

Spherical Lenses

Cylindrical Lenses

Lens Kits

Achromatic Doublets

Multi-Element

Micro Optics

Mirrors

Prisms

Substrates & Windows

Beamsplitters

Polarizers

Filter & Apertures

Laser Mirrors

- High reflectance at laser lines in the Ultra-Violet, visible, and NIR
- Polished to $\lambda/10$ minimizing subsurface structure
- ≤ 3 arcmin parallelism
- Multilayer dielectric coatings, optimized for design wavelength
- Designed for 45 degree angle of incidence
- Standard diameters from 12.7 to 50.8mm

These laser mirrors are designed for specific wavelength laser applications where low wavefront distortion, low scattering, and high reflectivity are usually important. The reflectance is greater than 99.5% at the specified wavelength. Typically the s-polarization is greater than 99.9% and p-polarization is close to 99.5%. The reflectance curves shown on pages 112-114 are for a circularly polarized input beam.

Possible surface damage from higher power laser beams is minimized by careful polishing and precisely controlled coating methods.

As with the broadband mirrors, standard diameters are 1/2 inch, 3/4 inch, 1 inch and 2 inches. Other diameters are available on request. Other laser wavelengths can also be provided so please call.



Specifications & Tolerances

Surface flatness: $\lambda/10$

Surface quality: 20-10

Thickness: ± 0.1 mm

Bevel: 0.3mmx45° typical

Laser damage threshold: Single Wavelength: $5\text{J}/\text{cm}^2$ @ 10ns pulse, 1064nm

Diameter: +0, -0.1mm

Parallelism: ≤ 3 arcmin

Clear aperture: $>90\%$ diameter

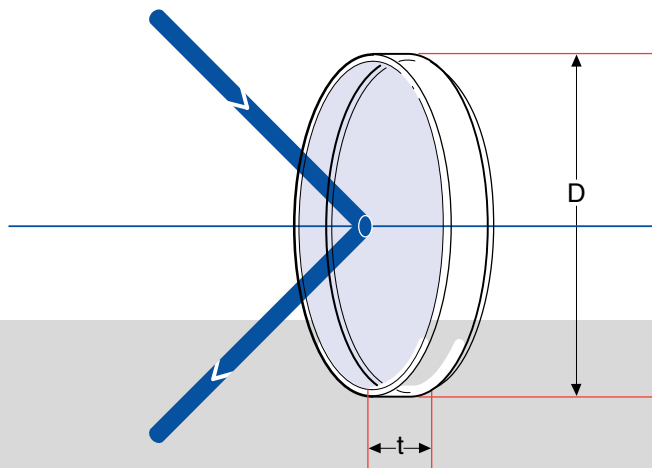
Material: BK7, grade A

Durability: to MIL-C-675

Reflectance: $R > 99.5\%$ at laser wavelength for $\lambda > 300\text{nm}$

$R > 99.0\%$ at laser wavelength for $200\text{nm} < \lambda < 300\text{nm}$

$R > 95.0\%$ at laser wavelength for $\lambda < 200\text{nm}$

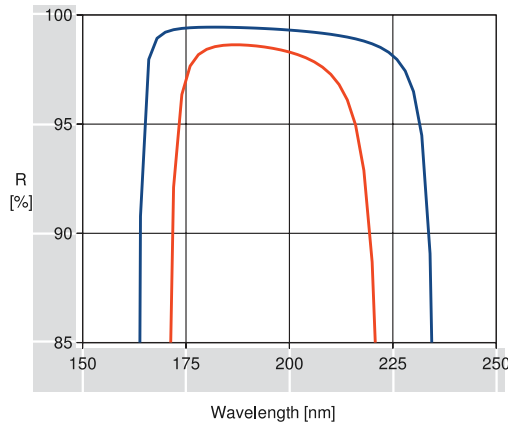


PLANE MIRROR

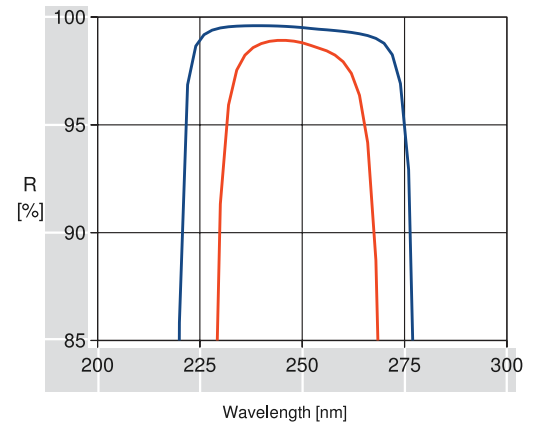
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OPTICAL COMPONENTS

