



HIGH POWER Nd:YAG / Nd:YLF LASER MIRRORS: Y1, Y2, Y3, Y4



Specifications

Product Code: **Y1, Y2, Y3, Y4**

Substrate Material:

Standard Grade Corning 7980 1-D (Fused Silica)

Diameter Tolerance: +0/-0.25mm

Thickness Tolerance: ±0.25mm

Wedge: ≤ 5 arc minutes (flat substrates only)

Chamfer:

Ø ≤ 50.8mm: 0.35mm leg width at 45° nominal

Ø > 50.8mm: 0.85mm leg width at 45° nominal

Concentricity: ±0.05mm (spherical substrates only)

Radius Tolerance: ±0.5% (spherical substrates only)

S1 Surface Figure: < λ/10 p-v at 633nm before coating; after coating on select substrates

S1 Surface Quality: 10-5 scratch-dig per MIL-PRF-13830b (at 100W)

S2 Surface Quality: Commercial polish

Clear Aperture: ≥ 85% of central diameter

Angle of Incidence: 0° or 45° options

Reflectance:

R ≥ 99.9% at 0°

R ≥ 99.6% at 45°, P-Pol

R ≥ 99.8% at 45°, UNP

R ≥ 99.9% at 45°, S-Pol

Adhesion and Durability: Per MIL-C-675c and MIL-C-48497a

Damage Threshold:

Pulsed:

25 J/cm², 20ns, 20Hz at 1064nm

20 J/cm², 20ns, 20Hz at 532nm

15 J/cm², 20ns, 20Hz at 355nm

10 J/cm², 20ns, 20Hz at 266nm

cw: 10 MW/cm² at 1064nm

BUILD YOUR PART NUMBER

STEP-1	STEP-2	STEP-3	STEP-4
PRODUCT CODE	SIZE CODE	ANGLE OF INCIDENCE	RADII OPTIONS
Y1	1025	0	1.00CC

EXAMPLE: Y1-1025-0-1.00CC

CHOOSE FROM THE OPTIONS BELOW.

1. PRODUCT CODE	LASER TYPE	WAVELENGTH (nm)
Y1	Nd:YAG / Nd:YLF	1047-1064
Y2	Nd:YAG / Nd:YLF second harmonic	523-532
Y3	Nd:YAG / Nd:YLF third harmonic	349-355
Y4	Nd:YAG / Nd:YLF fourth harmonic	262-266

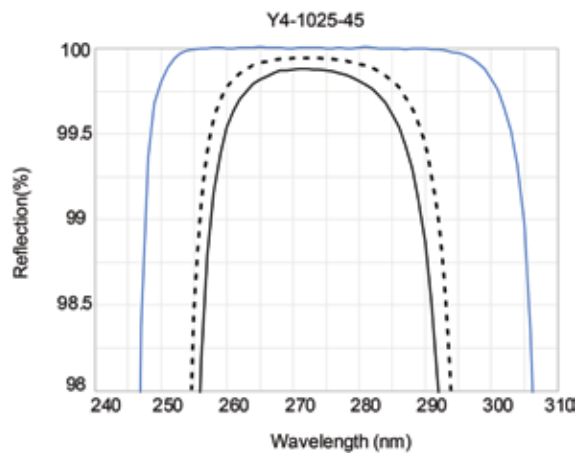
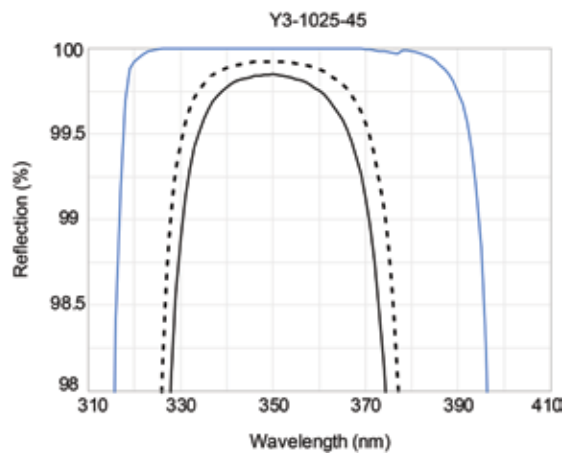
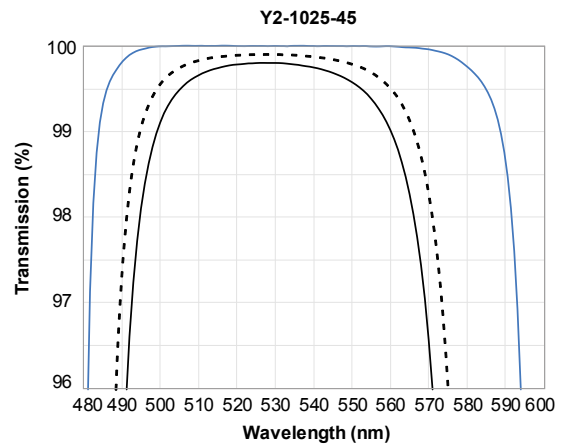
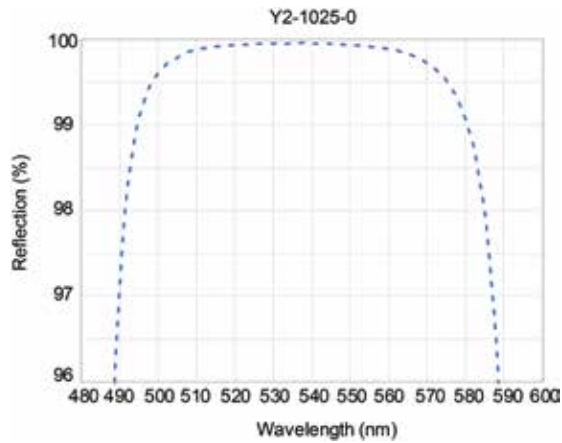
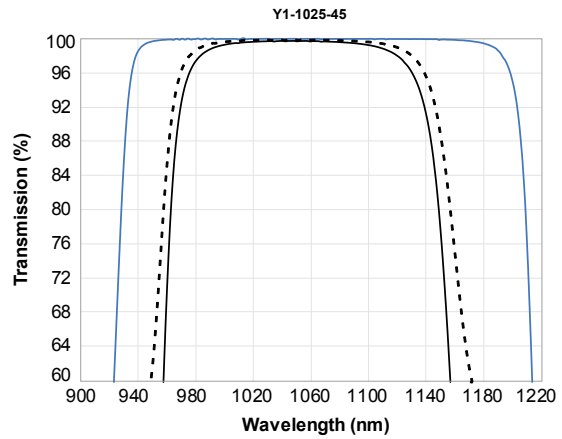
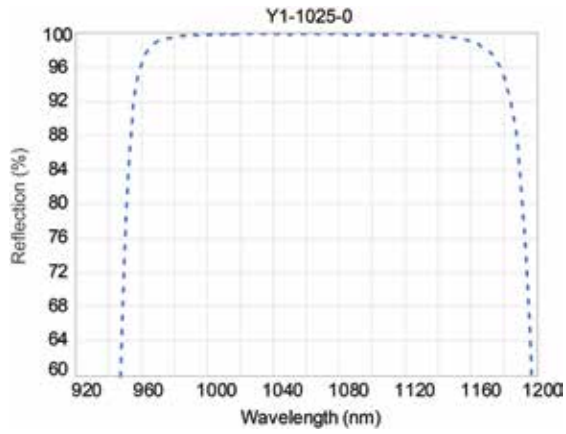
2. SIZE CODE	DIAMETER (mm)	THICKNESS (mm)
0525	12.7	6.35
1025	25.4	6.35
1537	38.1	9.53
2037	50.8	9.53
3050	76.2	12.7
4050	101.6	12.7

