



Spectano 100

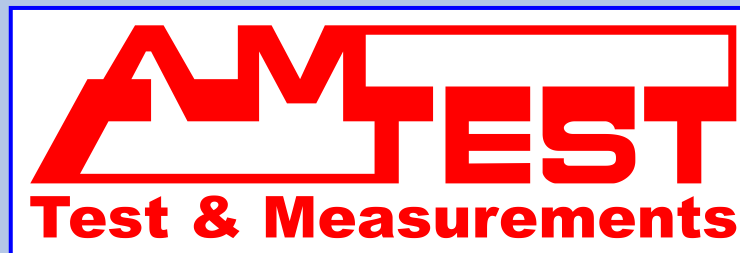
Dielectric Material Analyzer

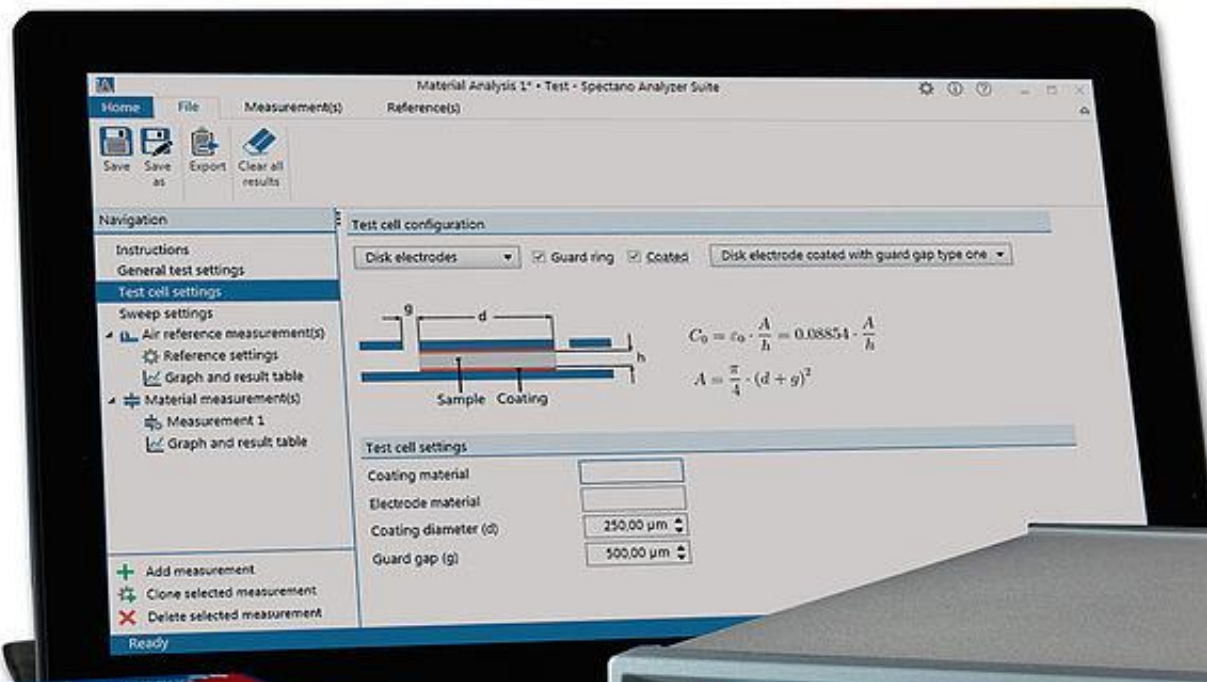
Manufacturer: Omicron Lab, Austria

Authorized supplier for Czechia and Slovakia:

