TOPAG
Lasertechnik

DBM
Beam Sampler for Monitoring

PRODUCT FEATURES

▲ Separation of two beams for online monitoring

▲ Thin single optical element

APPLICATIONS

Online monitoring of:

▲ Power

▲ Power stability

▲ Beam profile

▲ Beam quality M²

▲ Pulse length

Beam samplers split two beams away from the main beam. The physical behavior of these two beams is identical to the main beam. Thus, the two beams can be used for online monitoring.

In the opposite of ordinary beam splitters, the beam samplers diffract a small fraction (typical < 1%) of the input beam energy into higher diffraction orders (+/- 1st order). The bulk (typical > 99%) of the input energy remains in the main beam and can be used for laser process as before. The +1st and -1st order can be used as input beam for example for measurement of power/power stability, beam profiles, m² measurement or autocorrelators.

Beam samplers are available with different separation angles between the main beam and the two separated beams. The ratio of light (main beam to the two separated beams) can be customized to the requirements of the measurement.

SCHEMATIC DIAGRAM
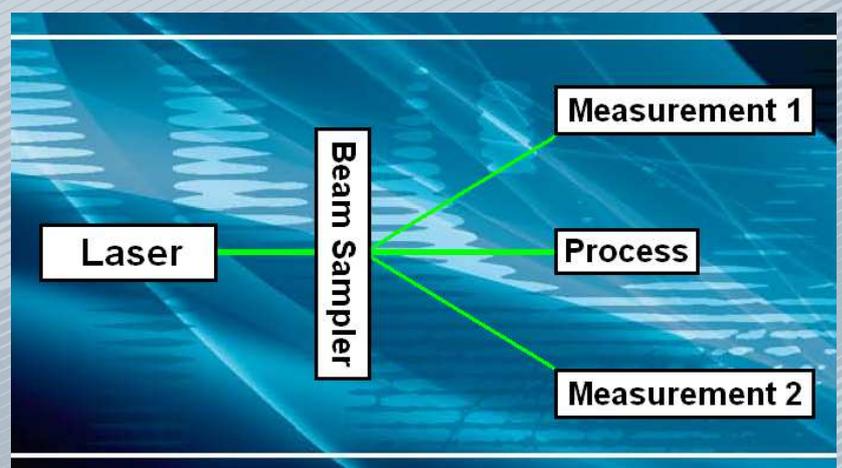
SPECIFICATIONS

Ratio of light in the main beam (0th order)	typical > 99%
Ratio of light in each of the two separated beams (+/-1st order)	either <0.5%, <0.25%, <0.1%, or <0.05%
Wavelength	see table below
Separation	see table below
Material	UVFS (UV grade fused silica)
Dimensions	diameter 25.4mm (1inch), thickness 3mm
Active area	diameter 23mm

WAVELENGTH - SEPARATION

Wavelength	Separation between (+ or -) 1st order beam and 0th order beam			
1064nm	2.29°	5.09°	10.21°	20.77°
1030nm	2.22°	4.92°	9.88°	20.08°
800nm	1.72°	3.82°	7.66°	15.47°
532nm	1.15°	2.54°	5.09°	10.21°
515nm	1.11°	2.46°	4.92°	9.88°
355nm	0.76°	1.70°	3.39°	6.80°
343nm	0.74°	1.64°	3.28°	6.57°