

Temperature and Humidity Cabinets, Refrigerated (+10°C to +60°C & 10% to 95% RH)

AUSTRALIAN MADE

FEATURES

The TRH-Series of cabinets manufactured by Thermoline are a leader in the market place for accurate precise control of Temperature and Humidity. The ability to perform heat, cool, humidification and dehumidify functions makes the Thermoline TRH ideal for Pharmaceutical, Food Technology, Electronic, Bio-science and Life Science Research just to name a few. Complete in four standard capacities from 150Lt to 850Lt internal. Thermoline also has the ability to customise units to meet your application.



TRH-850
(Shown with optional Programmable control)



TRH-460

- Precise control of Temperatures and Humidity between +10°C and +60°C and 10% to 95% Humidity {temperature dependant}
- Digital indication of internal conditions and set values
- Microprocessor controlled with heat/cool outputs
- Internal construction of 304 stainless steel fully sealed for high humidity conditions
- Attractive PVC coated steel external surface
- Built in quiet running CFC free refrigeration system
- Fully insulated with friendly fibreglass and styrene ensures energy efficiency
- Choose between solid or glass access door/s
- Built in condensate drain system
- Fan forced air supply via long life self cooling motors delivers conditioned air throughout for precise internal conditions
- Temporal accuracy at set point better than $\pm 0.2^{\circ}\text{C}$ & 1%Rh {unloaded chamber}
- Spatial accuracy measured to be better than 1°C & 3%Rh {unloaded chamber}
- Humidification via inbuilt vapour generating water trough with automatic water level detection and low water safety cut off

- Dehumidification via purpose built refrigeration system with air cooled condenser and electronic pulsed hot-gas by pass injection
- Heating and humidification provided through electric stainless steel heating element
- Cooling provided via evaporator coils with in air handling system and electronic switching of solenoid valves
- High grade electronic Temperature and Humidity sensor
- 50mm Monitoring or cable port access point {additional ports available}
- Open wire stainless steel fully adjustable shelves
- Convenient manual or log book holder on side of cabinet
- Easy installation with optional gravity feed water tank
- Built in condensate drain system to single exit point-allows easy cleaning of internal trough generator
- Optional ramp to set point functions
- Control error codes



TRH-150

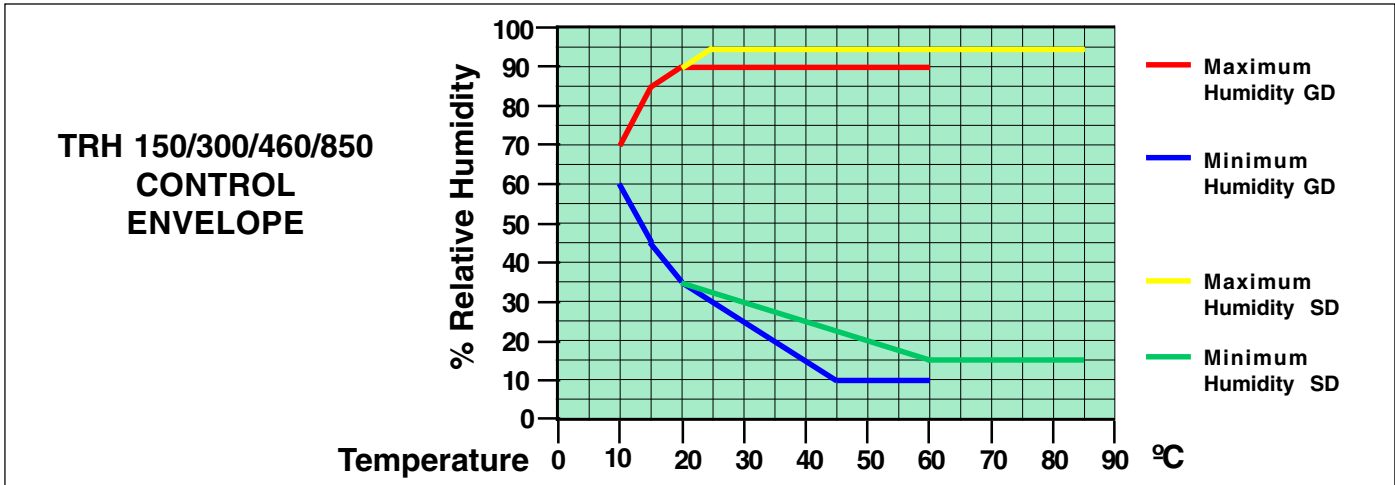
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- Thermoline TRH-Series Safety Devices**
- ✓ Over Current protection
 - ✓ User adjustable safety temperature cut out
 - ✓ Built in electric element safety cut out
 - ✓ Positive door closure
 - ✓ Lockable sturdy casters

