

Product Information Packet

Model TLC-1400

Cool Only Solid State Liquid Chiller

with Integral TC-4300 Temperature Control

Part #6-BOE0-0-0B0

Thank you for your purchase. Information has been enclosed regarding the installation, specifications, and wiring of your solid state assembly.

Please read and follow all instructions carefully before installation. Only qualified technicians should install this equipment.

If you have any questions with your equipment, please do not hesitate to call us toll free at (888) TECA-USA (832-2872), we will be happy to assist. We are open from 8:00 am to 4:30 pm Central Time.

Included in this packet you will find:

Getting Started

Product Literature and Specifications

Wiring Drawing # SK100914

Warranty Information

EasyLog Manual

TC-4300 CD

GETTING STARTED:

(Read entire instructions before operating)

STEP #1 This unit should operate with the bottom feet resting on a flat surface. The internal heat exchanger is cooled by a tubeaxial fan. It is necessary to keep the inlet/outlet air path free from any restrictions that may impede your cooling performance. A 6" minimum spacing from the rear of the unit to any obstruction is required. External tubing with insulation has been provided for a total of 12' plumbing line. Trim the tubing and insulation as necessary to minimize the ambient thermal load. 4 clamps have been provided to attach the tubing (2 to the quick connectors provided and 2 for your load connectors). The tubing lines are a 3/8" inner diameter. Connect the external plumbing lines to the device(s) being cooled.

STEP #2 Low fluid and low flow indicators have been provided on the front panel. It is necessary to fill the internal reservoir before you apply power. **FAILURE TO DO SO MAY RESULT IN DAMAGE TO THE PUMP** The internal reservoir holds approximately 500 ml of fluid. The "add fluid" light will come on when the reservoir is approximately 1/2 full. There is a visual indicator of the water level on the side of the unit. Distilled water is the recommended fluid for temperatures to 5°C. For temperatures below 5°C, a 30% glycol 70% distilled water mix is suggested. Remove the reservoir cap located at the top left corner of the unit and fill the reservoir. Keep the reservoir cap off until the external plumbing is filled and the reservoir is topped off.

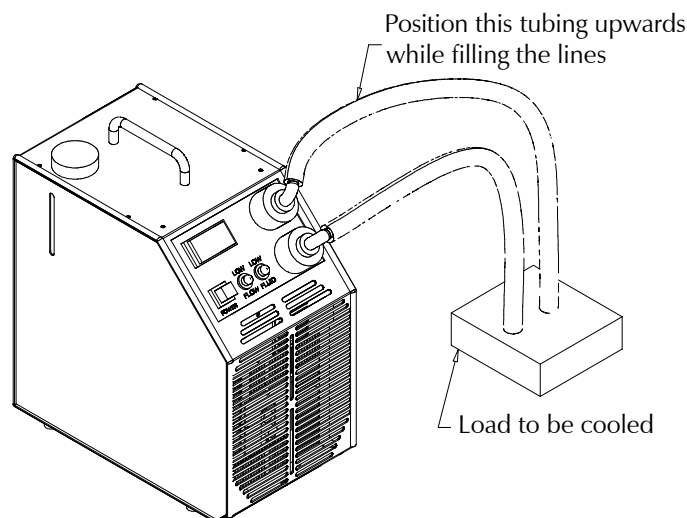
STEP #3 Connect the power cord to an appropriate outlet. The power cord must be connected to a receptacle protected by a circuit protected per local and or national codes. While you are filling the external lines, position the supply quick connect upwards. (See Figure A) This will assist in removing air trapped in the lines. At this point, depress the power switch on the front panel to turn the system on. For a 12' plumbing line, it should take about 30 seconds before the "add fluid" light illuminates. At this point, turn the power off and add additional fluid. Re-apply power. Another 30 seconds or so should be enough time to completely fill the lines. Turn off the power switch and top off the reservoir. Reattach the reservoir cap securely.

