BWA-Cam Mode Laser Beam Measurement Results

This Test Has Been Performed In Accordance With ISO 11146-1:2004

General Information

Test Date : 02/26/2024

Test Performed By : John Doe

Organization Name and Address: Haas LTI

Laser Information

Laser Type : 980nmDiode

Laser Manufacturer : Thor Labs

Laser Model : CPS980

Laser Serial Number : Unknown

Test Conditions

Wavelength(s) Tested : 940

Diode Laser Cooling Fluid Temperature (°K): 25.0 *C

Operating Mode : CW

Polarization : NP

Environmental Conditions : Ambient Room Temperature

Laser Parameter Settings

Output Power or Energy : 4.5mW

Current or Energy Input : 5V

Pulse Energy : NA

Pulse Duration : NA

Pulse Repetition Rate : NA

Testing and Evaluation Information

Evaluation Method : Second Order Moment

Test Equipment Used

- [x] Camera
- [x] Multispot
- [ ] Moving Camera
- [ ] Filter - Three-Step
- [ ] Filter - Full Caustic

Detector and Sampling System

Response Time of the Detector System : NA

Trigger Delay of Sampling (pulsed lasers only) :

Measuring Time Interval (pulsed lasers only) :

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Test Results

Beam Widths or Beam Diameter and Azimuth Angle (in accordance with Clause 7)

Location Z: 250.811 mm

	Mean Value	Standard Deviation
Beam Diameter dσ (µm)	57.010	0.001
Beam Diameter dσx (µm)	56.802	0.052
Beam Diameter dσy (µm)	57.219	0.051
Azimuth Angle ϕ (mRad)	-312.397	1.870

Beam Divergence Angles (in accordance with Clause 8)

Focusing Element Used : 10X Microscope Objective

Focal Length : 251 mm

	Mean	Standard Deviation
Beam Divergence Angle Θσ (mRad)	21.836	0.001
Beam Divergence Angle Θσx (mRad)	21.711	0.001
Beam Divergence Angle Θσy (mRad)	21.961	0.001

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Test Results (continued)

Beam Propagation Parameters Derived From Hyperbolic Fit (in accordance with Clause 9)

	Mean	Standard Deviation
Beam Waist Location z0 (mm)	250.811	0.000
Beam Waist Location z0x (mm)	250.877	0.003
Beam Waist Location z0y (mm)	250.745	0.003
Beam Waist Diameter d0 (µm)	57.010	0.001
Beam Waist Diameter d0x (µm)	56.802	0.052
Beam Waist Diameter d0y (µm)	57.219	0.051
Azimuth Angle ϕ (mRad)	-312.397	1.870
Rayleigh Length zR (mm)	2.611	0.000
Rayleigh Length zRx (mm)	2.616	0.002
Rayleigh Length zRy (mm)	2.605	0.002
Beam Divergence Angle Θσ (mRad)	21.836	0.001
Beam Divergence Angle Θσx (mRad)	21.711	0.001
Beam Divergence Angle Θσy (mRad)	21.961	0.001
Beam Propagation Ratio M^2	1.040	0.000
Beam Propagation Ratio M^2x	1.030	0.001
Beam Propagation Ratio M^2y	1.050	0.001