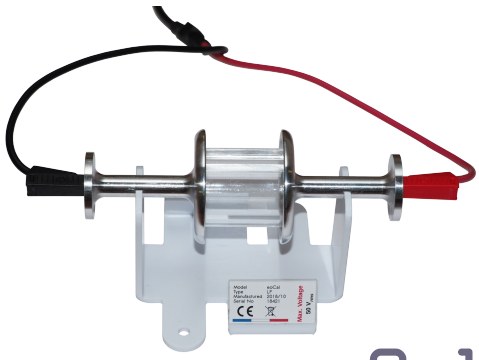


eoCal™

DESCRIPTION

Kapteos electric (E) field applicators eoCal™ allow you to calibrate E field probes in any fluid (air, gas or liquid). Regardless of the physical principle of an E field probe, its response depends on the measurement conditions like the medium in which the measurement is carried out. It is therefore essential to perform the calibration of the probe in the right medium.

eoCal™ is based on a well defined Volume Under Test (VUT) in which the E field is constant, both in terms of field strength and direction. As compared to the classical plane-parallel capacitor structure, the entry-level field applicator eoCal™ LF reduces the spreading of the E field strength inside the VUT by a factor of 3.

APPLICATIONS

When E field measurements have to be carried out in a liquid or for periodic probe recalibration in air, a reliable E field applicator is required. A first line of E field applicator for low frequency calibration of Kapteos E field probes has been developed:

- **LF** line is dedicated for probe calibration in any fluid from DC up to 30 MHz.

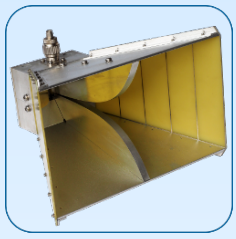
Depending on your performance requirement, a **H**igh **R**esolution (**HR**) module can be jointly used with the LF field applicator in order to get a much better steadiness of the E field in the VUT and a 14 dB improvement of calibration accuracy.

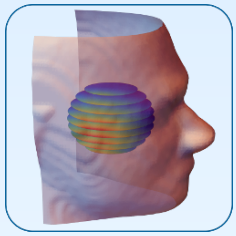
Depending on the type of E field probe you are using, four different probe holders are delivered with eoCal™:

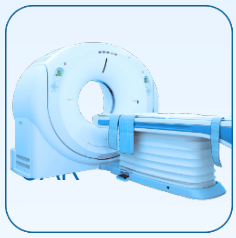
- EL*x*-**air**|**vac** probe holder,
- ET*x*-**air**|**vac** probe holder,
- EL*x*-**bio** probe holder,
- ET*x*-**bio** probe holder.

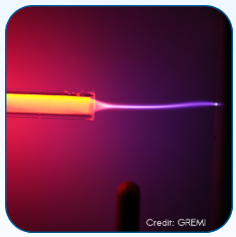
SERVICES

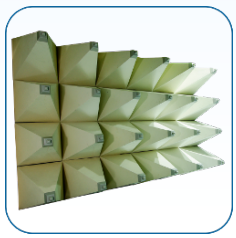
Kapteos offers a recalibration service of your probes and associated optoelectronic converters. Specific calibration in different liquids are also possible on request.











