Site Preparation Guide
# Ideal Setup

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IDEAL PLACEMENT AND BENCH MEASUREMENTS

Select a location with adequate floor space and a rigid laboratory bench that is level and is in a vibration-free environment.

Bench width: 1.8 m (6 ft)
Bench depth: 76 cm (30 in)
COMPONENTS

**A. Chiller**

**B. Instrument**

**C. Computer (Controller)**

*Note: Place the chiller on the **same level** as the instrument.*
Instrument Measurements

INSTRUMENT MEASUREMENTS

Height: 94 cm (37 in)
Width: 64 cm (25 in)
Depth: 71 cm (28 in)
Weight: 44 kg (98 lbs)
# Utility Requirements

## POWER

<table>
<thead>
<tr>
<th>Item</th>
<th>Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Instrument</td>
<td>• 100–120 VAC, 10 A, 60 Hz (US)</td>
</tr>
<tr>
<td></td>
<td>• 200–240 VAC, 10 A, 50/60 Hz (Non-US)</td>
</tr>
<tr>
<td></td>
<td>o Installation of a 16A Class B or C main fuse is recommended.</td>
</tr>
<tr>
<td>Power cords provided</td>
<td>• NEMA 5-15 plug for 100–120 VAC OR</td>
</tr>
<tr>
<td></td>
<td>• NEMA 6-15 plug for 200–240 VAC</td>
</tr>
</tbody>
</table>

- Use power cords with plugs appropriate for your circuit.

- Supply voltages lower than indicated may result in a degradation of performance.

- Ensure that the mains assigned do not also supply power to noise generating equipment nearby, such as motors, welders, transformers, etc.

- An independent heavy GROUND wire must be provided through the power hookup. Improper grounding may cause severe damage for which the supplier will not accept responsibility. All power strips must be fully grounded and carry the ground through to the sockets into which the computer is plugged.
## Utility Requirements

### GAS

<table>
<thead>
<tr>
<th>Pneumatic Ram</th>
<th>Gas Requirements for <strong>Pneumatic Ram</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Type</strong></td>
<td>Must be <strong>nitrogen</strong> or <strong>air</strong></td>
</tr>
<tr>
<td><strong>Source</strong></td>
<td>Must be from a <strong>gas cylinder</strong>, <strong>Grade 5 purity</strong></td>
</tr>
</tbody>
</table>
| **Inlet Pressure** | Minimum: 40 psig (2.75 bar)  
Maximum: 50 psig (3.45 bar) |
| **Tubing**    | • ¼” tubing is supplied to connect from instrument to gas regulator  
• Tubing is rated to 100 psig (7 bar) |

<table>
<thead>
<tr>
<th>Purge Gas</th>
<th>Gas Requirements for <strong>Purge</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Type</strong></td>
<td>Must be <strong>nitrogen</strong>; at sub-ambient temperatures to prevent frost and moisture buildup on internal metal components</td>
</tr>
<tr>
<td><strong>Inlet Pressure</strong></td>
<td>Less than 5 psig needed–it is simply a low, steady flow to flush the furnace cavity</td>
</tr>
</tbody>
</table>
| **Tubing** | • Purge gas port requires 1/8” tubing (provided)  
• A 1/8” stem to ¼” tubing adapter is also provided |

The customer is required to supply either compressed air, dried and filtered, to 10 microns, or laboratory grade inert gas (such as nitrogen from a high pressure cylinder).
## Utility Requirements

<table>
<thead>
<tr>
<th>Item</th>
<th>Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>COOLANT</strong></td>
<td></td>
</tr>
<tr>
<td>Pressure</td>
<td>4.3 psig (0.30 bar) maximum</td>
</tr>
<tr>
<td>Flow Rate</td>
<td>20 L/min (5 gal/min) maximum</td>
</tr>
<tr>
<td></td>
<td>Operating close to or below min. pressure will result in</td>
</tr>
<tr>
<td></td>
<td>erratic operation.</td>
</tr>
<tr>
<td>Cooling Capacity</td>
<td>• At -20°C = 265W</td>
</tr>
<tr>
<td></td>
<td>• At 0°C = 650W</td>
</tr>
<tr>
<td></td>
<td>• At +20°C = 1000W</td>
</tr>
<tr>
<td>Coolant Liquid</td>
<td>• 50/50 mix of DI water and <strong>labatory grade</strong> ethylene</td>
</tr>
<tr>
<td></td>
<td>glycol for testing up to 300°C</td>
</tr>
<tr>
<td></td>
<td>• Denaturalized alcohol for sub-zero testing</td>
</tr>
<tr>
<td>Connections</td>
<td>Supplied: Two hoses (6 feet / 1.8 meters each) to connect to</td>
</tr>
<tr>
<td></td>
<td>the Coolant Inlet and Outlet ports on the back of the furnace.</td>
</tr>
<tr>
<td></td>
<td>The other end of each hose is blank; a <strong>male 3/8” barb with</strong></td>
</tr>
<tr>
<td></td>
<td><strong>1/4” threads</strong> (provided) must be installed to connect to</td>
</tr>
<tr>
<td></td>
<td>the coolant source.</td>
</tr>
</tbody>
</table>

**CAUTION**

Place the chiller on the **same level** as the instrument.

