

ILX Instrumentation Selection Guide





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LASER DIODE CONTROLLERS

- Precision laser diode driver with integrated high stability temperature controller
- Multiple levels of laser diode protection
- Laser diode drivers with output currents up to 20A
- Thermoelectric temperature controllers with output power up to 128W
- 4-wire laser forward voltage and TEC voltage measurement
- USB remote control on all models with GPIB available on most models

Laser diode controllers have an integrated precision laser diode driver and high stability temperature controller. Multiple levels of laser diode protection are built into each instrument including isolated power supplies, slow start, adjustable current limit and compliance voltage, intermittent contact protection, and output shorting relays. To complement our line of laser diode controllers, ILX Lightwave offers a wide variety of laser diode mounts and fixtures with standard interconnection cables.



	LDC-3724C	LDC-3744C
Maximum Current Output	200 mA / 500 mA	2A / 4A
Set Point Accuracy	$\pm 0.05\%$	$\pm 0.05\%$
Set Point Resolution	4 μ A / 10 μ A	40 μ A / 80 μ A
Noise and Ripple	< 2 μ A / 2 μ A	< 10 μ A / 10 μ A
Short Term Stability	< 20 ppm	< 20 ppm
Compliance Voltage	10V	10V
Analog Modulation	Yes	Yes
Laser Diode Protection	Slow start circuit, normally closed shorting relay and semiconductor switch, floating output, adjustable current limit, adjustable voltage limit, power line surge and EFT transient protection, intermittent contact protection	
TEC Output Power	32W	32W
TEC Output Current	4A	4A
TEC Output Voltage	8V	8V
Temperature Stability	$< \pm 0.01^\circ\text{C}$	$< \pm 0.01^\circ\text{C}$
Temperature Control Range	-100°C to 199°C	-100°C to 199°C
Thermistor Sensor	Yes	Yes
IC Sensor	Yes	Yes
RTD	Yes	Yes
TEC Measurement	Temperature, current, resistance, voltage	
TEC Control Loop	Hybrid P-I	Hybrid P-I
Computer Interface	USB, GPIB	USB, GPIB

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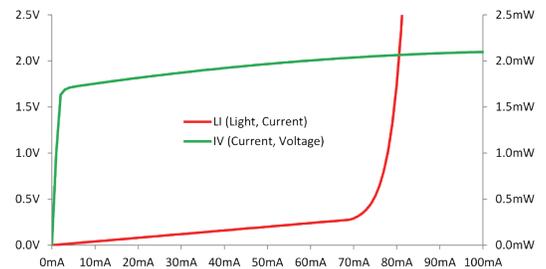


	LDC-3726	LDC-3736	LDC-37620
Maximum Current Output	100 mA / 200 mA / 500 mA	1A / 2A / 4A	10A / 20A
Set Point Accuracy	$\pm 0.01\%$ of FS + 0.01% of SP	$\pm 0.15\%$ of SP ± 1 mA	$\pm 0.1\%$ ± 10 mA
Set Point Resolution	2 μ A / 4 μ A / 10 μ A	20 μ A / 40 μ A / 80 μ A	1 mA
Noise and Ripple	< 1.5 μ A / 2 μ A / 2 μ A	< 10 μ A / 15 μ A / 50 μ A	< 5 mA / 5 mA
Short Term Stability	< 20 ppm	< 20 ppm	± 50 ppm
Compliance Voltage	10V	18V	4V
Analog Modulation	Yes	Yes	Yes
Laser Diode Protection	Slow start circuit, normally closed shorting relay and semiconductor switch, floating output, adjustable current limit, adjustable voltage limit, power line surge and EFT transient protection, intermittent contact protection		
TEC Output Power	32W	128W	128W
TEC Output Current	4A	8A	8A
TEC Output Voltage	8V	16V	16V
Temperature Stability	$\pm 0.002^\circ\text{C}$	$\pm 0.002^\circ\text{C}$	$\pm 0.002^\circ\text{C}$
Temperature Control Range	-100°C to 200°C	-100°C to 200°C	-100°C to 200°C
Thermistor Sensor	Yes	Yes	Yes
IC Sensor	Yes	Yes	Yes
RTD	Yes	Yes	Yes
TEC Measurement	Temperature, current, resistance, voltage		
TEC Control Loop	Digital PID with autotune	Digital PID with autotune	Digital PID with autotune
Computer Interface	USB and GPIB	USB and GPIB	USB and GPIB

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LIV Characterization

The characterization of the relationship between output power, current, and voltage is a key facet of the development and production of laser diodes. LIV characterization and LIV curves are the standard methods of evaluating the interrelationships of these parameters. The ILX Lightwave LDC-3726, LDC-3736, and LDC-37620 laser diode controllers have the capability of easily capturing multiple and synchronized LIV data points over time. Rather than requiring constant monitoring and external control, sophisticated built-in firmware automates the control and data capture of the LIV process. Firmware commands are simply sent to the unit to define the scope of the data measured and the remainder of the characterization is controlled by the instrument.