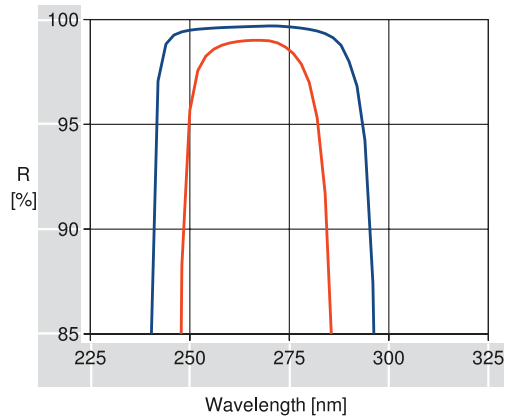
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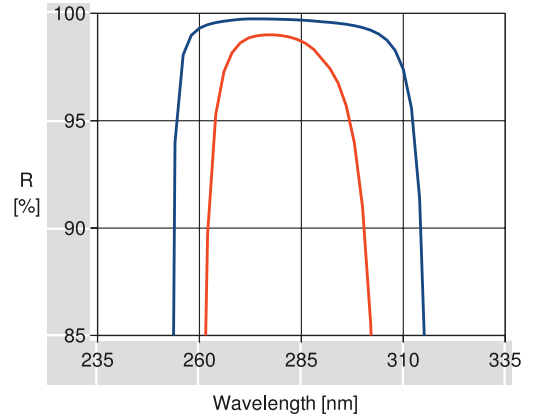
NARROWBAND H.R. COATING
R03: 193nm
 S-POL, 45° ———
 P-POL, 45° ———



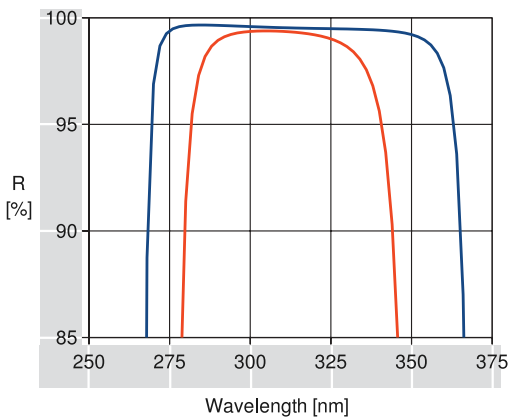
NARROWBAND H.R. COATING
R04: 248nm
 S-POL, 45° ———
 P-POL, 45° ———



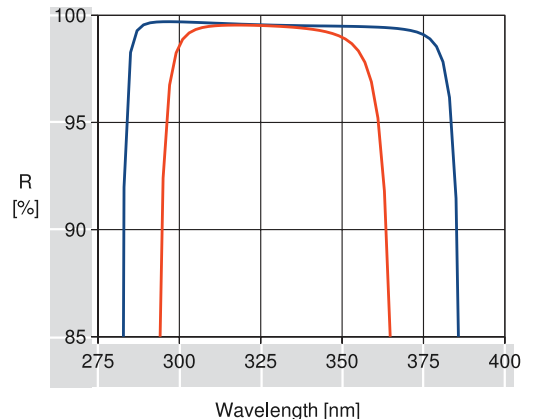
NARROWBAND H.R. COATING
R05: 266nm
 S-POL, 45° ———
 P-POL, 45° ———



