Choosing the Right Instrument
for Cell Counting and Particle Characterization

### Applications Across Sizes

<table>
<thead>
<tr>
<th>Applications</th>
<th>Dynamic &amp; Static Light Scattering</th>
<th>Coulter Principle (Electrical Impedence)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>DelsaMax Core</td>
<td>Multisizer 4e</td>
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<tr>
<td></td>
<td>DelsaMax Pro</td>
<td>Multisizer 3</td>
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<tr>
<td>Size (nM)</td>
<td>10 50 100 500 1000</td>
<td>Aperture Sizes Available (µM)</td>
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<tr>
<td>Size (µM)</td>
<td></td>
<td>10 20 30 50 70 100 140 200 280 400 560 600 1000 2000</td>
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<tr>
<td></td>
<td></td>
<td>Effective Aperture Upper and Lower Range (µM)</td>
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<tr>
<td></td>
<td></td>
<td>0.2 0.4 0.6 1.0 1.4 2.0 2.8 4.0 5.6 8.0 11.2 20 40</td>
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<tr>
<td>Applications</td>
<td>Nanoparticles</td>
<td>Liposomes</td>
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<tr>
<td></td>
<td>Protems/Macromolecules</td>
<td>Bacterial Studies</td>
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<tr>
<td></td>
<td>Protein Aggregates</td>
<td>Lg. Protein Aggregates</td>
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<td></td>
<td>Virus Particles</td>
<td>CMP Slurries</td>
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<td></td>
<td>Liposomes</td>
<td>Yeast</td>
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<td></td>
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<td>Diagnostic Beads</td>
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<td>Ink Toners</td>
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<td>Mammalian Cells</td>
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<td>Fermentation/Bioreactors</td>
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<td>Plankton/Cyanobacteria-Biofuels</td>
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<td>Abrasives – ASTM Methods</td>
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<td>Plant and Plankton Cells</td>
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<td>Blood Clots</td>
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<td>Stem Cell/Tissue Aggregates</td>
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</tbody>
</table>

**Beckman Coulter Life Sciences**

**Characterized by ingenuity.**
Cell Counting and Particle Characterization Decision Tree — Research

Customer Need(s):

- Cell Viability (Trypan blue)
- Total Cell Count and Concentration
- Cell Volume
- Cell Size Distribution
- >1 um Particle Size and Distribution
- <1 um Particle Size and Distribution
- <0.2 um Particle Size and Distribution
- Particle Charge
- Particle Molecular Weight

DelsaMax
- Mammalian, Insect, and Yeast Cells

Z Counter
- Mammalian, Insect, Yeast and Bacterial Cells, Organelles >0.2 um
- Mammalian, Insect, Yeast and Bacterial Cells

Multisizer 4e
- Mammalian, Insect, Yeast and Bacterial Cells, Organelles >0.2 um
- Mammalian, Insect, Yeast and Bacteria Cells

Vi-CELL XR
- Mammalian, Insect, and Yeast Cells
- Toners, Abrasives, Emulsions, Microbubbles, Beads, Magnetic Particles, Liposomes
- Fine Toners, Fine Abrasives, Large Protein Aggregates, Extracellular Vesicles >0.2 um

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