Vertical Dilatometer

DIL821 DIL822

Site Preparation Guide

Revision C Issued August 2026

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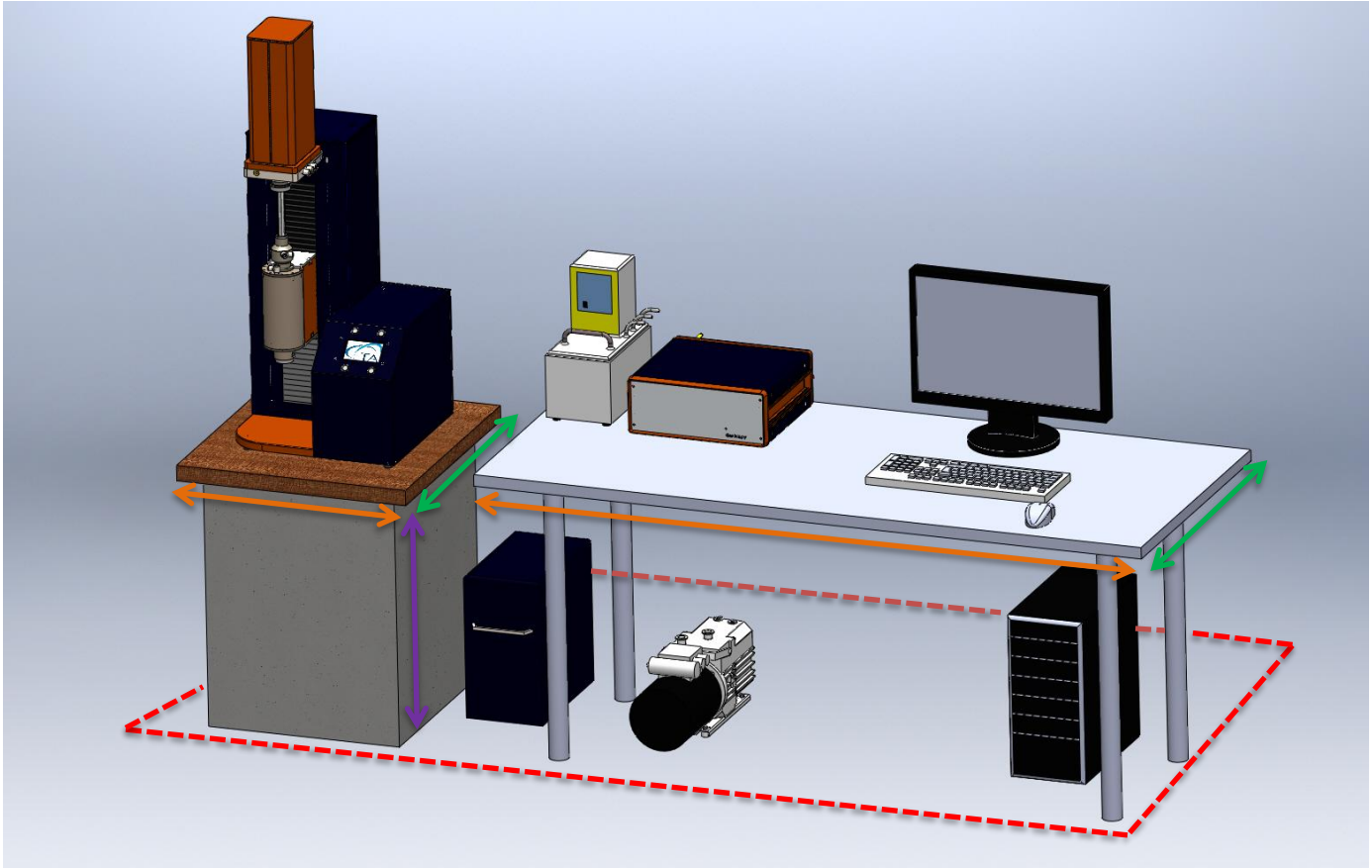
Ideal Setup

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. Room temperature should be ambient (20°C ± 1°C).



