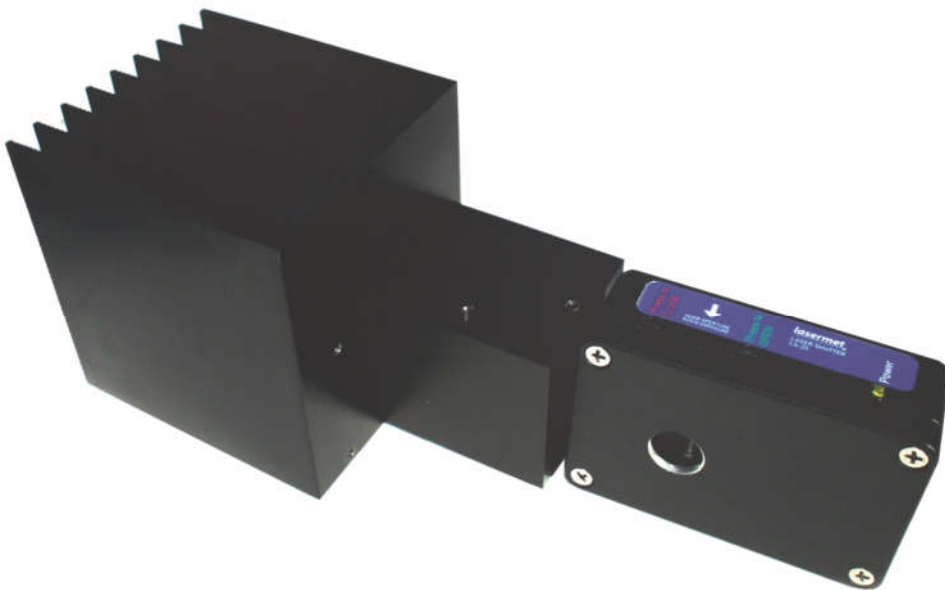


LASERMET BD-20 Beamdumps Types BD20-AC and BD20-AC-DC

INSTRUCTION MANUAL



AIR-COOLED BEAMDUMPS FOR LS-20 SHUTTERS

Issue 2

LASERMET BD-20 Beamdump Instruction Manual

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1 Safety Warnings

This beamdump can only successfully absorb a laser beam if no part of it becomes overheated.

Due to the huge number of different types, powers and beam sizes of lasers Lasermet cannot guarantee suitability of this beamdump in every case and testing may be necessary to ensure that the beamdump is able to absorb and dissipate the laser energy without damage.

Once degradation starts to occur rapid failure is likely, possibly leading to the beam being reflected in undesirable directions potentially causing damage within the beamdump, the shutter and other areas.

Always be aware that the laser beam will be exposed if the laser is activated with the beamdump removed from the shutter.

Ensure that sufficient ventilation is provided to the heatsink fins. The power rating will be reduced if air is unable to flow freely over the heatsink.

2 Concept

The Lasermet LS-20 Laser Safety Shutter is intended to provide a means of preventing accidental exposure to a potentially harmful laser beam.

When closed, the shutter deflects the incoming laser beam towards its beamdump port.

The beamdump port may be fitted with a metal beamdump plug where the energy is converted to heat which is dissipated in the aluminium casing of the shutter. The shutter can dissipate about 20W of laser power.

If the laser power is too great to be dissipated in this way the beamdump plug may be removed and an external beamdump may be fitted. The Lasermet BD20-AC is an air-cooled beamdump which is able to dissipate considerably more laser power than the shutter itself. The rating of the beamdump is given in the 'Specifications' section at the end of these instructions.

Note that the LS-20 shutter blade should be equipped with an appropriate mirror to ensure the laser beam is fully directed out of the beamdump port. The mirror is factory-fitted and should be specified when the shutter is ordered. Please contact your local distributor or Lasermet for further information.

The LS-20 shutter and beamdump are available in single and dual channel versions and the correct type of beamdump should be used according to the type of shutter.

