



FocusMonitor FMW+



The Universal Tool for Focus Measurement

Efficient and advanced: Anyone using technology to shed light on things is focused not only on efficiency, but also on consistency. PRIMES beam diagnostics devices are unmatched in their ability to help your beam source ensure consistent workpiece quality. With the FocusMonitor FMW+, we provide a true jack of all trades, ready to show its true colors even in the tightest spaces.

The FocusMonitor FMW+ is specially designed for analyzing continuous irradiation, even at high beam powers. Our universal tool for high-power radiation is the compact version of our proven, globally successful FocusMonitor FM+ with new electronics and an absorber for powers up to 1000 W. Gain

the peace of mind that comes with knowing that the quality of the laser beam in your processing system is up to par when you use the compact FocusMonitor FMW+, capable of reliably determining the geometric dimensions of the focused laser beam as well as the focal point location in space, the beam parameter product, and the beam quality factor M^2 .

The Principle

The FocusMonitor FMW+ is a mechanically scanning measuring system for measuring focused laser beams with diameters between 100 μm and 3 mm in tight spaces. Unlike the FM+, the FMW+ does not have its own z-axis. You will therefore have to use the z-axis of the laser system to take caustic measurements.



The device can be used to measure NIR as well as CO₂ beams up to 1 000 W laser power. All you need to do is exchanging the measuring tip and the corresponding detector. With a maximum size of 8 x 8 mm, the measurement window can be gaged with a resolution of up to 1024 x 1024 pixels.

Just Exchange: Measuring Tips and Detectors

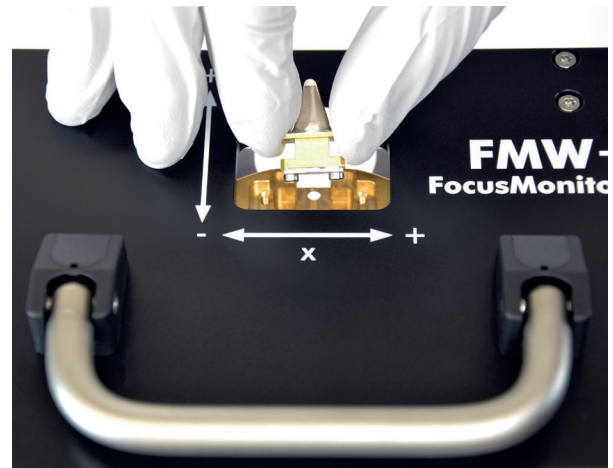
Changing the detector and the measuring tip is easy and can be done by the user in just a few minutes. The full FocusMonitor FMW+ system set includes the main device as well as two detectors, two measuring tips, and a practical transport box as well as other accessories.

- ① Measurement set for NIR beams
 - Detector DFIG-PS+
For measuring NIR lasers, incl. photo diode with electrically variable, adjustable sensitivity, wavelength range 1 – 1.7 μm
 - Measuring tip FocusMonitor NIR high div
For measuring high-power solid-state lasers with adjusted sensitivity, damage threshold up to 10 MW/cm² (7500 1/min and He inert gas)

- ② Measurement set for CO₂ beams
 - Detector DFC+
With passive infrared detector for measuring CO₂ lasers, wavelength range 9 – 12 μm
 - Measuring tip FocusMonitor CO₂ high power
for measuring high-power CO₂ lasers with adjusted sensitivity, damage threshold up to 30 MW/cm² (7500 1/min and He inert gas)

Enhanced Functionality Thanks to new LaserDiagnosticsSoftware

With the new diagnostics tool LaserDiagnosticsSoftware (LDS), the FocusMonitor FMW+ offers considerably more functionality than ever before. In addition to faster data communication via Ethernet, it also allows for semi-automatic or manual measurement of beam density distribution in keeping with innovative standards as well as the measurement of beam position and beam dimensions.





Technical Data

MEASUREMENT PARAMETERS	
Power range	up to 1 000 W
Wavelength range	1.0 – 1.7 μm and 9 – 12 μm
Beam dimensions, typ.	100 – 3 000 μm (optionally up to 5 000 μm)
Max. energy per measurement	90 kJ
DEVICE PARAMETERS	
Measurement window sizes	0.1 x 0.1 up to 8 x 8 mm (at 64 pixel resolution)
Resolution	32 x 32 – 1 024 x 1 024 pixel
Rotation speed	1 875, 3 750 rpm
SUPPLY DATA	
Power supply	24 V DC \pm 5 %, max. 1.8 A
COMMUNICATION	
Interfaces	Ethernet
DIMENSIONS AND WEIGHT	
Dimensions (L x W x H) Height with the carrying handle folded down	185.5 x 153 x 237.5 mm 208.5 mm
Weight (approx.)	8 kg
ENVIRONMENTAL CONDITIONS	
Operating temperature range	+10 °C up to +40 °C
Permissible relative humidity (non-condensing)	10 – 80 %