

LASER OUTPUT COUPLERS

Features

- Low Group Delay Dispersion

An output coupler is a partially reflecting dielectric mirror used in a laser cavity. It transmits a part of the circulating intracavity power for generating a useful output from the laser.

A low transmission output coupler leads to low laser threshold and possibly to poor laser efficiency if the losses due to output coupling do not dominate other parasitic losses in the laser cavity. The output coupler transmission is often chosen to maximize the output power, although its optimum value may be lower or higher if there are other design purposes (minimizing intracavity intensities or suppressing Q-switching instabilities in a passively mode-locked laser).

The standard substrates are parallel within 30 arcsec. If you need wedged substrates, please, choose from chapter Wedge Prisms (page 1.50).

Coating

Technology	Electron beam multilayer dielectric
Adhesion and Durability	Per MIL-C-675A. Insoluble in lab solvents
Clear Aperture	Exceeds central 85% of diameter
Angle of Incidence	0 – 8°
Parallelism	30 arcsec
Back side antireflection coated	R < 0.25%
Laser Damage Threshold	>100 mJ/cm ² , 50 fsec pulse, 50 Hz, 800 nm typical

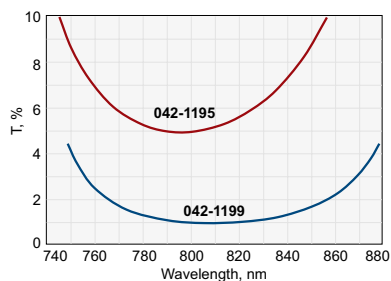
Substrate

Material	UV grade Fused Silica
S1 Surface Flatness	λ/10 typical at 633 nm
S1 Surface Quality	20–10 scratch & dig (MIL-PRF-13830B)
S2 Surface Flatness	λ/10 typical at 633 nm
S2 Surface Quality	20–10 scratch & dig (MIL-PRF-13830B)
Diameter Tolerance	+0.00 mm; -0.12 mm
Thickness Tolerance	±0.25 mm
Parallelism	< 30 arcsec
Chamfer	0.3 mm at 45° typical

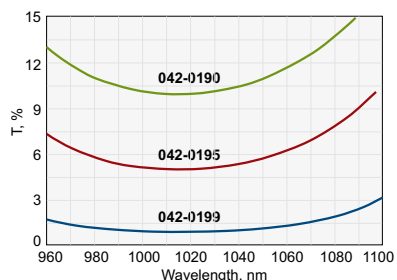
Wavelength, nm	Reflection, %	Transmission, %	Ø12.7x3 mm		Ø25.4x6 mm		Ø50.8x8 mm	
			Catalogue number	Price, EUR	Catalogue number	Price, EUR	Catalogue number	Price, EUR

Substrate material: UV grade Fused Silica

1030	50±3	50±3	041-0150	121	042-0150	144	045-0150	236
1030	60±3	40±3	041-0160	121	042-0160	144	045-0160	236
1030	65±3	35±3	041-0165	121	042-0165	144	045-0165	236
1030	70±3	30±3	041-0170	121	042-0170	144	045-0170	236
1030	75±3	25±3	041-0175	121	042-0175	144	045-0175	236
1030	80±3	20±3	041-0180	121	042-0180	144	045-0180	236
1030	85±3	15±3	041-0185	121	042-0185	144	045-0185	236
1030	90±2	10±2	041-0190	129	042-0190	152	045-0190	253
1030	95±2	5±2	041-0195	129	042-0195	152	045-0195	253
1030	97±1	3±1	041-0197	137	042-0197	160	045-0197	282
1030	98±1	2±1	041-0198	137	042-0198	160	045-0198	282
1030	99.0±0.5	1.0±0.5	041-0199	145	042-0199	168	045-0199	293
800	50±3	50±3	041-1150	121	042-1150	144	045-1150	236
800	60±3	40±3	041-1160	121	042-1160	144	045-1160	236
800	65±3	35±3	041-1165	121	042-1165	144	045-1165	236
800	70±3	30±3	041-1170	121	042-1170	144	045-1170	236
800	75±3	25±3	041-1175	121	042-1175	144	045-1175	236
800	80±3	20±3	041-1180	121	042-1180	144	045-1180	236
800	85±3	15±3	041-1185	121	042-1185	144	045-1185	236
800	90±2	10±2	041-1190	129	042-1190	152	045-1190	253
800	95±2	5±2	041-1195	129	042-1195	152	045-1195	253
800	97±1	3±1	041-1197	137	042-1197	160	045-1197	282
800	98±1	2±1	041-1198	137	042-1198	160	045-1198	282
800	99.0±0.5	1.0±0.5	041-1199	145	042-1199	168	045-1199	293



042-1199. PR = 99±0.5% @ 800 nm, T = 1±0.5%
042-1195. PR = 95±2% @ 800 nm, T = 5±2%



042-0199. PR = 99±0.5% @ 1030 nm, T = 1±0.5%
042-0195. PR = 95±2% @ 1030 nm, T = 5±2%
042-0190. PR = 90±2% @ 1030 nm, T = 10±2%

Related Products

Uncoated Elliptical Mirrors
 See page 1.8

Kinematic Mirror and Beamsplitter Mount 840-0020

Find more at EksmaOptics.com

