



Belford Research Ltd Laser Damage, Photonic & Microelectronic Materials

LIDT - Damage Threshold Certification

Customer:	Altechna	PO:	PU0020404-AVA
Date:	27/01/2021	BRL Job:	21028
Test :	S-on-1	Polarisation:	Linear
Angle:	Glancing (7°)	HR/AR:	HR
		Pre Clean:	Acetone Drag
		Wavelength (nm):	1535

Inspection and LIDT Results

Lot No.	Sample ID	Repetition Rate (Hz)	Pulse Duration (ns)	Laser Induced Damage Threshold	
				MW/cm ²	J/cm ²
4	M001948 LOT0072058 72871-Hf-9	10	10	>3017	>30.17

Additional Sample Information: Test restricted due to limited test area - threshold could not be narrowed down as precisely as usual. Damage threshold > 3.017 GW/cm².

Microscopy:	No	Laser Spot Log and Size (µm):	>235
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Tested by:

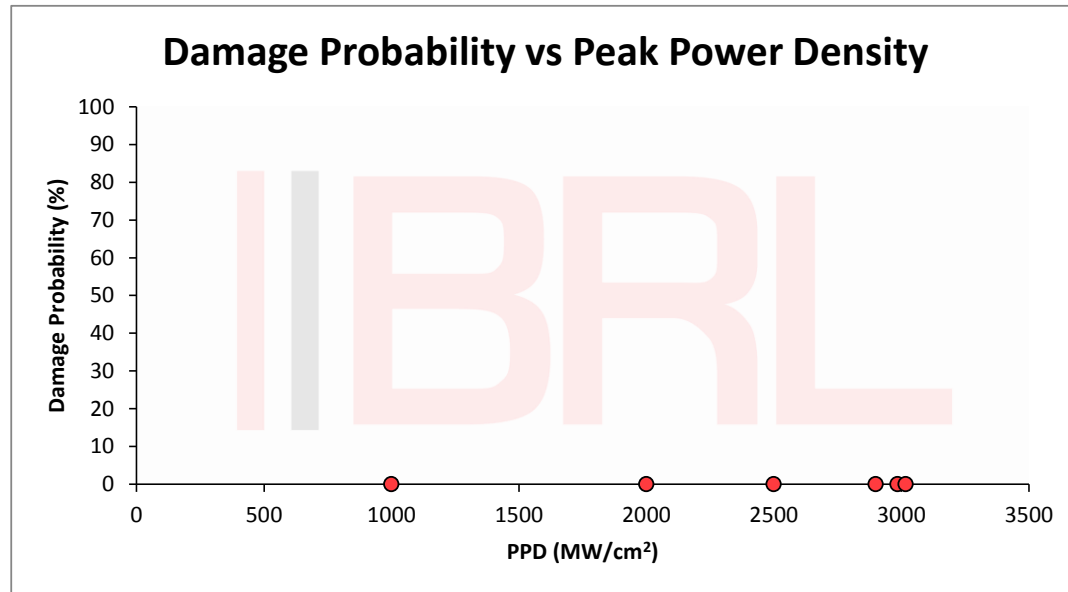
BRL certifies that all testing is conducted in general accordance with
 ISO Standards 21254-1; 21254-2; 21254-3 and ISO-TR-21254-4 2011.
 All instrument calibration is traceable to NIST or BS.

TEST DATA & SPECIFICATIONS

Customer	Altechna	
Date	27/01/2021	
Sample ID	M001948 LOT0072058 72871-Hf-9	
Test	Laser-Induced Damage Threshold	
LIDT Type	S-on-1	
Threshold Value	> 3017 MW/cm²	> 30.17 J/cm²
Determination Method	Least Fluence	
Wavelength (nm)	1535	
Pulse Duration (FWHM) (ns)	10	
Repetition Rate (Hz)	10	
Polarization	Linear	
Angle of Incidence (deg)	Glancing (7°)	
Spot Diameter (1/e ²) (µm)	>235	
Pre-Clean	Acetone Drag	
Test Beam Profile	TEM ₀₀	
Camera Log	4	
Axial Modes	Multiple	
ISO Compliance	ISO Standards 21254-1; 21254-2; 21254-3 & ISO-TR-21254-4 2011	
Number of Sites per Row	10	
Number of Rows tested	6	
Sample Handling	Cleanroom Glove	
Sample Size	12.7 mm dia	
Optic or Witness	Witness	
Substrate Material	BK7	
Side to Test	Coated	

Measurements

	Damage Incidents	MW/cm ²	J/cm ²
Row 1	0	1000.0	10.00
Row 2	0	2000.0	20.00
Row 3	0	2500.0	25.00
Row 4	0	2900.0	29.00
Row 5	0	2985.0	29.85
Row 6	0	3017.0	30.00



Damage Threshold: >3017 MW/cm²