PLC50-CLR Cryogenic Probe System

This guide defines the facility requirements for operation of your FormFactor PLC50-CLR probe system.

Probe System Requirements

Utilities	Compressed dry air	• Filtered, dry and oil-free • Minimum 5 bar to 6 bar maximum • Flow rate insignificant • 8 mm OD hose (US: 5/16-inch)
	Nitrogen gas, (probe station)	• Class 4.5 (Purity 99.995%) or better • 4 bar • 70 l per purging cycle • 8 mm OD hose (US 5/16-inch)
	Cooling water	• Inlet temperature range: 4 ~ 28°C (ideally <20°C) • Inlet pressure range 0.1 ~ 0.69 MPa • Flowrate 4 ~ 10 L/min • Pressure drop: 0.025 ~ 0.085 MPa • Heat output at steady state: < 7 kW • Heat output at maximum: < 8 kW • Water quality:  **CAUTION** *Do not use demineralized water.* – pH Value = 6.5 to 8.2 at 25°C – Electrical conductivity = <80 mS / m – Chloride ion = < 200 mg/liter – Sulfate ion = < 200 mg/liter – M-alkalinity = < 100 mg/liter – Total hardness = < 200 mg/liter – Calcium hardness = < 150 mg/liter – Ionic silica = < 50 mg/liter – Iron = < 1.0 mg/liter – Copper = < 0.3 mg/liter – Sulfide ion = None, not detectable – Ammonium ion = < 1.0 mg/liter – Residual chlorine = < 0.3 mg/liter – Free carbon dioxide = < 4.0 mg/liter – Stability index = 6.0 to 7.0 – Suspended matter = < 10 mg/liter – Particle size = < 100 µm
Power	Station	• 3-Phase 400 V 50/60 Hz
	Connection	• IEC 60309 16 A 3P+N+E (CEE plug 16 A), or • NEMA L21-20P (20 A plug), or • Direct connection without plug
	Facility power line	• Cross section 5 x 4 mm^2 5x AWG#12)
	Fuse	• Lead in fuse 3 x 16 A (time delayed)
	Protection class	• I (IEC 61140)
	Transient overvoltage	• Overvoltage category II (IEC 60364-4-443)

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Environmental conditions	Humidity	• Tool area: 25% to 60%
	Temperature	• Operating range: 19°C to 24°C • Target temperature: 22°C
	Heat output	• 1000W (typical value)
	Pollution level	• 1 (IEC 60664-1)
	Vibrations	The facility should be free of vibrations caused by other equipment.
	 **WARNING** *Release of nitrogen or helium gas imposes a potential danger due to oxygen depletion in the working environment. An oxygen-deficient atmosphere can lead to rapid asphyxiation, causing loss of consciousness and potentially resulting in serious injury or death.* *Consult your safety and facilities departments to ensure that the venting in your working environment is adequate to dissipate any nitrogen or helium build-up.* *The use of an oxygen sensor with an alarm is recommended.*	
Dimensions (WxDxH)	Probe station	• Station: 800 x 810 x 972 mm (31.5 x 31.9 x 38.3 in.) • Station with microscope: 800 x 810 x 1318 mm (31.5 x 31.9 x 51.9 in.)
	Pump station	• 400 x 450 x 400 mm (15.7 xx17.7 x 15.7 in.)
	Compressor	• 450 x 600 x 600 mm (17.7 x 23.6 x 23.6 in.)
	Rack	• 580 x 550 x 1130 mm (22.9 x 21.7 x 44.5 in.)
Weight	Probe station	• 250 kg (551 lbs.)
	Pump station	• 19 kg (42 lbs.)
	Compressor	• 150 kg (331 lbs.)
	Rack	• 100 kg (220 lbs.)
Shipping dimensions (WxDxH)	Probe station	• Dimensions: 1430 x 1310 x 1830 mm (56.3 x 51.6 x 72.0 in.)
	Compressor	• 600 x 600 x 800 mm (23.6 x 23.6 x 31.5 in.)
	Accessories (typical)	• Dimensions: 1300 x 1300 x 1800 mm (51.2 x 51.2 x 70.9 in.)
Shipping weight	**NOTE** *A forklift with 1 m (minimum) forks is required to move the station.*	
	Probe station	• Weight: 400 kg (882 lbs.)
	Compressor	• 150 kg (331 lbs.)
	Accessories (typical)	• Weight: 300 kg (661 lbs.)