P/N 202612.001 (120V for 60Hz power, 13A)
or
202442.001 (240V for 50Hz power, 13 A)
WATER

Excessively cold water will result in “sweating” and corrosion of cooled metal surfaces. The purge of nitrogen gas through the furnace will prevent this.

Operating below the minimum chiller coolant level will result in erratic operation. A chiller/circulator is recommended for this instrument.

If a chiller/circulator is to be used, it **must** be placed at the same level as the instrument.
HARDWARE REQUIREMENTS

- Unused RS-232 (serial) port
- Unused USB port

Instrument drivers and software are provided on a CD.

Computer should not be attached to other analytical instruments or LAN.

SOFTWARE REQUIREMENTS

<table>
<thead>
<tr>
<th>Item</th>
<th>Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating System</td>
<td>• Windows 7 or 10, 32- or 64-bit, Ultimate, Enterprise &amp; Professional</td>
</tr>
<tr>
<td></td>
<td>• Home version not supported</td>
</tr>
<tr>
<td>Network</td>
<td>• TA Instruments is not responsible for resolving issues associated with</td>
</tr>
<tr>
<td></td>
<td>connections to your corporate network.</td>
</tr>
<tr>
<td></td>
<td>• Network cards and/or certain network operation frequently interfere</td>
</tr>
<tr>
<td></td>
<td>with the operation of the instrument and software.</td>
</tr>
<tr>
<td>Conflicts</td>
<td>TA Instruments is not responsible for resolving hardware/software conflicts</td>
</tr>
<tr>
<td></td>
<td>created by the addition of third party hardware or software to the</td>
</tr>
<tr>
<td></td>
<td>computer.</td>
</tr>
</tbody>
</table>
## Site Preparation Checklist

### Thermal Conductivity Instruments: DTC-300

<table>
<thead>
<tr>
<th>Sufficient bench space for instrument, computer, and chiller (if needed):</th>
</tr>
</thead>
<tbody>
<tr>
<td>□ Length: 1.8 m (6 ft)</td>
</tr>
<tr>
<td>□ Depth: 76 cm (30 in)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Instrument power is</th>
</tr>
</thead>
<tbody>
<tr>
<td>□ 100–120 VAC, 10 A max, 60 Hz (US)</td>
</tr>
<tr>
<td>□ 220–240 VAC, 10 A max, 50/60 Hz (Non-US)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Computer, monitor, and chiller power is</th>
</tr>
</thead>
<tbody>
<tr>
<td>□ 120 V (US)</td>
</tr>
<tr>
<td>□ 220–240 V, 6.4 A max, 50/60 Hz (Non-US)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Pneumatic Ram Gas – Air or Nitrogen</th>
</tr>
</thead>
<tbody>
<tr>
<td>□ Regulator to allow 40–50 psig (2.75–5.50 bar)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Purge Gas – Dry Nitrogen</th>
</tr>
</thead>
<tbody>
<tr>
<td>□ Under 5 psig (2.75–5.50 bar)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Water Circulation</th>
</tr>
</thead>
<tbody>
<tr>
<td>□ Nominal flow rate of 20 L/minute (5 gal/min)</td>
</tr>
<tr>
<td>□ Maximum pressure of 4.3 psig (0.30 bar)</td>
</tr>
<tr>
<td>□ Sufficient cooling capacity</td>
</tr>
<tr>
<td>□ 50/50 mix of DI water and laboratory grade ethylene glycol (for temperatures up to 300°C)</td>
</tr>
<tr>
<td>□ Denaturalized alcohol (for sub-zero measurements)</td>
</tr>
</tbody>
</table>

- The Customer assumes responsibility for any damage that occurs when the instrument is moved by someone other than a trained TA Instruments Service Representative.

I hereby acknowledge that all utility requirements have been met per the checklist above and that they will be ready at the agreed time of installation.

If all utility requirements are not met at the agreed time of installation, additional charges may be incurred for a return Service trip.

<table>
<thead>
<tr>
<th>Customer</th>
<th>DD</th>
<th>MM</th>
<th>YYYY</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Company</th>
<th>City</th>
<th>State</th>
<th>Country</th>
</tr>
</thead>
</table>

Please send a signed copy of the completed checklist to your local Service representative.
For information on our latest products, contact information, and more, see our website at:

To find your local TA Instruments office and contact information, visit
http://www.tainstruments.com/contact/ta-directory/

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