

Technical Information

Blue diode laser module

Bluetec 600 / 1200



Features

- Very compact dimensions
- Very high outpower power
- Ultra stable beam alignment
- Modulation up to 100kHz
- Air Cooling
- Excellent Beam Properties
- Integrated driver and peltier control

Applications

Ultra stable and powerful blue laser modules for marking, pointing, show and light applications. Solid aluminum housing with integrated driver and active cooling for diodes. Very good beam properties with circular beam shape, useful in RGB mixed laser systems.

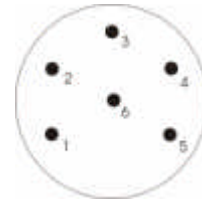
Specification

Wavelength	447 nm +/- 3nm
Optical power	CW, min. 500mW typ. 600mW min 1.1W, typ. 1.2W
Beam mode	Multimode
Beam diameter (1/e ²)	< 3.5 mm
Beam divergence (1/e ²)	< 1 mrad
Modulation	< 100 KHz, 5VDC analog input
Polarization	Random
Operating power	15VDC / 5A max
Optimal operation temperature	5 °C to + 35 °C
Warm up time	ca. 5 min
Cooling type	Active TEC
Size Laser-head (l x w x h)	142 mm x 60 mm x 47 mm
Beam height from base	29-30mm

Connection

There are four cables at 6 pins coming from the 6-pin connector. View is from end of laser unit onto female connector.

Pin 3+6: Source + 12VDC, red cable
Pin 4+5: Source GND, blue cable
Pin 2: Modulation +5V, yellow cable
Pin 1: Modulation GND, black cable



Signal description

Source: A source of 15VDC +/-1V has to be applied to run the diode laser unit. The source must be stabilized and ready to offer minimum 3A continuous current. Use minimum 1mm² cabling. Operating voltage must be peak free. Make sure to apply correct polarization.

Modulation: Digital or analog signal to trigger the laser output. If Low (0V) laser output is off, if High (4V or more) laser output is on. The laser can be adjusted in brightness by applying a low voltage signal to this input. Avoid any influences on the input cabling. Signal must be peak free.

Mounting

Pls. make sure to mount the laser unit on a proper heat sink to remove the heat coming from the Peltier elements built inside the unit. The bottom of the laser unit must be in good thermal contact to the heatsink. Use heat dissipation paste or other thermal compound.

Operation

The Bluetec 600/1200 laser units can be operated continuously, if heat is removed adequate. Continuous operation does not reduce lifetime.

Give the unit time to warm up. After 3-5 minutes the optimum internal temperature is reached and beam divergence will reduce to minimum. As long as unit is connected to the source, temperature will be stable, even if laser is not triggered and there is no laser output. If diode temperature exceeds healthy parameters, the laser will shut down. This means, there was no good thermal contact to the extra heatsink or mounting plate. Let it cool down for minimum 60 minutes, attach the laser to an appropriate heatsink or large metal base plate and shut it on again.

