

## Dual Band Mirrors

Substrate material: **UV grade Fused Silica**

Size – **Ø12.7 × 3 mm**

| Wavelength, nm | R, % (s+p)/2<br>AOI=0° / AOI=45° | Catalogue number |          | Price, EUR<br>AOI=0° / AOI=45° |
|----------------|----------------------------------|------------------|----------|--------------------------------|
|                |                                  | AOI=0°           | AOI=45°  |                                |
| 532+1064       | 99.8 / 99.5                      | 061-5306-i0      | 061-5306 | 109 / 109                      |
| 633+1064       | 99.8 / 99.5                      | 061-6306-i0      | 061-6306 | 109 / 109                      |
| 355+532        | 99.8 / 99.5                      | 061-3553-i0      | 061-3553 | 115 / 115                      |

Size – **Ø25.4 × 6 mm**

| Wavelength, nm | R, % (s+p)/2<br>AOI=0° / AOI=45° | Catalogue number |             | Price, EUR<br>AOI=0° / AOI=45° |
|----------------|----------------------------------|------------------|-------------|--------------------------------|
|                |                                  | AOI=0°           | AOI=45°     |                                |
| 532+1064       | 99.8 / 99.5                      | 062-5306-i0      | 062-5306    | 134 / 134                      |
|                | 99.9 / 99.9                      | 062-5306HHR-i0   | 062-5306HHR | 180 / 180                      |
| 633+1064       | 99.8 / 99.5                      | 062-6306-i0      | 062-6306    | 134 / 134                      |
| 355+532        | 99.8 / 99.5                      | 062-3553-i0      | 062-3553    | 139 / 139                      |

Size – **Ø50.8 × 8 mm**

| Wavelength, nm | R, % (s+p)/2<br>AOI=0° / AOI=45° | Catalogue number |          | Price, EUR<br>AOI=0° / AOI=45° |
|----------------|----------------------------------|------------------|----------|--------------------------------|
|                |                                  | AOI=0°           | AOI=45°  |                                |
| 532+1064       | 99.8 / 99.5                      | 065-5306-i0      | 065-5306 | 209 / 209                      |
| 633+1064       | 99.8 / 99.5                      | 065-6306-i0      | 065-6306 | 209 / 209                      |
| 355+532        | 99.8 / 99.5                      | 065-3553-i0      | 065-3553 | 215 / 215                      |

Size – **Ø76.2 × 12.7 mm**

| Wavelength, nm | R, % (s+p)/2<br>AOI=0° / AOI=45° | Catalogue number |          | Price, EUR<br>AOI=0° / AOI=45° |
|----------------|----------------------------------|------------------|----------|--------------------------------|
|                |                                  | AOI=0°           | AOI=45°  |                                |
| 532+1064       | 99.8 / 99.5                      | 067-5306-i0      | 067-5306 | 318 / 318                      |
| 633+1064       | 99.8 / 99.5                      | 067-6306-i0      | 067-6306 | 318 / 318                      |
| 355+532        | 99.8 / 99.5                      | 067-3553-i0      | 067-3553 | 323 / 323                      |

### RELATED PRODUCTS

Laser Line and  
Dual Laser Line  
Mirrors of other  
wavelengths

See page 1.17



Metal Coated Mirrors

See page 1.20

## LASER HARMONIC SEPARATORS

- Offered on Ø 0.5 or 1 inch substrates of BK7 or UV FS with surface flatness  $\lambda/10$

Harmonic separators are dichroic beamsplitters that reflect one wavelength and transmit the others. Reflectance is higher than 99.5% for the wavelength of interest and transmittance is at least 90% for the rejected wavelengths. The rear surface of harmonic separators is antireflection coated.

### SUBSTRATE

|                     |                                      |
|---------------------|--------------------------------------|
| Material            | UV grade Fused Silica or BK7 glass   |
| S1 Surface Flatness | $\lambda/10$ typical at 633 nm       |
| S1 Surface Quality  | 20–10 scratch & dig (MIL-PRF-13830B) |
| S2 Surface Flatness | $\lambda/10$ typical at 633 nm       |
| S2 Surface Quality  | 20–10 scratch & dig (MIL-PRF-13830B) |
| Diameter Tolerance  | +0.00 mm -0.12 mm                    |
| Thickness Tolerance | $\pm 0.25$ mm                        |
| Parallelism         | < 30 arcsec                          |
| Chamfer             | 0.3 mm at 45° typical                |

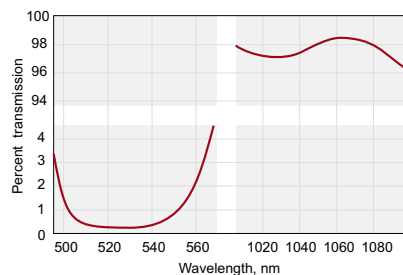
### COATING

|                                 |                                                      |
|---------------------------------|------------------------------------------------------|
| Technology                      | Electron beam multilayer dielectric                  |
| Adhesion and Durability         | Per MIL-C-675A. Insoluble in lab solvents            |
| Clear Aperture                  | Exceeds central 85% of diameter                      |
| Damage Threshold:               |                                                      |
| BK7                             | >5 J/cm <sup>2</sup> , 8 nsec pulse, 1064 nm typical |
| UV FS                           | >8 J/cm <sup>2</sup> , 8 nsec pulse, 1064 nm typical |
| Coated Surface Flatness         | $\lambda/10$ at 633 nm over clear aperture           |
| Back side antireflection coated | AOI 45°, R<0.5%<br>AOI 0°, R<0.1%                    |

