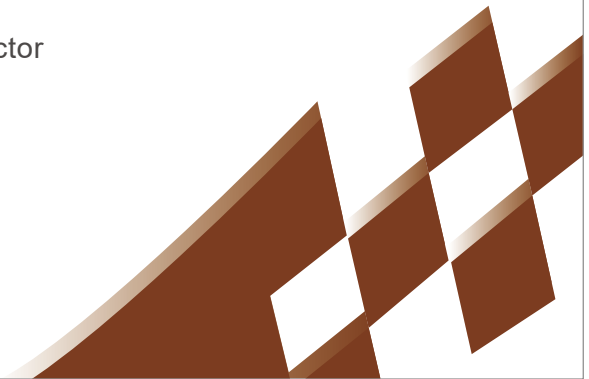




DoGain

Dogain Optoelectronic Technology (Suzhou) Co.,Ltd

Manufacturer of high-end semiconductor
laser chips and modules



01 Company Profile

Manufacturer of high-end semiconductor laser chips and modules



DoGain

DoGain Optoelectronic Technology (Suzhou) Co.,Ltd

DoGain Optoelectronics Technology (Suzhou) Co., Ltd. was established in 2017, with core expertise in the design and manufacturing of high-end laser chips. The company focuses on the core competence of the optoelectronics industry and possesses comprehensive engineering and manufacturing capabilities. These include compound semiconductor laser chip design, epitaxial growth, device fabrication, chip packaging, testing, reliability verification, and functional module development. DoGain specializes in the design, R&D, and production of high-performance, high-power, and high-reliability optoelectronic chips and devices.

Currently, the company offers a diversified product portfolio consisting of five categories: high-power chips, single-mode pump modules, array lasers, VCSELs, and fiber-coupled modules. These products serve a wide range of applications, including industrial processing, intelligent sensing, 3D sensing, optical communications, medical aesthetics, and scientific research. DoGain is committed to establishing itself as an internationally recognized R&D and manufacturing center in the optoelectronics industry.



Philosophy

ENJOY DOING
ENJOY THE GAIN



Mission

Unite global talents to deliver
world-class quality optoelectronic
products to customers.



Core Values

Excellence 、 Innovation 、
Win-win cooperation
Continuous progress



Team Vision

To become a world-leading
developer and manufacturer
of laser light sources.

Domestic Networking 02

Manufacturer of high-end semiconductor laser chips and modules



03 Development Path

Manufacturer of high-end semiconductor laser chips and modules

2024

Development
Milestones

- **Technological Breakthroughs**
 - Achieved 110W output for double-junction semiconductor laser chips and 74W for single-junction chips, marking significant advancements in power output.
- **Intellectual Property Achievements**
 - Passed the evaluation of intellectual property management system certification by the provincial bureau.
 - Recognized as a leading enterprise in the "Suzhou Intellectual Property Strong Enterprises Cultivation Project (Third Round)".
- **Quality Certifications**
 - Attained TL9000 certification, aligning quality management systems with international standards in the telecommunications industry.
- **Awards and Recognition**
 - 2024 Ringier Technology Innovation Award for cutting-edge contributions to optoelectronics.
 - 2023 China Top Ten Optical Industry Technology Award, highlighting technological excellence.
 - Best Growth Enterprise Award at the 7th Red Light Awards.
 - Recognized in the "Vico Cup Ofweek 2024" with: Best Semiconductor Laser Technology Innovation Award & Most Promising Enterprise Award.
- **Industry Accolades**
 - Designated as a 2024 Key "Little Giant" Enterprise, emphasizing its role as a leader among innovative small and medium enterprises.
 - Honored for "Outstanding Innovation Achievements in the Photonics Field Over Three Years".

2023

Development
Milestones

- **Corporate Rebranding**
 - Officially renamed as "Dogain Optoelectronics Technology (Suzhou) Co., Ltd.", reflecting its enhanced focus and mission.
- **Strategic Expansion**
 - Established four regional market centers in Beijing, Wuhan, Shenzhen, and Xi'an, along with an International Business Department to strengthen global outreach.
- **Subsidiary Launches**
 - Inaugurated two subsidiaries: Suzhou DoGain Optoelectronic Devices Co., Ltd. & Suzhou DoGain Vertical Cavity Chip Co., Ltd.
- **Technological Innovations**
 - Unveiled the world's first 55W 90nm single-emitter chip, setting a new benchmark in semiconductor laser technology.
 - Released the infrared VCSEL chip series ("Dongfanghong"), which successfully passed AEC-Q102 automotive-grade certification, reinforcing its role in advanced vehicle applications.
- **Prestigious Awards and Recognitions**
 - Designated as a National-level Specialized and New "Little Giant" Enterprise, highlighting its innovation and niche expertise.
 - Received the Suzhou Quality Award, a testament to its commitment to high standards.
 - Selected for the Suzhou High-Value Patent Cultivation Program, recognizing its intellectual property contributions.

2022

Development
Milestones

- **Production Capacity Expansion**
 - Established the fiber-coupled module production base in Nantong, which began full-scale production.
- **Product Innovations and Releases**
 - Launched the high-power single-mode 980nm semiconductor laser chip and pump module products.
 - Achieved KIK-level mass production and delivery of VCSEL chips.
- **Awards and Recognitions**
 - Recognized as 2021's Most Promising High-Tech Enterprise and received the High-Quality Intellectual Property Creation Award.
 - Included in the lists of Jiangsu Provincial Enterprise Technology Center and Jiangsu Specialized and New Small and Medium Enterprises.
- **Unicorn Potential**
 - Honored as a 2022 Jiangsu Province Potential Unicorn Enterprise and a China Potential Unicorn Enterprise.
- **Industry Recognition**
 - Awarded the 2022 China Top Ten Optical Industry Technology Award for its advancements in optical technology.

2021

Development
Milestones

- **Funding Milestones**
 - Successfully completed B++ round and C round financing, ensuring robust financial support for scaling operations and advancing innovation.
- **Quality Management Certification**
 - Achieved ISO9001 Quality Management System certification, demonstrating adherence to international standards in quality assurance.
- **Product Commercialization**
 - Initiated sales of VCSEL and 980nm single-mode module products, marking significant progress in market entry and acceptance.
- **Recognition in Technology and Innovation**
 - Awarded the Second Prize for Scientific and Technological Progress by the Optical Engineering Society for outstanding contributions to the field.
 - Selected for the Suzhou Innovation and Entrepreneurship Leading Talent Program, highlighting its leadership in technological entrepreneurship and innovation.

