Supply (VDC)	24						48			
Power Range (%)	0~100%									
Other Characteristics										
Dimensions (mm) W*H*D	286×95×215		320×120×350				460×395×131			
Cooling	Air-cooled									
Operating Temperature (°C)	0-40									

High-power Pulsed Fiber Lasers

Introduction

High-power pulsed fiber lasers are the latest products launched by Raycus, featuring high average output power (200-1000W), high single pulse energy, square or circular spot with uniform energy distribution and easiness to use and maintain. It is the ideal product for mold surface treatment, automobile manufacture, shipping industry, petrochemical industry and tire manufacture,etc.

Typical Applications

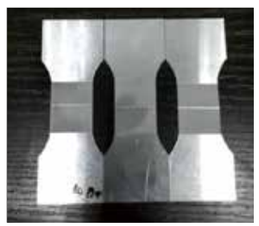
- Rust Removal
- Paint Stripping
- Oil Cleaning
- Welding Surface Pre-treatment
- Mold Surface Treatment
- Portrait Stone Surface Treatment

Characteristic

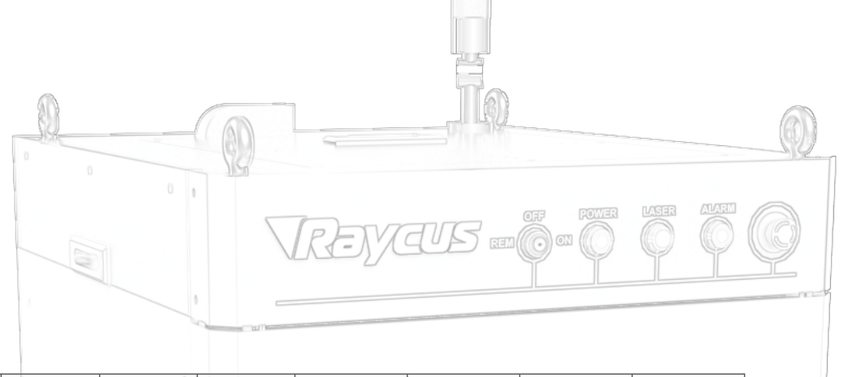
- Uniform Control Interface
- Adjustable Frequency Range
- High Single Pulse Energy
- Excellent Light Beam Quality


Laser cleaning


Mold cleaning


Post-weld cleaning


Train wheel shaft cleaning



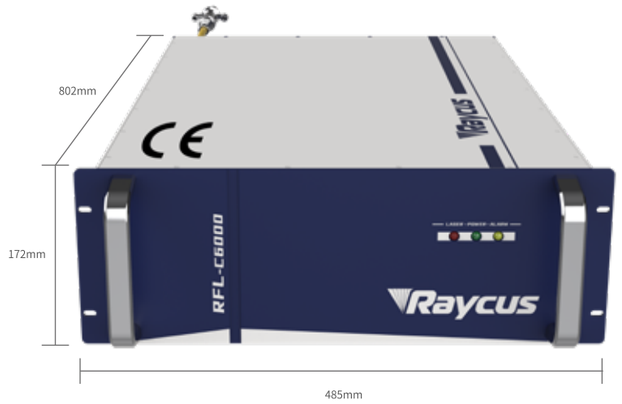
Model	RFL-P200Q	RFL-P300Q	RFL-P500Q	RFL-P200H	RFL-P300H	RFL-P500H	RFL-P1000H
Optical Properties							
Output Power(W)	100@10kHz	250@20kHz	200@10kHz	200@13-100 kHz/100ns	300@20-100 kHz/100ns	500@10-100 kHz/100ns	1000@10-100 kHz/100ns
				200@23-100 kHz/70ns	300@35-100 kHz/70ns	500@13-100 kHz/70ns	1000@15-100 kHz/70ns
				200@33-100 kHz/50ns	300@50-100 kHz/50ns	500@15-100 kHz/50ns	1000@25-100 kHz/50ns
	200@20-50kHz	300@30-50kHz	500@20-50kHz	200@148-100 kHz/30ns	300@75-100 kHz/30ns	500@25-100 kHz/30ns	1000@45-100 kHz/50ns
				/	/	500@45-100 kHz/20ns	1000@75-100 kHz/50ns
Wavelength (nm)	1064±5						
Repetition Frequency (kHz)	10-50	20-50	10-50	10-100	10-100	10-100	10-100
Output Power Instability	<5%						
Output Characteristics							
Polarization State	Random						
Pulse Width Range(ns)	120-160			30-100	30-100	20-100	20-100
Max.Single Pulse Energy(mJ)	10@20 kHz	12.5@20 kHz	25@20kHz	15@13kHz	15@20kHz	50@10kHz	100@10kHz
OutputFiber Inner Diameter (um)	100	100	200	100	100	400	400
Delivery Cable Length(m)	10					15	
Electrical Characteristics							
Power Supply	220VAC 50/60Hz						
Power Range(%)	10~100						
Other Characteristics							
Dimensions (mm) W*H*D (handle included)	485×237×765		502×254×755	461×190×755		480×253×798	483×257×939
Cooling	Water Cooling						
Operating Temperature (°C)	10-40						

