HR Broad Band Mirrors (BBHR)

Description

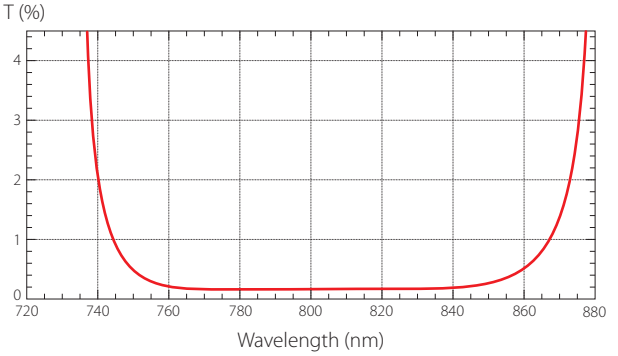
HR broad band mirrors (BBHR) provide high reflectivity for a broad spectrum. Therefore, it is ideal solution for a wide range of multi-wavelength laser or white light applications. Coatings are provided by Ion Beam Sputtering (IBS) or electron beam evaporation with/without ion assistance coating techniques.

High reflectivity dielectric coatings in the range of 0.19 - 20 µm are available.

Standard specifications

Diameter tolerance	+0/-0.1 mm
Thickness tolerance	±0.1 mm
Clear aperture	>90 %
Surface quality	20-10 S-D
Surface flatness	<λ/8@632.8 nm
Protective chamfers	<0.25 mm x 45°
Measured reflectivity	R>99 % @ AOI=0°, R_{avg}>99 % @ AOI=45°
Coating adhesion and durability	Per MIL-C-675A
Laser damage threshold reports	www.altechna.com/lidt

Measured transmission curve of the standard coating code 2C00



Features

- Provides optimised performance at certain wavelength and certain angle of incidence (AOI)
- Other dimensions are available in small and mass production quantities
- Mass production capabilities: 1'000 pieces per month

Miscellaneous

- Coatings are provided by ion beam sputtering (IBS) or electron beam evaporation with/without ion assistance coating techniques.
- If your application does not require such a wide wavelength range please refer to - HR laser line mirrors

→ Read further

Catalog Items

Wavelength, nm	Reflectivity (average), %	Substrate material	Product ID for AOI=0°	Product ID for AOI=45°	Price
			Ø12.7 x 6 mm		
400-700	>99,0	BK7	1-OS-1-0127-6-[2A00]	1-OS-1-0127-6-[2A45]	82 €
700-950			1-OS-1-0127-6-[2B00]	1-OS-1-0127-6-[2B45]	90 €
750-850			1-OS-1-0127-6-[2C00]	1-OS-1-0127-6-[2C45]	74 €
750-1000			1-OS-1-0127-6-[2D00]	1-OS-1-0127-6-[2D45]	90 €
900-1200			1-OS-1-0127-6-[2E00]	1-OS-1-0127-6-[2E45]	90 €
			Ø25.4 x 6 mm		
400-700	>99,0	BK7	1-OS-1-0254-6-[2A00]	1-OS-1-0254-6-[2A45]	98 €
700-950			1-OS-1-0254-6-[2B00]	1-OS-1-0254-6-[2B45]	105 €
750-850			1-OS-1-0254-6-[2C00]	1-OS-1-0254-6-[2C45]	92 €
750-1000			1-OS-1-0254-6-[2D00]	1-OS-1-0254-6-[2D45]	105 €
900-1200			1-OS-1-0254-6-[2E00]	1-OS-1-0254-6-[2E45]	105 €
			Ø50,8 x 8 mm		
400-700	>99,0	BK7	N/A	1-OS-1-0508-8-[2A45]	230 €
700-950				1-OS-1-0508-8-[2B45]	175 €
700-850				1-OS-1-0508-8-[2C45]	165 €
750-1000				1-OS-1-0508-8-[2D45]	195 €
900-1200				1-OS-1-0508-8-[2E45]	195 €

NOTE:
* If you do not find suitable wavelength or AOI for your application please contact us and we will provide the best solution for you!
* Any of our standard substrates can be coated with these types of coatings
* Curved substrates can also be coated

Related products and accessories

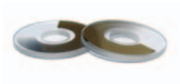
Metallic Coated Round Optics

Refer to page 84

Right-Angle Prisms Retroreflectors

Refer to page 52

Circular Variable Neutral Density Filters



Refer to page 101

5MBM24 - Kinematic Mirror mounts

www.altechna.com

Ultra-Broadband Dielectric Mirrors

Description

Ultra-Broadband Dielectric Mirrors perform high reflection in whole range of 350 nm - 1100 nm and show high average reflection in very wide range of angle of incidence (0°-50°). As maximum GDD reaches about 350 fs^2, mirrors do not cause considerable pulse broadening for 1 ps and shorter pulses*. Due to these features ultra-broadband mirror is a good choice to replace three or more convetional laser line mirrors, especially designed for Nd:YAG and its harmonics.

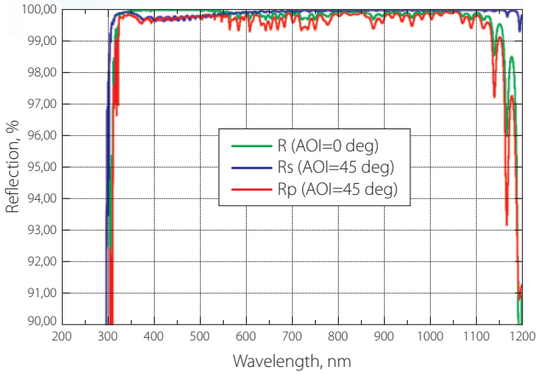
** specific GDD values are indicated in GDD vs. Wavelength curves*