2020

Development
Milestones

- **Industry Recognition and Talent Development**
 - Honored with the Suzhou Park Listed Seedling Cultivation Program, a recognition for potential high-growth companies in the region, aiding in further visibility and access to resources.
 - Awarded Jiangsu Province Dual-Innovation Talent recognition, highlighting the company's commitment to fostering innovation and entrepreneurial talent within the semiconductor and optoelectronic fields.
- **Mass Production of main Products**
 - Successfully entered the mass production phase for pump lasers, medical products, and industrial products, marking a significant milestone in product scaling and meeting market demand.
- **Regional and National Recognition**
 - Designated as a Suzhou Enterprise Technology Center and named a "Unicorn" Cultivation Enterprise by the city of Suzhou, indicating its potential to become a leading player in the high-tech sector.
- **Financing and Growth**
 - Completed B+ round financing, securing additional capital to strengthen operations and accelerate product development and market expansion.

2019

Development
Milestones

- **Infrastructure and Equipment Setup**
 - The company successfully completed the installation and commissioning of its first MOCVD (Metal-Organic Chemical Vapor Deposition) equipment, a crucial technology for the growth of compound semiconductor materials, marking a significant step in its vertical integration.
- **Epitaxial Development and Self-Controlled Production**
 - Epitaxial growth was successfully developed in-house, allowing the company to enter a new phase of self-controlled production, reducing reliance on external suppliers and enhancing its capabilities for innovation and quality control.
- **Establishment of Manufacturing Lines**
 - Both the FAB production line and the packaging line were completed and became operational, with the first semiconductor chip products entering production. This laid the groundwork for the company's future mass production capabilities, enabling it to scale its operations efficiently.

Honors and Qualifications 04

Manufacturer of high-end semiconductor laser chips and modules

2018

Development
Milestones

- **A Round of Financing Completed**
- The company successfully completed its Series A financing round, securing the necessary capital to support its research and development initiatives as well as initial growth.
- **Establishment of Cleanroom and Production Line**
- The company constructed a 2,550m² ultra-clean workshop, equipped with advanced facilities to support its chip production. Additionally, the chip production line was set up, marking the initiation of its manufacturing capabilities and solidifying the foundation for future product development and mass production.

2017

Development
Milestones

- **Company Registration and Seed Funding**
- In 2017, the company was officially founded and successfully registered. During this initial phase, it secured seed round funding of 20 million RMB, providing the financial backing required to establish its operations and initiate early-stage development.
- **Recognition for Talent Development**
- The company was selected as part of the Suzhou Industrial Park's Major Leading Talent Project, recognizing its potential for growth and its focus on attracting key talent to drive innovation and technological development.
- **Angel Round Financing and IDM Model Launch**
- The company successfully raised 21 million RMB in an angel round of financing, which marked a pivotal moment in the company's growth. With these funds, the company began its transition to an Integrated Device Manufacturer (IDM) model, which involves control over the entire production process from chip design to manufacturing, ensuring self-sufficiency and innovation.



Awards and Recognitions:

Suzhou Quality Award
National High-tech Enterprise
Jiangsu Province Specialized and New Small and Medium Enterprise
Jiangsu Province Dual Innovation Talent Enterprise
Jiangsu Province Provincial-Level Academician Workstation
Jiangsu Province Potential Unicorn Enterprise
China Potential Unicorn Enterprise
Jiangsu Province Provincial-Level Enterprise Engineering Technology Research Center
National Specialized and New "Little Giant" Enterprise
Suzhou's Third Batch Intellectual Property Strong Enterprise Cultivation Project Leading Enterprise

Intellectual Property Achievements (as of June 2024):

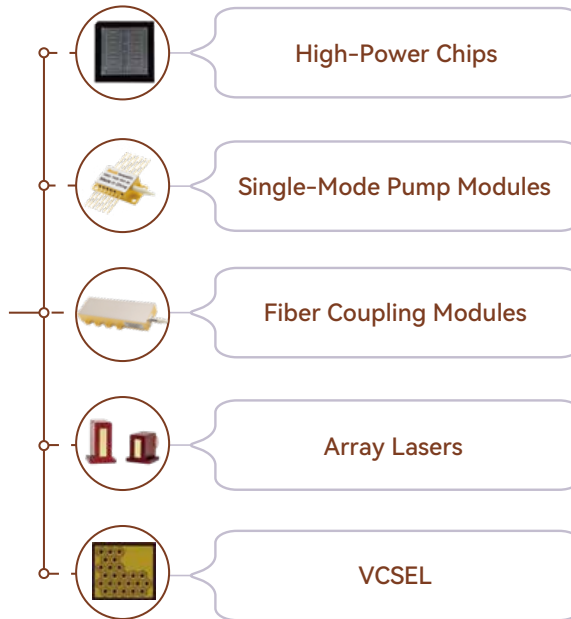
Total Patents Authorized: 267
Invention Patents: 135

05 Products and Applications

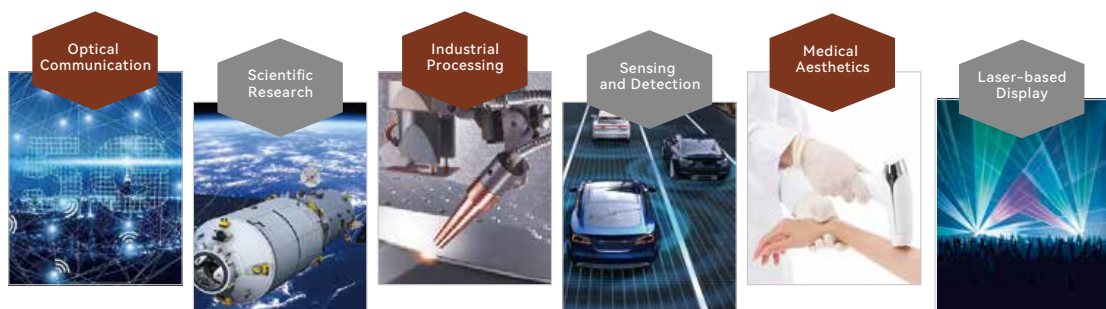
Manufacturer of high-end semiconductor laser chips and modules

Product

Five Core Product Series



Application Areas



High-Power Chips 06

Manufacturer of high-end semiconductor laser chips and modules

High-Power Single Laser Chips

- Wavelength Range: 750nm ~ 1100nm
- Power Range: 5W ~ 66W
- Emitter Width: 100µm ~ 500µm
- Cavity Length Range: 0.75mm ~ 6mm
- Polarization: TE 95% ~ 99%, TM



Product Features:

- High Brightness.
- High Reliability
- High Output Power
- High Electro-Optical Conversion Efficiency

Application Areas:

- Laser Pumping
- Industrial Processing
- Scientific Research
- Optical Communication
- Sensing
- Industrial Lasers

High-Power Bar Laser Chips

- Wavelength Range: 760nm~1064nm
- Power Range: CW: 50W~200W
QCW: 100W~700W
- Fill Factor: 20%~80%
- Cavity Length Range: 1mm~4 mm
- Polarization: TE & TM



Product Features:

- High Reliability.
- High Electro-Optical Conversion Efficiency
- High Stability.
- Long Lifespan

Application Areas:

- Scientific Research.
- Industrial Pumping.
- Laser Equipment.
- Industrial Processing.