- Thermoline TRH-Series Optional Accessories**
- Solid Doors or Glass doors*
 - Extended temperature range +2°C to +80°C (solid doors only) - Code: HT*
 - Programmable controllers with Computer interface*
 - Retransmission of process variables*
 - Deviation alarms with remote contacts*
 - Solid viewing door over glass door (inspect product without disturbing internal conditions)*
 - Additional cable entry port holes*

Example: TRH -150-SD-HT
 Temperature Range: +10.0°C to +80.0°C
 Humidity Range: 20%RH to 95%RH



Order Code	Temperature Range °C	Humidity Range %	Internal Dims. (HxWxD) cm	Capacity Ltrs.	External Dims. (HxWxD) cm
TRH-150	10 to 60	10 to 90	64 x 50 x 50	150	135 x 66 x 76
TRH-300	10 to 60	10 to 90	99 x 60 x 50	300	175 x 76 x 76
TRH-460	10 to 60	10 to 90	114 x 65 x 65	460	190 x 81 x 91
TRH-850	10 to 60	10 to 90	114 x 117 x 65	850	190 x 133 x 91
Order Code	Nº. Shelf Positions	Nº. Shelves Supplied	Approx. Unpacked Weight Kg.	Approx. Packed Dims. (HxWxD) cm	Approx. Packed Weight Kg.
TRH-150	Multiple	2	90	157 x 87 x 91	140
TRH-300	Multiple	3	120	198 x 96 x 91	210
TRH-460	Multiple	4	150	210 x 105 x 110	230
TRH-850	Multiple	8	200	210 x 154 x 110	290
Order Code	Electrical Supply			Temperature	Humidity
TRH-150	10A 240V 50Hz	¹ Control Stability ² Spatial Variation		±0.1 °C	±1%RH
TRH-300	15A 240V 50Hz			±1.0 °C	±3%RH
TRH-460	15A 240V 50Hz				
TRH-850	15A 240V 50Hz				

Temperature and Humidity Cabinets, Refrigerated (+10°C to +60°C & 20% to 90% RH)

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FEATURES

Thermoline's large capacity Temperature and Humidity cabinets differ from the standard TRH-Series being designed for the long-term storage of samples where high volume capacity are needed along with precise control of all parameters.

- Two sizes 1250Lt and 2000Lt internal volume
- Precise control of Temperatures and Humidity between +10°C and +60°C and 20% to 90% Humidity {temperature dependant}
- Digital indication of internal conditions and set values
- Microprocessor controlled with heat/cool outputs
- Internal construction of 304 stainless steel fully sealed for high humidity conditions
- Attractive powder coated steel external surface
- Built in quiet running refrigeration system built below floor area