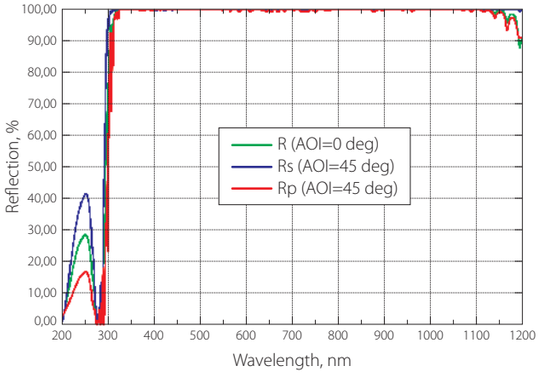
Standard specifications

Diameter tolerance	+0/-0.25 mm
Thickness tolerance	±0.2 mm
Clear aperture	>85 %
Surface quality	20-10 S-D
Surface flatness	<λ/10 @ 632.8 nm
Laser damage threshold	www.altechna.com/lidt

Features

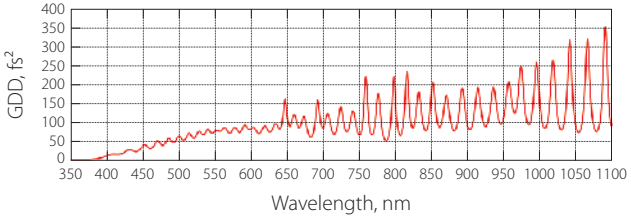
- High reflection in ultra broad wavelength range
- Wide range of acceptable ange of incidence
- High laser induced damage threshold
- Could replace several conventional components



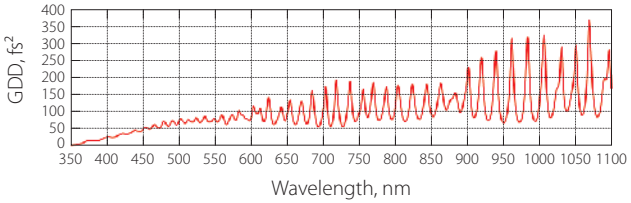


→ Read further

GDD vs. Wavelenght, AOI=0°



GDD vs. Wavelenght, AOI=45°



Catalog Items

Dimensions, mm	Reflectivity (Ravg), %	Agle of Incidence	Wavelength range, nm	Product ID	Price
Ø25.4 x 6.35	>99.0	0°-50°	350 - 1100	1-OS-0254-6[UBBHR]	375 €

Related products and accessories

HR Broad Band Mirrors (BBHR)

Refer to page 59

HR Laser Line Mirrors (HR)

Refer to page 55

Low Loss HR Mirrors

Refer to page 57

Low GDD Ultrafast Mirrors

Refer to page 65

Low GDD Ultrafast Mirrors

Description

Low GDD Ultrafast mirrors are designed for femtosecond applications to provide an optimized performance at certain wavelength and angle of incidence (AOI). This is achieved by careful selection of coating stacks to combine high reflectivity and low GDD value (from -10 fs^2 to 10 fs^2 at design bandwidth) at the same time. Such coatings are used for external beam manipulation applications where pulse broadening effect is undesirable. Low GDD Ultrafast mirrors are intended for Ti:Sapphire, Nd:Glass, Er:Glass or Ytterbium doped host based lasers working in femtosecond regime. Variety of catalogue components allows to choose the right mirror for fundamental wavelength as well as for it's harmonics.

Standard specifications

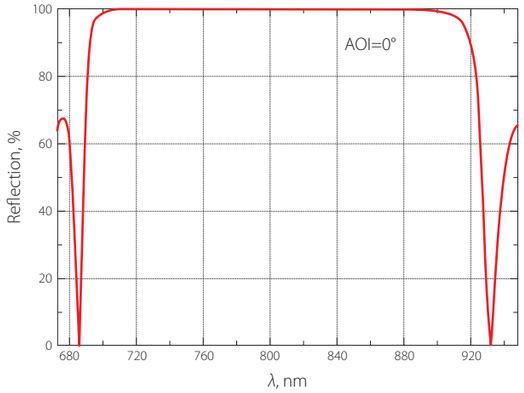
Material	UVFS
Diameter tolerance	+0/-0.1 mm
Thickness tolerance	±0.1 mm
Clear aperture	>90 %
Surface quality	20-10 S-D; 10-5 S-D on request
Surface flatness	<λ/8@632.8 nm
Protective chamfers	<0.25 mm x 45°
Coating adhesion and durability	Per MIL-C-675A
Laser damage threshold reports	www.altechna.com/lidt

Features

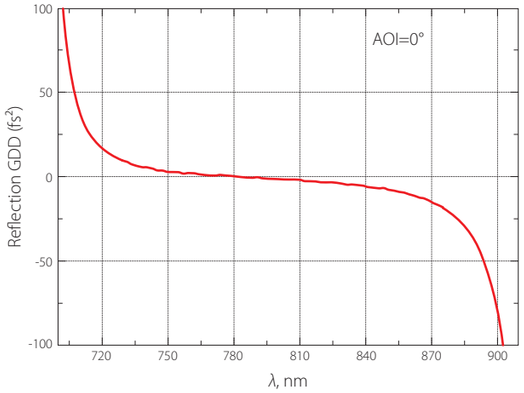
- Other dimensions and wavelengths are available in small and mass production quantities
- GDD values rangesfrom -10 fs^2 to 10 fs^2 at design bandwidth

→ Read further

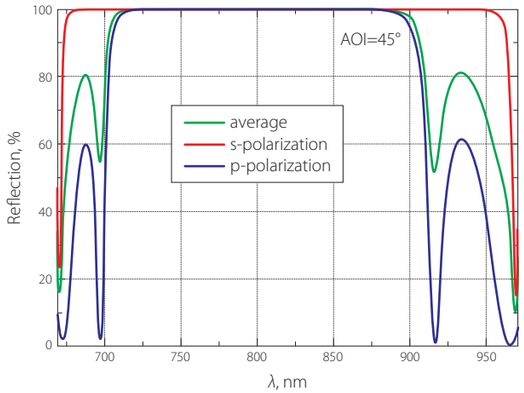
Calculated reflectiion curve of [1K00-GDD] coating



