

CHART INDUSTRIES

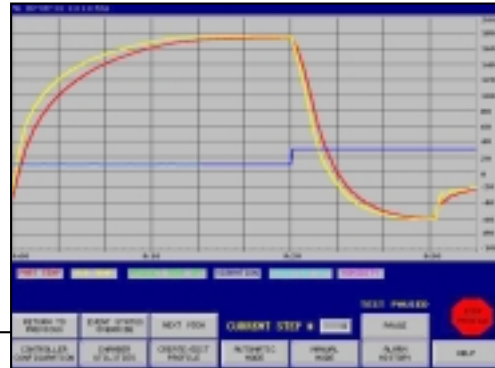
World Leader in Cryogenic Solutions

Chart Industries is the leading supplier of cryogenic equipment and services in the world. Headquartered in Cleveland, Ohio, the organization serves the global industrial gas and hydrocarbon processing markets and numerous end user applications. Chart Applied Technologies (formerly MVE Applied Technologies) is now one of eight operating divisions that Chart has created to form the only one-stop-shop for state-of-the-art Environmental and HALT/HASS Test Chambers.



Don't see the model you need in our standard products? Feel free to ask about Chart's ability to rapidly customize a chamber to best suite your application. Chart has the capability of customizing chamber size, air flow plenums, control system options, port sizes and locations, etc. In fact, we'll even paint the chamber any color you want it match your company logo's or other equipment! We encourage you to bring your ideas to our engineering group to help design a chamber perfect for your needs.

Get in Touch with Your Future! Chart's latest innovation, the CTI2000 Touch-Screen PLC is now standard on all test chamber models. Our new controller is much faster and provides greater flexibility than traditional methods of test chamber function control. The CTI2000 is designed to provide profiles for both thermal or thermal with vibration in one controller. Not only does it control your chamber functions, it also serves as a test and data acquisition system. So if you're looking for a flexible, economical way of controlling your chambers -- rely on your one-stop-shop, Chart Applied Technologies!



To ensure maximum efficiency of Liquid Nitrogen delivery to your test chamber, Chart has developed the vacuum insulated control valve assembly. Exclusively offered by Chart, this option was designed for frost free nitrogen delivery which eliminates dripping water, safety concerns, and unattractive after-thought insulation. Cooling rates exceeding 80°C per minute are obtained with the vacuum insulated valve assembly. The great success of this feature has made it standard on all chambers.

Thermal & Vibration Chambers (TVC Models)

Chart offers a complete line of thermal and vibration combined environment chambers for environmental stress testing and screening applications. Utilizing six degrees of freedom (6 DoF) vibration with rapid thermal change rates allows our customers to precipitate many failures not found

with temperature testing alone. Finding product failures early in the design and development stage will save significant engineering and warranty costs, and shortens the time to market with a much more robust product.

	TVC-1	TVC-4	TVC-9	TVC-16
Temp Range	-100°C to +200°C	-100°C to +200°C	-100°C to +200°C	-100°C to +200°C
Prod Temp Change Rate ¹	Up to 60°C/Min	Up to 60°C/Min	Up to 60°C/Min	Up to 60°C/Min
Vibration Level ²	60 gRMS	60 gRMS	60 gRMS	60 gRMS
Vibration Table	20" x 20"/51x 51 cm	24" x 24"/61 x 61 cm	36" x 36"/91 x 91 cm	48" x 48"/122 x 122 cm
Interior Dimensions ³	24"w x 24"d x 23"h (61 x 61 x 58 cm)	30"w x 26"d x 36"h (76 x 66 x 91 cm)	42"w x 38"d x 50"h (107 x 97 x 127 cm)	54"w x 50"d x 50"h (137 x 127 x 127 cm)
Exterior Dimensions	40"w x 44"d x 81"h (102 x 112 x 206 cm)	60"w x 44"d x 85"h (152 x 112 x 216 cm)	72"w x 55"d x 107"h (183 x 140 x 272 cm)	84"w x 67"d x 107"h (213 x 170 x 272 cm)
Vibration Table Size	20" x 20" (51 cm x 51 cm)	24" x 24" (61 cm x 61 cm)	36" x 36" (91 cm x 91 cm)	48" x 48" (122 cm x 122 cm)

¹ Temperature change rate depends on thermal load of device under test.

² Vibration levels with unloaded table.

³ Interior dimensions with vibration table in lower position for TVC-9 and TVC-16

Thermal Chambers (TC Models)

For customers that do not need six degree of freedom (6DoF) vibration, but want to take advantage of the capabilities of liquid nitrogen cooled chambers, Chart offers a complete line of thermal chambers for your environmental stress testing and screening applications. Our chambers provide extreme thermal performance with precise control of part

temperature. These chambers can also be equipped to handle future upgrade to vibration when needed. Chart's complete product offering allows customers to have a mix of thermal and thermal/vibration chambers that all work on the same platform.

	TC-1	TC-4	TC-9	TC-16
Temp Range	-100°C to +200°C	-100°C to +200°C	-100°C to +200°C	-100°C to +200°C
Prod Temp Change Rate ¹	Up to 60°C/Min	Up to 60°C/Min	Up to 60°C/Min	Up to 60°C/Min
Clear Interior Dimensions	24"w x 24"d x 23"h (61 x 61 x 58 cm)	30"w x 26"d x 48"h (76 x 66 x 122 cm)	42"w x 38"d x 62"h (107 x 97 x 157 cm)	54"w x 50"d x 62"h (137 x 127 x 157 cm)
Exterior Dimensions	40"w x 44"d x 81"h (102 x 112 x 206 cm)	60"w x 44"d x 85"h (152 x 112 x 216 cm)	72"w x 55"d x 107"h (183 x 140 x 272 cm)	84"w x 67"d x 107"h (213 x 170 x 272 cm)

¹ Temperature change rate depends on thermal load of device under test.

Represented By:



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