

# Thermal Diffusivity Instruments

DLF-1200 DXF-500/900



## Site Preparation Guide

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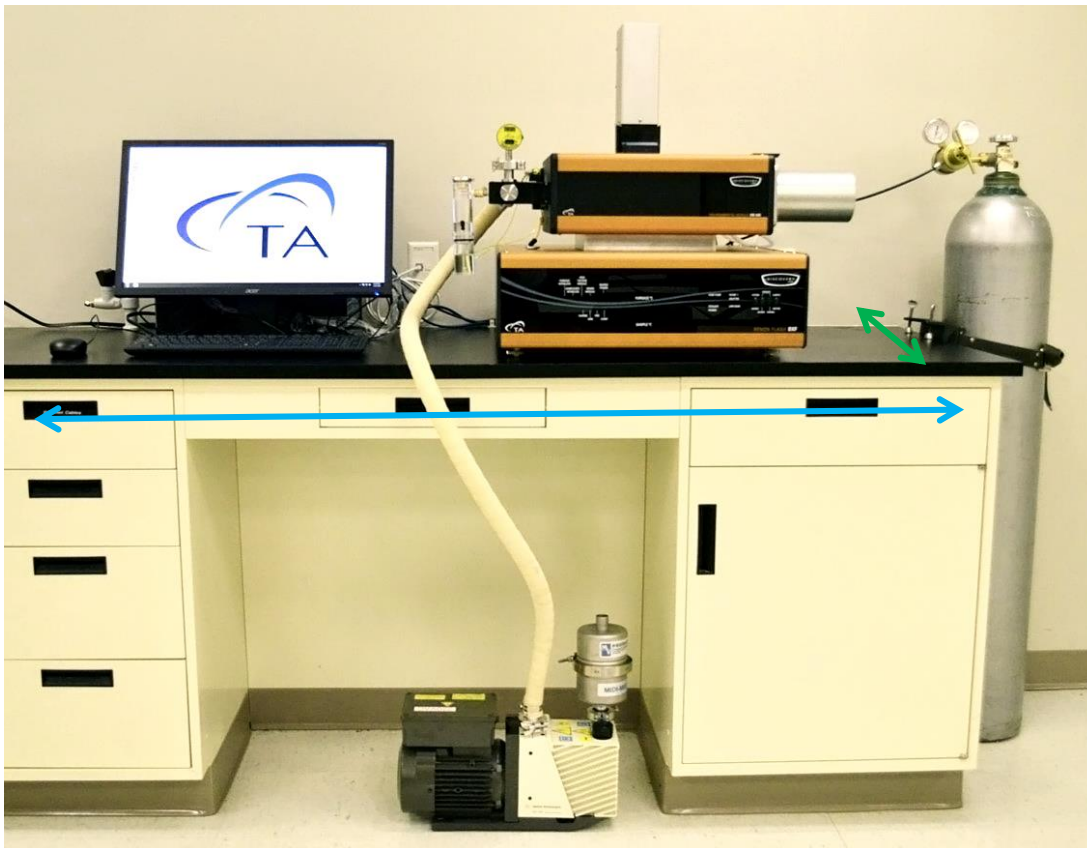
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# Ideal Setup



## 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. For optimal performance it is recommended that the instrument be placed by itself on a separate marble table.



