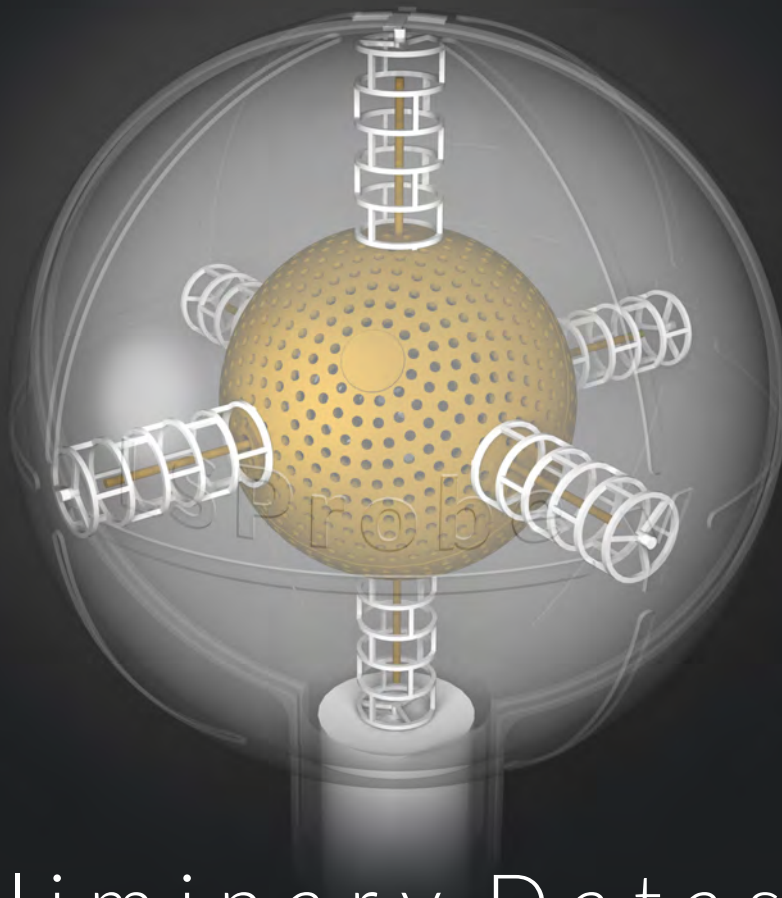




# LUMILOOP

LASER-POWERED SENSOR SYSTEMS



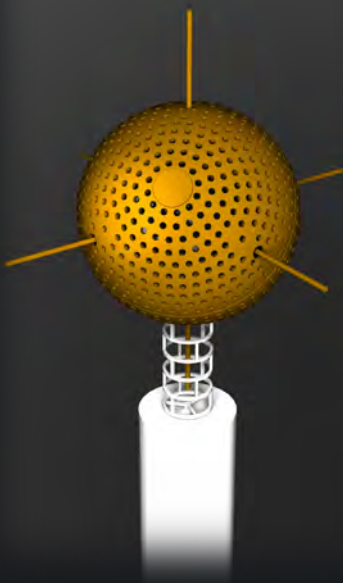
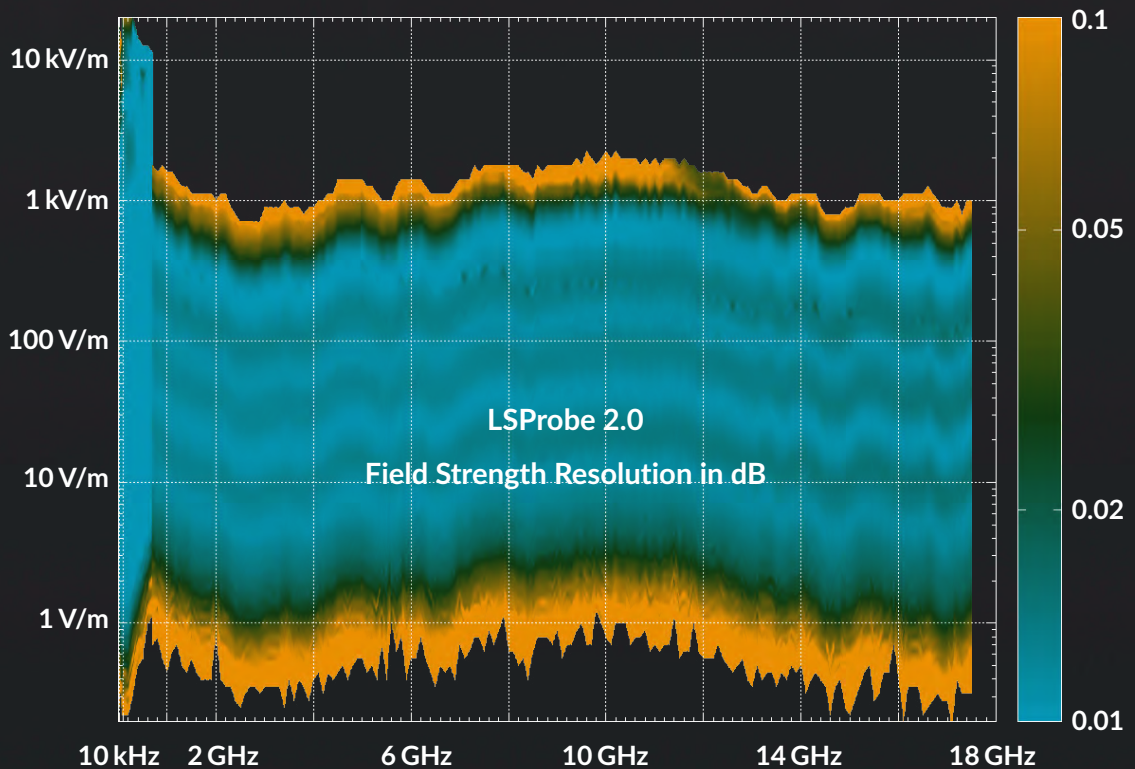
Preliminary Datasheet

