

RapidTherm *Fast Change Rate Temperature Cycling Chamber*

The **RapidTherm**© **Single Zone Chamber** is an energy efficient technology utilizing a thermal storage system to achieve extremely fast air temperature change rates, of more than 60°C/minute depending on the temperatures, without the use of expendable refrigerants (liquid nitrogen or CO₂).

The chamber is also capable of controlling linear ramp rates of 5°C-30°C per minute. Faster average rates of change are possible depending on the starting and ending temperatures. The control system can ramp either the chamber air temperature; or it can directly control the ramp rate of the temperature of the device under test.

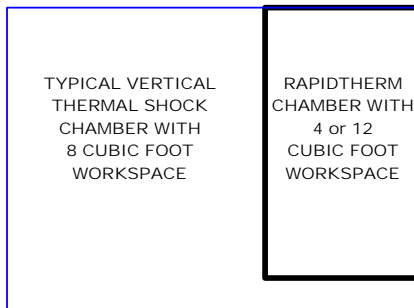
The **RapidTherm** chamber occupies just sixteen square feet of floor space. Because of the single zone design, the device under test does not move, eliminating the need for air dampers or a basket transfer system and the associated electrical control systems. Also, unlike other chambers that need to stop the test to defrost the cold zone's cooling coil, the design of this chamber inherently defrosts the cooling coil every cycle.

Realize an immediate cost savings as the chamber fits through standard commercial double doors reducing rigging and building modification costs. Additional savings are met by the elimination of compressed air, liquid nitrogen or gaseous nitrogen services; and reduced cooling water and electrical service size requirements.

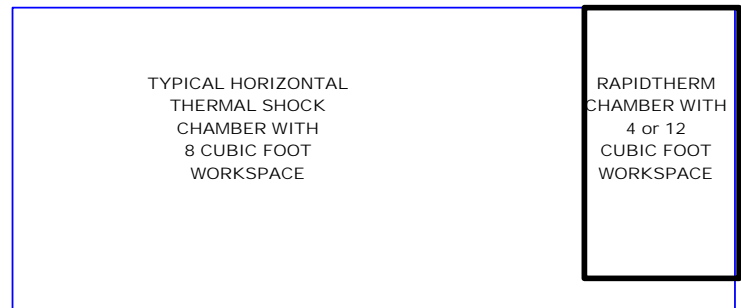


RapidTherm© Footprint Size Comparison

Since floor space is at a premium in a test laboratory or production area, the much smaller footprint of the RapidTherm chamber with its' increased workspace cubic footage is an advantage. The illustrations below are top view comparisons of a RapidTherm chamber super imposed on both a vertical thermal shock chamber and a horizontal thermal shock chamber to illustrate the footprint size difference. Conventional thermal shock chambers require additional space to allow for movement of the traveling access port. Since the RapidTherm chamber has no traveling access port, additional space is saved.



TOP VIEW



TOP VIEW

RAPIDTHERM, INC.

**6837 WEST FRYE ROAD CHANDLER, ARIZONA 85226 PHONE: 480-557-0001 FAX: 480-921-8556
WEBSITE: WWW.RAPIDTHERM.COM EMAIL: FAST@RAPIDTHERM.COM**

STANDARD FEATURES

HIGH RESOLUTION 5.7" TOUCHSCREEN CONTROLLER

- Profile internal storage of 20 programs, up to 49 steps each; 980 total steps available.
- Product temperature control capability
- Advanced control PIDs provide for better control of fast temperature ramps.
- Guaranteed soak timing feature.
- System Monitor logs and displays faults.



VARIABLE SPEED FANS

Provides faster product temperature changes.

INDEPENDENT HIGH-LOW LIMIT

Stand alone product temperature safety limit.

ELECTRICAL WIRING NFPA 79 COMPLIANT

CHAMBER CONSTRUCTION

SCROLL TYPE REFRIGERATION COMPRESSORS

Inherently more energy efficient, reliable, and quieter than piston compressors.

- Water-cooled refrigeration is standard, air-cooled is optional.
- The 4 cubic foot model has one 4-inch chamber access port, the 12 cubic foot model has two 4-inch access ports.
- 2" heavy duty steel casters
- Inner liner continuously welded 304 stainless steel construction designed to float. This allows for unabated thermal expansion and contraction.
- Door is equipped with dual silicon gaskets.
- Non-corrosive electronics grade silicon sealant used for sealing projections through the inner liner.

Thermal Shock Product Load Capability

The chamber is capable of performing Mil Standard 883 method 1010.8 condition B with a forty-five pound (20 Kg) load of sixteen DIP ceramic IC chips and condition C with a fifteen pound (6.8 Kg) load of sixteen DIP ceramic IC chips. No expendable refrigerants (liquid nitrogen or CO₂) are needed for these tests.

RapidTherm Chamber Specifications

The chamber is available in two Interior Sizes

4 and 12 Cubic Feet
(113 and 340 Liter)

Interior Workspace Dimensions

4 Cubic Foot - 24" Wide x 12" Deep x 24.0" High
(113 Liter - 61.0 cm x 30.5 cm x 61.0 cm)

12 Cubic Foot - 24" Wide x 32" Deep x 27.0" High
(340 Liter - 61.0 cm x 81.0 cm x 68.5 cm)

Exterior Dimensions All Models

36" Wide x 64" Deep x 76.5" High
(91.5 cm x 162.5 cm x 194.5 cm)

Temperature Range

-75°C to +200°C
Temperature Uniformity ± 1°C

Electrical Service

380/460 Volts, 50/60 Hertz, 3 Phase

Cooling Water Requirements

Cooling Tower Water
12 Gpm at 85°F (45 Lpm at 29°C)

or

Chilled Water (Refrigerated Water)
4 Gpm at 55°F (15 Lpm at 13°C)

Specifications subject to change without notice.

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