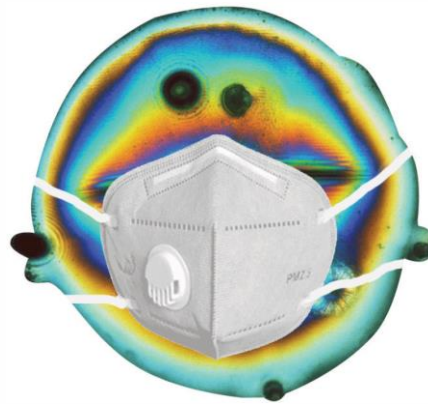
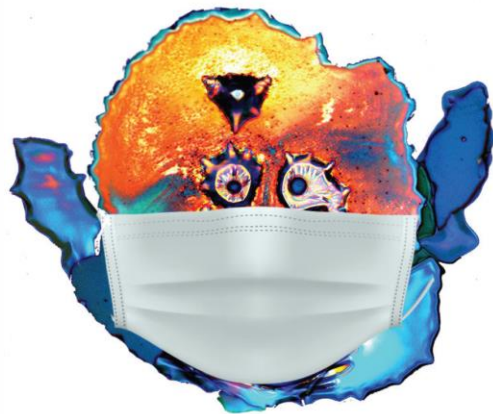


Laser-induced damage testing at continuous-wave regime



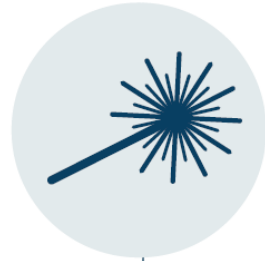
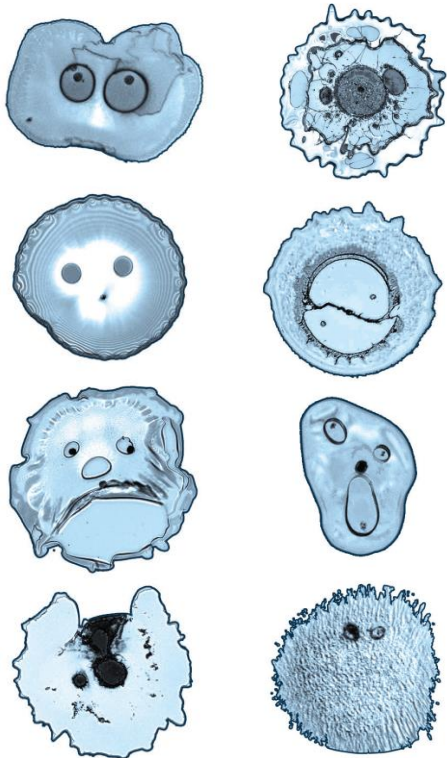
EPIC Members New Product Release
November 2021

Lidaris Ltd. – LIDT Service

- Almost 20 years of experience in LIDT testing.
- Serving the global market from Vilnius, Lithuania.
- Active participants in LIDT research community:
 - Testing facility for Thin Film Laser Damage Competition (SPIE Laser Damage) organized by LLNL.
 - Space optics' lifetime estimation research in cooperation with ESA.



Our product – ^{controlled} destruction of your optics!



ISO standard based LIDT testing services

- CW-NS-PS-FS pulse durations
- From IR to UV spectral range
- Detailed reports



Custom dedicated LIDT services

- High throughput
- Fast turnaround
- Custom irradiation conditions are available
- Custom testing protocols are available



Project based RnD service

- Beyond the standard testing conditions and protocols
- Long-term guidance in experimental design
- Quantitative feedback in High Power Optics development projects

Our toolbox

ISO 1-on-1



The 1-on-1 test is a relatively simple technique for a "non-fatigue" LIDT determination.

ISO S-on-1



The S-on-1 test is the most common LIDT test. It is a multipulse procedure, which considers optics aging (fatigue) effects.

ISO Pass/Fail (Damage certification)



Pass/Fail test is designed to separate good and bad optics at predefined laser fluence.

R-on-1



The R-on-1 is a non-standard test. It provides rough information about LIDT for surface limited samples (e.g. fibers, small crystals).

Raster scan



The raster scan technique helps to detect very rare defects, which could be missed by applying the S-on-1 test.

Custom LIDT test



The custom LIDT test is designed to provide the maximum information about LIDT in specific cases.