CW Fiber Lasers

Introduction

Raycus Global Edition CW Fiber laser employs latest high-performance optical fiber, which is developed by Raycus and highly matches Raycus technical solutions. The optical fiber can withstand high output power while has good control of beam quality. It has enhanced ability to reduce photodarkening while lowering the rate of power attenuation effectively. New coating material and longer time of burning-in test is applied to the optical fiber. The Global Edition CW Fiber laser adopts new generation laser chips, which feature high power, high brightness and long service life. All the lasers of this series comply with CE standard.

The new generation of CW lasers has the advantages of high electro-optical conversion efficiency, good beam quality, high energy density, wide modulation frequency, high reliability and maintenance-free operation. In the application of metal cutting, this series of lasers can achieve more stable and precise cutting effect.



Typical Applications

Precision Cutting

Metal Welding

Sheet Metal Piercing

Metal Carving

Surface Treatment

Characteristic

High Electro-optical Conversion Efficiency

Resistance To High Reflection

High Beam Quality

High Safety Performance

Sheet Cutting Efficiency

Customized Output Fiber Length

Maintenance-free Operation

Cutting

Brass cutting

Lithium battery welding

3D printing

Model	RFL-C1000S-CE	RFL-C1500S-CE	RFL-C2000S-CE	RFL-C3000S-CE	RFL-C4000S-CE	RFL-C6000S-CE
Optical Properties						
Average Output Power (W)	1000	1500	2000	3000	4000	6000
Central Wavelength (nm)	1080±5					
Operation Mode	CW/Modulate					
Modulation Frequency (Hz)	1-5000				1-20000	
Output Power Instability	±1.5%					
Red Guide LaserPower (mW)	0.5-1			1~1.5		
Output Characteristics						
Terminal Type	QBH (Customizable)			IQB (Customizable)	QBH (Customizable)	
Beam Quality(BBP)	/			1.5~2 (50μm)	1.7-2.5 (50μm)	2.7-3.1 (75μm)
Beam Quality(M^2)	＜1.8	2-6		/		
Core Fiber(μm)	25 (Customizable)	50 (Customizable)			50(75\100\200)	75(50\100\200) options
Polarization State	Random					
Delivery Cable Length(m)	20 (Customizable)					
Electrical Characteristics						
Power Supply	220±10% V AC、50/60Hz			Three Phase-four Wire Connect 380±10% V AC		
Control Mode	RS232/AD/Ethernet					
Power range(%)	10~100					
Other Characteristics						
Dimensions (mm) W×H×D	440×586×149			485×172×727	485×172×802	
Weight(kg)	<25		<28	<55	<80	<80
Cooling	Water Cooling					
Operating Temperature (°C)	10-40					

CW Fiber Lasers

Introduction

Raycus Global Edition CW Fiber laser employs latest high-performance optical fiber, which is developed by Raycus and highly matches Raycus technical solutions. The optical fiber can withstand high output power while maintaining good control of beam quality. It has enhanced ability to reduce photodarkening while lowering the rate of power attenuation effectively. New coating material and longer time of burning-in test is applied to the optical fiber. The Global Edition CW Fiber laser adopts new generation laser chips, which feature high power, high brightness and long service life. All the lasers of this series comply with CE standard.

The new generation of CW lasers has the advantages of high electro-optical conversion efficiency, good beam quality, high energy density, wide modulation frequency, high reliability and maintenance-free operation. In the application of metal cutting, this series of lasers can achieve more stable and precise cutting effect.