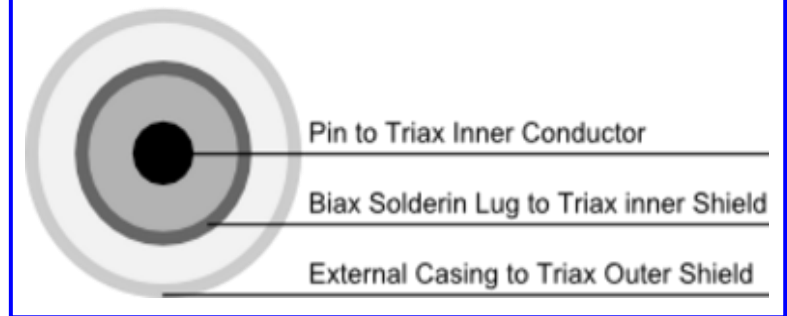
Amtest-TM, s.r.o., Svatováclavská 408, Uherské Hradiště

Czech Republic



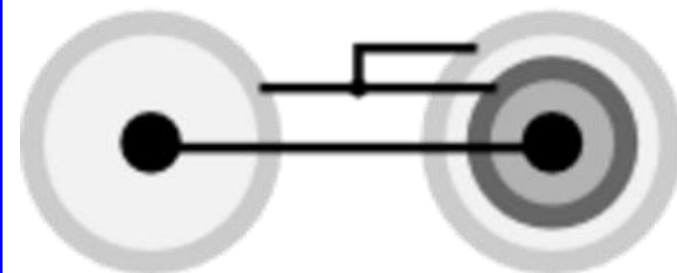


Lemo Male Connector - 1:1 Configuration



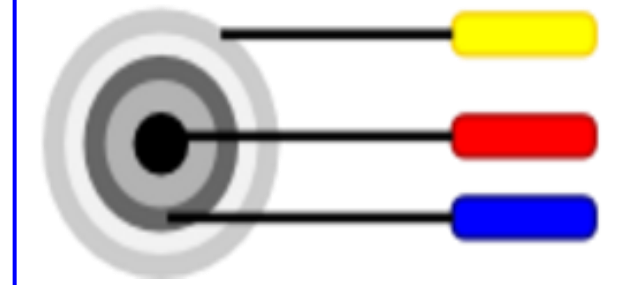
BNC male

Lemo female



Lemo Female

4mm Male

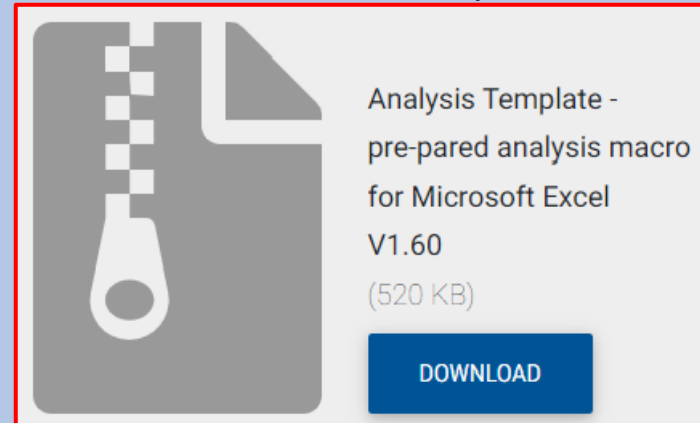
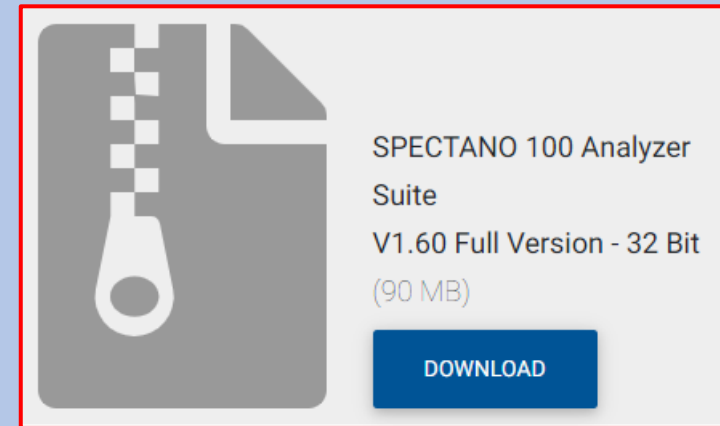
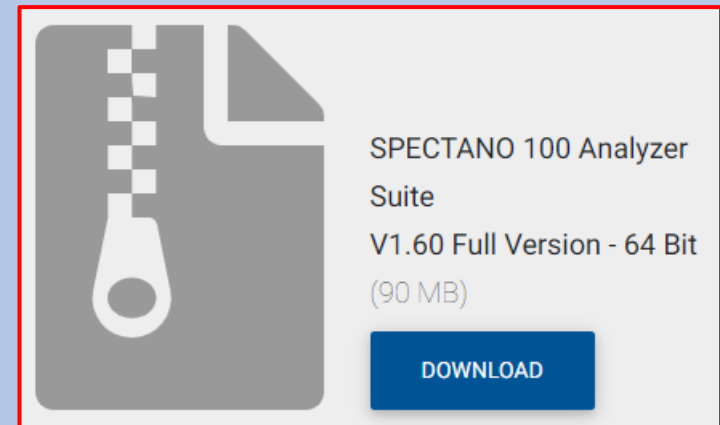