- Quantitative defect density estimation
- Lifetime estimation
- Non-destructive qualification
- LIDT estimation for small samples
- Detection of low density defects

Most common LIDT testing conditions

Pulse range	Laser	Effective pulse duration ⁽¹⁾	Wavelengths, nm	Pulse repetition rate, Hz
CW	CW Ytterbium (Yb) Fiber Laser	30 s	1074±6	Single shot
ns	Nd:YAG (single mode)	10 ns 5 ns 5 ns	1064 532 355	100
ps-fs	Yb:KGW (Kerr lens mode-lock)	Tunable 180 fs - 12 ps ⁽²⁾	1030 ⁽³⁾ 515 343	50000
fs	Ti:Sapphire ⁽³⁾ (Kerr lens mode-lock)	50 fs	800	100 -1000

*All available irradiation conditions at www.lidaris.com

CW-NS-PS-FS
Regimes



UV to IR
Spectral range



Vacuum and Cryo
Options

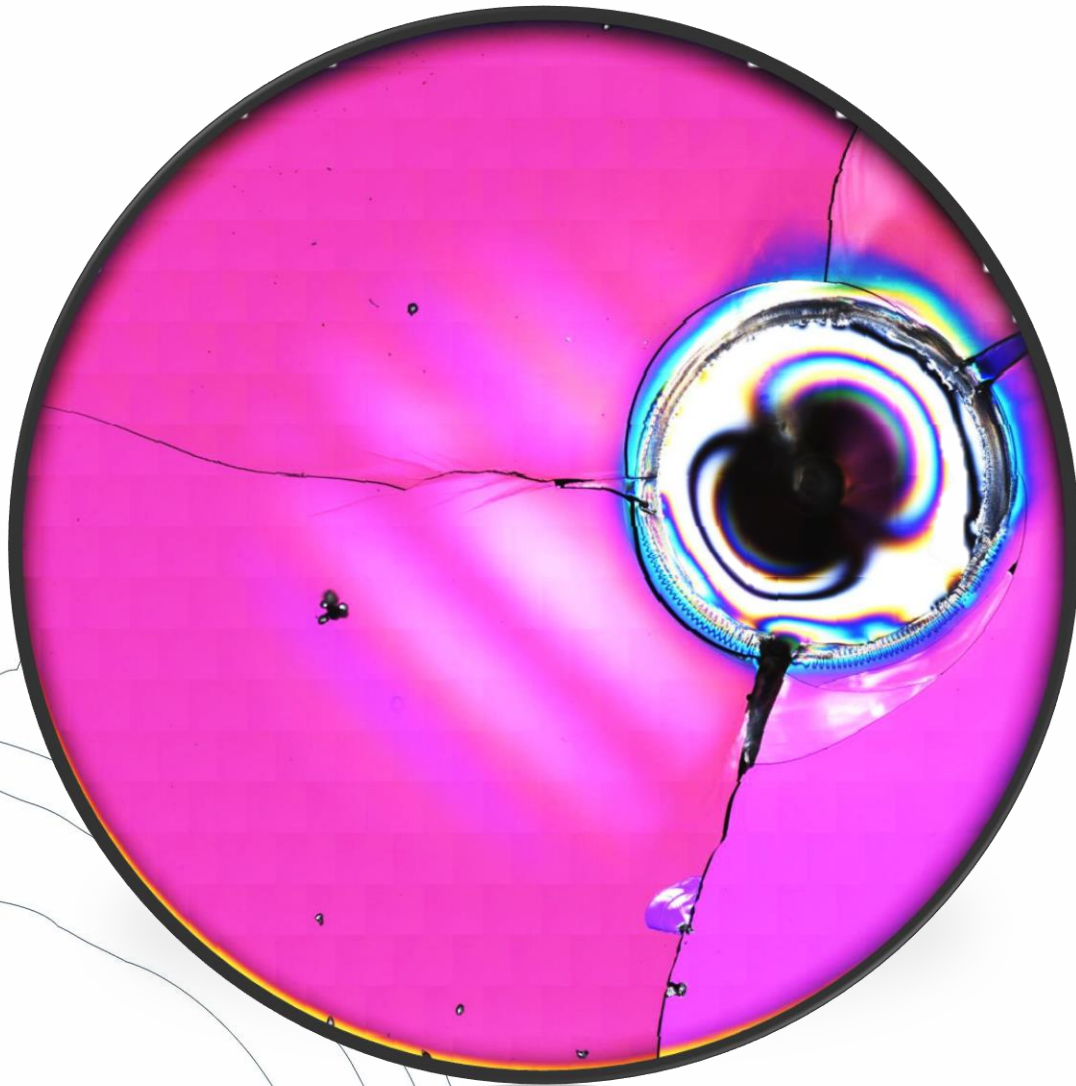


Continuous-wave (CW) regime is now available at Lidaris!

