

## SSK Series VCSEL Laser Diodes

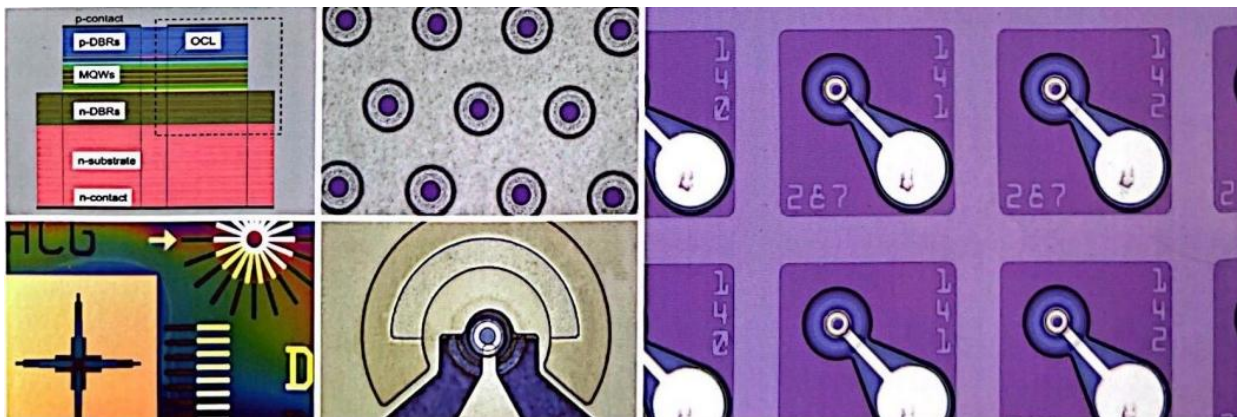


### High energy efficiency VCSEL single tube

- 600nm-1100nm band
- Polarization stabilization through surface grating technology
- Effectively control power consumption in high temperature environments
- Bare chips can be provided or packaging methods can be customized according to customer needs

### High power VCSEL array

- 808nm/850nm/940nm
- Peak output power reaches 100W
- Optical design and optical integration technology
- Meet aerospace application requirements



### Main advantages

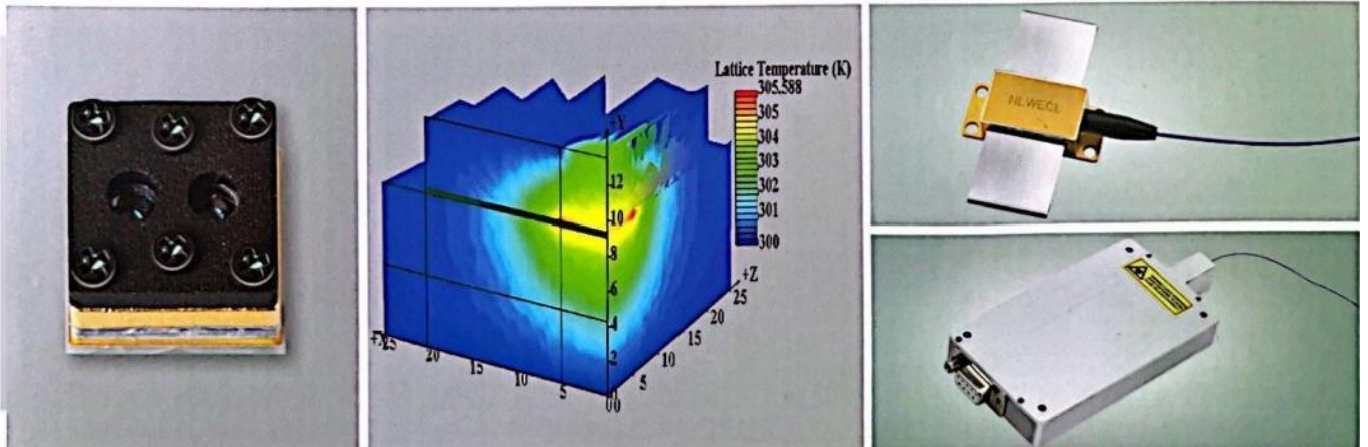
- We have rich technical accumulation in the research and development of GaAs-based VCSEL lasers and can customize the epitaxial and device structure designs according to customer application requirements.
- We have rich experience in semiconductor laser chip processing, mastering key processes such as inductively coupled plasma etching, wet oxidation, and BCB processes, and can provide stable and reliable chip products.
- Relying on Changchun Institute of Optics and Mechanics' rich experience in aerospace payload development and related testing conditions, customized product development can be carried out according to customers application needs in special environments.

### Visible light VCSEL

- Blue/green/orange light output
- Power>500mW
- Near diffraction limit
- Gain chip available separately

### High spectral purity semiconductor laser module

- 700nm-1800nm band
- Single frequency output
- Optical design and optical integration technology
- Integrated high-precision drive and temperature control



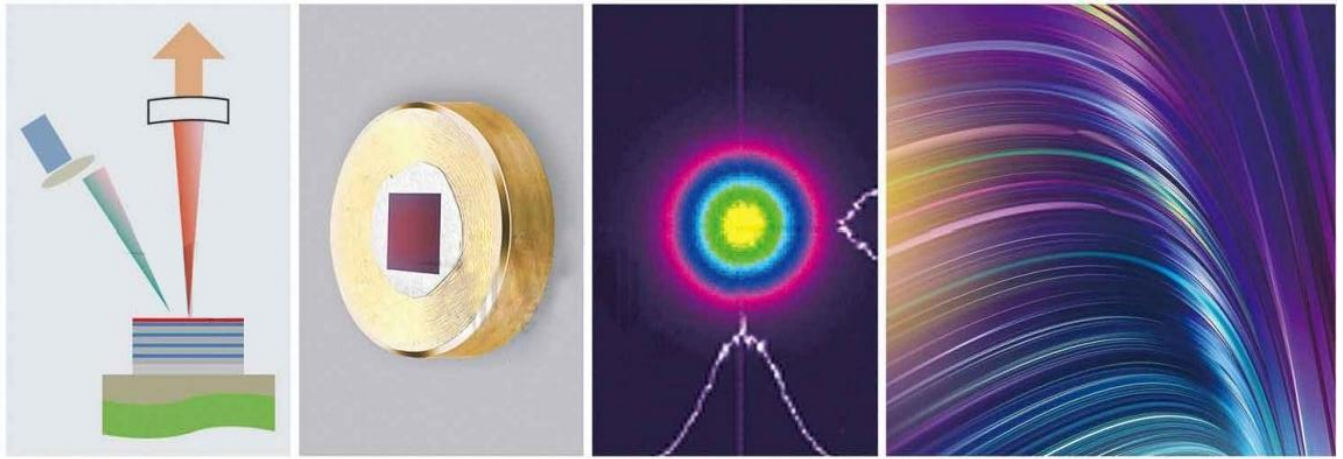
## 1. Vertical-External-Cavity Surface-Emitting Lasers

Our VCSEL is an external cavity laser module that can directly output near infrared or visible lasers. The module works like an external pump laser module and has a compact structure, small size, high optical , and wide laser wavelength coverage.

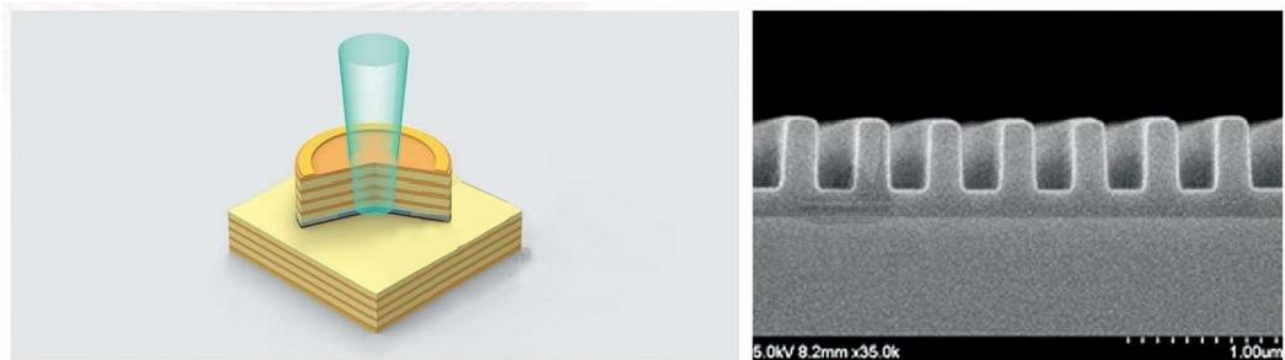
The VCSEL laser module can be used in laser processing, Laser demonstration, laser medicine and other applications. This module includes a laser gain chip, an optical lens, a frequency conversion lens, and many sets of lens devices.



The laser wavelength of the VCSEL module is the output wavelength produced after generating the frequency doubling effect by using nonlinear crystals. Its laser wavelength can be selected in accordance with the parameters of the different lenses and filters configured in the cavity.



Our VCSEL is an external cavity laser module that can directly output near infrared or visible lasers. The module works like an external pump laser module and has a compact structure, small size, high optical , and wide laser wavelength coverage.



In addition, our single-mode VCSEL covers the 750-900nm band, maintaining high output performance while having improved energy efficiency. Through integrated packaging, we integrate single-mode VCSEL chips with temperature controllers and temperature sensors to satisfy the requirements of various application.

Based on these advantages, we believe that single-mode VCSEL becomes an ideal option for atomic sensing. spectral analysis, high-accurate instrument, and other fields.

## 2. 790nm High Single Mode Power VCSEL

**Part Number:SSK-790-1mW-SM-TO**

### Applications:

- Magnetometers
- Gyroscopes
- Atomic Sensors

### Features:

- High single-transverse-mode power (>1mW) under high temperature (up to 90°C);
- Circular beam spot and low divergence angle;
- Linear polarization with high polarization extinction ratio(up to25dB);
- Narrow linewidth (spectral width).