BENEFITS

- Low frequency
- Frequency and time (Polarisation- and Depolarisation current) domain in one device
- Up to 50 – 75% shorter measurement in comparison to other analyzers (combine FDS and PDC)
- Output voltage range 100 mV_{peak} – 200 V_{peak} without additional external booster amplifier
- PDC data available for analysis in time and frequency domain (automatic Fourier Transformation)
- Better results due to pre-measurement function for quick check of measurement setup
- Automation Interface (API) for automated measurements
- Easy data sharing. Software licence for installation on an unlimited number of computers.
- Specific conductivity and specific resistance are offered next to standard dielectric parameters like ϵ , $\tan\delta$.
- Covering different international standards like ASTM D150, D924, IEC 62631-2-1 or IEC 62631-3-1
- Dielectric Sample Holder (DSH 100) for solid materials with interchangeable gold-plated PCB electrodes
- High customer satisfaction

SPECTANO 100 Analyzer Suite

- Frequency Domain Spectroscopy (FDS)
- Polarization Depolarization Current method (PDC)
- Combined measurement mode (FDS and PDC)
- Vacuum capacitance and permittivity calculation
- Compensation of parasitic capacitances
- Programable measurement sequences
- System quality check (pre-measurements)
- Analysis
- Documentation
- Clone measurements
- Data backup
- Automation Interface



The SPECTANO Analyzer Suite can be downloaded for free

<https://www.omicron-lab.com/downloads/material-analysis/spectano-100>

Voltage Source

Output voltage: $\pm 100 \text{ mV}_{\text{peak}}$ to $\pm 200 \text{ V}_{\text{peak}}$

Max. output current: $50 \text{ mA}_{\text{peak}}$

Frequency Domain Spectroscopy (FDS)

Measurement current: max. $\pm 50 \text{ mA}_{\text{peak}}$

Frequency range: $5 \mu\text{Hz}$ to 5 kHz

Time Domain Current Measurement (PDC)

Measurement current: max. 10 mA

Frequency range: $20 \mu\text{Hz}$ to 99 mHz

Combined Mode (FDS and PDC)

