

# Technical Data

## SPECTANO 100

Dielectric Material Analyzer



V1-1606

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Visit [www.omicron-lab.com](http://www.omicron-lab.com) for more information.

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## Voltage Source

Output voltage	$\pm 100 \text{ mV to } \pm 200 \text{ V}_{\text{peak}}$
Max. output current	$50 \text{ mA}_{\text{peak}}$

## Frequency Domain Spectroscopy (FDS)

Measurement current	$\text{max. } \pm 50 \text{ mA}_{\text{peak}}$
Frequency range	$5 \text{ } \mu\text{Hz to } 5 \text{ kHz}$

## Time Domain Current Measurement (PDC)

Frequency range	$20 \text{ } \mu\text{Hz to } 100 \text{ mHz}$
Measurement current	$\text{max. } 10 \text{ mA}$
Input resistance	$2 \text{ k}\Omega$
Accuracy	$0.5 \% \pm 1 \text{ pA}$

## Dissipation Factor

Tan $\delta$ range	$0 \text{ to } 10$
Tan $\delta$ resolution	$10^{-6}$

Accuracy <sup>1</sup> @ 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 $f > 100 \text{ Hz}$	$2 \% + 5 \times 10^{-4}$

## Phase Angle

Phase angle accuracy	$< 20 \text{ m}^\circ$
Phase angle resolution	$< 0.6 \text{ m}^\circ$

## Capacitance

Capacitance range	$10 \text{ pF to } 100 \text{ } \mu\text{F}$
Capacitance accuracy <sup>2</sup> @ 20 °C	$0.5 \% + 1 \text{ pF}$

## Impedance

Impedance range	$100 \text{ } \Omega \text{ to } 20 \text{ T}\Omega$
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1 Dissipation factor accuracy for capacitances  $> 100 \text{ pF}$

2 Capacitance accuracy for frequencies  $100 \text{ mHz} - 5 \text{ kHz}$

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## Measurement Time (Combined Mode)

2 mHz to 1 kHz	approx. 15 min
100 $\mu$ Hz to 1 kHz	< 3 h
10 $\mu$ Hz to 1 kHz	< 6 h

## System Requirements

Operating system	Windows 7 SP1, 8,10 or higher 32-bit and 64-bit
CPU	Current Intel or AMD CPU
RAM	min. 2 GB
Interface	USB 2.0 or higher

## AC Power Supply Data - Input

Supply voltage	100 V <sub>AC</sub> to 240 V <sub>AC</sub>
Frequency	50 or 60 Hz
Power	max. 45 W

## AC Power Supply Data - Output<sup>3</sup>

Voltage	12.0 V <sub>DC</sub>
Current	max. 3 A

## Environmental Conditions of Device (not accessories)

Operation temperature	-10 °C to +55 °C / -31 °F to +131 °F
Storage temperature	-10 °C to +65 °C / -31 °F to +149 °F
Relative humidity	10 % to 95 % non-condensing
Air pressure	70 kPa to 106 kPa

## Factory Tests

Climate	Tested according to EN 60068-2-78
Vibration	Tested according to EN 60068-2-6 Frequency range 10 to 50 Hz Acceleration 2 g, 20 cycles per axis
Shock	Tested according to EN 60068-2-27,15 g/11 ms, half-sine pulse, each axis

<sup>3</sup> For safety reasons use only the delivered grounded DRA power supply

## Mechanical Data

Dimensions	260 x 50 x 256 mm / 10.25 x 2 x 10.5 inch (w x h x d)
Weight	2.3 kG / 5 lb

## Electromagnetic Compatibility

Emission	EN 61326-1: FCC Subpart of Part 15, Class A
Immunity	EN 61326-1: Industrial environment

## CE Conformity and Requirements

The product adheres to the specifications and the guidelines of the council of the European Community for meeting the requirements of the member states according to the EMC, LVD and RoHS Directives.

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