NARROWBAND H.R. COATING
R06: 281nm
 S-POL, 45° ———
 P-POL, 45° ———



NARROWBAND H.R. COATING
R07: 308nm
 S-POL, 45° ———
 P-POL, 45° ———



NARROWBAND H.R. COATING
R08: 325nm
 S-POL, 45° ———
 P-POL, 45° ———

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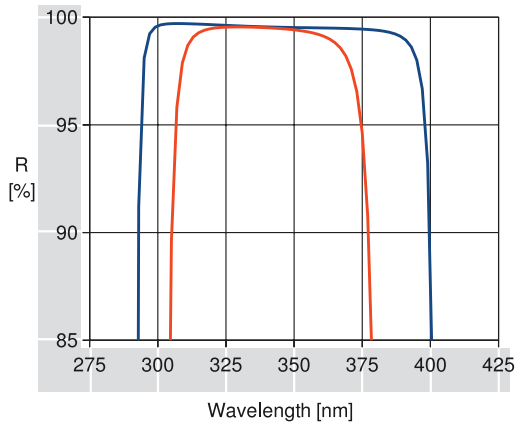
sales@optosigma.com

WEB

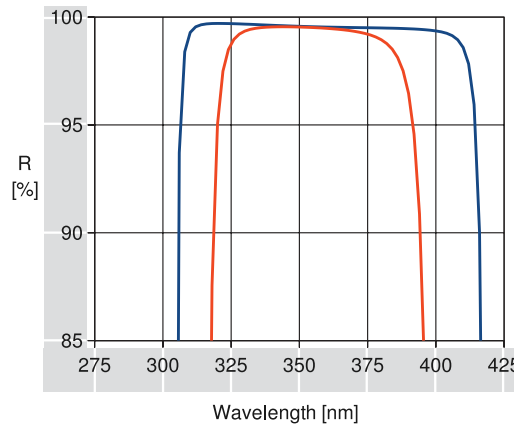
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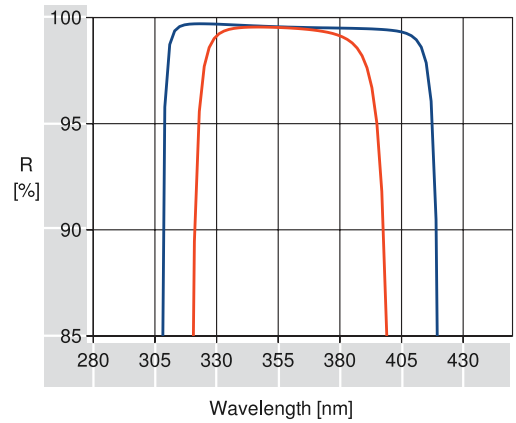
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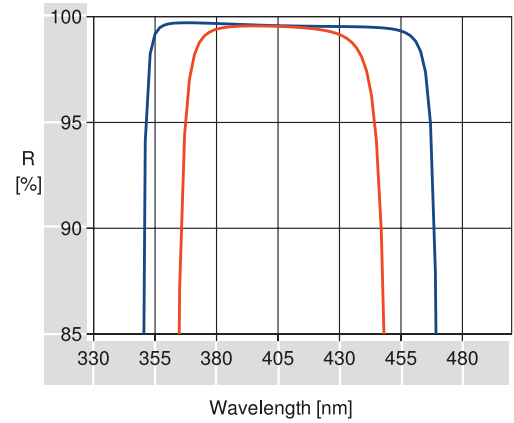
NARROWBAND H.R. COATING
R11: 337nm
 S-POL, 45° ————
 P-POL, 45° ————



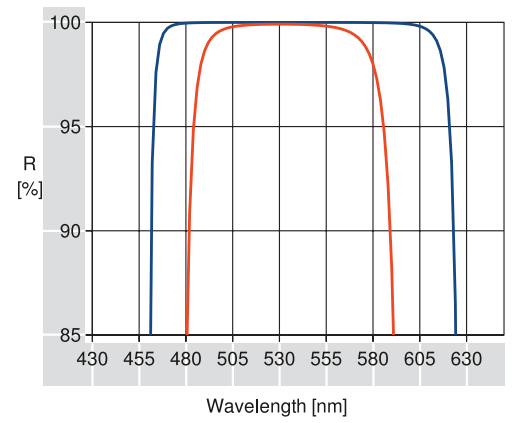
NARROWBAND H.R. COATING
R13: 352nm
 S-POL, 45° ————
 P-POL, 45° ————



