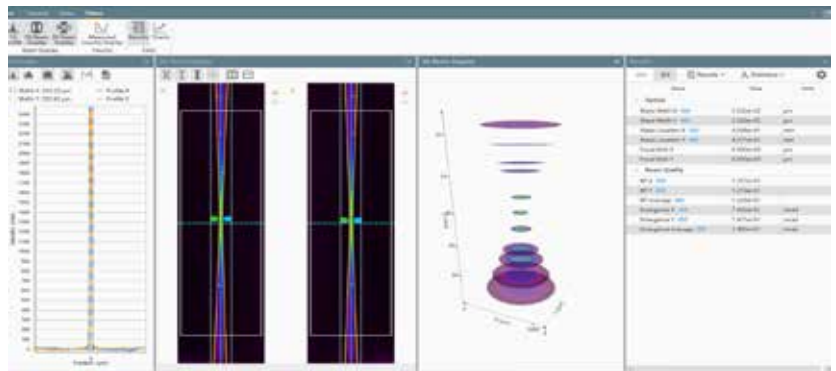


### 3.8.2 BeamWatch® & BeamWatch®Plus Non-contact, M<sup>2</sup>, Focus Spot Size and Position Monitor for high power NIR and VIS lasers

- Instantly measure focus spot size
- Dynamically measure focal plane location during start-up
- From 400W for NIR (3W for VIS) and up - no upper limit (So far, up to 100kW was measured)
- Non-contact, laser beam is completely pass-through
- Automation Control Interface for System Integration
- GigE camera interface for local network installation
- Patented



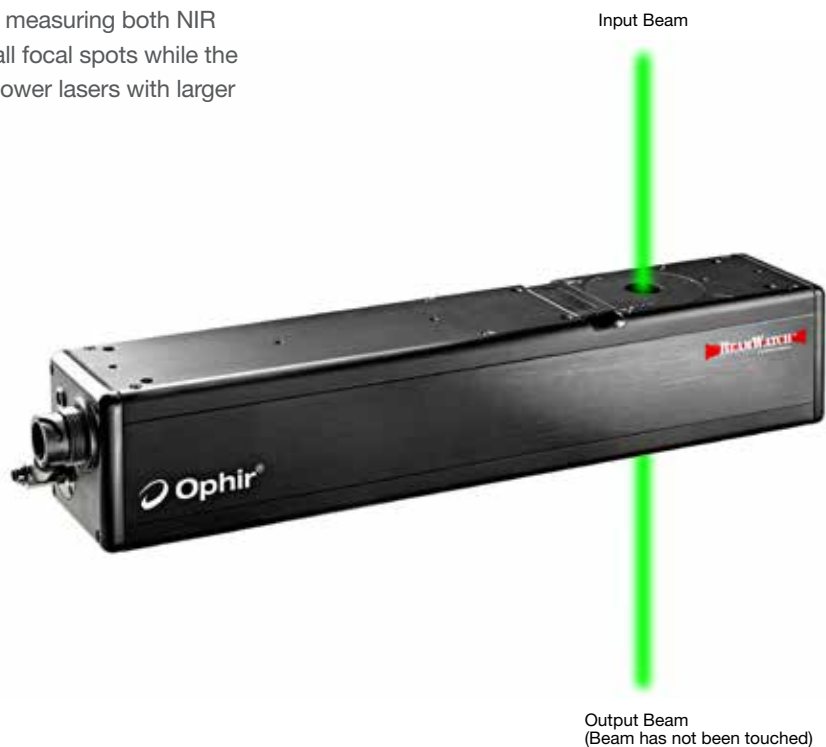
BeamWatch utilizes disruptive technology to measure laser beam characteristics of very high power lasers. By not intercepting the beam and yet providing instantaneous measurements, you can now monitor the beam at frequent intervals without having to shut down the process or remove tooling and fixtures 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.



The BeamWatch software accurately analyzes in real time the laser waist size and position, focal shift, M<sup>2</sup>, divergence and other parameters essential for industrial laser applications.

#### BeamWatch®Plus

The BeamWatch®Plus is capable of measuring both NIR and VIS high-power lasers with small focal spots while the BeamWatch® designated for high-power lasers with larger focal spots at NIR.



