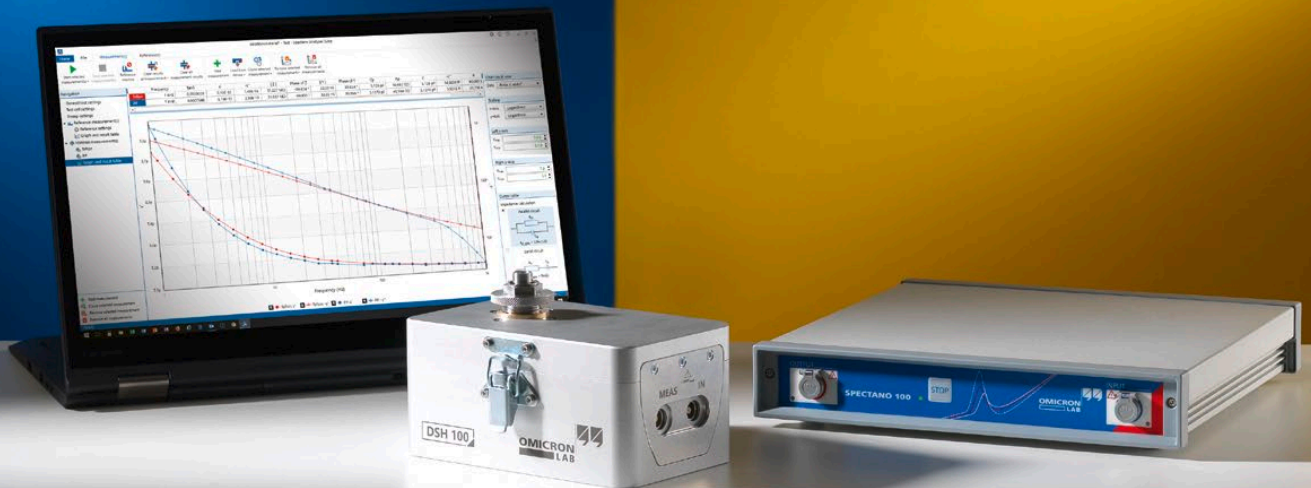


Technical Data

SPECTANO 100

Dielectric Material Analyzer



V2-2007

© 2020 by OMICRON Lab

Visit www.omicron-lab.com for more information.

Contact support@omicron-lab.com for technical support.

Technical data subject to change without notice



Output

Voltage range	$\pm 100 \text{ mV to } \pm 200 \text{ V}_{\text{peak}}$
Max. current	$50 \text{ mA}_{\text{peak}}$

Input

FDS ¹ input resistance	$< 2 \Omega$
PDC ² input resistance	$2 \text{ k}\Omega$
FDS measurement current	$\leq 50 \text{ mA}_{\text{peak}}$
PDC measurement current	$\leq 10 \text{ mA}$

Frequency range

FDS mode	$5 \mu\text{Hz to } 5 \text{ kHz}$
PDC mode	$20 \mu\text{Hz to } 99 \text{ mHz}$
Combined ³ mode	$20 \mu\text{Hz to } 5 \text{ kHz}$

Measurement range⁴

Impedance	$100 \Omega \text{ to } 20 \text{ T}\Omega$
Capacitance	$10 \text{ pF to } 100 \mu\text{F}$
Tan δ	$> 3 \times 10^{-4}$

Measurement accuracy @ 23 °C \pm 5 °C

Capacitance ⁵	$0.5 \% + 1 \text{ pF}$	
PDC current	$0.5 \% \pm 1 \text{ pA}$	
Phase angle	$< 20 \text{ m}^\circ$	
Tan δ ⁶	For $1 \text{ mHz} < f < 100 \text{ Hz}$	$1 \% + 3 \times 10^{-4}$
	For $f < 1 \text{ mHz}$	$2 \% + 5 \times 10^{-4}$
	For $f > 100 \text{ Hz}$	$2 \% + 5 \times 10^{-4}$

Measurement time (Combined mode)

2 mHz to 1 kHz	approx. 15 min
100 μHz to 1 kHz	$< 3 \text{ h}$
10 μHz to 1 kHz	$< 6 \text{ h}$

1 Frequency Domain Spectroscopy

2 Polarization Depolarization Current (Time Domain Method)

3 This mode combined the FDS and PDC method in one measurement

4 Depends on chosen measurement mode, voltage and frequency

5 Capacitance accuracy for frequencies 100 mHz - 5 kHz

6 Tan δ accuracy for capacitances $> 100 \text{ pF}$

PC requirements

Operating system	Windows 10
CPU	Current Intel or Intel compatible CPU
Memory (RAM)	min. 2 GB
USB interface	USB 2.0 or higher

DRA power supply ¹

Input voltage	100 V _{AC} ... 240 V _{AC}
Input frequency	50 ... 60 Hz
Power	≤ 45 W
Output voltage	12.0 V _{DC}
Output current	≤ 3 A

Environmental requirements

Temperature range	Operating	-10 °C to +55 °C (-31 °F to +131 °F)
	Storage	-10 °C to +65 °C (-31 °F to +149 °F)
Relative humidity	Operating	10 % to 95 % non-condensing
	Storage	10 % to 95 % non-condensing
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	
Maximum altitude	2000 m	

Supported standards

IEC	62631-3-1 (2017); 62631-2-1 (2018) ²
ASTM	D150; D924

General

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

¹ Grounded AC power supply delivered with SPECTANO 100. For safety reasons no other power supply is allowed!

² Former IEC 60250 (1969)