

# TEMPERATURE AND HUMIDITY CABINETS WITH LIGHTS



(+5°C TO +40°C) (10% TO 95% RH)

Image: TRHDL



- 460 and 850 litre capacities available
- Both sizes feature door and shelf lighting options
- Precise control of temperature and humidity
- STAR 700 user friendly 7" colour touch screen
- Quiet running CFC free refrigeration system
- Fully insulated to help maintain temperature values
- Humidity control via in built dew point water trough
- Monitoring or cable point access port
- Fully adjustable open wire shelves
- Fitted with castors to allow for easy moving
- Humidity is generated by boiling water creating steam (no ultrasonics that may disturb insects)



Thermoline LED light strips which are available in three colour options.

## Product Features

As well as the standard range of temperature and humidity controlled cabinets, Thermoline have a range which includes LED lighting. Within the lighting range are two variations, the TRHDL with lighting fitted to the outside of the glass door, which allows light energy to pass through the glass therefore eliminating the majority of the heat. The other variation is the TRHSL which has shelf lighting allowing a more direct and even distribution of light across each shelf. Both the TRHDL and the TRHSL utilise high output LED lighting in three colour options.

Both the TRHDL and TRHSL cabinets are supplied in two sizes, a single door 460-litre and a double door 850-litre. All TRHDL and TRHSL cabinets have programmable control of temperature, humidity and lighting.

All shelf lighting lamps are protected by a polycarbonate cover for protection against accidental breakage and sealed to prevent water ingress.

### Features

Precise internal conditions via self cooled fan motors

Humidity accuracy at set point better than  $\pm 0.2^{\circ}\text{C}$  and 1%RH (unloaded chamber)

Spatial accuracy measured to be better than  $\pm 2^{\circ}\text{C}$  and 5%RH (unloaded chamber)

Dehumidification via purpose built refrigeration system with air cooled condenser

Heating and humidification provided through electric stainless steel heating element

Cooling provided via evaporator coils with in air handling system

High grade electronic temperature and humidity sensor

50mm cable port access point (additional ports available)

Convenient manual or log book holder on side of cabinet

Easy installation with optional gravity feed or pumped water tank

Built in condensate drain system to single exit point-allows easy cleaning of internal trough generator

### Safety Features

Auto over temperature safety (Failsafe)

Built in electric element safety cut out

Positive door closure

Lockable castors

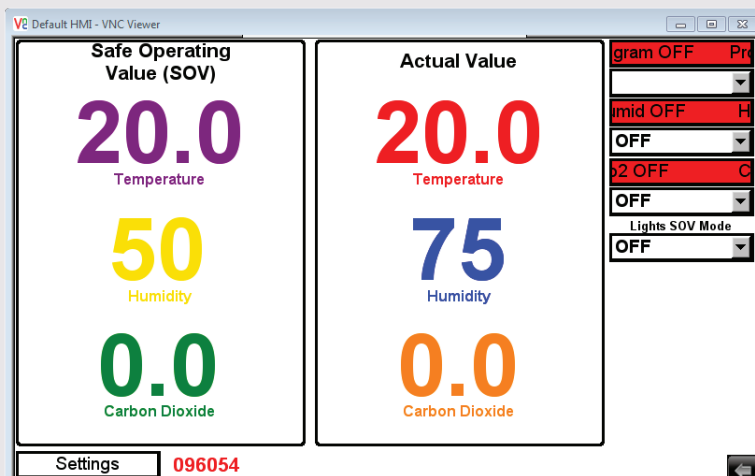
## STAR 700 Controller

Envirotherm cabinets are powered by Thermoline's **Select Touch And Run (STAR 700)** touch pad control system. The STAR 700 touch pad control system offers easy to program diurnal control of temperature, lighting, humidity and carbon dioxide.

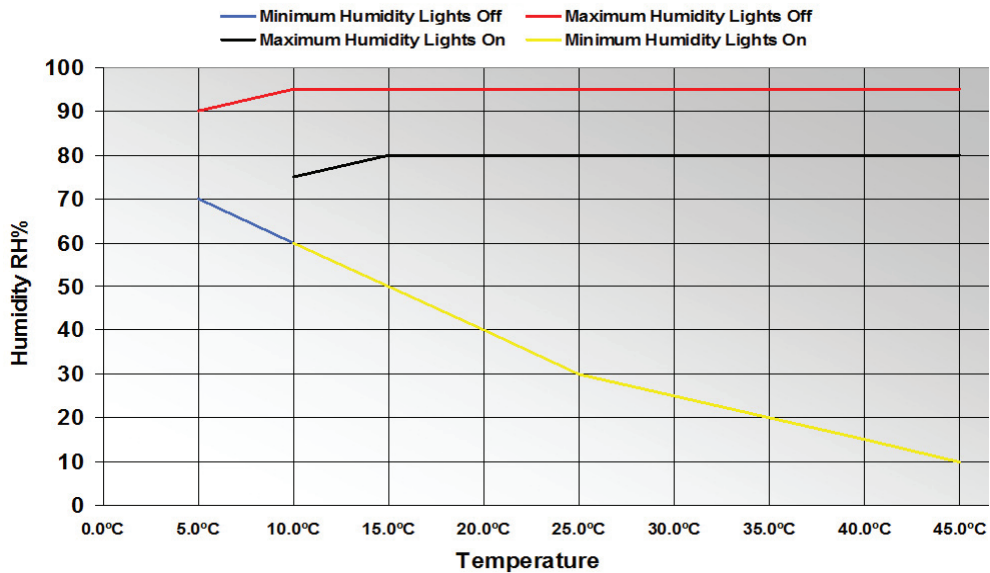
The STAR 700 features a large 154x87mm rugged full colour touchscreen, PC connectivity via ethernet cable and synchronize programmed settings which can be viewed in real time.

