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# Mirrors & Output Couplers

II-VI Aerospace & Defense provides mirrors of various shapes and sizes. In addition to plano mirrors, fabrication capabilities include both spherical and aspheric convex and concave mirrors. Virtually any substrate material can be coated to provide any desired reflectivity using either protected, enhanced metal films or, to provide very high laser damage threshold, specifically designed dielectric film stacks. Second-surface AR coatings can be specified to reduce unwanted reflections.

Property	Typical Specifications	
Product Category	Mirrors	Output Couplers
Materials	Fused silica, optical glass, metals, various crystal and CVD materials	Fused silica, optical glass, various crystal and CVD materials
Wavelength Range [nm]	266 – 12,000	190 - 5000
Parallelism (Wedge) [second]	<10	<10
TWF Distortion at 632.8nm [wave]	N/A	0.100
Clear Aperture [Central %]	90%	90%
Surface Quality	10-5	10-5
Surface Flatness at 632.8nm [wave]	0.100	0.100
Dimensions [mm]	1 to 300	1 to 300
Dimensional Tolerance+/- [mm]	+/-0.1	+/-0.1
Anti-Reflective / Partially-Reflective / High-Reflective Coatings	As Requested	As Requested
Reflectivity [%]	>99.9%	As specified +/-1%
Absorption [ppm]	<300	<300
Laser Damage Threshold @ 1064nm [J/cm <sup>2</sup> at 20Hz with a 20ns pulse-width]	15	15
1 - The above specifications are typical and provided for reference. The customer's specific product requirements will be reviewed and guaranteed specifications stated on our quotation.		
2 - The applicable wavelength range depends on optical properties of the substrate material and thin films/coatings		
3 - Dimensions and tolerances are provided for reference only - capability for larger/smaller optical components and more demanding tolerances exist.		
4 - Laser damage threshold of optics and thin films depends on several factors, some of which are the laser wavelength and the operating mode (CW or pulsed). In the case of pulsed laser energy, other factors include the pulse width and the laser repetition rate. The data shown in the table are presented for reference only –and scaled to 20ns-wide pulses at 1064nm at a pulse repetition rate of 20Hz.		

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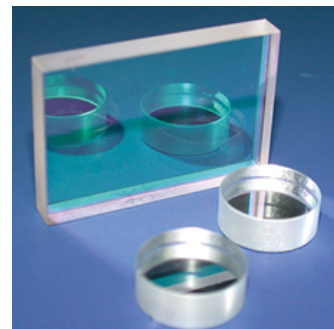
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