

Features:

- ◆ 20 BIB Board Capacity
- ◆ 2.8KW DUT Power Available to BIB
- ◆ 150W Thermal Control Capability
- ◆ Customizable Driver Modules
- ◆ Flexible Usage
- ◆ Uniform, Programmable DUT Pressure

Driver Module Capabilities:

- ◆ 128 I/O per DUT
- ◆ 333 MHz Clock Input
- ◆ Continuous Monitoring
- ◆ Infinite Vector Depth
- ◆ Analog Drive/Monitor Capability
- ◆ On/Off DUT Thermal Monitoring
- ◆ Low NRE Customization

Physical Features:

- ◆ Dimensions (m): 2.0w x 1.0d x 2.0h
- ◆ 480V, 3Φ, 60A Input
- ◆ 25mm Cooling Water Input

System Description

The AQ1000 is designed to handle devices with individual DUT power up to 150W and above. Current water-cooled thermal solutions provide 150W of DUT cooling ability with the ability to improve beyond 150W with larger or more efficient designs.

AQ1000 is configured to hold 20 BIB boards in two individual chambers. Total BIB capacity is limited by the DUT socket size, not I/O or drive requirements. Current designs, for example have 20-DUT boards for a total DUT capacity of 400 DUT per oven.

Driver modules and power regulators are plug-in and easily accessible on the BIB boards, NOT in the rear of the oven. This allows for better power regulation, higher DUT density with high currents, and lower overall system cost.



A Different Approach

SiFyre ovens are designed with customization in mind. System architecture, from power distribution to DUT communication to regulator design to driver modules are all designed to be tunable to meet specific or broad customer requirements. This approach involves approaching overall system design differently from all other burn-in systems previously or currently available. This approach puts the customer in control and allows the end user to define the interface, speed, power, and control requirements based on the DUT requirements, not compromise on DUT burn-in capabilities due to limitations in burn-in oven design.

Contact a SiFyre representative now to see how a SiFyre system can meet your needs.

Software Features

The AQ1000 software allows for configuration of DUT test conditions on a per-BIB or even per-DUT basis.

Independent DUT Control

Each DUT can be setup, started, and configured independently from all other DUTs on a BIB board. Algorithms exist for constant-power, constant-temperature, and constant-voltage control.

As each DUT reaches user-defined stress objectives, a timer is started for that DUT. As the time allocated for stress is completed for each DUT, the DUT is powered-down separately from all other DUTs on the BIB.

Datalogging

DUT conditions (temperature, voltage, current, pass/fail monitoring, etc.) are continuously saved to a networkable database for permanent storage. Sudden changes in DUT conditions are also logged for complete historical records of DUT stress.

Reporting and Remote Updating

Software can be setup to automatically email or SMS text if there are errors, lots complete, or other user-defined conditions.

Ease-of-Use and Safety Features

- ◆ 10-point monitoring of air temperature
 - Precise monitor and feedback
- ◆ Magnetic door interlocks
 - Safe power-off before opening
- ◆ Built-in control computer
 - Smaller footprint
- ◆ Integrated internal air cooler
 - No venting of heat to room air
- ◆ Network and Database ready
 - Share results, programs, configurations
 - Remote access and control

New Architecture New Capabilities

The SiFyre burn-in ovens are designed differently and these differences lead directly to benefits to the end user. Cost, capability, and flexibility. We have addressed the failings of previous designs to make a complete solution.

On-BIB Regulation

DUT voltage regulation on-BIB provides for less drop to high-current DUTs. Benefits to the user are higher flexibility in regulator configuration; lighter BIB boards due to lower lighter busbars (e.g. 20-DUT 150W BIB board – 7.5kg)

On-BIB Drivers

Drivers localized near the DUT allow more features in communicating with and controlling the DUT. DUT clock drive frequencies of 333MHz and above; high I/O count; analog drive & monitor; continuous monitoring; firmware and vectors are loaded into the drivers

Pneumatic Thermal Heads

SiFyre ovens use independent pneumatic pistons on each thermal head to engage with DUTs. This provides precise pressure uniformity; adjustable pressure to DUTs to accommodate bare-die, lidded, or other packaging styles; lower cost, lower weight of BIB and system.

Water-Based Cooling

Water-cooled DUT thermal heads remain in the oven when BIB boards are inserted or removed. Water-cooling provides higher cooling capacity and control of high-power DUTs with power regulation of 150W or more.