Dimension:



Specifications:

ELECTRO-OPTICAL CHARACTERISTICS				
PARAMETER	MIN	TYP	MAX	TESTCONITIONS
Emission Wavelength(nm)		794.98		
Chip Temperature(°C)	30		90	adjusted by TEC
Threshold Current (mA)		0.8	1.2	
Threshold Voltage (V)		1.8		
Output Power (mW)		1.2	1.5	@3.5mA
Operating Voltage (V)		2.3		
Wavelength Tuning Over Current (nm/mA)		0.3		
Wavelength Tuning Over Temperature(nm/°C)		0.06		
Side Mode Suppression(dB)		25	30	@3mA
Polarization Extinction Ratio (dB)		20	25	@3mA
Beam Divergence(°)	10		25	1/e <sup>2</sup>
Spectral Bandwidth(MHz)		70		Unmodulated
TEC Current(mA)		1100		@Maximum Temperature Difference
TEC Maximum Temperature Difference(°C)		70		Room Temperature
Maximum Cooling Capacity of TEC(W)		0.4		
NTC Thermistor Resistance (kΩ)		10		
Beta Value of Thermistor(K <sup>-1</sup> )		3930		
	<b>Thermal Parameters</b>			
Operating Temperature Range(°C)	-10		55	
Storage Temperature Range(°C)	-40		125	
	<b>Package</b>			
Package Type	TO46			

### 3. 790nm Single Mode VCSEL

Part Number: SSK-790-0.1mW-SM-BC/TO

Applications:

- Atomic clock
- Magnetometer

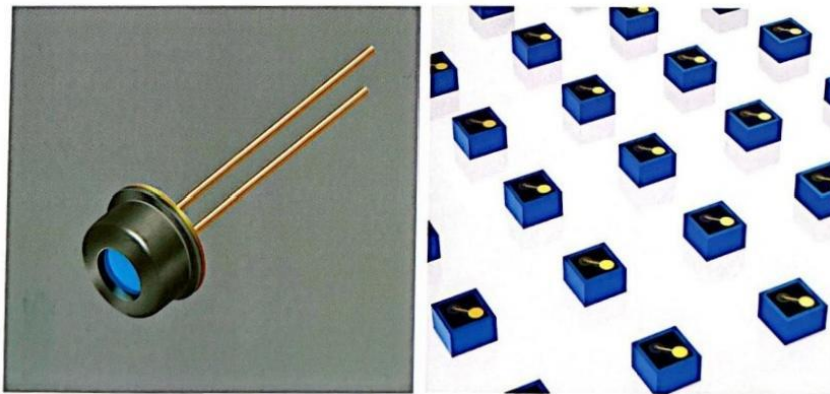
Features:

- Circular beam spot and low divergence angle
- Single-transverse-mode and linear polarization
- Narrow linewidth (spectral width)

**Specification:**

ELECTRO-OPTICAL CHARACTERISTICS				
PARAMETER	MIN	TYP	MAX	TEST CONITIONS
Emission Wavelength(nm)		794.98		
Chip Temperature(°C)	50	70	80	adjusted by TEC
Threshold Current(mA)	0.6	0.8	1.0	
Threshold Voltage (V)		1.8		
Output Power(mW)		0.1	0.2	@1.5mA
Operating Voltage (V)		2.3		
Differential Series Resistance(Ω)		200		
Wavelength Tuning Over Current (nm/mA)		0.3		
Wavelength Tuning Over Temperature(nm/°C)		0.06		
Side Mode Suppression(dB)		25		
Polarization Extinction Ratio (dB)		18		
Beam Divergence(°)	10		20	1/e <sup>2</sup>
Spectral Bandwidth(MHz)		60		
Thermal Parameters				
Operating Temperature Range(°C)	-10		55	
Storage Temperature Range(°C)	-40		125	
Package				
Package Type	Bare Chip/TO/Customized			

**Dimension:**



**4. 890nm Single Mode VCSEL**  
**Part Number: SSK-890-SM-BC/TO**

**Applications:**

- Atomic clock
- Magnetometer
- Quantum sensing

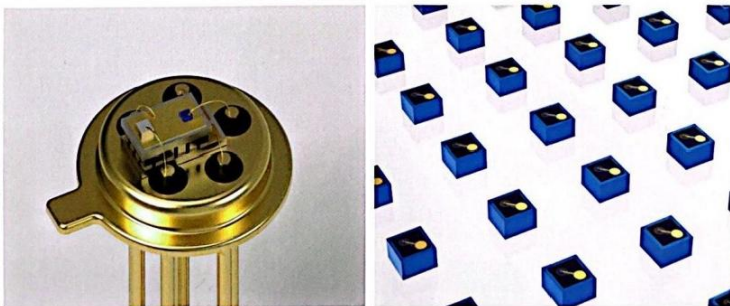
**Features:**

- Circular beam spot and low divergence angle
- Single-transverse-mode and linear polarization
- Narrow linewidth (spectral width)
- Low threshold current.ar beam spot and low divergence angle

**Specification:**

ELECTRO-OPTICAL CHARACTERISTICS				
PARAMETER	MIN	TYP	MAX	TEST CONITIONS
Emission Wavelength (nm)		894.6		
Chip Temperature(°C)	60	80	90	Customized
Threshold Current (mA)	0.4	0.6	0.8	
ThresholdVoltage (V)		1.7		
OutputPower(mW)	0.1	0.2	0.4	@1.5mA 25°C
OperatingVoltage (V)		2.3		@1.5mA 25°C
Differential Series Resistance(Ω)		200		
Wavelength Tuning Over Current(nm/mA)	0.4	0.6		
Wavelength Tuning Over Temperature(nm/°C)		0.06		
Side Mode Suppression(dB)		25		
Polarization Extinction Ratio(dB)		16		
Beam Divergence(°)	10		18	1/e2
Spectral Bandwidth(MHz)		<100		Unmodulated
Thermal Parameters				
Operating Temperature Range(°C)	-10		55	
Storage Temperature Range(°C)	-40		125	
Package				
Package Type	Bare Chip/TO/Customized			

**Dimension:**



**5. 760nm Single Mode VCSEL  
Part Number:SSK-760-SM-TO**

**Applications:**

- Gas sensing

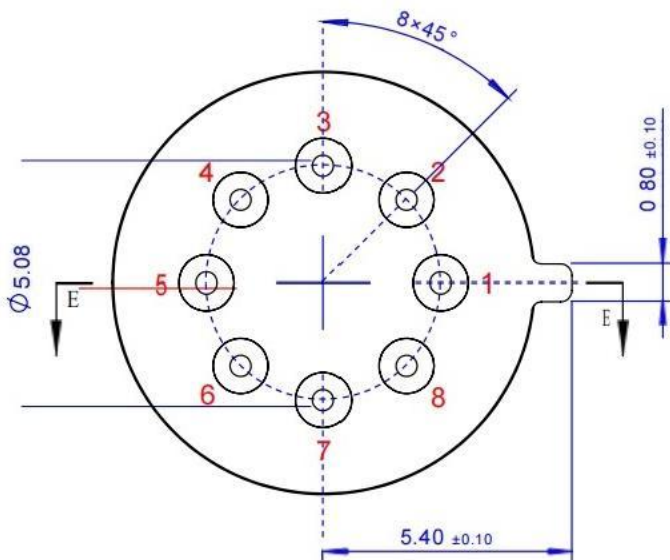
**Features:**

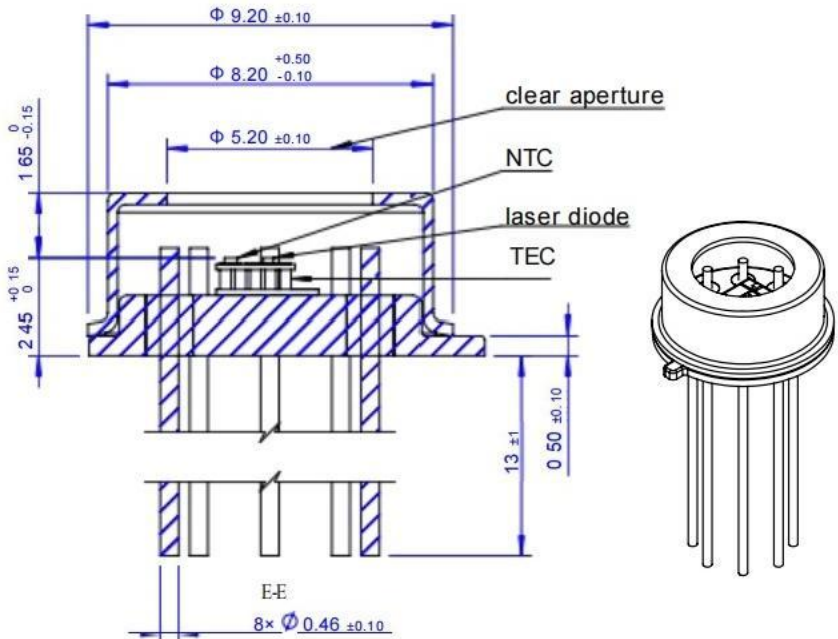
- Circular beam spot and low divergence angle
- Single-transverse-mode and linear polarization
- Narrow linewidth (spectral width)

ELECTRO-OPTICAL CHARACTERISTICS				
PARAMETER	MIN	TYP	MAX	TEST CONITIONS
Emission Wavelength (nm)	758	760	762	1mA 25°C
Chip Temperature (°C)	20		60	adjusted by TEC
Threshold Current (mA)	0.4	0.6	0.8	

