

Product Features

Pulsed current output up to 5A

20V compliance voltage

Adjustable pulse width from 10 ns to 1 μ s
with adjustable duty cycles up to 5%

Integrated 500 mA DC bias

USB and GPIB computer interfaces

Compatible with ILX LDM-4872 Quantum
Cascade Laser Mount

The LDP-3832 Pulsed Quantum Cascade Laser Current Source is specifically designed for controlling quantum cascade lasers in sensitive spectroscopic applications. The LDP-3832 provides peak pulse current up to 5A with a compliance voltage up to 20V and adjustable pulse widths from 10 ns to 1 μ s. An integrated DC current source, adjustable up to 500 mA, can be used to bias the laser and can be modulated with an external input for tuning.

Careful attention to the design provides for highly repeatable pulse to pulse amplitude and pulse width with fast rise times while maintaining overshoot to less than 5%.

Laser protection features incorporated in the LDP-3832 include redundant current limits, transient protection, floating outputs, and safety interlocks. For seamless integration into your automated test application, the LDP-3832 comes standard with a GPIB/IEEE488.2 and USB computer interface. Additional instrument flexibility is provided by trigger in and trigger out functions to control pulses and initiate corresponding measurements without a command program.

LDP 3832

Pulsed QCL Current Source



Precision pulsed current source
for quantum cascade lasers

ILX Lightwave
Laser Diode Instrumentation & Test Systems

LDP 3832

Pulsed QCL
Current Source

Specifications

PULSE OUTPUT

Range:	0.00 to 5.00A
Accuracy:	$\pm 1\% + 10 \text{ mA}$
Pulse Amplitude Repeatability:	$\pm 0.5\%$ (of amplitude)
Resolution:	10 mA
Compliance Voltage:	20V
Overshoot:	<5%
Output:	Floating

PULSE PARAMETERS

Pulse Width	
Range:	10 ns to 1 μs
Resolution:	1 ns
Accuracy (% of SP):	1% of setpoint $\pm 1 \text{ ns}$
Repeatability:	± 0.5 (of pulse width), measured at 50% amplitude
Rise/Fall Time:	<5 ns

PULSE REPETITION INTERVAL (PRI)

Range	
Internal:	500 ns to 1ms
External:	500 ns to single shot
Resolution:	10 ns
Accuracy:	$\pm 1\%$ of set point

DUTY CYCLE

Range:	0.01% to 5.00%
Resolution:	0.01%
Accuracy:	$\pm 1\%$ of set point

DC BIAS

Range:	500 mA
Accuracy:	$\pm 1\%$ of set point $\pm 5 \text{ mA}$
Resolution:	1 mA
Voltage Control:	External, 0 to 10V
Bandwidth:	>10 kHz

TRIGGER IN

Type:	TTL
Connector:	BNC
Delay:	5.0 ns + adjustable
Jitter:	1.5 ns
Pulse Width:	100 ns
Delay Display Set Point	
Resolution:	10 ns

TRIGGER OUT

Type:	TTL
Connector:	BNC
Delay:	5.0 ns + adjustable
Jitter:	600 ps
Pulse Width:	50% of period
Delay Display Set Point	
Resolution:	10 ns

CURRENT MONITOR (LPB-385)

Connector:	SMB
Output Impedance	50 Ω

VOLTAGE MONITOR (LPB-385)

Connector:	SMB
Output Impedance:	50 Ω

LASER DIODE PROTECTION

Output Shorting Relay on LPB-385:	Normally closed
Current Limit	
Pulse:	Adjustable, redundant hardware
Bias:	Adjustable, redundant hardware
Transient Protection	
AC Power Failure / Brown Out	

INTERLOCK INPUT

Interlock 1:	Normally open, close to enable output
Interlock 2:	Normally closed, open to enable output; Normally high, TTL input, TTL low to disable output

GENERAL (LDP-3832)

Power Requirements:	100 to 240 VAC, 50/60 Hz
Size (HxWxD):	102 mm x 216 mm x 330 mm (4.0" x 8.5" x 13.0")
Weight:	TBD
Operating Temperature:	+10°C to 40°C
Storage Temperature:	-40°C to +70°C
Humidity:	<85% relative
Regulatory:	CE certified RoHS
Interface:	SCPI, GPIB IEEE488.2, USB

GENERAL (LPB-385)

Size (HxWxD):	14.4 cm x 11.4 cm x 2.54 cm (4.5" x 4.5" x 1.0")
Weight:	TBD
Operating Temperature:	+10°C to 40°C
Storage Temperature:	-40°C to +70°C
Humidity:	<85% relative
Regulatory:	CE certified RoHS

NOTES

ORDERING INFORMATION

LDP-3832	Pulsed QCL Laser Current Source
CC-385	LDP-3832 Output Cable
LPB-385	QCL Pulse Board
LDM-4872	Pulsed QCL Mount
LPC-388	Current / Voltage Monitor Cable

In keeping with our commitment to continuous improvement, ILX Lightwave reserves the right to change specifications without notice and without liability for such changes.