LASER DIODE DRIVERS

- High stability, low noise output
- Dual output ranges on most models
- Constant current and constant power operating modes
- Multiple laser protection features
- Up to 15V compliance with 4-wire voltage measurement on select models
- Analog modulation on most models
- USB or GPIB interface on most models

Laser diode drivers are used to precisely control a laser diode's optical output while protecting the laser diode from over current conditions. Newport and ILX Lightwave offer a wide range of laser diode drivers with output up to 6000 mA. Multiple levels of laser diode protection are included in the design to protect against overcurrent conditions. Features include adjustable current limits, redundant hardware current limits, voltage limit (some models), slow start circuitry, output shorting relays and transient protection. To compliment our laser diode drivers, ILX offers a wide variety of laser diode mounts and fixtures with standard interconnect cables.



	LDX-3210	LDX-3220	LDX-3232
Output Current	50 mA / 100 mA	200 mA / 500 mA	2000 mA / 4000 mA
Setpoint Accuracy	$\pm 0.05\%$ of FS	$\pm 0.05\%$ of FS	$\pm 0.15\%$ of SP ± 2 mA
Setpoint Resolution	1 μ A / 2 μ A	4 μ A / 10 μ A	40 μ A / 80 μ A
Noise and Ripple	< 1.5 μ A / 1.5 μ A	< 2 μ A / 2 μ A	< 20 μ A / 20 μ A
Short Term Stability	< 10 ppm	< 10 ppm	< 20 ppm
Compliance Voltage	10V	10V	15V
Analog Modulation	Yes	Yes	Yes
Operational Transients	< 1 mA	< 1 mA	< 4 mA
Microprocessor Control	Yes	Yes	Yes
Laser Diode Protection	Slow start circuit Normally closed output shorting relay and semiconductor switch Floating output Adjustable current limit, hardware, and firmware Adjustable voltage limit (available on most models) Power line surge and EFT transient protection Intermittent contact protection		
Computer Interface	GPIB	GPIB	GPIB

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LDX-3220 Precision Laser Diode Current Source



LDX-3412 Low Cost Laser Diode Current Source



LDX-3525B 200 mA / 500 mA Laser Diode Current Source

	LDX-3525B	LDX-3545B	LDX-3565B
Output Current	200 mA / 500 mA	1000 mA / 3000 mA	2000 mA / 6000 mA
Setpoint Accuracy	$\pm 0.1\%$ of FS	$\pm 0.1\%$ of FS	$\pm 0.15\%$ of FS
Setpoint Resolution	100 μ A / 150 μ A	250 μ A / 750 μ A	500 μ A / 1500 μ A
Noise and Ripple	< 2 μ A / 2 μ A	< 15 μ A / 15 μ A	< 15 μ A / 30 μ A
Short Term Stability	< 20 ppm	< 20 ppm	< 20 ppm
Compliance Voltage	7V	6V	5V
Analog Modulation	Yes	Yes	Yes
Operational Transients	< 1 mA	< 2 mA / < 5 mA	< 30 mA / < 40 mA
Microprocessor Control	Yes	Yes	Yes
Laser Diode Protection	Slow start circuit Normally closed output shorting relay and semiconductor switch Floating output Adjustable current limit, hardware and firmware Power line surge and EFT transient protection Intermittent contact protection		
Computer Interface	USB	USB	USB

	LDX-3412	LDX-3620B
Output Current	200 mA	200 mA / 500 mA
Setpoint Accuracy	± 3 mA	± 5 mA
Setpoint Resolution	100 μ A	10 μ A / 100 μ A
Noise and Ripple	< 2 μ A	< 70 nA / 120 nA
Short Term Stability	< 50 ppm	< 10 ppm
Compliance Voltage	6V	5V
Analog Modulation	No	Yes
Operational Transients	< 100 μ A	< 10 μ A
Microprocessor Control	No	No
Laser Diode Protection	Slow start circuit Normally closed output shorting relay and semiconductor switch Floating output Adjustable current limit, hardware and firmware Power line surge and EFT transient protection Intermittent contact protection	
Computer Interface	-----	-----

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HIGH POWER LASER DIODE DRIVERS

- Output current up to 220A for driving high power laser diodes
- CW and QCW operating modes
- High setpoint accuracy and 4-wire forward voltage measurements for precision LIV testing
- Multiple laser diode protection features
- Temperature monitor with thermistor input

LDX-36000 Series High Power Laser Diode Drivers are designed specifically for controlling and testing high power laser diodes. The LDX-36000 Series are CW/QCW laser diode drivers with current ranges from 40A to 220A QCW and 18A to 125A CW with maximum compliance voltages from 12V to 35V. This series offers multiple levels of laser diode protection, forward voltage measurement, and photodiode measurements. To compliment our laser diode drivers, ILX Lightwave offers a wide variety of laser diode mounts and fixtures with standard interconnect cables.



