

# RTCA Consumables

For label-free, real-time cell analysis

The different Agilent xCELLigence systems provide a unique and powerful means to monitor cells in real time without using labels. This noninvasive measurement allows detection of changes in adherence, morphology, and viability without the need for overexpression of reporter and target proteins. This provides physiologically relevant data throughout the experiment.

The Agilent E-Plate features an innovative gold biosensor configuration that covers 80% of each well bottom surface area. The real-time measurement of impedance across the biosensors offers sensitive and immediate detection of cellular conditions from low cell numbers to confluency. 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

The Agilent xCELLigence CIM-Plate is a modified Boyden chamber design, comprised of a disposable top and bottom chamber. It features the same innovative biosensor configuration as the Boyden chamber on the bottom of a microporous polyethylene terephthalate (PET) membrane. The median pore size of this membrane is 8 µm. The design and real-time measurement allow for precise, quantitative, and dynamic information for applications in cell invasion and migration.



E-Plate 16	
Dimensions	4.0 cm × 8.7 cm × 1.96 cm (W × D × H, with cover)
Well spacing	9 mm center-to-center as per ANSI/SBS 4-2004 standard
Well volume	270 ±10 µL
Well bottom diameter	5.0 ±0.075 mm
Electrical interface	Compatible with RTCA DP analyzer
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 16	
All E-Plate 16 specifications apply	
Viewing window	Four center biosensors removed to aid in microscopy (~400 µm width)



CIM-Plate 16	
Dimensions	4.0 cm × 8.7 cm × 2.6 cm (W × D × H, assembled, with cover)
Well spacing	9 mm center-to-center as per ANSI/SBS 4-2004 standard
Upper well volume	180 ±5 µL
Lower well volume	162 ±3 µL
Membrane	PET membrane with 8 µm pore size
Well bottom diameter	5.0 ±0.075 mm
Electrical interface	Compatible with RTCA DP analyzer
Sensor impedance	24 ±8 Ω at 10 kHz, when measured with a 1x PBS solution
Materials	PET well plate, PET membrane sensor substrate, UV irradiated
Environment	Temperature: +15 to +40 °C, relative humidity: 98% maximum without condensation

The Agilent xCELLigence E-plate 96 is compatible with the RTCA SP and MP stations. The E-plate VIEW 96 has four center biosensors removed to aid in microscopy. The E-plate 384 well is compatible with the RTCA HT station, and the E-plate Cardio 96 is recommended for use with the RTCA Cardio station.



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 biosensors removed to aid in microscopy (~400 µm width)

E-Plate Cardio 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 Cardio 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 384	
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	4.5 mm center-to-center as per ANSI/SBS 4-2004 standard
Well volume	95 ±5 µL
Well bottom dimension	2.5 ±0.01 mm (square)
Electrical interface	Compatible with RTCA HT station
Sensor impedance	112 ±22 Ω at 10 kHz, when measured with a 1x PBS solution
Materials	Polystyrene well plate, PET sensor substrate, gamma irradiated
Environment	Temperature: +15 to +40 °C, relative humidity: 98% maximum without condensation



E-Plate L8	
Dimensions	4.0 cm × 8.7 cm × 1.9 cm (W × D × H, with cover)
Well spacing	8-well, single column, 9 mm center-to-center spacing as per ANSI/SBS 4-2004 standard
Well volume	830 ±10 µL
Well bottom area	64 mm <sup>2</sup> ±10%
Electrical interface	Compatible with RTCA iCELLigence instrument
Sensor impedance	5.6 ±1.7 Ω at 10 kHz, when measured with a 1x PBS solution
Materials	Polystyrene well plate, glass sensor substrate, UV irradiated
Environment	Temperature: +20 to +40 °C, relative humidity: 98% maximum without condensation

E-Plate L8 PET	
All E-Plate L8 specifications apply, with the exception of the following	
Materials	Polystyrene well plate, PET sensor substrate

E-Plate Insert 16	
Dimensions	7.02 cm × 1.7 cm × 1.11 cm (W × D × H)
Well format	16-well (8 × 2) format as per ANSI/SBS 4-2004 standard for 96-well microplates
Well volume	95 µL ±10%
Membrane material	PET
Membrane area	5.4 mm <sup>2</sup> ±12%
Pore size	0.4 ±0.1 µm
Pore density	8E+07 pores/cm <sup>2</sup> – 1.5E+08 pores/cm <sup>2</sup> , UV irradiated
Environment	Temperature: +15 to +40 °C, relative humidity: 98% maximum without condensation

Receiver Plate	
Dimensions	7.46 cm × 2.43 cm × 1.5 cm (W × D × H, with plate cover)
Well format	16-well (8 × 2) format as per ANSI/SBS 4-2004 standard for 96-well microplates
Well volume	244 ±25 µL (without insert)
Well volume	114 ±17 µL (with insert)
Material	Biocompatible surfaces, UV irradiated
Environment	Temperature: +15 to +40 °C, relative humidity: 98% maximum without condensation

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