



LBO

Lithium Triborate - LiB_3O_5

MAIN FEATURES

- High bulk damage threshold
- High optical homogeneity
- Small walk-off angle with a NCPM possibility for type I SHG
- Suitable for UV applications

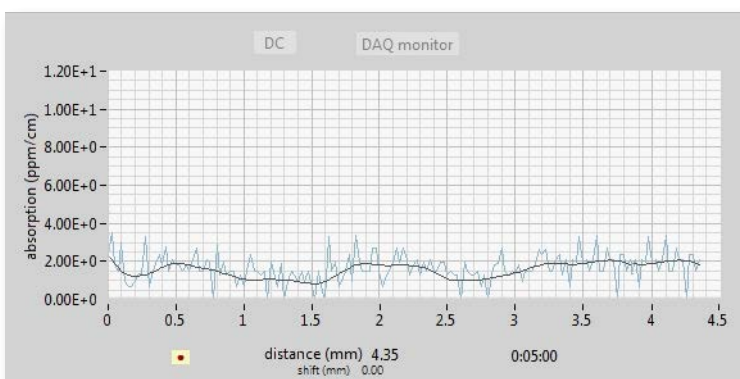
APPLICATIONS

- Green and UV high power industrial lasers
- Green lasers for Ti:Sapphire pumping
- OPA/OPCPA applications
- Biophotonics & medical lasers

WHAT MAKES US DIFFERENT?

- Ultra-low bulk absorption: $<2\text{ppm/cm}@1064\text{nm}^*$
- Super polishing with roughness $<3 \text{ \AA}$ rms and 2/1 scratch/dig
- Long lifetime in the UV: over 10.000 hours at 30W on one single spot
- Extremely low coating absorption in UV: 3ppm per side @ 355nm
- High damage threshold coating in the UV: $>20\text{J/cm}^2 @ 355\text{nm}, 10\text{ns}$
- Aperture up to $100 \times 100\text{mm}^2$ and length up to 100mm

TECHNICAL HIGHLIGHTS

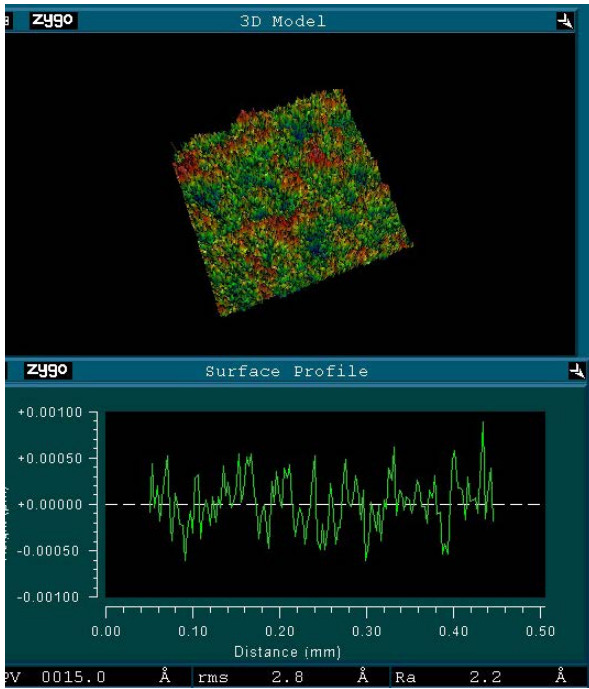


Bulk absorption measurement at IR and green wavelengths:

typical value is 1-2ppm/cm at 1.07 μm

*as measured by Photo-Thermal Common-Path Interferometry with a calibration coefficient of 1.