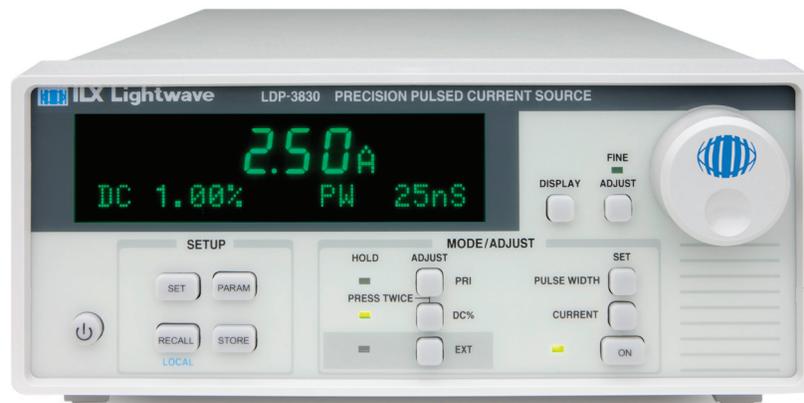
LDX-36_ _ _ _ _	018-35	025-12	040-30	050-12	070-30	125-24
Output Current CW (A)	18	25	40	50	70	125
Output Current QCW (A)	40	50	80	100	160	220
Compliance Voltage (V)	35	12	30	12	30	24
Noise and Ripple (mA rms)	< 10	< 10	<10	<20	< 40	< 60
Rise / Fall Time (µs)	< 10	< 10	<10	<20	< 20	< 20
Setpoint Accuracy (% of FS)	±0.1% ±10 mA		±0.1% ±20 mA		±0.1% ±80 mA	
Setpoint Resolution	10 mA for all models					
Short Term Stability	± 100 ppm for all models					
Pulse Width	40 µs to 2s for all models					
Overshoot	< 2% for all models					
Pulse Frequency	0.1 Hz - 1 kHz for all models					
Duty Cycle	0.5 to 90% for all models					
Temperature Monitor	Yes for all models					
PD Measurement	Yes for all models					
Laser Diode Protection	Intermittent contact protection; adjustable forward voltage limit, on / off shorting semiconductor switch, slow start circuit; floating output, independent adjustable current limit, power line surge and EFT transient protection					
Computer Interface	GPIB for all models					

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PRECISION PULSED LASER DIODE DRIVERS

- Clean current pulses with fast rise times and low overshoot
- Adjustable pulse width, duty cycle, and frequency
- Pulse width as low as 25 ns
- Built-in laser diode protection
- Input and output triggers
- USB and GPIB computer interfaces

Pulsed laser diode current sources are used to precisely output a square wave pulsed current to a laser diode. Multiple levels of laser diode protection are included in the design to protect against overcurrent conditions including user adjustable current limits, slow start circuitry, output shorting relays and transient protection. For seamless integration into your automated test application, GPIB and trigger out features are included with each instrument. Remote instrument operation is available through USB or 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 saves time and ensures systematic data collection and instrument operation.



	LDP-3811	LDP-3830	LDP-3840B
Output Current Pulse	200 mA / 500 mA	5A	3A
Setpoint Accuracy	$\pm 0.5\%$ of FS	$\pm(0.05A + 1.0\%$ of FS)	$\pm 2.5\%$ of FS
Setpoint Resolution	10 μ A	10 mA	1 mA
Trigger In	Yes	Yes	Yes
Trigger Out	Yes	Yes	Yes
Compliance Voltage	25V	20V	10V
Pulse Width	100 ns to 1 ms	25 ns to 1 μ s	100 ns to 10 ms
Rise / Fall Time	≤ 25 ns	≤ 10 ns	≤ 50 ns
Overshoot	$\leq 5\%$	$\leq 5\%$	$\leq 5\%$
Pulse Repetition Rate	1 kHz to 1 MHz	1 kHz to 2 MHz	10 kHz to 1 MHz
Duty Cycle	0.01 - 100%	0.1 - 5%	0 - 10%
Laser Diode Protection	Slow start circuit Normally closed output shorting relay and semiconductor switch Adjustable current limit Power line surge and EFT transient protection Safety interlocks		
Remote Interface	GPIB	USB and GPIB	GPIB

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LASER DIODE TEMPERATURE CONTROLLERS

- Long term temperature stability as low as 0.0009°C
- Adjustable TEC current limits
- Supports most thermistors, IC, and RTD temperature sensors
- USB or GPIB interface on most models

Thermoelectric temperature controllers are used to control a thermoelectric cooler (TEC) that is typically integrated into a laser diode's package or part of a temperature controlled mounting plate. Laser diode operation is affected by temperature. Precision temperature control will help maintain output power and wavelength as well as prevent against over temperature conditions that can damage or prematurely age laser diodes. Temperature controllers may also be used to control other optical electric devices in research and development or manufacturing test.

Careful attention to the design of the temperature controllers provide high stability either with easy to set up Hybrid P-I control loop or with a full PID control loop. For PID control loops, ILX Lightwave instruments contain an autotune method to reduce time to configure the temperature controller for your application. Most ILX Lightwave temperature controllers are compatible with multiple types of temperature sensors including thermistors, AD590, LM335, and RTD sensors.

More information on our complete line of laser diode temperature controllers and our Application Note "Controlling Temperature of Diode Lasers and Detectors Thermoelectrically" is available at www.newport.com/ilxlightwave.