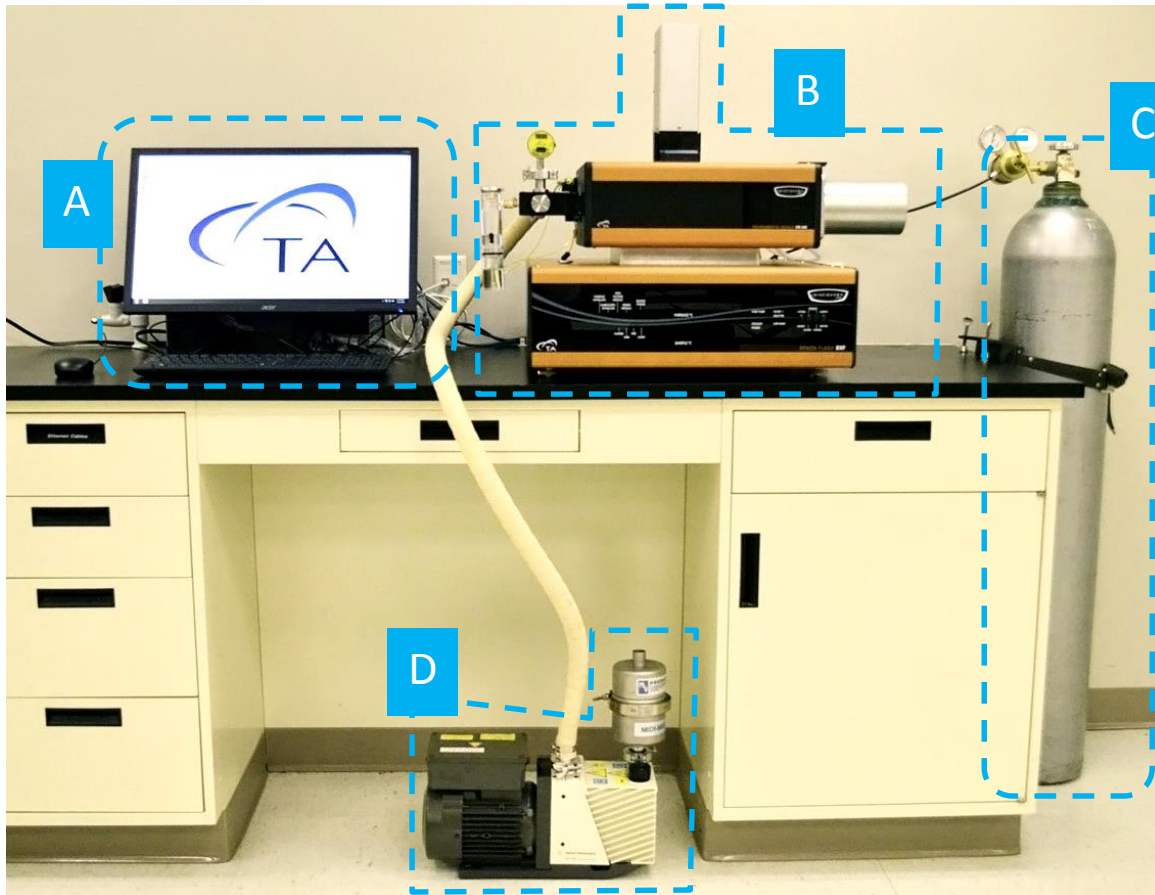
Bench length: 2.10 m (7 ft) – including Head open

Bench depth: 90 cm (36 in)

# System Components



## MAIN SYSTEM COMPONENTS

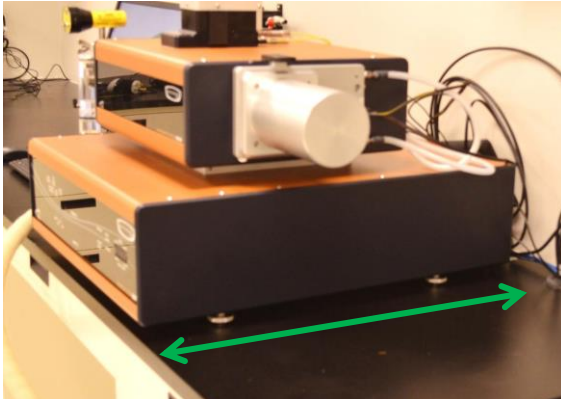
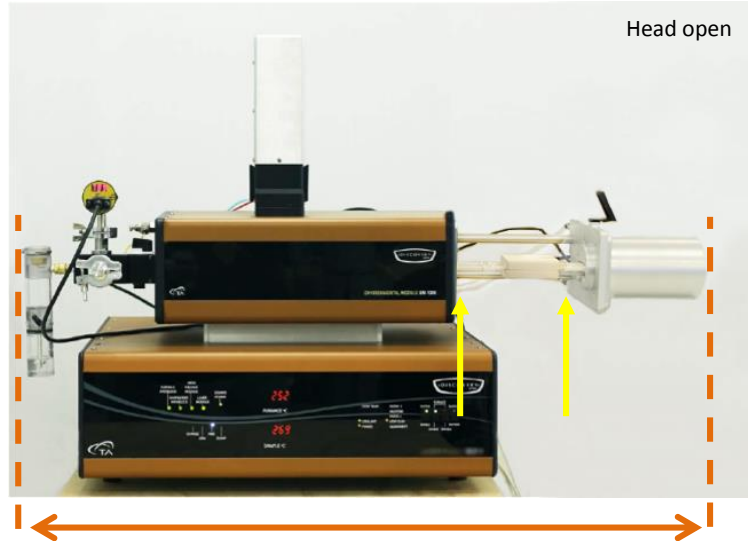
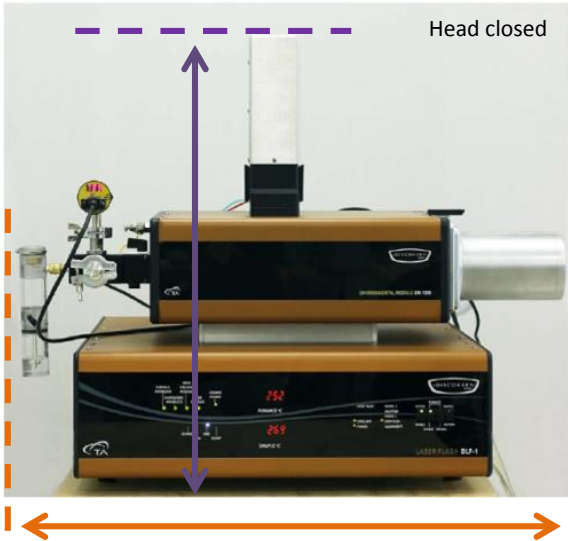


