

LDU1000

Laser Diode Controller



Laser Diode Driver

- Up to 120A laser diode current
- Up to 60V laser diode voltage
- CW and pulse operation

TEC Driver

- TEC driver up to 48V / 13A unipolar
- Digital PI temperature control

Parameter	Unit	Value
Specifications		
Power Laser Diode Driver	W	600
Max. Laser Diode Current	A	10 13 18 27 43 53 120
Max. Laser Diode Voltage	V	60 48 36 24 15 12 5
Current Limit Range		0 ... Max. Laser Diode Current
Current Adjustment Accuracy	mA	100
Temperature Coefficient	ppm/°C	< 100
Short Term Stability (1 hr)	ppm	< 30
Long Term Stability (24 hr)	ppm	< 75
Repetition Rate	Hz	0 ... 100
Pulse Width (*)	ms	> 5
Rise- / Fall- Time (*)	ms	< 2 (10 % – 90 % of Max. Current)
Analog Modulation		
Input (BNC Connector)		0 ... 10 V, 1 kΩ
Transfer Function		10 A/V
Bandwidth	Hz	0 ... 100
Pilot Laser		
Pilot Laser Voltage		5 V
Pilot Laser Current	mA	Max. 300
Pilot Laser Power Adjustment	ppm/°C	1 ... 100 %
Power Monitor		
Input (BNC connector)	V	0 ... 10
Transfer Function		10 A/V
TEC Controller		
Temperature Range	°C	0 ... 50
Temperature Stability	K	< 0,1
Temperature Adj. Accuracy	K	0,1
Control Loop		PID
Output Cooler		
TEC Output Power	W	600
TEC Current	A	0 ... 13
TEC Voltage	V	0 ... 48
TEC Current Limit Range	A	0 ... 13
Ripple	mA	100
Fan Voltage Adjustment Range (Manual)	%	0 ... 100 (12 V)
Fan Current	A	Max. 1

Temperature Sensors		
Sensor Types		Thermistor / PT100 / PT1000
Thermistor		NTC, 10 k Ω @ 25°C, Current: 100 μ A
Power Supply		
Line Voltage	V	85 - 264 AC, Auto Ranging
Frequency	Hz	50 - 60
Power Consumption	W	1.500
Fuses Rating for 115 V AC		16 A Slow Acting (5x20 mm)
Fuses Rating for 230 V AC		8 A Slow Acting (5x20 mm)
General Characteristics		
Ambient Temperature, Operating	°C	0 ... 30
Relative Humidity, Operating	%	30 ... 70
Weight	kg	6,4
Dimensions	mm ³	310 x 140 x 220 (W x H x D)

Notes:

(*) The risetime, the fall time and the pulse width may be prolonged by long cables between the power supply and the laser diode.

The signal ground (shielding) of the BNC-connectors of the trigger input, the trigger output and the analogue modulation input BNC-connector are isolated from the chassis ground (earth).

Attention:

The output pin „laser diode anode, plus, „+“ „, which is connected to the anode (A) of the laser diode is internally connected to any internal power supply voltage of the instrument.

Please be aware that most of all medium and high-power laser diodes have their housing electrically connected to the anode of the laser diode.

Therefore, in order to avoid any grounding loops when applying external instruments to the Laser Diode Controller unit it is recommended to isolate the housing of the laser diode from the chassis (earth).

Remark:

If the laser diode is mounted to the heat spreader of the heat sink provided by LASER ELECTRONICS it is already isolated from chassis ground (earth).

