

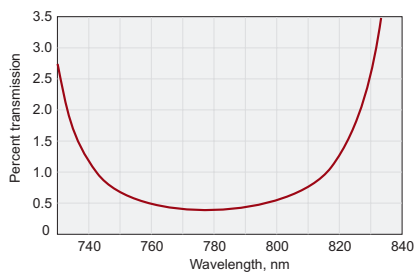
Coatings

HIGH REFLECTIVITY COATINGS

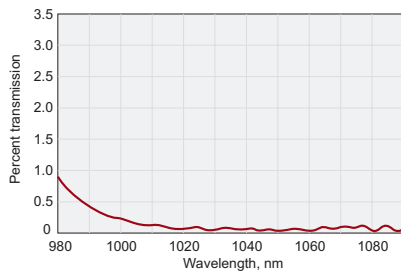
These multilayer coatings are stacks intended to achieve the highest possible reflectivity at specific laser line wavelengths at normal or 45 degrees incidence. Laser line high reflectivity coatings are intended for external beam manipulation applications where even slight losses may be intolerable.

For appropriate coating, please add the number of the chosen coating to the required optical component catalogue number.

LASER LINE COATINGS



1031. HR>99.5% @ 780 nm, AOI = 45°.

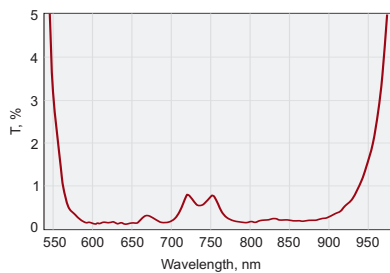


1037. HR>99.8% @ 1064 nm, AOI = 0°.

Wavelength, nm	AOI = 0°		AOI = 45°		Recommended substrate	Damage threshold, J/cm ² in 10 ns
	Reflectivity, %	Coating number	Reflectivity, %	Coating number		
226	>99	1007-i0	>99	1007-i45	UV FS	1
248	>99	1009-i0	>99	1009-i45	UV FS	1.5
266	>99.5	1011-i0	>99	1011-i45	UV FS	1.5
308	>99.5	1013-i0	>99.2	1013-i45	UV FS	1.5
325	>99.5	1015-i0	>99.2	1015-i45	UV FS	1.5
337	>99.7	1017-i0	>99.5	1017-i45	UV FS	1.5
355	>99.7	1019-i0	>99.5	1019-i45	UV FS	1.5
400	>99.7	1021-i0	>99.5	1021-i45	UV FS	1.5
473	>99.7	1023-i0	>99.5	1023-i45	UV FS, BK7	1.5
488-515	>99.7	1024-i0	>99.5	1024-i45	UV FS, BK7	1.5
532	>99.7	1025-i0	>99.5	1025-i45	UV FS, BK7	5
589	>99.7	1027-i0	>99.5	1027-i45	UV FS, BK7	5
616	>99.7	1029-i0	>99.5	1029-i45	UV FS, BK7	5
633	>99.7	1030-i0	>99.5	1030-i45	UV FS, BK7	5
780	>99.7	1031-i0	>99.5	1031-i45	UV FS, BK7	5
800	>99.7	1032-i0	>99.5	1032-i45	UV FS, BK7	5
830	>99.7	1033-i0	>99.5	1033-i45	UV FS, BK7	5
852	>99.7	1034-i0	>99.5	1034-i45	UV FS, BK7	5
946	>99.7	1035-i0	>99.5	1035-i45	UV FS, BK7	5
1064	>99.7	1037-i0	>99.5	1037-i45	UV FS, BK7	5
1320	>99.7	1039-i0	>99.5	1039-i45	UV FS, BK7	1.5
1550	>99.7	1045-i0	>99.5	1045-i45	UV FS, BK7	1.5
2000	>99	1047-i0	>99	1047-i45	UV FS, Sapphire	1.5
2100	>99	1049-i0	>99	1049-i45	UV FS, Sapphire	1.5

Contact us for other wavelengths and AOI's values.

BROADBAND COATINGS



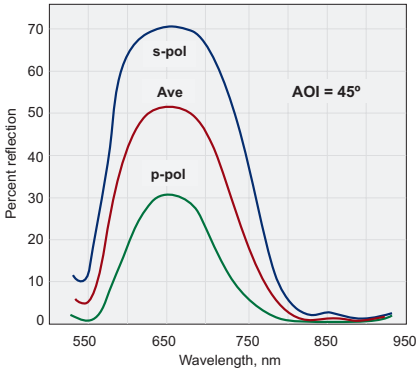
1130. HR>99% @ 600-900nm, AOI= 0°.

