

# FOX Series Heat Flow Meters

FOX 200 FOX 304 FOX 314



## Site Preparation Guide

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Circulator



Power



Cooling



Gas



LN<sub>2</sub>



Fluid



Light



Hardware



Software



Temp



Lab



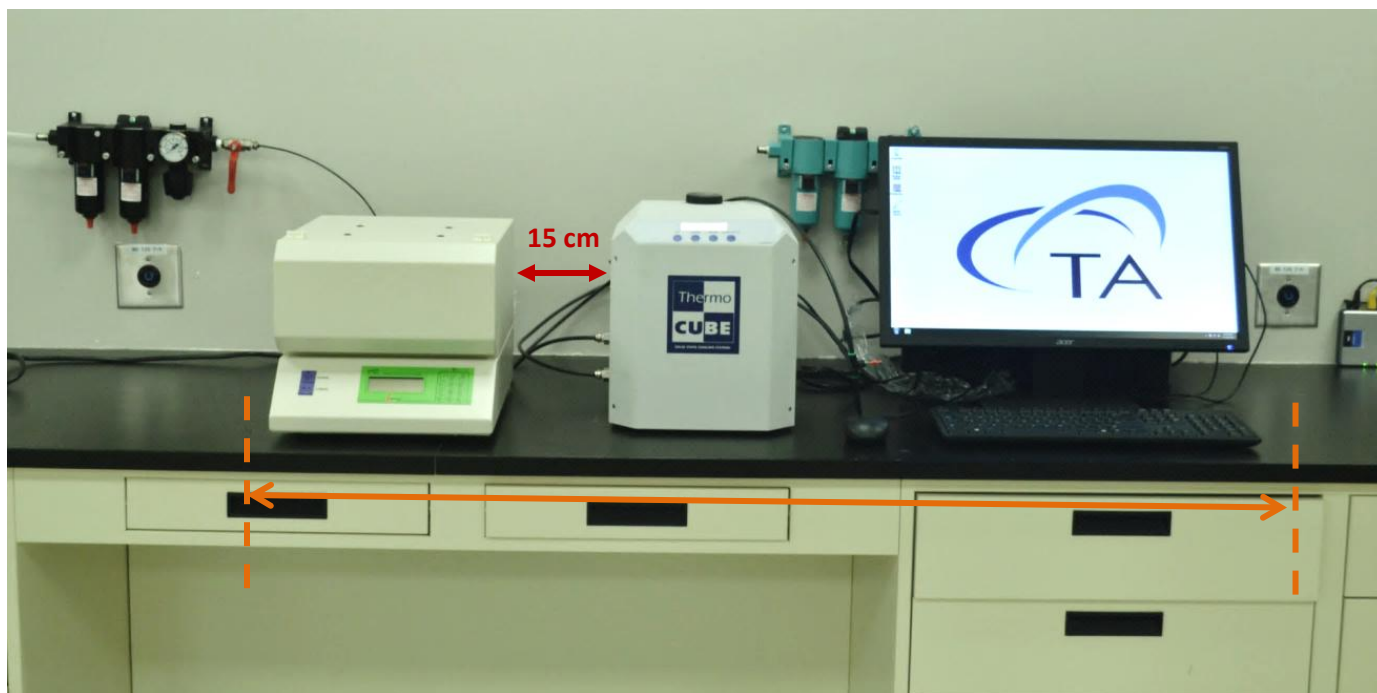
Customer

# 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.



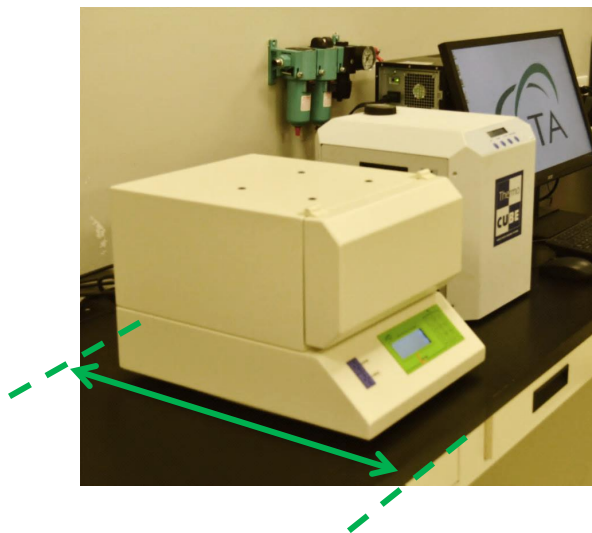
Bench width: 1.5 m (5 ft)