	LDT-5910C	LDT-5940C
Output Power	32W	60W
Output Current Range	±4A	±5A
Output Voltage	±8V	±12V
Temperature Stability	±0.001°C	<±0.002°C
Temperature Control Range	-100°C to 200°C	-100°C to 200°C
Thermistor Sensor	Yes	Yes
IC Sensor	Yes	Yes
RTD	Yes	Yes
TEC Measurement	Temperature, current, voltage, resistance	Temperature, current, voltage, resistance
AC Resistance Measurement	No	No
Control Loop	Digital PID, Autotune	Digital PID, Autotune
Computer Interface	GPIB, USB	GPIB, USB

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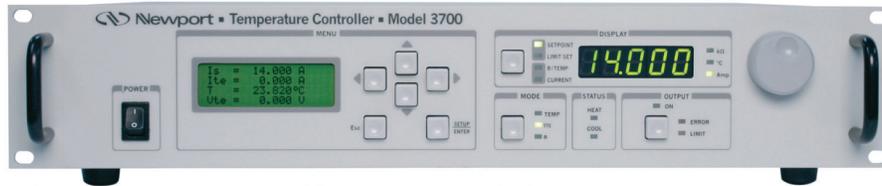
LDT-5416 Laser Diode Temperature Controller



LDT-5525B Laser Diode Temperature Controller

	LDT-5416	LDT-5525B	LDT-5545B
Output Power	16W	24W	50W
Output Current Range	$\pm 4.0A$	$\pm 4.0A$	$\pm 5.0A$
Output Voltage	$\pm 4.0V$	$\pm 6.0V$	$\pm 10.0V$
Temperature Stability	$< \pm 0.005^{\circ}C$	$< \pm 0.006^{\circ}C$	$< \pm 0.006^{\circ}C$
Temperature Control Range	10 - 40°C *	-99°C to 199.9°C	-99°C to 199.9°C
Thermistor Sensor	Yes	Yes	Yes
IC Sensor	No	Yes	Yes
RTD	No	Yes	Yes
TEC Measurement	Temperature, current, resistance	Temperature, current, resistance	Temperature, current, resistance
AC Resistance Measurement	No	No	No
Control Loop	Hybrid P-I	Hybrid P-I	Hybrid P-I
Computer Interface	----	USB	USB

* Please see manual for additional information.



3700 Laser Diode Temperature Controller

	LDT-5948	LDT-5980	3700
Output Power	60W	120W	336W
Output Current Range	$\pm 5A$	$\pm 10A$	$\pm 14A$
Output Voltage	$\pm 12V$	$\pm 12V$	$\pm 24V$
Temperature Stability	$< \pm 0.005^{\circ}C$	$< \pm 0.005^{\circ}C$	0.0009°C
Temperature Control Range	-50°C to 250°C	-50°C to 250°C	-100°C to 250°C
Thermistor Sensor	Yes	Yes	Yes
IC Sensor	Yes	Yes	Yes
RTD	Yes	Yes	Yes
TEC Measurement	Temperature, current, voltage, resistance	Temperature, current, voltage, resistance	Current, resistance, temperature, voltage
AC Resistance Measurement	Yes	Yes	No
Control Loop	Digital PID, Autotune	Digital PID, Autotune	Digital PID
Computer Interface	GPIB	GPIB	USB

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MULTI-CHANNEL LASER DIODE CONTROLLERS

- 8 or 16 independent, isolated channels for multiple laser and TE control
- Wide variety of laser and TE controller modules with up to 3A laser drive current, 24W TEC per channel
- Dual channel laser current or temperature control modules for control of up to 32 laser diodes or TECs per mainframe
- Laser current sources operate in constant current or constant power modes
- GPIB computer interface

Modular laser diode controllers offer up to 16 channels of laser diode control with the flexibility of choosing laser diode driver, TEC temperature control, or laser diode controller module options that suit your needs. Everything is housed in a space saving, rack mountable instrument for simultaneous control of both current and temperature in one mainframe. Multiple levels of laser diode protection are included in the design to protect against overcurrent conditions. Features include adjustable current limits, redundant hardware current limits, voltage limit (some models), slow start circuitry, output shorting relays, and transient protection. An independent power supply powers each channel, providing protection and stability for the laser diode. Remote communication through an IEEE/GPIB interface simplified testing and control of multiple devices. LabVIEW® drivers are available for any combination of mainframe and module.



Mainframes

LDC-3908

LDC-3916

Number of Modules	Up to 8	Up to 16
Computer Interface	GPIB	GPIB
Sensor	Thermistor	Thermistor

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LDC-3908 Mainframe with Modules



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LDC-3908 / 3916 Laser Diode Driver Modules

	LDC-3916332	LDC-3916334	LDC-3916338
Channels	2 LAS	2 LAS	1 LAS
Laser Current	0.5A	1A	3A
Compliance Voltage	6V	6V	4.5V
Short Term Stability (1 hr.)	20 ppm	20 ppm	50 ppm
Long Term Stability (24 hrs.)	50 ppm	50 ppm	70 ppm
Noise and Ripple	< 10 μ A	< 12 μ A	< 36 μ A
Compatible With	3908, 3916	3908, 3916	3908, 3916