07 Single-Mode Pump Modules

Manufacturer of high-end semiconductor laser chips and modules

HS00 Series – 980nm Low Threshold Single-Mode Pump Laser Module

■ Product Features:

- Self-developed DoGain Chip
- Low Stress 14-pin Butterfly Package
- Maximum Output Power: 330mW (kink-free),
- Operating Temperature Range: -20°C to 75°C,
- High Efficiency TEC Temperature Control: Provides stable operation at 25°C.
- Low Threshold: With threshold current (I_{th}) ≤ 40 mA,
- Stable Fiber Bragg Grating (FBG) for Wavelength Locking.
- Unique Coupling Packaging Technology
- Optional for Single-mode fiber, polarization-maintaining fiber, and FC/PC connectors.
- Reliability: Meets Telcordia GR-468-CORE standards, ensuring high quality and long lifespan.



■ Applications:

- EDFAs (Erbium-Doped Fiber Amplifiers)
- ASE Light Source Pumps
- Ultrafast Laser Pumping
- Gyroscopes
- CATV

HS01 & HS02 Series – 980nm Single-Mode Pump Laser Modules

■ Product Features:

- Self-developed DoGain Laser chip inside
- Low stress, high hermetic 10PIN, 14PIN butterfly package)
- Max. output power > 1320mW (kink-free)
- Operation Temperature: -20°C to 75°C
- Temperature control by TEC high efficiency ($T_s=25^\circ\text{C}$)
- High stable wavelength locking by FBG
- Excellent stability of output power over the whole operation current
- High efficiency and stability by the unique coupling and packaging technology
- Fulfillment of the reliability standard Telcordia GR-468-CORE



■ Applications:

- Low Noise EDFAs
- Ultrafast Laser Pumping
- ASE Light Source Pumps
- Multi-stage DWDM Systems (EDFAs)
- CATV

Single-Mode Pump Modules 08

Manufacturer of high-end semiconductor laser chips and modules

HM02 Series - 980nm Single-Mode Pump Laser Module

■ Product Features:

- Self-developed chips
- 10-pin butterfly packaging
- Max 550 mW (Kink-free) output power from single mode fiber
- Operating temperature range: -20 ~ 75 °C
- High efficient TEC temperature control (Ts=25°C)
- High wavelength stabilization with FBG
- Unique fiber coupling technology, high efficiency, high stabilization
- SM/PM fiber and FC-APC/UPC connector optional
- Comply with Telcordia GR-468-CORE standards



■ Applications:

- Multi-stage DWDM Systems (EDFAs)
- Low Noise EDFAs
- Pumping for ultrafast laser seeds
- Pumping for ASE sources
- CATV

1064nm Uncooled Seeds Laser Module DG-HDG3-WBW Series

■ Product Features:

- Self-developed chips
- Low-stress, high-airtightness, 3-pin, miniaturized, uncooled package
- Max 330 mW (Kink-free) output power from single mode fiber
- Operating temperature range: -5 ~ 75 °C
- High wavelength stabilization with FBG
- Unique fiber coupling technology, high efficiency, high stabilization
- SM/PM fiber and FC-APC/UPC connector optional
- Comply with Telcordia GR-468-CORE standards

■ Applications:

- Integrated amplifier
- Miniaturized low-noise EDFA
- Single-channel/DWDM EDFA



Manufacturer of high-end semiconductor laser chips and modules

/ 10

Array Laser Modules 10

Manufacturer of high-end semiconductor laser chips and modules

Microchannel Water-Cooled Vertical Stacked Array

- Wavelength Range: 780nm~1064nm
- Single-Bar Continuous Output Power: 0~200W
- Single-Bar Quasi-Continuous Peak Power: 0~1000W

■ Product Features:

- Low Smile Effect
- High Power
- Long Lifespan
- Fast-Axis Collimation

■ Applications:

- Scientific Pumping
- Industrial Applications



High-Power Semiconductor Laser Side-Pumped Module

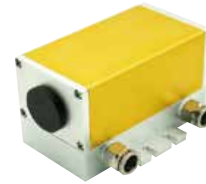
- Wavelength Range: 808nm
- Bar Quantity: Customizable
- Single-Bar Continuous Output Power: 0~200W
- Single-Module Quasi-Continuous Peak Power: 0~10000W

■ Product Features:

- High Electro-Optical Conversion Efficiency
- High Stability
- Uniform Fluorescence Distribution
- High Reliability

■ Applications:

- Scientific Pumping
- Industrial Pumping
- Medical Applications



Conductive-Cooled Semiconductor Laser Stacked Array

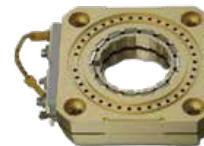
- Wavelength Range: 780nm~1064nm
- Bar Quantity: Customizable
- Single-Bar Quasi-Continuous Peak Power: 0~500W
- Single Stack Quasi-Continuous Peak Power: 0~25000W

■ Product Features:

- High Reliability
- Strong Environmental Adaptability
- High Peak Power
- Compact Design and Low weight

■ Applications:

- Pumping
- Illumination



11 VCSEL

Manufacturer of high-end semiconductor laser chips and modules

VCSEL Chips

- Wavelength Range: 680nm, 780nm, 808nm, 850nm, 905nm, 940nm, 980nm, 1064nm
- Power Output Options: 5mW, 10mW, 15mW, 210mW, 500mW, 1W, 2W, 3W, 5W, 8W, 40W
- Structural Formats: Single Point, Arrays, Structured Light, Addressable Arrays, Linear Shapes

