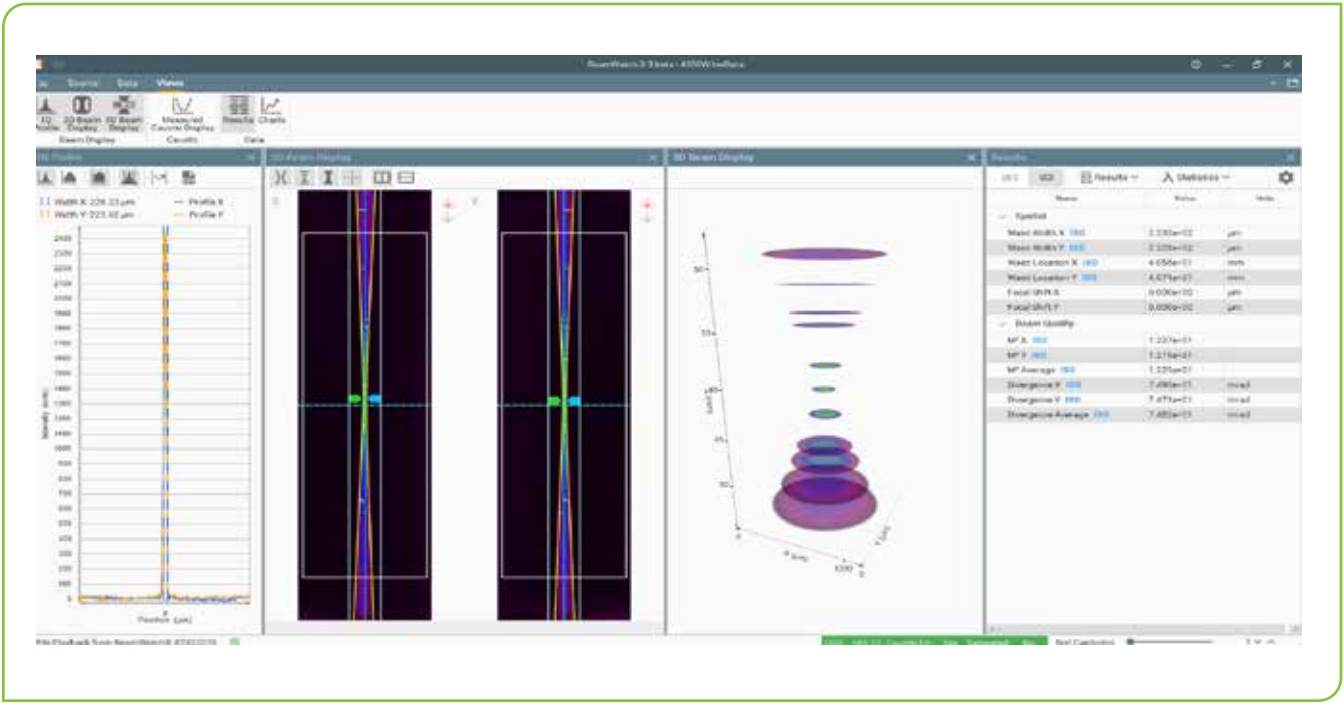


3.8.2 BeamWatch® Non-contact, Focus Spot Size and Position Monitor for high power YAG, Diode and Fiber lasers

- Instantly measure focus spot size
- Dynamically measure focal plane location during start-up
- From 400W and up – no upper limit (So far we have measured up to 100kW)
- Non-contact, laser beam is completely pass-through
- Automation Control Interface for System Integration
- GigE camera interface for local network installation
- Patented

BeamWatch utilizes disruptive technology to measure laser beam characteristics of very high power lasers. By not intercepting the beam and yet providing instantaneous measurements, you can now monitor the beam at frequent intervals without having to shut down the process or remove tooling and fixtures to get access. In addition, you can now measure focal spot location at several times per second and know if there is any focal spot shift during those critical start-up moments.