Frequency range: $20 \mu\text{Hz}$ to 5 kHz

Time reduction: Up to 75 % in comparison to exclusive FDS measurements

Capacitance, Dissipation Factor and Impedance

Tan δ range: $> 3 \times 10^{-4}$

Capacitance range: 10 pF to $100 \mu\text{F}$

Impedance range: 100Ω to $20 \text{ T}\Omega$

Test Modes and Ratings

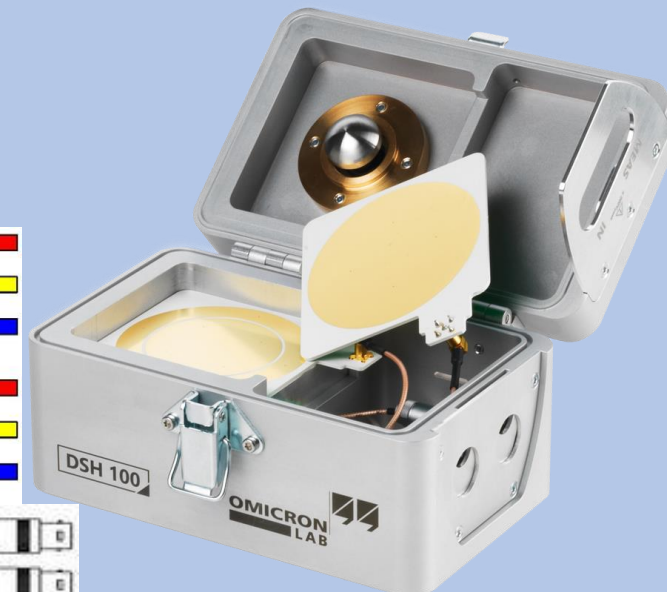
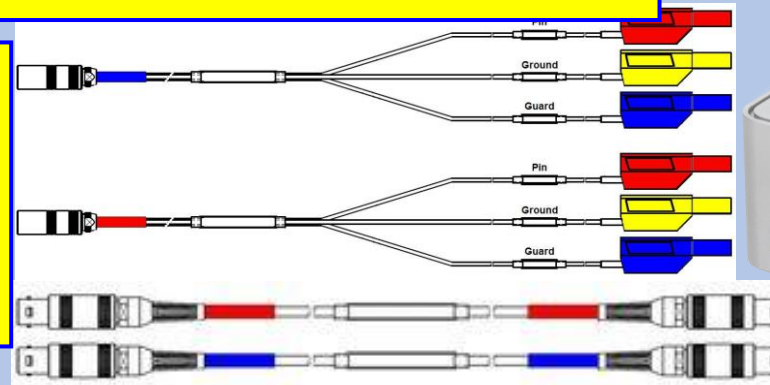
Test duration

FDS

Frequency band

PDC

Combined



Accuracy

Time Domain Current Measurement (PDC)