The STAR 700 logs the performance of the cabinets for up to up to 800 days.

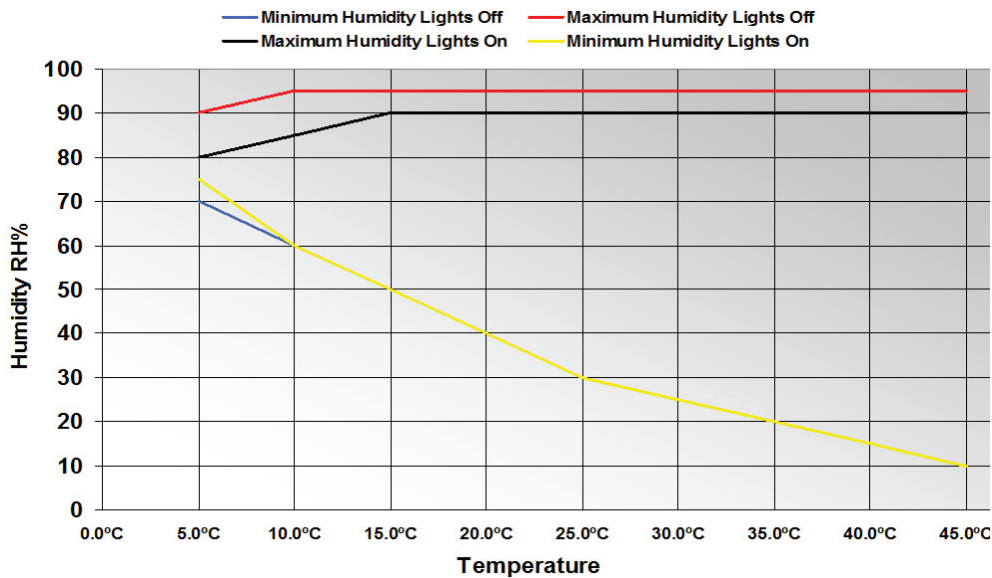
A live trend screen to allow the operator to quickly check the performance conditions within the cabinet. Alternatively the operator can download the logged data to a USB and then view data via a Excel spread sheet.



## Control Envelope for TRHSL-460 and TRHSL-850 Cabinets



## Control Envelope for TRHDL-460 and TRHDL-850 Cabinets



## Introduction to Drosophila Melanogaster

### What is it and why bother about it?

*Drosophila melanogaster* is a fruit fly, a little insect about 3mm long, of the kind that accumulates around spoiled fruit. It is also one of the most valuable of organisms in biological research, particularly in genetics and developmental biology. *Drosophila* has been used as a model organism for research for almost a century, and today, several thousand scientists are working on many different aspects of the fruit fly. Its importance for human health was recognised by the award of the Nobel prize in medicine/physiology to Ed Lewis, Christiane Nusslein-Volhard and Eric Wieschaus in 1995.

### Why work with *Drosophila*?

Part of the reason people work on it is historical - so much is already known about it that it is easy to handle and well-understood - and part of it is practical: it's a small animal, with a short life cycle of just two weeks, and is cheap and easy to keep large numbers. Mutant flies, with defects in any of several thousand genes are available, and the entire genome has recently been sequenced.

Source: <http://www.ceolas.org/fly/intro.html>



# LIGHTING SPECIFICATIONS

## LED Light Options

Three LED colour options for all Thermoline cabinets with LED lighting. These three options are described as '4000K', 'LEAF' or 'BLOOM'.

### 4000K

Because the light is neutral, not leaning in favour of red or blue spectrum, it can be described as 'standard' and is the closest equivalent to Cool White T5 fluorescent lamps.