————— LSProbe 2.0 —————

**Electric-Field Probe**  
**9 kHz - 18 GHz**

The LSProbe 2.0 Field Probe is a next-generation, high speed, high accuracy and high dynamic range electric-field probe. Its frequency range is 9 kHz to 18 GHz. The Field Probe's six-monopole antenna design ensures isotropic operation at all frequencies.

LSProbe 2.0 employs fine-grained compensation of linearity, frequency and temperature, guaranteeing accurate measurements from less than 1 V/m to at least 1 kV/m. A dynamic range of 60 dB is achieved for all frequencies. Please contact LUMILOOP support for detailed information.



LSProbe 2.0 contains a low-frequency and high-frequency detector for each of the six monopoles. The detectors can be operated continuously at 500 kSamples/s or in burst mode at 2 MS/s. This enables direct radar pulse measurements and accelerated, frequency sweep-based measurements.

A single axis, continuously sampling mode, operating at 2 MS/s, can be used for Equivalent Isotropically Radiated Power (EIRP) measurements of IoT products without antenna connectors in accordance with EN 300 328 and EN 301 893.

Laser-powered operation eliminates battery recharging and replacement. Extensive in-house calibration data are provided with each field probe and is handled automatically by the LSProbe TCP Server Software.

LSProbe 2.0 is backward compatible with LSProbe 1.2, supporting the same SCPI commands. Consequently, it inherits third-party EMC-software support for R&S EMC32, R&S ELEKTRA, emcware, BAT-EMC, Tepto, Tile, Win6000, Compliance5 and Radimation.

## LSProbe 2.0 Field Sensor, PRELIMINARY

<b>Supported Frequency Ranges</b>	
Low Band Detector	9 kHz ... 1.5 GHz
High Band Detector	700 MHz ... 18 GHz
<b>Field Strength Range</b>	
9 kHz ... 1 GHz	<1 V/m ... >5 kV/m
1 GHz ... 18 GHz	<1 V/m ... >1 kV/m
<b>Damage Level</b>	
9 kHz ... 1 GHz	>25 kV/m
1 GHz ... 18 GHz	>5 kV/m
<b>Sampling Rate, Minimum Pulse Width</b>	
Burst Mode	2 MSamples/s, 500 ns
Continuous Mode	500 kSamples/s, 2 μs
Single Axis Continuous Mode	2 MSamples/s, 500 ns
<b>Analog Rise Time</b>	
Low Band, low bandwidth	2 ms
Low Band, high bandwidth	<300 ns
High Band	<300 ns
<b>Resolution</b>	
	<0.05 dB
<b>Typical Worst-Case Isotropy Error</b>	
@ 1 GHz	tbd
@ 6 GHz	tbd
@ 18 GHz	tbd
<b>Amplitude Accuracy</b>	
10 kHz ... 30 MHz	Accredited Cal. at PTB, Germany ±0.6 dB
30 MHz ... 1 GHz	±1.0 dB
1 GHz ... 18 GHz	±1.4 dB
<b>Linearity Error</b>	
	±0.2 dB relating to 10 V/m
<b>Temperature Stability</b>	
	tbd
<b>Fiber Optic Connectors</b>	
	ST/FC
<b>Standard Fiber Optic Cables</b>	
	5 m permanently attached, 15 m ST/FC extension, two E2000 Sacrificial Cable Kits
<b>Max. Fiber Optic Cable Length</b>	
	500 m
<b>Fiber Optic Cable Bending Radius</b>	
	>30 mm
<b>Ambient Temperature</b>	
	10 °C ... 40 °C
<b>Dimensions (W × D × H)</b>	
	46 × 46 × 114 mm <sup>3</sup>

## LSProbe 2.0 Computer Interface

<b>PC Interface</b>	USB 2.0
<b>Application Software</b>	LSProbe 2.0 TCP Server, LSProbe 2.0 GUI
<b>Trigger Voltage</b>	5 V
<b>Trigger Connector</b>	BNC
<b>Laser Wavelength</b>	830 nm
<b>Laser, Max. Output Power</b>	1,000 mW
<b>Laser Class</b>	1M
<b>Laser Shutdown Time</b>	1 ms
<b>Fiber Optic Connectors</b>	ST/FC
<b>Number of Fiber Optic Couplers</b>	>6
<b>Input Voltage</b>	5 V ±5 %
<b>Input Current</b>	<3 A
<b>Ambient Temperature</b>	10 °C ... 40 °C
<b>Dimensions (W × D × H)</b>	135 × 120 × 38 mm <sup>3</sup>
<b>Certifications</b>	CE, IEC 60825-1:2014



Computer Interface Rear Side View

## Selected International Standards

ISO	11451-2, WD 11451-5, 11452-2, 11452-11
IEC	61000-4-3, 61000-4-21
EN	300 328, 301 893
Other	RTCA/DO-160

