



PLC50 Cryogenic Probe System

This guide contains information to help prepare your facility for the arrival of your PLC50 probe system.

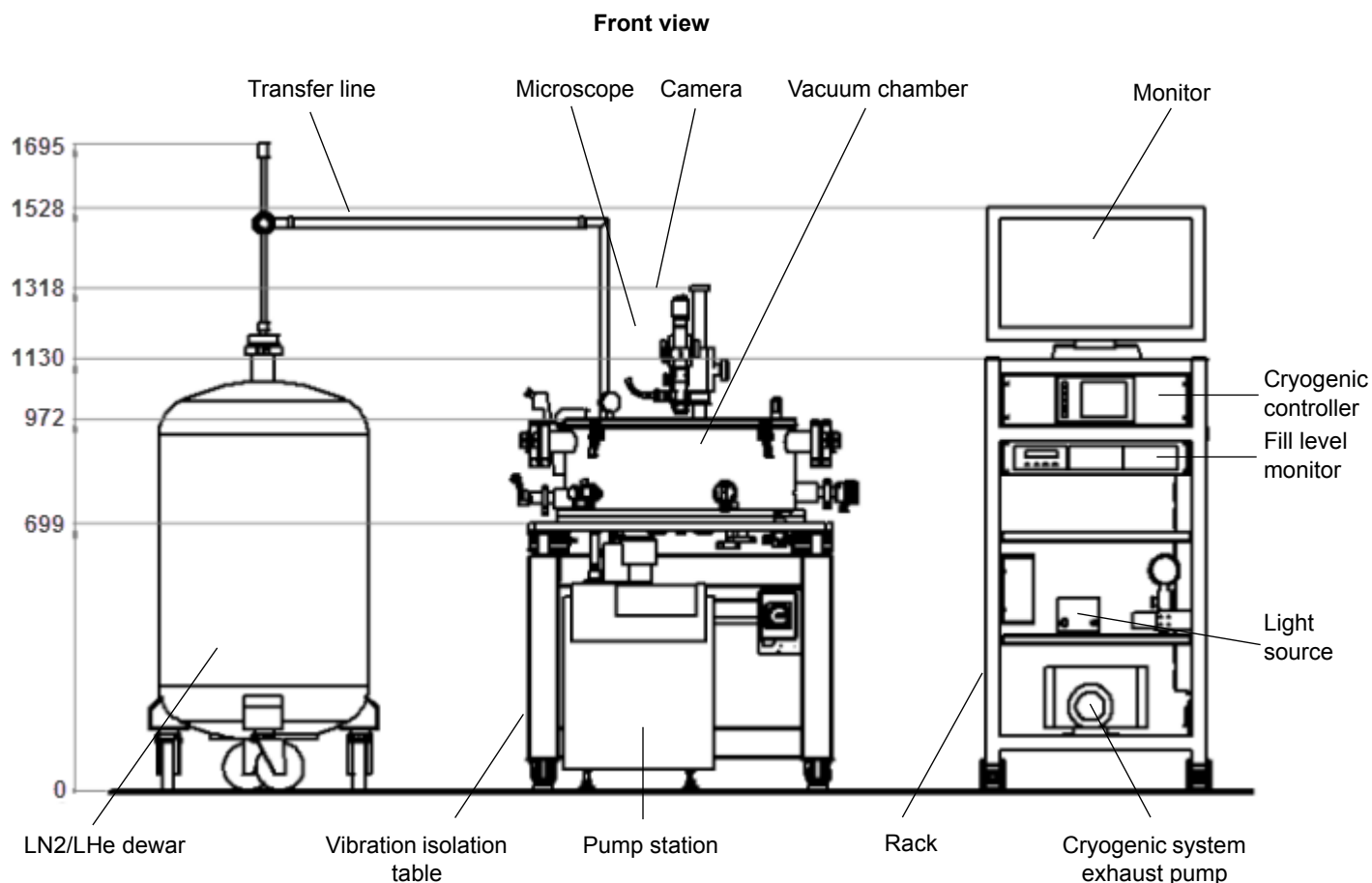
Probe System Requirements

Utilities	Compressed dry air	<ul style="list-style-type: none"> 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)	<ul style="list-style-type: none"> Class 4.5 (Purity 99.995%) or better 4 bar 70 l per purging cycle 8 mm OD hose
	Nitrogen gas, (dewar) option, only required for LN2 dewar	<ul style="list-style-type: none"> Class 4.5 (Purity 99.995%) or better 1.5 bar (precision pressure regulator suitable for low-flow condition is required) Flow rate insignificant 6 mm OD hose
	Helium gas (dewar) option, only required for LHe dewar	<ul style="list-style-type: none"> Class 4.5 (Purity 99.995%) or better 1.2 bar (precision pressure regulator suitable for low-flow condition is required) Flow rate insignificant 6 mm OD hose
	Liquid gas (LHe or LN2)	One dewar with liquid gas (LHe or LN2, depending on probing temperature) is required to operate the PLC50. Contact a Cascade Microtech representative to verify ability for pressurizing the dewar and interface to transfer tube when using customer-owned or rented dewars.
Power	Station	<ul style="list-style-type: none"> 3-Phase 400 V 50/60 Hz, or 3-Phase 208 V 50/60 Hz
	Connection	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> Lead in fuse 3 x 20 A (time delayed)
	Protection class	<ul style="list-style-type: none"> I (IEC 61140)
	Transient overvoltage	<ul style="list-style-type: none"> Overvoltage category II (IEC 60364-4-443)
Environmental Conditions	Humidity	<ul style="list-style-type: none"> Tool area: 25% to 60%
	Temperature	<ul style="list-style-type: none"> Operating range: 19° C to 24° C Target temperature: 22° C
	Heat Output	<ul style="list-style-type: none"> 1000W (typical value)
	Pollution level	<ul style="list-style-type: none"> 1 (IEC 60664-1)
	Vibrations	The facility should be free of vibrations caused by other equipment.
	 <p>WARNING</p> <p><i>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.</i></p> <p><i>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.</i></p> <p><i>The use of an oxygen sensor with an alarm is recommended.</i></p>	
Exhaust	Cryogenic system	<ul style="list-style-type: none"> 3/4-inch hose (connection point: rack)
	Vacuum system	<ul style="list-style-type: none"> 3/4-inch hose (connection point: pump station)