Shutter	Beamdump	
LS-20-24	BD20-AC	Air-cooled Beamdump, single channel
LS-20SIL-24	BD20-AC-DC	Air-cooled Beamdump, dual channel

Lasermet provides a full range of laser interlock equipment including control systems, interlock switches, illuminated warning signs, laser shutters, door locks, external power supplies etc. which can be connected to provide a complete laser interlock system. Full support, design and installation is available from Lasermet, please contact us for any queries. Contact details are given at the end of this manual.

3 Installation

3.1 Mounting and Connecting to the Shutter

Both the shutter and the beamdump are equipped with M6 female threads in the base for mounting purposes, the one in the shutter being located under the beam centreline.

The following two pages give the dimensions of the shutter/beamdump assembly for both the single and dual channel versions and show the positions of the fixing holes. The fixings suit a 25mm pitch breadboard directly, so two M6 mounting posts may be suitable. On imperial breadboards and other optomechanical systems adjustable or slotted bases may be required to adjust the position of the fixings.

The beamdump is connected to the shutter by connector ring(s) supplied with the shutter. To connect the beamdump first unscrew the plug from the beamdump port of the shutter and screw the connector ring in its place.

Then locate the beamdump onto the ring and secure with the locking grub screw. The grub screw accepts a 2mm hexagon wrench.

Always ensure that the shutter is correctly orientated with regard to the beam entry and exit ports, and that the beamdump is fitted to the beamdump port such that the beam is directed into it when the shutter is closed. It is good practice to use an alignment beam to ensure that the beam correctly and fully enters the beamdump.