Please Note: It may be necessary to add fluid to the reservoir from time to time. The "add fluid" indicator will illuminate if the reservoir requires a refill. If the "low flow" indicator light appears, check to see if there are any obstructions or leaks within the plumbing lines.

The "low flow" indicator appears when the flow is approximately 0.3 liter/min or less.

STEP #4 A digital temperature controller has been provided. Hold the * button and adjust ▼▲ to adjust the set point. More detailed temperature control information has been included with your product information packet. We suggest changing the temperature controllers programming to a PID control method and then performing an autotune for better temperature control.

We hope you enjoy your new Ameritemp™ series liquid chiller. If you have any questions, please do not hesitate to call our technical department @ 888-TECA-USA (888-832-2872).



TLC-1400 Liquid Chiller

Air Cooled

120 VAC, 240 VAC Input

FEATURES

- Compact (only 12" X 14" bench top footprint)
- Weighs approximately 59 lbs. (27 kg)
- Integral PID "tunable" temperature control (two styles)
- Ambient temperature up to +50°C
- No compressor, fluorocarbons or filters
- Virtually maintenance-free operation
- Remote Sensibility™
- Un-cooled, 500mL reservoir
- Front to back air-flow system
- Stainless steel exterior housing
- Low fluid level and low flow warning
- Integral power supply
- Self priming pump/reservoir
- Low pressure drop fluid quick connects
- Tubing and insulation
- 3/8" CPC low pressure drop shut off fittings



TC-4300 FEATURES

- One shot smart PID control tuning or Adaptive Smart Continuous Tuning
- Internal RTD sensor
- Remote Sensibility™ switchable exterior sensor
- Multi-segment ramp and soak programs
- RS-232 communications
- i-tools software for easy programming and control tweaking
- Process fluid "out of temperature range" warning
- Easy prime/pump reset feature
- No flow system shut down

SPECIFICATIONS

MODEL	PART NUMBER	PERFORMANCE RATING	VOLTAGE VAC BTU/HR	CURRENT AMPS. 50/60 HZ	WEIGHT LBS. (KG)	MAX OPERATING TEMP °C	TEMP. CONTROL	HEATING OPTION (HC SUFFIX) AMBIENT	FLUID TEMP RANGE °C
TLC-1400	6-B0E0-0-0B0	1400-1450	120 VAC	7.0	59(26.7)	50 °C(+122 F)	TC-4300		-5/65
TLC-1400HC	6-B0E0-1-0B0	1400-1450	120 VAC	7.0	59(26.7)	50 °C(+122 F)	TC-4300	400 Watt	-5/65
TLC-1402	6-B0E2-0-0B0	1400-1450	240 VAC	4.0	59(26.7)	50 °C(+122 F)	TC-4300		-5/65
TLC-1402HC	6-B0E2-1-0B0	1400-1450	240 VAC	4.0	59(26.7)	50 °C(+122 F)	TC-4300	400 Watt	-5/65

TLC-1400

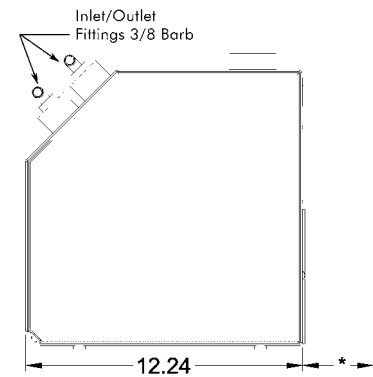
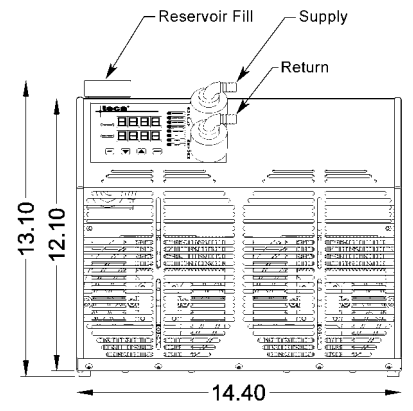
ENVIRONMENTS