Bench width for DIL82X: 60 cm (24 in)

Bench width: 1.8 m (6 ft)

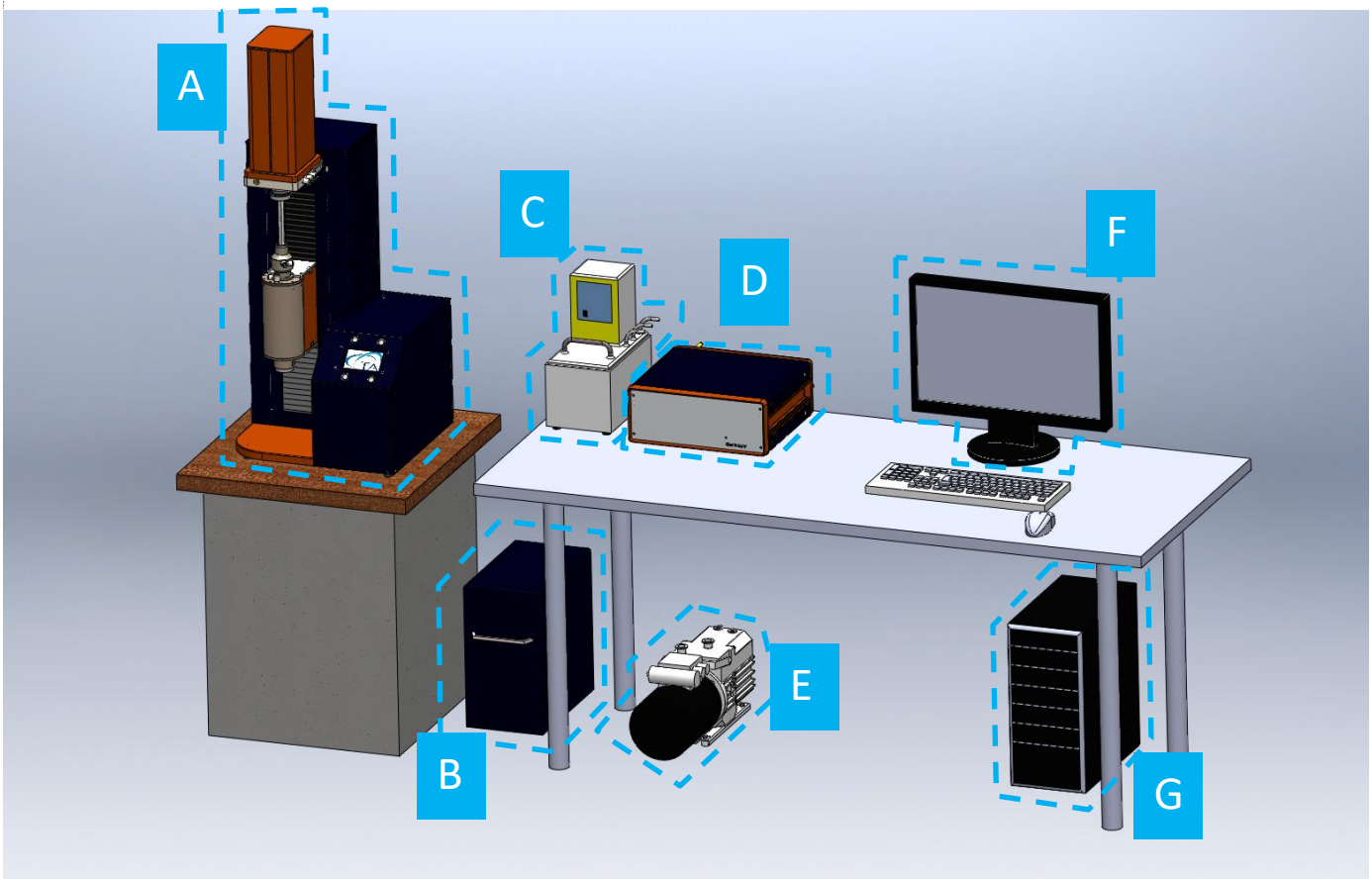
Bench depth for DIL82X: 70 cm (28 in)