- A. Computer (Controller)
- B. Instrument
- C. Bottled Gas
- D. Vacuum Pump
- E. Chiller/Recirculator (not shown)

# Instrument Measurements



## MAIN INSTRUMENT



Height: 65 cm (25.5 in)

Width (Head CLOSED): 81 cm (32 in)

Width (Head OPEN): 109 cm (43 in)

Depth: 76 cm (30 in)

DXF/DLF Weight: 70 kg (155 lbs)

EM-500/900/1200 Weight: 34 kg (75 lbs)



Allow at least 15 cm (6 in) of **additional clearance** behind the instrument for wires, cables, etc.

# Utility Requirements



## POWER



### Instrument

- 195–242VAC, 6.0A max, 50/60 Hz

### Computer and Vacuum

- 120V (US) or 220–240V, 6.4A max, 50/60 Hz

### Power cords provided



NEMA 6-15 plug



NEMA 5-15 plug



**Use power cords with plugs appropriate for your circuit!**

- Instrument: NEMA 6-15 plug, 2 m (6.5 ft) long
  - Computer
  - Monitor
  - Vacuum pump
- } NEMA 5-15 plug, 2 m (6.5 ft) long



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

	Requirements
Conditions	Must be dry!
Type	Must be <b>nitrogen</b> or <b>argon</b> !
Source	Must be from a <b>gas cylinder, Grade 5 purity!</b> 
Inlet Pressure	Minimum: 40 psi (2.75 bar) Maximum: 50 psi (3.45 bar)





### Liquid Nitrogen

- 1 L per day usage
- Use a small handheld dewar flask **1** to manually pour into the detector dewar **2**. A funnel **3** is supplied for assistance.



### 1/8" Urethane tubing

- Supplied with the instrument
- Rated to 100 psi (7 bar)
- 1.8 m (6 ft) length of tubing connects to the furnace by threaded barb connection (supplied).
- Another 4.6 m (15 ft) is provided in case extra length is needed.
- A push-to-connect (Legris) 1/8" to 1/8" tubing connector is provided: 
- A push-to-connect (Legris) 1/8" stem to 1/4" tubing adapter is provided: 





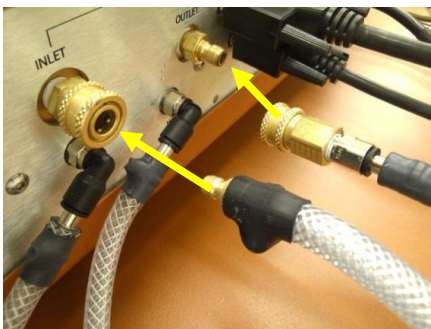
Improperly regulated, pulsating, or poor quality purge gas may cause irregular or erratic instrument operation. Containment of exhaust is recommended if noxious or poisonous gases are released by sample when heated. Venting inert gases into small rooms may reduce the oxygen content of the air and become hazardous to personnel.