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LDC-3908 / 3916 TEC Temperature Control Modules

	LDC-3916550	LDC-3916558
Channels	2 TEC	1 TEC
TE Current	1.5A	3A
TE Voltage	6V	8V
TE Power	9W	24W
Short Term Stability (1 hr.)	0.007°C	0.007°C
Long Term Stability (24 hrs.)	0.01°C	0.01°C
Noise and Ripple	< 1 mA	< 2 mA
Compatible With	3908, 3916	3908, 3916

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LDC-3908 / 3916 Laser Diode Driver / TEC Temperature Control Modules

	LDC-3916372	LDC-3916374	LDC-3916376
Channel 1	1 LAS	1 LAS	1 LAS
Laser Current	0.5A	1A	1.5A
Compliance Voltage	6V	4.75V	4.75V
Short Term Stability (1 hr.)	20 ppm	20 ppm	20 ppm
Long Term Stability (24 hrs.)	50 ppm	50 ppm	50 ppm
Noise and Ripple	< 10 μ A	< 10 μ A	< 12 μ A
Channel 2	1 TEC	1 TEC	1 TEC
TE Voltage	7V	7V	7V
TE Power	9W	9W	9W
Short Term Stability (1 hr.)	0.007°C	0.007°C	0.007°C
Long Term Stability (24 hrs.)	0.01°C	0.01°C	0.01°C
Noise and Ripple	< 1 mA	< 1 mA	< 1 mA
Compatible With	3908, 3916	3908, 3916	3908, 3916

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LASER DIODE MOUNTING FIXTURES

GENERAL FEATURES

- Accommodates most industry standard package styles
- Mounts accept currents up to 11A
- Standardized connections to work with ILX Lightwave equipment
- User configurable pinouts on most models
- Optional case temperature control is available for finer temperature control or for dissipation of higher wattage loads
- Most models can be mounted to an optical table

SPECIFIC MOUNTING FIXTURE FEATURES

LDM-498X Series

- Zero-insertion force (ZIF) sockets used to minimize strain on device leads
- Bias-T and RF modulation options available on select models
- All models which have internal TECs for devices have optional case temperature control

LDM-4405

- Low cost, simple setup mount for TO-Cans

LDM 4990

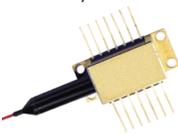
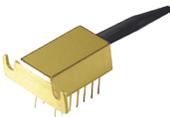
- Easy integration for free space TO-Cans to do characterization; built-in mounting post for ILX detector heads
- Optional water control and nitrogen purge

764H-XXX Series

- Can accommodate many different packages types which won't fit into other mounts
- Many mounting holes for unique packages

1. Product images not to scale.
2. Maximum Thermal Load - Q_{max} not available.

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Package Type	Applicable Mounts	Max Laser Current	
 Butterfly	A	LDM-4983(T) (7 or 13-pin)	2A
	A	LDM-4984(T) (14-pin)	2A
 3 & 4 Pin TO-Can	B	LDM-4405	500 mA
	C	710	3A
	D	LDM-4990	4A
 DIL & Mini-DIL	A	LDM-4982(T) (DIL)	2A
	A	LDM-4982M (Mini-DIL)	2A
 C-Mount	E	LDM-4409	10A
 HHL, TO-3 & Custom High Power Packages	F	764H-061	11A
	F	764H-061	11A
 2-Pin Packages	F	764H-061	11A
 CS Bar	F	764H-061	11A
Other	F	764H-061	11A
	F	764H-110	11A

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MOUNT STYLE ⁽¹⁾

TE Module Q_{max}	Case Temp Control	Cooling Methods	Temp Range (Min; Max)
14W	Optional	TEC	-5°C; +85°C
14W	Optional	TEC	-5°C; +85°C
8.2W	Standard	TEC	+10°C; +85°C
25W	Standard	TEC	-10°C; +85°C
9.3W	Standard	TEC / Water	-20°C; +85°C
14W	Optional	TEC	-5°C; +85°C
14W	Standard	TEC	-5°C; +85°C
78W	Standard	TEC	+10°C; +85°C
61W ⁽²⁾	Standard	TEC	-10°C; +80°C
61W ⁽²⁾	Standard	TEC	-10°C; +80°C
61W ⁽²⁾	Standard	TEC	-10°C; +80°C
61W ⁽²⁾	Standard	TEC	-10°C; +80°C
110W ⁽²⁾	Standard	TEC	-10°C; +80°C



A



B



C



D



E



F

OPTICAL POWER / WAVELENGTH METER

- High stability with low noise
- Multiple power display types
- Fast update rate
- GPIB computer interface

The OMM-6810B Optical Power / Wavelength Meter is used with all of the OMH-6700B Series Power / Wavelength measurement heads. This meter has the capability of measuring a wide range of power levels and wavelengths with requisite detector heads. With current offerings, this applies to the range of 350 nm to 1650 nm and up to 10W of power.