Bench depth: 80 cm (32 in)

Bench height for DIL82X: 70 cm (28 in)

Floor space: approx. 2.5 m^2 (27 ft^2)

System Components



A. DIL82X

B. Transformer

C. Circulation Thermostat

D. Gas Supply Unit (Optional)

E. Vacuum Pump (Optional)

F. Monitor (Optional)

G. Computer (Optional)

H. Chiller (Not shown; Optional)

Instrument Measurements

INSTRUMENT MEASUREMENTS

Height: 108 cm (43 in)

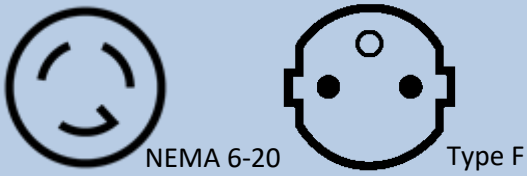
Width: 45 cm (18 in)

Depth: 41 cm (16 in)

Weight: 80 kg (176 lbs)

Utility Requirements

POWER

Item	Requirement
Instrument	• 230 V, 50/60 Hz, 2.4KVA • Supplied cable length: 3 m each (US and European)
Computer (Optional)	• 230V, 50/60 Hz, 0.5KVA • Supplied cable length: 2 m
Gas Supply Unit (Optional)	• 230 V, 50/60 Hz, 0.5KVA • Supplied cable length: 3 m
Water Chiller from Waters	• 230 V, 50/60 Hz, 6A
Power Cords	 NEMA 6-20 Type F

CAUTION **Use power cords with plugs appropriate for your circuit.**

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

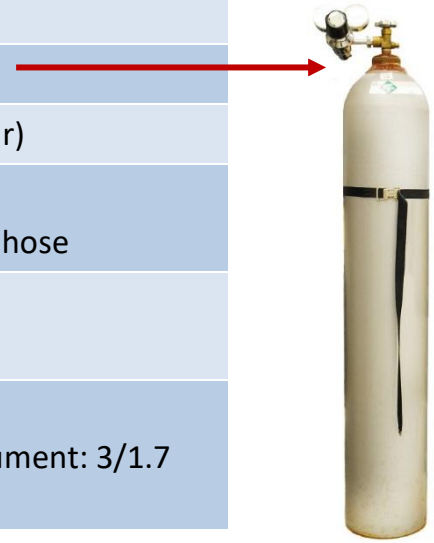
CAUTION Ensure that the mains assigned do not also supply power to noise generating equipment nearby, such as motors, welders, transformers, etc.

CAUTION 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.

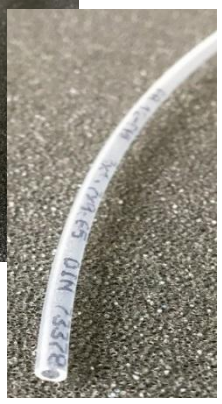
Utility Requirements

GAS

Item	Requirements
Conditions	Must be dry
Type	Must be **nitrogen**, **argon,** or **air**
Source	Must be from a **gas cylinder**, **Grade 5 purity**
Output Pressure	Pressure reducing valve output of 30 psig (2 bar)
Regulator	• Provided by the customer • Requires output connection for an 8/6 mm hose
Gas Connection Hose	• Supplied with the instrument • 8 mm outside/6 mm inside; 5 m long
Gas Supply Unit Hose (if available)	• Supplied with the Gas Supply Unit • Hose from the Gas Supply Unit to the instrument: 3/1.7 mm, 3 m long



Gas Connection hose



Gas Supply Unit hose

CAUTION

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.

