



**FRANKONIA**  
EMC Test-Systems GmbH

## EFS-LASER

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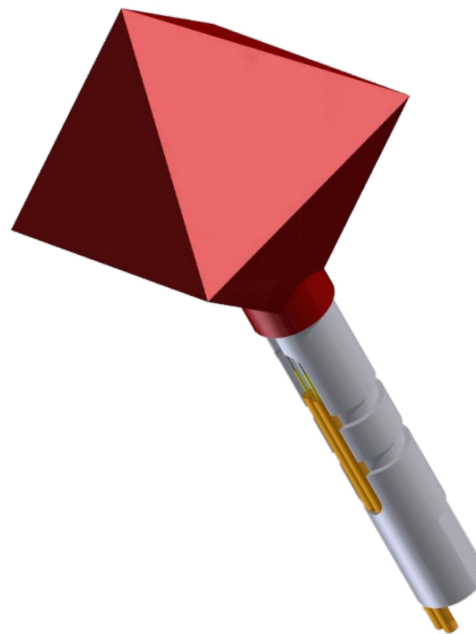
### Electric Field Probe

10 kHz to 6 GHz

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

The EFS-LASER is a high resolution, high speed, low noise electric field probe that provides high precision frequency and temperature compensation. The patented detection technology provides a 70 dB dynamic range and 0.5 V/m sensitivity. The E-Field Probe is laser powered to allow continuous galvanically insulated operation without recharging or battery replacement. As desired, the power supply comes either in a 19" (1HU) case ready for rack mounting or in a handy box with the dimensions 46 x 46 x 83 mm which can easily be carried. Calibration factors are provided with each probe. The EFS-LASER supports fiber optic cables up to 100 meters.

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.



#### Special features:

- 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
- Laser powered – no more empty batteries
- Wide dynamic range
- Continuous real-time data streaming
- Comprehensive frequency and temperature compensation



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Technical data	EFS-LASER
Frequency Range	10 kHz ... 6GHz
<b>Analog Rise Time</b> 10 kHz ... 100 MHz low Bandwidth 10 kHz ... 100 MHz high Bandwidth 100 MHz ... 6 GHz	4 $\mu$ s 40 ns 25 ns
<b>Minimum Pulse Width</b> Burst Mode Streaming Mode	500 ns 2 $\mu$ s
Resolution	< 0.01 dB
<b>Sampling Rate</b> Burst Mode Streaming Mode	2 MSample/s > 500 kSample/s
<b>Field Strength</b> 10 kHz ... 100 MHz 100 MHz ... 6 GHz	< 1 V/m ... > 10 kV/m < 0.1 V/m ... > 700 V/m
<b>Damage Level</b> 10 kHz ... 100 MHz 100 MHz ... 6 GHz	40 kV/m 10 kV/m
<b>Dynamic Range</b> 10 kHz ... 100 MHz 100 MHz ... 6 GHz	80 dB ... 100 dB 70 dB ... 80 dB
<b>Field Sensor</b>	
Isotropy, 900 MHz	< 1dB
<b>Amplitude Accuracy</b> 10 kHz ... 10 MHz (1.5 V/m to 30 V/m) > 10 MHz ... 1 GHz (1 V/m to 80 V/m) > 1 GHz ... 8 GHz (3 V/m to 100 V/m)	1.3 dB 1.5 dB 1.0 dB
Linearity Error	< 0.1 dB
Temperature Stability	0.1 dB
Ambient Temperature	10 °C ... 40°C
Dimensions (W x D x H)	67 x 67 x 124 mm
<b>Computer-Interface</b>	
PC Interface	USB 2.0
Application Software	included
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