

# Cube XT



Fiber and disc laser



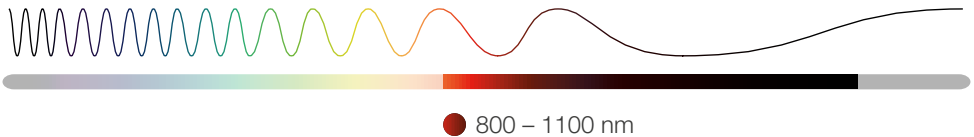
Diode laser



Ultrashort pulse laser



CO<sub>2</sub> laser



The Cube XT is highly accurate, reliable and portable.  
Your power meter of choice for high power lasers and large area beams.



Caustic



Raw beam



Power



Beam profile



Pointing stability



Vector



Focus shift

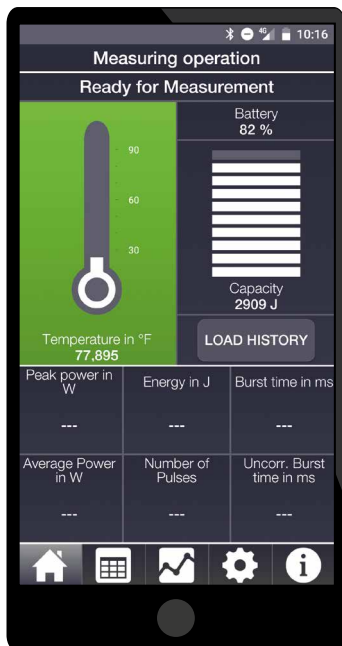
POWER RANGE	1 500 – 120 000 W
BEAM DIAMETER	up to 120 mm
HIGHLIGHT	Large absorber for very high power and for large area beams
INTERFACES	Bluetooth, Micro-USB

# Tech Corner

Identical in its working principle to the other Cube family members and related systems, the Cube XT calculates the energy of a laser pulse by determining the temperature rise within its absorber. By measuring the length of the incident laser pulse, the effective power is calculated. Due to this linear and accurate physical fact, this measurement method is particularly suitable for measuring laser power, even with the smallest amounts of energy and also at very high power levels.



The handling is designed to be as simple as possible, time-saving and with laser safety in mind. Place the Cube XT at a suitable distance to your laser and measure multiple power-levels. You don't need to cool the device with water or have to wait for minutes between measurements. You can also walk around your site and measure multiple lasers, one after the other. The laser cell can always be closed. An interlock constantly monitors the status of the measuring tool and unlocks in critical situations. Use the internal storage and the Cube App or our LaserDiagnosticsSoftware to evaluate your results later at your desk. You can also access the past measurements in the display with the easy one-button control.



Using the PRIMES Cube App for mobile devices with Android™, you can operate and monitor all Cube models 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 wirelessly to the Cube. It will graphically display the measuring values of laser power, pulse duration, and collected energy per pulse on the mobile terminal.

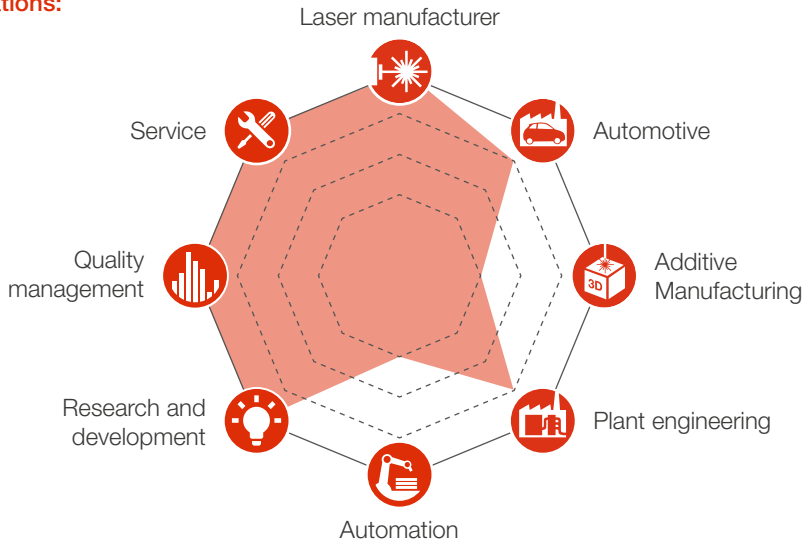
The Cube App also supplements this information with the standard deviations. You can download the PRIMES Cube App for free from the Google Play Store.

Alternatively, the micro-USB interface can be used to connect the Cube with a stationary computer and operate it with our new LaserDiagnosticsSoftware (LDS). This offers even more features to control the device or to analyze and back up measurement data.

MEASUREMENT PARAMETERS		CUBE XT
Power range		1 500 – 120 000 W <sup>1)</sup>
Wavelength range		800 – 1 100 nm
Max. beam diameter on the absorber		120 mm
Max. power density on the absorber (approx. 58 mm underneath the protective window)		< 4 kW/cm <sup>2</sup>
Irradiation time (depending on laser power)		0.1 – 2.0 s <sup>1)</sup>
Min. on/off times (duty cycle) for pulsed lasers (e.g. max. 10 kHz at 50 % duty cycle)		50 µs
Max. laser rise time		< 1% of irradiation time
Energy per measurement		3 000 – 50 000 J
Recommended energy per measurement		6 000 J
Total duration until measurement value output		< 35 s
DEVICE PARAMETERS		
Max. absorber temperature		120 °C
Max. angle of incidence perpendicular to inlet aperture		± 3 °
Max. centered tolerance		± 10 mm
Measurement accuracy		± 3 %
Reproducibility		± 1 %
SUPPLY DATA		
Power supply		Built in lithium-ion battery
Temperature range for charging the lithium-ion battery		0 – 45 °C
COMMUNICATION		
Interfaces		Micro-USB/Bluetooth®
Software (optional)		Cube App and LaserDiagnosticsSoftware (LDS)
DIMENSIONS AND WEIGHT		
Dimensions (L x W x H) (without connectors)		263 x 218 x 85 mm
Weight (approx.)		5 070 g

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

## Applications:



**System description:** The Cube XT is a compact power meter, using the proven calorimetric measuring principle. Its high accuracy of  $\pm 3\%$  is realised by additional thermal sensors within the housing. **The large absorber enables the measurement of very high power levels of up to 100 kW and also large scale beams up to 100 mm in diameter.** Measure your CW- or pulsed laser system in the wavelength range of NIR. Also, PRIMES Cube XT will capture every single pulse, up to a frequency of 10 kHz and 50 % duty cycle.

**Your benefit:** Due to its portable design and high accuracy, the Cube XT is a reliable tool that fits in every service box. Once the Cubes are charged, they can be operated with a mobile device for Android™ via Bluetooth using the PRIMES Cube App – **no wiring needed.** The display of the Cube 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

Measuring high power or large area beams has never been that easy. PRIMES Cube XT masters all the challenges from the laser market with its high diversity. No matter what power level or application, the PRIMES Cube is your solution.



For further information please visit [www.primes.de/cube](http://www.primes.de/cube)