

## MPL LASER DIODE DRIVER ELECTRICAL SPECIFICATIONS

Model Number	MPL-250	MPL-500	MPL-2500	MPL-7500
<b>Drive Current Output</b>				
Output Current Range	<b>0 - 250 mA</b>	<b>0 - 500 mA</b>	<b>0 - 2.5 Amps</b>	<b>0 - 7.5 Amps</b>
Compliance Voltage ❶	> 6 V	> 6 V	> 6 V	> 6 V
Temperature Coefficient	< 100 ppm / °C	< 100 ppm / °C	< 100 ppm / °C	< 100 ppm / °C
Short Term Stability (1 hr)	< 30 ppm	< 30 ppm	< 30 ppm	< 30 ppm
Long Term Stability (24 hrs.)	< 75 ppm	< 75 ppm	< 75 ppm	< 75 ppm
Noise and Ripple (rms) ❷	< 1 µA	< 3 µA	< 10 µA	< 20 µA
Current Limit Range	0 - 250 mA	0 - 500 mA	0 - 2.5 Amps	0 - 7.5 Amps
<b>Photodiode Feedback</b>				
Standard Range	50 - 5000 µA	50 - 5000 µA	50 - 5000 µA	50 - 7500 µA
Optional Range	15 - 500 µA	15 - 500 µA	15 - 500 µA	15 - 750 µA
Max. Forward PD Bias Voltage	0.25 V	0.25 V	0.25 V	0.375 V
Const. Power Output Stability	< 0.02 %	< 0.02 %	< 0.02 %	< 0.02 %
<b>External Modulation</b>				
Input Impedance	100 kΩ	100 kΩ	100 kΩ	100 kΩ
Bandwidth (3 dB) ❸	DC – 1.4 kHz	DC – 1.4 kHz	DC – 1.4 kHz	DC – 1.4 kHz
Depth of Modulation at 100Hz	90%	90%	90%	90%
<b>Transfer Functions (pin 2)</b>				
Constant Current Mode	50 mA / V	100 mA/V	500 mA/V	1000 mA/V
Constant Power Mode (Standard)	1000 µA / V	1000 µA / V	1000 µA / V	1500 µA / V
Constant Power Mode (Optional)	100 µA / V	100 µA / V	100 µA / V	150 µA / V
<b>Power Supply</b>				
Power Up Trip Point ❹	10.5 V	10.5 V	10.5 V	10.5 V
Power Down Trip Point ❹	9.5 V	9.5 V	9.5 V	9.5 V
Maximum Power Dissipation ❺	4 Watts	8 Watts	40 Watts	90 Watts
<b>Setpoint vs. Monitor Accuracy</b>	< 5 %	< 5 %	< 5 %	< 5 %

### MPL GENERAL SPECIFICATIONS

<b>Power Requirements</b> ❻ +12 to +15 VDC (+15.5V MAX)	<b>Weight</b> < 0.5 lbs.	<b>Connector</b> 15 pin D-sub receptacle (cable needs male plug)
<b>Supply Current</b> MPL's Maximum LD Output Current plus 200 mA @ V+	<b>Operating Temperature</b> 0 to +50°C (guaranteed) - 40 to +75°C (typical)	<b>Warm-up</b> 1 hour to rated accuracy
<b>Size (H x W x D)</b> 1.0" x 3.5" x 3.5" (2.5 Amps and below) 1.0" x 3.5" x 5.5" (MPL-7500)	<b>Storage Temperature</b> - 40 to +85°C	<b>Power Indicator</b> Green LED

❶ Compliance Voltage will vary depending on power supply voltages. A maximum compliance voltage of +10 volts will be obtained with +15 volts input. A maximum compliance voltage of +6 volts will be obtained with +12 volts input.

❷ With modulation input shorted.

❸ Modulation bandwidth in Constant Power mode will depend on photodiode response. Bandwidth specification changed in October 1998. The fourth digit in the Serial Number changed from "B" to "D." The following chart details the bandwidth of the units with "B" in the serial number:

Model Number	MPL-250	MPL-500	MPL-2500	MPL-7500
<b>Bandwidth</b>	DC – 19 kHz	DC – 12 kHz	DC – 9 kHz	DC – 4 kHz

❹ The MPL series has internal control circuitry which turns the output on and off depending on the voltage at V+. When the voltage reaches the power up trip point, the module soft starts the laser diode. When the voltage reaches the power down trip point, the module shunts current around the laser diode, powering it down in a controlled fashion.

❺ See page 6 for power dissipation equations.

❻ If thermistor or TE module are case common with the laser diode, the MPL and MPT power supplies must be isolated from each other.