OMM-6810B

Accuracy	< $\pm 0.2\%$ of FS
Update Display Period	Fast: 60 ms (1 sample); Medium: 240 ms (4 samples); Slow: 960 ms (16 samples)
Gain Ranges	10 mA, 1 mA; 100 μ A, 10 μ A; 1 μ A, 100 nA; 10 nA, 1 nA
Analog Output	Voltage output represents the measured power as a percentage of full scale within the selected voltage range
Voltage Range	0 - 10V

POWER ONLY MEASUREMENT HEADS

OMH-6703B

OMH-6708B

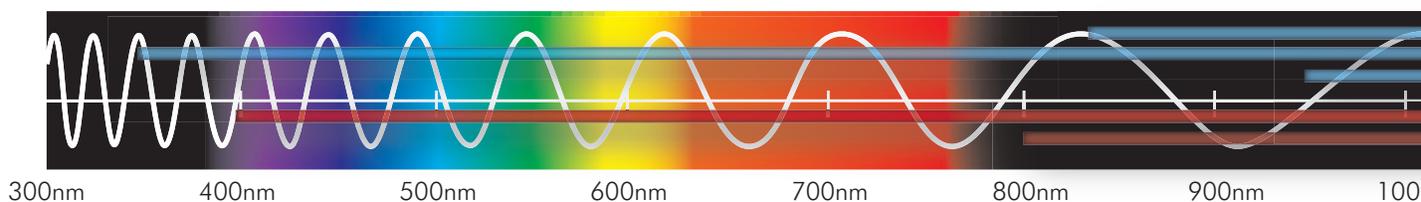
Power Range	-40 to +30 dBm; 100 nW to 1W	-50 to +20 dBm; 10 nW to 100 mW
Accuracy	$\pm 5.0\%$	$\pm 5.0\%$
Wavelength Range	400 to 1100 nm	800 to 1600 nm
Aperture	6 mm	6 mm
Dimensions	69 mm diameter x 28 mm	69 mm diameter x 28 mm

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OMH-6742B

OMH-6703B

OMH-6790B



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OPTICAL MEASUREMENT HEADS

- NIST traceable calibration
- Free space and fiber based measurements
- Wavelength measurement from 350 nm to 1650 nm
- Power measurement from 10 nW to 10W (-50 to +45 dBm)
- Temperature stabilized detectors
- Integrating sphere-based measurement heads

The OMH-6700B Series Power / Wavelength Measurement Heads have a unique capability which allows measurement of power and wavelength with the same detector head. With the use of integrating sphere based technology and temperature stabilized detectors, this imparts confidence and reliability in consistent and accurate measurements for new development and verification of devices in the laboratory.



POWER AND WAVELENGTH MEASUREMENT HEADS

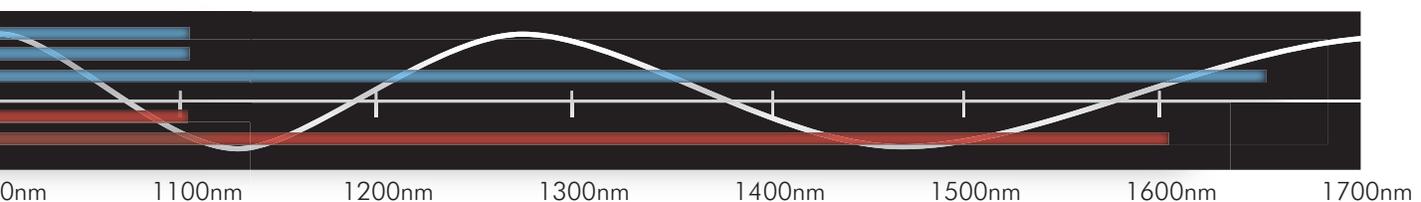
	OMH-6727B	OMH-6742B
Wavelength Range	950 nm to 1650 nm	350 nm to 1100 nm
Wavelength Measurement Accuracy	± 1.0 nm	± 1.0 nm
Power Measurement Range	-40 to +30 dBm; 100 nW to 1W	-40 to +30 dBm; 100 nW to 1W
Power Measurement Accuracy	$\pm 5.0\%$	$\pm 3.5\%$
Aperture	6 mm	6 mm
Dimensions	69 mm diameter x 28 mm	69 mm diameter x 28 mm

	OMH-6790B
Wavelength Range	830 nm to 1100 nm
Wavelength Measurement Accuracy	± 0.2 nm
Power Measurement Range	-30 to +40 dBm; 1 μ W to 10W
Power Measurement Accuracy	$\pm 5.0\%$
Aperture	2.54 mm fiber input
Dimensions	86 mm x 86 mm x 100 mm

In keeping with our commitment to continuing improvement, ILX Lightwave reserves the right to change specifications without notice or liability for such changes. For full specifications, please consult the product brochure.

OMH-6727B

OMH-6708B



FIBER OPTIC POWER METERS / MEASUREMENT HEADS

- +2.5% accuracy
- $< \pm 0.01$ dB repeatability
- ± 0.006 dB polarization dependent response
- Wavelength range of 800 nm to 1650 nm
- USB and GPIB computer interfaces

The FPM-8220 Fiber Optic Power Meter combines accurate, repeatable power measurements with low polarization dependence in a simple, easy to use instrument for R&D or manufacturing testing of fiber optic components and systems. Interchangeable fiber optic power measurement heads deliver repeatable results for measurements up to +30 dBm over a wavelength range of 800 nm to 1650 nm.

