LUMILOOP

LASER-POWERED SENSOR SYSTEMS

Datasheet

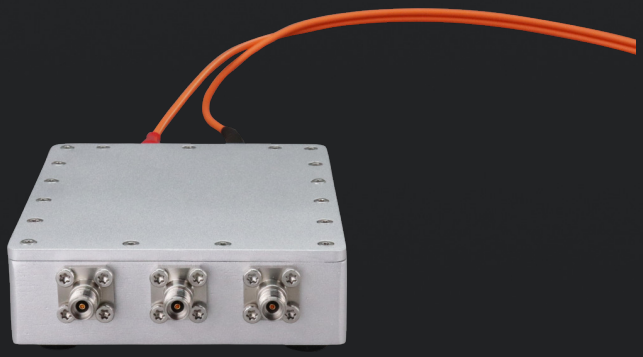
LSPM 1.1 | LSPM 2.1

9 kHz – 6 GHz | 9 kHz – 26.5 GHz

LASER-POWERED
High-Speed RF Power Meters

The LSPM 1.1 / LSPM 2.1 Triple High-Speed Power Meters are laser-powered, three channel, high speed, high accuracy and high dynamic range RF Power Meters. Single and dual channel versions are available as well. Its frequency range is 9 kHz to 6 GHz with the LSPM 1.1 variant, and up to 26.5 GHz with the LSPM 2.1 variant. Operation at higher frequencies is supported with reduced performance.

LSPM 1.1 and LSPM 2.1 are galvanically isoated. The sensor heads are extremly robust and can withstand more than 1000 V/m. Measuring forward and reverse RF Power at a directional coupler inside EMC test chambers has never been easier! Fiber cable lengths of >500 m allow for remote operation without ground loop worries.



Front view

Rear view

Compensation of linearity, frequency and power sensor temperature guarantee accurate measurements from less than -60 dBm to at least +15 dBm. A dynamic range of >75 dB is achieved for many frequencies.

The LSPM Triple High-Speed Power Meter's high sampling rate allows for high resolution time-domain signal analysis. The Power Meters can be synchronized with signal generators in order to realize high resolution pulse analysis. All LSPMs can also be synchronized with further LSPM 1.0, 1.1, 2.0 and 2.1 Power Meters as well as LSProbe E-Field Probes.

The LSPM 1.1 / LSPM 2.1 Laser-Powered RF Power Meters can also be combined with the Computer Interface CI-250+. It is equipped with a 4.3" Touchscreen and Ethernet Interface.

CI-250+ displays RF power, field strength, laser status, … at a glance. The set up is a child's play. Third party EMC software integration is quick and easy - just enter the IP address, power the laser, and start your measurement.

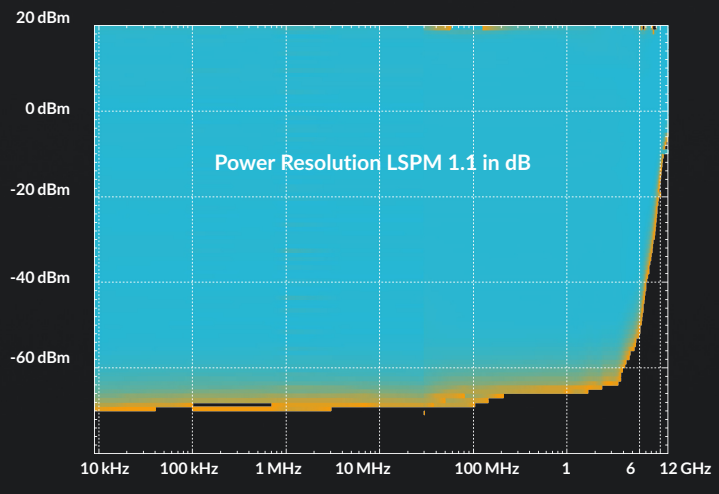
One CI-250+ enhances other LUMILOOP devices: LSPM 1.0 and LSPM 2.0 as well as LSProbe E-Field Probes connect to it the via USB. All devices can be accessed via the same touchscreen and ethernet connection.

