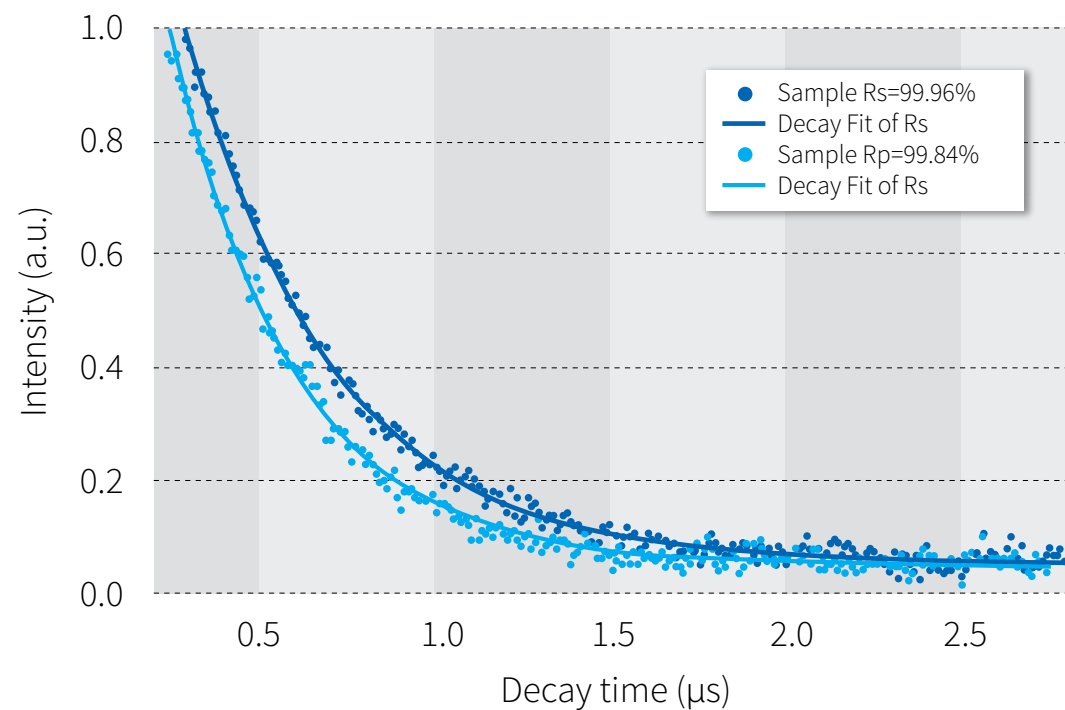


# UV OPTICS FOR INDUSTRIAL APPLICATIONS

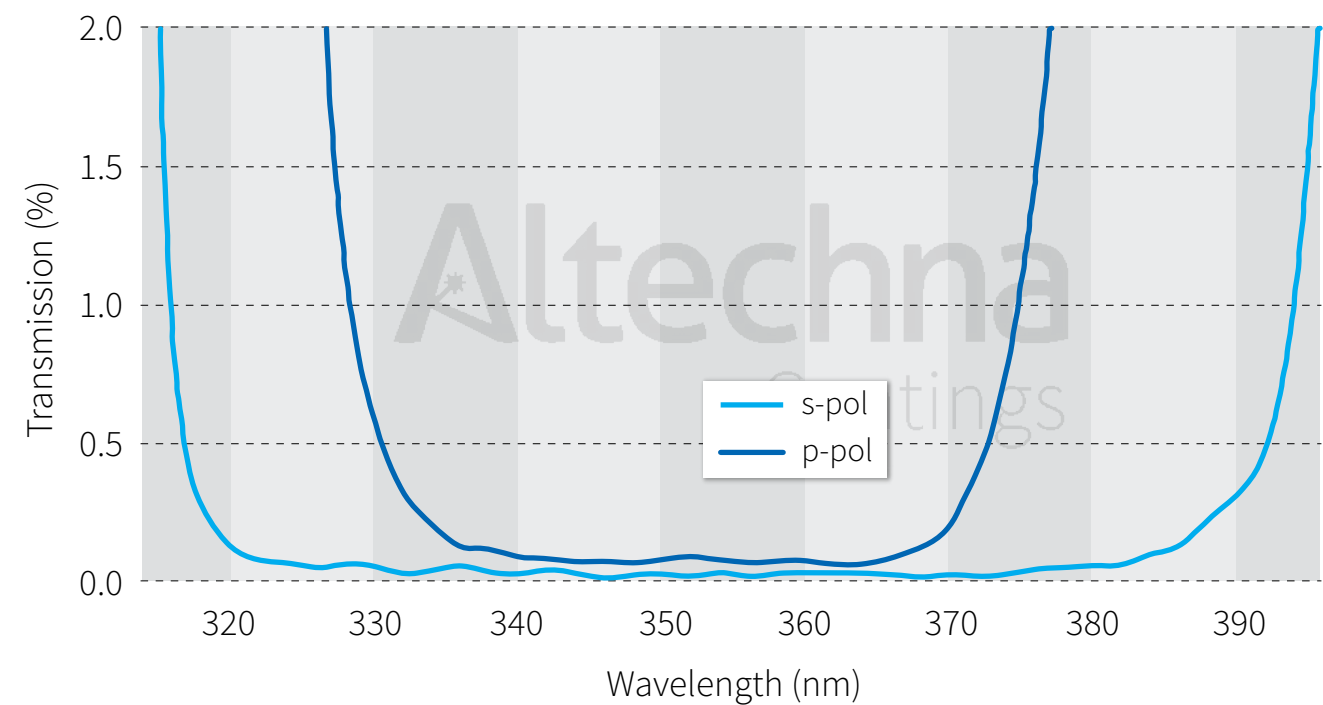
Low absorption high LIDT environmentally stable Ion Beam Sputtering (IBS) coatings