Typical Applications

Metal Cutting
Metal Welding
Cladding
Sintering
Surface
3D Printing

Characteristic

High Electro-optical Conversion Efficiency
Resistance to high reflection
High beam quality
High safety performance
Sheet Cutting Efficiency
Customized Output Fiber Length
Maintenance-free Operation

Model	RFL-C8000S-CE	RFL-C12000S-CE	RFL-C20000M-CE	RFL-30000M-CE	RFL-40000M-CE
Optical Properties					
Average Output Power(W)	8000	12000	20000	30000	40000
Central Wavelength(nm)	1080±5				
Operation Mode	CW/Modulate				
Modulation Frequency(Hz)	1-5000	1-5000	50-20000	50-5000	50-5000
Output Power Instability	±1.5%				
Red Guide Laser Power(mW)	0.5~1			1~1.5	
Output Characteristics					
Terminal Type	QBH (Customizable)		QP		
Beam Quality (BBP)	3-4 (100μm)		4.2 (100μm)	3.4-4.3 (100μm)	<6 (150μm)
Core Fiber(μm)	100(50\75\200) options)		100 (150、200 Optional)		150 (200 Optiona)
Polarization State	Random				
Delivery Cable Length(m)	20 (Customizable)		30 (Customizable)		
Electrical Characteristics					
Power Supply	Three Phase-four Wire Connect 380±10% V AC		Three Phase-four Wire Connect (PE) 323-437V、50/60Hz AC		
Control Mode	RS232/AD/Ethernet				
Power range(%)	10~100				
Other Characteristics					
Dimensions(mm) W*H *D	560×1344 ×1157	560×1344 ×1157	960×1530 ×1160	1050×1540 ×1290	1590×1570 ×1160
Weight(kg)	<250	<280	<700	<900	<1500
Cooling	Water Cooling				
Operating Temperature(°C)	10-40				


Brass cutting


30mm Carbon steel bright surface cuttng


60mm Aluminum cutting


100mm stainless steel cuttng

CW Fiber Lasers for Welding

Typical Applications

Stitch Welding
Splicing Welding
Fillet Welding

Characteristic

Excellent beam quality
High reliability
High power stability
High modulation frequency
Continuously adjustable power, fast switching response
Maintenance-free operation
High electro-optical conversion efficiency

Model	RFL-C1000H-CE	RFL-C1500H-CE	RFL-C2000H-CE	RFL-C3000H-CE
Optical Properties				
Average Output Power(W)	1000	1500	2000	3000
Central Wavelength(nm)	1080±5			
Operation Mode	CW/Modulate			
Modulation Frequency(Hz)	0-5000			
Output Power Instability	±1.5%			
Red Guide Laser Power(mW)	0.1~1			
Output Characteristics				
Terminal Type	QBH (Customizable)			IQB (Customizable)
Beam Quality (BBP)	BPP <1.5 mm.mrad			BPP <2(50μm)BBP
Core Fiber(μm)	50(14、20、100、200optional)			50 (with 100、200 options)
Polarization State	Random			
Delivery Cable Length(m)	10 (Customizable)			
Electrical Characteristics				
Power Supply	220±10% V AC、50/60Hz			Three Phase-four Wire Connect 380±10% V AC
Control Mode	RS232/AD/Ethernet			
Power range(%)	10~100			
Other Characteristics				
Dimensions(mm) W*H *D	440×586×149			1485×172 ×727
Weight(kg)	<25	<28		<55
Cooling	Water Cooling			
Operating Temperature(°C)	10-40			


Stitch welding


Tailor welding


Vertical welding


Vertical welding

QCW Fiber Lasers

Introduction

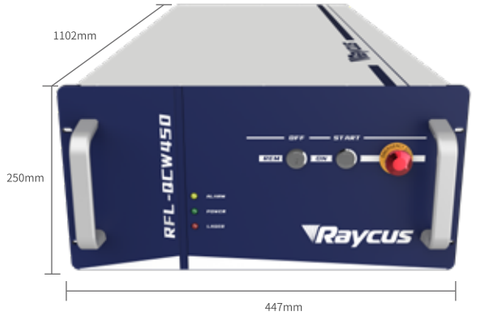
The QCW fiber laser series developed by Raycus ranges from 75W to 1500W, with higher electro-optical conversion efficiency, better optical quality and lower maintenance cost. This series product is a perfect alternative of existing light-pumped YAG laser and is an ideal choice for spot welding, seam welding, boring and other industrial applications，which requires wide pulse and high peak out power due to its diversified compatibility and the convenience for most YAG systems to use with simple transformation.