Wavelength, nm	AOI = 0°		AOI = 45°		Recommended substrate	Damage threshold, J/cm ² in 10 ns
	Reflectivity, %	Coating number	Reflectivity, %	Coating number		
220-250	>99	1106-i0	>99	1106-i45	UV FS	1
260-340	>99	1110-i0	>99	1110-i45	UV FS	1
350-450	>99	1114-i0	>99	1114-i45	UV FS	1
420-680	>99	1116-i0	>99	1116-i45	UV FS, BK7	1
600-900	>99	1130-i0	>99	1130-i45	UV FS, BK7	1
720-880	>99	1132-i0	>99	1132-i45	UV FS, BK7	1
760-840	>99	1133-i0	>99	1133-i45	UV FS, BK7	1
900-1100	>99	1142-i0	>99	1142-i45	UV FS, BK7	1.5
1100-1400	>99	1144-i0	>99	1144-i45	UV FS, BK7	1.5

Contact us for other wavelengths and AOI's values.

PARTIAL REFLECTING COATINGS

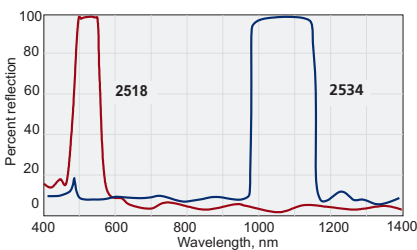
Partial reflecting coatings are durable multilayer dielectric coatings intended for efficient beam splitting as well as for output coupling in laser cavities. They are used in high power laser applications. Please refer to the Substrates for Laser Mirrors or Windows section for substrates for these coatings.



Wavelength, nm	Reflectivity, %	Coating number		Recommended substrate	Damage threshold, J/cm ² in 10 ns
		AOI = 0°	AOI = 45°		
248	25±3	2012-i0	2012-i45	UV FS	1
	50±3	2015-i0	2015-i45		
	75±3	2017-i0	2017-i45		
266	25±3	2022-i0	2022-i45	UV FS	1
	50±3	2025-i0	2025-i45		
	75±3	2027-i0	2027-i45		
308	25±3	2032-i0	2032-i45	UV FS	1
	50±3	2035-i0	2035-i45		
	75±3	2037-i0	2037-i45		
355	25±3	2042-i0	2042-i45	UV FS	2
	50±3	2045-i0	2045-i45		
	75±3	2047-i0	2047-i45		
400	25±3	2052-i0	2052-i45	UV FS	3
	50±3	2055-i0	2055-i45		
	75±3	2057-i0	2057-i45		
532	25±3	2062-i0	2062-i45	UV FS, BK7	3
	50±3	2065-i0	2065-i45		
	75±3	2067-i0	2067-i45		
633	25±3	2069-i0	2069-i45	UV FS, BK7	1.5
	50±3	2070-i0	2070-i45		
	75±3	2071-i0	2071-i45		
800	25±3	2072-i0	2072-i45	UV FS, BK7	3
	50±3	2075-i0	2075-i45		
	75±3	2077-i0	2077-i45		
852	25±3	2079-i0	2079-i45	UV FS, BK7	1
	50±3	2080-i0	2080-i45		
	75±3	2081-i0	2081-i45		
1064	25±3	2082-i0	2082-i45	UV FS, BK7	3
	50±3	2085-i0	2085-i45		
	75±3	2087-i0	2087-i45		
1550	25±3	2089-i0	2089-i45	UV FS, BK7	2
	50±3	2090-i0	2090-i45		
	75±3	2091-i0	2091-i45		

Contact us for other wavelengths and AOI's values.

LASER HARMONIC SEPARATORS



These harmonic separators comprise a dichroic reflector coating and should be applied on the front surface of high precision windows. They are used to separate the various harmonic components of frequency

doubled laser systems by selective spectral reflection and transmission. In all cases one wavelength is selected out by reflection and the other wavelengths are transmitted.