Your **key partner** for **electromagnetism** in **harsh environment**

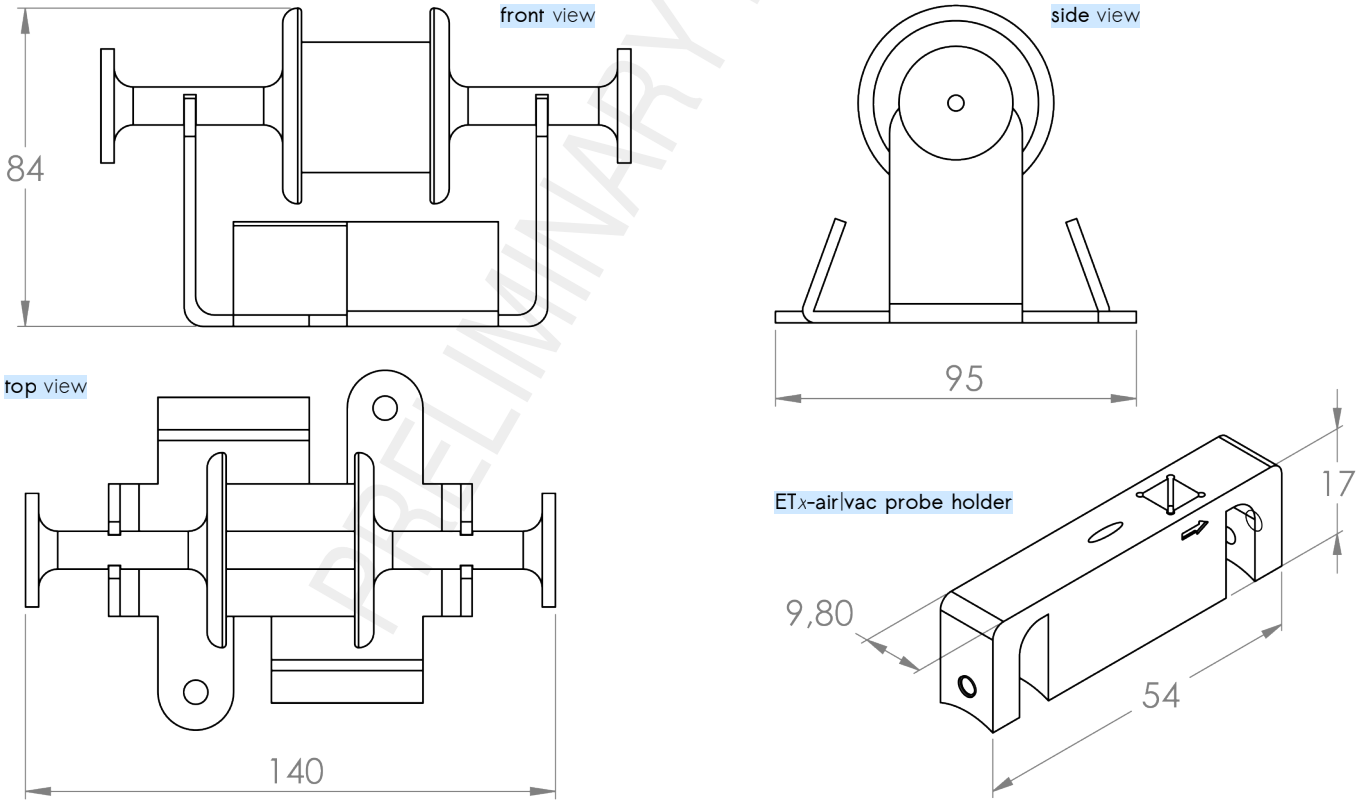
COMMON FEATURES

Compatible probes	EL*x*-air|vac probes, ET*x*-air|vac probes, EL*x*-bio probes, ET*x*-bio probes
Bandwidth @ -3 dB	DC-30 MHz
Field applicator impedance	High, medium dependant (>> 1 MΩ in case of VUT filled w/ low loss tangent fluid)
VUT dimensions	Diameter: 25 mm - Length: 40 mm - Fill volume: 19.6 cm^3
Maximum achievable E field strength[1]	1.25 kV_{rms}/m (i.e. for 50 V_{rms} applied to eoCal™)
Weight of field applicator cell	0.1 kg
Composition of field applicator cell	Aluminium alloy, quartz

[1] With fulfilment of operating conditions (mentioned below)

ELECTRIC FIELD APPLICATOR DESCRIPTION

Drawings of eoCal™ at scale 1:2 - Dimensions in mm (± 0.25 mm unless otherwise noted) - Drawing of probe holder at scale 1:1



OPERATING CONDITIONS ([2] Max. 8h per day in case operating conditions are more harsh than storage conditions)

Voltage	Extra-low voltage only: 50 V_{rms} Max.
Compatible liquids	Non-aggressive liquids like oils, aqueous media and alcohols
Temperature[2]	10°C → +50°C (+50°F → +122°F)
Pressure	690-1075 hPa (10-15.6 psi)
Field applicator cell cleaning	Wash with dishwashing product and rinsed with clean water, final rinse with isopropyl alcohol

STORAGE CONDITIONS

Storage	Only in its original case in a clean, dry environment
Temperature	0°C → +40°C (+32°F → +104°F)
Relative humidity	< 90% - non-condensing
Pressure	690-1075 hPa (10-15.6 psi)

CONTENTS LIST

Field applicator	Delivered with its holder
Probe holder w/ 1 screwdriver	1 for EL*x*-air|vac probes, 1 for ET*x*-air|vac probes, 1 for EL*x*-bio probes, 1 for ET*x*-bio probes
Power cable	BNC cable with two 4-mm banana plugs

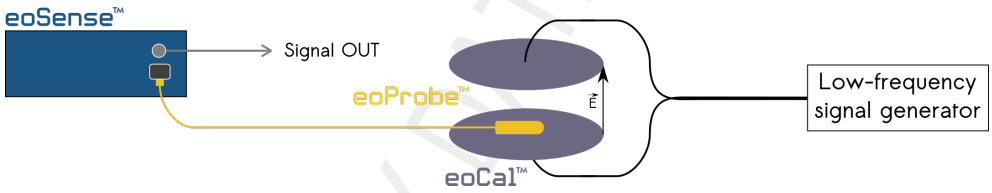
Transport case	Cardboard with protective foam
User guide	cf. eoCal User Guide PDF file GU-eoCal