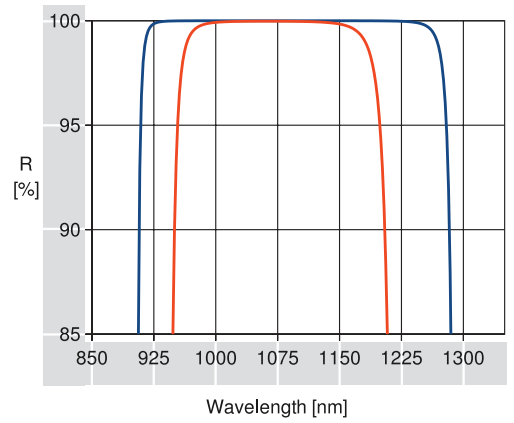
NARROWBAND H.R. COATING
R14: 355nm
 S-POL, 45° ————
 P-POL, 45° ————



NARROWBAND H.R. COATING
R16: 405nm
 S-POL, 45° ————
 P-POL, 45° ————



NARROWBAND H.R. COATING
R26: 532nm
 S-POL, 45° ————
 P-POL, 45° ————



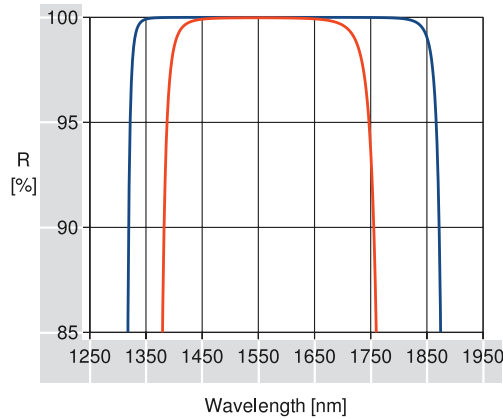
NARROWBAND H.R. COATING
R46: 1064nm
 S-POL, 45° ————
 P-POL, 45° ————

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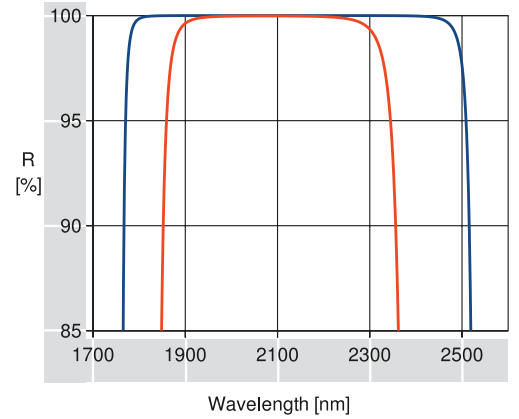


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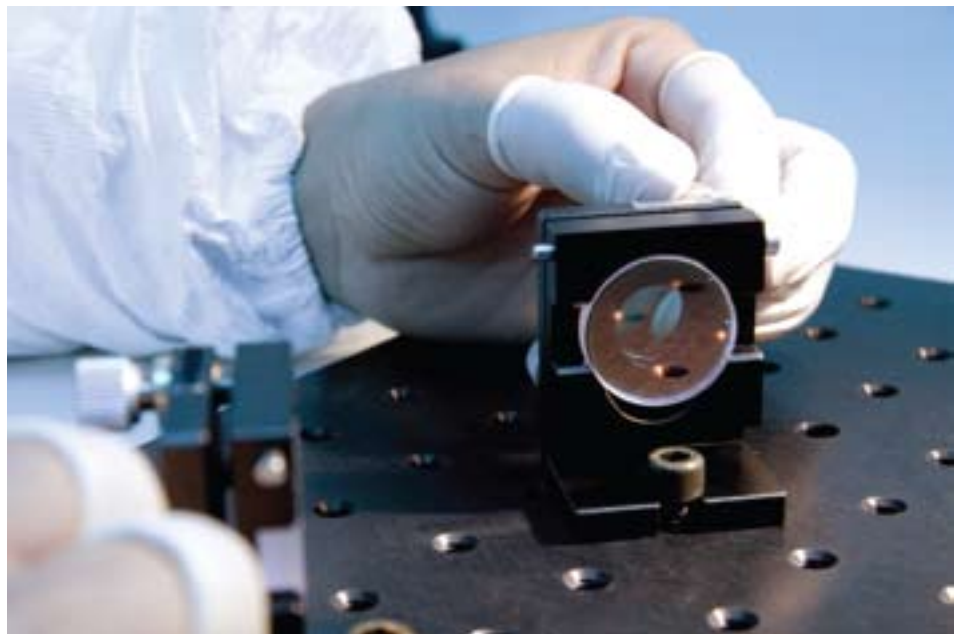
Laser Mirrors