Wavelength, nm	AOI = 0°			AOI = 45°			Recommended substrate	Damage threshold, J/cm ² in 10 ns
	R, %	T, %	Coating number	R, %	T, %	Coating number		
200-220 / 390-450	>90.0	>85	2506-i0	>90.0	>80	2506-i45	UV FS	1
355 / 532+1064	>99.0	>93	2510-i0	>99.0	>90	2510-i45	UV FS	1
380-420 / 720-820	>99.0	>90	2514-i0	>99.0	>90	2514-i45	UV FS, BK7	1
532 / 1064	>99.5	>95	2518-i0	>99.5	>95	2518-i45	UV FS, BK7	1
600 / 1200	>99.5	>95	2522-i0	>99.5	>95	2522-i45	UV FS, BK7	2
800 / 400	>99.5	>90	2526-i0	>99.5	>90	2526-i45	UV FS, BK7	2
1064 / 400-700	>99.5	>85	2530-i0	>99.5	>80	2530-i45	UV FS, BK7	2
1064 / 532	>99.5	>93	2534-i0	>99.5	>90	2534-i45	UV FS, BK7	2

Contact us for other wavelengths and AOI's values.

ANTI-REFLECTION COATINGS

These multilayer anti-reflection coatings are designed for reducing the reflectivity of a component to near-zero for one very specific wavelength. Therefore, valuable laser energy is efficiently transferred through complex

optical systems rather than being lost to glare and scatter. Our AR coatings are intended for use at normal incidence, and when used in this way will achieve maximum efficiency transmission.

LASER LINE ANTI-REFLECTION COATINGS

STANDARD LASER LINE ANTI-REFLECTION COATINGS

Wavelength, nm	Reflection per surface (AOI=0°)	Laser Damage Threshold, J/cm ²	Coating suffix	Price, EUR	
				Ø25.4	Ø50.8
266	R<0.4%	1	AR266	45	56
333 – 353	R<0.5%	3	AR343	29	50
355	R<0.25%	3	AR355	29	50
380 – 420	R<0.5%	3	AR400	29	50
500 – 530	R<0.3%	5	AR515	29	50
532	R<0.2%	5	AR532	29	50
760 – 840	R<0.4%	8	AR800	35	56
1000 – 1060	R<0.3%	10	AR1030	29	50
1064	R<0.2%	10	AR1064	29	50

IBS LASER LINE ANTI-REFLECTION COATINGS

Wavelength, nm	Reflection per surface (AOI=0°)	Laser Damage Threshold, J/cm ²	Coating suffix	Price, EUR	
				Ø25.4	Ø50.8
333 – 353	R<0.2%	4	AR343HT	135	250
355	R<0.2%	4	AR355HT	135	250
380 – 420	R<0.2%	4	AR400HT	105	180
500 – 530	R<0.1%	7	AR515HT	105	180
532	R<0.1%	7	AR532HT	105	180
760 – 840	R<0.1%	10	AR800HT	105	180
1000 – 1060	R<0.1%	15	AR1030HT	105	180
1064	R<0.1%	15	AR1064HT	105	180

OTHER LASER LINE ANTI-REFLECTION COATING OPTIONS

Wavelength, nm	Damage threshold, J/cm ² in 10 ns	AOI = 0°		AOI = 45°	
		Reflectivity, %	Coating number	Reflectivity, %	Coating number
193	1	< 1.0	3005-i0	<2.0	3005-i45
248	1.5	< 0.8	3007-i0	<1.5	3007-i45
266	1.5	< 0.4	3009-i0	<1.0	3009-i45
308	1.5	<0.3	3011-i0	<0.6	3011-i45
343	2	<0.25	3014-i0	<0.5	3014-i45
351 – 355	2	< 0.25	3015-i0	<0.5	3015-i45
400	2	< 0.25	3017-i0	<0.5	3017-i45
488 – 514	2	< 0.3	3021-i0	<0.5	3021-i45
515	4	< 0.2	3023-i0	<0.5	3023-i45
532	4	< 0.2	3025-i0	<0.5	3025-i45
633 – 650	4	< 0.25	3027-i0	<0.5	3027-i45
780	5	< 0.2	3031-i0	<0.5	3031-i45
800	5	< 0.2	3033-i0	<0.5	3033-i45
850	5	< 0.2	3035-i0	<0.5	3035-i45
1030	5	< 0.2	3036-i0	<0.5	3036-i45
1064	5	< 0.2	3037-i0	<0.5	3037-i45
1320	5	<0.3	3041-i0	<0.5	3041-i45
1547	4	<0.5	3045-i0	<1.0	3045-i45

Contact us for other wavelengths and AOI's values.