TECHNICAL HIGHLIGHTS



Surface roughness measurement:

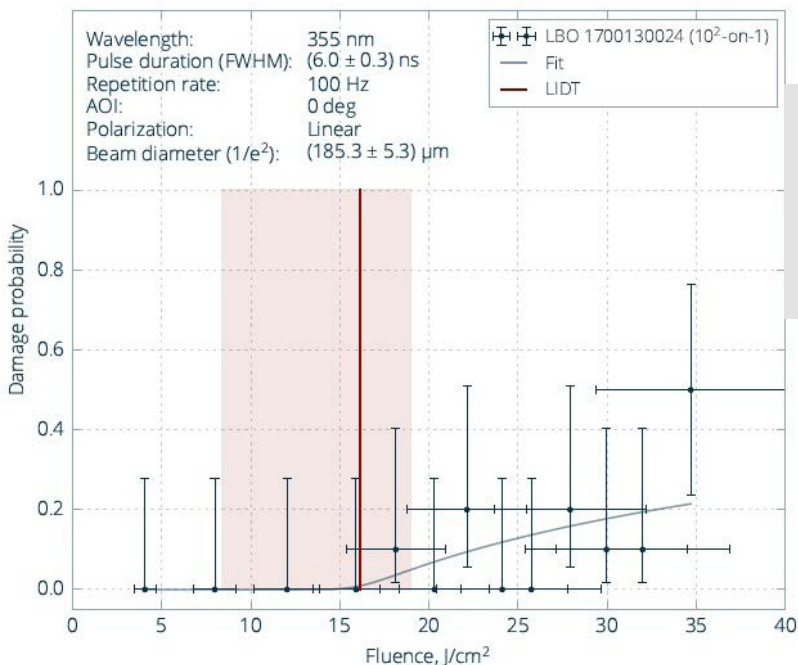
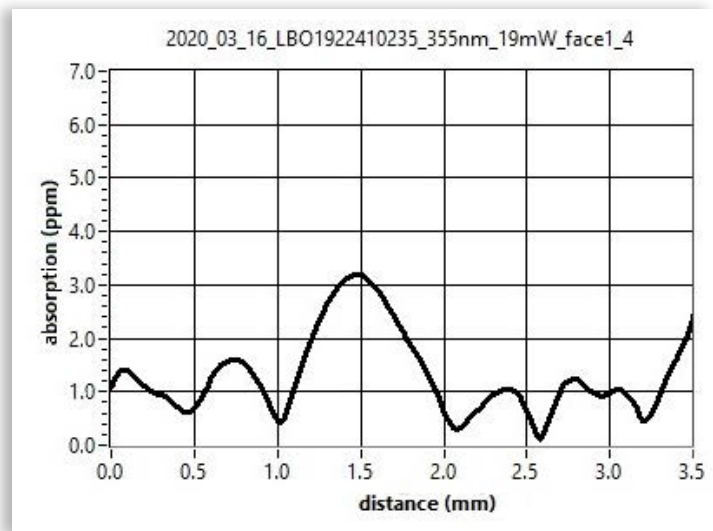
<3 Å rms and Ra around 2 Å

RESULTS

| | |
|-------------|--------|
| Peak-Valley | 15.0 Å |
| rms | 2.8 Å |
| Ra | 2.2 Å |

Surface absorption measurement

3ppm at 355nm of AR-coated output side of THG



Coatings damage threshold @ 355nm:

16J/cm² @ 6ns equivalent to 20J/cm² @ 10ns

SPECIFICATIONS

| | |
|-----------------------------|---|
| Aperture | Up to 100x100mm ² |
| Length | Up to 100mm |
| Flatness | $<\lambda/10$ @633nm |
| Wavefront distortion | $<\lambda/8$ @633nm |
| Parallelism | Down to 5" |
| Perpendicularity | Down to 5' |
| Scratch and dig | $<2/1$ |
| Bulk absorption | <2 ppm/cm @ 1064nm <2 ppm/cm @ 532nm |
| Damage threshold | $>40\text{J}/\text{cm}^2$ @ 1064nm, 10ns, 10Hz $>20\text{J}/\text{cm}^2$ @ 532nm, 10ns, 10Hz $>20\text{J}/\text{cm}^2$ @ 355nm, 10ns, 10Hz $>2,000$ GW/cm ² @ 1030nm, 1.5ps, 1kHz |

