

Handheld Laser Power Probes

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Many applications do not require “long term” power monitoring, but it is sufficient to have readings in a snapshot just to monitor if the power level is ok, as there is no necessity to measure over an extended period of time the laser power stability; moreover, many times water is not available on the laser machines, so service operations are easier if the measurement instrument do not require water cooling.

That’s the world for a different class of instruments known as “**Power Probes**”. These instruments are stand-alone meters made of a thermal probe connected to electronics with its display. In general, instruments of this type are thermometers that measure a temperature difference in a fixed time and have a simple digital display. **MLP-FIT** and **MLP-CRONOS** have been ergonomically designed in all their details, such as the LCD display and the balance of weights, to provide a comfortable and safe operation.

Laser Point has introduced a real breakthrough in the field with two series of fully automatic laser power probes that calculate laser power by a microprocessor based measurement of temperature dynamics.

Their measurement and acquisition technique self-determines the time needed to carry out a measurement: data acquisition is triggered and stopped by detecting set heat parameters thresholds.

The absorbers feature low reflections and high damage thresholds; in particular the high power, multikilowatt CRONOS have a concave conical shape to avoid dangerous back-reflections toward the operator.

FIT Series: Fully automatic, handheld Low/Medium Power Probes

- 3 models up to **50 , 200, 500 W**.
- dual wavelength (CO2 and Yag-Fiber-Diode incl.)
- ± 1 % repeatability
- ± 3 % accuracy
- 10/100 mW resolution
- Recalibration possible by User



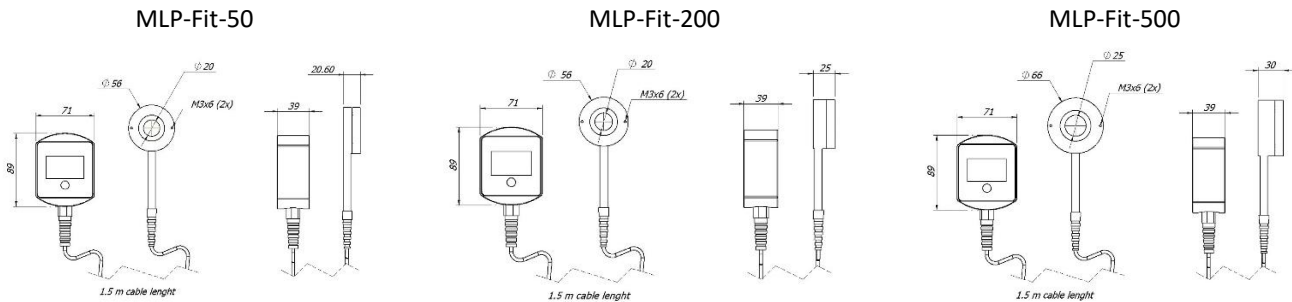
Cronos Series: Fully automatic, handheld High Power Probes



- 3 models up to **1.5, 5, 10 KW**
- dual wavelength (CO2 and Yag-Fiber-Diode incl.)
- $\pm 2/\pm 5$ % repeatability
- ± 4 % accuracy
- 1 W resolution
- Recalibration possible by User

MLP-FIT Series

Art.	Power Range	Useful Aperture	Spectral Range	Cooling	Sensor size
MLP-Fit-50	0.5 W – 50 W	20 mm	0.19 - 11 μm	Conduction	ϕ 56 x 21 mm
MLP-Fit-200	2 W – 200 W	20 mm	0.19 - 11 μm	Conduction	ϕ 56 x 25 mm
MLP-Fit-500	5 W – 500 W	25 mm	0.19 - 11 μm	Conduction	ϕ 56 x 30 mm

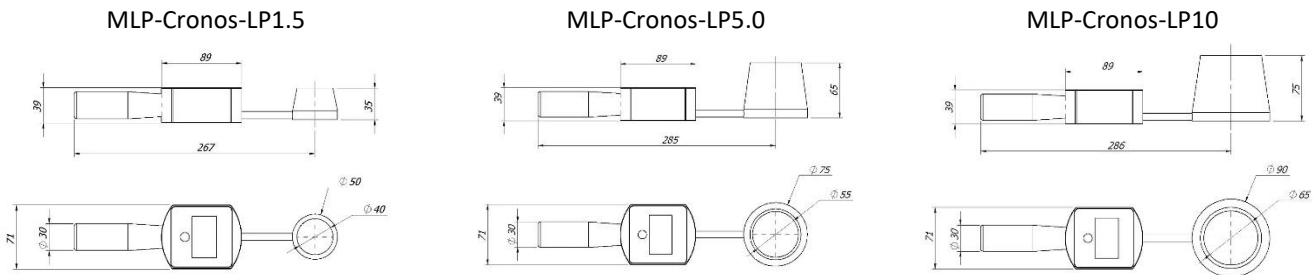


Full specification:

	MLP-Fit-50	MLP-Fit-200	MLP-Fit-500
Power Mode			
Max. Average Power	50 W	200 W	500 W
Min. Measurable Power	0.5 W	2 W	5 W
Min. Meas. Power @3% accuracy	1.5 W	5 W	15 W
Power Resolution	10 mW	100 mW	
Time to measure and display	4 sec		
Power Calibration Uncertainty	\pm 3%		
Repeatability	\pm 1%		
Absorber Specs			
Aperture	20 mm		25 mm
Type	HPB		
Absorber Spectral Range	0.19 - 11 μm		
Calibration Spectral Range	0.19 - 2.1 μm , 2.94 μm , 9 - 11 μm		
Max Power Density (2)	9 kW/cm ² @40 W	6 kW/cm ² @200 W	4 kW/cm ² @500 W
Max Energy Density (2)	5ms pulse width: 36 J/cm ²		
	10 μs pulse width: 1.2 J/cm ²		
	10ns pulse width: 0.3 J/cm ²		
General Characteristics			
Max Allowed Probe Temperature	70		
Power Supply	3V (2 AA Batteries)		
Battery runtime	200 hrs		
Cooling	Convection		
Weight	0.5 kg		
Dim. Sensor Head	ϕ 56 x 21 mm	ϕ 56 x 25 mm	ϕ 66 x 30 mm
Dim. Display	95 x 71 x 46 mm	95 x 71 x 46 mm	95 x 71 x 46 mm
Cable length	1.2 m		
Notes			
(1). Damage thresholds also depend on power level. Please see damage graphs for more details.			

MLP-Cronos Series

Art.	Power Range	Useful Aperture	Spectral Range	Cooling	External size
MLP-Cronos-LP1.5	30 W – 1.5 KW	40 mm	0.19 - 11 μ m	Convection	306 x 71 x 40 mm
MLP-Cronos-LP5.0	100 W – 5 KW	55 mm	0.19 - 11 μ m	Convection	312 x 71 x 65 mm
MLP-Cronos-LP10	200 W – 10 KW	65 mm	0.19 - 11 μ m	Convection	318 x 71 x 75 mm



Full specification:

	MLP-Cronos-LP1.5	MLP-Cronos-LP5.0	MLP-Cronos-LP10
Power Mode			
Max. Average Power	1500 W	5 kW	10 kW
Min. Measurable Power	30 W	100 W	200 W
Min. Meas. Power @3% accuracy	150 W	500 W	1000 W
Power Resolution	1 W		
Time to measure and display	8-15 sec (a)		
Power Calibration Uncertainty	$\pm 4\%$		
Repeatability	$\pm 2\%$	$\pm 5\%$	
Absorber Specs			
Aperture	40 mm	55 mm	65 mm
Type	HPB		
Absorber Spectral Range	0.19 - 11 μ m		
Calibration Spectral Range	0.19 - 2.1 μ m, 2.94 μ m, 9 - 11 μ m		
Max Power Density (1)	3.5 kW/cm ² @1 kW	2.5 kW/cm ² @5kW	2 kW/cm ² @10kW
Max Energy Density (1)	5ms pulse width: 36 J/cm ²		
	10 μ s pulse width: 1.2 J/cm ²		
	10ns pulse width: 0.3 J/cm ²		
General Characteristics			
Max Allowed Probe Temperature	150		
Power Supply	3V (2 AA Batteries)		
Battery runtime	200 hrs		
Cooling	Convection		
Weight	0.6 kg	1.1 kg	1.6 kg
Dimension	306 x 71 x 40 mm	312 x 71 x 65 mm	318 x 71 x 75 mm
Cable length	n.a.		
Notes			
(1). Damage thresholds also depend on power level. Please see damage graphs for more details.	(a). From 8 seconds for max power measurements, up to 15 seconds for min power.		