



# QC8x1x6x series

Picosecond pulsed seeder laser box

C00175-04 March 2024



## 1. DESCRIPTION

QC8x1x6x series is a picosecond pulsed seed laser box integrated with 14-pin butterfly DFB laser module of QLD1x6x and QLA1x6x series. 50 ps optical pulse with stable single longitudinal mode can be obtained. Flexible and easy operation can be achieved with both external and internal trigger from single shot to 250MHz high repetition rate. All operation parameters including pulse peak current and laser diode temperature can be controlled by PC software via USB interface.

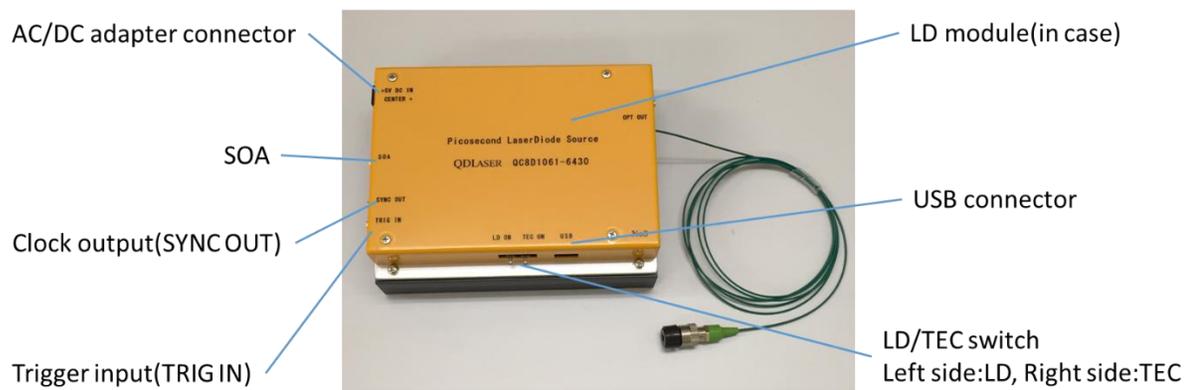
## 2. FEATURES

- 1018-1188 nm DFB-LD/DFB-SOA LD integrated
- 50 ps gain-switched pulse generation
- >30 mW peak power
- Internal / External clock operation
- Single shot to 250 MHz repetition rate
- Flexible parameter control via USB
- Plug and Play

## 3. APPLICATIONS

- Pulsed seeder for fiber lasers
- Time resolved measurement

## 4. APPEARANCE



**5. ACCESSORIES**

- AC/DC adapter
- USB cable
- SMA-SMB conversion cable
- Document CD-ROM(manual, applicaton software)

**6. ABSOLUTE MAXIMUM RATINGS**

 (T<sub>c</sub> = 25°C, unless otherwise specified)

PARAMETER	SYMBOL	RATING	UNIT
Input Voltage	V <sub>in</sub>	5.5	V
Operation Temperature *1)	T <sub>c</sub>	0 to 40	°C
Storage Temperature *1)	T <sub>stg</sub>	-10 to 50	°C

\*1)no condensation

**7. OPTICAL AND ELECTRICAL CHARACTERISTICS**

 (T<sub>c</sub> = 25°C, unless otherwise specified)

**Optical specifications**

PARAMETER	MIN	TYP	MAX	UNIT	REMARK
Optical pulse width	-	50	-	ps	Adjustable to 9 ns
Peak output power	30	50	-	mW	-
Jitter <sub>RMS</sub>	-	10	-	ps	-
Pulse to pulse stability	-	TBD	-	%	-
Peak wavelength *2)	-	λ <sub>p</sub>	-	nm	Dependent on integrated LD
Wavelength tuning range	-	2	-	nm	-
Pulsed side-mode supression ratio	-	30	-	dB	-
Pulsed spectral line width	-	0.1	-	nm	Under 50 ps pulse width

\*2) Peak wavelength is dependent on integrated LD module, and available wavelength is from 1018 to 1122 nm/1140-1188 nm for DFB-LD, and 1030, 1064, 1122 and 1188nm for DFB-SOA LD. .

**Electrical specifications**

PARAMETER	MIN	TYP	MAX	UNIT	REMARK
Electrical pulse width tuning range	300	-	9000	ps	-
Repetition rate tuning range *3)	0.012	-	250	MHz	With internal clock mode
Pulse peak current (I <sub>p</sub> ) tuning range	0	-	200	mA	Not exceed 200 mA for I <sub>p</sub> +I <sub>b</sub>
Bias current (I <sub>b</sub> ) tuning range	0	-	200	mA	Not exceed 200 mA for I <sub>p</sub> +I <sub>b</sub>
SOA bias current tuning range	0	-	300	mA	For SOA integrated version
LD chip temperature tuning range	15	25	60	°C	-
TEC current	-	-	1.3	A	-
Input power (Voltage)	-	+ 5	-	V	-
Input power (Current)	-	1	3	A	-