Current accuracy: $0.5 \% \pm 1 \text{ pA}$

Phase Angle

Accuracy: $< 20 \text{ m}^\circ$

Resolution: $< 0.6 \text{ m}^\circ$

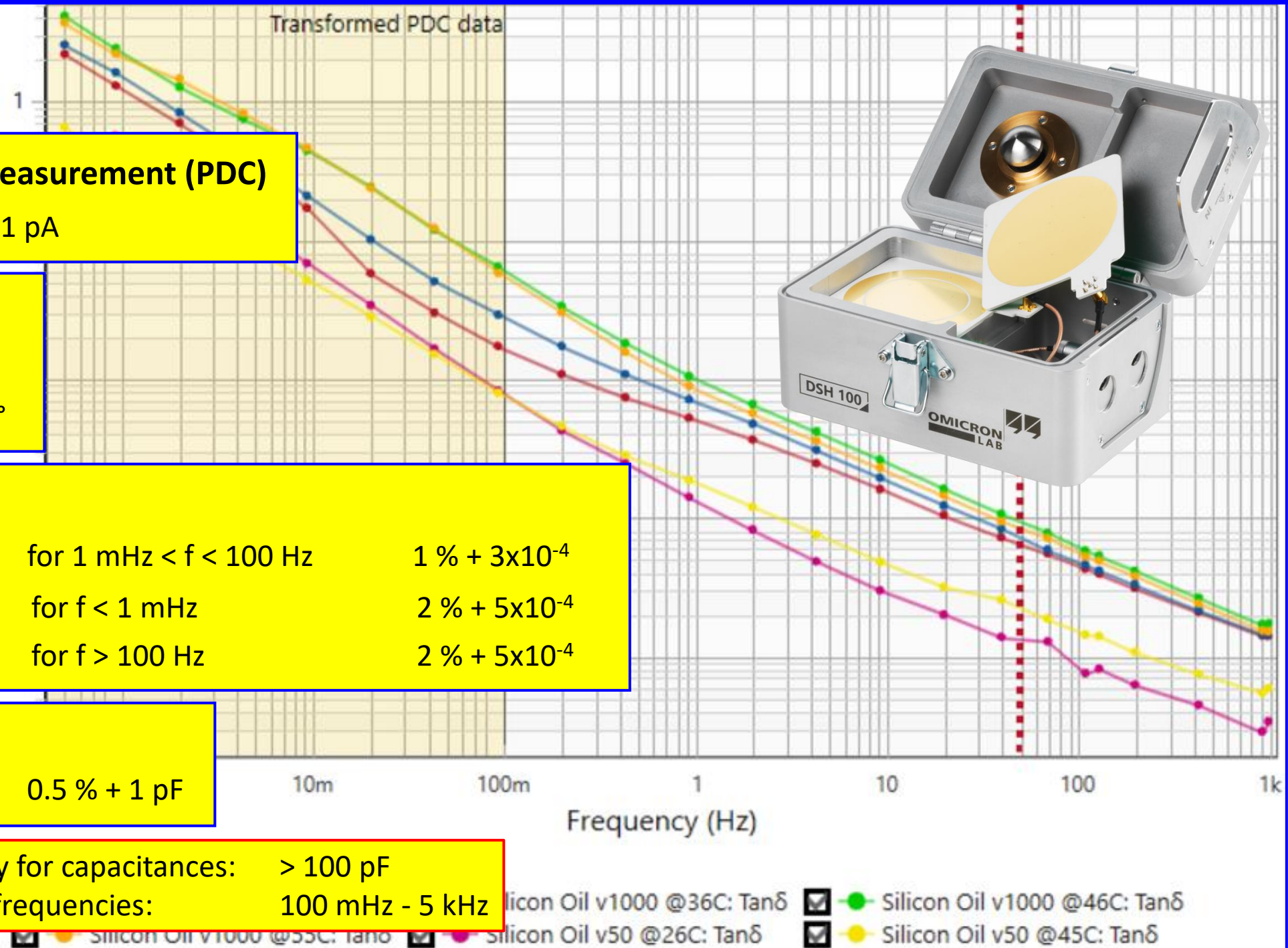
Dissipation Factor

Accuracy ¹ @ 20 °C	for $1 \text{ mHz} < f < 100 \text{ Hz}$	$1 \% + 3 \times 10^{-4}$
	for $f < 1 \text{ mHz}$	$2 \% + 5 \times 10^{-4}$
	for $f > 100 \text{ Hz}$	$2 \% + 5 \times 10^{-4}$

Capacitance

Accuracy ² @ 20 °C $0.5 \% + 1 \text{ pF}$

¹ Dissipation factor accuracy for capacitances: $> 100 \text{ pF}$
² Capacitance accuracy for frequencies: $100 \text{ mHz} - 5 \text{ kHz}$



General

System Requirements

Operating system: Windows 10
CPU: Current Intel or Intel compatible CPU
RAM: min. 2 GB
Interface: USB 2.0 or higher

