3.9.1 BeamPeek™ 2

Beam Profiling and Power Meter for AM Industry

The BeamPeek 2 laser beam profiler and power meter allows simultaneous beam profiling, M^2 and focal spot analysis, and power measurement of additive manufacturing (AM) lasers. It integrates both beam profiler, power meter, optical beam sampling system and beam dump. The electronics, beam splitters, and optics, as well as the SP932U CMOS camera and power meter are safely confined in separate chamber.
The beam dump is integrated into an easily replaceable tray without the need for active cooling using air or water.

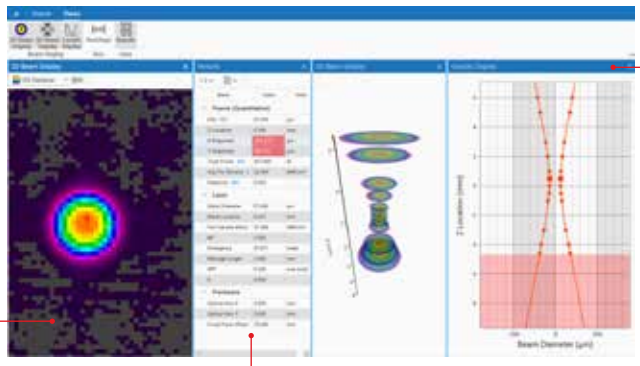
- Focal spot size and position, M^2, Laser Beam Profile, and Power
- Multimode and single mode, lasers
- Rugged for industrial production environment and metallic powder
- Doesn't require water or air cooling
- Fits AM chambers with 150-800mm focal lengths

BeamPeek 2



Software Features

Features	
Measurements	
	Beam Diameter (ISO)
	Z locations
	X/Y Alignment
	Total Power (ISO)
	Average Power Density (ISO)
	Ellipticity (ISO)
	Waist Diameter and Location (ISO)
	Power Density at Waist (ISO)
	M^2 (ISO)
	Divergence (ISO)
	Rayleigh Length (ISO)
	BPP (Beam Parameter Product)
User Interface	
	Intuitive access and usability as well as the option to hide controls
	Flexible display environments
2D display	
	Real-time representation of the intensity distribution within the beam
	Selectable color palettes designed to work with variety of safety eyewear
Caustic Display	
	Displays beam diameter along the propagation
	Select a point to display frame results from that plane
	Displays danger zone for safe operation
3D Beam Display	
	3D representation of beam constructed from all saved frames
Calculations	
	Frame results (Beam Diameter, Z location, X Alignment, Y Alignment, Total Power, Average Power Density, Ellipticity)
	Laser results (Waist Diameter, Waist Location, Power Density at Waist, M2, Divergence, Rayleigh Length, BPP, K)
	Supported beam diameter calculations
	• D4σ
	• % Peak (13.5% clip level)
	• EPSA (86.5% clip level)
Single Page Report	
	Setup information
	Results
	Caustic Display
	3D Beam Display



The Caustic Display shows the X and Y beam widths plotted against the Z axis locations.

This window displays the 2D or 3D beam profile.

This window displays quantitative measurements of the laser parameters. These include waist width, beam widths, M^2, power density, divergence angles, Rayleigh range, and other parameters shown.

Specifications

Model	BeamPeek™ 2
Beam Profiling, Power Meter and Beam Dump	
Wavelengths	1030 - 1080 nm
Spot size (min - max)	34.5µm - 2mm
Power	10W - 2kW
Measuring rate	24fps
Maximum spot size at entrance	10mm
Maximum incidence angle	0.5°
Operation time	2 min at 1000W, 1 min at 2000W
Camera position from bottom plane (1)	Nominal 76.54mm
Accuracy	3%
Response time	<3s
Cooling	Passive
Software	
	BeamPeek™ Software (2), BeamGage Ring - Core, BeamGage Professional
Calibration Certificates	
Power sensor	NIST traceable
JUNO USB converter	NIST traceable
Camera position from bottom plane (1)	Test Certificate ±100 µm
General	
Communication and power (3)	USB 3.0
Storage temperature	-30° C to 65° C
Storage humidity	95% maximum (non-condensing)
Operating temperature	10° C to 40° C
Weight	~9.5 kg
Dimensions	190mm x 190mm x 175mm
Compliance	CE, UKCA, China RoHS
Ordering Information	
Part Number	**SP90660**

Notes: (1) Nominal value, may differ from item to item due to assembly and camera tolerances; actual value is on COC, calibration sticker, ± 100µm
(2) BeamPeek 2 can also be used with StarLab, and BeamPeek Tools
(3) Comes with 2m cable, 15m active USB 3.0 cable P/N: 7E11214 available on request as accessory

Accessory Ordering Information

Item	Description	P/N
Beam-Dump Cartridge	Replicable beam dump cartridge for BeamPeek 2	**SP98026**
Cable 5 Meter for BeamPeek 2	USB 3.0 A male to A male cable, 5 meter for BeamPeek 2	**7E11231**
NIR Dustproof Window	Protective glass with a Target cap	**SP98024**

BeamPeek 2 Drawing

