

Advanced Temperature Test (ATT) Systems

C40s Thermal System: -40°C to +300°C

This guide defines the facility requirements for operation of your ATT Systems thermal system. The thermal system discussed here is compatible with 200 and 300 mm systems.



NOTE

Operation at negative temperatures requires a shielded system.

Thermal System Requirements

Clean Dry Air (CDA)	 	<p>WARNING</p> <p>Operating the system without sufficient air pressure or flow can cause significant component damage. The control unit and the chiller must be connected to common ground.</p> <p>FormFactor does not endorse or recommend using nitrogen instead of CDA for thermal system operation with any FormFactor system due to the risk of oxygen depletion in the working environment. If your testing configuration requires the use of nitrogen instead of CDA for MicroChamber purge, time in Quick Purge mode should be controlled. Discuss your setup with your safety and facilities departments to ensure that the oxygen flow in your working environment is adequate to dissipate any nitrogen build up. The use of oxygen sensor alarms is also recommended. For MicroChamber purge requirements, refer to your probe station Facility Planning Guide.</p>									
		Chiller	<table border="1"> <tr> <td>Cooling medium</td> <td> <ul style="list-style-type: none"> ISO 8573.1 Class 1.1.1 (-70°C dew point, oil less than 0.01 mg/m³) </td> </tr> <tr> <td>Temperature</td> <td> <ul style="list-style-type: none"> Minimum: 5°C Maximum: 30°C </td> </tr> <tr> <td>300 mm</td> <td> <ul style="list-style-type: none"> Standard mode: 250 l/min (8.8 CFM) at SATP* supplied at 6-8 bar (87 - 116 psi) gage Power mode: 350 l/min (12.4 CFM) at SATP* supplied at 6-8 bar (87 - 116 psi) gage </td> </tr> <tr> <td>200 mm</td> <td> <ul style="list-style-type: none"> Standard mode: 160 l/min (5.6 CFM) at SATP* supplied at 6-8 bar (87 - 116 psi) gage Power mode: 260 l/min (9.1 CFM) at SATP* supplied at 6-8 bar (87 - 116 psi) gage </td> </tr> <tr> <td>Connection</td> <td> <ul style="list-style-type: none"> 10 mm OD push-in tube </td> </tr> </table>	Cooling medium	<ul style="list-style-type: none"> ISO 8573.1 Class 1.1.1 (-70°C dew point, oil less than 0.01 mg/m³) 	Temperature	<ul style="list-style-type: none"> Minimum: 5°C Maximum: 30°C 	300 mm	<ul style="list-style-type: none"> Standard mode: 250 l/min (8.8 CFM) at SATP* supplied at 6-8 bar (87 - 116 psi) gage Power mode: 350 l/min (12.4 CFM) at SATP* supplied at 6-8 bar (87 - 116 psi) gage 	200 mm	<ul style="list-style-type: none"> Standard mode: 160 l/min (5.6 CFM) at SATP* supplied at 6-8 bar (87 - 116 psi) gage Power mode: 260 l/min (9.1 CFM) at SATP* supplied at 6-8 bar (87 - 116 psi) gage
Cooling medium	<ul style="list-style-type: none"> ISO 8573.1 Class 1.1.1 (-70°C dew point, oil less than 0.01 mg/m³) 										
Temperature	<ul style="list-style-type: none"> Minimum: 5°C Maximum: 30°C 										
300 mm	<ul style="list-style-type: none"> Standard mode: 250 l/min (8.8 CFM) at SATP* supplied at 6-8 bar (87 - 116 psi) gage Power mode: 350 l/min (12.4 CFM) at SATP* supplied at 6-8 bar (87 - 116 psi) gage 										
200 mm	<ul style="list-style-type: none"> Standard mode: 160 l/min (5.6 CFM) at SATP* supplied at 6-8 bar (87 - 116 psi) gage Power mode: 260 l/min (9.1 CFM) at SATP* supplied at 6-8 bar (87 - 116 psi) gage 										
Connection	<ul style="list-style-type: none"> 10 mm OD push-in tube 										
Air dryer (optional)	<table border="1"> <tr> <td>Cooling medium</td> <td> <ul style="list-style-type: none"> ISO 8573.1 Class 1.3.1 (-20°C dew point, oil less than 0.01 mg/m³) </td> </tr> <tr> <td>Temperature</td> <td> <ul style="list-style-type: none"> Minimum: 5°C Maximum: 30°C </td> </tr> <tr> <td>200/300 mm</td> <td> <ul style="list-style-type: none"> 150 l/min (5.3 CFM) at SATP* supplied at 6 bar (87 psi) gage Only usable with chiller in standard mode </td> </tr> </table>	Cooling medium	<ul style="list-style-type: none"> ISO 8573.1 Class 1.3.1 (-20°C dew point, oil less than 0.01 mg/m³) 	Temperature	<ul style="list-style-type: none"> Minimum: 5°C Maximum: 30°C 	200/300 mm	<ul style="list-style-type: none"> 150 l/min (5.3 CFM) at SATP* supplied at 6 bar (87 psi) gage Only usable with chiller in standard mode 				
Cooling medium	<ul style="list-style-type: none"> ISO 8573.1 Class 1.3.1 (-20°C dew point, oil less than 0.01 mg/m³) 										
Temperature	<ul style="list-style-type: none"> Minimum: 5°C Maximum: 30°C 										
200/300 mm	<ul style="list-style-type: none"> 150 l/min (5.3 CFM) at SATP* supplied at 6 bar (87 psi) gage Only usable with chiller in standard mode 										

