

MIRRORS



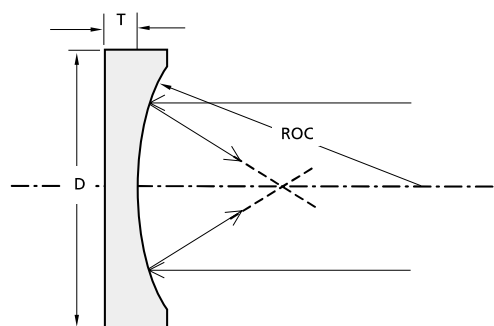
SUBSTRATES FOR LASER MIRRORS

made from BK7 glass, fused silica or UV grade fused silica

polished to high surface quality

standard substrates are available with a variety of radii of concave curvature

We offer three substrate materials, spanning a range of thermal expansion coefficients. For applications in which thermal shock is absent and thermal stability is not critical, BK7 glass is a suitable and inexpensive material. For applications requiring high thermal stability or involving severe thermal shock, fused silica and UV grade fused silica is a good choice.



SPECIFICATIONS

| | |
|------------------------|-----------------------|
| Material | BK7, FS, UV FS |
| Front surface quality | 20-10 scratch & dig |
| Front surface flatness | $\lambda/10$ @ 633 nm |
| Rear surface | pitch polished |
| Diameter tolerance | +0.00, -0.12 mm |
| Thickness tolerance | ± 0.2 mm |

Presented substrates are uncoated. For appropriate coating please refer to the Coatings section of EK SMA catalogue.

We provide a wide selection of shapes and sizes, with plano, spherical or cylindrical surfaces.

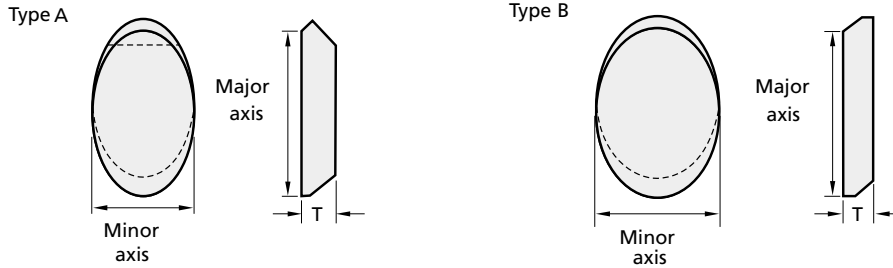
| BK7 | Catalogue number | | Diameter D, mm | | Thickness T, mm | ROC, mm |
|----------|------------------|----------|----------------|---------|-----------------|-----------------|
| | UV FS | FS | Metric | English | | |
| 010-0105 | 010-1105 | 010-3105 | 12.5 | 12.7 | 3.0 | 100 |
| 010-0110 | 010-1110 | 010-3110 | 12.5 | 12.7 | 3.0 | 250 |
| 010-0115 | 010-1115 | 010-3115 | 12.5 | 12.7 | 3.0 | 500 |
| 010-0120 | 010-1120 | 010-3120 | 12.5 | 12.7 | 3.0 | 1000 |
| 010-0125 | 010-1125 | 010-3125 | 12.5 | 12.7 | 3.0 | ∞ (flat) |
| 010-0205 | 010-1205 | 010-3205 | 25.0 | 25.4 | 6.0 | 250 |
| 010-0210 | 010-1210 | 010-3210 | 25.0 | 25.4 | 6.0 | 500 |
| 010-0215 | 010-1215 | 010-3215 | 25.0 | 25.4 | 6.0 | 750 |
| 010-0230 | 010-1220 | 010-3220 | 25.0 | 25.4 | 6.0 | 1000 |
| 010-0235 | 010-1225 | 010-3225 | 25.0 | 25.4 | 6.0 | 2000 |
| 010-0240 | 010-1230 | 010-3230 | 25.0 | 25.4 | 6.0 | 5000 |
| 010-0245 | 010-1235 | 010-3235 | 25.0 | 25.4 | 6.0 | ∞ (flat) |
| 010-0405 | 010-1405 | 010-3405 | 40.0 | 38.1 | 8.0 | 500 |
| 010-0410 | 010-1410 | 010-3410 | 40.0 | 38.1 | 8.0 | 750 |
| 010-0415 | 010-1415 | 010-3415 | 40.0 | 38.1 | 8.0 | 1000 |
| 010-0420 | 010-1420 | 010-3420 | 40.0 | 38.1 | 8.0 | 2000 |
| 010-0425 | 010-1425 | 010-3425 | 40.0 | 38.1 | 8.0 | 5000 |
| 010-0430 | 010-1430 | 010-3430 | 40.0 | 38.1 | 8.0 | ∞ (flat) |

For metric dimensions please add to catalogue number code M, for English – code E.
Contact EK SMA for other size, radius of curvature, or precision requirements.