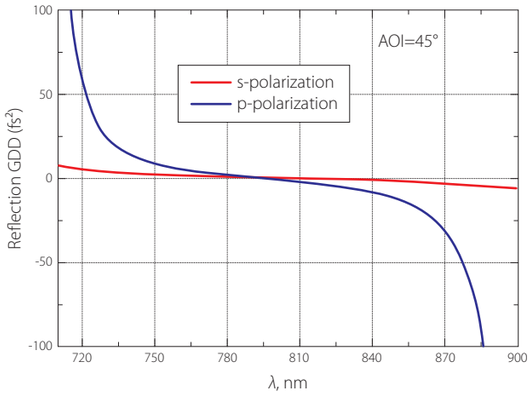
Calculated GDD-reflection values of [1K00-GDD] coating



Calculated reflection curve of [1K45-GDD] coating



Calculated GDD-reflection values of [1K45-GDD] coating



Standard products

Wavelength, nm	Reflectivity (average), %	Product ID for AOI=0°	Product ID for AOI=45°	Price
		Ø12.7 x 5 mm		
250-270	>99,0	1-OS-2-0127-5-[1A00-GDD]	1-OS-2-0127-5-[1A45-GDD]	78 €
340-370	>99,5	1-OS-2-0127-5-[1B00-GDD]	1-OS-2-0127-5-[1B45-GDD]	78 €
380-420		1-OS-2-0127-5-[1C00-GDD]	1-OS-2-0127-5-[1C45-GDD]	68 €
500-532		1-OS-2-0127-5-[1E00-GDD]	1-OS-2-0127-5-[1E45-GDD]	78 €
760-840		1-OS-2-0127-5-[1K00-GDD]	1-OS-2-0127-5-[1K45-GDD]	78 €
1000-1060		1-OS-2-0127-5-[1P00-GDD]	1-OS-2-0127-5-[1P45-GDD]	78 €
		Ø25.4 x 5 mm		
250-270	>99,0	1-OS-2-0245-5-[1A00-GDD]	1-OS-2-0254-5-[1A45-GDD]	94 €
340-370	>99,5	1-OS-2-0245-5-[1B00-GDD]	1-OS-2-0254-5-[1B45-GDD]	94 €
380-420		1-OS-2-0245-5-[1C00-GDD]	1-OS-2-0254-5-[1C45-GDD]	84 €
500-532		1-OS-2-0245-5-[1E00-GDD]	1-OS-2-0254-5-[1E45-GDD]	94 €
760-840		1-OS-2-0245-5-[1K00-GDD]	1-OS-2-0254-5-[1K45-GDD]	94 €
1000-1060		1-OS-2-0245-5-[1P00-GDD]	1-OS-2-0254-5-[1P45-GDD]	94 €

Related products and accessories

Ti:Sapphire Crystals

Refer to page 140

Yb:KGW and Yb:KYW Crystals

Refer to page 149

High Energy Waveplates

Refer to page 109

Gires-Tournois Interferometer Mirrors

Refer to page 72

Variable Reflectivity Mirrors

Description

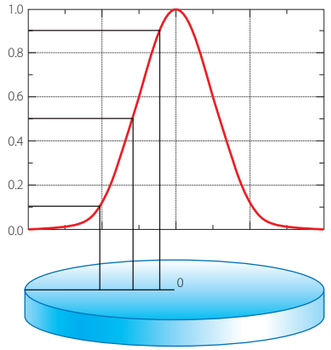
In order to have better beam quality, i.e. in non-stable resonators, variable reflection mirrors can be used. High intensity of the laser beam requires use of components with a high damage threshold. Dielectric coatings are best suited to meet these requirements. *Altechna* offers variable reflectivity mirrors with dielectric coatings, designed for wavelengths in the range from 266 to 2500 nm.

Standard specifications

Material	UVFS
Diameter tolerance	+0/-0.1 mm
Thickness tolerance	±0.1 mm
Clear aperture	>90 %
Surface quality	20-10 S-D
Surface flatness	<λ/8@632.8 nm
Protective chamfers	<0.25 mm x 45°
Parallelism error	<10 arcsec
Laser damage threshold reports	www.altechna.com/lidt

Features

- Improves beam shape and quality
- Variable/locally defined reflection
- Highest available central reflection value R_r (max) – 35 %
- Custom design available (substrate shape, wedge, radius, wavelength)



$$R_r = R_0 \times \exp\left[-2\left(\frac{r}{w_m}\right)^k\right]$$

Function of reflection. Expression:
r – *radius (variable), mm*
R_r – *Reflection (mean), %*
R_0 – *Reflection (center), %*
w_m – *coating 1/e-radius, mm*
k – *order*

Miscellaneous

- Custom design production is also available
- Mass production capabilities: 500 pieces per month
- Check the stock items list for fastest delivery

Catalog Items

Substrate material	Wavelength	Reflectivity R_0	Radius wm	Gaussian order k	Product ID	Price
					Ø25.4 mm x 5 mm	
UVFS	1064 nm	15 -/+0.5 %	2 mm	2	1-OS-2-0254-5-[3H15-VRM]	499 €
		20 -/+0.5 %			1-OS-2-0254-5-[3H15-VRM]	499 €
		25 -/+0.5 %			1-OS-2-0254-5-[3H15-VRM]	499 €
		30 -/+0.5 %			1-OS-2-0254-5-[3H15-VRM]	499 €
		35 -/+0.5 %			1-OS-2-0254-5-[3H15-VRM]	499 €

Related products and accessories

Meniscus Lenses/Substrates

Refer to page 26

Laser Output Coupler

Refer to page 68

Low Loss HR Mirrors

Refer to page 57

Gires-Tournois Interferometer Mirrors

Description

A Gires–Tournois interferometer (GTI) is an optical standing-wave resonator designed for generating chromatic dispersion. GTI mirrors are used mainly for pulse compression in Yb:YAG, Yb:KGW femtosecond lasers, but can be optimized for other wavelengths, for example Ti:Sapphire laser system. Compared to prism or grating pulse compression systems GTI thin film mirrors exhibits lower losses and sensitivity to mechanical misalignment errors, thus enabling higher output power and stability of laser system.