Advanced Temperature Test (ATT) Systems

C40s Thermal System: -40°C to +300°C

Power	Controller	<ul style="list-style-type: none"> • Single phase: 100-127 VAC or (200) 208-240 VAC 50/60Hz • 1500 VA • Source: <ul style="list-style-type: none"> – North American: NEMA L6-15 for 208-240 VAC – Europe: CEE VII (Schuko) – Other: consult factory
	Chiller	<ul style="list-style-type: none"> • Dedicated versions: <ul style="list-style-type: none"> – Single phase: 208-230 VAC at 50Hz and 220-230 VAC at 60Hz; 1500 VA – Single phase: 208-230 VAC at 60Hz; 1700 VA • Source: <ul style="list-style-type: none"> – North American: NEMA L6-20 for 208-220 VAC – Europe: CEE VII (Schuko) – Other: consult factory
Environmental Conditions	Site requirements	<ul style="list-style-type: none"> • For indoor use only • Installation site \leq2000 m altitude • Installed on a level, even with surface • For air-cooled units, maintain 200 mm clearance above and around the unit to allow air circulation. Allow 400 mm clearance around the front and back sides of the chiller. • The unit should be located so as not to restrict access to the mains power switch • Mains voltage should be \pm10% of the rated value
	Ambient temperature	<ul style="list-style-type: none"> • +18°C to +28°C
	Relative humidity	<ul style="list-style-type: none"> • 20% to 60%
	Seismic restraints	Optional seismic restraints are available for ATT thermal systems which include a chiller. To use the seismic restraints, 3 anchor bolts must be embedded in the floor at the customer site for seismic restraint use. See your ATT user documentation for details on placement.
Communications	RS-232	
Dimensions (WxDxH)	Controller	See Controller on page 3.
	Chiller	See Chiller C40s on page 3.
	Air dryer	See Chiller C40s with Optional Air Dryer on page 4.
Weight	Controller	<ul style="list-style-type: none"> • 11 kg (24 pounds)
	Chiller	<ul style="list-style-type: none"> • 82 kg (181 pounds) • Two people are required to roll the chiller from the crate.
	Air dryer	<ul style="list-style-type: none"> • 18 kg (40 pounds)
Shipping Dimensions (WxDxH)	Chiller crate	<ul style="list-style-type: none"> • 1000 x 820 x 1150 mm (39 x 32 x 45 in.)
	Controller box	<ul style="list-style-type: none"> • 550 x 500 x 300 mm (22 x 22 x 11 in.)
Shipping weight	Chiller and crate	<ul style="list-style-type: none"> • 160 kg (353 pounds)
	Controller and box	<ul style="list-style-type: none"> • 18 kg (40 pounds)