High reflective coating

HR @ 343-355 nm ( $R_s > 99.9\%$ ,  $R_p > 99.7\%$ ), AOI=45°



**Graph 1.** Cavity Ring-Down (CRD) measurement.

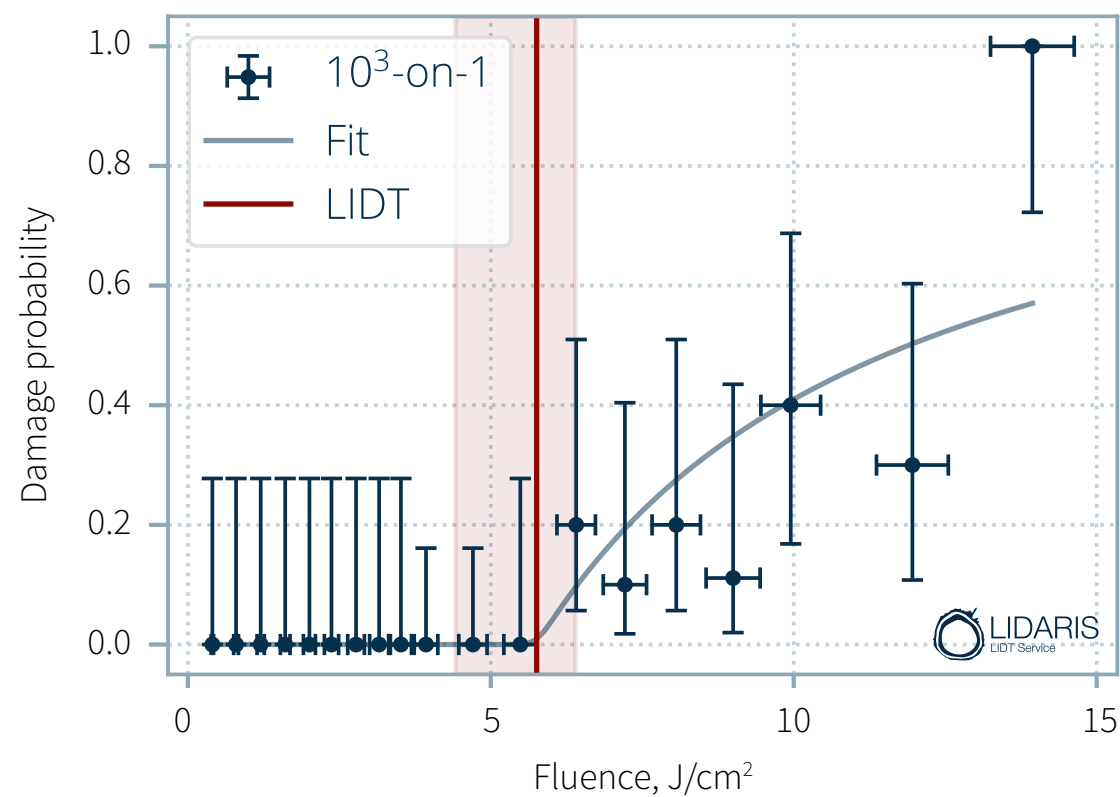


**Graph 2.** Spectral measurement.

# Laser-Induced Damage Threshold

HR @ 343-355 nm ( $R_s > 99.9\%$ ,  $R_p > 99.7\%$ ), AOI=45°