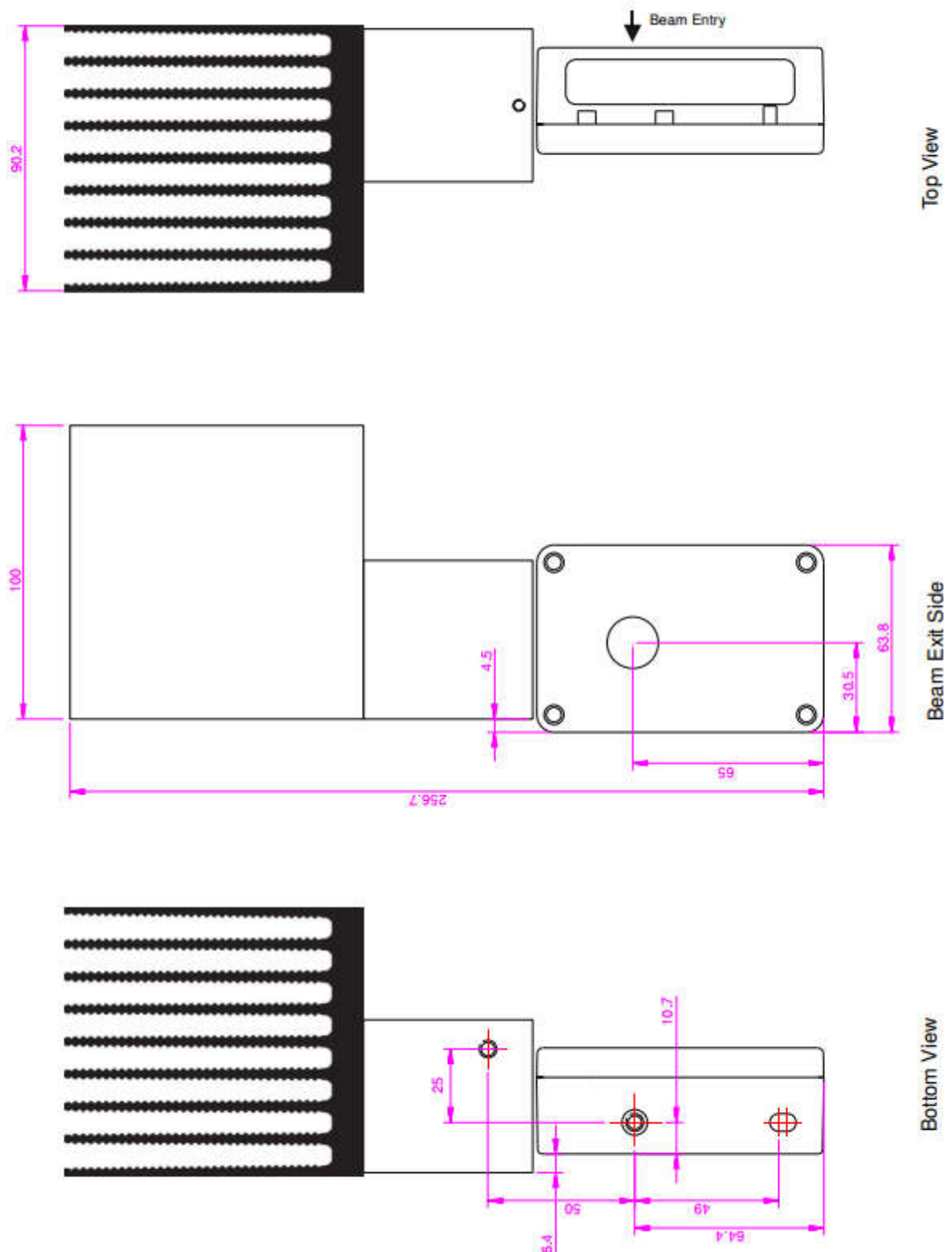
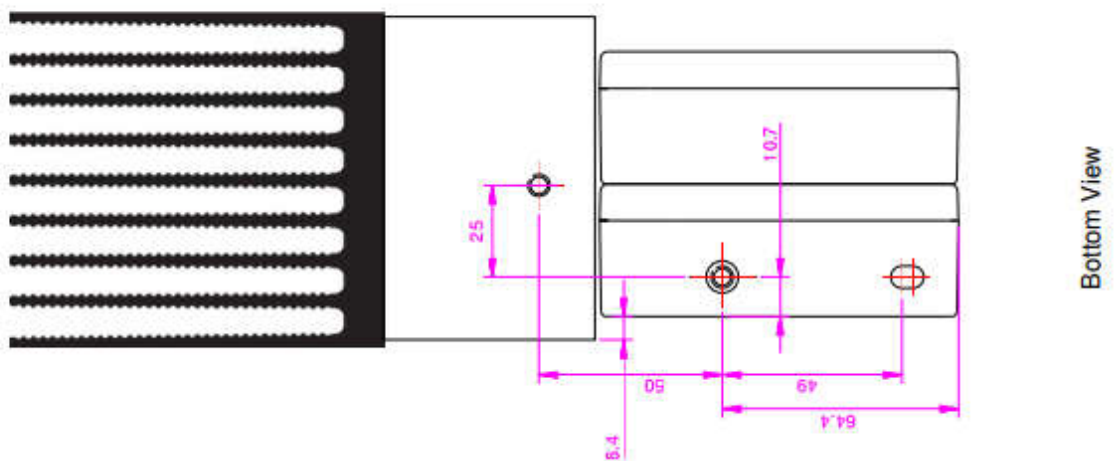
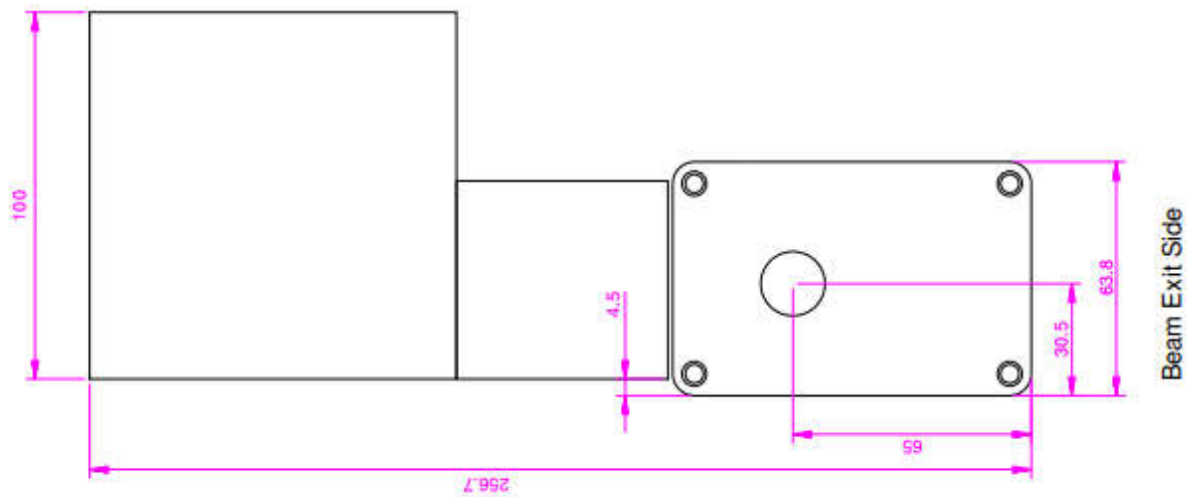
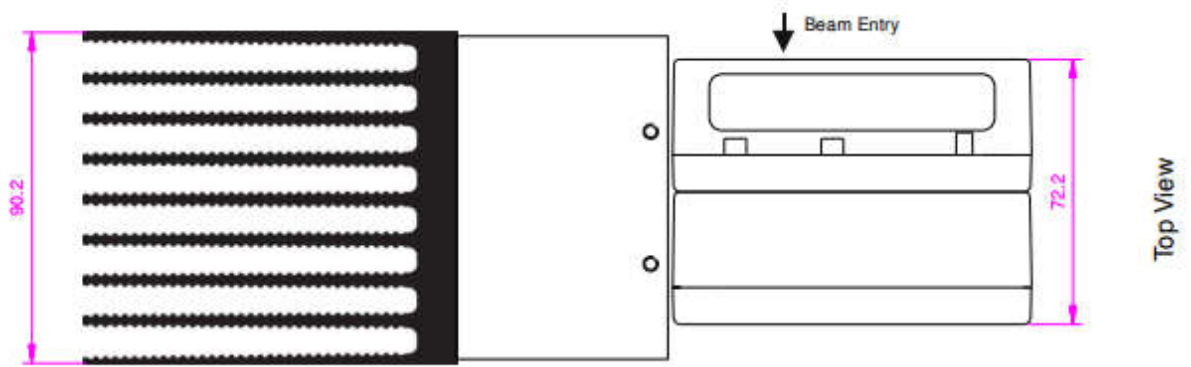