Typical Applications

- Spot/Seam Welding
- Power Battery Welding
- PCB Welding
- Electronic Parts Processing
- Precision Welding /Cutting
- Soldering
- Ceramics Cutting
- PCB Welding
- Alternative of Light-Pumped YAG Lasers

Characteristic

- Two Work Modes：Continuous and Pulsed
- Peak Output 15000W
- Extremely Stable Output Performance
- Excellent Light Beam Quality
- QBH Output Connector and Optional Output Length
- Air/Water-Cooled Heat Dissipation



Model	RFL-QCW 75/750	RFL-QCW 100/1000	RFL-QCW 150/1500	RFL-QCW 300/3000	RFL-QCW 450/4500	RFL-QCW 600/6000
Optical Properties						
Operation Mode	CW/Modulate					
Average Power (CW) (W)	120	100	250	300	450	600
Average power (Pulse) (W)	75	100	150	300	450	600
Max. Output Power (W)	750	1000	1500	3000	4500	6000
Max. Pulse Energy (J)	7.5	10	15	30	45	60
Wavelength (nm)	1080±5					
Repetition Frequency(Hz)	0-5000					
Pulse Duration(ms)	0.05—50					
Output Power Instability	<±1.5%					
Red laser	Yes					
Output Characteristics						
Beam Delivery Optics	IQB					
Output Fiber Diameter(μm)	50 (14、25 Optional)		50 (100、200 Optional)			
BPP (mm.mrad)	<1.2		<2		<4	
Electrical Characteristics						
Power Supply	48±10%VDC				380±15%Vac	
Control Mode	RS232/Ether	RS232/ AD/Ethernet				
Power range (%)	10~100					
Other Characteristics						
Dimensions (mm) W* H *D	280×148 ×440	390×191 ×460	390×191 ×460	570×234 ×565	447×250 ×1102	900×960 ×1160
Weight(kg)	<25	<30	<35	<60	<90	<360
Cooling	Air cooling				Water cooling	
Operating Temperature	10-40					

Precision cutting

Precision welding

Precision welding

Precision welding

QCW Fiber Lasers

Introduction

The QCW fiber laser series developed by Raycus ranges from 75W to 1500W, with higher electro-optical conversion efficiency, better optical quality and lower maintenance cost. This series product is a perfect alternative of existing light-pumped YAG laser and is an ideal choice for spot welding, seam welding, boring and other industrial applications，which requires wide pulse and high peak out power due to its diversified compatibility and the convenience for most YAG systems to use with simple transformation.

Typical Applications

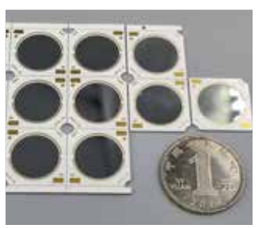
- Spot/Seam Welding
- Power Battery Welding
- PCB Welding
- Electronic Parts Processing
- Precision Welding /Cutting
- Soldering
- Ceramics Cutting
- PCB Welding
- Alternative of Light-Pumped YAG Lasers

Characteristic

- Two Work Modes：Continuous and Pulsed
- Peak Output 15000W
- Extremely Stable Output Performance
- Excellent Light Beam Quality
- QBH Output Connector and Optional Output Length
- Air/Water-Cooled Heat Dissipation

Model	RFL-QCW 1000/3000	RFL-QCW 2000/6000	RFL-QCW 6000/12000	RFL-QCW 1500/15000
Optical Properties				
Operation Mode	CW/Modulate			
Average Power (CW) (W)	1000	2000	6000	1500
Average power (Pulse) (W)	1000	2000	6000	1500
Max. Output Power (W)	3000	6000	12000	15000
Max. Pulse Energy (J)	100	200	600	150
Wavelength (nm)	1080±5			
Repetition Frequency(Hz)	0-5000			
Pulse Duration(ms)	0.05—50			
Output Power Instability	<±1.5%			
Red laser	Yes			
Output Characteristics				
Beam Delivery Optics	IQB			
Output Fiber Diameter(μm)	50 (25, 100,200)	100 (200、400 Optional)		
BPP (mm.mrad)	<2.5	<4		
Electrical Characteristics				
Power Supply (V AC)	380±15% 、50/60Hz			
Control Mode	RS-232/ AD/Ethernet			
Power range (%)	10~100			
Other Characteristics				
Dimensions (mm) W* H *D	450×234×913	900×960×1106	560×990×1100	959×1468×1160
Weight(kg)	<70	<360	<250	<500
Cooling	Water cooling			
Operating Temperature	10-40			

