xCELLigence® RTCA HT System:
Label-free, real-time cellular analysis for high-throughput screening applications

xCELLigence® technology is now available for high throughput screening via modular 384-well plate stations designed for use on robotic platforms. Up to four 384-well plates stations can be used in parallel for increased throughput and flexibility.

The xCELLigence® Real-Time Cell Analysis (RTCA) systems provide a unique and powerful means to monitor cells in real-time without the potential artifacts generated through the use of labels. The non-invasive measurement of cellular impedance enables detection of changes in cell adherence, morphology and viability without the need for over-expression of reporter and target proteins. This provides highly physiologically relevant data throughout the entire time course of the experiment.

The xCELLigence E-Plate® 384 features an innovative micro-electrode configuration that covers 80% of each well bottom’s surface area. Real-time measurement of impedance across these electrodes provides sensitive detection of cell health and behavior from low cell numbers to confluence. This enables a wide array of potential applications including (but not limited to):

- Functional monitoring of GPCR and receptor tyrosine kinase signaling
- Cell proliferation
- Cell quality
- Compound-mediated cytotoxicity
- Cell-mediated cytotoxicity
- Cell adhesion and spreading

### RTCA HT Station

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dimensions:</td>
<td>16.5 cm x 24.0 cm x 13.5 cm (W x D x H)</td>
</tr>
<tr>
<td>Weight:</td>
<td>&lt; 10.0 kg</td>
</tr>
<tr>
<td>Electrical Input:</td>
<td>+5 V, -5 V, +12 V, 15 W max</td>
</tr>
<tr>
<td>Electrical Switch Resistance:</td>
<td>7-12 Ω</td>
</tr>
<tr>
<td>Electrical Interface:</td>
<td>Handling one E-Plate® 384 device</td>
</tr>
<tr>
<td>Communication:</td>
<td>RS232 serial communications at a band rate</td>
</tr>
<tr>
<td></td>
<td>of 57,600 bits/second</td>
</tr>
<tr>
<td>Environment:</td>
<td>+15° C to +32° C, relative humidity:</td>
</tr>
<tr>
<td></td>
<td>80% max, up to +32° C, without condensation</td>
</tr>
<tr>
<td>Status Indicators:</td>
<td>Single led for System, Heater, and Motor</td>
</tr>
<tr>
<td></td>
<td>status</td>
</tr>
</tbody>
</table>

### E-Plate 384

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Footprint: Compliance with ANSI/SBS</td>
<td>1-2004 requirements</td>
</tr>
<tr>
<td>Dimensions:</td>
<td>12.77 cm x 8.35 cm x 1.75 cm (W x D x H)</td>
</tr>
<tr>
<td>(with plate cover)</td>
<td></td>
</tr>
<tr>
<td>Spacing:</td>
<td>The spacing of the wells is 4.5 mm center-</td>
</tr>
<tr>
<td></td>
<td>to-center as per the ANSI/SBS 4-2004</td>
</tr>
<tr>
<td></td>
<td>standard for 384-well titer plates</td>
</tr>
<tr>
<td>Volume:</td>
<td>95 µl ± 5 µl</td>
</tr>
<tr>
<td>Bottom Dimension:</td>
<td>(2.5 ± 0.1 mm) x (2.5 ± 0.1 mm)</td>
</tr>
<tr>
<td>Electronic Interface:</td>
<td>Interface with RTCA HT Station</td>
</tr>
<tr>
<td>Sensor Impedance:</td>
<td>112 Ω ± 22 Ω at 10 kHz, when measured</td>
</tr>
<tr>
<td></td>
<td>with a 1x PBS Solution</td>
</tr>
<tr>
<td>Material: Biocompatible surfaces</td>
<td></td>
</tr>
<tr>
<td>Gamma ray irradiated</td>
<td></td>
</tr>
<tr>
<td>Environment:</td>
<td>+15° C to +40° C, Relative humidity:</td>
</tr>
<tr>
<td></td>
<td>98% maximum without condensation</td>
</tr>
</tbody>
</table>

For life science research only.
Not for use in diagnostic procedures.
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<table>
<thead>
<tr>
<th>RTCA HT Control Unit</th>
<th>RTCA HT Analyzer</th>
</tr>
</thead>
<tbody>
<tr>
<td>≥ 160 GB Hard disk drive</td>
<td>Dimensions: 45.0 cm x 45.0 cm x 11.0 cm (W x D x H)</td>
</tr>
<tr>
<td>≥ 1 TB second Hard disk drive</td>
<td>Weight: &lt; 13.6 kg</td>
</tr>
<tr>
<td>≥ Intel Pentium Dual Core 1.8 GHz</td>
<td>Electrical Input: 100-250 VAC, 50-60 Hz, 80 W max</td>
</tr>
<tr>
<td>≥ 2 GB Ram</td>
<td>Output Test Signal: 22mV rms ± 20% with max. 5 mV DC off-</td>
</tr>
<tr>
<td>Qty 2 Ethernet Cards</td>
<td>set at 10, 25 and 50 kHz</td>
</tr>
<tr>
<td>2 USB 2.0</td>
<td>Impedance Measurement Accuracy: ± (1.5% at 1 Ω)</td>
</tr>
<tr>
<td>≥ 256 MB Graphics device</td>
<td>Impedance Measurement Repeatability: 0.8%</td>
</tr>
<tr>
<td>≥ 19” monitor with 1280 x 1024 pixels display resolution</td>
<td>Impedance Dynamic Range: 50 Ω to 2 kΩ</td>
</tr>
<tr>
<td></td>
<td>Communication: USB-to-RS232 serial communications at a</td>
</tr>
<tr>
<td></td>
<td>band rate of 57,600 hits/second</td>
</tr>
<tr>
<td></td>
<td>Environment: +15°C to +32°C, Relative humidity: 80% max.</td>
</tr>
<tr>
<td></td>
<td>up to 32°C, without condensation</td>
</tr>
<tr>
<td></td>
<td>Status Indicators: Power and four separate analyzer status LEDs (one for each channel)</td>
</tr>
<tr>
<td></td>
<td>Analyzer self-test button</td>
</tr>
</tbody>
</table>

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