Mechanical Data

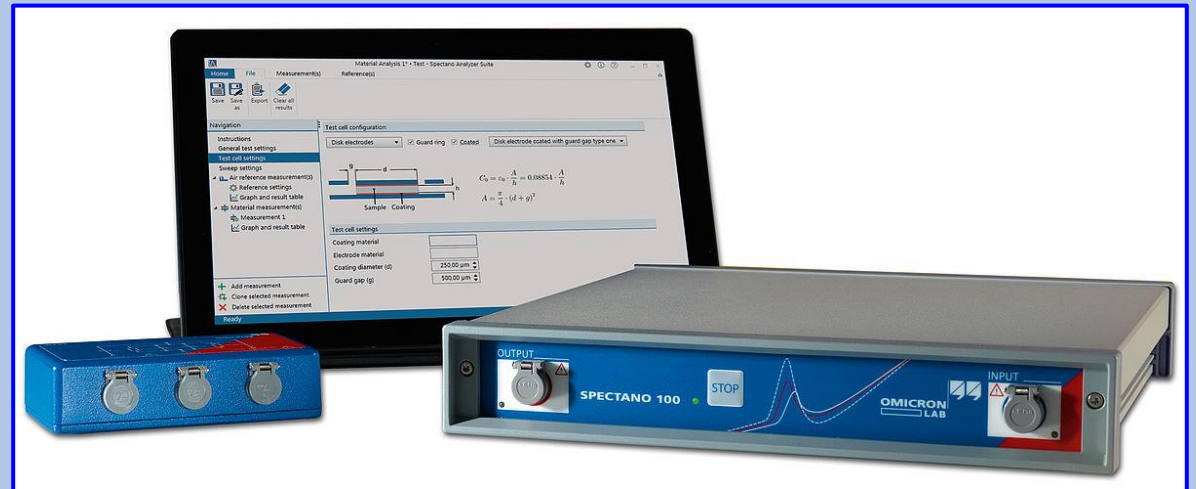
Dimensions: 260 x 50 x 256 mm
Weight: 2.3 kG

Environmental Conditions of Device (not accessories)

Operation temperature: -10 °C to +55 °C
Storage temperature: -10 °C to +65 °C