Precision cutting



Ceramic cutting

Ceramic cutting

Precision cutting

Hundred-watt Level Fiber Delivered Direct Diode Lasers

Introduction

The main applications of Hundred-watt level fiber delivered direct diode lasers include laser soldering and plastic laser welding.

With precise laser positioning and accurate temperature control, laser tin soldering provides a highly flexible solution for the introduction of lead-free soldering technology in the constantly developing modern electronics manufacturing industry. It features non-contact welding, fast rate of temperature increase and small heat affected area, making it more suitable for lead-free processing.

In laser transmission welding of plastic application, one of the materials needs to be able to transmit the laser, while the other material or the surface coating of it needs to absorb the laser. Under the influence of pressure, the parts of the two materials that need to be connected form a connection band as the laser beam moves.

Model	RFL-FDDL50X	RFL-FDDL100X	RFL-A200D
Output Power(W)	50	100	200
Output Power Instability(%)	⩽1		⩽2
Wavelength(nm)	915±10nm，Customizable		
Pilot Laser Parameter	650±10nm，0.25～1mW		
Fiber Core(um)	105/200	200	
NA (rad)	0.22		
Output Interface Type	SMA905/D80		
Control Mode	Touch Panel/RS232/AD		RS232/AD
Dimensions (mm) W* H *D	260×138×340		
Cooling	Air-Cooled		
Operation Power Source (V DC)	24 VDC		48 VDC
Operating Temperature (°C)	0-40°C		0-30°C

Application

laser soldering

laser beam-transmission welding for plastic

Application Industry

3C electricity/Optical communication/ Micro-electricity/

Camera mold assembly, etc

Home appliances/car/lighting/medical/packaging, etc

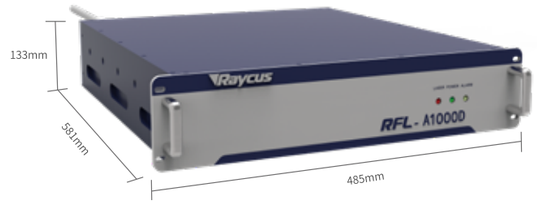
Plastic welding

Plastic welding

Plastic welding

Laser soldering

Medium Power fiber Delivered Direct Diode Lasers



Introduction

Medium Power Fiber Delivered Direct Diode Lasers are mainly used for heat conduction welding of metal sheet. In heat conduction welding, the laser beam melts the mating parts along a common joint. The molten materials flow together and solidify to form the welding seam. Heat conduction welding is similar to spot welding, but the laser beam moves after the welding pool is formed. Compared with traditional welding methods, laser heat conduction welding can not only reduce material deformation, but also process welding faster. In addition, it can achieve smooth and hole-free welding without any subsequent processing.

Model	RFL-A500D	RFL-A1000D	RFL-A1500D	RFL-A2000D
Optical Properties				
Output Power (W)	500	1000	1500	2000
Operation Mode	CW/Modulate			
Power Adjusting Range(%)	10~100			
Central Wavelength(nm)	915±10Customizable			
Output Power Instability	<2%			
Modulation Frequency(Hz)	50～10K			
Pilot Laser Indicated Power(mW)	0.25～1			
Output Characteristics				
Terminal Type	QBH			
Fiber core (μm)	300		400	400/600
Na (rad)	0.22			
Delivery Cable Length(m)	5 (Customizable)		10 (Customizable)	
Electrical Characteristics				
Operation Voltage(V AC)	Single Phase 220VAC ±10%、50/60Hz AC			Three Phase 380VAC ±10%、50/60Hz AC
Control Method	RS-232/AD			
Other Characteristics				
Dimensions (mm)	485×133×581(Handle Included)		485×133×661(Handle Included)	
Cooling	Water cooling			

Application

Stainless steel welding

Application Industry

Construction Hardware Hardware Tool

Daily Hardware Welding

Welding with low material thickness

Stainless steel welding

Stainless steel welding

Stainless steel welding

Stainless steel welding

High Power Fiber Delivered Direct Diode Lasers

Introduction

High-powered fiber delivered direct diode laser is mainly used in hardening and cladding.