ELLIPTICAL SUBSTRATES FOR FLAT LASER MIRRORS

bend light at precise angles with minimum wave distortion

Elliptical flat mirrors bend light at precise angles with minimum wave distortion due to elongated major axis. Precision 45 degree elliptical flat mirrors are ideal for technical and astronomical applications.



SPECIFICATIONS

| | |
|---------------------|----------------------|
| Material | BK7, FS, UV FS |
| Surface quality | 20-10 scratch & dig |
| Surface flatness | $\lambda/4$ @ 633 nm |
| Axis tolerance | +0.00,-0.12 mm |
| Thickness tolerance | ± 0.25 mm |

Mirrors are available uncoated, or with metallic, or dielectric coatings.

| BK7 | Catalogue number UV FS | FS | Minor axis, mm | Major axis, mm | Thickness T, mm |
|----------|---------------------------|----------|-------------------|-------------------|--------------------|
| 020-0183 | 020-1183 | 020-3183 | 18.0 | 25.0 | 3.0 |
| 020-0254 | 020-1254 | 020-3254 | 25.0 | 35.0 | 4.0 |
| 020-0304 | 020-1304 | 020-3304 | 30.0 | 42.5 | 4.0 |

For type A please add to catalogue number code A, for type B – code B.
Contact EK SMA for other size or precision requirements.

LASER MIRRORS

The laser mirrors are dielectric reflectors providing an optimised performance at stated wavelengths. The high polishing quality is important for low wave front distortion, low scattering and high damage threshold. All mirrors designed for work at 45 degrees.

Mirrors of dia 76.2 mm and 101.6 mm are available upon request

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 laser quality |
| S2 Surface Quality | Commercial polish |
| Diameter Tolerance | + 0.00 mm, - 0.12 mm |
| Thickness Tolerance | ± 0.25 mm |
| Wedge | < 3 minutes |
| 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 | 5 J/cm ² , 8 nsec pulse, 1064 nm typical |
| Coated Surface Flatness | $\lambda/10$ at 633 nm over 85% of diameter available |
| Angle of incidence | 45 degrees |

LASER LINE WAVELENGTH

Substrate material: BK7 grade A.

| Wavelength, nm | Application | R, % (s+p)/2 | Catalogue number | | |
|-------------------|-------------|-----------------|------------------|-----------------|-----------------|
| | | | Ø12.7 × 3 mm | Ø25.4 × 6 mm | Ø50.8 × 8 mm |
| 351÷361 | YAG 3H | 99.5 | 031-0350 | 032-0350 | 035-0350 |
| 400 | Ti:Sa 2H | 99.5 | 031-0400 | 032-0400 | 035-0400 |
| 488÷515 | Ar+ | 99.5 | 031-0490 | 032-0490 | 035-0490 |
| 527÷532 | YAG 2H | 99.5 | 031-0530 | 032-0530 | 035-0530 |
| 589 | Dye | 99.5 | 031-0590 | 032-0590 | 035-0590 |
| 633÷670 | HeNe+Diode | 99.5 | 031-0630 | 032-0630 | 035-0630 |
| 780 | Diode | 99.5 | 031-0780 | 032-0780 | 035-0780 |
| 760÷840 | Ti:Sa | 99 | 031-0800 | 032-0800 | 035-0800 |
| 852 | Diode | 99.5 | 031-0850 | 032-0850 | 035-0850 |
| 1047÷1064 | YAG | 99.5 | 031-1060 | 032-1060 | 035-1060 |
| 1300÷1320 | YAG | 99.5 | 031-1300 | 032-1300 | 035-1300 |
| 1520÷1570 | Diode | 99.5 | 031-1550 | 032-1550 | 035-1550 |

