

INTRA-CAVITY AO MODULATOR (Cavity Dumper)

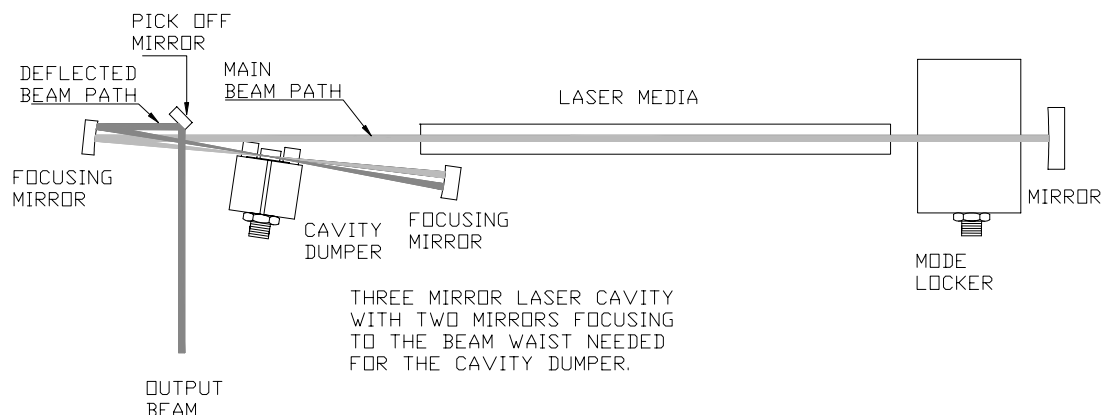
13389-BR

The Cavity Dumper device is a fused silica optic in a Brewster window configuration with a Lithium Niobate transducer. The Cavity Dumper is typically used in a mode locked laser to select one of the circulating laser pulses inside the laser cavity and direct it out of the laser or to a different optical path. The Cavity Dumper can handle a peak optical power of up to 2000 megawatts / cm². The device can be operated with up to 0.5 watt CW RF drive power or a 10 watt peak, @ 5% duty cycle with a 10 ns width RF pulse. Optimum diffraction efficiency will be provided with a rise time of 6 nanoseconds correlating to a waist diameter in the SiO₂ crystal of 0.44 millimeter.

The 13389-BR is an intra-cavity AO Device and typically requires a three (3) mirror cavity, with two of the mirrors focusing the laser beam to the required beam waist for the Cavity Dumper assembly. The diffracted beam must be output past the edge of one of the mirrors or picked off with another mirror. The Cavity Dumper should be mounted on a fixture to provide sufficient adjustment to peak the Cavity Dumper efficiency (Brewster angle, Bragg angle, horizontal, and vertical position). Adjustment must also be provided to adjust the focusing mirrors cavity configuration in order to adjust cavity gain and stability. The 71016 accessory mount is available for mounting the Cavity Dumper.

The Cavity Dumper can be driven with any good driver with a nominal 50 Ohm output of 389 MHz typically, however, it is recommended that a G & H driver be used to drive this Cavity Dumper to achieve optimum performance due to the timing required to sync on the laser pulses. The G & H 643ZZ.ZZZ-SYN-Y-X Driver is designed to provide a RF drive signal that is synchronous to the pulse rate of the mode locked laser cavity. The phase of the RF and time delay of the output signal relative to a reference signal can be adjusted to select a single output pulse from the laser. The 3ZZ.ZZZ in the model number of the driver is the output frequency of the driver, which is a multiple of the laser cavity resonate frequency. The "X" is a customer selectable division factor, which sets the output pulse repetition rate from the driver.

Typical Configuration For A Three Mirror Laser Cavity



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東京本社 〒160-0014 東京都新宿区内藤町1番地 内藤町ビルディング
TEL: 03 (3356) 1064 FAX: 03 (3356) 3466 E-mail: info@optoscience.com
大阪支店 〒532-0011 大阪市淀川区西中島7-7-2 新大阪ビル西館
TEL: 06 (6305) 2064 FAX: 06 (6305) 1030 E-mail: osk@optoscience.com
名古屋営業所 〒450-0002 名古屋市中村区名駅2-37-21 東海ソフトビル
TEL: 052 (569) 6064 FAX: 052 (569) 8064 E-mail: ngo@optoscience.com