NARROWBAND H.R. COATING
R48: 1550nm
 S-POL, 45° ———
 P-POL, 45° ———



NARROWBAND H.R. COATING
R50: 2060-2100nm
 S-POL, 45° ———
 P-POL, 45° ———



We offer a complete line of mirror mounts which fit a variety of applications. Please turn to the mirror mount section and make your selection or call our technical sales team to assist you.

Keeping your optics clean will both improve optical performance and increase the optic's lifetime. Please turn to page 33 for our complete selection of cleaning supplies.

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Laser Line Mirrors

Lasers	Wavelength Range (nm)	Diameter, D (mm)	Thickness, t (mm)	Reflectance (%)	Price	PART NUMBER
ArF	193	25.4	5.0	≥95.0		034-0110
ArF	193	30.0	5.0	≥95.0		034-0120
ArF	193	50.0	8.0	≥95.0		034-0130
KrF	248.4	12.7	5.0	≥99.0		034-0150
KrF	248.4	19.1	5.0	≥99.0		034-0155
KrF	248.4	25.4	5.0	≥99.0		034-0160
KrF	248.4	30.0	5.0	≥99.0		034-0170
KrF	248.4	50.0	8.0	≥99.0		034-0180
KrF	248.4	50.8	8.0	≥99.0		034-0185
Nd:YAG 4th	266	12.7	5.0	≥99.0		034-0190
Nd:YAG 4th	266	19.1	5.0	≥99.0		034-0195
Nd:YAG 4th	266	25.4	5.0	≥99.0		034-0200
Nd:YAG 4th	266	30.0	5.0	≥99.0		034-0203
Nd:YAG 4th	266	50.0	5.0	≥99.0		034-0205
Nd:YAG 4th	266	50.8	8.0	≥99.0		034-0210
XeBr	281.8	12.7	5.0	≥99.0		034-0220
XeBr	281.8	19.1	5.0	≥99.0		034-0225
XeBr	281.8	25.4	5.0	≥99.0		034-0230
XeBr	281.8	30.0	5.0	≥99.0		034-0240
XeBr	281.8	50.0	8.0	≥99.0		034-0250
XeBr	281.8	50.8	8.0	≥99.0		034-0260
XeCl	308	12.7	5.0	≥99.5		034-0261
XeCl	308	19.1	5.0	≥99.5		034-0262
XeCl	308	25.4	5.0	≥99.5		034-0264
XeCl	308	30.0	5.0	≥99.5		034-0265
XeCl	308	50.0	8.0	≥99.5		034-0266
XeCl	308	50.8	8.0	≥99.5		034-0267
HeCd	325	12.7	5.0	≥99.5		034-0270
HeCd	325	19.1	5.0	≥99.5		034-0275
HeCd	325	25.4	5.0	≥99.5		034-0280
HeCd	325	30.0	5.0	≥99.5		034-0290
HeCd	325	50.0	8.0	≥99.5		034-0330
HeCd	325	50.8	8.0	≥99.5		034-0340
N2	337.1	12.7	5.0	≥99.5		034-0341
N2	337.1	19.1	5.0	≥99.5		034-0342
N2	337.1	25.4	5.0	≥99.5		034-0344
N2	337.1	30.0	5.0	≥99.5		034-0345
N2	337.1	50.0	8.0	≥99.5		034-0346
N2	337.1	50.8	8.0	≥99.5		034-0347
XeF	352	12.7	5.0	≥99.5		034-0350
XeF	352	19.1	5.0	≥99.5		034-0355
XeF	352	25.4	5.0	≥99.5		034-0360
XeF	352	30.0	5.0	≥99.5		034-0370
XeF	352	50.0	8.0	≥99.5		034-0380
XeF	352	50.8	8.0	≥99.5		034-0390
Nd:YAG 3rd	355	12.7	5.0	≥99.5		034-0391
Nd:YAG 3rd	355	19.1	5.0	≥99.5		034-0392
Nd:YAG 3rd	355	25.4	5.0	≥99.5		034-0394
Nd:YAG 3rd	355	30.0	5.0	≥99.5		034-0395
Nd:YAG 3rd	355	50.0	8.0	≥99.5		034-0396
Nd:YAG 3rd	355	50.8	8.0	≥99.5		034-0397

