Data Sheet

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Trusted Answers

Agilent xCELLigence RTCA SP System

For label-free, real-time cellular analysis

The Agilent xCELLigence real-time cell analysis (RTCA) single plate (SP) system provides a unique and powerful means to monitor cells in real time without the potential artifacts generated by using labels. This noninvasive measurement allows detection of changes in adherence, morphology, and viability without needing to overexpress reporter and target proteins. This provides physiologically relevant data throughout experiment.

The Agilent xCELLigence E-Plate features an innovative biosensor configuration that covers 80% of each well bottom surface area. The real-time measurement of impedance across the biosensors provides sensitive immediate detection of the cellular condition and response. This enables a wide array of potential applications including (but not limited to):

- Cell proliferation
- Cell quality
- Compound-mediated cytotoxicity
- Cell-mediated cytotoxicity
- Cell adhesion and spreading
- Functional monitoring of receptor tyrosine kinase and GPCR signaling
- Cell-mediated cytolysis
- Barrier function
- Viral quantification

RTCA SP Station	
Electrical input	+5V, –5V, 1 W max
Electronic switch resistance	2 to 5 Ω
Electronic interface	Handling one Agilent E-Plate 96
Communication	RS-232 serial communications at a baud rate of 57,600 bits/second
Environment	Temperature: +20 to +40 °C, relative humidity: 98% max. noncondensing
Measurement rate	<10 seconds per measurement for one E-Plate 96
Dimensions	23 cm × 28 cm × 12 cm (W × D × H)
Status indicators	Power and device status

E-Plate 96	
Footprint	Compliance with ANSI/SBS 1-2004 requirements
Dimensions	12.77 cm × 8.55 cm × 1.75 cm (W × D × H, with cover)
Well spacing	9 mm center-to-center as per ANSI/SBS 4-2004 standard
Well volume	243 ±5 µL
Well bottom diameter	5.0 ±0.05 mm
Electrical interface	Compatible with RTCA SP and MP stations
Sensor impedance	17 ±5 Ω at 10 kHz, when measured with a 1x PBS solution
Materials	Polystyrene well plate, glass sensor substrate, UV irradiated
Environment	Temperature: +15 to +40 °C, relative humidity: 98% maximum without condensation

E-Plate VIEW 96	
All E-Plate 16 specifications apply	
Viewing window	Four center electrodes removed to aid in microscopy (~400 µm width)

RTCA SP Control Unit
Computer with pre-installed RTCA software
User-friendly graphical user interface (GUI)
≥160 GB hard disk drive
≥2 GB RAM
≥256 MB graphics device

DTCA SP Anlyzer	
Electrical input	100 to 240 VAC, 50 to 60 Hz, 25 W max
Output test signal	22 mV rms ±20% at 10, 25, and 50 kHz
Impedance measure accuracy	±(1% + 1.5 Ω)
Impedance measure repeatability	0.8%
Impedance dynamic range	10 to 5 kΩ
Communications	RS-232 serial communications at a baud rate of 57,600 bits/second
Environment	Temperature: +15 to +32 °C, relative humidity: 80% max. up to 31 °C, decreasing linearly to 50% max. at 40 °C
Dimensions	40 cm × 40 cm × 8 cm (W × D × H)
Status indicators	Power, communications, and analyzer status, analyzer self-test-button

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