Threshold Voltage (V)		1.7		
Output Power (mW)		0.3		1mA 25°C
Operating Voltage (V)		2.1		
Differential Series Resistance ( $\Omega$ )		180		
Wavelength Tuning Over Current (nm/mA)	0.5	0.7	0.9	
Wavelength Tuning Over Temperature (nm/°C)		0.05	0.06	
Side Mode Suppression (dB)	20	25	30	
Polarization Extinction Ratio (dB)		15		
Beam Divergence (°)		10		1/e <sup>2</sup>
Spectral Bandwidth (MHz)		100		
TEC Current (mA)		1100		@Maximum Temperature Difference
TEC Maximum Temperature Difference (°C)		70		
Maximum Cooling Capacity of TEC (W)		0.4		
NTC Thermistor Resistance (k $\Omega$ )		10		
Beta Value of Thermistor(K-1)		3930		
<b>Thermal Parameters</b>				
Operating Temperature Range (°C)	-10		55	
Storage Temperature Range (°C)	-40		125	
<b>Package</b>				
Package Type	TO39			

**Dimension:  
Bottom View:**



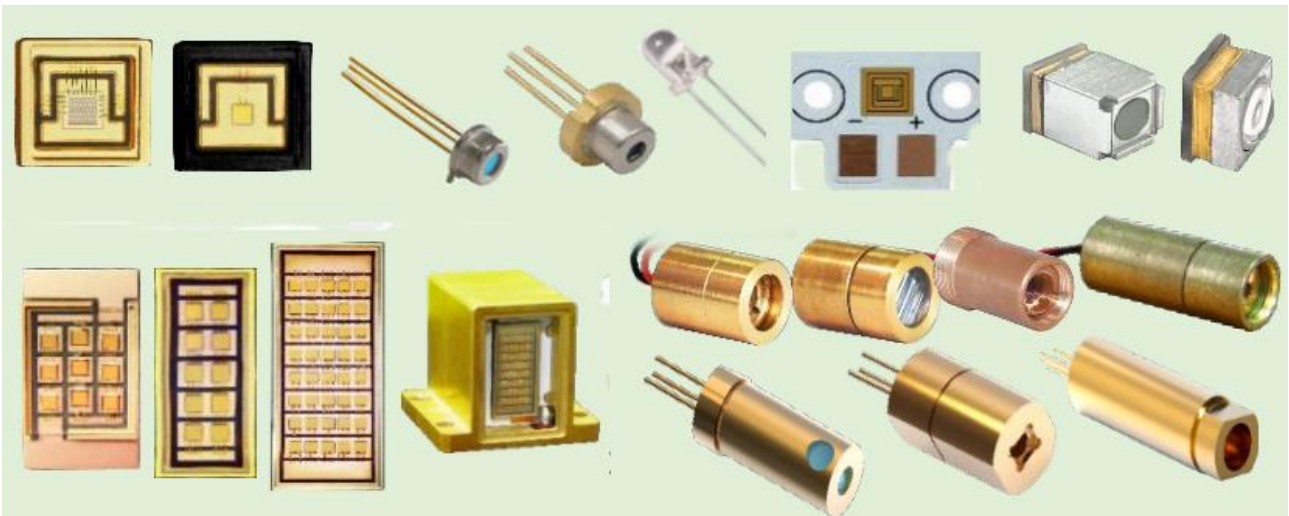


**PIN DEFINITION**

PIN NO	DESCRIPTION
1	TEC+
2	TEC-
3	NTC
4	NTC
5	
6	CASE
7	vCSEL+
8	vCSEL-

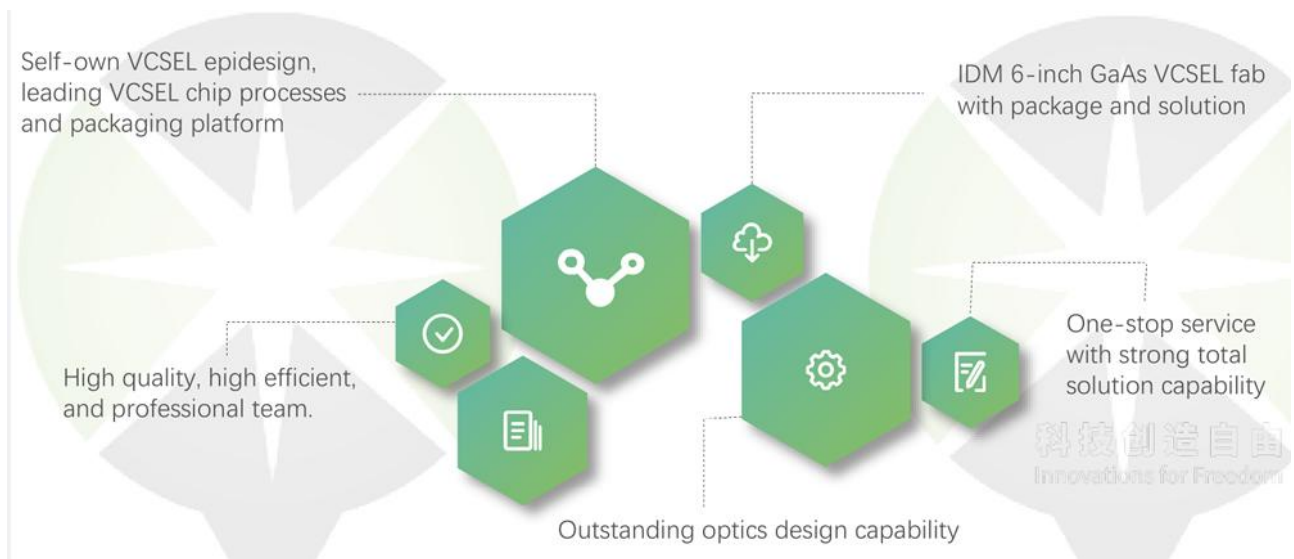


## SXL Series VCSEL Laser Diodes



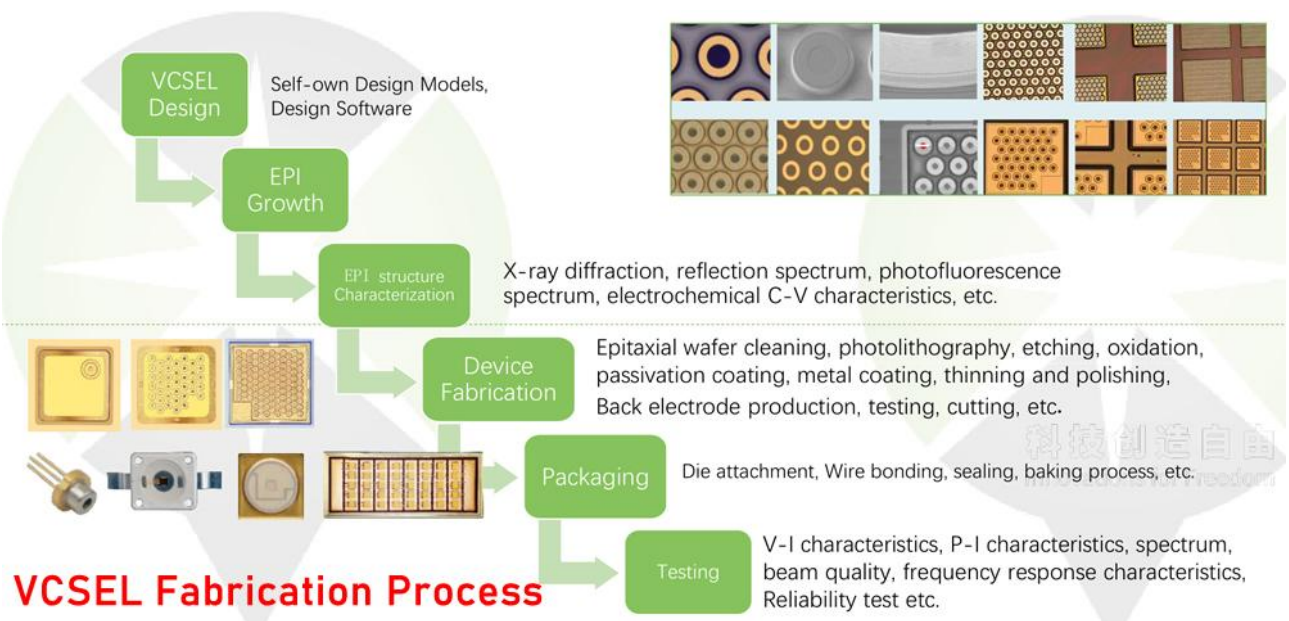
We are the competitive supplier in VCSELs & solutions, via providing the VCSELs & PDs and VCSEL based solutions for artificial intelligence (AI) and internet of things (IoT). We have all advanced equipment for advanced 6-inch GaAs VCSEL chip manufacture and package process line and testing line. We have 80+ various IP rights to cover epidesign, chip process, packaging and solutions and 30+ IP in application. Also we have the certificates such as ISO9001, IATF16949, RoHS, REACH, AEC-Q102, CE, IEC60825-1.

With implemented one-stop service from design, components, sensors, to total solutions. over 300 standard VCSEL-based products are provided. Customized products are also welcome.













