



BDS-SM

BDS-SM Family Pulsed Diode Lasers

Small-size OEM Module

40 mm x 40 mm x 110 mm

Free-beam or single-mode fibre output

Pulse width down to 50 ps

Pulse repetition rate 50 MHz

CW equivalent power 0.25 to 1.2 mW

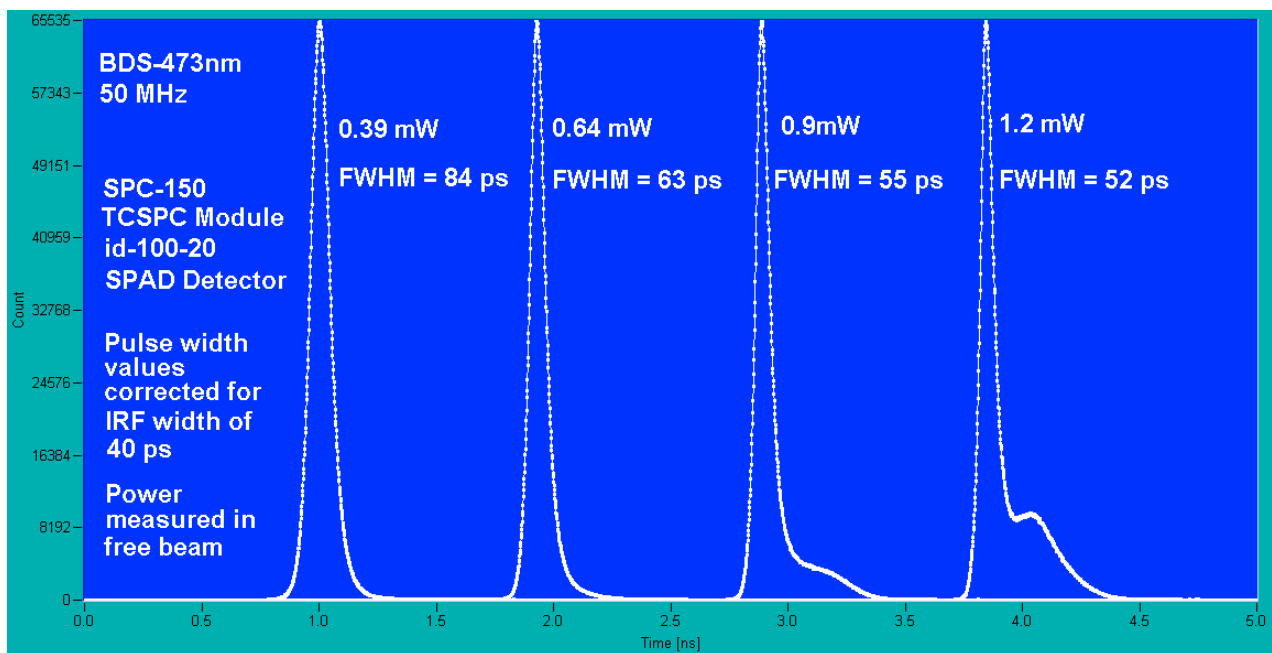
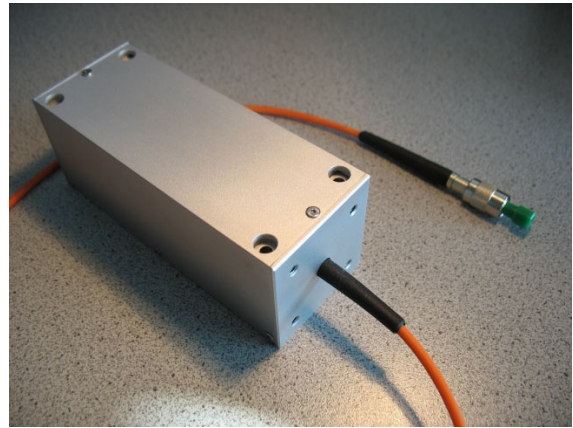
Fast on / off / multiplexing capability

Internal power stabilisation loop

All electronics integrated

No external driver unit

Simple +12 V power supply



Designed and manufactured by



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Optical

Repetition Rate	50 MHz
Wavelengths	405 nm, 445 nm, 470 nm, 485 nm, 510 nm
Pulse Width (FWHM, at 1 mW power, 50 MHz)	50 to 90 ps
Average (CW equivalent) Power	0.2 mW to 1.2 mW, adjustable by control voltage
Beam diameter, free beam	0.7 mm, TEM ₀₀ mode
Polarisation	horizontal
Coupling efficiency into single-mode fibre, typically	40%
Reaction time to 'Laser on/off' signal	4 µs
Warm-up time for power and pulse shape stabilisation after power on	1 min ¹⁾

Trigger Output

Pulse Amplitude	-1V (peak) into 50 Ω
Pulse Width	5 ns
Leading edge fall time	1 ns
Output Impedance	50 Ω
Connector	SMA
Delay from Trigger to Optical Pulse	< 500 ps
Jitter between Trigger and Optical Pulse	< 10 ps

Control Inputs

Laser ON / Off	TTL / CMOS, 'low' means 'off', internal pull-up
External Power Control	analog input, 0 to + 10V

Power Supply

Power Supply Voltage	+ 9 V to +15 V
Power Supply Current at 12V	200 mA to 350 mA ²⁾

Mechanical Data

Dimensions	40 mm x 44 mm x 110 mm
Mounting holes	four holes for M3 screws
Heat sink requirements	< 2°C / W ³⁾

Connector Pin Assignment

Connector	3M Shrunk Delta Ribbon (SDR), 26 pins
Power supply +12V	18, 19, 20, 21, 22
GND	1, 2, 3, 5, 7, 9, 24, 25, 26
Power control voltage	4
Laser On/OFF	6

Maximum Values

Power Supply Voltage	0 V to +15 V
Voltage at 'Laser On/Off' control input	-2 V to +7 V
Voltage at 'Laser Power' control input	-12 V to + 12 V
Ambient Temperature	0 °C to 40 °C ³⁾

1) Operation below 13 °C ambient temperature may result in extended warm-up time.

2) Depends on case temperature due to laser diode cooling. Cooling current changes with case temperature

3) Laser must be mounted on heat sink. Case temperature must remain below 40°C

Related Products

BDL-SMC picosecond and CW diode lasers, 375nm, 405nm, 445nm, 473nm, 488nm, 515nm, 640nm



Caution: Class 3B laser product. Avoid direct eye exposure. Light emitted by the device may be harmful to the human eye. Please obey laser safety rules when operating the devices. Complies with US federal laser product performance standards.

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