# Utility Requirements



## WATER (the thermocube is included in the current proposal see item 201786.001)

	Requirements
Inlet Pressure	<ul style="list-style-type: none"> <li>• Minimum: 40 psi (2.75 bar)</li> <li>• Maximum: 80 psi (5.50 bar)</li> </ul> <p> <i>Operating close to or below minimum pressure will result in erratic operation.</i></p> <ul style="list-style-type: none"> <li>• If plant-wide recirculation is used, a minimum inlet/outlet differential pressure of 50 psi is required.</li> <li>• ThermoCube chiller (PN 201786.001) is recommended </li> </ul>
Nominal Flow Rate	<ul style="list-style-type: none"> <li>• 1–2 L/min</li> <li>• Varies with Inlet pressure</li> </ul>
Water Temperature	<ul style="list-style-type: none"> <li>• Optimal: <b>20°C</b></li> <li>• Permissible: 15°C–30°C</li> <li>• Excessively cold water will result in “sweating” and corrosion of cooled metal surfaces. Warm water may not allow starting a test from below 25°C.</li> </ul>



Coolant Inlet and Outlet hoses

The instrument is supplied with two hoses (1.8 meters/6 feet each) to connect to the Coolant Inlet and Outlet ports on the back of the furnace. The other end of each hose has a **male 1/4" Legris fitting** that must be connected to the coolant source.



1/4" male fittings



If the coolant source is a recirculator, place it on the **same level** as the instrument.



Wall-mounted supply shutoff, open drain, and city water is required if chiller/circulator was NOT ordered.



# Computer Requirements



## HARDWARE REQUIREMENTS

The instrument comes with a computer already configured. Use the following requirements if using a computer not supplied by TA Instruments:

- 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

Item	Requirement
Operating System	<ul style="list-style-type: none"><li>• Windows 7 32-bit Ultimate, Enterprise &amp; Professional</li><li>• Home version not supported</li></ul>
Network	<ul style="list-style-type: none"><li>• <i>TA Instruments is not responsible for resolving issues associated with connections to your corporate network.</i></li><li>• <i>Network cards and/or certain network operation frequently interfere with the operation of the instrument and software.</i></li></ul>
Conflicts	<i>TA Instruments is not responsible for resolving hardware/software conflicts created by the addition of third party hardware or software to the computer.</i>

# Site Preparation Checklist



## Thermal Diffusivity Instruments

	<p>Sufficient bench space for instrument, computer, vacuum pump, and recirculator (if needed):</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Width: 2.10 m (7 ft)</li> <li><input type="checkbox"/> Depth: 90 cm (36 in)</li> </ul>
	<ul style="list-style-type: none"> <li><input type="checkbox"/> Instrument power is 198–242 VAC, 6.0 A max, 50/60 Hz</li> <li><input type="checkbox"/> Computer, monitor, and vacuum power is 120 V (US) or 220–240 V, 6.4 A max, 50/60 Hz</li> </ul>
	<p>Purge Gas – Dry nitrogen or argon</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Grade 5 purity cylinder</li> <li><input type="checkbox"/> Regulator to allow 40–50 psi (2.75–5.50 bar)</li> <li><input type="checkbox"/> Dew point is -10°C or better</li> </ul> <p>Liquid Nitrogen</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Handheld dewar, 1 L/day usage</li> </ul>
	<p>Water Circulation <b>INCLUDED</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Inlet pressure of 40–50 psi (2.75-5.50 bar)</li> <li><input type="checkbox"/> Nominal flow rate of 1–2 L/minute</li> <li><input type="checkbox"/> Optimal coolant temperature of 20°C</li> <li><input type="checkbox"/> Filtered or clean and debris-free</li> <li><input type="checkbox"/> ThermoCube chiller OR wall-mounted supply shutoff, open drain, and city water</li> </ul>

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.**

\_\_\_\_\_  
*Customer* *DD* / *MM* / *YYYY*

\_\_\_\_\_  
*Company* *City* *State* *Country*

Please send a signed copy of the completed checklist to your local Service representative.

# TA Instruments Offices

For information on our latest products, contact information, and more, see our website at:  
<http://www.tainstruments.com>.

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

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