■ Product Features:

- High optical-to-electrical conversion efficiency
- Superior reliability
- Excellent temperature stability

■ Applications:

- Infrared illumination
- Surveillance illumination
- Medical and beauty
- Consumer electronics
- Machine vision
- Industrial applications



VCSEL Modules

- TO Modules: TO46, TO56, TO33
- TOF/SMD Modules:
 - Models: 3532, 3535, 3838, 5050
 - Customizable options for different wavelengths, power levels, and field of view angles: 40°x30°, 60°x45°, 72°x58°, 110°x90°.
- Copper-Structural Components:
 - Linear light spots, collimated points, and diffraction patterns
 - Custom specifications available
- High-Power Arrays:
 - Power levels: 50 W, 100 W, 200 W, 300 W
 - Customizable for different power requirements



■ Product Features:

- High efficiency in converting electrical power into optical output
- Reliable operation over extended use
- Stable performance across a wide temperature range

■ Applications:

- Laser heating
- Infrared illumination
- Machine vision
- Surveillance camera
- Biometric recognition
- AR/VR technologies
- Laser-based obstacle detection
- Laser-based distance measurement

Single Chip Product Series

/ Germany and Other Countries LASER COMPONENTS Germany GmbH Tel +49 8142 2864-0 info@lasercomponents.com www.lasercomponents.com

13 Bar Chip Product Series

Manufacturer of high-end semiconductor laser chips and modules

Bar Chip Product Series

PKG	Wavelength	Product Name	Type	Output Power(W)										Emitter Width(um)				Cavity Length(mm)				Filling Factor (%)				Bar Length (mm)	PCE(%)	
				50	80	100	120	150	200	300	500	600	700	100	150	184	190	200	1	1.5	2	2.5	4	20	30			50
Bar Chip with Microchannel Packaging	760	760nm 50W CW Bar Chips	DG-UMB-30-19-760-TE-50-1.0	✓											✓				✓				✓			10		
		760nm 100W CW Bar Chips	DG-UMB-50-47-760-TE-100-1.5				✓								✓					✓				✓			10	60
	780	780nm 50W CW Bar Chips	DG-UMB-30-19-780-TE-50-1.0	✓											✓				✓				✓				10	62
		780nm 100W CW Bar Chips	DG-UMB-50-47-780-TE-100-1.5				✓								✓					✓				✓			10	56
		780nm 300W QCW Bar Chips	DG-UMB-75-62-780-TE-300-1.5								✓				✓						✓				✓		10	55
	796	796nm 500W QCW Bar Chips	DG-UMB-75-62-796-TE-500-2.0								✓				✓							✓				✓	10	62
		808	808nm 50W CW Bar Chips	DG-UMB-30-19-808-TE-50-1.0	✓											✓								✓				10
	808nm 60W CW Bar Chips		DG-UMB-50-47-808-TE-60-1.0		✓										✓								✓				10	55
	808nm 80W CW Bar Chips		DG-UMB-20-19-808-TE-80-2.0			✓									✓								✓				10	60
	808nm 100W CW Bar Chips		DG-UMB-50-47-808-TE-100-1.5				✓								✓									✓			10	63
	808nm 150W CW Bar Chips		DG-UMB-50-24-808-TE-150-4.0					✓									✓					✓				10	55	
	808nm 150W QCW Bar Chips		DG-UMB-50-19-808-TE-150-1.5					✓									✓	✓						✓		5	60	
	808nm 300W QCW Bar Chips		DG-UMB-75-62-808-TE-300-1.5							✓					✓									✓		10	60	
	808nm 300W QCW Bar Chips		DG-UMB-75-38-808-TE-300-1.5							✓						✓								✓		10	60	
	808nm 500W QCW Bar Chips		DG-UMB-75-62-808-TE-500-2.0								✓										✓				✓		10	63
	808nm 500W QCW Bar Chips		DG-UMB-80-43-808-TE-500-2.5								✓				✓					✓					✓		10	52
	915/940 /975	865nm 50W CW Bar Chips	DG-UMB-30-19-865-TE-50-1.0	✓											✓					✓				✓			10	68
		880nm 50W CW Bar Chips	DG-UMB-30-19-880-TE-50-1.0	✓											✓					✓				✓			10	69
		9XXnm 50W CW Bar Chips	DG-UMB-30-19-9XX-TE-50-1.0	✓											✓					✓				✓			10	65/68/70
		9XXnm 50W CW Bar Chips	DG-UMB-50-47-9XX-TE-50-1.0	✓											✓						✓				✓		10	63/63/66
		9XXnm 80W CW Bar Chips	DG-UMB-30-19-9XX-TE-80-1.5			✓									✓						✓				✓		10	68/68/68
		9XXnm 100W CW Bar Chips	DG-UMB-50-47-9XX-TE-100-1.5			✓									✓							✓			✓		10	65/65/67
		9XXnm 150W CW Bar Chips	DG-UMB-50-24-9XX-TE-150-4.0					✓								✓					✓				✓	10	67/67/67	
		9XXnm 300W QCW Bar Chips	DG-UMB-75-62-9XX-TE-300-1.5							✓						✓						✓			✓	10	63/63/63	
		9XXnm 500W QCW Bar Chips	DG-UMB-75-62-9XX-TE-500-2.0	✓							✓				✓								✓			10	62/60/60	
		9XXnm 500W QCW Bar Chips	DG-UMB-84-42-9XX-TE-500-2.0	✓								✓					✓							✓	✓	10	61/63/62	
		9XXnm 500W QCW Bar Chips	DG-UMB-84-42-9XX-TE-500-2.5		✓							✓				✓					✓			✓	✓	10	61/62/63	
	1064	9XXnm 700W QCW Bar Chips	DG-UMB-84-42-940-TE-700-2.5											✓		✓				✓			✓	✓	✓	10	77	
		1064nm 50W CW Bar Chips	DG-UMB-30-19-1064-TE-50-1.0	✓											✓					✓				✓			10	66
		1064nm 50W CW Bar Chips	DG-UMB-50-47-1064-TE-50-1.0	✓											✓					✓				✓			10	60
		1064nm 80W CW Bar Chips	DG-UMB-30-19-1064-TE-80-1.5		✓										✓						✓				✓		10	63
		1064nm 100W CW Bar Chips	DG-UMB-50-47-1064-TE-100-1.5			✓									✓						✓				✓		10	66
		1064nm 300W QCW Bar Chips	DG-UMB-75-62-1064-TE-300-1.5								✓					✓									✓		10	60
		1064nm 500W QCW Bar Chips	DG-UMB-75-62-1064-TE-500-2.0								✓				✓						✓				✓		10	61
		1064nm 500W QCW Bar Chips	DG-UMB-84-42-1064-TE-500-2.0								✓					✓						✓			✓		10	61

