

Agilent xCELLigence RTCA eSight System Specifications

Instrument specifications

General Specifications	
Data Management	
Workstation and Monitor	Intel 8 core i9-10900X processor or above, 32GB RAM or above, 256GB solid state drive or above. High-resolution flat panel with resolution of 2,560 x 1,440 or above.
Enhanced Performance Workstation (AI)	Model: Dell Pro Max Tower T2 FCT2250 CPU: Ultra 9 285, GPU: NVIDIA RTX PRO 4500 Blackwell Memory: 64 GB Hard disk: 512 GB SSD + 32 TB HDD Display - WiFi - Max power: 1500 W Dimensions: 387 x 187.7 x 438 mm (machine), 595 x 378 x 505 mm (package)
Data Storage (For Models Without Network Attached Storage)	Built-in 32 TB storage
Data Storage (For Models With Network Attached Storage)	High-performance 8-bay 64-bit network attached storage with 24 TB storage by default. Option to expand up to 56 TB storage.
Data Communication	USB 2.0 (mainboard) and USB 3.0 (camera)
Exported Image Format	JPG, png, TIFF, BMP
Exported Movie Format	WMV, AVI, MPEG-4
Operating Conditions	
Instrument Dimensions	16.9" W x 17.5" D x 16.2" H (43.1 x 44.5 x 41.4 cm)
Instrument Weight	60 lb (27.2 kg)
Operating Environment	Temperature: 20–40 °C Relative humidity: 5–98% without condensation Altitude: 0–2000 m
Power Requirements	100–240 VAC, 47–63 Hz, 1.25 Amps max at 100 VAC, 0.5 Amps max at 240 VAC
Instrument Input Power	+ 5 VDC, + 12 VDC, + 24 VDC, 80 W maximum

Regulatory Compliance	
Indoor and Outdoor Use	Indoor use only
Overvoltage Category	Class 2
Pollution Degree of the Intended Environment	Class 2
Degree of Ingress Protection	IPX0
Storage	
Storage Environment	Temperature: 0–40 °C Relative humidity 5–98% without condensation Altitude: 0–2000 m
Biosensor Specifications	
Cradle and Labware	
Cradle Configuration	Three cradles for E-Plate 96 or E-Plate VIEW 96 Five cradles for standard 96-well imaging microplate (standard model*)
Compatible Labware	Biosensor E-Plate 96, Biosensor E-Plate VIEW 96 With 96-LED brightfield module: ANSI/SLAS standard 96-well plate, 6-well plate, 35 mm and 60 mm petri dish, T25 flask With matrix-LED brightfield module (RTCA eSight instrument with SN XX-X-XXXX-2001-X and above): ANSI/SLAS standard 96-well plate, 6-well plate, 12-well plate, 24-well plate, 48-well plate, 384-well plate, 35 mm and 60 mm petri dish, T25 flask
Impedance Measurement	
Test Signal	22 mV rms $\pm$ 20% with maximum 5 mV DC offset at 10 kHz Ω
Average Impedance Measurement Speed	2.88 s (E-Plate 96 and E-Plate VIEW 96)
Impedance Measurement Accuracy	$\pm$ (1.5% + 1 Ω)
Impedance Measurement Repeatability	0.8%
Impedance Dynamic Range	10 Ω to 5 k Ω
Electronic Switch Resistance	2 to 5 Ω
Imaging Specifications—Optical Imaging	
Imaging Modes	Brightfield and three fluorescent channels (blue, green, red)
Fluorescence Excitation/Emission	Red (excitation 584–605 nm; emission 621–720 nm) Green (excitation 473–491 nm; emission 503–561 nm) Blue (excitation 381–404 nm; emission 427–462 nm)
Fluorescence Light Source	High-power LEDs
Objective	10x (default), 5x (optional), 20x (optional)
Imaging Resolution	10x at 1.72 $\mu\text{m}/\text{pixel}$, 5x at 3.44 $\mu\text{m}/\text{pixel}$, 20x at 0.86 $\mu\text{m}/\text{pixel}$
Field of View	10x: 0.85 x 0.88 mm (E-Plate VIEW 96) and 1.68 x 1.40 mm (ANSI/SLAS standard 96-well plate) 5x: 3.36 x 2.80 mm (ANSI/SLAS standard 96-well plate) 20x: 0.85 x 0.88 mm (E-Plate VIEW 96) and 0.84 x 0.70 mm (ANSI/SLAS standard 96-well plate)
Camera	5.0 M pixels
Image Collection Rate	7 min (E-Plate VIEW 96) and 6 min (ANSI/SLAS standard 96-well plate) for 96 wells with brightfield image only and one image per well; 13 min (E-Plate VIEW 96) and 10 min (ANSI/SLAS standard 96-well plate) for 96 wells with brightfield image and three fluorescence images (200 ms exposure) and one image per well
Automated Functions	Autofocus, auto-exposure (brightfield)
Autofocus Methods	Image-based autofocus

Compatible E-Plates

The xCELLigence RTCA eSight instrument is compatible with the E-Plate VIEW 96 (for both impedance measurement and live-cell imaging) and the E-Plate 96 (for impedance measurement only). The specifications of E-Plate VIEW 96 and E-Plate 96 are shown below:

Consumable Specifications	
Footprint	Compliant with ANSI/SLAS 1–2004 requirements
Plate Dimension	12.77 × 8.55 × 1.75 cm (with plate cover)
Plate Well Spacing	9 mm center-to-center. Compliant with ANSI/SLAS 4–2004 standard for 96-well titer plates.
Maximum Well Volume	264 µL ± 10 µL
Well Bottom Diameter	5.0 mm ± 0.05 mm
Imaging Window	Window width of 900 µm with center electrodes removed for live-cell imaging (E-Plate VIEW 96 only)
Sensor Impedance	21 Ω ± 6 Ω (E-Plate VIEW 96) or 17 Ω ± 5 Ω (E-Plate 96) at 10 kHz, when measured with a 1x PBS solution
Material	Gold biosensor electrodes on a glass substrate
Plate Decontamination	UV irradiated
Operating Environment	+ 20 to 40 °C Relative humidity: 98% maximum without condensation

RTCA Resistor Plate 96

RTCA Resistor Plate 96 is composed of an array of precision resistors in a 96-well plate format, which is used to verify if the impedance measurement module of the xCELLigence RTCA eSight works properly. The specifications of the RTCA Resistor Plate 96 are shown below:

Consumable Specifications	
Plate Dimension	12.77 × 8.55 × 1.75 cm (with plate cover)
Resistor Values	37.4, 64.9, 91.0, 115.0 Ω ± 0.5%
Operating Environment	+ 20 to 40 °C Relative humidity: 98% maximum without condensation

Image module calibration plate

The image module calibration plate is used to verify the position of each cradle relatively to the movement of the optical module for accurate image acquisition. The specifications of the image module calibration plate are shown below:

Consumable Specifications	
Plate Dimension	12.77 × 8.55 × 1.75 cm (with plate cover)
Operating Environment	+ 20 to 40 °C Relative humidity: 98% maximum without condensation

Fluorescence calibration slide

The fluorescence calibration slide calibrates the instrument for fluorescence intensity measurement standardization. The specifications for the fluorescence calibration slide are shown below:

Consumable Specifications	
Slide Size	25 x 75 mm
Slide Thickness	1 mm
Fluorescence Calibration Window	17 x 24 mm
Operating Environment	+ 20 to 40 °C Relative humidity: 98% maximum without condensation
Storage Environment	Room temperature and dark when not used

www.agilent.com/lifesciences/eSight

DE-015319

This information is subject to change without notice.