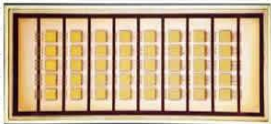
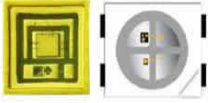

**Product Portfolio**



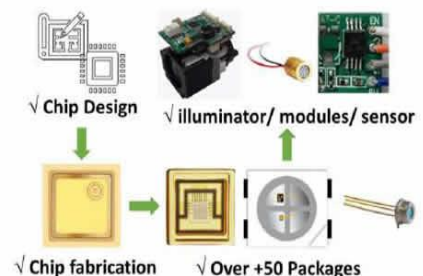
## Product List

Type	Wavelength	Characteristic of VCSEL Die			Package Forms	Applications	
		Power (CW) Peak Power (Pulse)	No. of Aperture	Beam Angle (° Degree)		Consumable	Industrial Automotive
660nm VCSEL	660nm± 10nm	2mW	1	20	2016CuAg / 2016AIN / TO56/TO46		
680nm VCSEL	680nm± 10nm	5mW	1	20	2016CuAg / 2016AIN / TO56/TO46	Facial Recognition	
		18mw	6	20	2016CuAg / 2016AIN / TO56/TO46		
		50mw	21	23	2016CuAg / 2016AIN / TO56/TO46		
808nm VCSEL	808nm± 10nm	15mW	1	20	2016CuAg / 2016AIN / TO56/TO46	Medical Application	
		30mW	2	20	3528PPA		
		60mW	5	20	2016CuAg / 2016AIN / TO56/TO46		
		120mW	1x5 (Line)x2	20	TO56		
		300mW	38	25	2016CuAg / 2016AIN / TO56	Smart House	
		600mW	113	25	3535AIN/7060CuAg		
		1.5W	156	25	3535AIN/7060CuAg		
		2W~3W	306	25	3535AIN/7060CuAg	Human- Computer Interaction	
		4W-5W	598	25	3535AIN/5050AIN/T-mount		
		7W	1184	25	5050AIN /6868AIN/T-mount		
		37W	1184x5	25	0613AIN/T-mount		
		40W	598x9	25	1408AIN/T-mount		
		50W	598x10	25	0613AIN/T-mount	Industrial Control	
		65W	1184x9	25	1408AIN/T-mount		
		100W	306x40	25	2511AIN/ T-mount/ Water Cooling Module		
		220W	598x40	25	2511AIN/ T-mount/ Water Cooling Module		
		300W	1184x40	25	Water cooling module	3107aln	
600W pulse	1184x32	25					
Single mode VCSEL 808nm	808nm± 10nm	2mW	1	20	2016CuAg/3535AIN/TO46		
850nm VCSEL	850nm± 10nm	8~15mW	1	25	2016CuAg / 2016AIN / TO56/TO46	Security surveilla nces	
		60mW	1X5 (Line)	23	2016CuAg / 2016AIN / TO56/TO46		
		130mW	10	23	2016CuAg / 2016AIN / TO56		
		200mW	39	19	2016AIN/2016CuAg/7060CuAg/ 3535AIN/3535CuAg/TO56	Datacom	
		300mW	20	18	2016AIN/2016CuAg/7060CuAg/ 3535AIN/TO56		
		500mW-1W	113	23	2016AIN/2016CuAg/7060CuAg/3535AIN		
		3W	306	25	3535AIN/5050AIN /6868AIN/T-mount		
		4W	598	25	3535AIN/5050AIN /6868AIN/T-mount		
		5W	1184	25	5050AIN /6868AIN/T-mount		
		200W	1184x40	25	2511AIN/ T-mount/ Water Cooling module		
Single mode VCSEL 850nm	850nm± 10nm	2mW	1	25	3535AIN/TO46	ADAS/LIDAR	
High speed VCSEL 850nm	850nm± 10nm	6G	1		TO46/Fiber coupling		
		10G	1		TO46/Fiber coupling		
940nm VCSEL	940nm± 10nm	15mW	1	20	2016AIN / TO56/ TO46		
		20mW	3	20	2016AIN / TO56/ TO46		
		60mW	5	20	2016AIN/3535AIN/2016CuAg/ 3535CuAg/TO56		
		90mW	10	20	2016AIN/3535AIN/2016CuAg/ 3535CuAg/TO56		
		200mW	20	20	2016AIN/3535AIN/2016AIN/ 2016CuAg/TO56		
		400mW	49	20	3535AIN/7060CuAg/TO56		
		1W	113	23	2016AIN/3535AIN		

Type	Characteristic of VCSEL Die				Package Forms	Applications	
	Wavelength	Power (CW) Peak Power (Pulse)	No. of Aperture	Beam Angle (° Degree)		Consumable	Industrial Automotive
940nm VCSEL	940nm± 10nm	2W	306	23	3535AIN/5050AIN /6868AIN/T-mount	Facial Recognition	
		3W	306	23	3535AIN/5050AIN /6868AIN/T-mount		
		4W	598	23	3535AIN/5050AIN /6868AIN/T-mount		
		5W	598	23	3535AIN/5050AIN /6868AIN/T-mount		
		6W	598	23	3535AIN/5050AIN /6868AIN/T-mount	Medical Application	
		16W	598x4	25	6868AIN/T-mount		
		30W	306x10	25	0613AIN/T-mount		
		80W	598x10	25	0613AIN/T-mount	Smart House	
		100W	598x40	25	2511AIN/ T-mount/ Water Cooling Module		
		150W	598x56	25	Water cooling module		
800W	598x264	25	259*34Cu				
Dual Junction VCSEL 940nm (CW and Pulse Mode)	940nm± 10nm	20mW	1	25	2016CuAg / 2016AIN / TO56/TO46/3535CuAg/3535AIN	Human-Computer Interaction	
		60mW	3	25	2016CuAg / 2016AIN / TO56/TO46/3535CuAg/3535AIN		
		150mW	10	25	2016CuAg / 2016AIN / TO56/TO46/3535CuAg/3535AIN		
		300mW	20	25	2016CuAg / 2016AIN / TO56/TO46/3535CuAg/3535AIN		
		700mW	38	25	2016CuAg / 2016AIN / TO56/TO46/3535CuAg/3535AIN		
		4W	306	25	3535AIN/5050AIN/7060CuAg/T-mount		
		6W	600	25	3535AIN/5050AIN/6868AIN/T-mount		
		16W	306 2x2	25	6868AIN/T-mount		
		2W	1	25	2016AIN/TO56 Chip Array: 1X4/1X8/1X16		
		6W	3	25	2016AIN/TO56 Chip Array: 1X4/1X8/1X16	Security surveillances	
		25W	10	25	2016AIN/TO56 Chip Array: 1X4/1X8/1X16		
		50W	20	25	2016AIN/TO56 Chip Array: 1X4/1X8/1X16		
		100W	38	25	2016AIN/TO56 Chip Array: 1X4/1X8/1X16		
		400W	306	25	3535AIN Chip Array: (customizable)	Datacom	
1050nm VCSEL	1050nm± 10nm	10mW	1	25	2016AIN/TO56/TO46/3528PPA	ADAS/LIDAR	
		20mW	2	25	2016AIN/TO56/TO46/3528PPA		
		1W	113	25	2016AIN/3535AIN/7060CuAg		
1060nm VCSEL	1060nm± 10nm	10mW	1	25	2016AIN/TO56/TO46/3528PPA	ADAS/LIDAR	
		1W	113	25	2016AIN/3535AIN/7060CuAg		

<b>High Power Assembly</b>	<b>Number of Chips</b>	<b>Package Formats</b>	
	2 chips x2 chips	7471AIN/ T-mount	
	2 chips x4 chips	7471AIN/ T-mount	
	2 chips x5 chips	0613AIN/ T-mount	
	3 chips x5 chips	0613AIN/ T-mount	
<b>Transceiver</b>	<b>Number of Chips</b>	<b>Package Formats</b>	
	One arbitrary VCSEL chip & One PD	3535AIN	
	Any four arbitrary VCSEL chip PD	3528AIN	
<b>3D ToF /Diffuser</b>	<b>Beam Angle</b>	<b>Package Formats</b>	
	60°× 45°	3535AIN	
	72°× 58°		
	90°× 70°		
	110°× 85°		
120°× 90°			

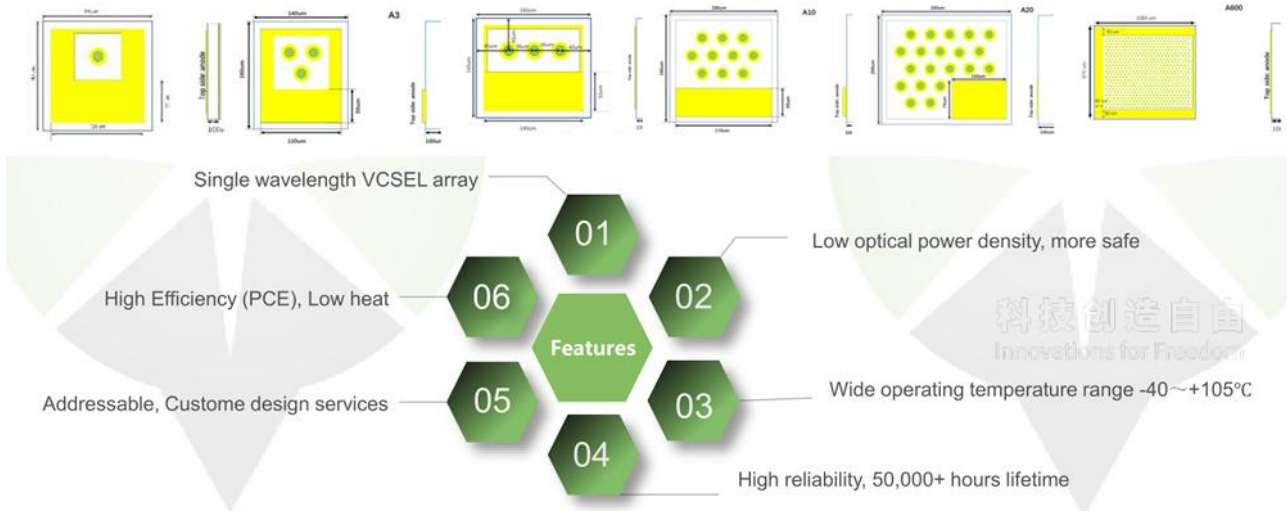
We provide a customized solution for your specific applications.