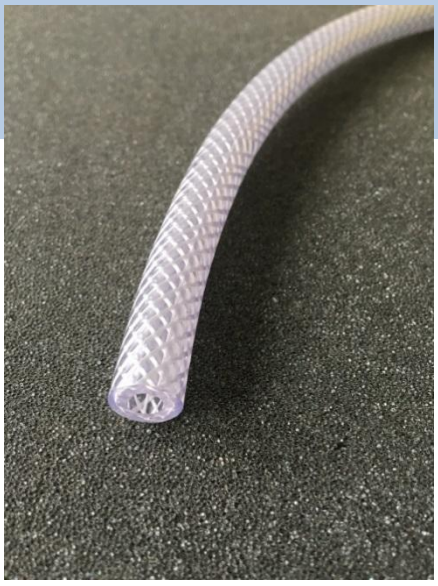
Utility Requirements

LIQUID NITROGEN

	Requirements
Source	26 L pressurized Dewar
Inlet Pressure	7 psig (0.5 bar)
Regulator	• Provided with instrument • Insulated hose (4/2.7 mm) already part of delivery

WATER

	Requirements ***if there is NO CHILLER***
Water Pressure	• < 58 psig (4 bar) • < 51 psig (3.5 bar) differential pressure
Flow Rate	• 60 L/h
Temperature	• < 30°C (but above the dew point) • Stability: 1°C during the test
Quality	• Mechanically pure (filtered with 0.1 mm) • Chemically neutral • Water hardness < 8°C DH • Conductivity 50–60 µS/cm



High pressure water hose: 12/6 mm-10 m

Computer Requirements

HARDWARE REQUIREMENTS

The computer is not supplied with the instrument. The customer should provide a computer with following requirements:

- Unused LAN port
- IBM-compatible PC with Pentium CPU 2.0 GHz or higher
- CD-ROM drive
- Graphic card with a resolution of 1024x768 or higher (1689x1050 on at least a 21'' monitor preferred)

Instrument software is provided on a CD.

SOFTWARE REQUIREMENTS

Item	Requirement
Operating System	Windows 7 or higher
Network	• *Waters is not responsible for resolving issues associated with connections to your corporate network.* • *Network cards and/or certain network operation frequently interfere with the operation of the instrument and software.*
Conflicts	*Waters is not responsible for resolving hardware/software conflicts created by the addition of third party hardware or software to the computer.*
Firewall	IP traffic between the computer and the measuring instrument must not be blocked by the Windows firewall or another program. Switch off the firewall or allow all EXE- programs in the installation folder of the WinTA software to pass through the firewall.

Only German and English versions are supported.

Site Preparation Checklist

DIL82X Vertical Dilatometer

	Sufficient bench and floor space for instrument, computer and monitor (optional), vacuum pump (optional), Gas Supply Unit (optional), transformer, and circulation thermostat: ☐ Width of bench: 1.8 m (6 ft) ☐ Depth of bench: 80 cm (32 in) ☐ Floor space: Approximately 2.5 m^2 (27 ft^2.) ☐ Width of separate bench: 60 cm (24 in) ☐ Depth of separate bench: 80 cm (32 in) ☐ Height of separate bench: 70 cm (32 in)
	☐ Instrument power is 230 VAC, 50/60 Hz, 10A ☐ Optional: Computer and monitor power is 230 V, 50/60 Hz, 2A ☐ Optional: Gas Supply Unit is 230 V, 50/60 Hz, 6A ☐ Optional: Chiller is 230 V, 50/60 Hz, 6A ☐ Local electrician is available on installation day
	Gas – Nitrogen, argon, air ☐ Pressure reducing valve output is > 2 bar ☐ Grade 5 purity cylinder ☐ Gas regulator is available
	Liquid Nitrogen ☐ Inlet pressure is 7 psig (0.5 bar) ☐ 26 L pressurized Dewar
	Water ☐ Pressure is < 58 psig (4 bar); differential pressure is 51 psig (3.5 bar) ☐ Nominal flow rate of 60 L/h ☐ Filtered or clean and debris-free
	☐ The Customer assumes responsibility for any damage that occurs when the instrument is moved by someone other than a trained Waters 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.

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

_____ ____/____/____

Customer *DD* *MM* *YYYY*

_____ _____ _____

Company *City* *State* *Country*

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

Waters Technologies Corporation Offices

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

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

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