

## Most popular LIDT testing conditions

Pulse range	Laser	Effective pulse duration <sup>(1)</sup>	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 <sup>(2)</sup>	1030 <sup>(3)</sup> 515 343	50000
fs	Ti:Sapphire <sup>(3)</sup> (Kerr lens mode-lock)	50 fs	800	100 - 1000

## Available irradiation condition (check for availability)

CW Ytterbium (Yb) Fiber Laser	Tunable: 1 ms - 30 s <sup>(4)</sup>	1074±6	Single shot
Nd:YAG (single-mode)	10 ns 5 ns 5 ns 4 ns 4 ns	1064 532 355 266 213	1 - 100
Nd:YAG OPO (single mode)	~ 4 ns	710 - 810 1500 - 2100	1 - 100 <sup>(2)</sup>
Yb:KGW (Kerr lens mode-lock)	Tunable 180 fs - 12 ps <sup>(2)</sup>	1030 <sup>(3)</sup> 515 343 258	Tunable 1 - 200000 <sup>(2)</sup>
Ti:Sapphire <sup>(3)</sup> (Kerr lens mode-lock)	Tunable 45 fs - 12 ps <sup>(2)</sup> 45 fs - 1 ps 45 fs - 500 fs	800 400 266	Tunable 10, 100, 1000
Ti:Sapphire OPO (Kerr lens mode-lock)	~ 40 - 80 fs	250 - 2500 <sup>(5)</sup>	Tunable 10, 100, 1000 <sup>(2)</sup>

(1) effective pulse duration measured at Full Width Half Maximum

(2) maximum energy and pulse duration depend on the selected wavelength

(3) non-compressed pulses are available on demand (~135 ps)

(4) limited due to safety reasons by 1kW of average power (for higher powers 1s is used by default): longer pulse durations are available on demand

(5) pulse duration at wavelengths <500 nm and >1600 nm is relative between 40 - 80 fs

(6) At the CW regime currently only: 1) random polarization is available 2) the smallest available AOI is 12°

**Available for all pulsed laser irradiation conditions.**<sup>(6)</sup> **Polarization State:** Circular/Linear (S, P); **Different AOI:** 0 - 75°; **Test Environment:** Air (room temperature), Vacuum (down to 10<sup>-6</sup> mbar), cryogenic temperatures (down to 100K, for AOI: 0-60°)

**Standard testing conditions:** 1- or 2- inch round samples tested at 1064, 532 or 355 nm, 5-10 ns, 100 Hz. Standard tests are performed within 10 work days turnaround. Fast Turnaround (1 work day) is available on demand.

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## AVAILABLE TESTING PROCEDURES

### 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.