

Model 8000 Hot-Ambient-Cold Test Option



- -40°C to $+155^{\circ}\text{C}$, $\pm 0.1^{\circ}\text{C}$ temperature range
- Unique fluid based heating and cooling method
- Allows Ambient-Hot-Cold tri-temp test in just one insertion
- No soak chamber required, soak times, 4 seconds typical
- Built-in TC contacts DUT case for constant temperature monitoring
- Computer/test program controlled contact pressure
- Optimized for RF Test and Particle Interconnect Test Sockets
- Snaps on/off for change over, no tools required

Heat Exchanger



Any Model 8000 Handler can be upgraded for **Hot and Cold** test. Equipped with two Heat Exchanger heads, the 8000 allows a DUT to be tested at ambient, again at high temperature, and again at low temperature, all in just one insertion. The DUT is first clamped with the handler's ambient pick up head and tested. If it passes, the pick up head leaves the DUT in the test socket. The DUT is then clamped with the **Hot** Heat Exchanger and tested. If it passes, the hot head moves and the **Cold** Heat Exchanger clamps down on the DUT for the third time. The DUT is then sorted and a new cycle begins.

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Vitesse Semiconductor

Fluid flowing through a brass block called a Heat Exchanger adds or subtracts heat from the Device Under Test (DUT). No forced air or resistive heaters are used. The Heat Exchanger clamps the DUT into either a conventional test socket or an Exatron Particle Interconnect test socket. Heat transfers directly to/from the case of the DUT. The surrounding test socket, DUT board, and test electronics remain near room temperature. Traditional frost problems are greatly reduced*. A very small thermal shield is built around the Heat Exchanger. This shield allows dry air and/or dry nitrogen to purge the Heat Exchanger and test socket. The handler can open the socket and remove the DUT without frost forming on the Heat Exchanger or surrounding DUT board. There is no need to wait for the socket to return to room temperature.

A Julabo circulator heats or chills a 3M fluid to +/- 0.1°C. The fluid flows through the Heat Exchanger, passing within a fraction of an inch of the DUT. Depending on the fluid and circulator unit chosen, it is possible to test from -55°C to +155°C. Thermal losses and the case temperature of the DUT are detected with a thermocouple (TC) that is built into the face of the Heat Exchanger. This TC continuously monitors the case temperature of the DUT during the entire test. Any thermal losses or heat generated by the DUT can be calibrated out.



A computer controlled regulator allows for remote control of the test socket mechanical pressure. Using a conventional test socket may require a unique size of Heat Exchanger. Using Exatron's Particle Interconnect test sockets may allow for a small range of DUT sizes to be tested with only one size head. The Heat Exchanger can be removed from the handler without tools.

There is no traditional "soak chamber". The TC built into the head is thermally insulated from the head itself. This allows the TC to detect the case temperature of the DUT over the head. The handler monitors the DUT case temperature until it is in test range. This allows the handler to measure actual soak times. The handler allows for additional delay if required. Soak times of 4 to 5 seconds are typical, longer at the extreme temperature ranges.

* When used on a controlled environment test floor, Exatron's standard thermal shielding works to approximately -25° C. Additional shielding is typically required at lower test temperatures. TBD

Julabo Circulators: Julabo manufactures a wide range of models. Most models can be used with the handler. The working range of the handler is determined by the capacity of model chosen. Please call for more information.

3M Fluorinert: 3M offers a variety of fluids. The working range of the handler is determined by the fluid chosen. Please call for more information.