## Specifications

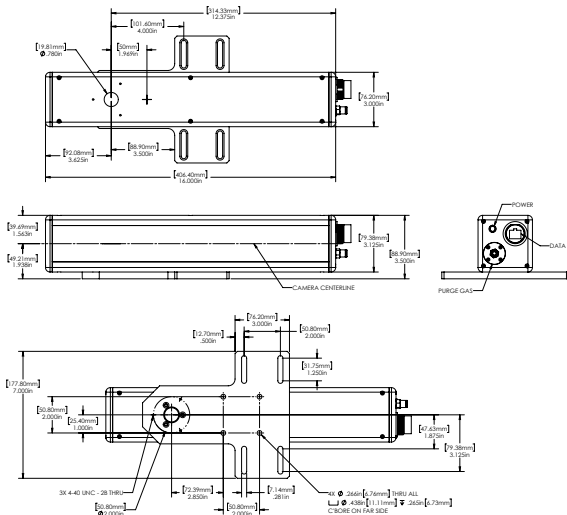
| Model   | BW-NIR-130   | BW-PLUS-45   |
|---|--|--|
| <b>Beam Profiling</b>                                 |  |  |
| Wavelengths   | 950-1100nm   | 420-635nm      950-1100nm  |
| Minimum Linear Power density <sup>(1)</sup>           | 15 kW/cm   | 230 W/cm      34 kW/cm   |
| Minimum Power   | 400 W  | 3 W      400 W   |
| Minimum spot size                                     | 130 μm <sup>(2)</sup>  | 45 μm  |
| Maximum Power   | No limit   | No limit   |
| Field of View (FOV)                                   | 25.74mm x 8.55mm   | 9.01mm x 2.99mm  |
| FOV resolution  | 16.5μm   | 5.5μm  |
| Max Rayleigh Range                                    | 8.5mm  | 3mm  |
| Maximum beam diameter at entrance/exit <sup>(3)</sup> | 12.5mm   | 12.5mm   |
| Distance from top to center of FOV <sup>(4)</sup>     | 39.7mm   | 39.7mm   |
| <b>Accuracy<sup>(5)</sup></b>                         |  |  |
| Waist width (Spot size)                               | ±5%  | ±5%  |
| Waist location  | ±125 μm  | ±125 μm  |
| Focal shift   | ±50 μm   | ±50 μm   |
| Beam parameter product                                | ±2% RMS  | ±2% RMS  |
| Divergence  | ±2% RMS  | ±2% RMS  |
| M <sup>2</sup>  | ±2% RMS  | ±2% RMS  |
| <b>General</b>  |  |  |
| 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 35 PSI / 2.5 BAR<br>Particle size < 5μm, oil and water free | Clean Dry Gas, approximately 35 PSI / 2.5 BAR<br>Particle size < 5μm, oil and water free |
| Weight  | 3.9 Kg   | 3.9 Kg   |
| Dimensions  | 16in x 7in x 35in<br>406.4mm x 177.8mm x 88.9mm  | 16in x 7in x 35in<br>406.4mm x 177.8mm x 88.9mm  |
| Operating / Storage Temperature                       | 10 to 40°C / -20 to 80°C   | 10 to 40°C / -20 to 80°C   |
| Operating / Storage Humidity                          | 20% to 80%, relative, non-condensing   | 20% to 80%, relative, non-condensing   |
| Compliance  | CE, UKCA, China RoHS   | CE, UKCA, China RoHS   |
| <b>Ordering information</b>                           |  |  |
| Part Number   | SP90623  | SP90613  |

- Notes: (1) Linear Power Density calculated by Power / beam diameter.  
 (2) Minimum spot size possible down to 125μm with additional 2% error.  
 (3) OEM solutions available for larger aperture needs.  
 (4) Cup aperture accessory (SP90476) has a 23.8mm distance to the center of the FOV. The deep cup accessory (SP98008) for BW-PLUS-45 only has a 12mm distance to the center of the FOV.  
 (5) Specified accuracy for beam tilt < 5°.

## Suggested Add-Ons

| Item                        | Description  | P/N     |
|-----------------------------|--|---------|
| Cup aperture for BW-NIR-130 | For applications requiring closer positioning of laser to center of FOV, Includes alignment tool.  | SP90476 |
| Cup aperture for BW-Plus-45 | Enables down to 23.8mm distance to the center of the FOV   | SP98008 |
| 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   | 7Z07108 |
| 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 |

### BeamWatch



### BeamWatch-Plus