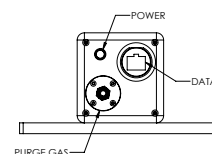
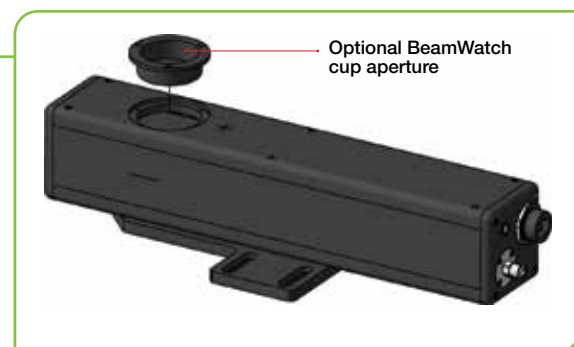
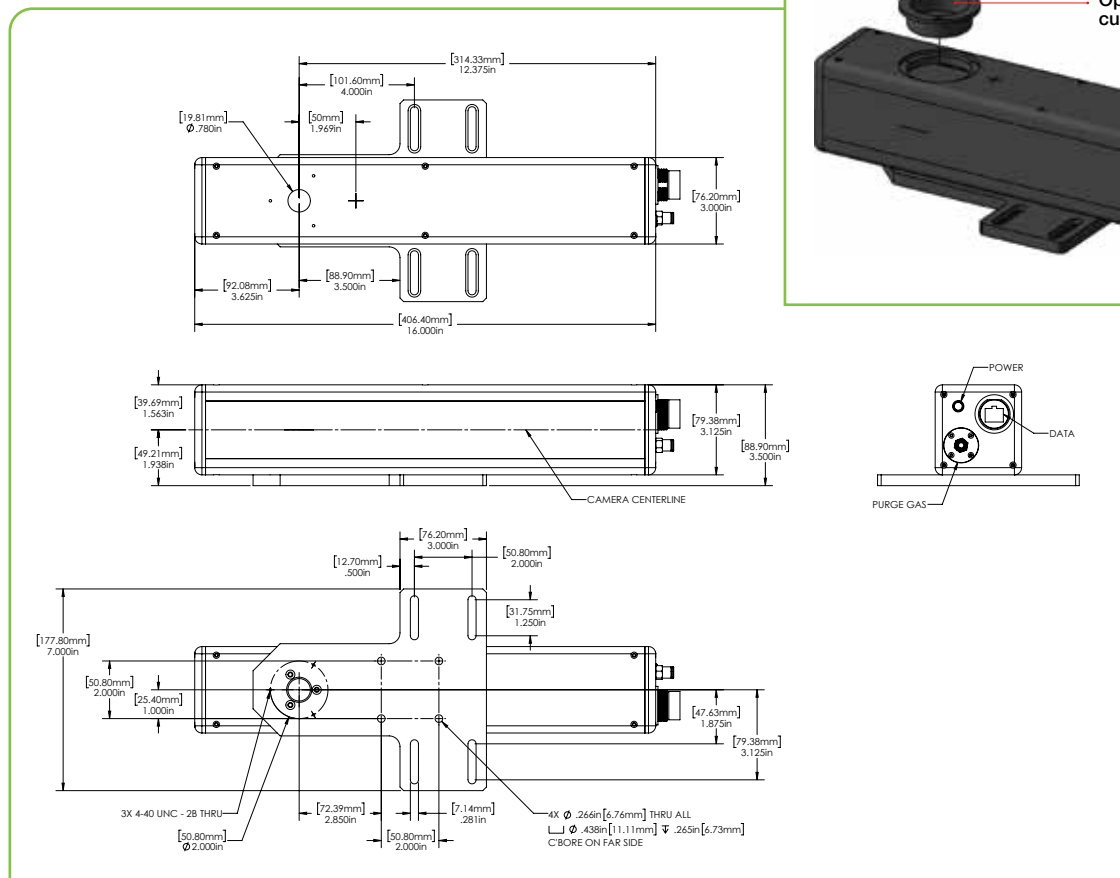


Specifications

Model	BW-NIR-2-155	BW-NIR-2-55
Beam Profiling		
Wavelengths	980-1080nm	980-1080nm
Minimum power density	2 Megawatts/cm ²	2 Megawatts/cm ²
Minimum spot size	155 microns	55 microns
Depth of field (DOF)	25.74mm	9.01mm
DOF resolution	16.5µm	5.5µm
Maximum beam diameter at entrance/exit	12.5mm	12.5mm
Accuracy		
Waist width (Spot size)	±5%	±5%
Waist location	±125 micrometers within the BeamWatch window	±125 micrometers within the BeamWatch window
Focal shift	±50 microns	±50 microns
Beam parameter product	±3.5% RMS	±3.5% RMS
Divergence	±3.5% RMS	±3.5% RMS
M2	±3.5% RMS	±3.5% RMS
General		
Communication to PC	GigE	GigE
Power supply	12 Volts DC, 1.67 Amps max, 100-240V AC	12 Volts DC, 1.67 Amps max, 100-240V AC
Particulate purge	Clean Dry Gas, approximately 10 LPM	Clean Dry Gas, approximately 10 LPM
Weight	3.9 Kg	3.9 Kg
Dimensions	16in x 7in x 35in 406.4mm x 177.8mm x 88.9mm	16in x 7in x 35in 406.4mm x 177.8mm x 88.9mm
Compliance	CE, UKCA, China RoHS	CE, UKCA, China RoHS
Ordering information		
Part Number	SP90390	SP90391

Suggested Add-Ons

Item	Description	P/N
Cup aperture	For those applications where the standard flat aperture does not position the delivery head close enough to the measurement centerline. Includes alignment tool SP90475	SP90476
Rotation Mount	Add-on 180° manual rotation mount to bottom of BeamWatch	SP90346
Locking Ethernet Cable	Replace standard Ethernet cable with one that locks into place, IP67 rated	SP90394
5000W-BB-50	5kW water cooled power sensor	7Z02754
10K-W-BB-45-V4	10kW water cooled power sensor	7Z07102
30K-W-BB-74	30kW water cooled power sensor	7Z02757
120K-W	100kW water circulated power sensor for laser with an approximately Gaussian beam and fiber output	7Z02691
Juno	Compact module to operate one Ophir sensor from your PC USB port	7Z01250
Vega	Hand held color universal power meter	7Z01560



Operating Space Charts

The plots are intended to give a visual indication of the recommended operating space for BeamWatch. If BeamWatch is operated outside of this space, it may be more difficult to see the curvature of the caustic or the beam may be large enough at the edges of the image that it is out of focus.

The maximum waist is dependent on the power density and M^2 of the beam. Specified is a minimum power density of 2 megawatts/cm² and the M^2 vs waist width is shown in the corn-looking graphs. Following these charts also covers the 12.5mm max beam size as it enters and exits the unit.

The 12.5mm maximum beam size at entrance and exit is the physical clear aperture of unit, and is the same for all models.

- Optimal has at least 3 Rayleigh lengths on both sides of the waist, with the waist at the center of the image
- Near Optimal has at least 3 Rayleigh lengths on 1 side of the waist, with the waist at the end of the image
- Acceptable has at least 1.5 Rayleigh lengths on both sides of the waist, with the waist at the center of the image