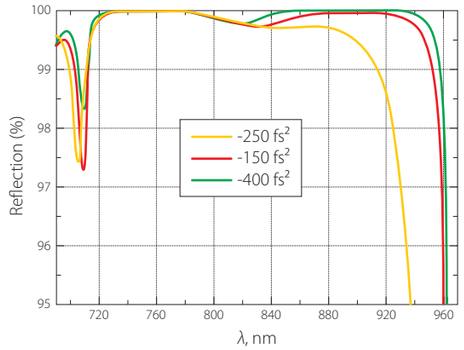
Standard specifications

Diameter tolerance	+0/-0.1 mm
Thickness tolerance	±0.1 mm
Clear aperture	>90 %
Surface quality	20-10 S-D; 10-5 S-D on request
Surface flatness	<λ/8 @ 632.8 nm
Protective chamfers	<0.25 mm x 45°
Measured reflectivity	R_{sp}>99.8 % @ 1010 nm – 1080 nm, AOI=0° - 10°
	R_{sp}>99.8 % @ 700 – 900 nm, AOI=0° - 10°
Coating adhesion and durability	Per MIL-C-675A
Laser damage threshold reports	www.altechna.com/lidt

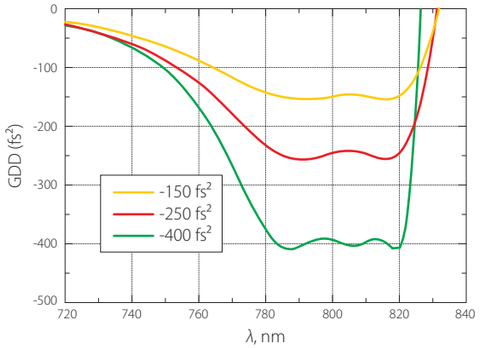
Features

- Reflectivity up to 99,9 %.
- Central wavelength tolerance up to 1 %.
- GDD values ranges from 100 to 1500 fs2 for Yb:KGW, Yb:YAG laser type coatings according to customer specifications.
- Calculated and measured GDD curves are supplied with every batch.

Measured reflection curve for GTI mirror, HR>99.8 %@700-900 nm, GDD@780-820 nm, AOI=0 deg



Simulated GDD curve for GTI mirror, HR>99.8 %@700-900 nm, GDD@780-820 nm, AOI=0 deg

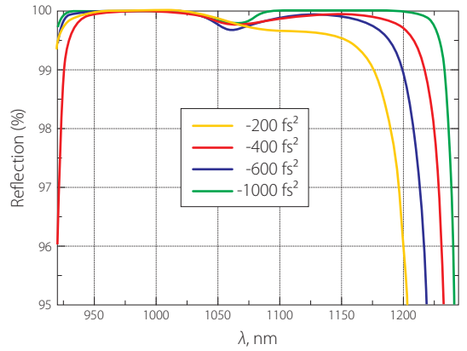


Catalog Items

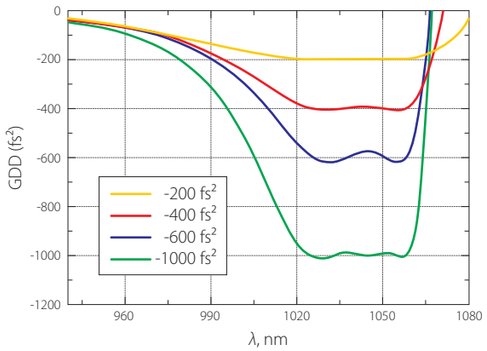
Material	Dimensions, mm	Wavelength range, nm	Average GDD, fs²	AOI, deg	Product ID	Price
UVFS	Ø12.7x5	780 - 820	-150	0 - 10	1-OS-2-0127-5-150-[10A00]	275 €
	Ø25.4x5				1-OS-2-0254-5-150-[10A00]	390 €
	Ø12.7x5		-250		1-OS-2-0127-5-250-[10A00]	275 €
	Ø25.4x5				1-OS-2-0254-5-250-[10A00]	390 €
	Ø12.7x5		-400		1-OS-2-0127-5-400-[10A00]	275 €
	Ø25.4x5				1-OS-2-0254-5-400-[10A00]	390 €
	Ø12.7x5	1020 - 1060	-200		1-OS-2-0127-5-200-[10B00]	275 €
	Ø25.4x5				1-OS-2-0254-5-200-[10B00]	390 €
	Ø12.7x5		-400		1-OS-2-0127-5-400-[10B00]	275 €
	Ø25.4x5				1-OS-2-0254-5-400-[10B00]	390 €
	Ø12.7x5		-600		1-OS-2-0127-5-600-[10B00]	275 €
	Ø25.4x5				1-OS-2-0254-5-600-[10B00]	390 €
	Ø12.7x5		-1000		1-OS-2-0127-5-1000-[10B00]	275 €
	Ø25.4x5				1-OS-2-0254-5-1000-[10B00]	390 €

* If you do not find suitable specifications, please contact us

Measured reflection curve for GTI mirror, HR>99.8 % @930-1150 nm, GDD@1020-1060 nm, AOI=0 deg



Simulated GDD curve for GTI mirror, HR>99.8 % @930-1150 nm, GDD@1020-1060 nm, AOI=0 deg

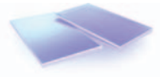


Related products and accessories

Ti:Sapphire Crystals

Refer to page 140

Broadband (Ultrafast) Thin Film Polarizers



Refer to page 124

5BM131 – beamsplitter/mirror mount

www.altechna.com

Wavelength Separators

Description

Wavelength separators are used to separate the spectral regions or specified wavelengths (harmonic components) of the multi-wavelength laser systems by selective spectral reflection, transmission and absorption.