## 1. VCSEL Chips

- ❖ Wavelength: 660nm/670nm/808nm/850nm/940nm/1060nm
- ❖ Power: several milliwatts to tens of Watts

## VCSEL Chips












### Features:

- Wide operating temperature range
- High reliability, 50,000h lifetime
- Low wavelength drift 0.07nm/°C
- High efficiency PCE 50%
- Low optical power density, safer
- Low heat, environment friendly
- Top hat beam profile

Part number	Wavelength	Optical power	Beam angle	Remark
SXL-LC-0808-B050-0025CC	808nm	50mW	24°	
SXL-LC-0808-B060-0025CC	808nm	60mW	25°	
SXL-LC-0808-B350-0025CA	808nm	350mW	25°	
SXL-LC-0808-B350-0030CA	808nm	350mW	30°	
SXL-LC-0808-C003-0025CA	808nm	3W	25°	
SXL-LC-0808-C006-0025CA	808nm	6W	25°	
SXL-LC-0808-C010-0025CA	808nm	10W	25°	
SXL-LC-0850-B008-0025CA	850nm	8mW	25°	
SXL-LC-0850-B010-0023CC-A	850nm	10mW	23°	
SXL-LC-0850-B010-0023CC-B	850nm	10mW	23°	
SXL-LC-0850-B010-0023CC	850nm	10mW	23°	
SXL-LC-0850-B015-0023CC	850nm	15mW	23°	
SXL-LC-0850-B060-0023CC	850nm	60mW	23°	
SXL-LC-0850-B130-0023CC	850nm	130mW	23°	
SXL-LC-0850-B200-0025CC	850nm	200mW	25°	
SXL-LC-0850-B400-0025CC	850nm	400mW	25°	
SXL-LC-0850-C001-0025CA	850nm	1W	25°	
SXL-LC-0850-C003-0025CA	850nm	3W	25°	
SXL-LC-0850-C004-0025CC	850nm	4W	25°	
SXL-LC-0850-B008-0025CA	850nm	8mW	25°	
SXL-LC-0940-B008-0020CC	940nm	8mW	20°	
SXL-LC-0940-B010-0020CC	940nm	10mW	20°	
SXL-LC-0940-B020-0025CC	940nm	18mW	25°	
SXL-LC-0940-B020-0025CP	940nm	20mW	25°	Dual-junction
SXL-LC-0940-B060-0020CC	940nm	60mW	20°	
SXL-LC-0940-B060-0120CC	940nm	60mW	20°	
SXL-LC-0940-B060-0025CP	940nm	60mW	25°	Dual-junction

SXL-LC-0940-B060-0025CP-1x3	940nm	60mW	25°	Dual-junction
SXL-LC-0940-B160-0025CP	940nm	160mW	25°	Dual-junction
SXL-LC-0940-B160-0120CC	940nm	160mW	20°	
SXL-LC-0940-B200-0016CP	940nm	200mW	16°	
SXL-LC-0940-B200-0020CC	940nm	200mW	20°	
SXL-LC-0940-B200-0020CP	940nm	200mW	20°	
SXL-LC-0940-B300-0025CP	940nm	300mW	25°	
SXL-LC-0940-B400-0025CP	940nm	400mW	25°	
SXL-LC-0940-C001-0023CA	940nm	1W	23°	
SXL-LC-0940-C002-0020CA	940nm	2W	20°	
SXL-LC-0940-C004-0020CA	940nm	4W	20°	
SXL-LC-0940-C004-0025CP	940nm	4W	25°	


## 2. High-power VCSEL Diodes

Type	Characteristic of VCSEL Die				Package Forms	Applications		
	Wavelength	Power (CW) Peak Power (Pulse)	No. of Aperture	Beam Angle (° Degree)		Consumable Industrial Automotive		
Single Junction VCSEL 940nm	940nm± 10nm	10mW	1	20	2016AIN / TO56/ TO46	Industrial Control 		
		20mW	3	20	2016AIN / TO56/ TO46			
		60mW	10	20	2016AIN / TO56			
				160mW	20	20	2016AIN / TO56	Security Surveillances 
			1W	113	23	2016AIN/3535AIN		
			2W	306	23	3535AIN		
			4W	598	23	3535AIN/5050AIN /6868AIN/T-mount		
Dual Junction VCSEL 940nm (Pulse Mode)	940nm± 10nm	2W	1	25	2016AIN/TO56 Chip Array: 1X4/1X8/1X16	Facial Recognition 		
		6W	3	25	2016AIN/TO56 Chip Array: 1X4/1X8/1X16	Human-Computer Interaction 		
		25W	10	25	2016AIN/TO56 Chip Array: 1X4/1X8/1X16			
		50W	20	25	2016AIN/TO56 Chip Array: 1X4/1X8/1X16	ADAS 		
		100W	38	25	2016AIN/TO56 Chip Array: 1X4/1X8/1X16			
		400W	306	25	3535AIN Chip Array: (customizable)			
		Type & Application	Configuration (Arbitrary Chips)	Beam Angel (Horizontal × Vertical)	Package Forms	Standard & Customizable		
<b>Auto-Grade VCSEL Diode</b>								
Transceiver Flood Illuminator 3D ToF In-Cabin Sensor LiDAR	VCSEL Photodiode Diffuser	42°× 34 ° 50°× 40 ° 60°× 45 ° 72°× 58 ° 90°× 70 ° 110°× 85 ° 120°× 90 °	3532AIN 3535AIN 4050AIN	   				

Type	Characteristic of VCSEL Die				Package Forms	Applications Consumable Industrial Automotive
	Wavelength	Power / Peak Power	No. of Chips	Beam Angle (° Degree)		
High Power Assembly	660nm± 10nm 808nm± 10nm 850nm± 10nm 940nm± 10nm 1060nm± 10nm	6-15W	1 X 2 Chips	20-25	6868AIN/T-mount	Industrial Control 
		10-60W	2 X 2 Chips	20-25	1408AIN/T-mount / Heatsink Module	
		20-100W	2 X 4 Chips	20-25	0613AIN/T-mount/Heatsink Module	
		50-200W	4 X 6 Chips	20-25	2511AIN/T-mount/Heatsink Module	
		50-200W	5 X 5 Chips	20-25	2511AIN/T-mount/Heatsink Module	
		60-300W	5 X 8 Chips	20-25	2511AIN/T-mount/Heatsink Module	Security Surveillances 
XX - 1000W	100-300 chips	20-25	Customizable Arbitrary Layout			

Type	Characteristic of VCSEL Die				Package Forms Single Chip / Chip Array	Applications Consumable Industrial Automotive
	Wavelength	Peak Power per Chip	No. of Aperture per Chip	Beam Angle (° Degree)		
High Power Assembly (Pulse Mode)	660nm± 10nm 808nm± 10nm 850nm± 10nm 940nm± 10nm 1060nm± 10nm	1-2W	1	20-25	Single Chip: 2016AIN/TO56 Chip Array: 1X4/1X8/1X16	Facial Recognition 
		3-6W	3	20-25		Human-Computer Interaction 
		10-25W	10	20-25		
		20-50W	20	20-25		
		50-100W	38	20-25		
		100-400W	306	20-25	Single Chip: 3535AIN Chip Array: (customizable)	LIDAR 



## VCSEL Array



## High Power Assembly







Part number	Wavelength	Optical power	Beam angle	Remark
SXL-LD-0808-B015-0020CC-XXXX	808nm	15mW	20°	
SXL-LD-0808-B050-0025CC-XXXX	808nm	50mW	25°	
SXL-LD-0808-B060-0025CC-XXXX	808nm	60mW	25°	
SXL-LD-0808-B300-0025CA-XXXX	808nm	300mW	25°	Array
SXL-LD-0808-B600-0025CA-XXXX	808nm	600mW	25°	
SXL-LD-0808-C1D5-0025CA-XXXX	808nm	1.5W	25°	
SXL-LD-0808-C002-0025CA-0103-A0	808nm	2W	30°	
SXL-LD-0808-C003-0025CA-0103	808nm	3W	25°	
SXL-LD-0808-C004-0025CC-XXXX	808nm	4W	25°	
SXL-LD-0808-C005-0025CA-XXXX	808nm	5W	25°	
SXL-LD-0808-C007-0025CA-XXXX	808nm	6.8W	25°	
SXL-LD-0808-C008-0025CA-0614	808nm	4x2W	30°	
SXL-LD-0808-C010-0025CA-XXXX	808nm	10W	25°	
SXL-LD-0808-C020-0025CA-0611	808nm	20W	25°	
SXL-LD-0808-C020-0025CA-0611	808nm	20W	25°	
SXL-LD-0808-C030-0025CA-0611	808nm	30W	25°	
SXL-LD-0808-C035-0025CA-0132	808nm	35W	25°	
SXL-LD-0808-C040-0025CC-XXXX	808nm	40W	25°	
SXL-LD-0808-C060-0025CA-0611	808nm	60W	25°	
SXL-LD-0808-C060-0025CA-06XX	808nm	60W	25°	Array
SXL-LD-0808-C070-0025CC-0611	808nm	60W	25°	Array
SXL-LD-0808-C070-0025CC-XXXX	808nm	60W	25°	Array
SXL-LD-0808-C065-0025CA-0132	808nm	65W	25°	
SXL-LD-0808-C100-0025CC-XXXX	808nm	80W	25°	Array
SXL-LD-0808-C100-0025CA-0611	808nm	100W	25°	Array
SXL-LD-0808-C200-0025CA-XXXX	808nm	140W	25°	Array
SXL-LD-0808-C200-0025CA-0611	808nm	170W	25°	Array
SXL-LD-0808-C200-0025CA-0611	808nm	200W	25°	
SXL-LD-0808-C220-0025CA-0124	808nm	220W	25°	Array
SXL-LD-0808-C300-0025CA-XXXX	808nm	300W	25°	Array
SXL-LD-0850-B004-0023CA-2231	850nm	4mW	25°	
SXL-LD-0850-B005-0025CA-XXXX	850nm	5mW	25°	
SXL-LD-0850-B010-0023CC-XXXX	850nm	10mW	23°	
SXL-LD-0850-B015-0023CC-XXXX	850nm	15mW	23°	
SXL-LD-0850-B015-0025CCP-0317	850nm	15mW	25°	
SXL-LD-0850-B060-0023CC-XXXX	850nm	60mW	23°	
SXL-LD-0850-B100-0020CC-XXXX	850nm	100mW	24°	
SXL-LD-0850-B130-0024CA-XXXX	850nm	130mW	24°	