Glass view windows

Rear perforated Air Duct



Temperature Controller

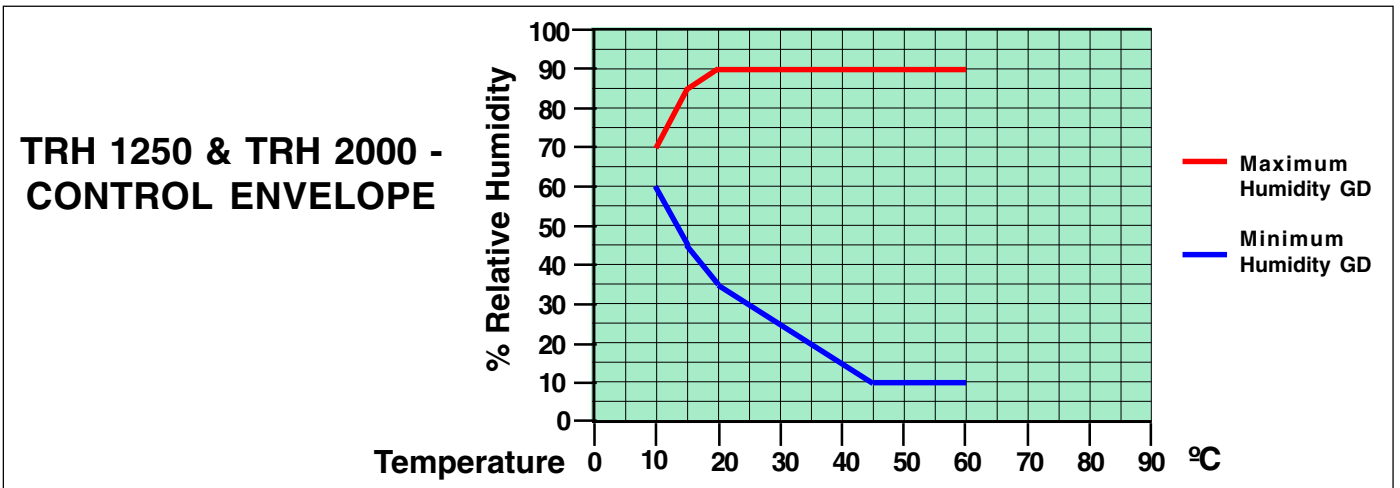
Humidity Controller

- Control error codes built in
- Fully insulated with fibreglass and styrene ensures energy efficiency
- Solid lockable access doors with internal glass viewing door
- Built in condensate drain system
- Fan forced air supply via long life self cooling motors delivers conditioned air throughout for precise internal conditions
- Temporal accuracy at set point better than $\pm 0.2^{\circ}\text{C}$ & 1%RH (unloaded chamber)
- Spatial accuracy measured to be better than 1°C & 3%RH (unloaded chamber)
- Humidification via steam generator externally mounted under cabinet with automatic water level detection and low water safety cut off
- Dehumidification via purpose built refrigeration system with air cooled condenser and electronic pulsed hot-gas by pass injection
- Heating provided through electric stainless steel heating element and electronic pulse injection of hot gas
- Cooling provided via evaporator coils with in air handling system and electronic switching of solenoid valves
- High grade electronic Temperature and Humidity sensor
- 50mm Monitoring or cable port access point {additional ports available}
- Open wire fully adjustable stainless steel shelves
- Convenient manual or log book holder on side of cabinet
- Easy installation with optional gravity feed water tank
- Optional in ramp to set point functions

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Order Code	Temperature Range °C	Humidity Range %	Internal Dims. (HxWxD) cm	Capacity Ltrs.	External Dims. (HxWxD) cm
TRH-1250	10 to 60	10 to 95	130 x 152 x 65	1250	202 x 170 x 82
TRH-2000	10 to 60	10 to 95	160 x 152 x 82	2000	232 x 170 x 99
Order Code	Nº. Shelf Positions	Nº. Shelves Supplied	Approx. Unpacked Weight Kg.	Approx. Packed Dims. (HxWxD) cm	Approx. Packed Weight Kg.
TRH-1250	Multiple	6	300	222 x 194 x 102	400
TRH-2000	Multiple	6	400	253 x 194 x 120	520
Order Code	Electrical Supply			Temperature	Humidity
TRH-1250	15A 240V 50Hz			¹ Control Stability	±0.1 °C
TRH-2000	15A 240V 50Hz			² Spatial Variation	±1.0 °C
					±1%RH
					±3%RH



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Thermoline TRH-Series Optional Accessories
Programmable controllers with Computer interface
Retransmission of process variables
Deviation alarms with remote contacts
Additional cable entry port holes

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The Thermoline Cement Shrinkage Test Chamber was designed for, and in conjunction with, the Cement and Concrete Testing Association of Australia to form part of the range of equipment necessary to perform a Australian test procedure, Australian Standard AS2350.13 - 1995. It is well recognized that the evaporation of water from test samples is influenced by the following factors.

- a) Surrounding Air Temperature.
- b) Surrounding Air Relative Humidity
- c) Air velocity over the surface of samples.
- d) The surface area to volume ratio of test samples.

The Thermoline Shrinkage Testing Chamber has been designed to ensure uniformity of temperature, humidity and air flow velocity over samples placed on up to eleven shelf levels.

Model:	CSTC 9-6-4.5\TH23-50
Interior:	304 grade stainless steel.
Exterior:	Attractive grey PVC steel.
Castors:	Cabinet formed on a structural angle steel base, fitted with 4x swivel casters for ease of installation, maintenance and cleaning.
Access Door:	Triple glazed to allow view of samples.
Shelves:	11 Off. Perforated stainless steel at 75mm. centres. (Removable)
Support Racks:	11 Off. stainless steel grid support, 6mm, dia. Rods on 100mm, centres.
Heating:	By 'calrod' sheathed resistance elements.
Air Flow:	Horizontal forwards through workspace from a perforated distribution plenum at the rear of the chamber.
Humidification:	By evaporation from the surface of a temperature controlled dew point trough from the base of the chamber.
Refrigeration:	An air cooled, hermetically sealed condensing unit using R134a refrigerant.
Control:	Temperature and Humidity Controllers are both digital set point and indicating values.
Safety Thermostats:	Operator settable, fitted as over temperature and low temperature protection.

ORDER CODE	DIM. INT HxWxD cm	LITRES CAPACITY	DIM. EXT HxWxD cm	HUMIDITY	APPROX WEIGHT Kg
CSTC 9-6-4.5\TH 23-50	90x58x55	280	172x69x72	50% RH	160
	SHELVES	S/S GRIDS	ELECTRICAL	TEMP	PACKED Dims HxWxD cm
	11	11	240V 50Hz 10A	23°C	193x88x97