**Case Study**

**JULABO ED-39 and FT402**

Determining the lowest working temperature when using an FT402 immersion cooler with an ED-39 heating bath circulator

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**The Objective**

The test is carried out to determine the lowest temperature that could be achieved when using an FT402 for cooling an ED-39.

**Setup**

For the test an ED-39 heating bath circulator (filling volume: 39 liters) is filled with Thermal G bath fluid. The FT402 immersion cooler is used as cooling device; the probe is immersed at the left side of the bridge. The temperature inside the bath is registered with an LC6 laboratory controller connected to a laptop.

**Test Conditions**

<table>
<thead>
<tr>
<th>Instruments</th>
<th>ED-39 heating bath circulator</th>
<th>FT402 immersion cooler</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mains voltage</td>
<td>230 Volts/ 50 Hz</td>
<td></td>
</tr>
<tr>
<td>Ambient temperature</td>
<td>20°C (room temperature)</td>
<td></td>
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<tr>
<td>Bath fluid</td>
<td>Thermal G</td>
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</tbody>
</table>

**Result**

Under the test conditions above, a value of -9.9 °C is achieved as lowest temperature.

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Cool-down curve

39 liters bath with immersion probe for cooling the bath

Setup with heating bath circulator and immersion cooler

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