Single-Mode Pump Module Product Series 14

Manufacturer of high-end semiconductor laser chips and modules

Single-Mode Pump Module Product Series

Product Code	Minimum Center Wavelength	Maximum Center Wavelength	Fiber Output Power Range	
			Min	Max
DG-HS01-0825B-xxxxx	803nm	813nm	10mW	400mW
DG-HS01-8525B-xxxxx	845nm	855nm	10mW	400mW
DG-HS01-0525B-xxxxx	905nm	915nm	10mW	500mW
DG-HS01-7425B-xxxxx	973nm	975nm	10mW	1000mW
DG-HS01-7625B-xxxxx	975nm	977nm	10mW	1000mW
DG-HSL2-74xxB-xxxxx	973nm	975nm	10mW	400mW
DG-HSL2-74xxB-xxxxx	975nm	977nm	10mW	400mW
DG-HM02-74xxB-xxxxx	973nm	975nm	10mW	400mW
DG-HM02-76xxB-xxxxx	975nm	977nm	10mW	400mW
DG-HDG3-74UCA-xxxxx	973nm	975nm	10mW	300mW
DG-HDG3-76UCA-xxxxx	975nm	977nm	10mW	300mW
DG-HS00-7425B-xxxxx	973nm	975nm	10mW	300mW
DG-HS00-7625B-xxxxx	975nm	977nm	10mW	300mW
DG-HS01-3025B-xxxxx	1029nm	1031nm	10mW	500mW
DG-HS01-8025B-xxxxx	1079nm	1081nm	10mW	500mW
DG-HS01-1125B-xxxxx	1099nm	1101nm	10mW	500mW
DG-HS03-6425B-xxxxx-Wxxx	1064nm	1070nm	10mW	500mW
DG-HM03-6425B-xxxxx-Wxxx	1064nm	1070nm	10mW	500mW
DG-HS02-6425B-xxxxx	1063nm	1065nm	10mW	1000mW
DG-HM02-6425B-xxxxx	1063nm	1065nm	10mW	500mW
DG-HDG3-64UCA-xxxxx-WPN	1060nm	1070nm	10mW	300mW
DG-HS05-6425B-xxxxx-Dxx	1063nm	1065nm	10mW	200mW

15 VCSEL Product Series

Manufacturer of high-end semiconductor laser chips and modules

Product Types	PN	Product Forms	Wavelength	Current	Power	PCE	Drive condition	Chip Width	Chip Length	Number of emitters
LiDAR Series	QDSA9403J20105	bare die&module(SMD,TO)	940	1.6A	4W	51%	50°C, 0.3ms, 1%D.C.	1670	355	105
	QDSA9403J205204	bare die&module(SMD,TO)	940	1A	2.5W	50%	50°C, 0.3ms, 1%D.C.	847	759	52
	QDSA9403J2052	bare die&module(SMD,TO)	940	1A	2.5W	50%	50°C, 0.3ms, 1%D.C.	416	503	52
	QDSA9403J2030	bare die&module(SMD,TO)	940	500mA	1.2W	50%	50°C, 0.3ms, 1%D.C.	325	424	30
	QDSA9403J2003	bare die&module(SMD,TO)	940	35mA	86mW	54%	50°C, 0.3ms, 1%D.C.	149	232	3
	QDSA9403J2007	bare die&module(SMD,TO)	940	80mA	180mW	50%	50°C, 0.3ms, 1%D.C.	201	277	7
	QDSA9403J2001	bare die&module(SMD,TO)	940	13mA	30mW	49%	50°C, 0.3ms, 1%D.C.	183	183	1
	QDSA9055J	bare die&module(SMD,TO)	905	12A	50W	15%	2ns,0.02%	380	500	52
Customization	QDCA9056J151716	bare die&module(SMD,TO)	905	1A	4.8W	50%	50°C, 0.3ms, 1%D.C.	2305	773	17
	QDCC680Indicator	bare die&module(SMD,TO)	680	5mA	3mW	NA	25°C, CW	565	824	Indicator
	QDCA850180mW	bare die&module(SMD,TO)	850	210mA	180mW	41%	50°C, 0.3ms, 1%D.C.	140	937	22
	QDSL940150mW	bare die&module(SMD,TO)	940	210mA	180mW	44%	50°C, CW	175	944	22
	QHCS9402W	bare die&module(SMD,TO)	940	2A	1W	42%	50°C, 0.3ms, 10%D.C.	521	931	403
Proximity Series	QDSC940500mW	bare die&module(SMD,TO)	940	650mA	500mW	43%	50°C, 0.3ms, 1%D.C.	726	729	127
	DSA8505mW	bare die&module(SMD,TO)	850	7mA	5mW	39%	25°C, 0.5ms, 1%D.C.	168	168	1