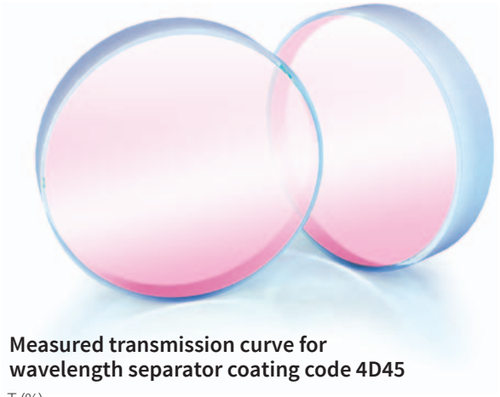
Wavelength separators are used to clean second harmonic from remains of first harmonic: selected wavelengths are reflected while others are transmitted.

Standard specifications

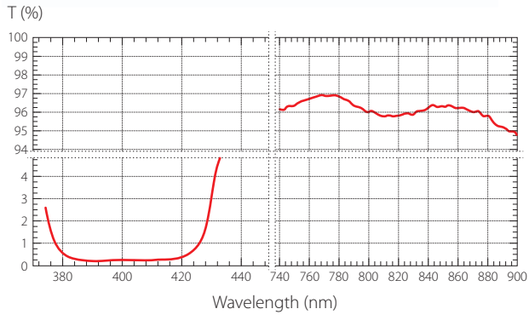
Diameter tolerance	+0/-0.1 mm
Thickness tolerance	±0.1 mm
Clear aperture	>90 %
Surface quality	20-10 S-D
Surface flatness	<λ/8@632.8 nm
Protective chamfers	<0.25 mm x 45°
Coating adhesion and durability	Per MIL-C-675A
Measured reflectivity (average)	R >99.5 % (R >99 % @ 266 nm)
Laser damage threshold reports	www.altechna.com/lidt

Features

- Used to separate the spectral regions or specified wavelengths
- Other dimensions are available in small and mass production quantities
- Mass production capabilities: 1'000 pieces per month



Measured transmission curve for wavelength separator coating code 4D45



Miscellaneous

- Coatings are provided by ion beam sputtering (IBS) or electron beam evaporation with/without ion assistance coating techniques
- Separators for other wavelengths are available on request

Related products and accessories

HR Laser Line Mirrors (HR)

Refer to page 55

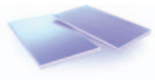
Low Loss HR Mirrors

Refer to page 57

5MBM24 - Kinematic Mirror mounts

www.altechna.com

Thin Film Polarizers



Refer to page 120

Catalog Items

Wavelength separators

Reflected wavelength, nm	Transmitted wavelength (for average polarization), nm	Material	Dimensions	Product ID for AOI=0°	Product ID for AOI=45°	Price
266	T>90 % @ 355 + 532 + 1064	UVFS	Ø25.4x5 mm	1-OS-2-0254-5-[4A00]	1-OS-2-0254-5-[4A45]	90 €
340 - 355	T>92 % @ 510 - 532 + 1020 - 1070	UVFS	Ø12.7 x 5 mm	N/A	1-OS-2-0127-5-[4BC45]	78 €
			Ø25.4 x 5 mm	N/A	1-OS-2-0254-5-[4BC45]	90 €
			Ø50.8 x 6 mm	N/A	1-OS-2-0508-6-[4BC45]	170 €
400	T>95 % @ 800	UVFS	Ø12.7x2 mm	1-OS-2-0127-2-[4D00]	1-OS-2-0127-2-[4D45]	68 €
			Ø25.4x5 mm	1-OS-2-0254-5-[4D00]	1-OS-2-0254-5-[4D45]	80 €
515	T>95 % @ 1030	UVFS	Ø12.7x2 mm	1-OS-2-0127-2-[4E00]	1-OS-2-0127-2-[4E45]	68 €
			Ø25.4x5 mm	1-OS-2-0254-5-[4E00]	1-OS-2-0254-5-[4E45]	80 €
510 - 532	T>90 % @ 1010 - 1070	UVFS	Ø12.7 x 5 mm	N/A	1-OS-2-0127-5-[4EH45]	78 €
			Ø25.4 x 5 mm	N/A	1-OS-2-0254-5-[4EH45]	90 €
			Ø50.8 x 6 mm	N/A	1-OS-2-0508-6-[4EH45]	170 €
532	T>90 % @ 266	UVFS	Ø12.7x2 mm	1-OS-2-0127-2-[4G00]	1-OS-2-0127-2-[4G45]	68 €
			Ø 25.4x5 mm	1-OS-2-0254-5-[4G00]	1-OS-2-0254-5-[4G45]	80 €
532	T>95 % @ 1064	BK7	Ø 12.7x3 mm	1-OS-1-0127-3-[4H00]	1-OS-1-0127-3-[4H45]	68 €
			Ø25.4x6 mm	1-OS-1-0254-6-[4H00]	1-OS-1-0254-6-[4H45]	80 €
(532 + 1064)	T>90 %@ 355	UVFS	Ø12.7x2 mm	1-OS-2-0127-2-[4J00]	1-OS-2-0127-2-[4J45]	105 €
			Ø25.4x5 mm	1-OS-2-0254-5-[4J00]	1-OS-2-0254-5-[4J45]	125 €
(532 + 1064)	T>95 % @ 808	BK7	Ø12.7x3 mm	1-OS-1-0127-3-[4K00]	1-OS-1-0127-3-[4K45]	105 €
			Ø25.4x6 mm	1-OS-1-0254-6-[4K00]	1-OS-1-0254-6-[4K45]	125 €
(750 - 850)	T>95 % @ 532	UVFS	Ø25.4x5 mm	1-OS-2-0254-5-[4L00]	1-OS-2-0254-5-[4L45]	105 €
800	T>95 % @ 400	UVFS	Ø12.7x2 mm	1-OS-2-0127-2-[4M00]	1-OS-2-0127-2-[4M45]	68 €
			Ø25.4x5 mm	1-OS-2-0254-5-[4M00]	1-OS-2-0254-5-[4M45]	80 €
1030	T>95 % @ 515	UVFS	Ø12.7x2 mm	1-OS-2-0127-2-[4P00]	1-OS-2-0127-2-[4P45]	68 €
			Ø25.4x5 mm	1-OS-2-0254-5-[4P00]	1-OS-2-0254-5-[4P45]	80 €
1030	T>95 % @ 940	BK7	Ø12.7x3 mm	1-OS-1-0127-3-[4R00]	1-OS-1-0127-3-[4R45]	105 €
			Ø25.4x6 mm	1-OS-1-0254-6-[4R00]	1-OS-1-0254-6-[4R45]	125 €
1020 - 1080	T>97 % @ 970 - 980	UVFS	Ø12.7x2 mm	1-OS-2-0127-2-[4S00]	1-OS-2-0127-2-[4S45]	225 €
			Ø25.4x5 mm	1-OS-2-0254-5-[4S00]	1-OS-2-0254-5-[4S45]	267 €
			Ø25.4x6 mm	1-OS-2-0254-6-[4S00]	1-OS-2-0254-6-[4S45]	267 €
1064	T>95 % @ 355	UVFS	Ø12.7x2 mm	1-OS-2-0127-2-[4T00]	1-OS-2-0127-2-[4T45]	68 €
			Ø25.4x5 mm	1-OS-2-0254-5-[4T00]	1-OS-2-0254-5-[4T45]	80 €
1064	T>95 % @ 532	BK7	Ø12.7x3 mm	1-OS-1-0127-3-[4V00]	1-OS-1-0127-3-[4V45]	68 €
			Ø25.4x6 mm	1-OS-1-0254-6-[4V00]	1-OS-1-0254-6-[4V45]	80 €
1064	T>95 % @ 400 - 700	BK7	Ø12.7x3 mm	1-OS-1-0127-3-[4W00]	1-OS-1-0127-3-[4W45]	68 €
			Ø25.4x6 mm	1-OS-1-0254-6-[4W00]	1-OS-1-0254-6-[4W45]	80 €
1064	T>95 % @ 808	BK7	Ø12.7x3 mm	1-OS-1-0127-3-[4X00]	1-OS-1-0127-3-[4X45]	68 €
			Ø25.4x6 mm	1-OS-1-0254-6-[4X00]	1-OS-1-0254-6-[4X45]	80 €

