



# 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

Thermal Head

Digitally Controlled Pressure  
to DUT

Seal Ring and Dry Air to  
prevent frost

Ideal for use with Ironwood  
test sockets

Frost-Free Operation

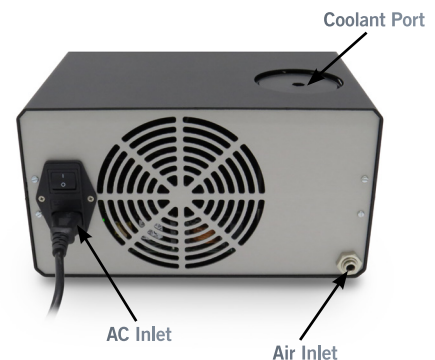
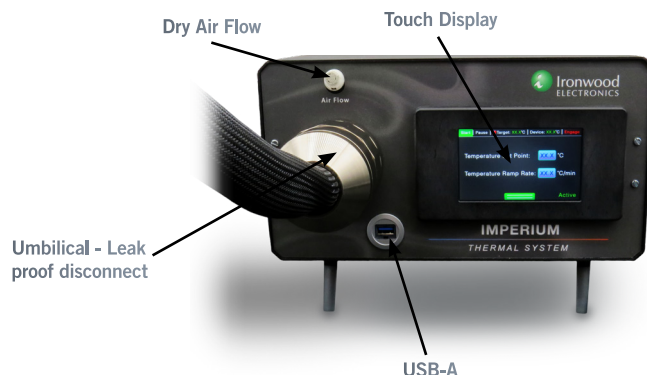
Excellent Thermal Control

Imperium is intended for low power (<10 W) temperature control from -55°C to +150°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.

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.

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



## SPECIFICATIONS

Temperature Range	-55°C to 150°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 60°C/min
Remote Interface	Serial over USB-A
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
Ambient Temperature	0°C to 30°C
Ambient Humidity	<90%
Dry Air (to avoid condensation)	<0.5 CFM @ 90 PSI -55°C dew point
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