	QDSA8505mWA02	bare die&module(SMD,TO)	850	1.3mA	5mW	42%	50°C, CW	166	166	1
	QDSA8508mW	bare die&module(SMD,TO)	850	7mA	8mW	44%	50°C, CW	166	166	1
	DSA85010mW	bare die&module(SMD,TO)	850	14mA	10mW	39%	25°C, 0.5ms, 1%D.C.	168	168	2
	DSA85015mW	bare die&module(SMD,TO)	850	21mA	16mW	37%	25°C, 0.5ms, 1%D.C.	168	168	3
	QDSA85070mW	bare die&module(SMD,TO)	850	85mA	70mW	44%	50°C, 0.3ms, 1%D.C.	140	893	22
	QDSA850150mW	bare die&module(SMD,TO)	850	185mA	150mW	38%	25°C, 0.5ms, 1%D.C.	240	264	24
	QDSA850150mWA01	bare die&module(SMD,TO)	850	210mA	150mW	40%	50°C, 0.3ms, 1%D.C.	271	246	24
	DSA9405MWA02	bare die&module(SMD,TO)	940	6mA	5mW	54%	25°C, 0.5ms, 1%D.C.	168	168	1
	DSA94010mW	bare die&module(SMD,TO)	940	12mA	10mW	54%	25°C, 0.5ms, 1%D.C.	168	168	2
	DSA94015mW	bare die&module(SMD,TO)	940	18mA	16mW	53%	25°C, 0.5ms, 1%D.C.	168	168	3
	QDSA940210MWA01	bare die&module(SMD,TO)	940	240mA	210mW	42%	50°C, 0.3ms, 1%D.C.	260	284	24
	DSA940500mW	bare die&module(SMD,TO)	940	700mA	600mW	45%	25°C, 0.3ms, 1%D.C.	388	420	105
	QDSA940500mW	bare die&module(SMD,TO)	940	650mA	500mW	45%	50°C, 0.3ms, 1%D.C.	520	524	156
ToF Series	QDSA8083W	bare die&module(SMD,TO)	808	3.5A	3W	41%	50°C, 0.3ms, 1%D.C.	1044	1084	754
	QDSA8503WA01	bare die&module(SMD,TO)	850	3.5A	3W	44%	50°C, 0.3ms, 1%D.C.	1044	1084	754
	DSA9401W	bare die&module(SMD,TO)	940	1.4A	1W	43%	25°C, 0.5ms, 1%D.C.	503	511	217
	QDSA9401W	bare die&module(SMD,TO)	940	1.3A	1W	46%	50°C, 0.1ms, 1%D.C.	611	613	203
	QDSA9401WB01	bare die&module(SMD,TO)	940	1.2A	1W	45%	50°C, 0.3ms, 1%D.C.	701	664	3.6
	QDSA9401.5W	bare die&module(SMD,TO)	940	1.8A	1.6W	46%	50°C, 0.3ms, 1%D.C.	906	838	410
	QSSA9401.5W	bare die&module(SMD,TO)	940	2.5A	2W	45%	50°C, 0.3ms, 1%D.C.	674	775	408
	DSA9402W	bare die&module(SMD,TO)	940	2.5A	2W	45%	25°C, 0.2ms, 1%D.C.	674	775	408
	QDSA9402WB01	bare die&module(SMD,TO)	940	2.4A	2W	45%	50°C, 0.3ms, 1%D.C.	923	1014	594
	QHSA9403WA01	bare die&module(SMD,TO)	940	3.5A	3W	40%	50°C, 0.3ms, 1%D.C.	806	937	560
	QDSA9403WB01	bare die&module(SMD,TO)	940	3.5A	3W	45%	50°C, 0.3ms, 1%D.C.	1044	1084	754
	QHSA9403W	bare die&module(SMD,TO)	940	3.5A	3W	47%	50°C, 0.3ms, 1%D.C.	806	937	560
	QDSA9408W	bare die&module(SMD,TO)	940	10A	8.3W	44%	50°C, 0.1ms, 1%D.C.	1701	1718	1958
Illumination Heating Security Medical and Beauty Series	DSA6805mW	bare die&module(SMD,TO)	680	6mA	5mW	33%	25°C, 0.5ms, 1%D.C.	168	168	1
	QDSA6805mw	bare die&module(SMD,TO)	680	8mA	5mW	27%	25°C, 0.3ms, 1%D.C.	166	166	1
	QDCA6805mW	bare die&module(SMD,TO)	680	8mA	5mW	27%	25°C, CW	203	511	1
	DSA68010mW	bare die&module(SMD,TO)	680	12mA	10mW	33%	25°C, 0.5ms, 1%D.C.	168	168	2
	DSA68015mW	bare die&module(SMD,TO)	680	18mA	15mW	33%	25°C, 0.5ms, 1%D.C.	168	168	3
	DSA680100mW	bare die&module(SMD,TO)	680	180mA	100mW	27%	25°C, 0.5ms, 1%D.C.	240	264	24