DUAL BAND ANTI-REFLECTION COATINGS

STANDARD DUAL BAND ANTI-REFLECTION COATINGS

Wavelength, nm	Reflection per surface (AOI=0°)	Laser Damage Threshold, J/cm ²	Coating suffix	Price, EUR	
				Ø25.4	Ø50.8
515 + 1030	R<0.5%	4	ARD1030	35	56
532 + 1064	R<0.5%	4	ARD1064	35	56

IBS DUAL BAND ANTI-REFLECTION COATINGS

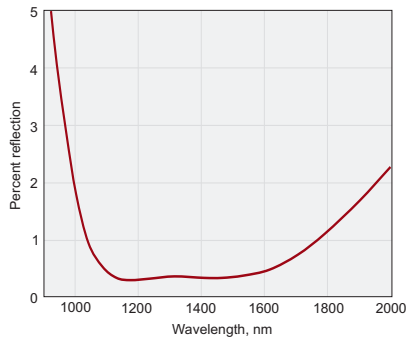
Wavelength, nm	Reflection per surface (AOI=0°)	Laser Damage Threshold, J/cm ²	Coating suffix	Price, EUR	
				Ø25.4	Ø50.8
400 + 800	R<0.2%	4	ARD800HT	125	205
515 + 1030	R<0.1%	6	ARD1030HT	115	195
532 + 1064	R<0.1%	6	ARD1064HT	115	195

OTHER DUAL BAND ANTI-REFLECTION COATING OPTIONS

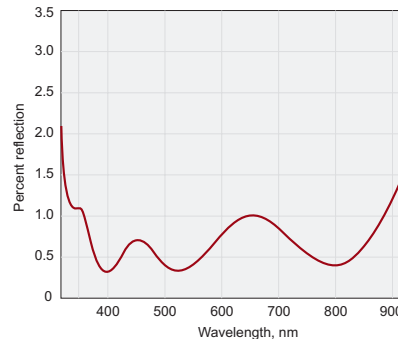
Wavelength, nm	Damage threshold, J/cm ² in 10 ns	AOI = 0°		AOI = 45°	
		Reflectivity, %	Coating number	Reflectivity, %	Coating number
266 + 532	1.5	<0.5	3106-i0	<1.0	3106-i45
355 + 532	2	<0.5	3110-i0	<1.0	3110-i45
355 + 1064	2	<0.5	3114-i0	<1.0	3114-i45
400 + 800	3	<0.5	3118-i0	<1.0	3118-i45
515 + 1030	4	<0.5	3121-i0	<1.0	3121-i45
532 + 1064	4	<0.5	3122-i0	<1.0	3122-i45
670 + 1064	4	<0.5	3126-i0	<1.0	3126-i45
808 + 1064	4	<0.5	3127-i0	<1.0	3127-i45
1064 + 1320	4	<0.5	3130-i0	<1.0	3130-i45
1064 + 1570	3	<0.5	3134-i0	<1.0	3134-i45

Contact us for other wavelengths and AOI's values.

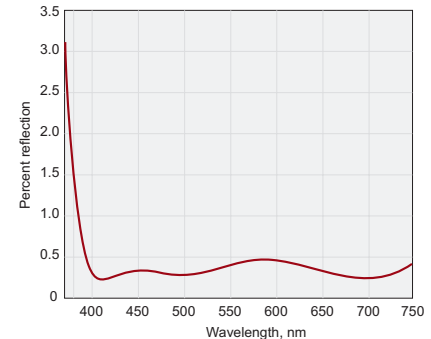
BROADBAND ANTI-REFLECTION COATINGS



ARB1375. R<0.7% @ 1050–1700 nm, AOI=0°.



ARB625. R<1.5% @ 350–900 nm, AOI = 0°.



ARB550. R<0.9% @ 400–700 nm, AOI = 0°.

STANDARD BROADBAND ANTI-REFLECTION COATINGS

Wavelength, nm	Reflection per surface (AOI=0°)	Laser Damage Threshold, J/cm ²	Coating suffix	Price, EUR	
				Ø25.4	Ø50.8
210 – 400	R<2%	1	ARB300	70	85
400 – 700	R<0.9%	2	ARB550	56	67
350 – 900	R<1.5%	2	ARB625	60	78
650 – 1100	R<0.7%	3	ARB825	61	72
700 – 900	R<0.5%	3	ARB800	50	68
1050 – 1700	R<0.7%	2	ARB1375	76	89