Elliptical Flat Mirrors

Description

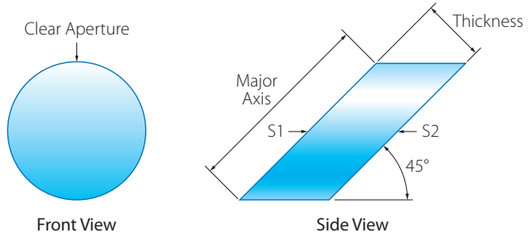
When the maximum possible clear aperture is required, the best choice is elliptical flat mirrors. Due to unique geometry of substrate, the aperture becomes circular when mirror is rotated by 45° around the minor axis. List of standard mirrors contains 16 different items. 4 different sizes, scaling from 12,7 mm up to 50,8 mm, and 4 types of metallic coatings are availabe. The most common aluminum coating features a fair reflection in UV, visible and mid - IR wavelenght ranges. Protected silver coatings assures the highest reflectivity of all metal coated mirrors in the visible wavelength range. Protected gold is the most efficient coating over the entire IR range. However, if higher reflectivity is needed, the best choice is dielectric coated elliptical mirrors; *Altechna* can also offer such custom solutions.

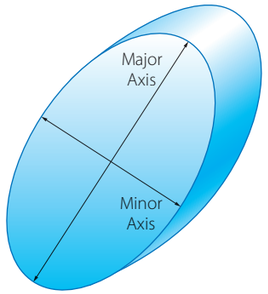
Standard specifications

Material	BK7, UVFS
Diameter tolerance	+0/-0.1 mm
Thickness tolerance	±0.1 mm
Clear aperture	>90 %
Surface quality	40-20 S-D
Surface flatness	<λ/8@632.8 nm
Parallelism error	<30 arcsec
Protective chamfers	<0.25 mm x 45°
Laser damage threshold	
Protected Aluminum	>0.25 J/cm² for 11 ns pulses @ 1064 nm
Protected Silver	>1.8 J/cm² for 11 ns pulses @ 1064 nm
Protected Gold	>0.9 J/cm² for 11 ns pulses @ 1064 nm

Features

- Broad band protected metallic coatings
- Dielectric HR coatings are available
- Circular clear aperture

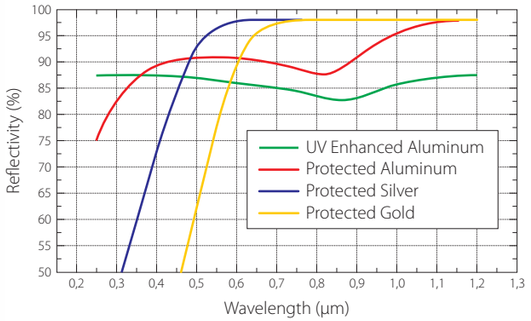




Catalog items

Coatings	Minor axis, mm	Major axis, mm	Thickness, mm	Material	Product ID	Price
UV enhanced Aluminum R_{avg} > 85 % @ 250 nm - 600 nm	12.7	17.96	5.0	UVFS	1-OS-2-127-1796-5-[9AL1]	40 €
	25.4	35.92			1-OS-2-254-3592-5-[9AL1]	50 €
	38.1	53.88	10.0		1-OS-2-381-5388-10-[9AL1]	77 €
	50.8	71.84			1-OS-2-508-7184-10-[9AL1]	99 €
Protected Aluminum R_{avg} > 85 % @ 400 nm - IR	12.7	17.96	5.0	BK7	1-OS-1-127-1796-5-[9AL0]	36 €
	25.4	35.92			1-OS-1-254-3592-5-[9AL0]	45 €
	38.1	53.88	10.0		1-OS-1-381-5388-10-[9AL0]	70 €
	50.8	71.84			1-OS-1-508-7184-10-[9AL0]	90 €
Protected Silver R_{avg} > 96 % @ 550 nm - IR	12.7	17.96	5.0		1-OS-1-127-1796-5-[9AG0]	45 €
	25.4	35.92			1-OS-1-254-3592-5-[9AG0]	50 €
	38.1	53.88	10.0		1-OS-1-381-5388-10-[9AG0]	75 €
	50.8	71.84			1-OS-1-508-7184-10-[9AG0]	95 €
Protected Gold R_{avg} > 96 % @ 750 nm - IR	12.7	17.96	5.0		1-OS-1-127-1796-5-[9AU0]	58 €
	25.4	35.92			1-OS-1-254-3592-5-[9AU0]	65 €
	38.1	53.88	10.0		1-OS-1-381-5388-10-[9AU0]	90 €
	50.8	71.84			1-OS-1-508-7184-10-[9AU0]	115 €