VCSEL Product Series 16

Manufacturer of high-end semiconductor laser chips and modules

Product Types	PN	Product Forms	Wavelength	Current	Power	PCE	Drive condition	Chip Width	Chip Length	Number of emitters
Illumination Heating Security Medical and Beauty Series	QDSA808500mW	bare die&module(SMD,TO)	808	600mA	480mW	40%	50°C, 0.3ms, 1%D.C.	156	520	524
	QDSA8081W	bare die&module(SMD,TO)	808	1.2A	1W	42%	50°C, 0.3ms, 1%D.C.	701	664	306
	QDSA8081WGS	bare die&module(SMD,TO)	808	1.2A	1W	42%	50°C, 0.3ms, 1%D.C.	787	858	576
	QDSA8081.5W	bare die&module(SMD,TO)	808	2A	1.9W	44%	25°C, 0.1ms, 5%D.C.	804	886	280
	QRSA8082W	bare die&module(SMD,TO)	808	2A	1.8W	42%	25°C, 0.1ms, 5%D.C.	810	885	280
	QRSA8082WB01	bare die&module(SMD,TO)	808	2.4A	1.9W	37%	50°C, 0.3ms, 1%D.C.	829	747	410
	QDSA8082W	bare die&module(SMD,TO)	808	2.4A	2W	41%	50°C, 0.3ms, 1%D.C.	923	1014	594
	QDSA8082WGS	bare die&module(SMD,TO)	808	2.5A	2W	41%	50°C, 0.3ms, 1%D.C.	1077	1059	1120
	QHSA8083W	bare die&module(SMD,TO)	808	3.5	3W	40%	50°C, 0.3ms, 1%D.C.	806	937	560
	QDSA8088WGS	bare die&module(SMD,TO)	808	10A	8W	40%	50°C, 0.3ms, 1%D.C.	2264	2295	5600
	QDCA80840W	bare die&module(SMD,TO)	808	56A	40W	32%	25°C. CW	4950	5000	14513
	QDCA808250mWGSB01	bare die&module(SMD,TO)	808	320mA	250mW	41%	50°C, 0.3ms, 1%D.C.	200	980	216
	QDCA808250mWGSA01	bare die&module(SMD,TO)	808	300mA	270mW	42%	50°C, 0.3ms, 1%D.C.	200	980	180
	QDCA808200mW	bare die&module(SMD,TO)	808	250mA	230mW	43%	50°C, 0.3ms, 1%D.C.	200	790	44
	QDCA808180mW	bare die&module(SMD,TO)	808	220mA	210mW	43%	50°C, 0.3ms, 1%D.C.	200	646	34
	QDSA850500mWA01	bare die&module(SMD,TO)	850	600mA	550mW	44%	50°C, 0.3ms, 1%D.C.	520	524	156
	QDSA850500MW	bare die&module(SMD,TO)	850	650mA	500mW	44%	50°C, 0.3ms, 1%D.C.	520	524	156
	QDSA850500mWGS	bare die&module(SMD,TO)	850	650mA	500mW	41%	50°C, 0.3ms, 1%D.C.	566	581	306
	QDSA8501W	bare die&module(SMD,TO)	850	1.3A	1W	42%	50°C, 0.3ms, 1%D.C.	611	613	203
	QDSA8501WA01	bare die&module(SMD,TO)	850	1.3A	1W	43%	50°C, 0.3ms, 1%D.C.	664	701	306
	QDSA8501WA02	bare die&module(SMD,TO)	850	1.2A	1.1W	43%	50°C, 0.3ms, 1%D.C.	701	664	306
	QDSA8501WGS	bare die&module(SMD,TO)	850	1.2A	1W	43%	50°C, 0.3ms, 1%D.C.	787	858	576
	QDSA8501WGSB01	bare die&module(SMD,TO)	850	1.2A	1W	43%	50°C, 0.3ms, 1%D.C.	745	783	580
	QDSA8501WGSC01	bare die&module(SMD,TO)	850	1.2A	1W	44%	50°C, 0.3ms, 1%D.C.	765	803	580
	QDSA8501WGS01	bare die&module(SMD,TO)	850	1.2A	1W	40%	50°C, 0.3ms, 1%D.C.	787	834	580
	RRSA8502W	bare die&module(SMD,TO)	850	2.4A	2W	39%	50°C, 0.3ms, 1%D.C.	747	829	420
	QDSA8502WGS	bare die&module(SMD,TO)	850	2.4A	2W	43%	50°C, 0.3ms, 1%D.C.	1059	1077	1120
	QDSA8502WGSA01	bare die&module(SMD,TO)	850	2.4A	2W	43%	50°C, 0.3ms, 1%D.C.	1077	1059	1120
	QDSA8502WA01	bare die&module(SMD,TO)	850	2.6A	2.3W	43%	50°C, 0.3ms, 1%D.C.	923	1014	594
	QDSA8502WA02	bare die&module(SMD,TO)	850	2.2A	2W	44%	50°C, 0.3ms, 1%D.C.	923	1014	594
	QDSA8503W	bare die&module(SMD,TO)	850	3.5A	3W	41%	50°C, 0.3ms, 1%D.C.	1044	1084	754
	QDSA8503WGS	bare die&module(SMD,TO)	850	3.5A	3W	43%	50°C, 0.3ms, 1%D.C.	1193	1210	1472
	QDSA8504W	bare die&module(SMD,TO)	850	5.2A	4W	42%	50°C, 0.3ms, 1%D.C.	1416	1438	1502
	QDSA8504WGS	bare die&module(SMD,TO)	850	5A	4W	42%	50°C, 0.3ms, 1%D.C.	1661	1715	2800
	QDSA8504WGSA01	bare die&module(SMD,TO)	850	5A	4W	41%	50°C, 0.1ms, 1%D.C.	1600	1587	2806
	QDSA8508WGS	bare die&module(SMD,TO)	850	10A	8W	43%	50°C, 0.3ms, 1%D.C.	2264	2295	5600
	DSA8508W	bare die&module(SMD,TO)	850	10A	8W	35%	25°C, CW	1468	1658	2716
	QDSA8508WA01	bare die&module(SMD,TO)	850	10A	8W	42%	50°C, 0.3ms, 1%D.C.	1718	1701	1958
	QDSA8508W	bare die&module(SMD,TO)	850	10A	8W	39%	50°C, 0.1ms, 1%D.C.	1701	1718	1958
	QDSA940500mWGSA01	bare die&module(SMD,TO)	940	650mA	550mW	42%	50°C, 0.3ms, 1%D.C.	566	581	306
	QDSA9401.5WGS	bare die&module(SMD,TO)	940	1.8A	1.5W	42%	50°C, 0.3ms, 1%D.C.	754	1044	1085
	QDSA9403WGS	bare die&module(SMD,TO)	940	3.5A	3W	42%	50°C, 0.1ms, 1%D.C.	1438	1416	1502