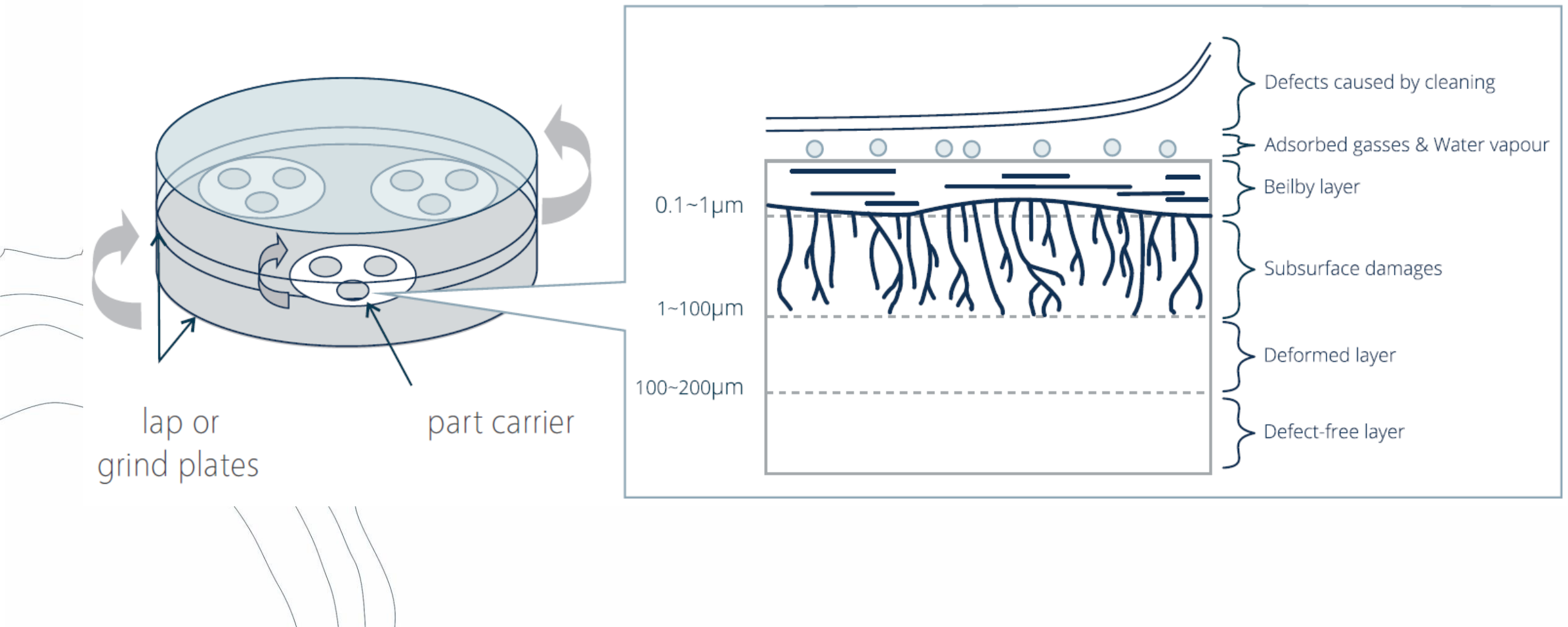
Wavelength: 1074 nm
Average power: up to 6 kW

Protocols:

- Certification
- T-on-1
- R(T)-on-1
- Raster scan

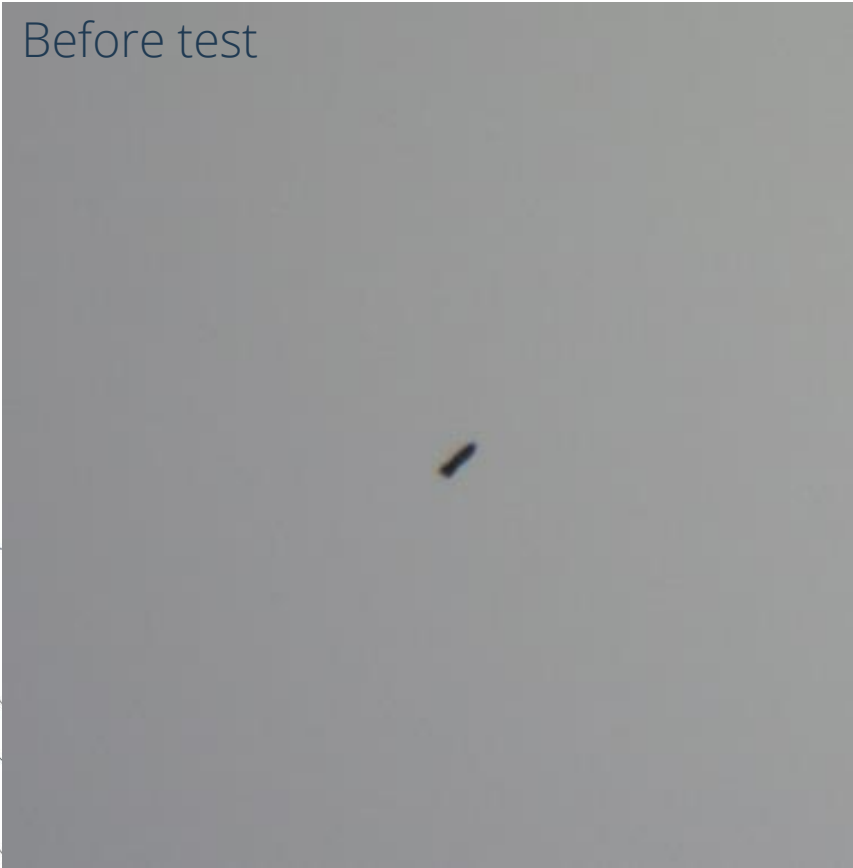


Manufacturing defects

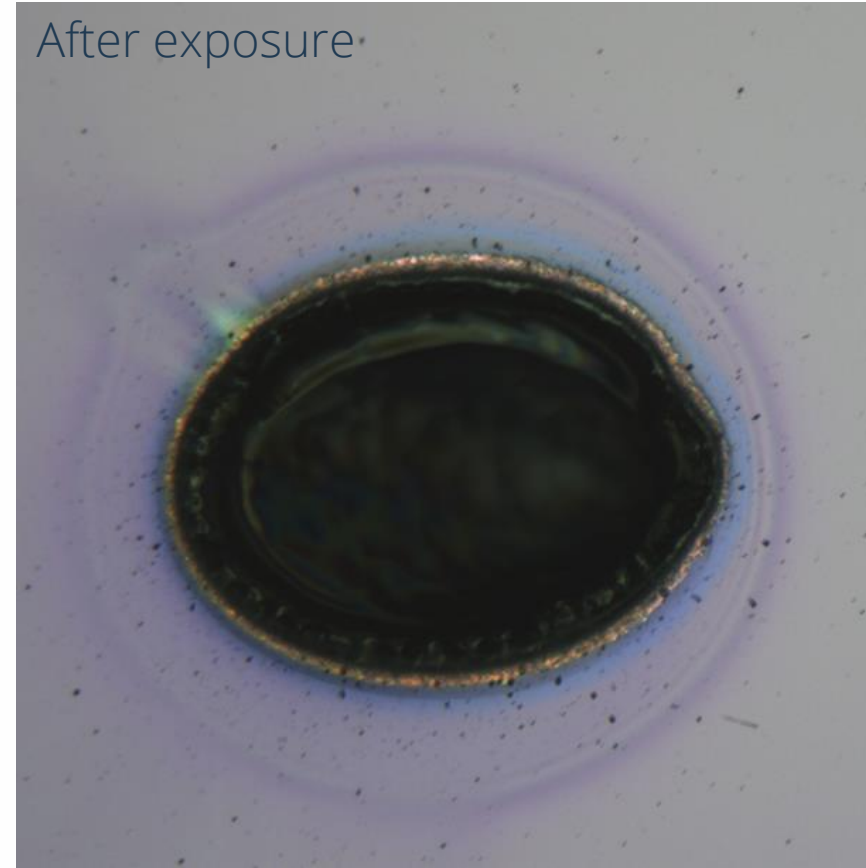


