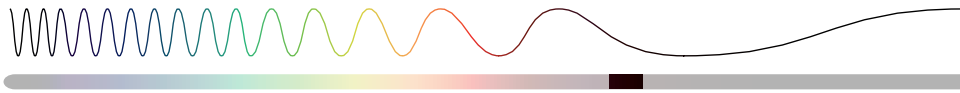
PowerMeasuringCassette

PRIMES

- Fiber and disc laser
- Diode laser
- Ultrashort pulse laser
- CO_2 laser



● 900 – 1090 nm

Measure laser power directly in the protective window cartridge slot of your processing head.

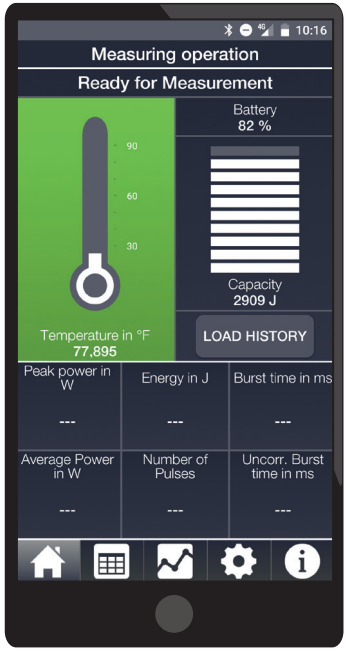
- Caustic
- Raw beam
- Power
- Beam profile
- Pointing stability
- Vector
- Focus shift

POWER RANGE	400 W – 12 kW
BEAM QUALITY M^2	Up to single mode
BEAM DIAMETER	Up to 30 mm
HIGHLIGHT	Pulsed laser > 50 µs Internal storage
INTERFACES	USB

Tech Corner

The PMC-BEO is a compact laser power measurement solution that leverages the widely recognized calorimetric measuring principle. It calculates laser pulse energy by assessing the temperature rise in its absorber and determines effective power by measuring the length of the inserted laser pulse. This linear and precise method is ideal for measuring laser power across a broad energy range.

Its user-friendly design ensures simplicity, time-efficiency, and laser safety. The PMC-BEO can be effortlessly placed in the protective glass slot to measure various power levels without the need for cooling or lengthy waiting periods between measurements. It allows you to move around your site and measure multiple lasers consecutively while keeping the laser cell closed. An interlock system monitors the measuring tool's status and provides safety in critical situations.



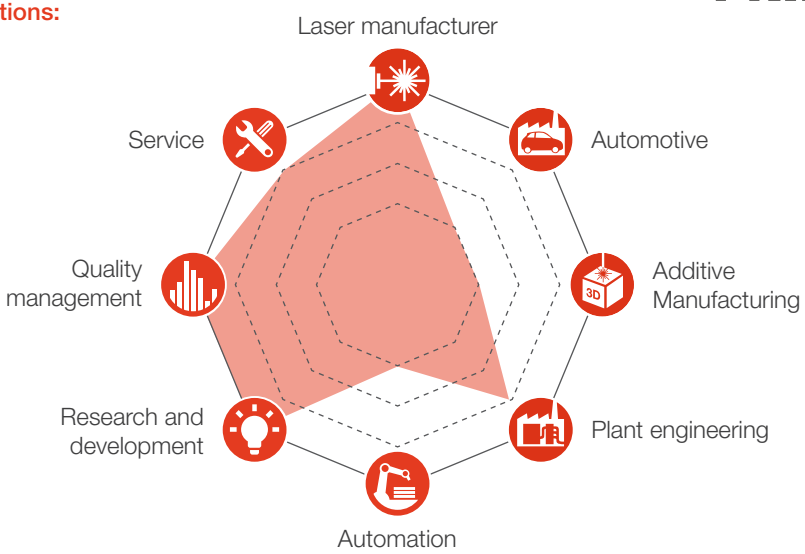
Using the PRIMES Cube App for mobile devices with Android™, you can operate and monitor The PMC-BEO simply and conveniently on a tablet or smartphone via Bluetooth. Entire measuring series can be preset through the user-friendly interface on the mobile terminal and transmitted to the PMC-BEO. It will graphically display the measuring values of laser power, pulse duration, and collected energy per pulse on the mobile terminal.

The Cube App also supplements this information with the standard deviations. You can download the PRIMES Cube App for free from the Google Play Store.

MEASUREMENT PARAMETERS	PMC-BEO
Power range	400 – 12 000 W
Wavelength range	900 – 1 090 nm
Max. beam diameter on the absorber	30 mm
Max. power density on the absorber (approx. 2 mm underneath the protective window) at beam diameters > 10 mm 10 – 3 mm 3 – 1.5 mm < 1.5 mm	 4 kW/cm² 5 kW/cm² 10 kW/cm² 12 kW/cm²
Irradiation time	0.1 – 1 s (depending on the laser power) [1]
Min. on/off times (duty cycle) for pulsed lasers	50 µs (e.g. max. 10 kHz at 50% duty cycle)
Max. laser rise time	100 µs
Energy per measurement	50 – 3 000 J
Recommended energy per measurement	300 – 500 J
Total duration until measurement value output	< 15 s
Nominal measuring frequency	300 J: 1 cycle/min, 3 000 J: 1 cycle/15 min
DEVICE PARAMETERS	
Max. absorber temperature	120 °C
Max. angle of incidence	± 5°
Max. centered tolerance	± 2.0 mm
Measuring accuracy at angles of incidence up to 5 °	± 3 %
Reproducibility	± 1 %
SUPPLY DATA	
Power supply	Integrated lithium-ion battery, which can be charged via a micro-USB port
Temperature range for charging the lithium-Ion battery	0 – 45 °C
COMMUNICATION	
Interfaces	USB
DIMENSIONS AND WEIGHT	
Dimensions (L x W x H)	179 x 84 mm x 31 mm
Weight (approx.)	460 g

[1] The stated limit values are to be understood in correlation with the permitted maximum energy ($E = P \cdot t$).

Applications:



System description: The PowerMeasuringCassette PMC is a compact power meter, using the proven calorimetric measuring principle. Its special design allows the PMC to measure the laser power directly within the laser processing head by replacing the protective glass. Decoupled of the environment, the PMC works with high precision in the range of several watts up to multi kilowatts in just one device. Measure your CW- or pulsed solid state laser system within seconds.

Your benefit: Due to its design, high accuracy, quick and easy setup, without losing sight of safety, PowerMeasuringCassette is a reliable tool that fit in every service box. The display of the PMC or PRIMES Cube App shows all the information you need at a glance, but can provide even more parameters by pressing just one button. For a better comparison of individual measurements, an internal storage allows a series of measurements which can be displayed after all your measurements are done.

CONCLUSION

Qualification and service have never been that easy. PRIMES PowerMeasuringCassette masters all the challenges from the laser market with its high diversity. The PowerMeasuringCassette is compact, fast, reliable and highly accurate.

For further information please visit www.primes.de/pmc

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