

THE IDEAL

WAY



ISO 9001
Ideal Aerosmith, Inc.
CERTIFIED

TEMPERATURE CHAMBERS

FEATURES

- Temperature Range: -65 to +85 °C
- Rise/Pull Down Time: 5 °C/minute
- Local and remote operation
- Electric heaters
- Cooling by LN₂ or mechanical refrigeration
- Forced air circulation
- No exterior condensation over the temperature range (in typical laboratory environments)
- Microprocessor based temperature controller
- Standard IEEE-488 or optional RS-232 communications interface ⁽¹⁾
- Redundant temperature sensors
- Double gaskets between doors and chamber
- Interlock switches on doors



Typical Model 1601 with LN₂ Thermal

DESCRIPTION

Temperature chambers can be provided with or added to Ideal Aerosmith rate and/or position tables to expose the units under test to temperature extremes. Mounting interfaces between chambers and tables are designed to secure the chambers without disturbing the precision alignment of the table axes.

Electric heaters located inside the chamber provide heat. ⁽²⁾ Liquid nitrogen (LN₂) or mechanical refrigeration provides cooling.

LN₂ is routed directly to the chamber. The stand alone mechanical refrigeration unit uses ozone friendly refrigerants and delivers conditioned air or cooled fluid to the chamber. Noise reduction, chilled water cooling, and dry air purge features are available.

Expanding gas inlets (LN₂), conditioned air inlets, heaters, circulating fans, and baffles are located to create an air flow path that minimizes temperature gradients in the chamber and protect the unit under test from direct impingement of heat or cold.

A microprocessor based temperature controller is integrated into a 19 inch rack mountable chassis. Temperature data is entered manually or remotely through an IEEE-488 (standard) or RS-232 (optional) communications interface.

Chamber temperature is continuously monitored. Heating and cooling are discontinued in the event factory set non-changeable limits or user selected software limits are exceeded.

Interlock switches on the chamber doors prevent table operation if the door latches are not completely engaged.

Notes: (1) For the Model 1280, RS-232 is standard and IEEE-488 is optional.

(2) For the Model 1280 with mechanical refrigeration, the electric heaters are located in the mechanical refrigeration unit and not in the chamber mounted to the 1280.

Additional information on Ideal Aerosmith products is available on the Internet at: <http://www.ideal-aerosmith.com>

1510 GATEWAY DR. NE • EAST GRAND FORKS, MN 56721 USA • VOICE (218) 773-2455 • FAX (218) 773-7665

Temperature Chamber Physical Configuration

Chamber	External Dimensions (inches)	Payload Volume (inches)
Model TCL – 4 (single access door)	22 Wide x 26 Deep x 22 High	14 Diameter x 12 High
Model TCL – 6 (two access doors)	28 Wide x 30 Deep x 26 High	18 Diameter x 16 High
Model TCL – 9 (two access doors)	34 Wide x 35 Deep x 26 High	24 Diameter x 16 High
Model TCL – 18 (two access doors)	42 Wide x 43 Deep x 30 High	32 Diameter x 18 High

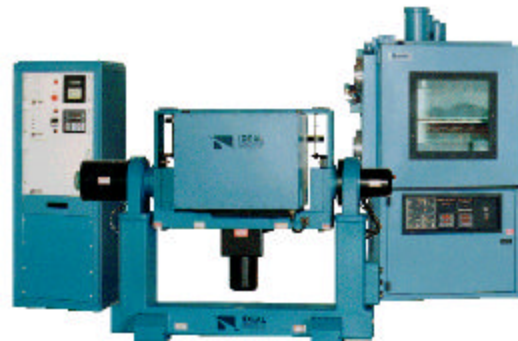
Temperature Chamber Thermal Specifications (All Chambers)

Temperature Range, °C	-65 to +85 (LN ₂ cooling) -55 to + 85 (mechanical refrigeration cooling)					
Temperature Stability, °C	±1					
Temperature Resolution, °C	±0.1					
Temperature Range	Rise Rate, °C/minute (max)			Pull Down Rate, °C/minute (max)		
	LN ₂	Mech.Refrig (3 Hp)	Mech.Refrig (6 Hp)	LN ₂	Mech.Refrig ⁽⁴⁾ (3 Hp)	Mech.Refrig ⁽⁵⁾ (6 Hp)
+85 to -20 °C	5	5 ⁽³⁾	5	5	3	5
-20 to -55 °C	5	5	5	5	1	3
-55 to -65 °C	5	NA	NA	5	NA	NA
Insulation (3 inch thick nom.)	Prevents exterior condensation in typical laboratory environment.					

Typical Temperature Chamber/ Table Configurations

Chamber Model No.	Table Model Number								
	1270VS	1280	1561	1601	1562	1532	2002	1533	2003
TCL-4		X	X	X					
TCL-6			X	X		X	X	X	X
TCL-9			X	X		X	X	X	X
TCL-18			X	X		X	X		

Mech. Refrig. Unit	Size (inches)	Power
3 HP	50 x 32 x 77 (L x W x H)	230V, 1 or 3 phase, 60Hz, 10kva
6 HP	60 x 40 x 85 (L x W x H)	230V, 3 phase, 60Hz, 19kva



Typical Model 1532 with Mechanical Refrigeration System

Notes: (3) For Model 1280, 3 °C/min
 (4) Typical performance for TCL-4 Chamber
 (5) Typical performance for TCL-6 Chamber