



## LASER DIODE DRIVER POWER SUPPLIES

### General Specifications and Types

#### PRODUCT DESCRIPTION

Product 2004 is a constant current output supply optimised to drive laser diodes and is available in three current ratings. The output can be a single diode or strings of diodes/bars of up to six series diodes. (For strings greater than six please contact factory for advice).

The unique 'auto-sense' output circuitry automatically compensates for the number of diodes used maintaining a constant current output. Also, output current is slowly transferred from a low internal resistance of 10 ohms to the diode load. This slow transition takes approximately three seconds to maximum output and prevents thermal shock to the laser diodes. Shut down follows a similar technique, phasing the load current away from the diode string into the internal resistor before finally turning off. Transient suppression is included.

A remote modulation input is available for fast changes of the set DC diode current, within a bounded limit. This wide bandwidth channel can be used for 'process control'.



#### ELECTRICAL

Nominal Line Input	220VAC, 1-phase, 50/60 Hz.
AC Supply Tolerance	+/- 10% for all types.
Frequency	47-63 Hz for all types.
Power Factor (full load)	>=0.9 better than 0.98 with PFC.
Efficiency	>=70%
Output Ripple (full load)	0.5% pk-pk, 1kHz bandwidth.
Line Regulation	0.1% for +/- 10% line voltage change, all types.
Output Drift	<=0.1% over 8 hour period. (With constant temperature, load and line conditions).
Output Rating (maximum current)	Type 1 - 35A, Type 2 - 75A, Type 3 - 100A.

#### MECHANICAL

Size (mm) - '3U'	Height 132, Width 483, Depth 390. Note: add 25mm for connections.
Weight (kg)	9.0
Cooling	Forced air using internal fan, exiting at the rear.
Temperature	Continuous in an ambient of 0°C to 60°C with appropriate derating above 35°C.
Safety (all Types)	All control circuitry and wiring has full galvanic isolation from the line, and are low voltage. The output is fully floating. If required, it is recommended that the positive (+) lead is connected to earth.  The build standards comply with EN61010-1 and conform to the requirements of the Low Voltage Directive 73/23/EEC and carry the CE Mark.  An appropriate EMC Filter is fitted. The units comply with the Emission and Immunity Standards EN50082-2 and EN50081-2 (Class A). A PFC Input is optional.
Protection	Protection on the line input is by a line fuse. Output protection is included in the event of an open circuit or short circuit load. There is also an over-current and power limit. Thermal protection is included against over-temperature.  Output diode current ramp to maximum output is set at approximately three seconds to prevent thermal shock.
Front Panel Controls	Key-switch for Line power. ON-OFF Rocker switch. 10-turn potentiometer for lamp current control. 3 1/2 Digit LED Display of lamp current.

Push Switch selecting 'Standby'. Remote or potentiometer control of output lamp current.

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Rear Control Connector 15-way 'D' connector.

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Functions include: Interlock  
Status  
Overtemperature  
Remote/Local select of ON/OFF  
0-10VDC Diode Current Control  
Diode 'ON' output (Answer Back)  
Output Monitor Voltage

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Output Modulation Optional A second 0-10VDC signal can be used to modulate the output diode current. This has a fast response and is limited over a smaller range of output diode current. Its main application is in process control.

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*New Product. Data is provisional.*

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