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Laser Line Mirrors (continued)

Lasers	Wavelength Range (nm)	Diameter, D (mm)	Thickness, t (mm)	Reflectance (%)	Price	PART NUMBER
LD	405	12.7	5.0	≥99.5		034-0400
LD	405	19.1	5.0	≥99.5		034-0405
LD	405	25.4	5.0	≥99.5		034-0410
LD	405	30.0	5.0	≥99.5		034-0415
LD	405	50.0	8.0	≥99.5		034-0420
LD	405	50.8	8.0	≥99.5		034-0425
Nd:YAG 2nd	532	12.7	5.0	≥99.5		034-0590
Nd:YAG 2nd	532	19.1	5.0	≥99.5		034-0595
Nd:YAG 2nd	532	25.0	5.0	≥99.5		034-0620
Nd:YAG 2nd	532	25.4	5.0	≥99.5		034-0660
Nd:YAG 2nd	532	30.0	5.0	≥99.5		034-0670
Nd:YAG 2nd	532	50.0	8.0	≥99.5		034-0680
Nd:YAG 2nd	532	50.8	8.0	≥99.5		034-0690
Nd:YAG	1064	12.7	5.0	≥99.5		034-1220
Nd:YAG	1064	19.1	5.0	≥99.5		034-1225
Nd:YAG	1064	25.4	5.0	≥99.5		034-1240
Nd:YAG	1064	30.0	5.0	≥99.5		034-1250
Nd:YAG	1064	40.0	6.0	≥99.5		034-1260
Nd:YAG	1064	50.0	8.0	≥99.5		034-1270
Nd:YAG	1064	50.8	8.0	≥99.5		034-1280
Diode	1550	12.7	5.0	≥99.5		034-1360
Diode	1550	19.1	5.0	≥99.5		034-1370
Diode	1550	25.4	5.0	≥99.5		034-1380
Diode	1550	50.8	8.0	≥99.5		034-1390
Holmium/YAG	2100	12.7	5.0	≥99.5		034-1330
Holmium/YAG	2100	19.1	5.0	≥99.5		034-1335
Holmium/YAG	2100	25.4	5.0	≥99.5		034-1340
Holmium/YAG	2100	50.8	8.0	≥99.5		034-1350



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High performance optical coatings require pristine substrates. We ensure that all contaminants are removed from our substrates in a clean room environment before the coating process begins.

Laser Line Wide Angle Mirrors

- High Reflectance at laser line wavelengths
- Designed for wide angle use 0-45 degrees
- Multilayer dielectric coatings, optimized for design wavelength