Typical reflectivity of metal coatings



Related products and accessories

HR Laser Line Mirrors (HR)

Refer to page 55

Achromatic (Broadband) Waveplates

Refer to page 111

Gires-Tournois Interferometer Mirrors

Refer to page 72

5MBM24 - Kinematic Mirror mounts

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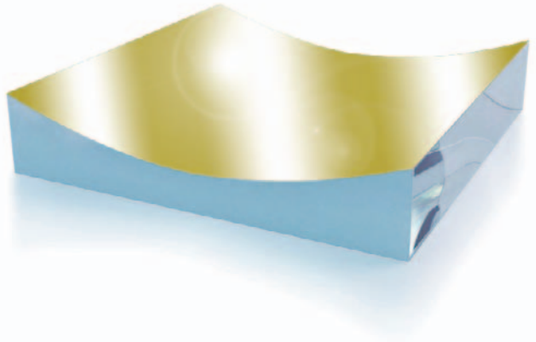
Cylindrical Concave Metallic Coated Mirrors

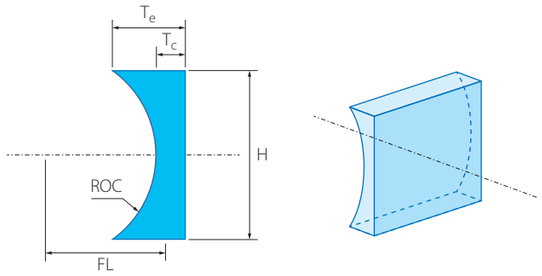


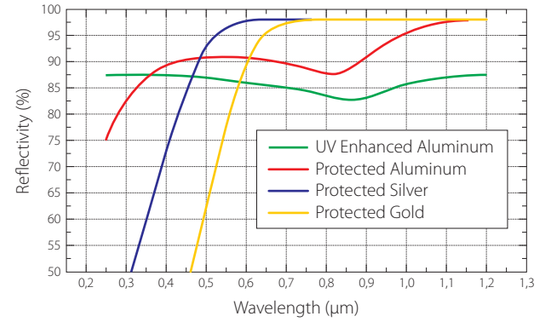
Description

Cylindrical concave metallic coated mirrors are used for focusing light to a thin line without chromatic aberration. Being metallic coated, mirrors work as reflectors in broadband spectral range. Most common application for cylindrical mirrors is either beam expansion or line generation. *Altechna* offers gold, silver and aluminum as standard coatings, but other type mirrors coatings such as chrome, copper, dielectric high reflection or partial reflection are available on request.

Standard specifications

Material	BK7, UVFS
Diameter tolerance	+0/-0.1 mm
Center thickness	3 mm
Thickness tolerance	±0.1 mm
Focal length tolerance	±3 %
Clear aperture	>90 %
Surface quality	40-20 S-D
Surface figure	<λ/4@632.8 nm
Protective chamfers	<0.25 mm x 45°
Laser damage threshold	
Protected Aluminum	>0.25 J/cm² for 11 ns pulses @ 1064 nm
Protected Silver	>1.8 J/cm² for 11 ns pulses @ 1064 nm
Protected Gold	>0.9 J/cm² for 11 ns pulses @ 1064 nm





Features

- Protected gold provides excellent, broadband infrared high reflectance
- Protected silver provides higher reflectance than aluminum throughout the visible and near IR
- Protected Aluminum is economical solution for VIS applications
- UV enhanced Aluminum provides good reflectance over a wide range and are mainly used in UV applications
- Custom made lenses, dielectric HR coatings and positive cylindrical lenses are available

Catalog items

Coatings	Material	Dimensions, mm	Focal length, mm	ROC, mm	Product ID	Price
UV enhanced Aluminum Ravg > 85 % @ 250 nm - 600 nm	UVFS	20 x 20	11,4	-22,9	1-NLC-2-A200-[9AL1]	98 €
			22,9	-45,7	1-NLC-2-B200-[9AL1]	98 €
			40,0	-80,0	1-NLC-2-C200-[9AL1]	98 €
			45,7	-91,4	1-NLC-2-D200-[9AL1]	98 €
			114,3	-228,5	1-NLC-2-E200-[9AL1]	98 €
			228,5	-457	1-NLC-2-F200-[9AL1]	98 €
			457,0	-914,0	1-NLC-2-G200-[9AL1]	98 €
Protected Aluminum Ravg > 85 % @ 400 nm - IR	BK7		25,8	-51,7	1-NLC-1-A200-[9AL0]	84 €
			51,7	-103,4	1-NLC-1-B200-[9AL0]	84 €
			129,2	-258,4	1-NLC-1-D200-[9AL0]	84 €
			258,4	-516,8	1-NLC-1-E200-[9AL0]	84 €
			516,8	-1033,6	1-NLC-1-F200-[9AL0]	84 €
Protected Silver Ravg > 96 % @ 550 nm - IR			25,8	-51,7	1-NLC-1-A200-[9AG0]	90 €
			51,7	-103,4	1-NLC-1-B200-[9AG0]	90 €
			129,2	-258,4	1-NLC-1-D200-[9AG0]	90 €
			258,4	-516,8	1-NLC-1-E200-[9AG0]	90 €
			516,8	-1033,6	1-NLC-1-F200-[9AG0]	90 €
Protected Gold Ravg > 96 % @ 750 nm - IR			25,8	-51,7	1-NLC-1-A200-[9AU0]	98 €
			51,7	-103,4	1-NLC-1-B200-[9AU0]	98 €
			129,2	-258,4	1-NLC-1-D200-[9AU0]	98 €
			258,4	-516,8	1-NLC-1-E200-[9AU0]	98 €
			516,8	-1033,6	1-NLC-1-F200-[9AU0]	98 €