Particulate contamination

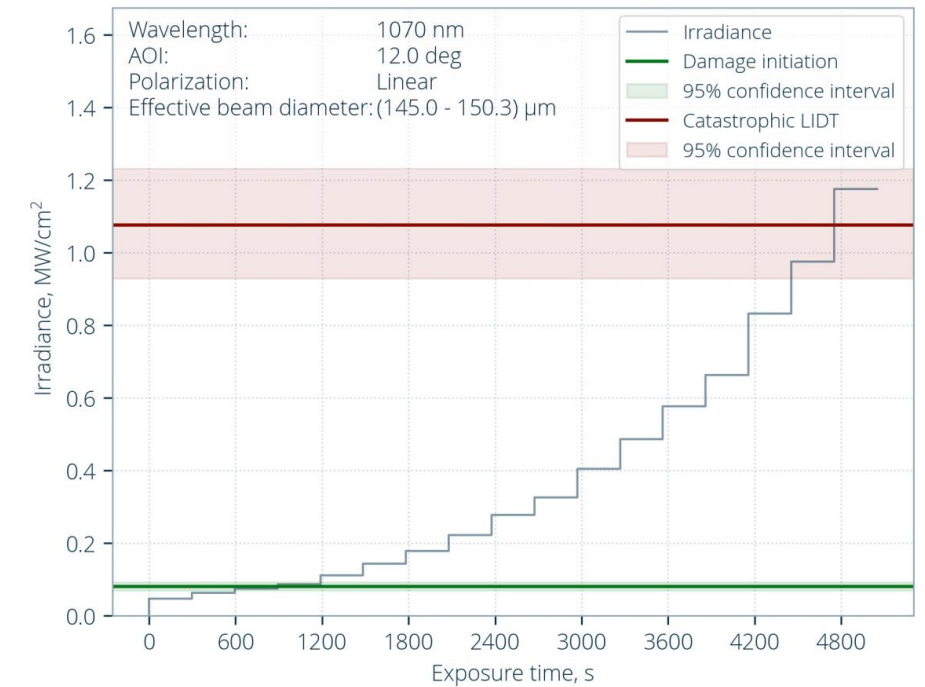
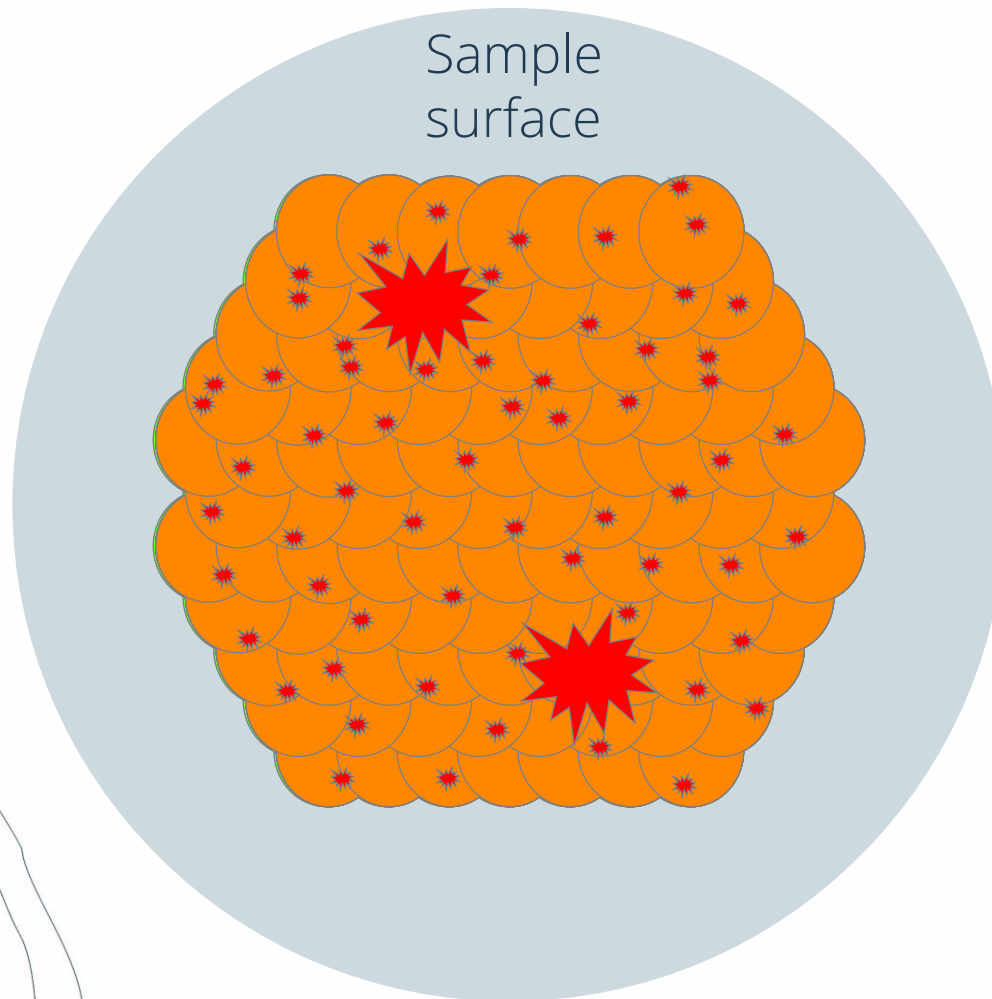
Before test



