LDP 3811

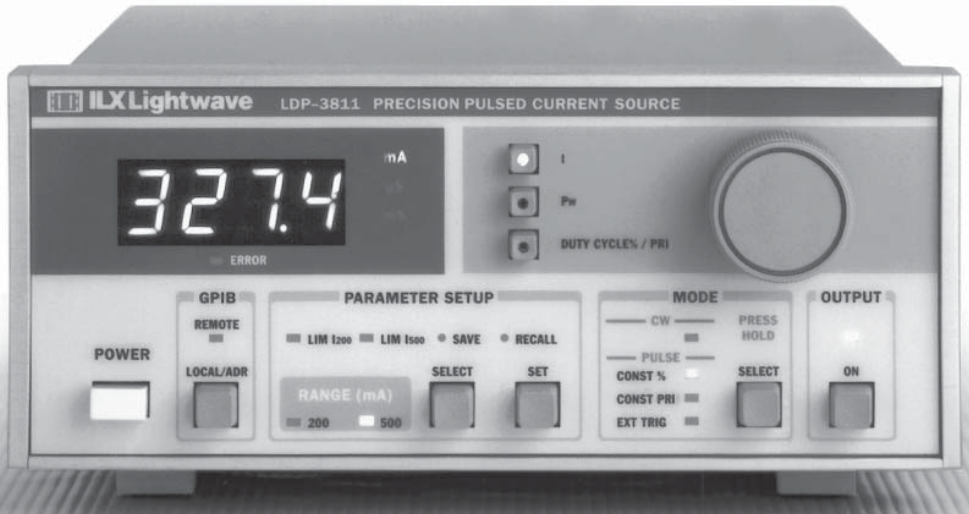
Precision Pulsed Current Source

Product Features

- CW and pulsed operating modes
- Built-in laser diode protection
- Adjustable pulse amplitude, pulse width and duty cycle
- Clean precise pulses with <25 ns rise times and low overshoot (<5%)
- Trigger In and Out functions
- IEEE488/GPIB instrument interface

Specifically designed to drive low power laser diodes, the LDP-3811 is a microprocessor-controlled current source with two operational modes, CW or pulsed. Offering a dual range 200/500 mA output, it has the flexibility to meet a variety of lower power laser diode testing needs. The standard GPIB interface with trigger in/out functions allow complete system integration with other lab equipment, and improve the accuracy, ease, and speed of data gathering and remote measurement. The intuitive front panel allows easy adjustment of CW or pulsed operating modes and parameters.

The LDP-3811 offers complete laser diode protection and safety features such as current limits and output shorting circuits, along with operational and power transient protection.



Precision Pulsed Control of Low Power Laser Diodes

ILX Lightwave
Laser Diode Instrumentation & Test Systems

LDP 3811

Precision Pulsed Current Source

Complete System Integration

Remote instrument operation is available on the LDP-3811 through an IEEE488/GPIB interface. All instrument controls and functions are accessible through the interface for easy remote programming and control in automated test systems where repeatable and accurate test sequencing, measurements, and data handling are required. Whether the application is data intensive LIV testing, pulsed control for thermal characterization, or R&D evaluations, remote operation of the 3811 saves time and ensures systematic data collection and instrument operation.

TTL level triggers are incorporated into the LDP-3811 to control output pulses and to initiate corresponding measurements from other instruments without a command program.

CW or Pulsed Operation

The LDP-3811 operates as a dual range current source in both CW and pulsed mode. High setpoint accuracy and a low noise stable output current assures confidence in laser diode CW or pulsed measurements. Adjustable current limits, and transient suppression in any operating mode protect the laser diode under test.

Adjustable Pulse Parameters

The LDP-3811 is designed for quick and easy instrument operation permitting precise pulse control. Pulse modes and parameters are logically grouped together allowing easy adjustment of pulse width, duty cycle and frequency. A selection of pulse operating modes includes constant duty cycle and constant pulse repetition interval (PRI). In constant duty cycle mode, the set duty cycle is maintained while adjusting pulse widths. In constant PRI mode, the set pulse interval is maintained while adjusting pulse width. The bright 4-digit LED display is easy to view in laboratory environments while precision digital tuning is accomplished with the front panel adjustment knob.

Specifications

PULSE AMPLITUDE

Range:	0–200/0–500 mA, floating[1]
Resolution:	10 µA
Accuracy:[2]	± 0.5% of FS
Temperature Coefficient:	<100 ppm/°C
Compliance Voltage:	≥25 V
Overshoot	
50 mA ≤ I < I_{max}:	< ±5%
<50 mA:	< ±2 mA
Maximum Load:	50Ω

CW CURRENT OUTPUT

Range:	0–200/0–500 mA, floating
Resolution:	10 µA
Accuracy:	±0.5% of FS
Temperature Coefficient:	<100 ppm/°C
Short-Term Drift:[3]	<100 ppm
Long-Term Drift:[4]	<200 ppm
Compliance Voltage:	≥25 V
Noise and Ripple:	<200 µA rms
Maximum Load:	50Ω

PULSE PARAMETERS

Pulse Width	
Range:	0.1 µs to ≥1000 µs
Resolution:	100 ns
Accuracy:	10 ns ± 0.01% of reading
Pulse Rise/Fall Time:[5]	<25 ns
Pulse Repetition Interval (PRI)	
Range:	1 µs to ≥1000 µs
Resolution:	100 ns
Accuracy:	20 ns ± 0.01% of reading
Duty Cycle:	0.01% to 100%

TRIGGER OUTPUT

Type:	TTL
Jitter:	5 ns
Delay:	40 ns, ±10 ns

TRIGGER INPUT

Type:	TTL
Jitter:	100 ns
Delay:	200 ns, ±20 ns

DISPLAY

Type:	4-digit, green LED
Maximum Readings:	505.0 mA, 1000 µs, 6.500 ms, 100.0%
Resolution:	0.1 mA, 0.1 µs, 0.01%
Accuracy:	±0.5% of FS

GENERAL

GPIB:	IEEE488
Weight:	5.2 kg (11.4 lbs)
Size (HxWxD):	88 mm x 212 mm x 269 mm 3.5" x 8.4" x 10.6"
Power (50–60 Hz):	90–105/105–125/210–230/220–250
Operating Temperature:	0°C–50°C
Storage Temperature:	–40°C to 70°C
Regulatory Compliance:	CE Certified 2004/108/EC; EN61326-1:2006; EN55011:2007 Safety, 73/23/EEC; EN60950, EN61010-1
Warm up:	1 hour
Laser Safety:	Interlock, key switch

NOTES

All specifications measured after a one-hour warm up at 25°C with a 50 Ω load.

1 Grounding the laser diode cathode degrades pulse performance.
2 Measured after 2 µs settling time.
3 Over any 10 minute interval, half scale output.
4 Over a 24 hour period, half scale output.
5 Measured from 10%–90% points at half scale output.

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

ORDERING INFORMATION

LDP-3811	Precision Pulsed Current Source
CC-305S	Current Source/Laser Diode Mount Interconnect Cable
CC-306S	Current Source/Unterminated Interconnect Cable
LNF-320	Low Noise Filter
RM-122	Dual Rack Mounting Kit
RM-124	Single Rack Mounting Kit
LabVIEW® 3.0	Instrument Driver

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