17 Fiber-Coupled Module Product Series

Manufacturer of high-end semiconductor laser chips and modules

Wavelength (nm)	Model Number	Fiber Core (µm)	Power (W)	Excitation (NA)	Efficiency (%)	Weight	Feature
792±3	DG-Z12-120-793-200	200	120	0.136	41.5		
	DG-Z18-150-793-200	200	150	0.175	45		
	DG-Z18-180-793-200	200	180	0.18	40.5		
808±3	DG-Z3-20-808-200	200	20	0.11	50		
	DG-Z6-50-808-200	200	50	0.14	47		
	DG-Z17-150-808-200	200	150	0.175	42		
	DG-Z42-350-808-400	400	350	0.178	40		
878/885/888±1	DG-Z35-30-878.6/885/888-200-VBG	200	30	0.13	52		
	DG-Z65-65-878.6/885/888-200-VBG	200	65	0.15	52		
	DG-Z12-120-878/885/888-200-VBG	200	120	0.13	52		
	DG-Z125-120-878/885/888-200-VBG	200	120	0.13	52		
	DG-Z18-180-878/885/888-200-VBG	200	180	0.17	52		
	DG-Z281-300-878.6/885/888-200-VBG	200	300	0.17	51		
	DG-Z42-500-878.6/885/888-200-VBG	200	500	0.18	48		
	DG-Z3-30-915/976-105	105	30	0.11	57		
	DG-Z6-60-915/976-105	105	60	0.14	54		
	DG-Z9-110-915-105	105	110	0.16	54		
915/976±3	DG-Z185-150-915/976-105	105	150	0.16	54		
	DG-Z14-280-915/976-135	135	280	0.175	54		
	DG-Z19-380-915/976-135	135	380	0.175	52		
	DG-Z23-21X-450-915/976-135	135	450	0.18	50		
	DG-Z22DW-800-915+976-135D	135	800	0.19	52		
	DG-Z16-320-915/976-200	200	320	0.175	56		
	DG-Z18-450-915/976-200	200	450	0.175	54		
	DG-Z19-540-915/976-200	200	540	0.175	52		
	DG-Z28-26X-600-915/976-200	200	600	0.175	52		
	DG-Z32C-700-976-200	200	700	0.17	54		
	DG-Z22DW-1100-915+976-200D	200	1100	0.175	54		
	DG-Z13-320-915/976-220	220	320	0.165	56		
	DG-16F-450-915-220	220	450	0.17	54		
	DG-Z18-500-915/976-220	220	500	0.175	57		
	DG-Z23-680-915/976-220	220	680	0.175	54		
	DG-Z25-750-915/976-220	220	750	0.17	55		
	DG-36T-750-976-220-HE	220	750	0.175	58		
	DG-Z28T-800-976-220D-C4	220	800	0.175	54		
	DG-Z32C-850-915-220	220	850	0.175	54		
	DG-Z32C-900-976-220	220	900	0.165	54		
	DG-Z36-32X-900-915-220(Red Light Integration)	220	900	0.2	54		
	DG-Z22DW-1320-915+976-220D	220	1320	0.17	54		
	DG-Z32C-1000-915/976-280D-C5	280	1000	0.18	54		
	DG-Z22DW-1320-915+976-280D	280	1320	0.17	54		
	DG-Z22DW-1450-915+976-300D	300	1450	0.175	52		
	DG-Z23-750-976-300	300	750	0.18	53		
	DG-Z28T-900-915-300	300	900	0.18	54		
	DG-Z28T-950-976-300D-C5	300	950	0.175	54		
	DG-Z32B-1000-976-300	300	1000	0.165	50		
	DG-Z36-1700-976-365/400(Red Light Integration)	365/400	1700	0.25	50		
	DG-Z44-1900-976-365/400(Red Light Integration)	365/400	1900	0.25	50		
	DG-34DW-2800-915+976nm-365/400	365/400	2800	0.37	46		
976/981±1	DG-Z3-1X-10-969/976/981-105-VBG	105	10	0.11	55		
	DG-Z3-2X-20-969/976/981-105-VBG	105	20	0.11	55		
	DG-Z3-30-969/976/981-105-VBG	105	30	0.11	55		
	DG-Z65-55-969/976/981-105-VBG	105	55	0.14	53		
	DG-Z185-140-969/976/981-105-VBG	105	140	0.15	52		
	DG-Z14-200-969/976/981-135-VBG	135	200	0.165	52		
	DG-Z185-250-969/976/981-135-VBG	135	250	0.158	52		
	DG-Z19-300-969/976/981-135-VBG	135	300	0.175	50		
	DG-Z23-400-969/976/981-200-VBG	200	400	0.18	50		
	DG-Z28T-600-969/976/981-200-VBG	200	600	0.18	48		
1018±5	DG-Z23-400-1018-135	135	400	0.175	50		
Lightweight	DG-6XS-5X-45-976-135-VBG	135	45	0.15	52	65	lightweight
	DG-18XL-17X-300-915/940-135	135	300	0.178	53	82	lightweight
	DG-18XL-17X-260-976/981-135-VBG	135	260	0.175	50	82	lightweight
	DDG-18XL-17X-250-1010-135	135	250	0.175	51	82	lightweight
	DG-20XL-18X-125-976-105-VBG	105	125	0.17	48	120	lightweight
	DG-20XL-19X-300-915/940-135	135	300	0.175	53	120	lightweight
	DG-20XL-19X-300-976-135-VBG	135	300	0.175	50	120	lightweight

Array Laser Product Series 18

Manufacturer of high-end semiconductor laser chips and modules

Array Laser Product Series Table

Product Series	Single Bar Power (W)	Output Power (W)	Wavelength (nm)	Maximum Current (A)	Maximum Voltage (V)	Maximum Duty Cycle (%)	Maximum Pulse Width (ms)	Cooling Water Flow Rate (L/min)	Remarks	
HH	100	300	Wavelength Options: 780 nm, 808 nm, 940 nm, 1064 nm	100	6	30	300	3.5~4	Beam Spot fully customizable, with optional of fast-axis collimation for precision.	
		400			8	30	300			
		500			10	30	300			
		600			12	20	200			
HL	50	300		50	12	40	400	3.5~4		
		500			20	40	400			
	50/100	800		50/100	16/32	20	200	4~4.5		
		1000			20/40	20	200			
	100	1200		100	24	25	200			
		1500			30	20	200			
		1600			32	20	200			
		1800			36	20	150			
		2000			40	20	100			
		2400			48	10	100			
		HS			100	100	20		10	100
	1200			24			20		100	
	MCC	100		800	100	16	40	400	2.5	Beam Spot fully customizable, with optional of fast-axis collimation for precision.
Z	/	300	808	17	64	40	400	/	Beam Spot fully customizable.	
		500		35	49					
CA	20	100~200	808	26	22	20	100	/	Beam Spot fully customizable.	

Side-Pump Laser

Technical Parameters	Operation Mode	Output Power /1064nm (W)	Optical Height (mm)	Water Flow Rate (L/min)	Water Pressure (Mpa)	Crystal Diameter (mm)
LP09 Series	CW	75	40-56	9	≤0.5Mpa	3
LP20 Series	CW/QCW	250/1350	40-56	12	≤0.5Mpa	4/5~8
LP30 Series	CW/QCW	400/1050	40-56	12	≤0.5Mpa	5~8/6~10
LP40 Series	CW	500	40-56	14	≤0.5Mpa	6~10
LP56 Series	CW/QCW	800/4500	40-56	16	≤0.5Mpa	6~12

GS

Technical Parameters	Operation Mode	Peak Power (W)	Pitch(mm)	Operating Wavelength (nm)	Temperature (°C)	Collimation optional
GS05 Series	QCW	500-800	≥0.40	790-980	-40-75	✓
GS08 Series	QCW	1600-2000	≥0.40	790-980	-40-75	✓
GS03 Series	QCW	300-900	≥0.43	790-980	-40-75	✓
GS06 Series	QCW	600-1200	≥0.43	790-980	-40-75	✓
GS20 Collimation Series	QCW	2000-4000	≥0.43	790-980	-40-75	✓
GS05 Collimation Series	QCW	500-1000	≥0.43	790-980	-40-75	✓
HF bar Series	QCW	50-6000	≥0.43	790-980	-40-75	✓
Ring Array	QCW	130000	≥0.43	790-980	-40-75	✓

MCC

Technical Parameters	Operation Mode	Peak Power of Single Bar (W)		Bar quantity	Pitch(mm)	Operating Wavelength (nm)	Standard Operating Temperature (°C)	Collimation optional
		QCW	CW					
MCC Horizontal Line Array Series	GS05 Series	50-600	50-200	1~12	/	755-1064	25	✓
VS Vertical Stacked Array Series	GS08 Series	50-600	50-200	1~50	1.5, 1.8	755-1064	25	✓

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