- Bench top
- Laboratory
- Industrial

COOLING CAPACITY

410 Watts @ 0 °C ΔT (standard)

DIMENSIONS



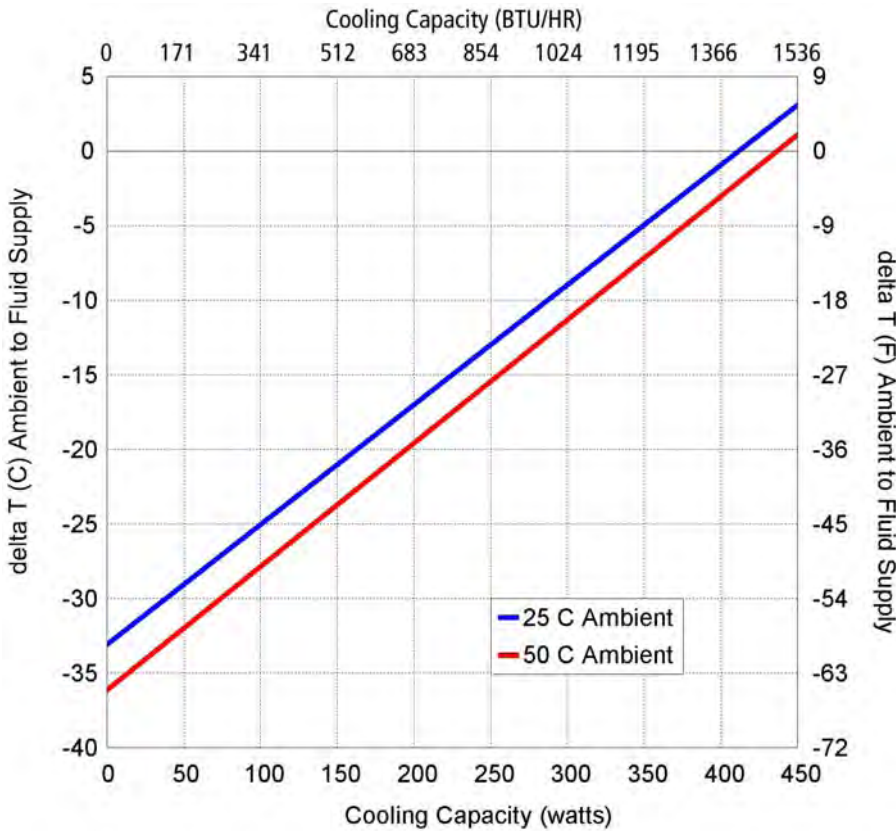
Dimensions : Inches

* Minimum recommended clearance 3".



