# Probe holder eoPod™

2nd generation

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## Make easy measurement of the three components of E field in any environment & for any location

Withstand of 25 $kV_{RMS}$ voltage, 4.7 T magnetic field & 0.1 $W/cm^2$ power density

Set of two detachable parts: base plate with suction effect & articulated probe holder

Intended for use with 4th generation Kapteos EM-field probes

Articulated, immersible & metal-free probe holder for straightforward positioning of EM-field probes in gases, plasma and liquids, MRI & harsh environment (vacuum, high pressure) compliant

KEY PARTNER FOR ELECTROMAGNETISM

kapteos

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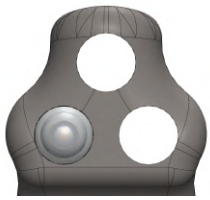
## Implementation

Depending on the application, 1 to 3 probes can be mounted together on the same holder without any tool. This holder allows simultaneous measurement of different EM-field components in a very limited space either in air, in liquids, in low or high pressure medium. The voxel of measurement is lower than 1 $cm^3$. The holder design ensures both auto-centring of the probes and absence of probe coupling effect.

| Number of probes | Configuration | Use & features |
|---|---|---|
| 1 |  | **Measurement of 1 EM-field component**<br>Straightforward assessment of the longitudinal E-field component in the reactive near field region or for EMI diagnostics |
| 2 | | **Measurement of 2 EM-field components**<br>Straightforward assessment of co- & cross-polarization of the EM wave radiated by an antenna or an array of antennas |
| 3 | | **Measurement of 3 EM-field components**<br>Straightforward assessment of the three components of the E field vector. Recommended to hold 2 transverse probes + 1 longitudinal probe to get the three E-field components |

## Performance specifications

| | | Min | Typical | Max | Unit |
|---|---|---|---|---|---|
| Density | For immersion purpose | 1.08 | 1.11 | 1.14 | |
| Hemispherical silicone base | Hardness | | 28 | | Shore A |
| Withstand | Voltage | 25 | | | $kV_{RMS}$ |
| | Magnetic field | 4.7 | | | T |
| | Permanent Power Density ($f$ < 10 GHz) | 0.1 | | | $W/cm^2$ |
| 3 E-field component meas. voxel | Diameter | | 11 | 11.5 | mm |
| | Length for EX1 probes | | 1.5 | 2 | |
| | Length for EX5 probes | | 5.5 | 6 | |
| Holder tip dielectric constant | $\varepsilon_r$ (f < 300 GHz) | 2.75 | 2.8 | 2.95 | |
| | tan $\delta$ @ 1 GHz | | $2\ 10^{-3}$ | | |
| | @ 3 GHz | | $3\ 10^{-3}$ | | |
| | @ 10 GHz | | $6\ 10^{-3}$ | | |
| | @ 30 GHz | | $11\ 10^{-3}$ | | |
| | @ 100 GHz | | $21\ 10^{-3}$ | | |



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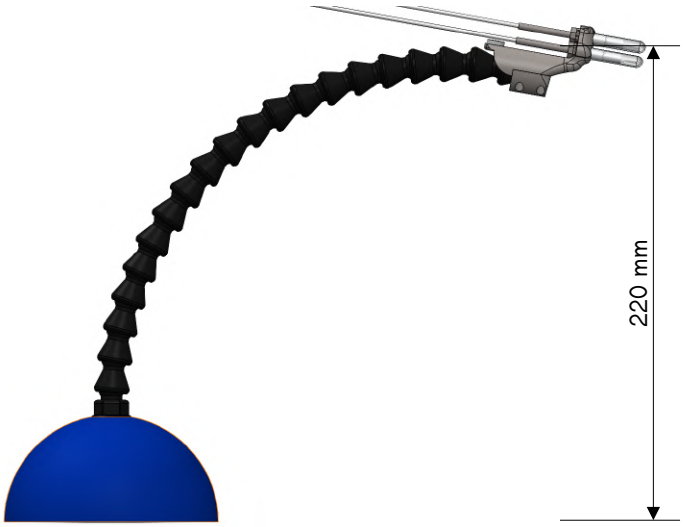
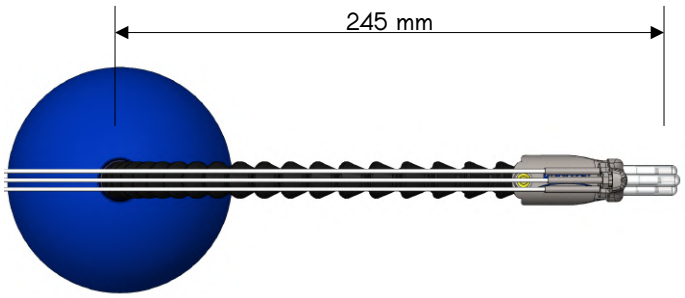
## Mechanical specifications

| | | Min | Typical | Max | Unit |
|---|---|---|---|---|---|
| Dimensions | Inter-probe distance (equilateral triangular grid) | | 8.0 | | mm |
| | Articulated arm length (20 elements arm) | | 280 | | |
| | Silicone base diameter | | 100 | | |
| Weight | | 310 | 330 | 350 | g |
| Ingress Protection rating | | | IP68 | | |
| Removable articulated arm | Base thread | | ¼" x 19 BSPF | | |