COMPATIBLE DEVICES & ACCESSORIES

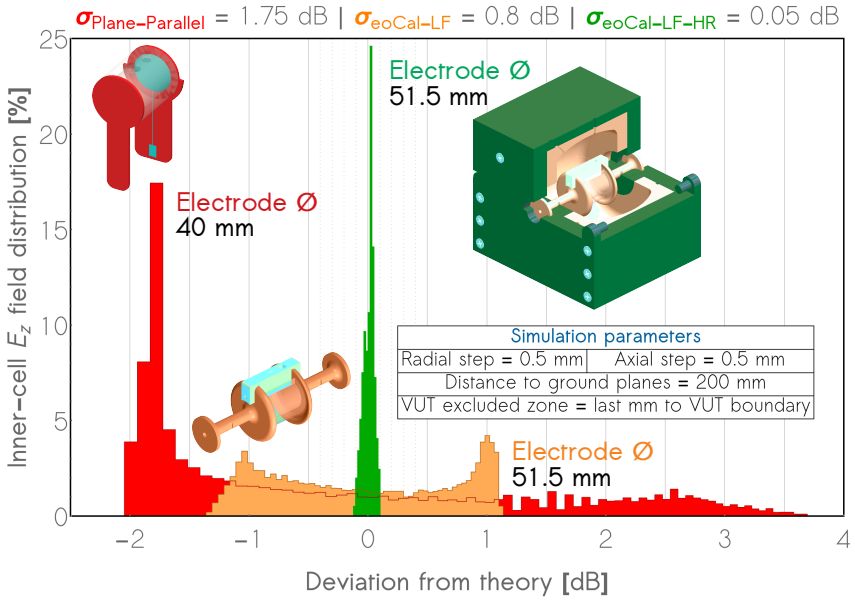
E field probe	eoProbe (cf. related data sheet FT-eoProbe)

APPLICATIONS INFORMATION

Calibration setup



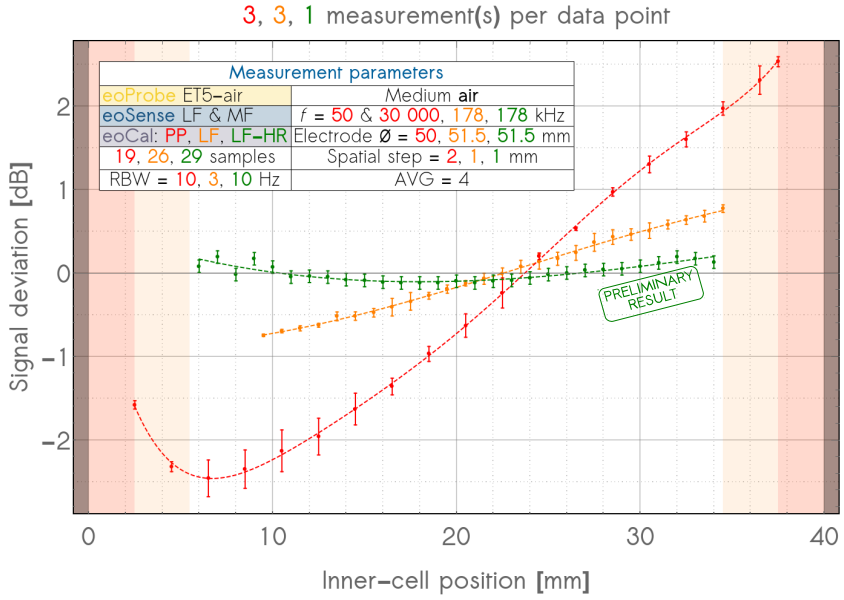
TYPICAL PERFORMANCE CHARACTERISTICS



Simulation of E field distribution in air

- Comparison of plane-parallel (PP) structure, LF entry-level field applicator and joint use of eoCal™ **LF** with High Resolution (**HR**) module[1]
- E field steadinees in VUT → 7 dB improvement with eoCal™ **LF** and further improvement of 24 dB with joint use of **HR** module
- Ratio of main E field component E_z to radial E field disruptive component E_r → > 40 dB with joint use of eoCal™ **LF** with **HR** module

[1] Ongoing industrialisation



Measurement of E field distribution

- eoCal™ **LF** vs plane-parallel structure → 10 dB improvement of E field steadinees in VUT.
- Joint use of a HR module mockup → further improvement of 14 dB
- Standard deviation of E field distribution in VUT with HR module mockup → only 0.1 dB!