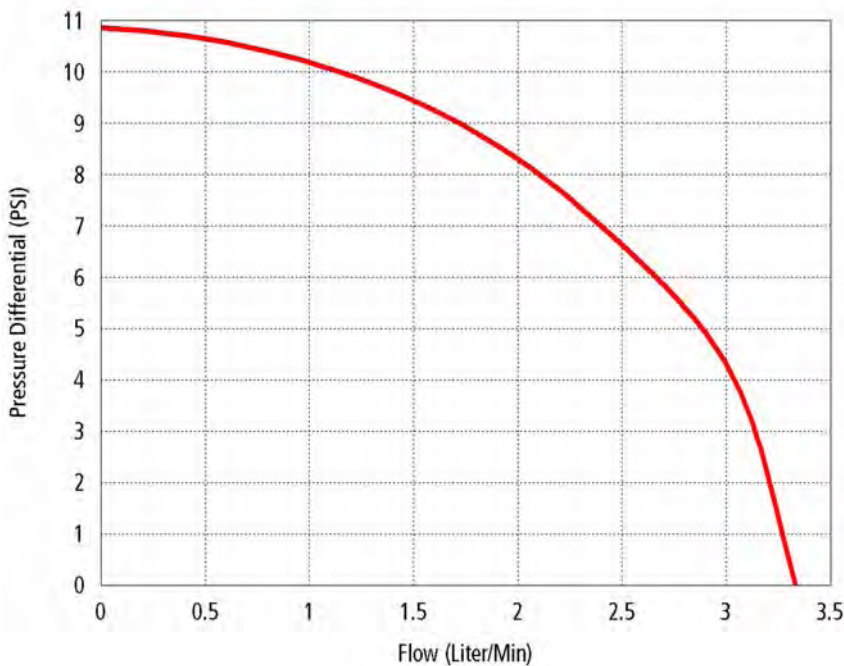
Ambient Air Path

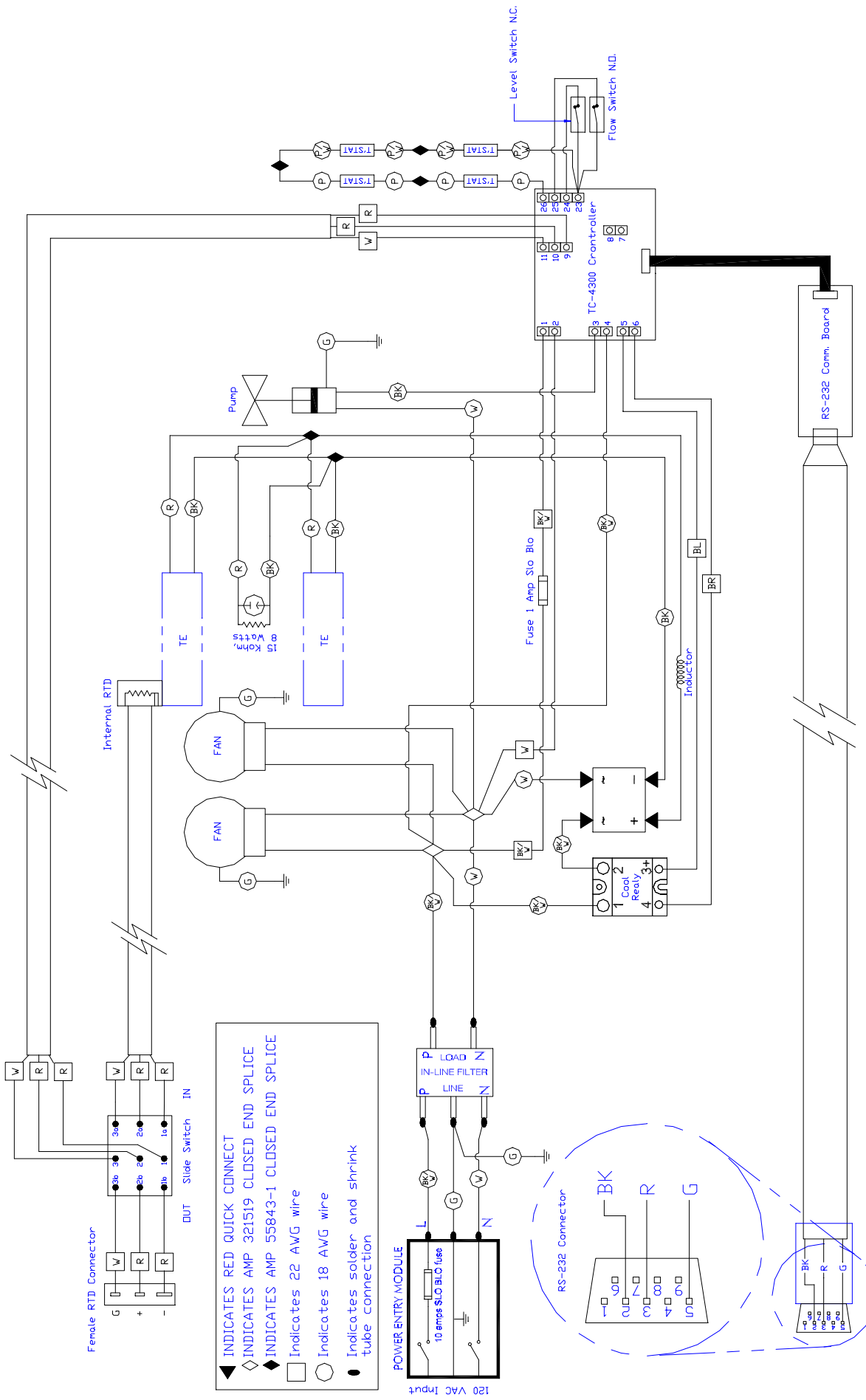
PERFORMANCE CURVE



Equation of line: $y = \Delta T(^{\circ}C)$ $x = \text{Capacity (Watts)}$		
Ambient Temp	25°C	50°C
Fluid Supply	$y = .08x - 33.1$	$y = .08x - 36.1$

PUMP CURVE





- ◄ INDICATES RED QUICK CONNECT
- ◇ INDICATES AMP 321519 CLOSED END SPLICE
- ◆ INDICATES AMP 55843-1 CLOSED END SPLICE
- Indicates 22 AWG wire
- Indicates 18 AWG wire
- Indicates solder and shrink tube connection

THERMOELECTRIC COOLING AMERICA CORP.	
TLC-1400 WITH TC-4300 WIRING DIGARAM	
DRAWN BY: AA	DRAWING # SK100914
DATE: 09/23/10	SCALE D7900
REV	DESCRIPTION
	Date
	APPROVED
	MASTER: MASTER
	SHEET
	REV LEVEL

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
 TOLERANCES ARE:
 DECIMALS .XX +/-
 FRACTION .XXX +/-
 ANGLE +/-
 MATERIAL:
 FINISH:

INFORMATION DISCLOSED HEREIN IS THE CONFIDENTIAL PROPERTY OF TECA CORP. RECIPIENT SHALL NOT USE THE INFORMATION IN ANY UNAUTHORIZED MANNER.

LIMITED WARRANTY

In the event a defect in material or workmanship is discovered in any of TECA's products within one year after the date they are delivered to Buyer, and if: (a) TECA is notified of the defect in writing by certified mail within 14 days of the date of discovery; (b) TECA may then either, at its sole discretion, inspect the product at Buyer's location, or require that the product be made available at