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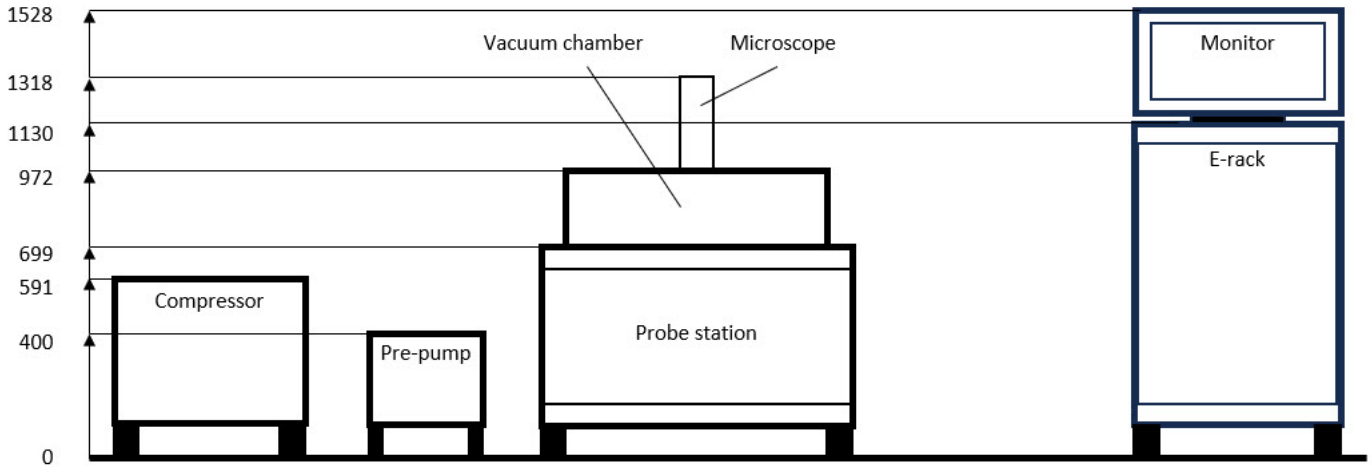
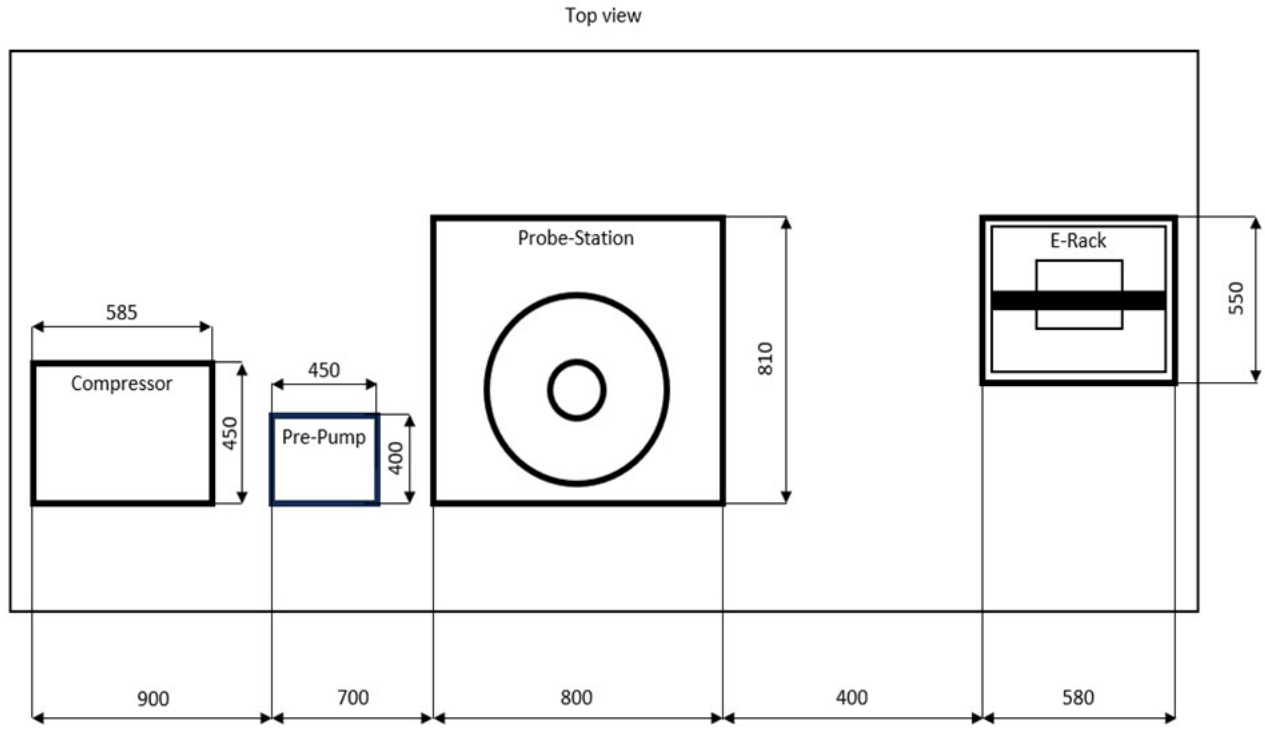
Dimensions (in mm)

Front view



*Drawings are not to scale

Top view



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