### Leaf (2700K)

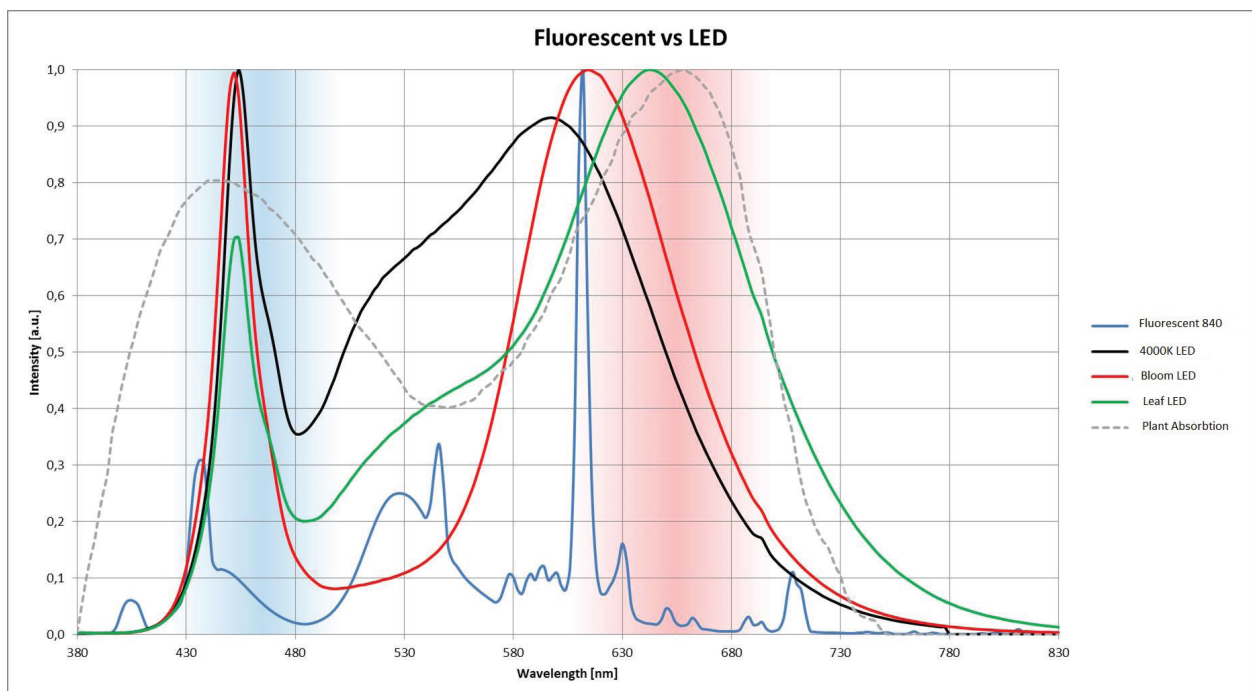
'Leaf' is the recommendation for plants and vegetables which should have an optimized vegetative growth. Due to increased spectral emission in the far red (> 700 nm), as well as in the green (500–560 nm) spectral range, the growth of the plants or the vegetables can be positively influenced.

### Bloom (1900K)

"Bloom" shows an optimized effect on ornamental plants and young seedlings, which need support in the flowering or in the initial growth stage. The spectrum is characterized by its focus on the blue and red spectral range, which provides maximum efficiency in photosynthesis.

# SPECTRAL CHARACTERISTICS

Type	Spectral distribution related to $\mu\text{mol/s}$				Ratios		
	400–500 nm (blue)	500–600 nm (green)	600–700 nm (red)	> 700 nm (far red)	blue – red	blue – green	red – far red
Bloom	16.9%	24.0%	56.6%	4.5%	1 : 3.2	1 : 1.4	1 : 0.1
Leaf	10.1%	22.5%	53.7%	13.7%	1 : 5.3	1 : 2.2	1 : 0.3



# SPECIFICATIONS

Model	TRHDL-460	TRHSL-460	TRHDL-850	TRHSL-850
Temperature Range	+5°C to +40°C			
Humidity Range	10% to 95%			
Internal Dimensions (WxDxH mm)	650x650x1140		1170x650x1140	
External Dimensions (WxDxH mm)	810x910x1900		1330x910x1900	
Capacity (litres)	460		850	
Shelf Positions	Multiple			
Shelves Supplied	4	3	4 Levels	6
Lighting Style	4x LED light strips per door	3x LED light trays	4x LED light strips per door	3x LED light trays
Light Intensity @ 20°C *	220 µmols @ 300mm	350 µmols @ 150mm	220 µmols @ 300mm	350 µmols @ 150mm
Temperature Control Stability	±0.2°C			
Temperature Spatial Variation	±2.0°C			
Humidity Control Stability	±1% RH			
Humidity Spatial Variation	±5% RH			
Approx Weight (kg)	350	350	450	450
Electrical Supply	15 Amps/240 V			

\* Light intensity changes throughout the temperature range. Detailed light intensity data can be supplied on request.

## Water Feed Tank for Humidity Controlled Cabinets

This 55 litre water feed tank allows water to be pumped directly to the cabinet whilst being safely stored on the floor. This specialised tank features a self-priming 12v diaphragm pump, low water protective cut-out, extra-long 6 metre hose and a large opening for easy filling.

### Features

- 55 Litre UV stabilised polytuff tank
- Self-priming 12v diaphragm pump
- 2.6L/min open flow, 50psi
- Low water protective cut-out with audible alarm
- Extra-large filter requires less cleaning
- Large opening for easy filling
- Large outlet for quick drainage
- Extra-long 6 metre hose



Tank Model: 55L-WC-PUMP

For more information on our complete Humiditherm range or to speak to a sales team member, please call our head office or email us via the details below:

**Head Office Phone** (02) 9604 3911

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