Buyer's expense at TECA's premises for TECA's inspection within 14 days of the date of notification; and (c) the products are defective and the defects result from faulty materials and/or workmanship and not in any way from accident, misuse, misapplication, mishandling, modification, or alteration by the Buyer or the shipper, then TECA shall, at its sole option, repair or exchange defective products free of charge to Buyer, or credit to buyer the price of the defective products. ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, ARE EXCLUDED, INCLUDING BUT NOT LIMITED TO THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. IN NO EVENT SHALL TECA BE LIABLE FOR ANY CLAIM BASED UPON BREACH OF EXPRESS OR IMPLIED WARRANTY OR ANY OTHER DAMAGES WHETHER SPECIAL, INDIRECT, INCIDENTAL, CONSEQUENTIAL, LOST PROFITS, BUSINESS INTERRUPTION, OR LOSS OF BUSINESS OR CUSTOMER RELATIONSHIPS.

RETURNED GOODS, RESTOCKING CHARGES

In order to return merchandise for any reason (repair, replacement, or credit) a return authorization number must be issued by TECA. New merchandise may not be returned for credit beyond 60 days from shipment. Charges for incidental or other damages may also be made. All returned goods must be sent freight prepaid. A restocking charge of 15% will apply. On special equipment and custom modified equipment orders, additional incremental cancellation charges may be made.