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Specifications & Tolerances

Surface flatness: $\lambda/10$

Surface quality: 20-10

Thickness: ± 0.1 mm

Bevel: 0.3mm x 45° typical

Diameter: +0, -0.1mm

Parallelism: ≤ 3 arcmin

Clear aperture: 90%

Material: BK7 or equivalent

Laser Line Wide Angle Mirrors

Wavelength Range (nm)	Diameter, D (mm)	Thickness, t (mm)	Rear Surface	Reflectance (%)	Angle of Incidence (°)	Price	PART NUMBER
405	15.0	3.0	Ground	≥ 99.0	0-45		034-2811
405	25.4	5.0	Polished	≥ 99.0	0-45		034-2815
405	30.0	5.0	Polished	≥ 99.0	0-45		034-2816
405	50.0	8.0	Polished	≥ 99.0	0-45		034-2818
532	25.4	5.0	Polished	≥ 99.0	0-45		034-2835
532	30.0	5.0	Polished	≥ 99.0	0-45		034-2836
532	50.0	8.0	Polished	≥ 99.0	0-45		034-2838
425-675	15.0	3.0	Ground	≥ 99.0	0-45		034-2841
425-675	25.4	5.0	Polished	≥ 99.0	0-45		034-2845
425-675	30.0	5.0	Polished	≥ 99.0	0-45		034-2846
425-675	50.0	8.0	Polished	≥ 99.0	0-45		034-2848
780	15.0	3.0	Ground	≥ 99.0	0-45		034-2851
780	25.4	5.0	Polished	≥ 99.0	0-45		034-2855
780	30.0	5.0	Polished	≥ 99.0	0-45		034-2856
830	15.0	3.0	Ground	≥ 99.0	0-45		034-2861
830	25.4	5.0	Polished	≥ 99.0	0-45		034-2865
830	30.0	5.0	Polished	≥ 99.0	0-45		034-2866
1064	25.4	5.0	Polished	≥ 99.0	0-45		034-2875
1064	30.0	5.0	Polished	≥ 99.0	0-45		034-2876
1064	50.0	8.0	Polished	≥ 99.0	0-45		034-2878
1300	15.0	3.0	Ground	≥ 99.0	0-45		034-2881
1300	25.4	5.0	Polished	≥ 99.0	0-45		034-2885
1300	30.0	5.0	Polished	≥ 99.0	0-45		034-2886
1550	15.0	3.0	Ground	≥ 99.0	0-45		034-2891
1550	25.4	5.0	Polished	≥ 99.0	0-45		034-2895
1550	30.0	5.0	Polished	≥ 99.0	0-45		034-2896

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Laser Line High Power Mirrors

- High Reflectance at laser line wavelengths
- Designed for use at 45 degrees
- Multilayer dielectric coatings, optimized for design wavelength



Specifications & Tolerances

Surface flatness: $\lambda/10$
 Surface quality: 20-10
 Thickness: ± 0.1 mm
 Bevel: 0.3mm x 45° typical

Diameter: +0, -0.1mm
 Parallelism: ≤ 3 arcmin
 Clear aperture: 90%
 Material: BK7 or equivalent

Laser Damage Threshold
 Wavelength: 193nm 2J/cm²
 248nm 4J/cm²
 266nm 5J/cm²

355nm 8J/cm²
 532nm 26.5J/cm²
 1064nm 28J/cm²

(Tested with pulse width =10nsec, repetition 20Hz)

Laser Line High Power Mirrors

Wavelength Range (nm)	Diameter, D (mm)	Thickness, t (mm)	Rear Surface	Reflectance (%)	Price	PART NUMBER
193	25.4	5.0	Polished	≥ 95.0		034-4510
193	30.0	5.0	Polished	≥ 95.0		034-4512
193	50.0	8.0	Polished	≥ 95.0		034-4514
248	25.4	5.0	Polished	≥ 98.0		034-4520
248	30.0	5.0	Polished	≥ 98.0		034-4522
248	50.0	8.0	Polished	≥ 98.0		034-4524
266	25.4	5.0	Polished	≥ 98.0		034-4530
266	30.0	5.0	Polished	≥ 98.0		034-4532
266	50.0	8.0	Polished	≥ 98.0		034-4534
355	25.4	5.0	Polished	≥ 99.0		034-4540
355	30.0	5.0	Polished	≥ 99.0		034-4542
355	50.0	8.0	Polished	≥ 99.0		034-4544
532	25.4	5.0	Polished	≥ 99.0		034-4550
532	30.0	5.0	Polished	≥ 99.0		034-4552
532	50.0	8.0	Polished	≥ 99.0		034-4554
1064	25.4	5.0	Polished	≥ 99.0		034-4560
1064	30.0	5.0	Polished	≥ 99.0		034-4562
1064	50.0	8.0	Polished	≥ 99.0		034-4564

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