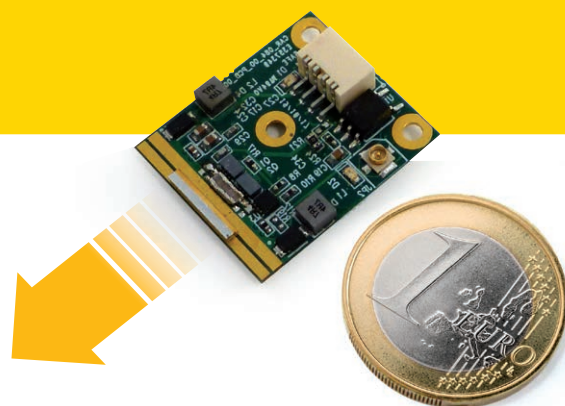


Pulsed laser diode illuminator (QD-Qxy03-IL)

Laser solutions by LUMIBIRD

Ultra-short pulse illuminator



MAIN FEATURES

- **μJ CLASS NIR LASER DIODE ILLUMINATOR**
 - Standard wavelengths : 808, 915, 940 or 980 nm
- **HIGH PULSE REPETITION RATE UP TO 500 kHz**
- **SUPERGAUSSIAN TEMPORAL PULSE SHAPE**
 - < 3 ns (FWHM)
- **ELECTRICAL-TO-OPTICAL EFFICIENCY UP TO 25 %**
 - High efficiency diode bars
 - High efficiency current pulse generator with integrated DC-DC convertor
- **UP TO 1 W AVERAGE POWER WITH NATURAL CONVECTION. SUCH AS:**
 - 10 μJ pulse energy at 100 kHz
 - 5 μJ pulse energy at 200 kHz
- **ON-CHIP LASER DIODE DESIGN**
- **ROBUST DESIGN**
 - High reliability
 - Shock and vibration resistant
 - Qualified for defense and space applications

APPLICATIONS

- 3D FLASH LIDAR
- SCANNING LIDAR
- TIME OF FLIGHT

MARKETS

- MEDICAL
- AUTOMOTIVE
- CIVIL ENGINEERING
- SECURITY
- DEFENSE & SPACE
- AEROSPACE

OPTIONS

- EXTERNAL POWER SUPPLY
- TEC COOLING & FAN
- OTHER WAVELENGTHS WITH LESS ENERGY: 1.55 μm

OUTPUT ENERGY AT 25°C

OUTPUT ENERGY	PULSE WIDTH	MAXIMUM FREQUENCY
2 μJ	< 3 ns	500 kHz
5 μJ		200 kHz
10 μJ		100 kHz

Energy can be adjusted from 10% to 100% by external DC power supply applied on J1.

OTHER SPECIFICATIONS

PARAMETERS	UNIT	
STACK CHARACTERISTICS		
Number of diode bars		Up to 3
Bar-to-bar pitch	µm	140
BEAM CHARACTERISTICS		
Spot width in SA ⁽¹⁾ (FWHM)	mm	10 or 5
Slow axis divergence (FWHM)	deg	< 11
Spot height in FA ⁽¹⁾ (FWHM)	mm	0.3
Fast axis divergence ⁽²⁾ (FWHM)	deg	< 40
Wavelength at 25°C ⁽³⁾	nm	808, 915, 940 or 980 (± 5 Typ.)
Spectral width	nm	< 10
Polarization		TE mode

ELECTRICAL REQUIREMENTS	CONNECTOR	WITH HIGH VOLTAGE ON BOARD	EXTERNAL HIGH VOLTAGE
Low voltage DC power supply	J1	12 VDC / < 0.1 A	12 VDC / < 0.1 A
High voltage DC power supply		0-85 VDC / < 0.1 A 10 A peak	
Energy adjustment voltage supply ⁽⁵⁾		0-5 VDC / < 0.1A ⁽⁴⁾	Adjustment via high voltage power supply
Trigger signal	J2	Pulse mode, 10 ns ≤ width ≤ 20 ns Frequency up to 500 kHz	

OPERATING CONDITIONS		
Operating temperature	°C	+ 15 to + 40
Storage temperature	°C	- 20 to + 80
Humidity		Non condensing for humidity rate lower than 70 %

(1) SA : Slow axis, FA : Fast axis

(2) FAC : Fast axis collimation

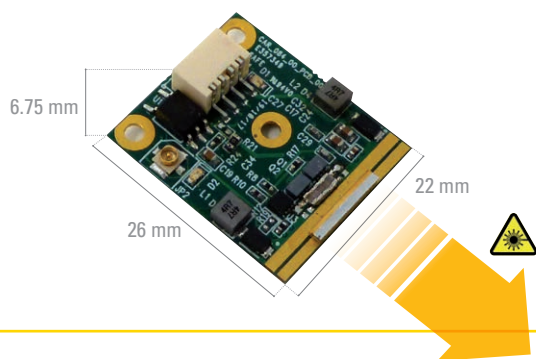
(3) Variation of wavelength with temperature is approximately 0.3 nm/°C.

(4) Without any DC voltage (0-5VDC), the output energy is maximum. When applying DC voltage between 0 and 5VDC, the output energy can be adjusted.

(5) When the output energy is adjusted from 10% to 100%, the pulse width will decrease as well as the output energy (at 10% of maximum energy, pulse duration will be reduced by 50 %).

DIMENSIONS

EXTERNAL HIGH VOLTAGE VERSION



Many options and configurations are available. Please contact Lumibird to find the best match for your needs and compatibility between options.