LIDT S-pol: 5 J/cm<sup>2</sup> @ 355 nm

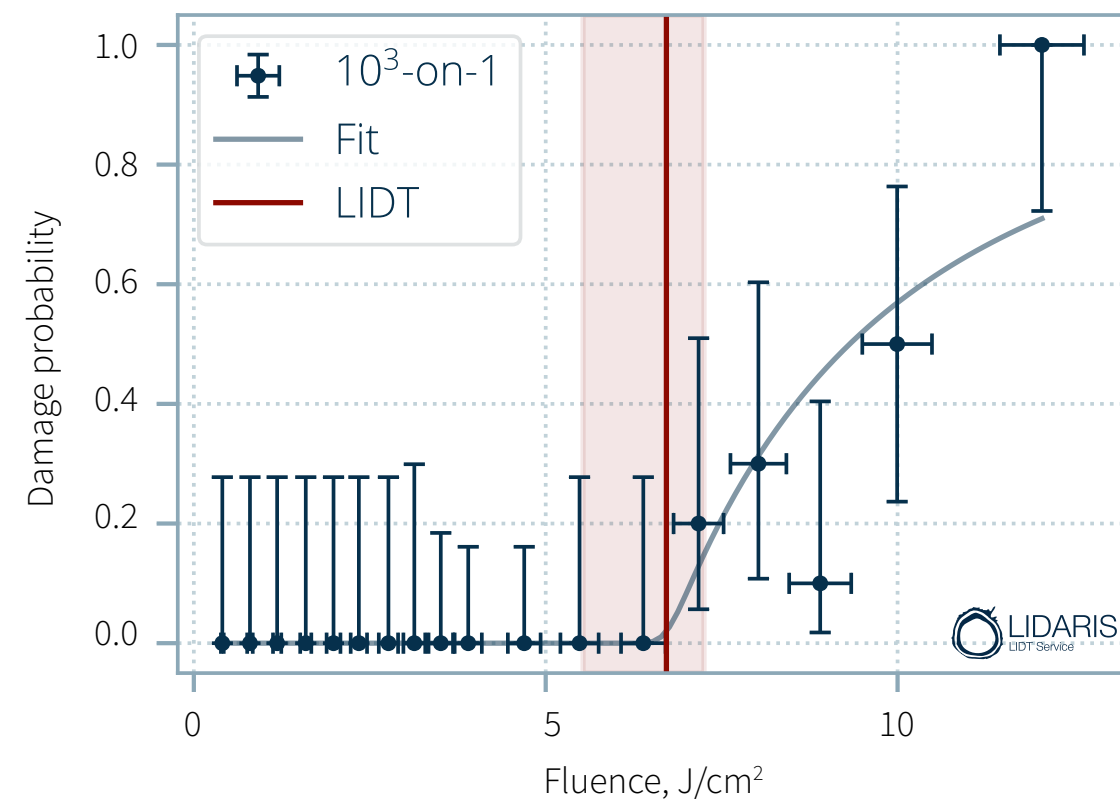


**Graph 3.** Damage probability plot 10<sup>3</sup>-on-1.

[Full report by Lidaris\\*](#)

\* Extrinsic local defect detected at 3.38 J/cm<sup>2</sup>.