The FMH-8715 and FMH-87107 fiber optic power measurement heads use integrating sphere technology to virtually eliminate sensitivity to laser polarization state or fiber orientation. By combining the FPM-8220 with one of the FMH-8700 Series Fiber Optic Measurement Heads, the system provides better than +2.5% accuracy with +0.01 dB repeatability for precise fiber optic component power measurement.



FPM-8220

Accuracy	$< \pm 0.1\%$ of FS
Update Display Period	Fast: 20 ms (1 sample); Medium: 200 ms (> 10 samples); Slow: 2 s (> 10 samples)
Gain Ranges	10 mA, 1 mA; 100 μ A, 10 μ A; 1 μ A, 100 nA; 10 nA
Analog Output	Voltage output represents the measured power as a percentage of full scale within the selected voltage range
Voltage Range	0 - 10V

	FMH-8715	FMH-87107	FMH-8705
Wavelength Range	800 to 1650 nm	800 to 1650 nm	800 to 1650 nm
Power Range	-70 to +20 dBm	-60 to +30 dBm	-85 to +1.5 dBm
Accuracy	$\pm 2.5\% \pm 100$ pW	$\pm 2.5\% \pm 1$ nW	$\pm 3.5\% \pm 2$ pW
Linearity	± 0.02 dB -35 to +20 dBm	± 0.02 dB -35 to +30 dBm	± 0.02 dB -60 to +1.5 dBm
Aperture	5 mm	5 mm	3 mm
Dimensions	86 mm x 86 mm x 100 mm; 3.4" x 3.4" x 3.9"		

In keeping with our commitment to continuing improvement, ILX Lightwave reserves the right to change specifications without notice or liability for such changes. For full specifications, please consult the product brochure.

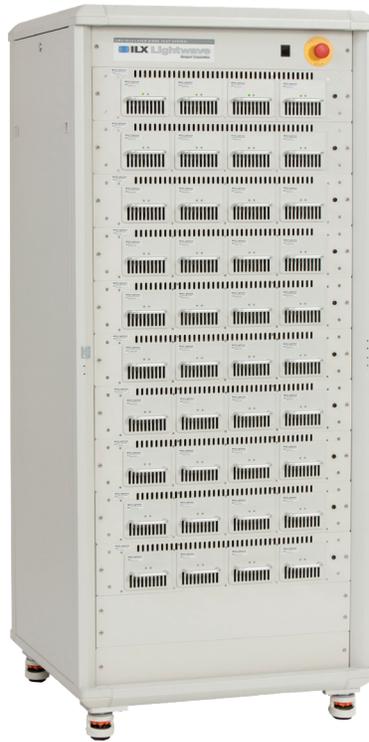
Contact us toll free at 1-800-459-9459 or 1-406-556-2481 (international)

LASER DIODE RELIABILITY AND BURN-IN TEST SYSTEMS

ILX Lightwave offers laser diode test systems for lifetime reliability tests and production burn-in. The systems incorporate ILX Lightwave's proven technology for laser diode control, temperature control, and optical measurement to provide the precision and reliability required for manufacturing, engineering evaluation, and R&D applications. Each system is custom designed to fit your laser package's requirements.



**Benchtop Laser Diode
Reliability and Burn-In System
LRS-9434SS**



**Laser Diode Reliability
and Burn-In Systems
LRS-9434 / LRS-9550**



**Laser Diode Production
Burn-In Systems
LTS-7410 / LTS-7540**

	LRS-9434SS	LRS-9434	LRS-9550	LTS-7410	LTS-7540
System Capacity	128	1408	512	8960	252
Temperature Range	25°C - 150°C	25°C - 150°C	25°C - 85°C	25°C - 95°C	20°C - 80°C
Control Modes	ACC, APC, LIV	ACC, APC, LIV	ACC, LIV	ACC	ACC
Current Range	1 mA - 500 mA	1 mA - 500 mA	500 mA - 30A	1 mA - 500 mA	5A - 30A
Compliance Voltage	3V, 5V	3V, 5V	2.5V	3V	3V
Optical Power Measurement	Yes	Yes	Yes	No	No
Test Control	ReliaTest™	ReliaTest™	ReliaTest™	Touch Screen	Touch Screen
Drive Type	Parallel	Parallel	Series	Series	Series

In keeping with our commitment to continuing improvement, ILX Lightwave reserves the right to change specifications without notice or liability for such changes. For full specifications, please consult the product brochure.

PRODUCT RECOMMENDATION AND ASSISTANCE

- Would you like assistance determining which ILX Lightwave equipment is the best for your application?

Complete the following information and provide it to an ILX Lightwave technical sales engineer by calling 1-800-459-9459 or emailing it to sales@ilxlightwave.com. The ILX team of specialists and engineers will make recommendations and provide a quote for a complete solution. The most relevant information can be found on the laser diode's data sheet. If possible, please include the laser diode's data sheet with the request.

