



Laser Beam Dumps

Operation Manual



Caution: Always Wear Laser Protective Eyewear

1. DESCRIPTION

TRAP-IT™ Laser Beam Dumps are safety devices that dissipate incoming laser power via heat dissipation. Place beam dumps in a position along the optical beam path to provide a final beam stop.

Various designs and cooling methods accommodate different beam sizes, average power levels, and power density ratings. For applications that range outside product specifications, we recommend users expand the beam size with a negative lens to lower the power density level. Liquid-cooled models allow for higher average power and have the potential for higher laser damage threshold ratings, depending on the cooling loop provided.

2. LASER SAFETY

Depending on the operating parameters of the laser source and the potential to exceed MPE (Maximum Permissible Exposure) limits, there may be a significant risk of eye injury. Under such conditions, we recommend using the appropriate laser protective eyewear. Laser protective eyewear must

be evaluated in accordance with ANSI Z136.1 Standard for the Safe Use of Lasers.

3. INSTRUCTIONS

1. Calculate your laser beam average power and maximum power density. Never place the product in a location above the maximum suggested power density, as damage could occur to the product finish.
2. Position the laser beam centerline within the TRAP-IT™ target center.
3. If this product is used as a control measure, make sure it is fastened to the table to prevent it from being moved or knocked over.
4. Liquid-cooled models require poly tubing with a 10mm outside diameter.
 - a. **Maximum pressure:** 50psi [3.5bar].
 - b. **Water flow** 1-200 watts; ¼ gallon per minute [0.94 liters].
 - c. **Water flow** 201-500 watts; ¾ gallon per minute [2.83 liters].
 - d. **Water flow** 501-1,000 watts; 1½ gallon per minute [5.67 liters].

4. PREVENTIVE MAINTENANCE

Depending on the frequency of use and the number of personnel that have access to the laser application, we recommend you inspect the product daily or weekly.

- Verify the product is in the correct orientation to the incoming laser beam.
- Verify that the absorbing target surface hasn't been damaged by the laser.
- Clean with methanol alcohol or acetone.

5. ACCESSORIES

Mounting holes on the front face of the beam dumps can accommodate a selection of accessories sold separately. Options include a VIEW-IT® Infrared Detector Ring to help walk laser beams towards the center of the beam dump. Accessories are also available to connect certain types of fiber optic connectors into the center of 0.75, 1, and 2-inch beam dumps.

6. COMPLIANCE

This product line is RoHS, REACH and LaserSmart® compliant.



Part Number	Note	Target Aperture	Spectral Sensitivity	Max. Average Power	Damage Threshold	Thermal Management
ABD-075		0.75 inch [19.1mm]	190-10,600nm	50 watts	150 watts/cm ²	Convection Cooled
ABD-075NP	4	0.75 inch [19.1mm]	190-10,600nm	50 watts	150 watts/cm ²	Convection Cooled
ABD-1		1.00 inch [25.4mm]	190-10,600nm	50 watts	150 watts/cm ²	Convection Cooled
ABD-1NP	4	1.00 inch [25.4mm]	190-10,600nm	50 watts	150 watts/cm ²	Convection Cooled
ABD-2		2.00 inch [50.8mm]	190-10,600nm	50 watts	150 watts/cm ²	Convection Cooled
ABD-2C	1	2.00 inch [50.8mm]	190-10,600nm	1000 watts	150 watts/cm ²	Liquid Cooled
ABD-2CNP	1,4	2.00 inch [50.8mm]	190-10,600nm	1000 watts	150 watts/cm ²	Liquid Cooled
ABD-2NP	4	2.00 inch [50.8mm]	190-10,600nm	50 watts	150 watts/cm ²	Convection Cooled
ABD-4C	1	4.00 inch [101.6mm]	190-10,600nm	1000 watts	150 watts/cm ²	Liquid Cooled
ABD-4CNP	1,4	4.00 inch [101.6mm]	190-10,600nm	1000 watts	150 watts/cm ²	Liquid Cooled
ABD-6C	1	6.00 inch [152.4mm]	190-10,600nm	1000 watts	150 watts/cm ²	Liquid Cooled
ABD-6CNP	1,4	6.00 inch [152.4mm]	190-10,600nm	1000 watts	150 watts/cm ²	Liquid Cooled
ABD-FC	2	N/A	N/A	N/A	N/A	N/A
ABD-FO-075	2	N/A	N/A	N/A	N/A	N/A
ABD-FO-2	2	N/A	N/A	N/A	N/A	N/A
ABD-LC	2	N/A	N/A	N/A	N/A	N/A
ABD-SC	2	N/A	N/A	N/A	N/A	N/A
ABD-SMA	2	N/A	N/A	N/A	N/A	N/A
ABD-ST	2	N/A	N/A	N/A	N/A	N/A
ABD-V075	2,3	N/A	800-1,700nm	N/A	30 watts/cm ²	Convection Cooled
ABD-V2	2,3	N/A	800-1,700nm	N/A	30 watts/cm ²	Convection Cooled
ABD-V4	2,3	N/A	800-1,700nm	N/A	30 watts/cm ²	Convection Cooled

1. For applications using an external chiller, laser damage threshold ratings can increase up to 500 watts/cm² based on settings. Call 603-223-4900 to discuss with an LSO!

2. Accessories for select beam dumps. 3. Pulsed laser damage threshold rating: 1J/cm² for nanosecond pulses, 10J/cm² for microsecond or millisecond pulses. 4. Product stand not included.



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