ICE BLOC®

ICE BLOC DDTC

Diode driver and temperature controller

BUILD A BETTER LAB WITH ICE BLOC

High performance laser instrumentation with state-of-the-art connectivity and modern accessible interfaces. The new Ice Bloc range has been designed to help you capture, extract and view important experimental data with the aim of making your experiments easier to set up, manage and measure. Choose from a range of laser diode drivers, quantum cascade laser and actuator drivers as well as temperature controllers and digital timers.

INTRODUCING ICE BLOC DDTC

Ice Bloc DDTC is an integrated precision diode driver and temperature controller for building laser-based photonic systems in research, experimental and production applications.

Driving the latest generation of high power laser diodes, the DDTC combines high current, low noise output with high accuracy, high resolution current set points.

The temperature controller can control either a TEC or resistive heater with user-programmable output current, current polarity, voltage limits, PID feedback parameters and ramp time. Its compact form factor with customisable software interface allows easy integration of the DDTC with experiments or OEM setups.

- Fully Integrated laser diode driver & temperature controller
- Low noise current driver for wide variety of low/high compliance laser diodes
- Multiple layers of diode protection
- High precision temperature control
- External modulation inputs
- Ethernet connectivity and web interface

ICE BLOC FEATURES

SIMPLE WEB BASED CONTROL

Configure and run experiments from a modern web interface which provides easy access to all features and provides rich data visualization. Ice Bloc has a built-in web server, so there is no software to install or dedicated software drivers to download.

FULL SPEED AHEAD - IT'S CONNECTED BY ETHERNET

Ice Bloc is more secure, faster and works over a longer range than other connection technologies.

The built-in 2-port Ethernet router makes it easy to connect to your lab's network for fast, secure, local and remote access. This set up means you'll be able to easily control, monitor, diagnose, even upgrade your system, from any computer.

ENGINEERED FOR HIGH PERFORMANCE AND LOW NOISE

Ice Bloc's high-end design and engineering strikes the optimum balance between noise, power and efficiency. All our components and electronics are fully optimised and highly sensitive ensuring you get the precision and power you need in your experiments.

CUSTOM CONTROL, WHENEVER YOU NEED IT

Control Ice Bloc with your own custom software or use any third-party packages including MATLAB, Python and LabVIEW. You can record internal and external measurement values for display or download.

HIGHLY CUSTOMISABLE

We're no strangers to customising devices to meet the exacting experimental requirements of our customers. If you need something different, for example reduced output noise, or a higher output current, we'll create an Ice Bloc to suit you.

SPECIFICATIONS

DIODE DRIVER

Output current range	0 - 5 A
Output compliance voltage range	1.2 – 22 V
Output current noise density	1A output: 280 nA and 5A output: 445 nA / √ Hz (DC to 100 kHz)
Current setting resolution	1 mA
Current accuracy	±0.1%
Current temperature stability	75 ppm/°C

MODULATION

Input sensitivity	0.1 A/V
Modulation range	0 – 0.5 A above the set point
Modulation frequency response	DC – 20 kHz
Input impedance	840 Ω
Maximum safe input	0 – 5.5 V (protected)

PHOTODIODE

Input impedance	20 Ω (transimpedance)
Transimpedance gain range	80 V/A – 20 k V/A
Maximum safe input	±5 V (protected)
Input linear range	±10 mA
Input resolution	24 bits

TEMPERATURE CONTROLLER

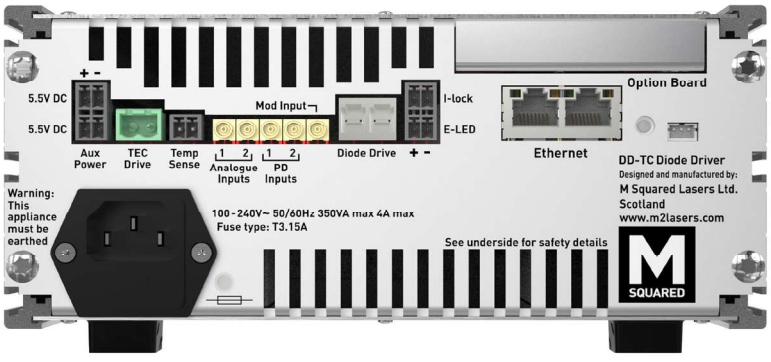
Output voltage range	1.2 V - 22 V
Output type	Bi-directional, linear
Output current range	0 – 5 A
Current limit range	0.5 A - 5.5 A
Temperature set point resolution	0.001 °K - typical value, steady state
Temperature control stability	<1 mK
Set point temperature coefficient	<5 ppm/°K
Temperature set point range	-20.15 °C to +79.85 °C
NTC thermistor range	10 kΩ - 100 kΩ
Extended thermistor range	1 kΩ - 1 MΩ (slightly lower resolution)

AUXILIARY I/O

External auxiliary device power supply	
Output voltage	5.5 V
Maximum current	200 mA
Interlock	
Open circuit voltage	3.3 V
Closed maximum resistance	5.6 kΩ
Maximum safe input voltage	±10 V
Emission LED	
Output voltage	+5.5 V
Current limiting resistance	360 Ω

GENERAL

Mains input voltage	100 – 240 V AC, 50/60 Hz, 350 VA (typical power: 15 W)
Size (W x H x D)	Half rack (203mm) x 2U (89mm) x 345mm (8” x 3.5” x 13.6”)
Weight	4.1 kg
Operating temperature	0 °C to 70 °C
Storage temperature	-20 °C – 85 °C
Relative humidity	<90 % humidity, non-condensing
Indoor/outdoor use	Indoor use only
Altitude	<2000 m



Ice Bloc rear view: Industrial-grade connectors give quick, solder-free connection to photonic system components.

ICE BLOC®

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