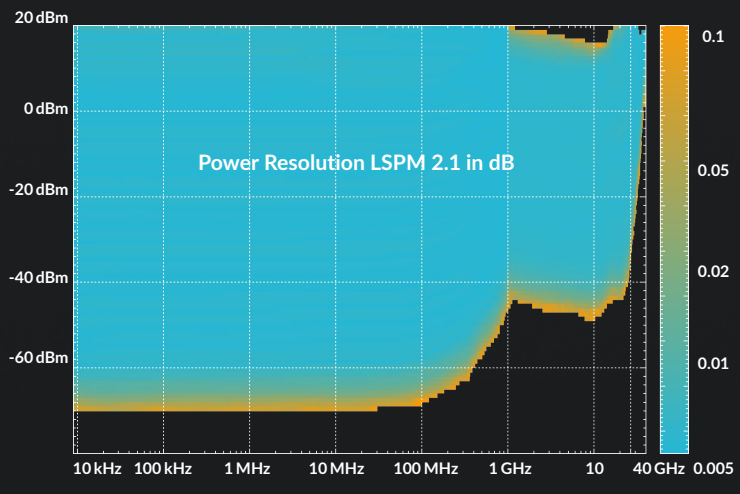
Specifications	LSPM 1.1	LSPM 2.1
Frequency Range		
Low Band	9 kHz ... 400 MHz	9 kHz ... 1GHz (usable up to 2 GHz)
High Band	30 MHz ... 6 GHz (usable up to 12 GHz)	1 GHz ... 26.5 GHz (usable up to 40 GHz)
Analog Rise Time		
Low Band Low Band	1.5 ms (VBW 666 Hz) 600 ns (VBW 1.67 MHz)	1.3 ms (VBW 770 Hz) 530 ns (VBW 1.9 MHz)
High Band	140 ns (VBW 7.14 MHz)	50 ns (VBW 20 MHz)
Minimum Pulse Width	500 ns	500 ns
VSWR	<1.20:1	<1.22:1 up to 26.5 GHz
Sampling Rate	2 MSamples/s	2 MSamples/s
Measurement Range & Dynamic Range		
Low Band	<-60 dBm ... >20 dBm up to 400 MHz	<-65 dBm ... >20 dBm up to 200 MHz <-45 dBm ... >20 dBm up to 1 GHz
High Band	<-60 dBm ... >20 dBm up to 4 GHz <-30 dBm ... >20 dBm 4 ... 8 GHz <-5 dBm ... >20 dBm 8... 12 GHz	<-44 dBm ... >15 dBm 1 ... 20 GHz <-35 dBm ... >15 dBm 20 ... 26.5 GHz <5 dBm ... >18 dBm 26.5 ... 40 GHz
Amplitude Accuracy*	0.15 dB	0.15 dB
	0.15 dB	0.15 dB
Linearity Error	0.15 dB	<0.2 dB
Temperature Stability	<0.2 dB	<0.1 dB
Power Resolution	<0.1 dB (see plot below)	<0.1 dB (see plot below)
Channel Isolation	>56 dB up to 6 GHz	>50 dB up to 32 GHz
Damage Level	>30 dBm	>25 dBm
Application Software	LUMILOOP TCP Server, LUMILOOP GUI, CalImport	LUMILOOP TCP Server, LUMILOOP GUI, CalImport

*) At 0 dBm, CW, accredited Calibration at esz AG calibration & metrology.

Computer Interface CI-250

PC Interface	USB 2.0
Trigger Voltage	5 V
Trigger Connector	BNC
Input Voltage	5 V ±5 %
Input Current	<3 A
Ambient Temperature	10 ... 40 °C
Dimensions (W × D × H)	77 × 117 × 27 mm^3
Certifications	CE





LSPM Documentation and Application Notes (AN)

- LSPM 1.1 / LSPM 2.1 User's Manual
- AN 04: Reliable Operation - Fiber Connector Cleaning Advice

LSPM Laser-Powered Power Meter Accessories

Fiber Connector Cleaning Kit

- optical fiber microscope
- lint-free cassette cleaner wipes
- an unfilled isopropyl alcohol (IPA) pipette/bottle
- spare FC/ST dust caps and two E2000 locking caps

E2000 Sacrificial Cable Kit

- prevents contamination of connectors
- quick and simple replacement in case of connector burn-in
- includes two 0.5 m E2000 to ST/FC cables
- includes E2000 and ST/FC couplers

Optic Fiber Cable Extension

- includes ST/FC coupler
- arbitrary length of cable available on request

LUMILOOP GmbH
Gostritzer Str. 63
01217 Dresden, Germany
Phone: +49 351 85097870
E-mail: info@lumiloop.de

www.lumiloop.de

EUROPÄISCHE UNION

Gefördert durch:
Bundesministerium für Wirtschaft und Energie
aufgrund eines Beschlusses des Deutschen Bundestages

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Existenzgründungen aus der Wissenschaft