SXL-LD-0850-B200-0020CC-XXXX	850nm	200mW	20°	
SXL-LD-0850-B400-0024CC-XXXX	850nm	400mW	24°	
SXL-LD-0850-B700-0020CA-XXXX	850nm	700mW	20°	
SXL-LD-0850-C001-0020CA-XXXX	850nm	1W	20°	
SXL-LD-0850-C1D5-0020CA-0305	850nm	1.5W	20°	
SXL-LD-0850-C002-0020CA-XXXX	850nm	2W	24°	
SXL-LD-0850-C002-0020CA-XXXX	850nm	2.2W	24°	
SXL-LD-0850-C002-0025CA-0104	850nm	2.2W	24°	
SXL-LD-0850-C004-0020CA-XXXX	850nm	4W	24°	
SXL-LD-0850-C006-0025CA-XXXX	850nm	6W	25°	
SXL-LD-0850-C020-0025CA-XXXX	850nm	20W	25°	
SXL-LD-0850-C030-0025CA-XXXX	850nm	30W	25°	
SXL-LD-0850-C200-0025CA-XXXX	850nm	200W	25°	
SXL-LD-0940-B010-0020CC-XXXX	940nm	10mW	20°	
SXL-LD-0940-B015-00XXCCP-033X	940nm	15mW	15°	
SXL-LD-0940-B020-0020CC-XXXX	940nm	18mW	20°	
SXL-LD-0940-B020-0020CA-XXXX	940nm	20mW	20°	
SXL-LD-0940-B020-0025CP-XXXX	940nm	20mW	20°	
SXL-LD-0940-B060-0014CC-0235	940nm	60mW	14°	
SXL-LD-0940-B060-0014CC-1035	940nm	60mW	14°	
SXL-LD-0940-B060-0020CC-XXXX	940nm	60mW	20°	
SXL-LD-0940-B060-0025CP-XXXX	940nm	60mW	25°	
SXL-LD-0940-B070-00XXCCP-033X	940nm	70mW	15°	
SXL-LD-0940-B140-0010CCP-0331	940nm	140mW	10°	
SXL-LD-0940-B200-0020CC-XXXX	940nm	200mW	20°	
SXL-LD-0940-B200-0025CP-XXXX	940nm	200mW	20°	
SXL-LD-0940-B500-0020CC-XXXX	940nm	500mW	20°	
SXL-LD-0940-C001-0020CA-XXXX	940nm	1W	20°	
SXL-LD-0940-C002-0020CA-0103	940nm	2W	20°	
SXL-LD-0940-C002-0020CA-XXXX	940nm	2W	20°	
SXL-LD-0940-C004-0020CA-XXXX	940nm	4W	20°	
SXL-LD-0940-C015-0025CA-XXXX	940nm	15W	25°	
SXL-LD-0940-C100-0025CA-XXXX	940nm	100W	25°	

### 3. VCSELs for Lidar Applications

#### Features

- Low wavelength drift
- Oxide isolation technology
- Low threshold current
- High reliability
- Easy to collimate

#### Applications

- 3D sensors
- Lidars
- IR illuminations
- Medical applications
- Proximity sensors

Part number	Wavelength	Optical power	Beam angle	Remark
SXL-LD-0808-C200-0025CAP-XXXX	808nm	150W	25°	Pulsed
SXL-LD-0808-C300-0025CAP-XXXX	808nm	192W	25°	Pulsed
SXL-LD-0850-B200-XXXXRC-0103	850nm	200mW	20°	D ToF with diffuser
SXL-LD-0850-B200-XXXXRC-0103	850nm	200mW	60° x 45° / 72° x 58° / 90° x 70° / 110° x 85° / 120° x 90°	3D TOF with diffuser
SXL-LD-0850-B700-XXXXRC-0103	850nm	700mW	60° x 45° / 72° x 58° / 90° x 70° / 110° x 85° / 120° x 90°	3D TOF with diffuser
SXL-LD-0850-B700-XXXXRA-0103	850nm	700mW	20°	D ToF with diffuser



SXL-LD-0940-C004-XXXXRA-0103	850nm	4W		With diffuser
SXL-LD-0850-C004-XXXXRA-0103	850nm	4W	60° x 45° / 72° x 58° / 90° x 70° / 110° x 85° / 120° x 90°	3D TOF with diffuser
SXL-LD-0850-C020-0020CAP-XXXX	850nm	20W	20°	Pulsed
SXL-LD-0850-C050-0020CAP-XXXX	850nm	50W	20°	Pulsed
SXL-LD-0940-C050-0025CPP-XXXX	850nm	50W	25°	Pulsed
SXL-LD-0940-B200-XXXXRC-0103	940nm	200mW	20°	3D ToF
SXL-LD-0940-B200-XXXXRC-0103	940nm	200mW	60° x 45° / 72° x 58° / 90° x 70° / 110° x 85° / 120° x 90°	3D TOF with diffuser
SXL-LD-0940-B500-XXXXRC-0103	940nm	500mW	60° x 45° / 72° x 58° / 90° x 70° / 110° x 85° / 120° x 90°	3D TOF with diffuser
SXL-LD-0940-B600-XXXXRC-0103	940nm	600mW	20°	3D ToF
SXL-LP-000E-C002-XXXXSA-0103	940nm	2W	20°	with diffuser & PD
SXL-LD-0940-C002-XXXXRA-0103	940nm	2W	20°	with diffuser
SXL-LD-0940-C002-XXXXRA-0103	940nm	2W	60° x 45° / 72° x 58° / 90° x 70° / 110° x 85° / 120° x 90°	3D TOF with diffuser
SXL-LP-000E-C004-XXXXSA-0103	940nm	4W	20°	with diffuser & PD
SXL-LD-0940-C004-XXXXRA-0103	940nm	4W	20°	with diffuser
SXL-LD-0940-C004-XXXXRA-0103	940nm	4W	60° x 45° / 72° x 58° / 90° x 70° / 110° x 85° / 120° x 90°	3D TOF with diffuser
SXL-LD-0940-C006-0025CPP-XXXX	940nm	6.5W	25°	Pulsed
SXL-LD-0940-C010-0020CBP-XXXX	940nm	10W	20°	Pulsed
SXL-LD-0940-C025-0025CPP-XXXX	940nm	22W	25°	Pulsed
SXL-LD-0940-C025-0025CPP-XXXX	940nm	25W	25°	Pulsed
SXL-LD-0940-C050-0025CPP-XXXX	940nm	50W	25°	Pulsed
SXL-LD-0940-C100-0025CPP-XXXX	940nm	100W	25°	Pulsed
SXL-LD-0940-C400-XXXXRA-0103	940nm	400W	25°	Pulsed with diffuser
SXL-LD-0940-C400-0025CPP-XXXX	940nm	400W	25°	Pulsed

#### 4. VCSEL Dot and Line Modules

##### Features

- Uniform and detail-oriented, no stripe & no noise.
- Compact and small size.

##### Applications

- 3D measurement, indication and positioning.
- Sweeping robot.

##### 50mW 808nm Line Laser Module (VM-0808F-050M-GL-0A0)

Parameters	Typical values	Remarks
Linewidth	≤ 2mm	@10cm
Divergence	≥ 130°	-



##### 30mW 940nm Dot Laser Module (VM-0940G-030M-AD-0A0)

Parameters	Typical values	Application
Optical power	30mW	300-500m Laser curtain Railway station shield door
Divergence	1.5±0.5 mrad	



### VCSEL Dot & Line Classical Modules



Distance at 30cm

Remarks: We provide Line and Dot laser module in variety of wavelength, power levels and dimensions.

**Features**

- Uniform and detail-oriented, no stripe & no noise.
- SMD

**Applications**

- 3D measurement, indication and positioning.
- Sweeping robot.