Bench depth FOX-200: 60 cm (25 in)

Bench depth FOX-3xx: 70 cm (27 in)



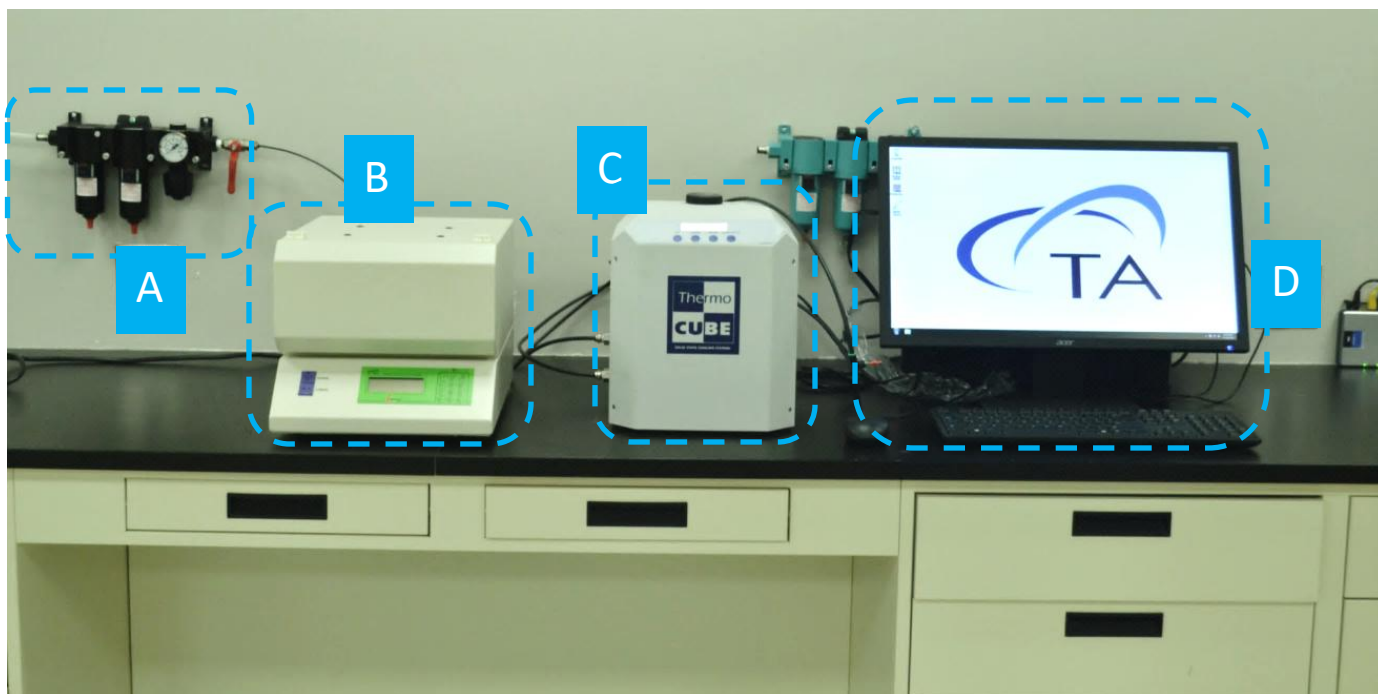
Allow at least 15 cm (6 in) of **additional** clearance to the right of the instrument for wires, tubing, etc.



# System Components



## MAIN SYSTEM COMPONENTS



- A. Gas Source
- B. Instrument
- C. Coolant Source
- D. Computer (Controller)

# Instrument Measurements



## FOX-200 INSTRUMENT

Height: 28 cm (11 in)

Width: 32 cm (12.5 in)

Depth: 48 cm (19 in)

Weight WITH autofeeder: 27 kg (60 lbs)

Weight WITHOUT autofeeder: 18 kg (40 lbs)



## FOX-3xx INSTRUMENT

Height: 40 cm (16 in)

Width: 42 cm (16.5 in)

Depth: 53 cm (21 in)

Weight WITH autofeeder: 36 kg (80 lbs)


Weight WITHOUT autofeeder: 21 kg (45 lbs)



# Utility Requirements



## POWER

Item	FOX-200 Requirement	FOX-3XX Requirement
Instrument	115–220 VAC, 5 A max, 50/60 Hz	115–220 VAC, 6.25 A max, 50/60 Hz
Computer and Monitor	<ul style="list-style-type: none"> <li>110–240 VAC, 50/60 Hz</li> <li>Consult the computer/monitor manufacturer specifications as needed</li> </ul>	
Power cords provided	NEMA 5-15 plug, 2 m (6.5 ft) long 	



Instrument power



**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

Item	Requirement
Conditions	Must be dry
Type	Must be <b>nitrogen</b> or <b>air</b>
Source	Must be from a <b>gas cylinder, Grade 5 purity</b>
Inlet Pressure	Minimum: 25 psig (1.75 bar) Maximum: 40 psig (2.75 bar)
Fittings	Instrument fitting is 5/32". 5/32" tubing is supplied with the instrument.