Relative humidity: 10 % to 95 % non-condensing
Air pressure: 70 kPa to 106 kPa

AC Power Supply

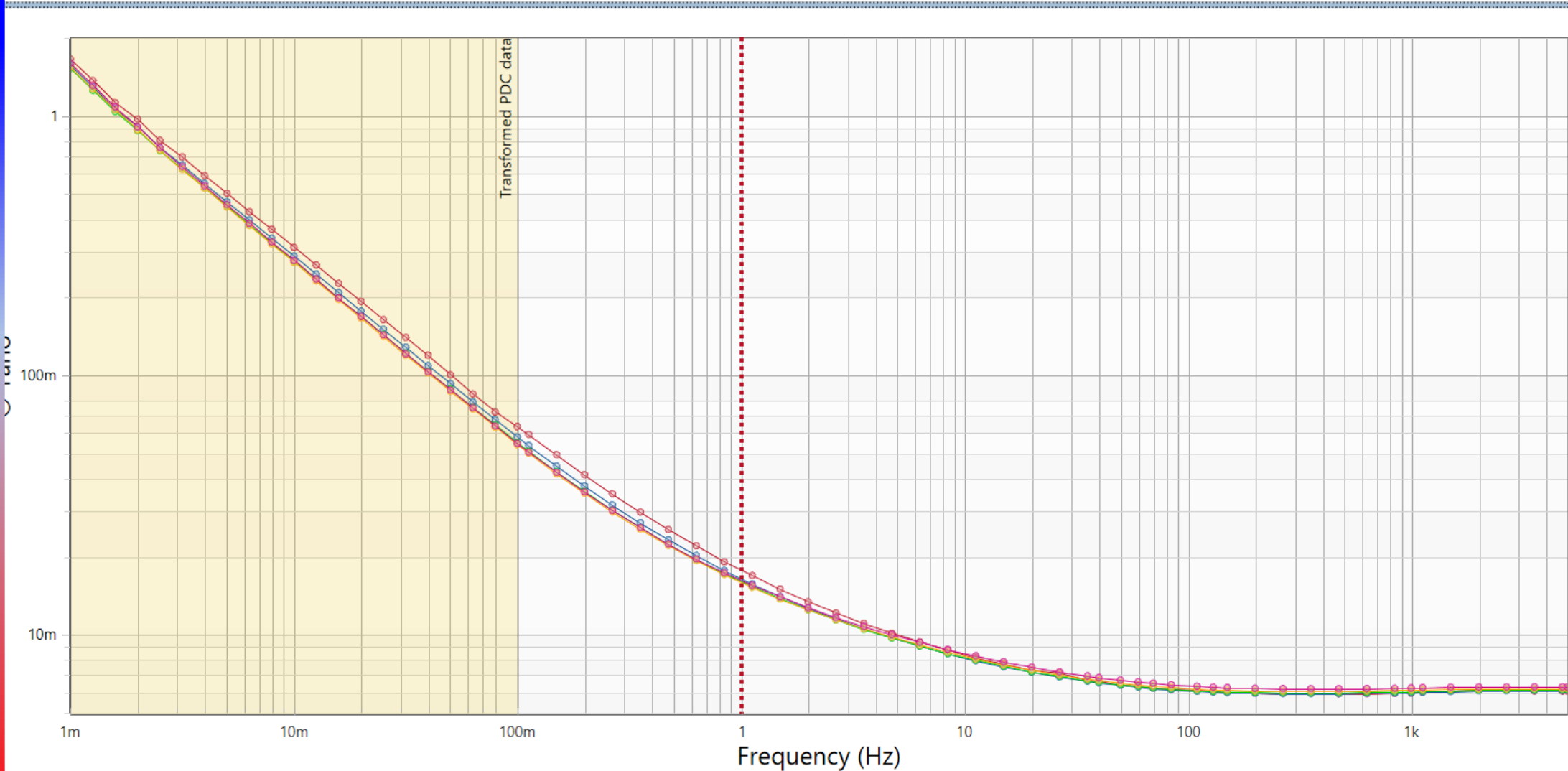
For safety reasons only use grounded DRA power supply which is delivered with the SPECTANO 100. DO NOT use any other power supply.



