FL7030

Electric Field Probe

- 5kHz–30MHz
- 1.5–300 V/m
- User–selectable X, Y, Z Axes

Features

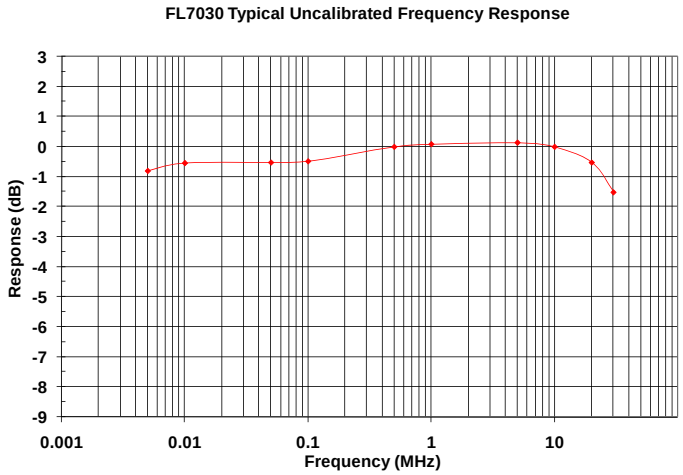
The FL7030 is a smart, fast, extremely accurate electric field probe that contains an internal microprocessor to provide linearization, temperature compensation, control, and communication functions. Noise reduction and temperature compensation allow accurate measurements down to 1.5 V/m without zero adjustment. When rotated about its ortho angle mount, the probe provides isotropic response of ±0.5 dB over its specified frequency range.

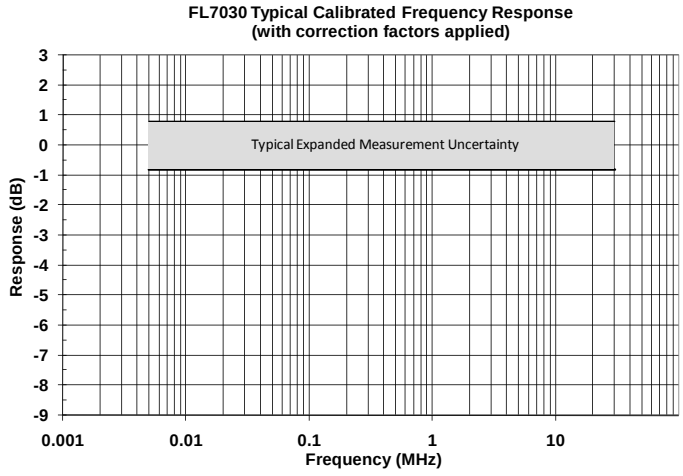
The FL7030 is laser powered to allow for continuous operation without recharging or battery replacement. This probe requires an FI7000 for power and communication. FM7004A is recommended for local monitoring and control.

Correction factors are provided with the probe. These factors can be loaded into the Model FM7004A Field Monitor (sold separately) to automatically correct the probe readings at user-specified frequencies. When correction factors are applied, the true accuracy of the probe can be realized.

The FL7030 communicates and is powered through glass fiber optic cables, up to 100 meters long, to the FI7000 interface. X, Y, Z, and isotropic readings can be returned through an FI7000 in 20 msec.

The FL7030 extends the range of AR laser powered E–field probes down to 5 kHz. It offers an extended post–detection response-smoothing time constant to provide more consistent readings for carrier frequencies down to 5 kHz.





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Specifications

Amplitude Accuracy (field aligned with sensor axes):
Without correction factors applied: ±1.0 dB @ 10 MHz;
With correction factors applied: Typical expanded measurement uncertainty (95% confidence interval), 0.8 dB, 5 kHz–30 MHz

Response Time/Sampling Rate (through FI7000): 20 msec/up to 50 samples per second at FI7000, USB and GPIB interfaces

Response Smoothing Time Constant: 10 msec nominal

Isotropic Deviation (measured at the ortho angle): ±0.5 dB @ 10 MHz; ±0.5 dB, 5 kHz–30 MHz (typical)

Operating Range: 1.5–300 V/m

Linearity, 1.5 to 300 V/m: ±0.5 dB and ±0.9 V/m

Temperature Stability: ±0.5 dB over operating temperature range

Damage Level: 1000 V/m continuous field

Ranges: Single range

Data returned from probe: X, Y, Z axes, and composite

Power Requirements: Laser powered from FI7000 interface

Dimensions: 5.7 x 5.7 x 5.7 cm (2.25 x 2.25 x 2.25 in); 2.92 cm (1.15 in) DIA spherical housing; 3.18 cm (1.25 in) sensor radome per axes

Weight: 62.5 g (2.2 oz)

Operating Temperature Range: 10°C to 40°C (50°F to 104°F) @ 5% to 95% RH non-condensing

Fiber Optic Connectors: Two E2000 compact duplex connectors at 1 meter, includes fiber optic verification loop.

Calibration Data: Accredited Calibration Report (A2LA) supplied with probe