Name*

Organization*

Email Address*

Package Style (Number of pins on device) †

Number of Devices †

Maximum Operating Current †

Maximum Operating Voltage †

Does the laser diode have an integrated TEC? †

If yes, what are the power requirements?

Are you interested in remote interfacing?

If yes, with what interface?

Other Desired Features

Pulsed Output

External Modulation

LIV

Other

Are you interested in power and wavelength measurements?

If yes, at what wavelengths and power levels?

Additional Comments

Yes No Unsure

Current:

Voltage:

Yes No Unsure

GPIB USB Other

Yes No

* indicates required information

† indicates preferred information; can be replaced by the laser diode data sheet



Look for the ILX Lightwave Proven Protection symbol to ensure your devices are safeguarded from damage.

Contact us toll free at 1-800-459-9459 or 1-406-556-2481 (international)

TECHNICAL REFERENCES

Technical references, such as application notes, technical notes, white papers, product manuals, and LabVIEW® drivers are available for download from the Newport website.

- Application Note 1: Controlling Temperatures of Laser Diodes Thermoelectrically
- Application Note 2: Selecting and Using Thermistors for Temperature Control
- Application Note 3: Protecting Your Laser Diode
- Application Note 4: Thermistor Calibration and the Steinhart-Hart Equation
- Application Note 5: An Overview of Laser Diode Characteristics
- Application Note 6: Choosing the Right Laser Diode Mount for Your Application
- Application Note 8: Mode Hopping in Semiconductor Lasers
- Application Note 11: Pulsing a Laser Diode
- Application Note 12: The Differences Between Threshold Current Calculation Methods
- Application Note 13: Testing Bond Quality by Measuring Thermal Resistance of Laser Diodes
- Application Note 14: Optimizing TE Drive Current
- Application Note 16: Measuring Wide Linewidth Source with the OMH-6700B Series Waveheads
- Application Note 17: AD590 and LM335 Sensor Calibration
- Application Note 18: Basic Test Methods for Passive Fiber Components
- Application Note 20: PID Control Loops in Thermoelectric Temperature Controllers
- Application Note 21: High Performance Temperature Control in Laser Diode Test Applications
- Application Note 22: Modulating Laser Diodes
- Application Note 23: Laser Diode Burn-In and Reliability Testing
- Application Note 25: Novel Power Meter Design Minimizes Fiber Power Measurement Inaccuracies
- Application Note 26: ReliaTest L/I Threshold Calculations
- Application Note 27: Intensity Noise Performance of Semiconductor Lasers
- Application Note 28: Characterization of High Power Laser Diode Bars
- Application Note 29: Accelerated Aging Test of 1310 nm Laser Diodes
- Application Note 30: Measuring High Power Laser Diode Junction Temperature and Package Thermal Impedance
- Application Note 31: Mounting Considerations for High Power Laser Diodes
- Application Note 32: Using a Power / Wavehead for Emitter Level Screening of High Power Laser Diode Bars
- Application Note 33: Estimating Laser Diode Lifetimes and Activation Energy
- Application Note 34: Using USB Through Virtual COM Ports
- Application Note 37: Measuring and Reducing Noise Using an LDX-3620B Ultra Low Noise Laser Diode Current Source
- Application Note 38: Achieving Millikelvin Temperature Stability

ILX Lightwave has been a pioneer in photonic test and measurement instrumentation for over thirty years, starting with the industry's first precision laser diode current source in 1986. Since then, ILX has continued to grow and evolve with the expanding photonic industry, building a tradition of innovation, quality, and customer service.

This tradition has pushed ILX Lightwave to go beyond meeting customers' needs to exceeding their expectations. The highly technical nature and rapid evolution of the photonic industry required a technically perceptive, customer focused approach. ILX not only delivers quality products, but also provides unsurpassed technical support and customer service, ensuring that you receive the best return on your investment.

As photonic components become increasingly complex, ILX Lightwave is committed to providing high performance equipment that will improve manufacturing yields, reduce manufacturing cycle times, and lower overall cost of ownership. In addition to developing new instruments and systems, ILX is also advancing the underlying technologies to ensure that your test and measurement needs are met now and in the future.

Why Choose ILX Lightwave?

Experience.

For over thirty years, ILX Lightwave has been a pioneer in laser diode instrumentation and test systems, starting with the industry's first precision laser diode current source in 1986. Since then, ILX Lightwave has continued to grow and evolve with the expanding photonic industry, building a tradition of innovation, quality, and customer service.

Quality.

ILX Lightwave has maintained ISO 9000 certification since 2001. Strong internal systems for problem identification and resolution have resulted in continuous improvement of our products and services. ILX believes that quality is not just something you build into a product, it's something you build into everything you do.

Commitment.

ILX Lightwave's mission is to be the world leader in laser diode instrumentation and test systems.

After Sales Support.

ILX understands the need for fast, technically accurate responses to all support requests. Our customers have direct access to technically qualified applications and service engineers to ensure the highest level of technical support.

In addition, customers can easily download one of our application notes, tech notes, or white papers that further discuss common industry challenges from www.newport.com/ilxlightwave.

Contact us toll free at 1-800-459-9459 or 1-406-556-2481 (international)

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