Laser is the excellent heat source for metal parts hardening, it can improve abrasive resistance of pares without destroying the metallurgical properties of material. And laser will not cause the ferrite transform in unintended area so that the partial hardening can be realized easily while the induction hardening can not do the same thing. Because of laser hardening will not cause the material warping, there is no need to connect deformation of the workpiece with additional methods.

Laser cladding is a kind of additive manufacturing which can fuse material on substrate. The laser cladding is often used for manufacturing better brand new surface and repairing worn-out surface in the heavy industrial.

Application

Hardening

Cladding

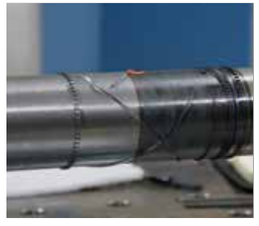
Application Industry

Mining machinery/ Gas turbine power plant

Steel rolling equipment/ Large mould

Model	RFL-A3000D	RFL-A4000D	RFL-A6000D
Optical Properties			
Average Output Power(W)	3000	4000	6000
Operation Mode	CW/Modulate		
Power Adjusting Range(%)	10~100		
Central Wavelength(nm)	915±10		
Output Power Instability	<3%		
Modulation Frequency(Hz)	50~5k		
Red Light Indicated Power(mW)	0.25~1		
Output Characteristics			
Terminal Type	IHQB		
Fiber core (μm)	600		
Beam Divergence (rad)	0.22		
Delivery Cable Length(m)	20		
Electrical Characteristics			
Operation Voltage(V AC)	Three Phase 380VAC ±10%、50/60Hz AC		
Control Method	RS-232/AD		
Other Characteristics			
Dimensions (mm)	485×238×796	662×968×1159	897×968×1159
Cooling	Water cooling		

Cladding



Cladding

Quenching

Quenching

3D Printing Lasers

Introduction

The 3D printing series of lasers feature brand-new design, optimized power monitoring system and effective suppression of high order modes. They have more compact structure and output highly stable bream with high quality. Raycus equips this series with highly customized QBH/QCS laser output jump wire, which matches the mainstream optical systems for printing device. With them, customers can complete their printing tasks that requires high quality. Excellent beam quality, compact structure design, high power stability and consistency

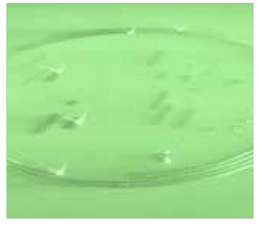
Technical Advantages

High beam quality, small size, high power stability and consistency

Applications

Medical Dentistry, Aerospace industry, Automobile Manufacturing, Consumer electronics, Artwork

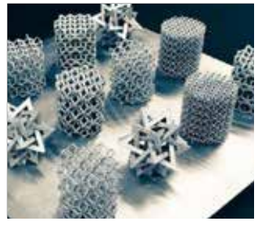
Model	RFL- C300AM-HP	RFL- C500AM-HP	RFL- C1000AM-HP
Optical Properties			
Average Output Power(W)	300	500	1000
Wavelength(nm)	1080±5		
Max. Modulation Frequency(kHz)	20		
Output Power Instability	±1.5%		
Red Laser	Yes		
Output Characteristics			
Power Supply (V AC)	200-240, Single Phase		
Beam Delivery Optics	QBH		
	QCS		/
M^2	<1.1		
Polarization State	Random		
Output Fiber Diameter(μm)	14		
Delivery Cable Length (m)	Customizable		
Electrical Characteristics			
Control Mode	RS-232/AD/Ethernet		
Power range (%)	10~100		
Other Characteristics			
Dimensions (mm) W* H *D	483×130×586	485×140×535	
Weight(kg)	<50		
Stored Temperature (°C)	-10~60		
Operating Temperature (°C)	10~40		
Operating Humidity (%)	<70		
Cooling	Air cooling	Water cooling	



Laser printing

Dentistry

Aerospace industry



Artwork

RESHAPE FIBER LASERS

Product Manual

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