Figure 1. LS-20-24 Shutter with Single Channel Beamdump BD20-AC



LS-20SIL-24 Shutter with Dual Channel Beamdump BD20-AC-DC

4 Specifications

Beamdump Weight	
Single Unit	1400g
Dual Unit	1500g

Maximum Laser Power

50W per mm beam diameter up to 2mm diameter, then 25W per additional mm beam diameter. For example, for a 5mm beam diameter the power handling limit would be $(50 \times 2) + (25 \times 3) = 175W$.

The absolute maximum power rating is 300W in free air. The power rating will be decreased if the cooling air flow over the heatsink is restricted.

Heatsink Temperature Rise: 0.5 °C/W in free air.

5 Warranty

Lasernet provide a 12-month warranty for defects in materials and manufacture, from the date of installation or delivery. Installations completed by Lasernet are covered against defects in workmanship for 12 months.

Damage or defects caused by other factors are not covered. For example, industrial contamination, incorrect cleaning, storm damage. Consequential loss is not covered under warranty. Compensation for indirect or direct loss or damage is expressly excluded. Rectification of the defects or a replacement does not initiate a new warranty period.

For all deliveries, payments and other legal transactions, English law takes precedence for any litigation.

6 Contact Details

Lasernet provide a full range of laser interlock equipment including interlock switches, illuminated warning signs, laser shutters, entry keypads with built-in fail-safe override timer, door locks, external power supplies etc. which can be interconnected to provide a complete system. We also supply equipment and consultancy covering all aspects of laser safety. Full support, design, and installation is available from Lasernet, please contact us for any queries.

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