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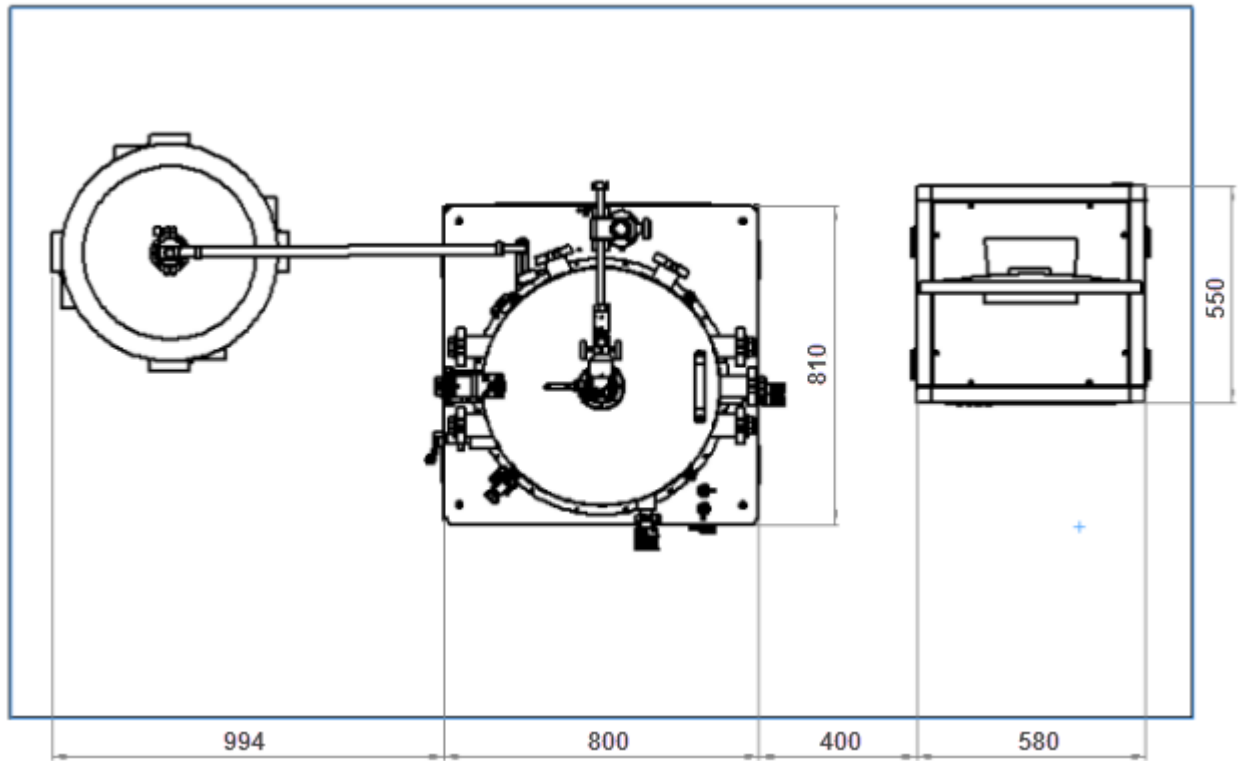
Dimensions	Probe station	<ul style="list-style-type: none"> • Station: 800 mm (W) x 810 mm (D) x 972 mm (H) • Station with microscope: 1318 mm (H) 	
	Pump station	<ul style="list-style-type: none"> • 392 mm (W) x 400 mm (D) x 492 mm (H) 	
	Rack	<ul style="list-style-type: none"> • 580 mm (W) x 550 mm (D) x 1130 mm (H) 	
	Dewar (typical data)	<ul style="list-style-type: none"> • 120 l LN2 storage dewar: 1250 mm x 550 mm (H x Ø) • 120 l LHe transport dewar: 1450 mm x 700 mm (H x Ø) 	
Weight	Probe station	<ul style="list-style-type: none"> • 230 kg 	
	Pump station	<ul style="list-style-type: none"> • 36 kg 	
	Rack	<ul style="list-style-type: none"> • 100 kg 	
	Dewar (typical data)	<ul style="list-style-type: none"> • 120 l LN2 storage dewar: 70 kg (empty)/170 kg (filled) • 120 l LHe transport dewar: 145 kg (empty)/160 kg (filled) 	
Shipping Dimensions and Weight	 NOTE <i>A forklift with 1 m (minimum) forks is required to move the station.</i>	Probe station	<ul style="list-style-type: none"> • Dimensions: 1430 mm (W) x 1310 mm (D) x 1830 mm (H) • Weight: 400 kg
		Accessories (typical data)	<ul style="list-style-type: none"> • Dimensions: 1300 mm (W) x 1300 mm (D) x 1800 mm (H) • Weight: 300 kg

Dimensions (in mm)



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Top view



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