\*3) Single shot to 250 MHz tuning is possible with external clock mode

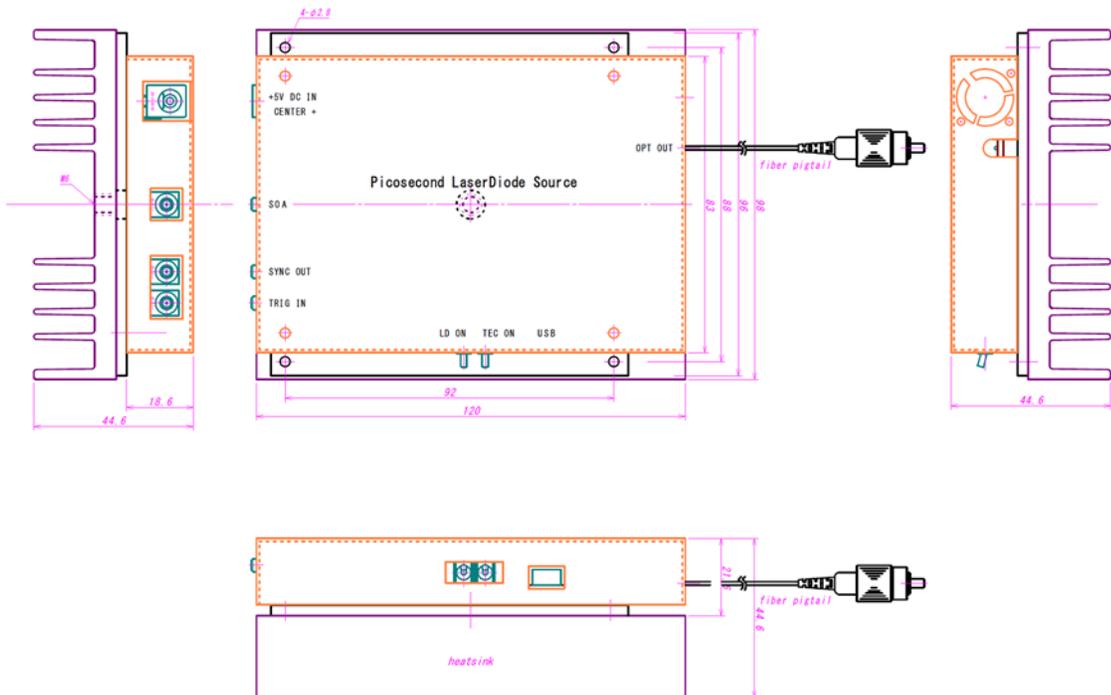
Clock interface

PARAMETER	MIN	TYP	MAX	UNIT	REMARK
External clock frequency	-	-	250	MHz	Single shot available
External clock voltage range	0~+1	-	-5~+5	V	-
External clock rise time	-	-	10	ns	-
External clock duty ratio	-	50	-	%	-
Clock monitor output voltage	-	0~1	-	V	50 Ω (0~2 V@Open)
Propagation delay	-	15	-	ns	Including optical fiber of 1 m

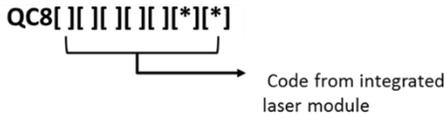
Dimensions

PARAMETER	Value	UNIT
Printed circuit board size	100 x 80	mm
Total unit size	120 x 98 x 44.6 (Maximum parts high)	mm
Weight	0.55	kg

8. EXTERNAL DIMENSION



**9. PRODUCT PART NUMBER**



(Example)

Part number	Integrated module	Description
QC8D1061-6430	QLD1061	1064nm DFB
QC8D1161-2030	QLD1161-2030	1120nm DFB
QC8D1061-643011	QLD1061-6430-11	250um fiber diameter
QC8A1061-64A0	QLA1061-64A0	1064nm DFB/SOA

**10. NOTICE**

• Safety Information

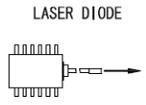
This product is classified as Class 3B laser product, and complies with 21 CFR Part 1040.10. Please do not take a look at laser lighting in operations since laser devices may cause troubles to human eyes. Please do not eat, burn, break and make chemical process of the products since they contain GaAs material.

• Handling products

Semiconductor lasers are easily damaged by external stress such as excess temperature and ESD. Please pay attention to handling products, and use within range of maximum ratings. QD Laser takes no responsibility for any failure or unusual operation resulting from improper handling, or unusual physical or electrical stress.

• RoHS

This product conforms to RoHS compliance related Directive (EU) 2015/863.

 <p><b>DANGER</b></p>	<p>LASER DIODE</p> 
<p>INVISIBLE LASER RADIATION AVOID DIRECTION EXPOSURE TO BEAM</p> <p>MAXIMUM OUTPUT 300 mW WAVELENGTH 1000~1200 nm CLASS 3B LASER PRODUCT</p>	<p>AVOID EXPOSURE-Invisible Laser Radiation is emitted from this aperture.</p>
<p>This product complies with 21 CFR Part 1040.10</p> <p><b>QD Laser, Inc.</b></p> <p>1-1 Minamiwataridacho, Kawasaki-ku, Kawasaki, Kanagawa, 210-0855 Japan</p>	

**QD Laser, Inc.**

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