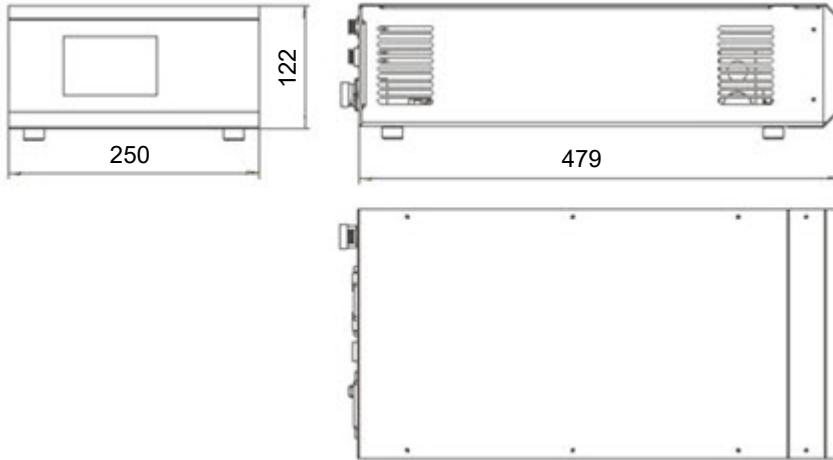
* Standard Ambient Temperature And Pressure (SATP)

Advanced Temperature Test (ATT) Systems

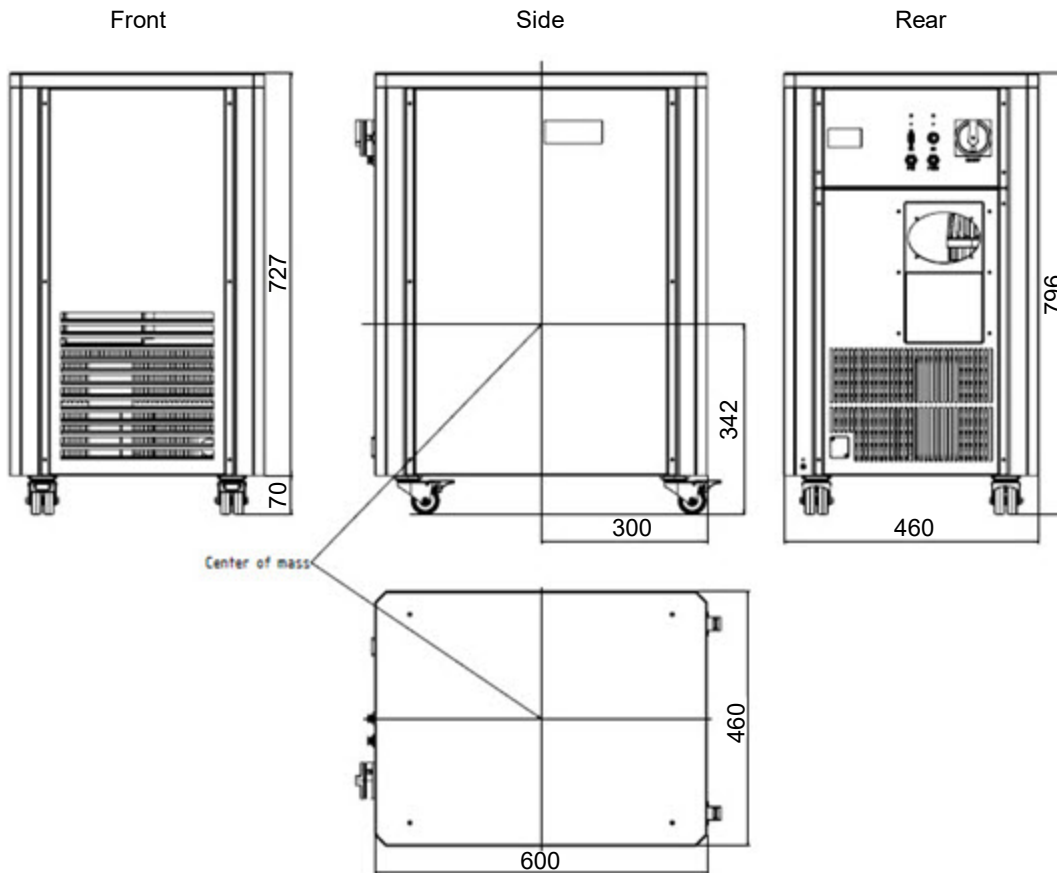
C40s Thermal System: -40°C to +300°C

Dimensions (in mm)

