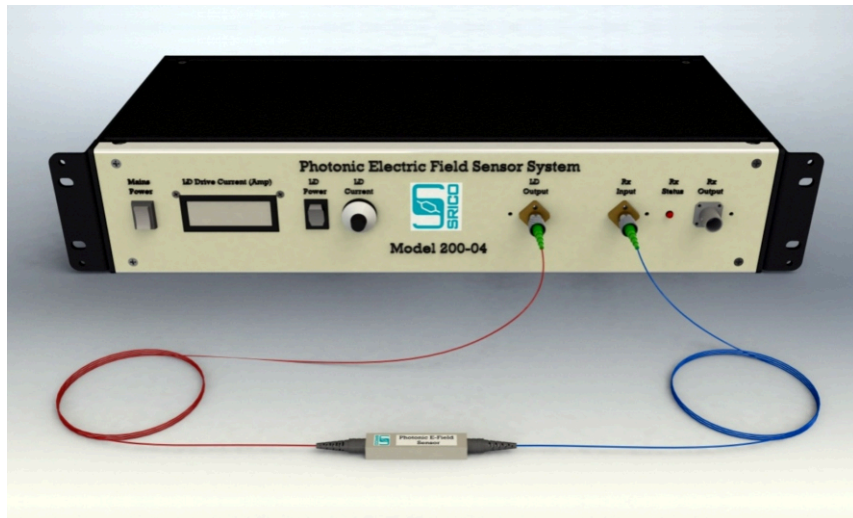




Photonic Electric Field Sensor System Model 200-04



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Product Description

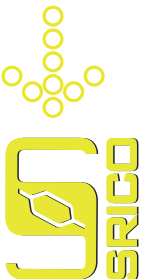
SRICO Model No. 200-04 Photonic Electric Field Sensor System has the ability to measure electric field with minimal disturbance to the field. The lightweight fiber-optic cables allow for easy placement of the E-field probe, allowing it to be unencumbered by the use of heavy coaxial cables that may disturb the field being measured. The dielectric E-field probe is electrically passive. The fiber-optic cable allows the light source and optical receiver to be remotely located and powered. The electrical isolation provided by the all-optical E-field probe provides excellent safety with a high damage threshold exceeding 1 MV/m.

SRICO uses lithium niobate Mach-Zehnder interferometer (MZI) technology for its photonic electric field sensor product line. The sensor is packaged with optical fibers for the optical light input to the sensor and optical signal output from the sensor to the instrumentation system, which converts the optical signal to an electrical output. Lithium niobate-based EO sensor probes offered by SRICO span a frequency range of 1 Hz to 20 GHz. The overall system bandwidth is determined by the optical receiver.

Model 200-04 Photonic Electric Field Sensor System consists of an E-field probe, a laser/receiver electronic box, one duplex fiber optic cable and two FC/APC bulkhead adapters.

Summary of Features

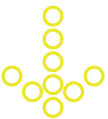
- Minimal disturbance to field being measured
- Lightweight optical fiber cables
- Remote measurement capability
- Remote power capability
- Electrically passive E-field probe
- High damage threshold
- Wide bandwidth capability



Nominal Specifications*

LASER	
Wavelength	1550 nm
Maximum Drive Current	300 mA
Maximum Optical Output Power	40 mW
RECEIVER	
Maximum Optical Input Power	3 mW
Electrical Bandwidth (-3 dB)	DC to 2 GHz
RF Output Impedance	50 Ω
DUPLEX PMF/SMF PATCHCORD	
Input Optical Fiber Identifier (Polarization Maintaining Fiber)	1 m
Output Optical Fiber Identifier (Single Mode Fiber)	1 m
E-FIELD PROBE	
Input Optical Fiber (Black)	PM
Output Optical Fiber (Purple)	Single Mode
Probe Package	50 X 11 X 8 (mm)
Electrical Damage Threshold	> 1 MV/m
SYSTEM RESPONSIVITY	
Nominal Received Optical Power	0 dBm
Operating Frequency Range for E-Field Probe	10 Hz to 1 GHz
Sensitivity (Noise Floor)	100 μV/m per √Hz
Electric Field Measurement Range	10 V/m to 10 kV/m

*Specifications may be customized per customer requirements.



Typical Test Data

The E-field sensor was tested from 10 kHz to 1 GHz by placing the device inside a TEM cell, IFI Model CC110. RF input to the TEM cell was delivered from a HP Spectrum Analyzer Model 8591E. RF input power of +10 dBm produced an E-field of 16.8 V/m within the TEM cell. The sensor response is flat over the measured frequency range. Measurement was limited to 1 GHz because of the limitations of the TEM cell.