LIDT P-pol: 6 J/cm<sup>2</sup> @ 355 nm

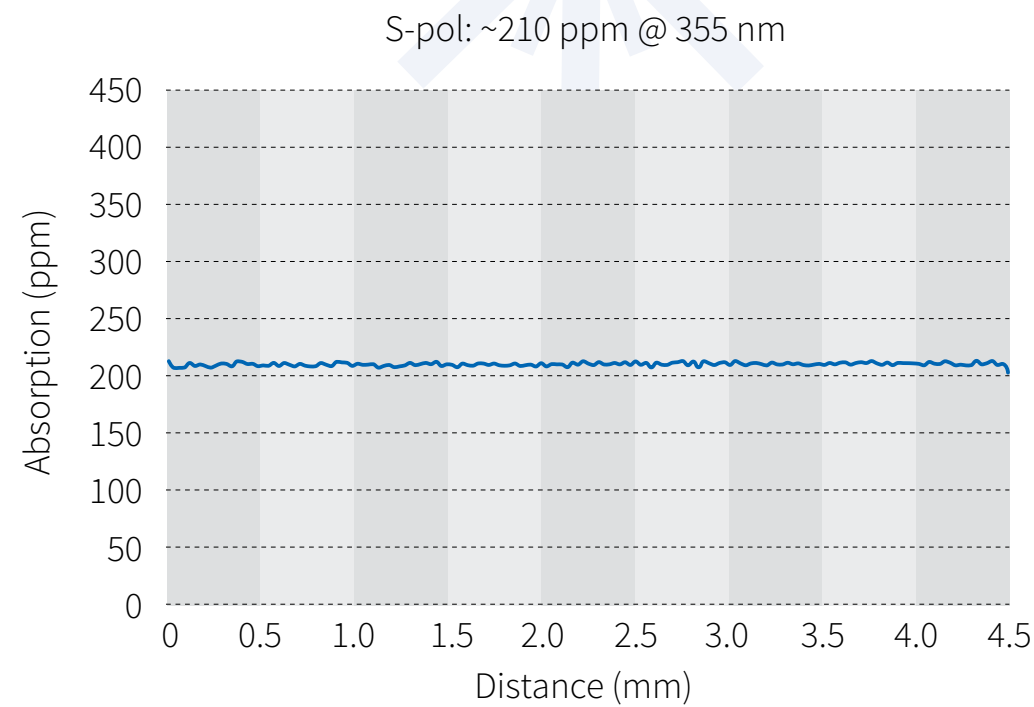


**Graph 4.** Damage probability plot 10<sup>3</sup>-on-1.

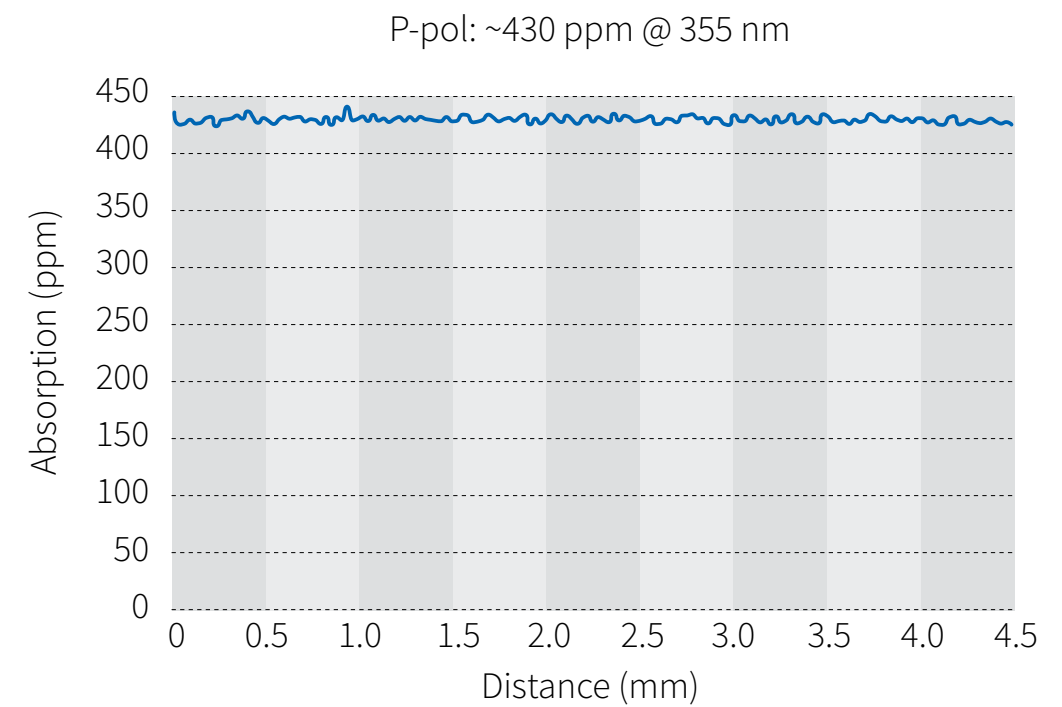
[Full report by Lidaris](#)