File Measurement(s) Reference(s) Graph view

▶ Selected measurement ▶▶ Start all measurements ■ Stop 📊 Reference inactive 📊 Clear selected results 📊 Clear all results ➕ Add measurement ⬇ Load from device ⚙ Clone selected measurement 🗑 Remove selected measurement 🗑 Remove all measurements

Tanδ frequency plot



☑ -○- MR18_ClearCMB_10V: Tanδ ☑ -○- MR18_ClearCMB_50V: Tanδ ☑ -○- MR18_ClearCMB_100V: Tanδ ☑ -○- MR18_ClearCMB_150V: Tanδ ☑ -○- MR18_ClearCMB_200V: Tanδ

Chart result view

Data Bode: Tanδ

Scaling

x-Axis Logarithmic

y-Axis Logarithmic

Left y-Axis

Y_{max} 2Y_{min} 5 m

Cursor table

Impedance calculation

☒ Parallel circuit

R_p

C_p

$R_{p_ges} = 1/\text{Re}\{1/Z\}$

☐ Serial circuit

R_s

C_s

$R_{s_ges} = \text{Re}\{Z\}$



Cole-Cole plot

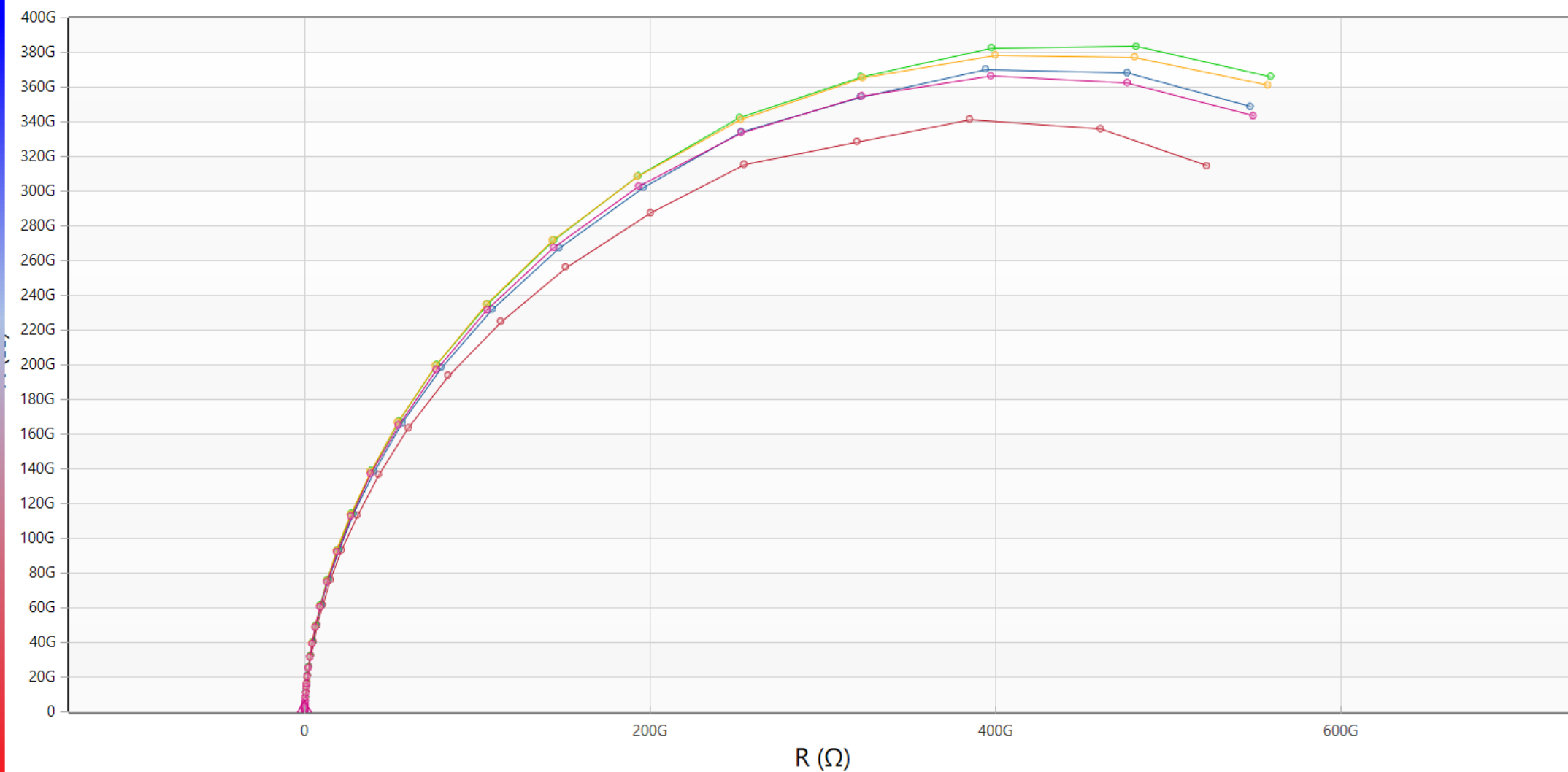


Chart result view

Data Cole-Cole: Complex Z

Scaling

x-Axis Linear

y-Axis Linear

Left y-Axis

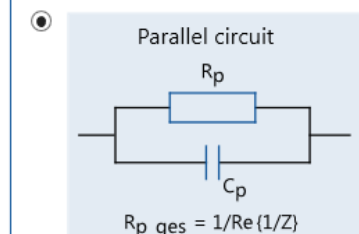
Y_{max} 400 G Ω Y_{min} 0 Ω

x-Axis

X_{min} 0 Ω X_{max} 100 k Ω

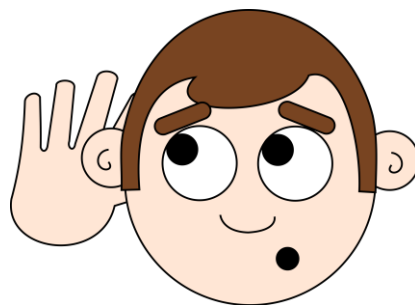
Cursor table

Impedance calculation



Serial circuit

**In case of interest, need for more
information, and/or price offer,
please, don't hesitate to contact us:**



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