**5-20mW 808/850/940nm line VCSEL Module  
(VM-0XXXF-0XXM-GL-0A0)**

Parameters	Typical values	Remarks
Linewidth	≤ 2mm	@10cm
Divergence	110°	-


**5-20mW 808/850/940nm Dot Module  
(VM-0XXXG-0XXM-AD-0A0)**

Parameters	Typical values	Application
Optical power	30mW	sensing
Divergence	3-5 mrad	



## VCSEL Dot & Line Modern Modules



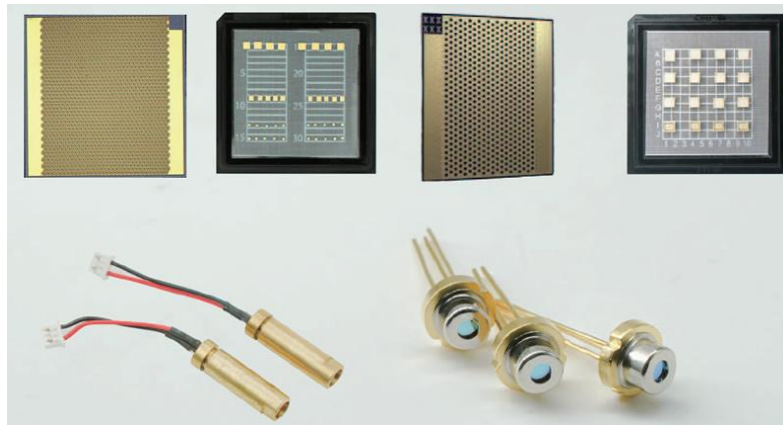
**Distance at 30cm**

**Remarks: We provide Line and Dot laser module in variety of wavelength, power levels and dimensions.**

Part number	Wavelength (nm)	Optical power (mW)	Spot shape	Illumination distance (m)	Dimension (mm)
SXL-LM-0850-B006-0913LA	850	6	Line		φ9 × L13.0
SXL-LM-0650-B001-0917LA	650	0.7	Line		φ9 × L17.0
SXL-LM-0940-B080-1059LA	940	80	Line		φ9 × L10.5
SXL-LM-0940-B060-0911LA	940	60	Line		φ9 × L11
SXL-LM-0405-B005-0614LA	405	5	Line		Φ6 × L13.7
SXL-LM-0405-B005-0714LA	405	5	Line		Φ7 × L13.7
SXL-LM-0808-B050-0607LA	808	50	Line		L6.5×φ6
SXL-LM-0850-B025-0911LA	850	25	Line		φ9×L11
SXL-LM-0940-B015-0913LA	940	15	Line		φ9×L13.0
SXL-LM-0940-B030-0913LA	940	30	Line		φ9 × L13.0
SXL-LM-0808-B050-0811LA-0120	808	50	Line		Φ8×L11
SXL-LM-0635-B001-1322LC	635	0.95	Line		L22×φ13
SXL-LM-0450-B002-5057LA	450	2mW	Line	10	L50×W50×H57
SXL-LM-0650-B001-0917LA	650	1mW	Line	>0.156	L17.0 × φ 9
SXL-LM-0850-B006-0913LA	850	6mW	Line	0.5-1	L13.0 × Φ 9
SXL-LM-0940-B018-2046LP	940	18mW	Line	/	Φ20x45.5
SXL-LM-0940-B020-0913LA	940	15mW	Line	>0.3	L13.0 × Φ9
SXL-LM-0940-B060-0913LA	940	30mW	Line	>0.3	L13.0 × Φ9
SXL-LM-0940-B080-0911LA	940	80mW	Line	>0.3	L10.5 × Φ 9
SXL-LM-0940-B100-0911LA	940	100mW	Line	>0.3	L10.5 × Φ9
SXL-LM-0656-B030-1512DA	656	30	Dot		L15.0 × φ12.0
SXL-LM-0940-B004-0711DC	940	4	Dot		Φ6.5x10.5
SXL-LM-0650-B003-1120DA	650	3	Dot		M11.5(φ10.5)×L19.3
SXL-LM-0650-B003-1120DC	650	3	Dot		M11.5(φ10.5)×L19.3
SXL-LM-0650-B004-1120DA	650	4	Dot		M11.5(φ10.5)×L19.3
SXL-LM-0940-B030-2432DA	940	30	Dot		Φ24x32
SXL-LM-0520-B004-1120DC	520	4	Dot		M11.5(φ10.5)×L19.3
SXL-LM-0520-B004-1120DA	520	4	Dot		M11.5(φ10.5)×L19.3
SXL-LM-0650-B003-0711DC	650	3	Dot		L10.5×φ6.5
SXL-LM-0850-B006-0722DA	850	3	Dot		φ6.5*L22
SXL-LM-0850-B004-0711DC	850	4	Dot		Φ6.5x10.5
SXL-LM-0450-B026-1120DA	450	26mW	Dot	500	M11.5(φ10.5)×L19.3
SXL-LM-0520-B004-1120DA	520	4mW	Dot	500	M11.5(φ10.5)×L19.3
SXL-LM-0650-B001-0818DB	650	1mW	Dot	/	L18.0 × φ8
SXL-LM-0650-B003-1120DA	650	3mW	Dot	500	M11.5(φ10.5)×L19.3
SXL-LM-0850-B006-0722DA	850	3mW	Dot	6	L22 × Φ6.5
SXL-LM-0850-B006-0919DA	850	2mW	Dot	20	L19 × Φ 9

SXL-LM-0850-B200-0913DA	850	200mW	Dot	0.5-1	L12.5 × Φ 9
SXL-LM-0940-B060-0919DA	940	30mW	Dot	20	L19 × Φ9
SXL-LM-0940-B004-0711DC	940	4	Dot	0.25	Φ6.5x10.5
SXL-LM-0850-A200-1010DA	850	0.2	Dot	>0.2	Φ10×L10

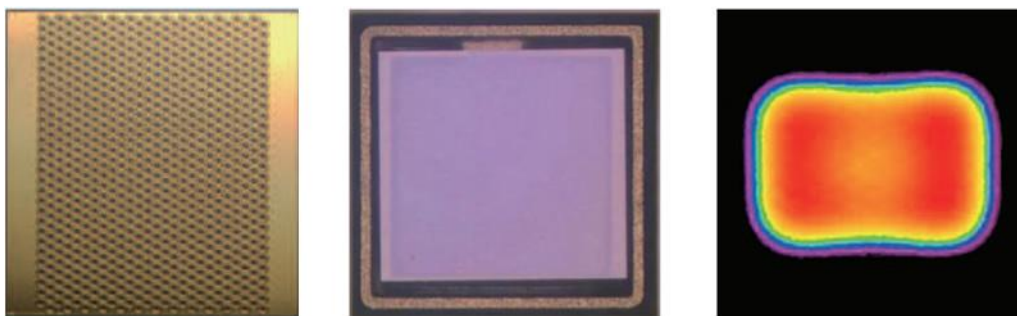
## STD Series VCSEL Laser Diodes



### 1. TOF Modules

Features:

- Multimode output
- High output power
- Custom module development
- Low power consumption



Applications:



Biometric Identification



AR VR



Security Monitoring



Machine Vision

Part number	Wavelength	Current	Power	PCE	Drive condition	Chip Width	Chip Length	Number of emitters
STD-QDSA8083W	808	3.5A	3W	41%	50°C, 0.3ms, 1%DC.	1044	1084	754
STD-QDSA8503WA01	850	3.5A	3W	44%	50°C, 0.3ms, 1%DC.	1044	1084	754
STD-DSA9401W	940	1.4A	1W	43%	25°C, 0.5ms, 1%DC.	503	511	217
STD-QDSA9401W	940	1.3A	1W	46%	50°C, 0.1ms, 1%DC.	611	613	203
STD-QDSA9401WB01	940	1.2A	1W	45%	50°C, 0.3ms, 1%DC.	701	664	3.6
STD-QDSA9401.5W	940	1.8A	1.6W	46%	50°C, 0.3ms, 1%DC.	906	838	410
STD-QSSA9401.5W	940	2.5A	2W	45%	50°C, 0.3ms, 1%DC.	674	775	408
STD-DSA9402W	940	2.5A	2W	45%	25°C, 0.2ms, 1%DC.	674	775	408
STD-QDSA9402WB01	940	2.4A	2W	45%	50°C, 0.3ms, 1%DC.	923	1014	594
STD-QHSA9403WA01	940	3.5A	3W	40%	50°C, 0.3ms, 1%DC.	806	937	560
STD-QDSA9403WB01	940	3.5A	3W	45%	50°C, 0.3ms, 1%DC.	1044	1084	754
STD-QHSA9403W	940	3.5A	3W	47%	50°C, 0.3ms, 1%DC.	806	937	560
STD-QDSA9408W	940	10A	8.3W	44%	50°C, 0.1ms, 1%DC.	1701	1718	1958

Pack: bare die & module (SMD, TO)