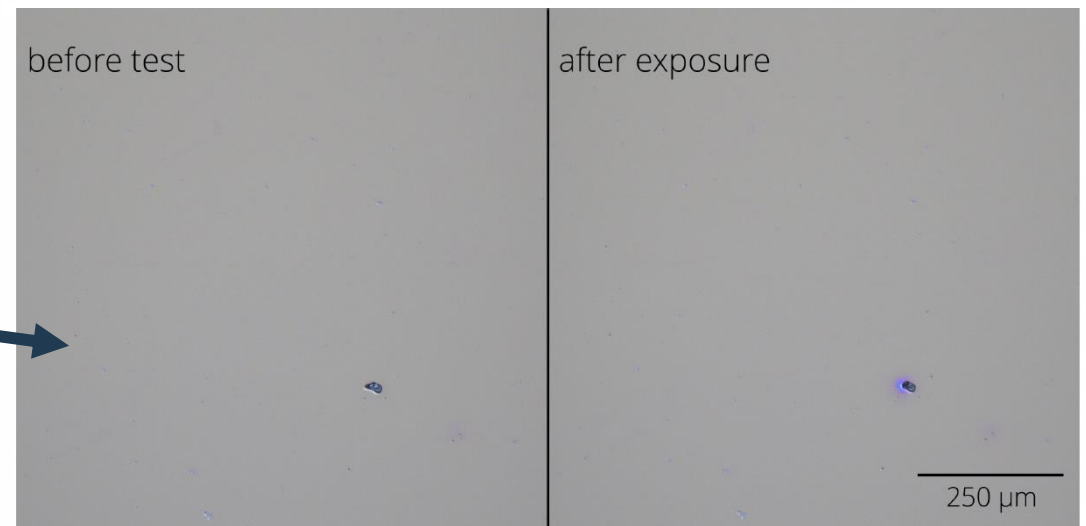
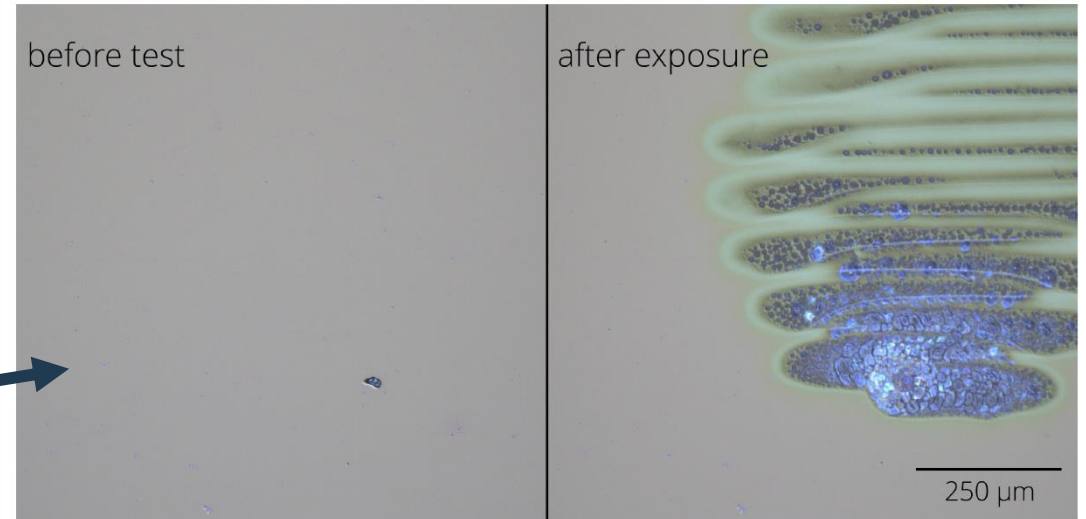
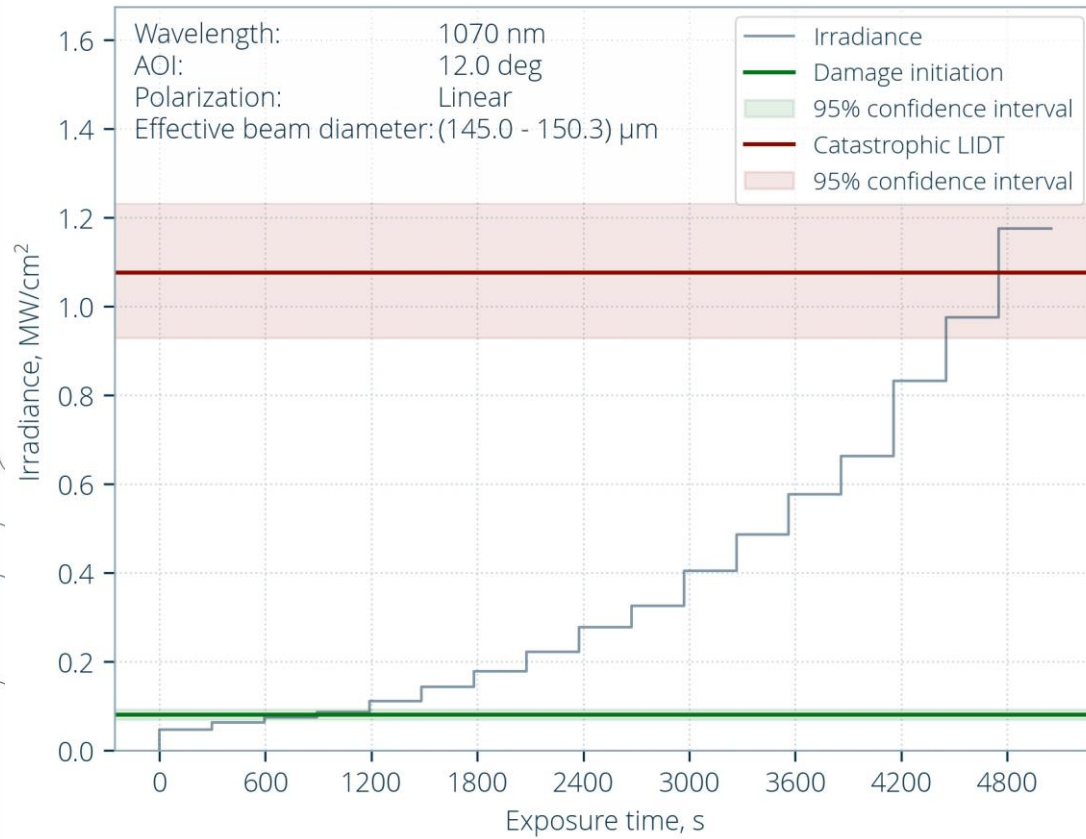
After exposure



