



Imperium Thermal Control System



Developed specifically for low power applications, Ironwood Electronics' IMPERIUM Thermal Control System integrates seamlessly with Ironwood's test sockets and can be easily adapted to all sockets, providing exceptional thermal control in demanding applications. Building upon Ironwood's leadership and expertise in high performance sockets, Imperium provides a smaller footprint, less noise, greater flexibility, and lower cost when compared to typically oversized systems for bench-top use.

FEATURES AND BENEFITS



Benchtop - Small Size

Unique Umbilical/
Test Head

Purge holes for dry air

Digitally Controlled Pressure
to DUT

Seal Ring and Dry Air to
prevent frost

Ideal for use with Ironwood
test sockets

Frost-Free Operation

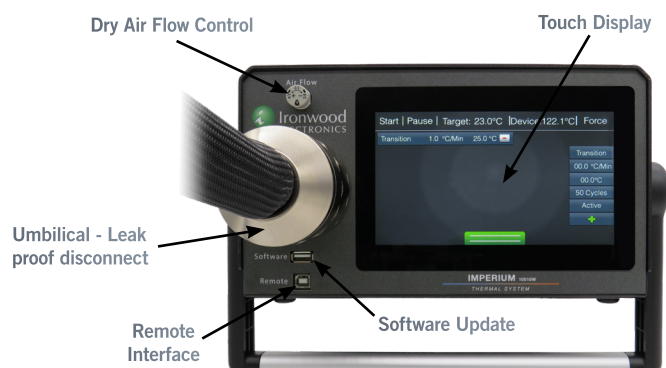
Imperium is intended for low power (<10 W) temperature control from -55°C to +155°C, resulting in a compact bench-top unit with low acoustic noise. The universal 115-250 volt power requirement and small size, just 410 x 282 x 150 mm (11 x 6 x 16 in) and only 8.7 kg (19 lb), makes it easy to move and use anywhere in the lab.

The detachable Thermal Head contains internal pneumatics for precise force control from 0-80 kg, perfect for use with high performance, but more force sensitive, elastomer contacts, while the quick disconnect makes it easy to swap heads for different package sizes or transfer between sites. Utilizes a highly flexibly abrasion resistant umbilical for easy workbench management.

Integrates with all high performance test sockets, creating a seal between the test head and socket body for frost free operation. Optional shrouds are available to extend the frost free zone outside the socket area.

Excellent Thermal Control

Temperature Control and Accuracy is within $\pm 0.2^{\circ}\text{C}$.



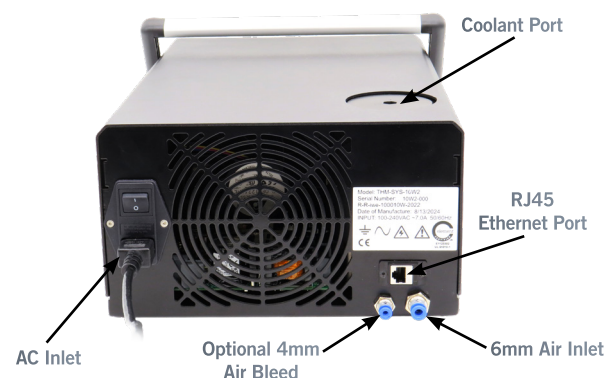
Dry Air Flow Control

Touch Display

Umbilical - Leak
proof disconnect

Remote
Interface

Software Update



Coolant Port

RJ45
Ethernet Port

AC Inlet

Optional 4mm
Air Bleed

6mm Air Inlet

SPECIFICATIONS

| | |
|------------------------------------|--|
| Temperature Range | -55°C to 155°C |
| Cooling Power | 10 W @ -40°C |
| Temperature Stability | 0.2°C |
| Temperature Accuracy | 0.2°C |
| Temperature Sensor | NTC Thermistor |
| Transition Rates | Up to 80°C/min |
| Remote Interface | Serial -232 over USB-B |
| Fully Automated DUT Pressure Force | System controlled up to 80 kgf |
| DUT Dimensions | 1.5 x 1.5 mm to 35 x 35 mm (standard head) |

System Requirements

| | |
|---------------------|---|
| Electrical | 115 - 250 Vac, 6 A max, Single Phase |
| Ambient Temperature | 0°C to 30°C |
| Ambient Humidity | <90% |
| Air Compressor | 0.5 CFM Min @ 90 PSI Min - 130 PSI Max -55°C dew point (Dry air to avoid condensation) |
| Dry Air Input | 6 mm OD Standard Tube |

Mechanical Dimensions

| | |
|------------------------------------|---|
| Chiller/Controller Dimensions | 410(D) x 282(W) x 150(H) mm 16.2 x 11.1 x 5.9 in |
| Weight (System) (Head) | (8.7 kg) (1.4 kg) |
| Thermal Head (mm) (Current Design) | 70 x 70 x 60 mm |
| Thermal Head Hose Length | 1 - 2.5 m, Some thermal loss at lengths > 1.5m |
| Sound Level | 45-55 dBA avg (64dBA max) |

CE/CB Certified

