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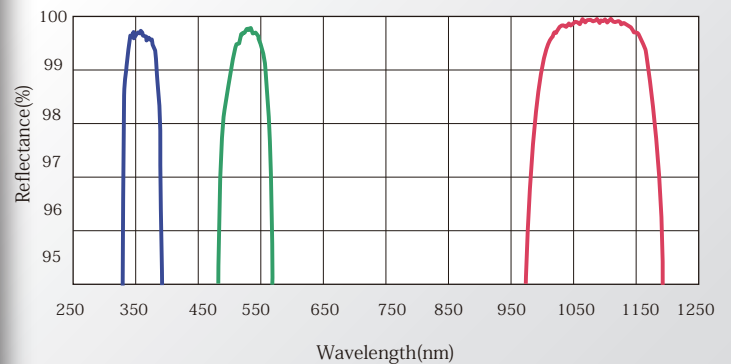
Coatings for High Power Laser Optical Systems



Features

- According to the trend of high power lasers, more durable optical devices which have higher surface damage resistance for laser power is requested.
- Tokai Optical has been investigating the condition of polishing substrate, coating materials, coating process condition, as the result, high performance laser mirror and anti-reflection coating have been developed which can be integrated to the high power laser optical systems.

Spectral property



355nm Coating

	Optical property	Damage threshold [※]	Test condition				
			Pulse width	Angle of incidence	Polarization	Beam diameter	Measurement method
Mirror	Reflectance > 99%	47J/cm ²	9ns	45°	P	X 200 μm, Y 200 μm (Gaussian 1/e ²)	1-on-1
A R	Reflectance < 0.5%	31J/cm ²	9ns	0°	—	X 200 μm, Y 190 μm (Gaussian 1/e ²)	1-on-1

532nm Coating

	Optical property	Damage threshold [※]	Test condition				
			Pulse width	Angle of incidence	Polarization	Beam diameter	Measurement method
Mirror	Reflectance > 99%	121J/cm ²	8ns	45°	P	X 264 μm, Y 260 μm (Gaussian 1/e ²)	1-on-1
A R	Reflectance < 0.5%	91J/cm ²	9ns	0°	—	X 250 μm, Y 250 μm (Gaussian 1/e ²)	1-on-1

1064nm Coating

	Optical property	Damage threshold [※]	Test condition				
			Pulse width	Angle of incidence	Polarization	Beam diameter	Measurement method
Mirror	Reflectance > 99%	134J/cm ²	10ns	45°	P	X 510 μm, Y 490 μm (Gaussian 1/e ²)	1-on-1
A R	Reflectance < 0.5%	198J/cm ²	10ns	0°	—	X 490 μm, Y 550 μm (Gaussian 1/e ²)	1-on-1

※Evaluation: Institute for Laser Technology (This table shows a test result but is not guarantee.)



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JQA-1184
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