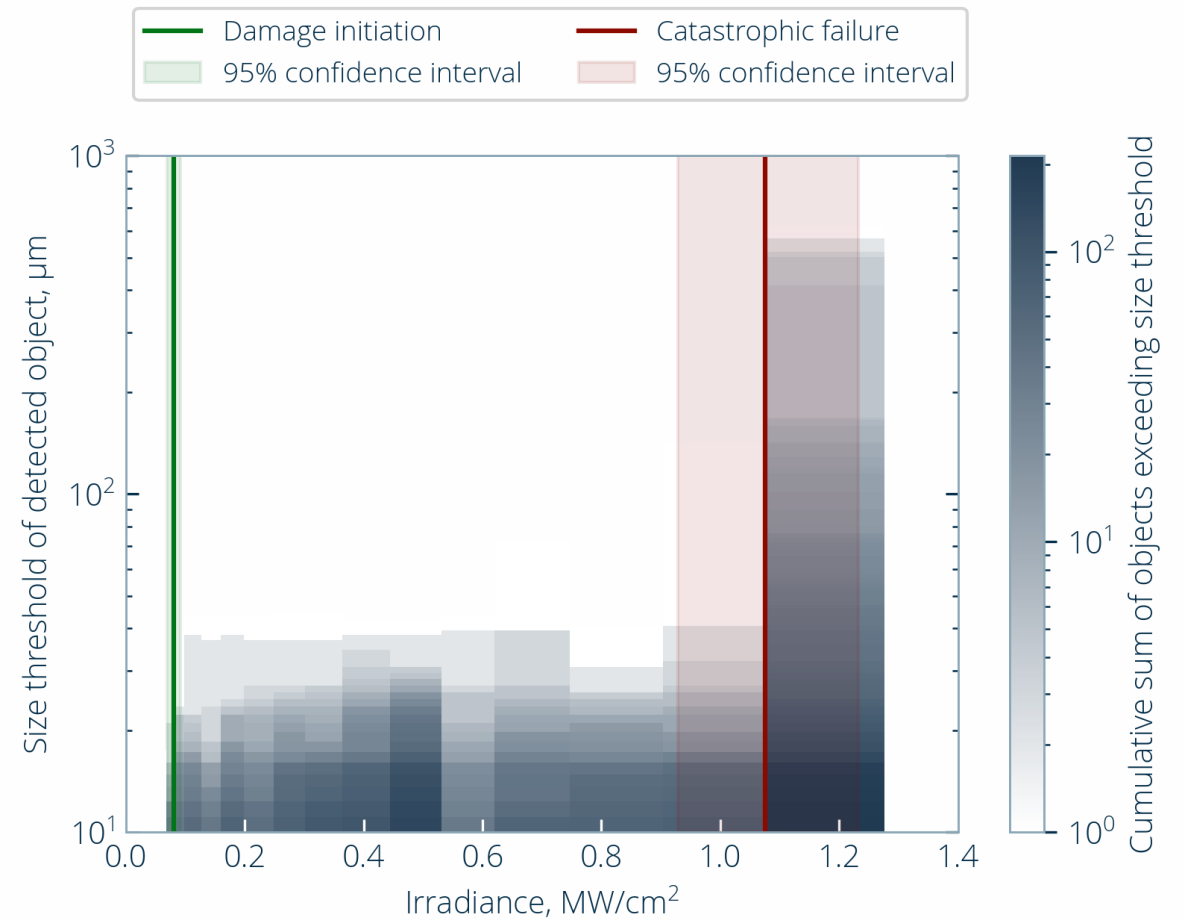
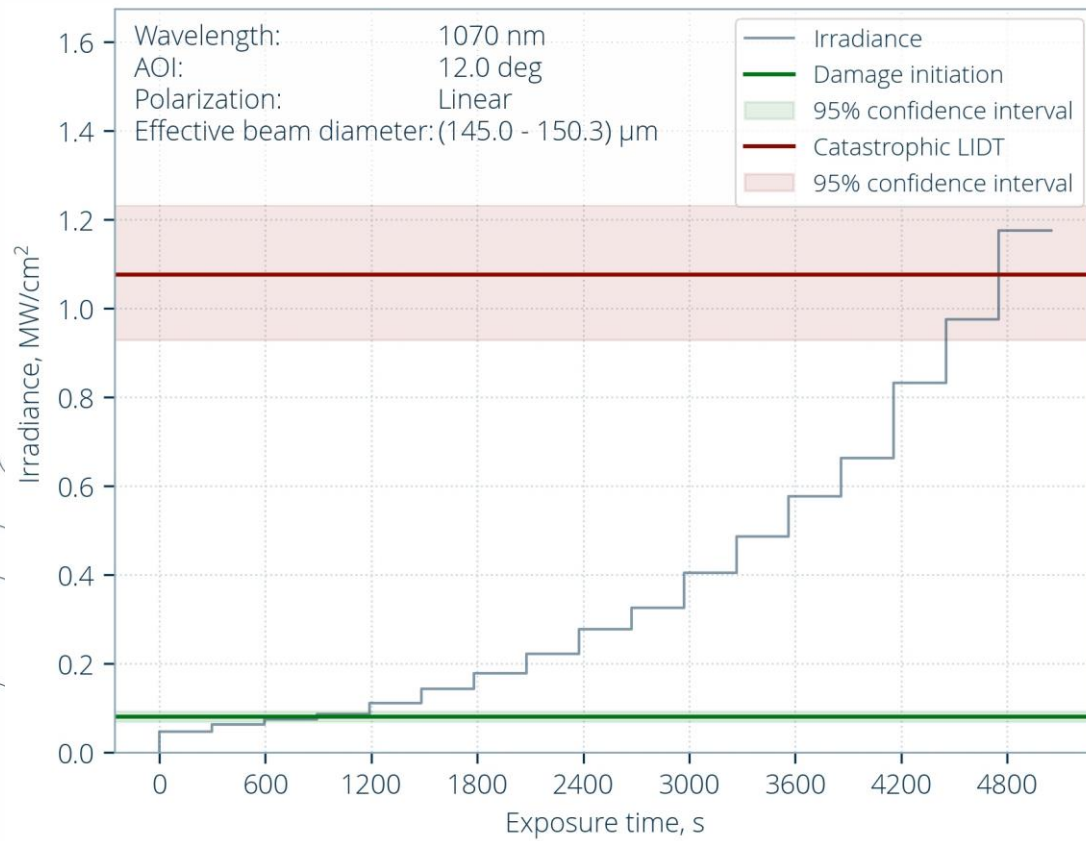
Raster scanning – the best tool to investigate low density defects



Surface defects



Surface defects



We can't wait to damage
your optics. Get in touch!



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