Regulator to monitor pressure



Nitrogen/Air port



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.

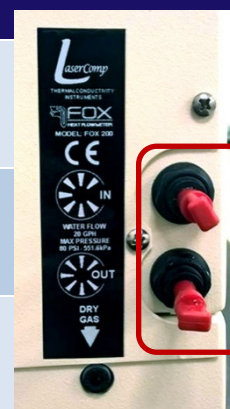


# Utility Requirements



## WATER

Item	Requirement
Cooling Capacity	<ul style="list-style-type: none"> <li>FOX-200 / FOX-314: 400 W at 20°C</li> <li>FOX-300: 900 W at 20°C</li> </ul>
Inlet Pressure	<ul style="list-style-type: none"> <li>Minimum: 60 psig (4.0 bar)</li> <li>Maximum: 80 psig (5.5 bar)</li> </ul>
Nominal Flow Rate	<ul style="list-style-type: none"> <li>57–75 L/hour</li> <li>Varies with Inlet pressure</li> <li>Excessively cold water may require the reduction of the flow rate. After reaching the desired setpoint, if the temperature changes by more than <math>\pm 0.01^{\circ}\text{C}</math>, the flow rate is not correct.</li> </ul>
Water Temperature	<ul style="list-style-type: none"> <li>Optimal: <b>18°C</b></li> <li>Permissible: 15°C–30°C</li> </ul>
Recirculation	<ul style="list-style-type: none"> <li>If plant-wide recirculation is used, a minimum inlet/outlet differential pressure of 50 psig is required.</li> <li>If a chiller/circulator is to be used, it must be placed at the <b>same level</b> as the instrument.</li> <li>ThermoCube chiller (PN 201786.001) is recommended</li> <li>Wall mounted supply shutoff, open drain, and city water is required if chiller/circulator was NOT ordered.</li> </ul>
Tubing	A single 2 m (6 ft) length of ¼" tubing is provided. If a chiller was purchased, the tubing would instead be two 3 foot (1 meter) lengths of ¼" tubing.



Inlet Port

Outlet Port





# 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, software, and calibrations are provided on a CD.



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








## SOFTWARE REQUIREMENTS

Item	Requirement
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



## FOX-200, FOX-3xx

	<p>Instrument:</p> <p><input type="checkbox"/> FOX-200                      <input type="checkbox"/> FOX-304                      <input type="checkbox"/> FOX-314</p> <p>Sufficient bench space for instrument, computer, and recirculator (if needed):</p> <p><input type="checkbox"/> Width: 1.50 m (5 ft)</p> <p><input type="checkbox"/> Depth: 60–70 cm (25–27 in)</p>
	<p>Instrument power:</p> <p><input type="checkbox"/> FOX-200: 115–220 VAC, 5 A max, 50/60 Hz</p> <p><input type="checkbox"/> FOX-3xx: 115–220 VAC, 6.25 A max, 50/60 Hz</p> <p>Computer, monitor, and vacuum power:</p> <p><input type="checkbox"/> 120 V (US) or 220–240 V, 50/60 Hz</p>
	<p>Purge Gas – Dry nitrogen or dry air</p> <p><input type="checkbox"/> Grade 5 purity cylinder</p> <p><input type="checkbox"/> Regulator to allow 25–40 psig (1.75–2.75 bar)</p>
	<p>Water Circulation</p> <p><input type="checkbox"/> Nominal inlet pressure of 60 psig (4.0 bar)</p> <p><input type="checkbox"/> Nominal flow rate of 57–75 L/hour</p> <p><input type="checkbox"/> FOX-200/314: 400 W at 20°C or FOX-300: 900 W at 20°</p> <p><input type="checkbox"/> Optimal coolant temperature of 18°C</p> <p><input type="checkbox"/> Filtered or clean and debris-free</p> <p><input type="checkbox"/> ThermoCube chiller OR wall-mounted supply shutoff, open drain, and city water</p>
	<p><input type="checkbox"/> The Customer assumes responsibility for any damage that occurs when the instrument is moved by someone other than a trained TA Instruments Service Representative.</p>

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

<i>Company</i>	<i>City</i>	<i>State</i>	<i>Country</i>
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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  
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