# Absorption

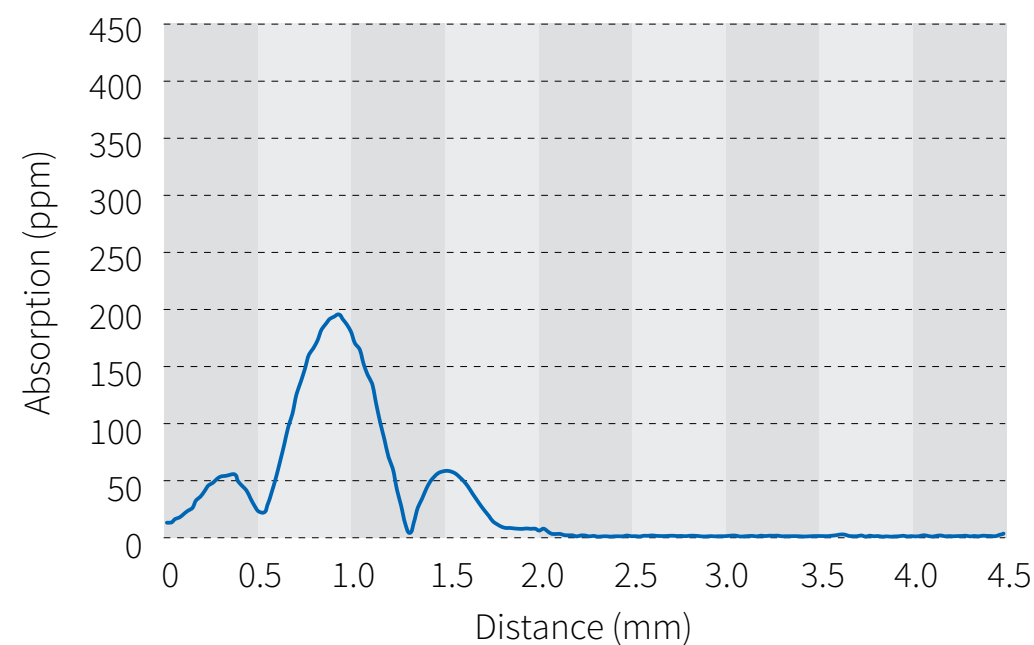
HR @ 343-355 nm ( $R_s > 99.9\%$ ,  $R_p > 99.7\%$ ), AOI=45°



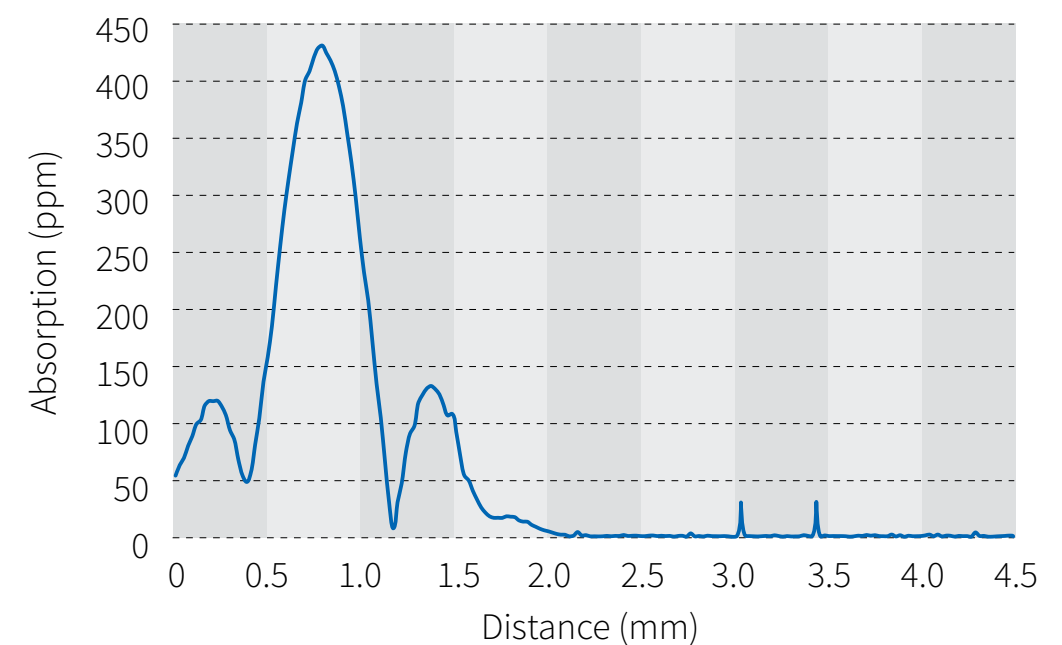
**Graph 5.** Coating surface absorption T-scan (s-pol, 45°, 50 kHz, 100 mW).