## 2. Lighting, Heating, Security Monitoring and Medical Beauty

Part number	Wave-length	Current	Power	PCE	Drive condition	Chip Width	Chip Length	Number of emitters
STD-DSA6805mW	680	6mA	5mW	33%	25°C, 0.5ms, 1%DC.			
STD-QDSA6805mW	680	8mA	5mW	27%	25°C, 0.3ms, 1%DC.	66	66	1
STD-QDCA6805mW	680	8mA	5mW	27%	25°C, CW	203	511	1
STD-DSA68010mW	680	12mA	10mW	33%	25°C, 0.5ms, 1%DC.	168	168	2
STD-DSA68015mW	680	18mA	15mW	33%	25°C, 0.5ms, 1%DC.	168	168	3
STD-DSA680100mW	680	180mA	100mW	27%	25°C, 0.5ms, 1%DC.	240	264	24
STD-QDSA808500mW	808	600mA	480mW	40%	50°C, 0.3ms, 1%DC.	156	520	524
STD-QDSA8081W	808	1.2A	1W	42%	50°C, 0.3ms, 1%DC.	701	664	306
STD-QDSA8081WGS	808	1.2A	1W	42%	50°C, 0.3ms, 1%DC.	787	858	576
STD-QDSA8081.5W	808	2A	1.9W	44%	25°C, 0.1ms, 5%DC.	804	886	280
STD-QRSA8082W	808	2A	1.8W	42%	25°C, 0.1ms, 5%DC.	810	885	280
STD-QRSA8082WB01	808	2.4A	1.9W	37%	50°C, 0.3ms, 1%DC.	829	747	410
STD-QDSA8082W	808	2.4A	2W	41%	50°C, 0.3ms, 1%DC.	923	1014	594
STD-QDSA8082WGS	808	2.5A	2W	41%	50°C, 0.3ms, 1%DC.	1077	1059	1120
STD-QHSA8083W	808	3.5	3W	40%	50°C, 0.3ms, 1%DC.	806	937	560
STD-QDSA8083WGS	808	3.5A	3W	42%	50°C, 0.3ms, 1%DC.	1193	1210	1472
STD-SSSA8084W	808	5A	4W	41%	25°C, 0.3ms, 1%DC.	1039	1085	977
STD-QDSA8084WGS	808	5A	4W	41%	50°C, 0.3ms, 1%DC.	1661	1715	2800
STD-QDSA8088WGS	808	10A	8W	40%	50°C, 0.3ms, 1%DC.	2264	2295	5600
STD-QDCA80840W	808	56A	40W	32%	25°C CW	4950	5000	14513
STD-QDCA808250mWGSB01	808	320mA	250mW	41%	50°C, 0.3ms, 1%DC.	200	980	216
STD-QDCA808250mWGSA01	808	300mA	270mW	42%	50°C, 0.3ms, 1%DC.	200	980	180
STD-QDCA808200mW	808	250mA	230mW	43%	50°C, 0.3ms, 1%DC.	200	790	44
STD-QDCA808180mW	808	220mA	210mW	43%	50°C, 0.3ms, 1%DC.	200	646	34
STD-QDSA850500mWA01	850	600mA	550mW	44%	50°C, 0.3ms, 1%DC.	520	524	156
STD-QDSA850500MW	850	650mA	500mW	44%	50°C, 0.3ms, 1%DC.	520	524	156
STD-QDSA850500mWGS	850	650mA	500mW	41%	50°C, 0.3ms, 1%DC.	566	581	306
STD-QDSA8501W	850	1.3A	1W	42%	50°C, 0.3ms, 1%DC.	611	613	203
STD-QDSA8501WA01	850	1.3A	1W	43%	50°C, 0.3ms, 1%DC.	664	701	306
STD-QDSA8501WA02	850	1.2A	1.1W	43%	50°C, 0.3ms, 1%DC.	701	664	306
STD-QDSA8501WGS	850	1.2A	1W	43%	50°C, 0.3ms, 1%DC.	787	858	576
STD-QDSA8501WGGSB01	850	1.2A	1W	43%	50°C, 0.3ms, 1%DC.	745	783	580
STD-QDSA8501WGSC01	850	1.2A	1W	44%	50°C, 0.3ms, 1%DC.	765	803	580
STD-QDSA8501WGS01	850	1.2A	1W	40%	50°C, 0.3ms, 1%DC.	787	834	580
STD-RRSA8502W	850	2.4A	2W	39%	50°C, 0.3ms, 1%DC.	747	829	420
STD-QDSA8502WGS	850	2.4A	2W	43%	50°C, 0.3ms, 1%DC.	1059	1077	1120
STD-QDSA8502WGSA01	850	2.4A	2W	43%	50°C, 0.3ms, 1%DC.	1077	1059	1120
STD-QDSA8502WA01	850	2.6A	2.3W	43%	50°C, 0.3ms, 1%DC.	923	1014	594
STD-QDSA8502WA02	850	2.2A	2W	44%	50°C, 0.3ms, 1%DC.	923	1014	594
STD-QDSA8503W	850	3.5A	3W	41%	50°C, 0.3ms, 1%DC.	1044	1084	754
STD-QDSA8503WGS	850	3.5A	3W	43%	50°C, 0.3ms, 1%DC.	1193	1210	1472
STD-QDSA8504W	850	5.2A	4W	42%	50°C, 0.3ms, 1%DC.	1416	1438	1502
STD-QDSA8504WGS	850	5A	4W	42%	50°C, 0.3ms, 1%DC.	1661	1715	2800
STD-QDSA8504WGSA01	850	5A	4W	41%	50°C, 0.1ms, 1%DC.	1600	1587	2806
STD-QDSA8508WGS	850	10A	8W	43%	50°C, 0.3ms, 1%DC.	2264	2295	5600
STD-DSA8508W	850	10A	8W	35%	25°C, CW	1468	1658	2716
STD-QDSA8508WA01	850	10A	8W	42%	50°C, 0.3ms, 1%DC.	1718	1701	1958
STD-QDSA8508W	850	10A	8W	39%	50°C, 0.1ms, 1%DC.	1701	1718	1958
STD-QDSA940500mWGSA01	940	650mA	650mW	42%	50°C, 0.1ms, 1%DC.	566	581	306
STD-QDSA9401.5WGS	940	1.8A	1.5W	42%	50°C, 0.1ms, 1%DC.	754	1044	1085
STD-QDSA9403WGS	940	3.5A	3W	42%	50°C, 0.1ms, 1%DC.	1438	1416	1502

Pack: bare die & module (SMD, TO)

## 3. Sensing Series

Part number	Wave-length	Current	Power	PCE	Drive condition	Chip Width	Chip Length	Number of emitters
STD-DSA8505mW	850	7mA	5mW	39%	25°C, 0.5ms, 1%DC.	168	168	1
STD-QDSA8505mWA02	850	1.3mA	5mW	42%	50°C, CW	166	166	1
STD-QDSA8508mW	850	7mA	8mW	44%	50°C, CW	166	166	1
STD-DSA85010mW	850	14mA	10mW	39%	25°C, 0.5ms, 1%DC.	168	168	2

STD-DSA85015mW	850	21mA	16mW	37%	25°C, 0.5ms, 1%DC.	168	168	3
STD-QDSA85070mW	850	85mA	70mW	44%	50°C, 0.3ms, 1%DC.	140	893	22
STD-QDSA850150mW	850	185mA	150mW	38%	25°C, 0.5ms, 1%DC.	240	264	24
STD-QDSA850150mWA01	850	210mA	150mW	40%	50°C, 0.3ms, 1%DC.	271	246	24
STD-DSA9405MWA02	940	6mA	5mW	54%	25°C, 0.5ms, 1%DC.	168	168	1
STD-DSA94010mW	940	12mA	10mW	54%	25°C, 0.5ms, 1%DC.	168	168	2
STD-DSA94015mW	940	18mA	16mW	53%	25°C, 0.5ms, 1%DC.	168	168	3
STD-QDSA940210MWA01	940	240mA	210mW	42%	50°C, 0.3ms, 1%DC.	260	284	24
STD-DSA940500mW	940	700mA	600mW	45%	25°C, 0.3ms, 1%DC.	388	420	105
STD-QDSA940500mW	940	650mA	500mW	45%	50°C, 0.3ms, 1%DC.	520	524	156

Pack: bare die & module (SMD, TO)

#### 4. Lidar Modules

Part number	Wave-length	Current	Power	PCE	Drive condition	Chip Width	Chip Length	Number of emitters
STD-QDSA9403J20105	940	1.6A	4W	51%	50°C, 0.3ms, 1%DC.	1670	355	105
STD-QDSA9403J205204	940	1A	2.5W	50%	50°C, 0.3ms, 1%DC.	847	759	52
STD-QDSA9403J2052	940	1A	2.5W	50%	50°C, 0.3ms, 1%DC.	416	503	52
STD-QDSA9403J2030	940	500mA	1.2W	50%	50°C, 0.3ms, 1%DC.	325	424	30
STD-QDSA9403J2003	940	35mA	86mW	54%	50°C, 0.3ms, 1%DC.	149	232	3
STD-QDSA9403J2007	940	80mA	180mW	50%	50°C, 0.3ms, 1%DC.	201	277	7
STD-QDSA9403J2001	940	13mA	30mW	49%	50°C, 0.3ms, 1%DC.	183	183	1
STD-QDSA9055J	905	12A	50W	15%	2ns, 0.02%	380	500	52
STD-QDCA9056J151716	905	1A	4.8W	50%	50°C, 0.3ms, 1%DC.	2305	773	17

Pack: bare die & module (SMD, TO)

#### 5. Custom-made Modules

Part number	Wave-length	Current	Power	PCE	Drive condition	Chip Width	Chip Length	Number of emitters
STD-QDCC680Indicator	680	5mA	3mW	NA	25°C, CW	565	824	Indicator
STD-QDCA850180mW	850	210mA	180mW	41%	50°C, 0.3ms, 1%DC.	140	937	22
STD-QDSL940150mW	940	210mA	180mW	44%	50°C, CW	175	944	22
STD-QHCS9402W	940	2A	1W	42%	50°C, 0.3ms, 10%DC.	521	931	403
STD-QDSC940500mW	940	650mA	500mW	43%	50°C, 0.3ms, 1%DC.	726	729	127

Pack: bare die & module (SMD, TO)

#### 6. Collimation Modules



Applications:



LDS Ranging Lidar



Laser Obstacle Avoidance



Laser Ranging

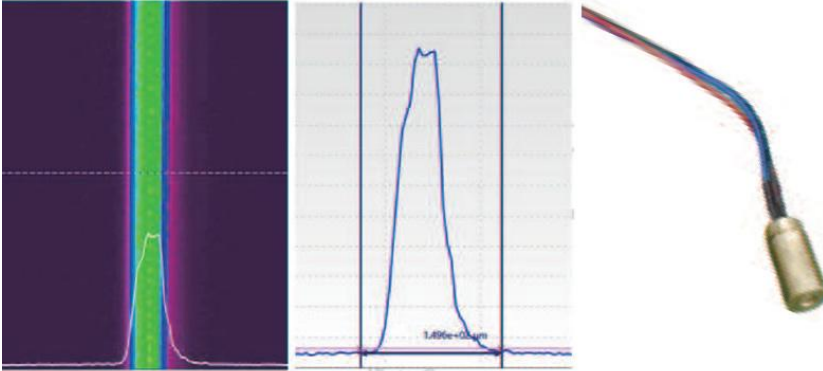


Laser Scanning

Specifications:

- Wavelength: 680\808\850\905\940nm
- Power: Power range: 5~200mW

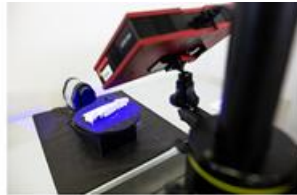
**7. Collimation Line Modules**



Applications:



3D Printing



Barcode Scanner



Medical Scan



Laser Scanning

Specifications:

- Wavelength: 680\808\850\905\940nm
- Power: Power range: 5~200mW