



# EFS-LASER

## New Laser-powered Electric Field Probe

10 kHz to 6 GHz

The Frankonia EFS-LASER Electric Field Probe especially has been designed for field strength measurements / field homogeneity measurements during radiated immunity tests according to IEC/EN 61000-4-3. However, it is also excellent to measure the radiation pollution of the environment, for example at workplaces or flats.

The EFS-LASER is an isotropic miniature E-field sensor to ensure, that the E-field will not be influenced by the size of the sensor itself. It even does not need any metering unit (which could also influence the field-strength), because of its direct fibre-optic output, which does allow direct connection of the sensor to the USB-interface of the control PC or laptop. The measuring values may be displayed via the individual IEC 61000-4-3 control software or via a windows-software included in the delivery.

The EFS-Laser cover the frequency-range from 10 KHz – 6 GHz. The utilized linearization technology provides a dynamic range up to 100 dB. The EFS-Laser is a smart, fast, extremely accurate electric field probe, which provides linearization, temperature compensation, control and communication functions. Noise reduction and temperature compensation allow accurate measurements down to 0.1 V/m. The probe is laser-powered to allow continuous, galvanically isolated operation without recharging or battery replacement. The power supply unit comes either in a 19" (1Hu) case for rack mounting or in a small handy box.



### Special features

- Laser powered – no more empty batteries
- Extreme small size
- High resolution, high speed, low noise
- Frequency range: 10 kHz to 6 GHz
- Field strength measurements from 0.1 V/m up to 10 kV/m
- Wide dynamic range
- Continuous real-time data streaming
- Temperature compensation

# Technical data

Field Sensor	
Frequency Range	10 kHz ... 6GHz
<b>Analog Rise Time</b>	
10 kHz ... 100 MHz low Bandwidth	4 $\mu$ s
10 kHz ... 100 MHz high	40 ns
Bandwidth 100 MHz ... 6 GHz	25 ns
<b>Minimum Pulse Width</b>	
Burst Mode	500 ns
Streaming Mode	2 $\mu$ s
<b>Resolution</b>	< 0.01 dB
<b>Sampling Rate</b>	2 MSample/s
Burst Mode Streaming Mode	> 500 kSample/s
<b>Field Strength</b>	
10 kHz ... 100 MHz	< 1 V/m ... > 10 kV/m
100 MHz ... 6 GHz	< 0.1 V/m ... > 700 V/m
<b>Damage Level</b>	
10 kHz ... 100 MHz	40 kV/m
100 MHz ... 6 GHz	10 kV/m
<b>Dynamic Range</b>	
10 kHz ... 100 MHz	80 dB ... 100 dB
100 MHz ... 6 GHz	70 dB ... 80 dB
Isotropy, 900 MHz	< 1dB
<b>Amplitude Accuracy</b>	
10 kHz ... 10 MHz (1.5 V/m to 30 V/m)	1.3 dB
> 10 MHz ... 1 GHz (1 V/m to 80 V/m)	1.5 dB
> 1 GHz ... 8 GHz (3 V/m to 100 V/m)	1.0 dB
<b>Linearity Error</b>	< 0.1 dB
<b>Temperature Stability</b>	0.1 dB
<b>Ambient Temperature</b>	10 °C ... 40°C
<b>Dimensions (W x D x H)</b>	67 x 67 x 124 mm

Computer-Interface	
PC Interface	USB 2.0
Application Software	included
Burst Trigger Output Level	3.3 V CMOS
Burst Trigger Output Connector	BNC
Laser – Wavelength	850 nm
Laser - Output Power	750 mW
Laser - Shutdown Time	1 ms
Fiber Optic Connector	FC / ST
Fiber Optic Cable Length	15 m
Max. Fiber Optic Cable Length	100 m (sold on request)
Input Voltage*	5V $\pm$ 5%
Input Current	< 2A
Ambient Temperature	10 °C ... 40 °C
Dimensions (W x D x H)	483 x 43.5 (1HE) x 120 mm
*Power supply	included

## Isotropy