Related products and accessories

HR Broad Band Mirrors (BBHR)

Refer to page 59

Positive Cylindrical Lenses

Refer to page 34

Negative Cylindrical Lenses

Refer to page 36

Powell Lenses

Refer to page 38

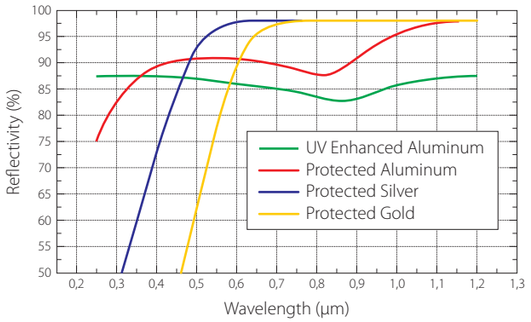
Right Angle Prism Mirror

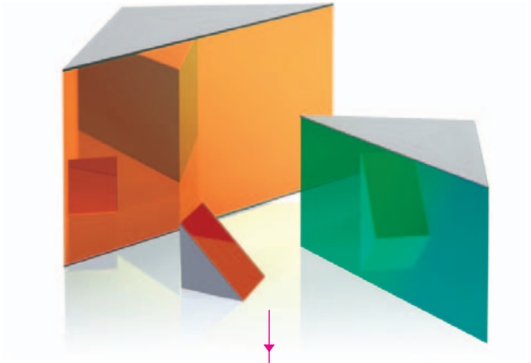
Description

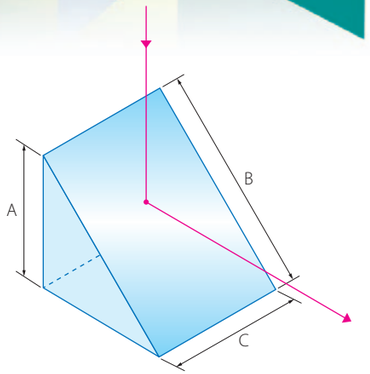
When precise and rigid mounting of bending mirror is needed, right angle prism mirrors provide more advantage than plate mirrors. Mirrors are designed to reflect light that is externally incident to hypotenuse of the prism. Prism angular tolerance of 90 deg angle is in range of several arc minutes (or arc seconds for precision type). Easy mounting does not required further alignment to bend a light at exact 90 deg angle, what makes the mirrors ideal for rigid optical systems. Four standard metallic coatings are provided. The most common is aluminum coating which features a fair reflection in UV, visible and mid - IR wavelength ranges. Other type of aluminum coating is labeled as "UV enhanced", which means it is designed for UV applications. Protected silver coating is best suited for application in visible wavelength range, while protected gold is the most efficient coating over the entire IR range. However, for maximum reflectivity and highest LIDT, the best choice is dielectric coated mirrors. *Altechna* provides wide range of standard design dielectric coatings, but custom coatings are also available.

Features

- Protected gold provides excellent, broadband infrared high reflectance
- Protected silver provides higher reflectance than aluminum throughout the visible and near IR
- Protected aluminum is economical solution for VIS applications
- UV enhanced aluminum provides good reflectance over a wide range and are mainly used in UV applications
- Custom made prisms and dielectric HR coatings are available







Standard specifications

Material	BK7, UVFS
Dimensions tolerance	+0/-0.2 mm
Clear aperture	>80 %
90˚ angle tolerance	±2 arcmin (precision type ±5 arcsec is available)
Pyramidal tolerance	±1 arcmin (precision type ±30 arcsec is available)
Surface quality	40-20 S-D
Surface flatness	<λ/4@632.8 nm
Protective chamfers	<0.25 mm x 45°
Laser damage threshold	
Protected Aluminum	>0.25 J/cm² for 11 ns pulses @ 1064 nm
Protected Silver	>1.8 J/cm² for 11 ns pulses @ 1064 nm
Protected Gold	>0.9 J/cm² for 11 ns pulses @ 1064 nm

Catalog items

Coatings	Material	Dimensions, mm	Product ID	Price
UV enhanced Aluminum R_{avg} > 85 % @ 250 nm - 600 nm	UVFS	12.7 x 12.7 x 12.7	1-PR-2-0127-[9AL1]	46 €
		25.4 x 25.4 x 25.4	1-PR-2-0254-[9AL1]	76 €
Protected Aluminum R_{avg} > 85 % @ 400 nm - IR	BK7	12.7 x 12.7 x 12.7	1-PR-1-0127-[9AL0]	32 €
		25.4 x 25.4 x 25.4	1-PR-1-0254-[9AL0]	48 €
Protected Silver R_{avg} > 96 % @ 550 nm - IR		12.7 x 12.7 x 12.7	1-PR-1-0127-[9AG0]	38 €
		25.4 x 25.4 x 25.4	1-PR-1-0254-[9AG0]	54 €
Protected Gold R_{avg} > 96 % @ 750 nm - IR		12.7 x 12.7 x 12.7	1-PR-1-0127-[9AU0]	52 €
		25.4 x 25.4 x 25.4	1-PR-1-0254-[9AU0]	78 €

Related products and accessories

HR Laser Line Mirrors (HR)

Refer to page 55

HR Broad Band Mirrors (BBHR)

Refer to page 59

6PT169 - Three Angle Prism / Beamsplitter Table

www.altechna.com

5PM57 - Prism Mount

www.altechna.com