Controller



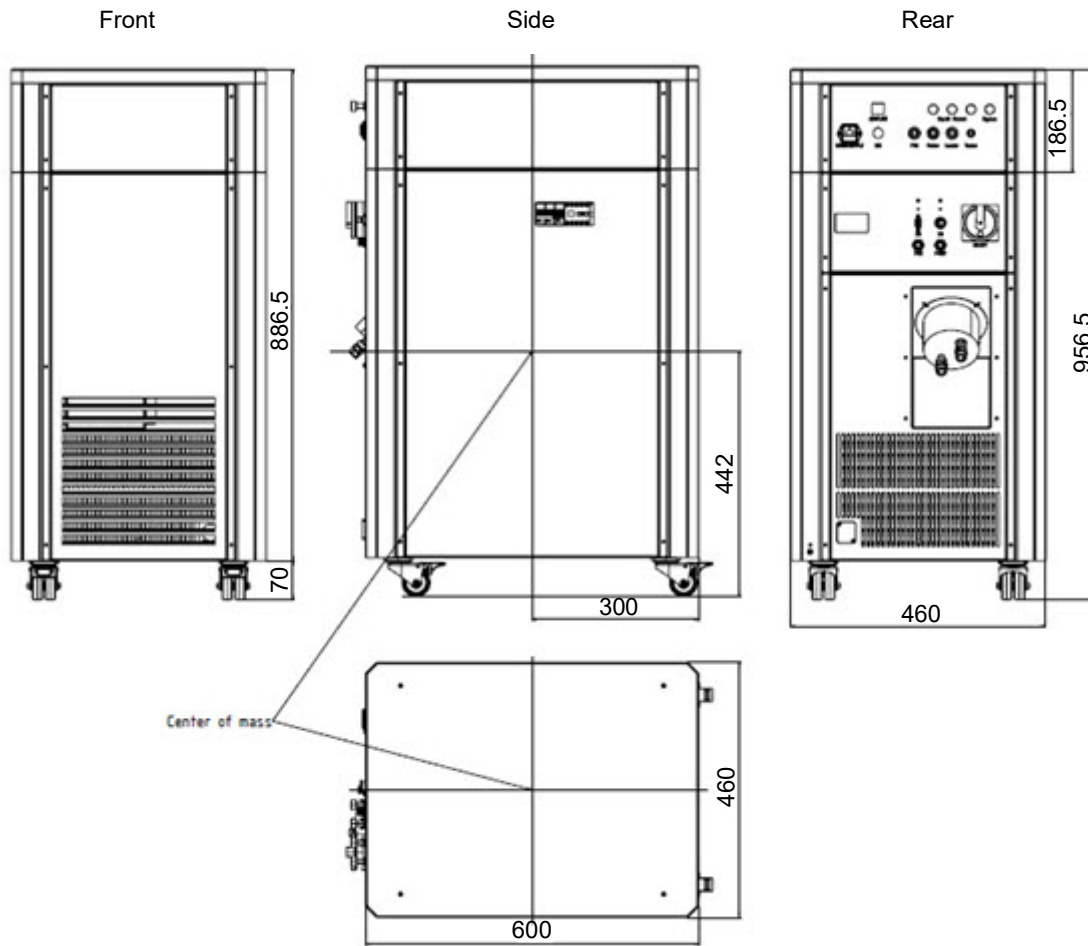
Chiller C40s



Advanced Temperature Test (ATT) Systems

C40s Thermal System: -40°C to +300°C

Chiller C40s with Optional Air Dryer



© Copyright 2020 FormFactor, Inc. All rights reserved. No part of this document may be reproduced, transmitted or displayed in any form or by any means except as duly authorized by FormFactor, Inc. FormFactor and the FormFactor logo are trademarks of FormFactor, Inc. All other trademarks are the property of their respective owners.

Important Notice

While the information contained herein is believed to be accurate as of the date hereof, no express or implied representations or warranties are made with respect to its accuracy or completeness. FormFactor, Inc., and its subsidiaries disclaim liability for any inaccuracies or omissions. All information is subject to change without notice.

Users are required to read and follow carefully all safety, compliance and use instructions. Users assume all loss and liability arising from the use of products in any manner not expressly authorized. The conditions and methods of use of products and information referred to herein are the entire responsibility of the user and, to the maximum extent permitted by applicable law, FormFactor, Inc., and its subsidiaries shall not be liable for any damages, losses, costs or expenses arising out of, or related to, the use thereof.

No license, express or implied, by estoppel or otherwise, under any intellectual property right is granted in connection herewith. Users shall take all actions required to avoid intellectual property infringement.

Corporate Headquarters

7005 Southfront Road
Livermore, CA 94551
Phone: 925-290-4000
www.formfactor.com