**Graph 6.** Coating surface absorption T-scan (p-pol, 45°, 50 kHz, 100 mW).



**Graph 7.** Mirror coating and bulk absorption z-scan (s-pol, 45°, 50 kHz, 100 mW).

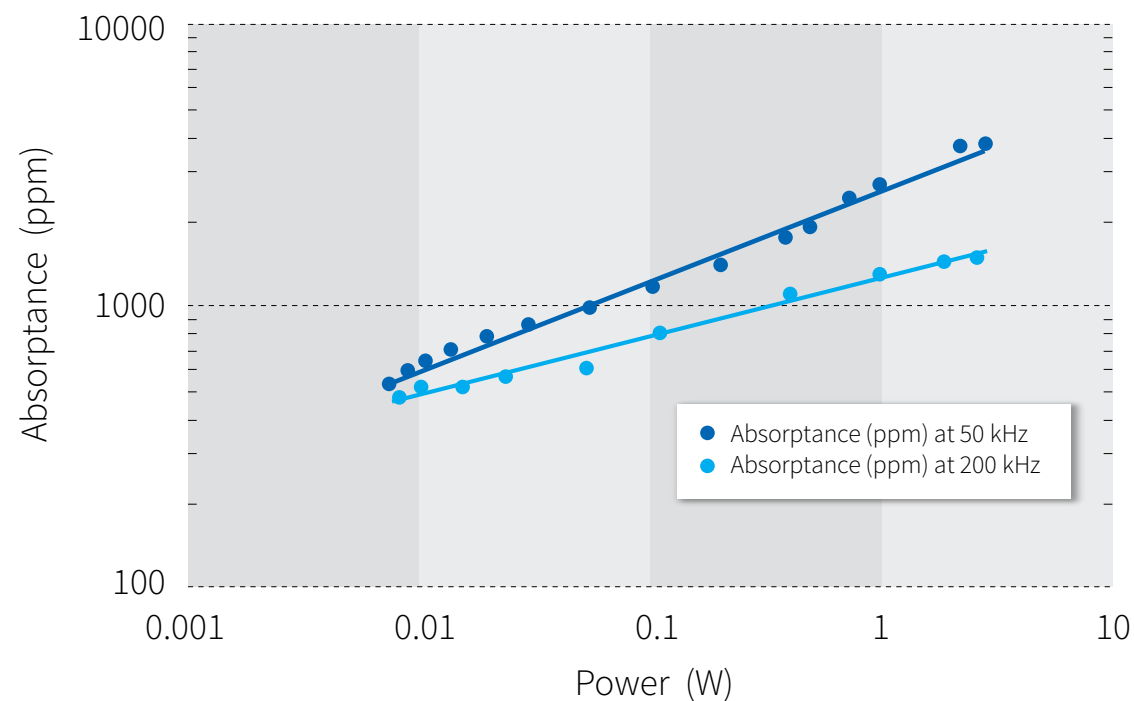


**Graph 8.** Mirror coating and bulk absorption z-scan (p-pol, 45°, 50 kHz, 100 mW).

## Background

### Absorption is not linear process

- Laser rep rate dependent
- Laser pulse duration dependent
- Average power dependent
- Environmentally sensitive



**Graph 9.** Relation between absorptance and laser power.

NOTE: Absorption measurements are done using 100 mW @ 355 nm, 50 kHz Photo thermal Common-path Interferometer (PCI).

## More information

One of Altechna's latest achievements is ultra low absorption (<1 ppm) and reflectivity (<0.1%) anti-reflective coatings for high-power CW laser applications. Check out our [whitepaper](#) on low absorption coatings for IR applications.

## Contact

If you require a professional consultation regarding the topic - feel free to contact our team: [info@altechna.com](mailto:info@altechna.com).