3. ANGLE OF INCIDENCE	in Degrees
0	0 degrees (normal incidence)
45	45 degrees

4. RADIUS OF CURVATURE (m)				
SIZE CODE	Diameter (mm)	RADII OPTIONS (m), cc = concave		RADII OPTIONS (m), cx = convex
0525	12.7	0.10CC	0.75CC	
		0.25CC	1.00CC	
		0.50CC		
1025	25.4	0.10CC	1.50CC	0.30CX
		0.25CC	2.00CC	0.50CX
		0.50CC	3.00CC	1.00CX
		0.75CC	5.00CC	
		1.00CC	10.00CC	

USABLE BANDWIDTH (R_{avg} ≥ 99.0%):

Y1	1020 - 1100nm
Y2	510 - 560nm
Y3	340 - 370nm
Y4	255 - 275nm



* Traces based on actual performance; not theoretical

P-POL: — UNP: - - - S-POL: — 0°: - - -



HIGH POWER Nd:YAG LASER MIRROR: Y5



Specifications

Product Code: Y5

Substrate Material:

Standard Grade Corning 7980 1-D (Fused Silica)

Diameter Tolerance: +0/-0.25mm

Thickness Tolerance: ± 0.25 mmWedge: ≤ 5 arc minutes

Chamfer: 0.35mm leg width at 45° nominal

S1 Surface Figure: $< \lambda/10$ p-v at 633nm before coating; after coating on select substrates

S1 Surface Quality: 10-5 scratch-dig per MIL-PRF-13830b (at 100W)

S2 Surface Quality: Commercial polish

Clear Aperture: $\geq 85\%$ of central diameter

Angle of Incidence: 0° or 45° options

Reflectance:

 $R \geq 97.0\%$ at 0° $R \geq 95.0\%$ at 45°, P-Pol $R \geq 97.0\%$ at 45°, UNP $R \geq 98.5\%$ at 45°, S-Pol

Adhesion and Durability: Per MIL-C-48497a

Damage Threshold:

Pulsed:

