

LIDT of High Power Laser Mirrors @ 532 nm

Test conditions:

| | |
|----------------------|------------------|
| Wavelength | 532 nm |
| Pulse duration | (5.4 ± 0.3) ns |
| Repetition rate | 100 Hz |
| AOI | 45° |
| Polarization | linear P |
| Beam diameter (1/e²) | (206.0 ± 6.7) μm |

Design wavelength – 532 nm. LIDT >20 J/cm², 10 ns pulse, 100 Hz, 532 nm typical.

| Wavelength, nm | AOI, deg | R, % (s+p)/2 | Ø 12.7 x 6 mm | Ø 25.4 x 6 mm | Ø 50.8 x 12 mm |
|----------------|----------|--------------|-------------------|------------------|--------------------|
| | | | Catalogue number | Catalogue number | Catalogue number |
| 532 | 45 | 99.9 | 041-0530T6UHHR | 042-0530UHHR | 045-0530T12UHHR |
| 532 | 0 | 99.95 | 041-0530T6UHHR-i0 | 042-0530UHHR-i0 | 045-0530T12UHHR-i0 |

Design wavelength – 800 nm. LIDT >30 J/cm², 10 ns pulse, 100 Hz, 800 nm typical.

| Wavelength, nm | AOI, deg | R, % (s+p)/2 | Ø 12.7 x 6 mm | Ø 25.4 x 6 mm | Ø 50.8 x 12 mm |
|----------------|----------|--------------|-------------------|------------------|--------------------|
| | | | Catalogue number | Catalogue number | Catalogue number |
| 800 | 45 | 99.9 | 041-0800T6UHHR | 042-0800UHHR | 045-0800T12UHHR |
| 800 | 0 | 99.95 | 041-0800T6UHHR-i0 | 042-0800UHHR-i0 | 045-0800T12UHHR-i0 |

Design wavelength – 1064 nm. LIDT >20 J/cm², 10 ns pulse, 100 Hz, 1064 nm typical.

| Wavelength, nm | AOI, deg | R, % (s+p)/2 | Ø 12.7 x 6 mm | Ø 25.4 x 6 mm | Ø 50.8 x 12 mm |
|----------------|----------|--------------|---------------------|-------------------|----------------------|
| | | | Catalogue number | Catalogue number | Catalogue number |
| 1064 | 45 | 99.9 | 041-1060T6HHR | 042-1060HHR | 045-1060T12HHR |
| 1064 | 0 | 99.95 | 041-1060T6HHR-i0 | 042-1060HHR-i0 | 045-1060T12HHR-i0 |
| 1064 | 0-45 | 99.9 | 041-1060T6HHR-i0-45 | 042-1060HHR-i0-45 | 045-1060T12HHR-i0-45 |

Design wavelength – 1064 nm. LIDT >40 J/cm², 10 ns pulse, 100 Hz, 1064 nm typical.

| Wavelength, nm | AOI, deg | R, % (s+p)/2 | Ø 12.7 x 6 mm | Ø 25.4 x 6 mm | Ø 50.8 x 12 mm |
|----------------|----------|--------------|-------------------|------------------|--------------------|
| | | | Catalogue number | Catalogue number | Catalogue number |
| 1064 | 45 | 99.9 | 041-1060T6UHHR | 042-1060UHHR | 045-1060T12UHHR |
| 1064 | 0 | 99.95 | 041-1060T6UHHR-i0 | 042-1060UHHR-i0 | 045-1060T12UHHR-i0 |

Design wavelength – 532+1064 nm. LIDT >15 J/cm² at 1064 nm and LIDT >5 J/cm² at 532 nm, 10 ns pulse, 10 Hz typical.

| Wavelength, nm | AOI, deg | R, % (s+p)/2 | Ø 12.7 x 6 mm | Ø 25.4 x 6 mm | Ø 50.8 x 12 mm |
|----------------|----------|--------------|------------------|------------------|------------------|
| | | | Catalogue number | Catalogue number | Catalogue number |
| 532+1064 | 45 | 99.5 | 061-5306HHR | 062-5306HHR | 065-5306HHR |
| 532+1064 | 0 | 99.5 | 061-5306HHR-i0 | 062-5306HHR-i0 | 065-5306HHR-i0 |

Design wavelength – 532+1064 nm. LIDT >30 J/cm² at 1064 nm and LIDT >10 J/cm² at 532 nm, 10 ns pulse, 10 Hz typical.

| Wavelength, nm | AOI, deg | R, % (s+p)/2 | Ø 12.7 x 6 mm | Ø 25.4 x 6 mm | Ø 50.8 x 12 mm |
|----------------|----------|--------------|------------------|------------------|------------------|
| | | | Catalogue number | Catalogue number | Catalogue number |
| 532+1064 | 45 | 99.5 | 061-5306UHHR | 062-5306UHHR | 065-5306UHHR |
| 532+1064 | 0 | 99.5 | 061-5306UHHR-i0 | 062-5306UHHR-i0 | 065-5306UHHR-i0 |

LASER HARMONIC SEPARATORS

Features

- Offered on Ø 0.5 or 1 inch substrates of BK7 or UV FS with surface flatness λ/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.

