LIDT CHALLENGE

ALL YOU NEED TO KNOW ABOUT THE LIDT METHOD AND THE QUALITY OF YOUR SAMPLES

Reliability of high-power lasers is to a large extend given by optical components used in them. In the competition, you will gain qualified knowledge of respective damage thresholds of your components.

How does it work?

Each participant may provide up to two different samples accompanied with identical witness samples (i.e. four samples in total), packed separately and clearly identified. Samples of high reflective dielectric coated mirrors from each participant are requested to be sent to our facility until **no later than March 7, 2022** to the following address: **HiLASE Centre, LIDT COMPETITION, Institute of Physics of the Czech Academy of Sciences, Za Radnici 828, 252 41 Dolni Brezany, Czech Republic**. Anonymized samples will be tested on our ISO-compliant LIDT station using state-of-the-art high energy, high repetition rate pulsed laser. Participants will have a unique opportunity to see real life performance of their elements in the cutting-edge system. **Anonymized results will be presented at the Laser World of Photonics, April 26–29, 2022, Munich, and later directly to the participants.**

What will be tested and how?

The requested diameter of the samples shall be 2" or 50 mm, angle of incidence 0° and central wavelength 343 nm. Samples will be tested by s-on-1 method according to the ISO 21254-2:2011 standard with up to 105 pulses. The testing laser will provide 1-ps pulses in round, Gaussian beam with 1 kHz repetition rate. The beam will be in single-longitudinal mode, p-polarized and the test will be conducted at ambient pressure, temperature 22°C and 30% relative humidity, i.e. 101.3 kPa, 22°C and 30% respectively. The testing spot size will be 1 mm in the plane of incidence with maximum fluence 2.5 J/ cm². Please make sure that your samples are properly packed and identified, to prevent any transport interference or confusion with other samples. Also, please make sure that every sample you sent is accompanied with its identical twin, which can be used as test witness if needed. Please mark you package clearly with note **"LIDT competition"** to prevent any confusion with other shipments we are receiving.

Why to use testing at the HiLASE Centre?

Why to use testing at the HiLASE Centre? Although components tested with small beams or low number of pulses perform excellent, they fail when used in high-energy, high repetition rate system. That is why we introduce mm-size spot in combination with long-term exposure to our ISO-compliant LIDT testing. At the HiLASE Centre, we provide state-of-the-art testing of materials and components on resistance to laser irradiation at controlled conditions. A number of LIDT procedures is available, based on ISO standard 21254 series or customized according to specific needs. We have established a Quality Management System for materials testing on Laser Induced Damage Threshold and our LIDT laboratory has received the ISO 9001 CERTIFICATE.

Contact and registration

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