Substrate material: Fused Silica

| Wavelength, nm | Application | R, % (s+p)/2 | Catalogue number | | |
|-------------------|-------------|-----------------|------------------|-----------------|-----------------|
| | | | Ø12.7 × 3 mm | Ø25.4 × 6 mm | Ø50.8 × 8 mm |
| 244÷248 | KrF | 99 | 041-0240 | 042-0240 | 045-0240 |
| 262÷266 | YAG 4H | 99 | 041-0260 | 042-0260 | 045-0260 |
| 308 | XeCl | 99.2 | 041-0300 | 042-0300 | 045-0300 |
| 351÷361 | YAG 3H | 99.5 | 041-0350 | 042-0350 | 045-0350 |
| 380÷420 | Ti:Sa 2H | 99.5 | 041-0400 | 042-0400 | 045-0400 |
| 527÷532 | YAG 3H | 99.5 | 041-0530 | 042-0530 | 045-0530 |
| 760÷840 | Ti:Sa | 99 | 041-0800 | 042-0800 | 045-0800 |
| 1047÷1064 | YAG | 99.5 | 041-1060 | 042-1060 | 045-1060 |

DUAL LASER LINE MIRRORS

Substrate: BK7 grade A.

| Wavelength, nm | Application | R, % (s+p)/2 | Catalogue number | | |
|-------------------|-------------|-----------------|------------------|-----------------|-----------------|
| | | | Ø12.7 × 3 mm | Ø25.4 × 6 mm | Ø50.8 × 8 mm |
| 532+1064 | YAG 1H+2H | 99.5 | 051-5306 | 052-5306 | 055-5306 |
| 633+1064 | YAG 1H+HeNe | 99.5 | 051-6306 | 052-6306 | 055-6306 |

BROAD BAND LASER MIRRORS

 Damage Threshold: 2 J/cm², 8 nsec pulse; 532 nm typical.

Substrate: BK7, grade A.

| Wavelength, nm | Application | R, % (s+p)/2 | Catalogue number | | |
|-------------------|-------------|-----------------|------------------|-----------------|-----------------|
| | | | Ø12.7 × 3 mm | Ø25.4 × 6 mm | Ø50.8 × 8 mm |
| 360÷440 | Ti:Sa 2H | 99 | 071-3644 | 072-3644 | 075-3644 |
| 420÷540 | Dye | 99 | 071-4254 | 072-4254 | 075-4254 |
| 520÷650 | Dye | 99 | 071-5265 | 072-5265 | 075-5265 |
| 600÷850 | Diode | 99 | 071-6085 | 072-6085 | 075-6085 |
| 730÷950 | Ti:SA | 99 | 071-7395 | 072-7395 | 075-7395 |
| 800÷1100 | Diode,YAG | 99 | 071-8010 | 072-8010 | 075-8010 |

Kinematic Mirror and Beamsplitter Mounts

840-0010, 840-0020, 840-0030

Contact us
for details.

Mounts provide ±6°
range of orthogonal
adjustments with 8 arc-
seconds resolution.



840-0010-04



840-0030-02

ORDERING INFORMATION

1. COATINGS

Prices

All prices are net F.C.A. Vilnius, Lithuania and do not include any taxes. Shipping charges will be added to your invoice. Quantity discounts as well as research application discounts are available upon request.

2. MIRRORS

Delivery

Most of standard products are stocked and shipped off-shelf after receipt of order. Large volume orders are delivered under mutually agreed terms. If not altered, shipping by DHL forwarder is assumed.

3. LENSES

Ordering

Orders may be placed by mail, fax, or e-mail. Mail orders should be sent to:

EKSPLA Ltd., Photonics Division

Mokslininku Str. 11

08412 Vilnius

LITHUANIA

For prompt ordering, please use fax or e-mail:

fax: +370.5.272 92 99,

e-mail: sales@eksma.com,

www.eksma.com.

4. WINDOWS

Payment

Term of payment is 30 days net by bank wire transfer. Money orders, bank and company cheques – in this case please add 25.- USD (or equivalent in other currency) to lump sum of invoice to cover cashing charges.

5. PRISMS

Certificate of Origin

All items shown in this catalogue are of Lithuanian Origin and therefore import duty free when importing to EEC, EFTA and NAFTA countries.

6. POLARISING OPTICS

Satisfaction and Returns

All standard products are covered by 30 days customer satisfaction warrantee. If for any reason buyer is not satisfied with purchased item, it may be returned by prepaid shipment for full credit.

7. UV & IR OPTICS

Warranty

All products of EKSMA are guaranteed to be free from defects in material and workmanship for a period of one year after delivery. EKSMA does not assume liability from installation, labour or consequential damages.