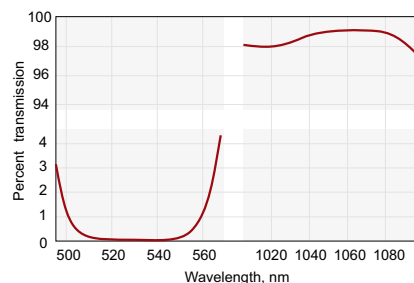
Substrate

| | |
|---------------------|--------------------------------------|
| Material | UV grade Fused Silica or BK7 glass |
| S1 Surface Flatness | λ/10 typical at 633 nm |
| S1 Surface Quality | 20–10 scratch & dig (MIL-PRF-13830B) |
| S2 Surface Flatness | λ/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 | ±0.25 mm |
| Parallelism | < 30 arcsec |
| Chamfer | 0.3 mm at 45° typical |

LASER HARMONIC SEPARATORS WITH HIGH TRANSMISSION

Coating

| | |
|----------------------------------|---|
| Technology | Ion Beam Sputtering (IBS) |
| Damage Threshold | >10 J/cm ² , 8 nsec pulse, 1064 nm typical |
| Back side anti-reflection coated | AOI 45°, R<0.5% AOI 0°, R<0.1% |



041-5105HT.

HR > 99.9% @ 532 nm, HT > 99% @ 1064 nm, AOI = 45°

| Reflected wavelength, nm | Reflection | Transmission | AOI, deg | Catalogue number | |
|--------------------------|------------------------|--|----------|----------------------------|----------------------------|
| | | | | Ø12.7x3 mm | Ø25.4x6 mm |
| 266 | R _{sp} >99.0% | T _{sp} >98% @ 532 + 1064 nm | 0 | 041-2510HT | 042-2510HT |
| 266 | R _{sp} >99.0% | T _{sp} >98% @ 532 + 1064 nm | 45 | 041-2515HT | 042-2515HT |
| 355 | R _{sp} >99.5% | T _{sp} >98% @ 532 nm + T _{sp} >99% @ 1064 nm | 0 | 041-3510HT | 042-3510HT |
| 355 | R _{sp} >99.5% | T _{sp} >98% @ 532 nm + T _{sp} >99% @ 1064 nm | 45 | 041-3515HT | 042-3515HT |
| 532 | R _{sp} >99.9% | T _{sp} >99% @ 1064 nm | 0 | 041-5100HT | 042-5100HT |
| 532 | R _{sp} >99.9% | T _{sp} >99% @ 1064 nm | 45 | 041-5105HT | 042-5105HT |
| 1064 | R _{sp} >99.5% | T _{sp} >98% @ 532 nm | 0 | 041-6500HT | 042-6500HT |
| 1064 | R _{sp} >99.5% | T _{sp} >98% @ 532 nm | 45 | 041-6505HT | 042-6505HT |

STANDARD LASER HARMONIC SEPARATORS

Coating

| | |
|-------------------------|--|
| Technology | Electron beam multilayer dielectric |
| Adhesion and Durability | Per MIL-C-675A. Insoluble in lab solvents |
| Damage Threshold: BK7 | >2 J/cm ² , 8 nsec pulse, 1064 nm typical |
| Damage Threshold: UV FS | >5 J/cm ² , 8 nsec pulse, 1064 nm typical |

| | |
|---------------------------------|------------------------------------|
| Clear Aperture | Exceeds central 85% of diameter |
| Coated Surface Flatness | λ/10 at 633 nm over clear aperture |
| Back side antireflection coated | AOI 45°, R<0.5% AOI 0°, R<0.2% |

| Reflected wavelength, nm, R > 99.5% | Transmitted wavelength, nm | Transmission, % | AOI, deg | Substrate material | Catalogue number | |
|--|----------------------------|-----------------|----------|--------------------|--------------------------|--------------------------|
| | | | | | Ø12.7x3 mm | Ø25.4x6 mm |
| 266 | 355+532+1064 | >90 | 0 | UVFS | 041-2310 | 042-2310 |
| 266 | 355+532+1064 | >90 | 45 | UVFS | 041-2315 | 042-2315 |
| 266 | 532 | >95 | 0 | UVFS | 041-2500 | 042-2500 |
| 266 | 532 | >95 | 45 | UVFS | 041-2505 | 042-2505 |
| 355 | 1064 | >95 | 0 | UVFS | 041-3100 | 042-3100 |
| 355 | 1064 | >95 | 45 | UVFS | 041-3105 | 042-3105 |
| 355 | 532 | >95 | 0 | UVFS | 041-3500 | 042-3500 |
| 355 | 532 | >95 | 45 | UVFS | 041-3505 | 042-3505 |
| 355 | 532+1064 | >95 | 0 | UVFS | 041-3510 | 042-3510 |
| 355 | 532+1064 | >95 | 45 | UVFS | 041-3515 | 042-3515 |
| 532 | 1064 | >95 | 0 | BK7 | 031-5100 | 032-5100 |
| 532 | 1064 | >95 | 45 | BK7 | 031-5105 | 032-5105 |
| 532 | 1064 | >95 | 0 | UVFS | 041-5100 | 042-5100 |
| 532 | 1064 | >95 | 45 | UVFS | 041-5105 | 042-5105 |
| 532+1064 | 355 | >85 | 0 | UVFS | 041-5140 | 042-5140 |
| 532+1064 | 355 | >85 | 45 | UVFS | 041-5145 | 042-5145 |
| 1064 | 532 | >93 | 0 | BK7 | 031-6500 | 032-6500 |
| 1064 | 532 | >93 | 45 | BK7 | 031-6505 | 032-6505 |
| 1064 | 532 | >93 | 0 | UVFS | 041-6500 | 042-6500 |
| 1064 | 532 | >93 | 45 | UVFS | 041-6505 | 042-6505 |



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Nd:YAGレーザー、Ti:Sレーザー
OPOLレーザー

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