IBS BROADBAND ANTI-REFLECTION COATINGS

Wavelength, nm	Reflection per surface (AOI=0°)	Laser Damage Threshold, J/cm ²	Coating suffix	Price, EUR	
				Ø25.4	Ø50.8
450 – 650	R<0.2%	3	ARB550HT	135	215
500 – 700	R<0.2%	4	ARB600HT	115	195
700 – 900	R<0.1%	5	ARB800HT	115	195
900 – 1100	R<0.1%	5	ARB1000HT	115	195

OTHER BROADBAND ANTI-REFLECTION COATING OPTIONS

OPTICAL
COMPONENTS

NONLINEAR & LASER
CRYSTALS

ND:YAG LASERLINE
COMPONENTS

FEMTOLINE
COMPONENTS

OPTICAL
SYSTEMS

OPTO-MECHANICAL
COMPONENTS

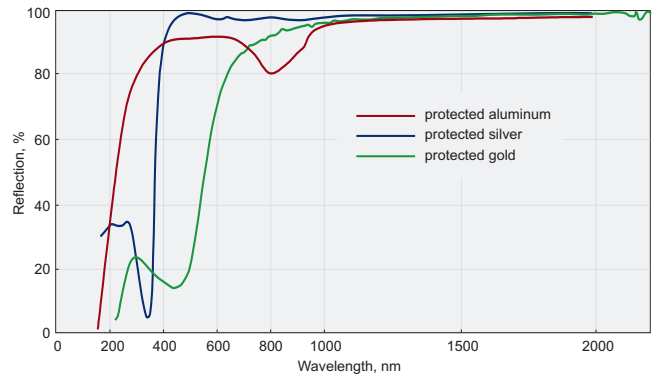
Wavelength, nm	Damage threshold, J/cm ² in 10 ns	AOI = 0°		AOI = 45°	
		Reflectivity, %	Coating number	Reflectivity, %	Coating number
210 – 400	1.5	<2.0	3205-i0	<3.0	3205-i45
250 – 350	1.5	<1.2	3207-i0	<2.5	3207-i45
300 – 400	1.5	<1.0	3209-i0	<2.0	3209-i45
350 – 500	2.0	<0.8	3211-i0	<1.6	3211-i45
350 – 900	2.0	<1.5	3213-i0	<3.0	3213-i45
400 – 550	2.5	<0.4	3215-i0	<0.8	3215-i45
400 – 700	3.0	<0.9	3217-i0	<1.8	3217-i45
420 – 680	3.0	<0.5	3219-i0	<1.0	3219-i45
450 – 750	3.0	<0.5	3221-i0	<1.0	3221-i45
500 – 800	3.0	<0.6	3223-i0	<1.2	3223-i45
500 – 1000	3.0	<1.5	3224-i0	<3.0	3224-i45
600 – 900	3.0	<0.7	3225-i0	<1.2	3225-i45
700 – 900	3.0	<0.5	3227-i0	<1.0	3227-i45
800 – 1200	2.5	<0.7	3229-i0	<1.4	3229-i45
1000 – 1400	2.0	<0.7	3231-i0	<1.4	3231-i45
1050 – 1700	2.0	<1.0	3232-i0	<1.5	3232-i45
1300 – 1700	2.0	<0.7	3233-i0	<1.4	3233-i45
1500 – 2000	1.5	<0.7	3235-i0	<1.4	3235-i45

Contact us for other wavelengths and AOI's values.

METALLIC COATINGS

Protected metallic coatings provide a moderate level of reflection over a very broad spectral range and are widely used as mirrors. These coatings are protected by a thin layer of dielectric material in order to make them durable. Enhanced metallic coatings provide greater reflection across the operating bandwidth. These coatings are enhanced by adding a multilayer dielectric stack.

Metal coatings modify the state of polarization of an incident beam of light and are therefore inappropriate for most polarization sensitive applications.



FEATURES

- › Protected gold
- › Protected aluminium
- › Protected silver
- › Enhanced aluminium

Wavelength, nm	Average reflection, %	Type	Laser Induced Damage Threshold at 1064 nm, 50 Hz, 11 nsec, J/cm ²	Coating number	Price, EUR	
					Ø25	Ø50
250-350	>88	UV enhanced aluminium	0.25	0005	34	52
450-650	>91	VIS enhanced aluminium	0.25	0010	25	40
300-IR	>86	Protected aluminium	0.25	0015	17	28
400-IR	>96	Protected silver	1.8	0025	56	76
900-IR	>98	Protected gold	1.0	0030	82	107

Please contact us for other wavelengths and AOI's.