3 J/cm², 8ns, at 248nm

BUILD YOUR PART NUMBER

STEP-1	STEP-2	STEP-3
PRODUCT CODE	SIZE CODE	ANGLE OF INCIDENCE
Y5	1025	45

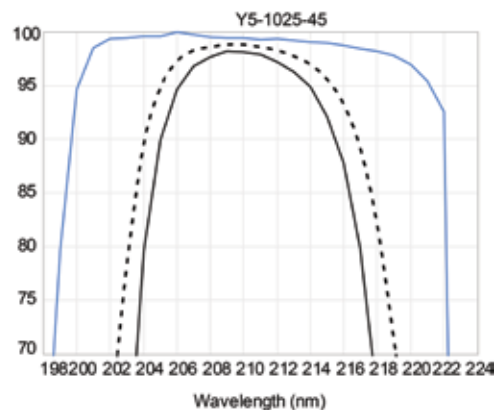
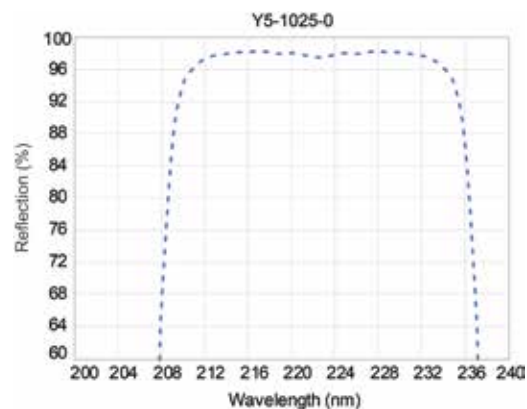
EXAMPLE: Y5-1025-45

CHOOSE FROM THE OPTIONS BELOW.

1. PRODUCT CODE	LASER TYPE	WAVELENGTH (nm)
Y5	Nd:YAG fifth harmonic	213

2. SIZE CODE	DIAMETER (mm)	THICKNESS (mm)
0525	12.7	6.35
1025	25.4	6.35
2037	50.8	9.53

3. ANGLE OF INCIDENCE in Degrees	
0	Normal incidence
45	45 degrees



P-POL: — UNP: - - - S-POL: — 0°: ·····

ION BEAM SPUTTERED Nd: YAG LASER MIRRORS: Y1S, Y2S, Y3S, Y4S



Specifications

Product Code: **Y1S, Y2S, Y3S, Y4S**

Substrate Material:

Standard Grade Corning 7980 1-D (Fused Silica)

Diameter Tolerance: +0/-0.25 mm

Thickness Tolerance: ±0.25 mm

Wedge: ≤ 5 arc min

Chamfer: 0.35 mm leg width at 45° typical

S1 Surface Figure: < $\lambda/10$ p-v at 633 nm before coating

S1 Surface Quality: 10-5 scratch and dig per MIL-PRF 13830b

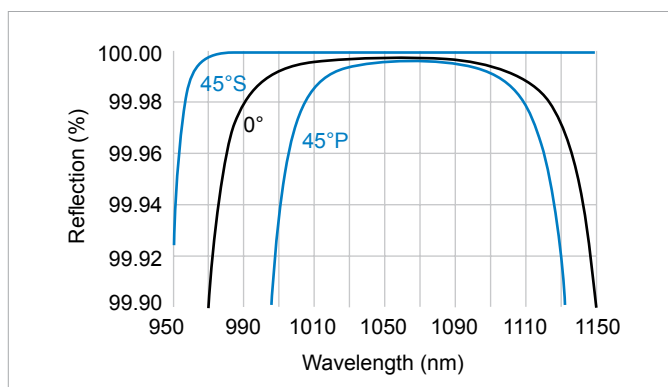
S2 Surface Quality: Commercial polish

Clear Aperture: ≥ 85% of central diameter

Angle of Incidence: 0° or 45° options

Adhesion and Durability: Per MIL-PRF-13830b

- ▶ High reflectivity and laser damage threshold
- ▶ Minimal coating shift; high environmental stability
- ▶ Ideal for high-power Nd:YAG and fiber laser applications



Reflectivity vs wavelength of Y1S low loss Nd:YAG laser mirror at 45° and 0° incidence angle design

ION BEAM SPUTTERED ND:YAG LASER MIRRORS

Wavelength (nm)	Reflectivity	Incidence Angle	Damage Threshold	Ø (mm)	t (mm)	PART NUMBER
1064	≥ 99.9% at 0°	0°	40 J/cm ² @ 1064nm	25.4	6.35	Y1S-1025-0
1064	≥ 99.9% at 45° (both S & P)	45°	40 J/cm ² @ 1064nm	25.4	6.35	Y1S-1025-45
532	≥ 99.9% at 0°	0°	8 J/cm ² @ 532nm	25.4	6.35	Y2S-1025-0
532	≥ 99.9% at 45° (both S & P)	45°	8 J/cm ² @ 532nm	25.4	6.35	Y2S-1025-45
355	≥ 99.9% at 0°	0°	3 J/cm ² @ 355nm	25.4	6.35	Y3S-1025-0
355	≥ 99.9% at 45° (both S & P)	45°	3 J/cm ² @ 355nm	25.4	6.35	Y3S-1025-45
266	≥ 99.9% at 0°	0°	2 J/cm ² @ 266nm	25.4	6.35	Y4S-1025-0
266	≥ 99.9% at 45° (both S & P)	45°	2 J/cm ² @ 266nm	25.4	6.35	Y4S-1025-45