

DataRay Laser Sampling & Attenuation Solutions

A line of high performance beam sampling & attenuation accessories which simplify the task of reducing laser beam irradiance (W/cm^2) to levels suitable for laser beam profilers.

EAM-2 Variable Attenuator

EAM-2 is a simple-to-use variable attenuator. It consists of a bank of four filter wheels, each with three different filters ranging from 100% transmission down to 0.003 %. This filter bank offers almost continuous attenuation from 0 to more than 93 dB (Optical Density > 9).

The **EAM-2** has three M6 mounting holes and can also connect directly to the C-mount port of a camera. Addition of the CUB or CUB-UV beam splitter cube allows you to sample light from lasers with higher power density.

EAM-2 uses Schott NG absorbing filter glass (NG). The filters are laser grade polished to 10-5 scratch-dig and $\lambda/10$ finish. All filters are mounted at a 4° angle to suppress back-reflection interference fringes.

Specifications:

Max. attenuation:	93 dB (OD=9)
Min. attenuation:	0 dB
Max. Power Density:	Power: $1W/cm^2$ Energy: $100mJ/cm^2$
Transmission of filters:	See table
Wavelength range:	350 to 2200 nm *
Clear Aperture:	18mm
Angle:	4°
Mounting:	3 x M6 threaded C-Mount thread



* Attenuation is specified at 516 nm; all absorbing glasses are highly wavelength dependent, particularly into the UV.

Attenuation in dB/ Transmission in %:

Wheel #	1		2		3		4	
Filter #	dB	%	dB	%	dB	%		%
1	0	100	0	100	0	100	0	100
2	0.5	90	5	30	20	1	35	0.03
3	1	80	10	10	25	0.3	40	0.01
4	3	50	15	3	30	0.1	45	0.0003

CUB & CUB-UV Beam Splitter Cubes

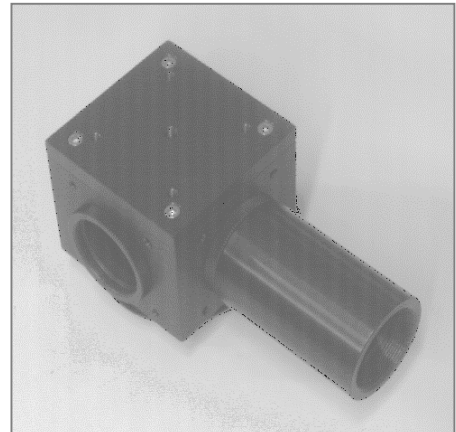
The **CUB** beam splitter cube takes a fixed ratio beam sample. It uses the front surface reflection from an uncoated laser mirror to achieve a reflection of 3% to 10% of the main laser beam for further analysis.

The surface is polished to 10-5 scratch-dig and 1/10 wave finish, wedged at 10 arc-min to avoid interference fringes and can take power densities up to $2 MW/cm^2$. like the **EAM** attenuator it has C-mount ports and can be connected to the **EAM** and your camera with the **ETCM** connecting tubes. It can post mount from an M6 threaded post.

Specifications:

Attenuation:	3% to 10% (polarization dependent)
Spectral range:	CUB: 350-2200nm CUB-UV: 190-2200nm
Clear Aperture:	19mm
Damage Threshold:	$50J/cm^2$

CUB shown with one **ETCM** tube mounted.



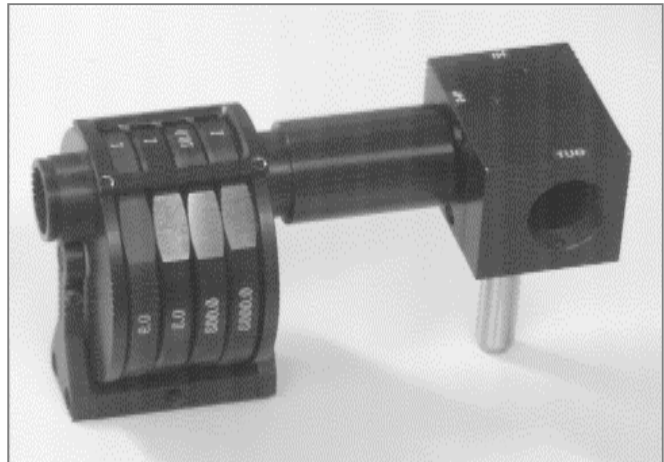
Part numbers:

EAM-2	Variable Attenuator
CUB	Beamsplitter
CUB-UV	UV-Beamsplitter
ETCM-2	Tube set with 2 tubes (2 x 50mm tubes + 4 adaptor rings)
ETCM-3	Tube set with 3 tubes (3 x 50mm tubes + 4 adaptor rings)

Application Examples

HPLS High Power Laser Set

A High Power Laser Set consists of a CUB or CUB-UV beam splitter and the **EAM-2** variable attenuator using the **ETCM-2** tube set.



NFAO Near-Field Imaging Optic

A Near Field Imaging Optic consists of an **EAM-2** variable attenuator plus an **ETCM-2** Tube set plus a Microscope Objective. This allows near field analysis of fibres, integrated optical devices, laser diode chips, laser and LED arrays, etc.