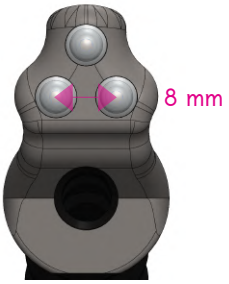
Front view




Top view

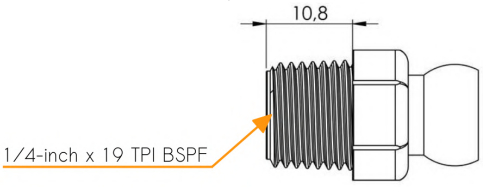



Probe holder tip front view at scale 1:1




Picture

Articulated arm base (removable from silicone hemisphere, to be mounted on customer-defined setup)




## Environmental specifications

| | | Min | Typical | Max | Unit |
|---|---|---|---|---|---|
| Temperature | Operating | 10 | | 50 | °C |
| | Storage | 10 | | 40 | |
| Pressure | Operating | 1 | | 2000 | hPa |
| | Storage | 690 | | 1075 | |
| Storage | Only in its original case in a clean, dry environment | | | | |
| Cleaning | Wash with dishwashing product and rinsed with clean water | | | | |



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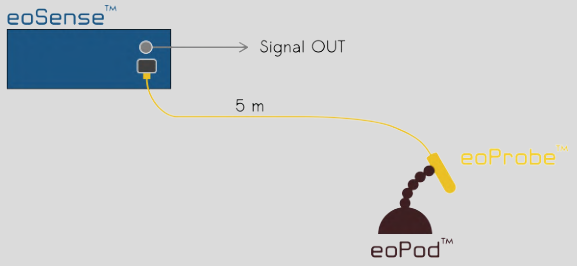
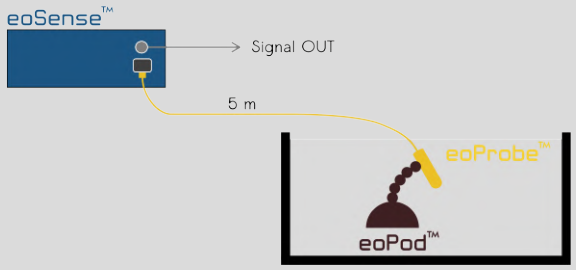
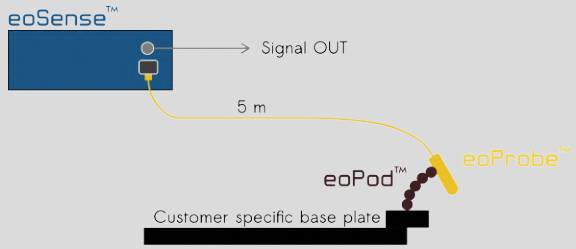
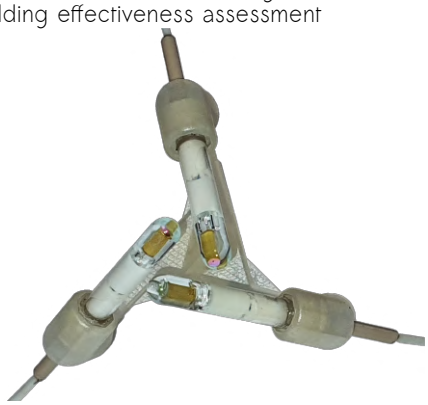
## Packaging information

| | Contents |
|---|---|
| eoPod™ holder | Delivered with an embedded bubble level & a 3-probe holder |
| Transport case | Cardboard with protective foam (W x D x H = 185 x 165 x 105 mm - Weight: 170 g) |
| User guide | See website https://en.kapteos.com/ |

## Compatible devices and accessories

| Device | Associated data sheet | Use | Outline schematic |
|---|---|---|---|
| EM-field probe | eoProbe-E-FT-25.01.pdf | Recommended setup in most cases |   |
| | | Immersed setup for measurements in phantoms |   |
| | | Customer-defined setup |   |

## Hardware options, customization and accessories

| Field of activity | Issue | Options and/or accessories |
|---|---|---|
| EMP generated by laser-plasma interaction using PW lasers | Intense UV, X and γ rays | -ELI → Specific holder for probe embedding an additional protective sheath against extreme light intensity |
| Measurement of weak signals for EM shielding effectiveness assessment  | Ultra high sensitivity required | -EL → Specific holder for using 3 longitudinal probes instead of standard configuration with 2 transverse & 1 longitudinal probes |



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## ORDERING INFORMATION

| Model | Type | (Option) |
|---|---|---|
| eoPod | LW | -ELI |

Examples: Probe holder for transverse or longitudinal probes in low κ or high κ liquids:

- product **eoPod LW** - Qty: 1

Probe holder for probes having additional protective sheath against extreme light intensity:

- product **eoPod LW** - Qty: 1
  - option **-ELI** - Qty: 1



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