



400W Ultra Quiet  
TEC Cooler Unit



Basic Cold Plate With  
Standard Mounting Holes

### PRODUCT DESCRIPTION:

The DevICE™ Cube is a combination of a Thermo-Electric Cooler (TEC), otherwise known as a Peltier device, and a fluid recirculation system which can transfer heat from your device at a rate that far exceeds a passive air cooled heat sink. For low power devices, the system can maintain the device package temperature below ambient room temp and for high power devices; it can remove heat more efficiently than other means keeping it cooler so that fault isolation methods like emission microscopy work better. Whatever the reason you need to cool your devices, the DevICE™ Cube will maintain a more constant temperature throughout the analysis. This system can also add heat when needed making it a very versital piece of equipment.

### DUT INTERFACE OPTIONS:

- ◆ Basic Cold Plate With Standard Mounting Holes
- ◆ Custom Cold Plate shaped to your particular needs
- ◆ ColdCAP™ Lids with Direct Heat Exchanger
- ◆ Chilled socket bases with Direct Heat Exchanger

### APPLICATIONS:

- ◆ Failure Analysis of High Power Devices
- ◆ Environmental Testing of Devices at Package Level
- ◆ Reliability Testing Requiring Temperature Control



## PRODUCT DATA SHEET (CONTINUED)

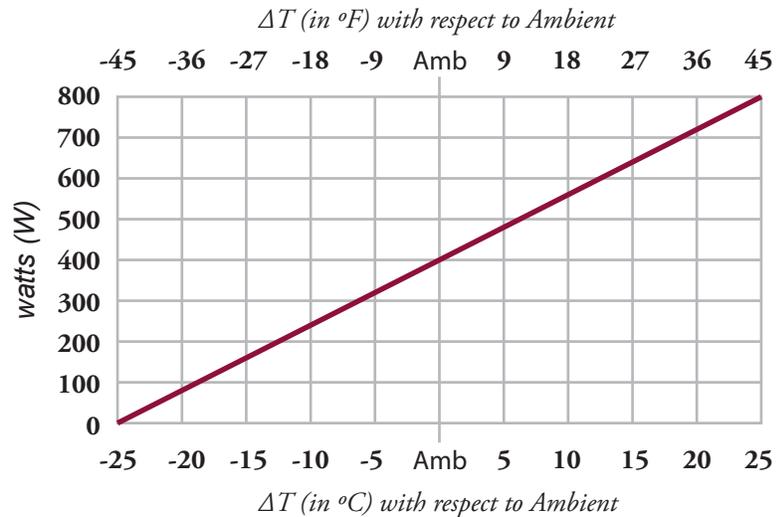
### COOLING CAPACITY:

The chart at right demonstrates the expected change in cooling plate temperature vs. your device wattage. To determine the power of your device simply multiply the operating voltage and operating current ( $P = I_{DDQ} * V_{DD}$ ). Find the spot where that wattage intersects the curve and move down to see how the cooling plate will affect the device temperature. A device running at 400W will maintain ambient temperature.

The TEC cooler technology in the DevICE™ Cube is very quiet and very efficient. Unlike mechanical refrigeration based coolers, TEC uses power to move only the heat that needs to be removed, the equipment automatically adjusts power to match the situation resulting a very stable set point temperature and rapid temperature slew rates.

### DEVICE FEATURES:

The Basic DevICE™ Cube setup consists of the TEC cooler unit, a set of hoses with quick disconnect couplings and a heat transfer plate. The heat transfer plate, also known as a cold plate can be engineered to work in a wide variety of applications for many device types and packages. we also offer lids and bases with TEC cooling built-in for space conscious fixture requirements. Each solution is tailored to meet the requirements of your test and test equipment. Instead of a cold plate, a cooled lid can be clamped onto a standard test socket thereby removing the heat from the topside of the package. The TEC can also act as a metal slug machined to fit inside the base of the socket through a cutout. This way, heat is removed from the bottom of the device, ideal for open top analysis of the package where the device is normally too hot for the usual microscopy based techniques.



### PRODUCT SPECIFICATIONS:

Operating Temperature Range (no load) :	-5C to +65C
Cooling Capacity:	400W
Temperature Control Modes:	Fixed Set Point, Temperature Cycling
Set Point Precision:	+/- 0.05C
Coolant Options:	Water/Glycol Mixture, DI Water, Galden/Fluorinert, PAO
Alarms:	Temp Set Point Compliance, System Failure and Fluid Level Low
Hoses and Fittings:	Several Options Available to Fit Your Application
Noise Level:	<65dBA
Size:	Less than 13"³ (Approximately 1 cubic foot)
Weight:	30 lbs.