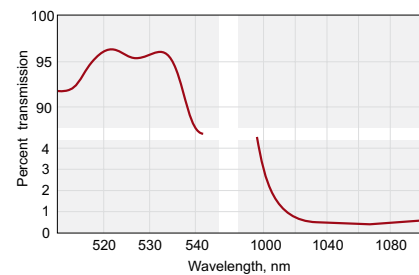
### RELATED PRODUCTS

Pellin-Broca Prisms

See page 1.40



**031-5105.**  
HR > 99.5% @ 532 nm, HT > 95% @ 1064 nm, AOI = 45°



**031-6500.**  
HR > 99.5% @ 1064 nm, HT > 93% @ 532 nm, AOI = 0°

| Reflected wavelength,<br>nm, R > 99.5% | Transmitted<br>wavelength, nm | Transmission,<br>% | AOI,<br>deg | Substrate<br>material | Code     |          | Price, EUR<br>Ø12.7 / Ø25.4 |
|----------------------------------------|-------------------------------|--------------------|-------------|-----------------------|----------|----------|-----------------------------|
| 355                                    | 1064                          | >95                | 0           | UV FS                 | 041-3100 | 042-3100 | 115 / 145                   |
| 355                                    | 1064                          | >95                | 45          | UV FS                 | 041-3105 | 042-3105 | 115 / 145                   |
| 355                                    | 532                           | >95                | 0           | UV FS                 | 041-3500 | 042-3500 | 115 / 145                   |
| 355                                    | 532                           | >95                | 45          | UV FS                 | 041-3505 | 042-3505 | 115 / 145                   |
| 355                                    | 532+1064                      | >90                | 0           | UV FS                 | 041-3510 | 042-3510 | 125 / 155                   |
| 355                                    | 532+1064                      | >90                | 45          | UV FS                 | 041-3515 | 042-3515 | 125 / 155                   |
| 532                                    | 1064                          | >95                | 0           | BK7                   | 031-5100 | 032-5100 | 90 / 115                    |
| 532                                    | 1064                          | >95                | 45          | BK7                   | 031-5105 | 032-5105 | 90 / 115                    |
| 532                                    | 1064                          | >95                | 0           | UV FS                 | 041-5100 | 042-5100 | 115 / 145                   |
| 532                                    | 1064                          | >95                | 45          | UV FS                 | 041-5105 | 042-5105 | 115 / 145                   |
| 1064                                   | 532                           | >93                | 0           | BK7                   | 031-6500 | 032-6500 | 95 / 120                    |
| 1064                                   | 532                           | >93                | 45          | BK7                   | 031-6505 | 032-6505 | 95 / 120                    |
| 1064                                   | 532                           | >93                | 0           | UV FS                 | 041-6500 | 042-6500 | 120 / 150                   |
| 1064                                   | 532                           | >93                | 45          | UV FS                 | 041-6505 | 042-6505 | 120 / 150                   |

## HOUSING ACCESSORIES

Adapter for  
Beamsplitter at 45°  
840-0116

See page 8.76



Kinematic Mirror and  
Beamsplitter Mount  
840-0020

See page 8.58



## LASER OUTPUT COUPLERS

An output coupler is a partially reflecting dielectric mirror used in a laser cavity. It transmits a part of the circulating intracavity power for generating a useful output from the laser. A low transmission output coupler leads to a low laser threshold, but also possibly to poor laser efficiency if the losses due to output coupling do not dominate over other parasitic losses in the laser cavity. The output coupler transmission is often chosen to maximize the achieved output power, although its optimum value may be lower or higher if there are other design purposes (minimizing the intracavity intensities or suppressing Q-switching instabilities in a passively mode-locked laser).

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| S1 Surface Quality  | 20–10 scratch & dig (MIL-PRF-13830B) |
| S2 Surface Flatness | $\lambda/10$ typical at 633 nm       |
| S2 Surface Quality  | 20–10 scratch & dig (MIL-PRF-13830B) |
| Diameter Tolerance  | +0.00 mm -0.12 mm                    |
| Thickness Tolerance | $\pm 0.25$ mm                        |
| Parallelism         | 30 arcsec                            |
| Chamfer             | 0.3 mm at 45° typical                |

### COATING

|                                 |                                                      |
|---------------------------------|------------------------------------------------------|
| Technology                      | Electron beam multilayer dielectric                  |
| Adhesion and Durability         | Per MIL-C-675A. Insoluble in lab solvents            |
| Clear Aperture                  | Exceeds central 85% of diameter                      |
| Damage Threshold:               |                                                      |
| BK7                             | >3 J/cm <sup>2</sup> , 8 nsec pulse, 1064 nm typical |
| UV FS                           | >6 J/cm <sup>2</sup> , 8 nsec pulse, 1064 nm typical |
| Coated Surface Flatness         | $\lambda/10$ at 633 nm over clear aperture           |
| Angle of Incidence              | 0°–8° (normal)                                       |
| Back side antireflection coated | R<0.2%                                               |