

## BA-CAM® BWA-CAM® & BWA-MON® Product Line

### BA-CAM, BWA-CAM & BWA-MON

The BA-CAM Beam Analysis CAMera, BWA-CAM Beam Waist Analysis CAMera and BWA-MON Beam Waist Analyzer MONitor systems and software enables "real-time" laser beam measurement, analysis and monitoring of multi-kilowatt CW and pulsed lasers. The system design is based on the international standards ISO 11146 and ISO 13694 which relate to lasers and laser related equipment and laser beam spatial metrics.

- Single Pulse ISO Compliant M<sup>2</sup> Capability
- Only Real-time ISO Compliant M<sup>2</sup> System on the Market
- Modular Design: Fiber Only, Post Focus and Free Space
- Power Capability to 30 kW
- User Friendly Software
  - Record and Playback Measurements
  - Real-Time Mode & Scan Mode
  - Full Logging Capability



20 kw Fiber input BWA-MON



High Power BA-CAM



BWA-CAM



Post Focus BWA-MON

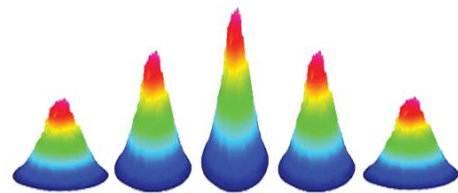
The patented<sup>†</sup> BA-CAM, BWA-CAM & BWA-MON systems provide the most versatility and ease of use when diagnosing laser beams with powers up to 30 kilowatts. This technology provides the best solution for high power laser applications. The systems are very modular and can be configured for a wide variety of applications, wavelengths, and laser powers.

<sup>†</sup>Covered by one or more of the following US patents: 8237922; 8427633; 8619247; 8711343; 8848177; 8848178; 8848179; 10708537; 10942275

Visit our website at [www.HAASLTI.com](http://www.HAASLTI.com) for additional information and product videos

Haas Laser Technologies, Inc | 37 Ironia Road, Flanders, New Jersey 07836 | USA

Ph: (973) 598-1150 | [info@haaslti.com](mailto:info@haaslti.com)



## Features

Optical	
M <sup>2</sup> Measurement	Real-Time with No Moving Optics/Hardware or Traditional Scan Mode
Rayleigh Range	1 mm to 48 mm
Single or Dual Camera	Profiling and M <sup>2</sup> measurement with Single or Dual Cameras
Auto Tracking of ROIs	Software Auto Sizes and Tracks all Regions of Interest (ROI)
QC Measurement	All Beam Quality Metrics Monitored and Flagged for External Interlocking Control
Extended Report Generations	ISO Report Generator of all Beam Quality Metrics
Logging & Recording Capability	All Beam Quality Metrics and Record Live Camera Measurements for Offline Playback
Attenuation	-5 to -8 OD Attenuation Built-in
Optional High-Power Attenuator	For Power Levels to 30 kilowatts and above
Alignment	Easy Setup, Alignment and Calibration
Spot Size	≥ 2 microns

## Specifications

Parameter	Description	Units
Sensors	CMOS & Microbolometer	
Pixel Area	Up to 25MP, Monochrome	
Pixel Size	2.74 to 17	µm
Active Sensor Area	Up to 23 x 23	mm
Scanning System	Rolling & Global Shutter	
Gray Level	10 - 16	bits
Frame Rate (in 8-bit mode)	Up to 100	fps
Trigger	Auto or External	
Power Consumption	1.9 – 4.0	W
Interface	POE 1 GigE	
Dimensions (L x W x H)	See Specific Model	mm <sup>3</sup>
Weight	See Specific Model	kg
Temperature Range	0 - 55	°C
Relative Humidity (non-condensing)	20 - 80	%
Wavelengths	190 - 10600	nm
Built-in Attenuation	-5.0 to -8.0	OD

\*Specifications of the parameters are model specific. Values provided cover the range of values from the various from our portfolio.

\*\*Power Over Ethernet (POE) Injector or switch, 48V 15.4W Power Over Ethernet, IEEE 802.3af Compliant, 10/100/1000Mbps and Category 5e, 6, or 6a cables only are not included with system.



*BWA-MON For 3-D Additive Applications*

Specifications subject to change without notice. Consult a Haas Laser Technologies engineer (973) 598-1150 for the latest specification changes or any additional assistance. Technical drawings of our products are available at [www.haaslti.com](http://www.haaslti.com). Contact [sale@haaslit.com](mailto:sale@haaslit.com) for ordering information.

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