

# CWT-100™

## CONTROLLED OPEN LOOP WIND TUNNEL

The **CWT-100™** is a research quality wind tunnel designed for PCB and component level testing. It is used in air flow characterization and flow visualization, thermal resistance measurements and generation of P-Q curves.

The wind tunnel can be used to characterize different heat sink sizes for natural and forced convection cooling. Two heat sinks can be tested side by side to determine their thermal performance in the same environment. Actual or simulated PCBs can be tested for air flow distribution and pressure drop characterization.

**CWT-100™** fans are tray-mounted and easily replaced with another tray to accommodate larger or smaller fans. If other flow ranges are required, the air velocity in the test section can be varied from 0.5 m/s (100 ft/min) to 10 m/s (2000 ft/min) with the fan tray that is provided.

The **CWT-100™** has 18 sensor ports on the front and sides of the test section, which allows for the insertion of a variety of probes, such as thermocouples, Pitot tubes, velocity measuring sensors, etc. It can be operated both vertically and horizontally. The test section is made of Plexiglas™ for ease of flow visualization.

PCBs are mounted on a flexible railing in the test section. The flexibility of the movable mounting plate allows users to design and build their own modifications to suit specific needs. The mounting plate can be adjusted in two directions using appropriate length standoffs.

The wind tunnel has honeycombs and screens to suppress turbulence and provide uniform and near homogeneous flow at the test section. A mounted diffuser at the exit and before the fans helps with pressure recovery to provide a smooth flow.

An optional heat slug (HP-97) will provide the thermal performance for devices or heat sinks under test for thermal analysis. The heat slug is mounted flush with the surface, so there is no dimensional change to the objects under test.

\* Power supply not included.

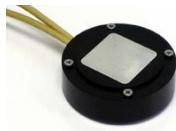
### RECOMMENDED ACCESSORIES:



**CLWTC-1000**  
Wind Tunnel  
Controller



**WTC-100™**  
Wind Tunnel  
Controller



**HP-97™**  
High Power  
Component  
Simulator



**ATVS-NxT™**  
Hot Wire  
Anemometer

**OVERALL DIMENSIONS (L X W X H)**  
197.6 x 81.3 x 68.6 cm  
(77.8 x 32 x 27")

**TEST SECTION**  
61 x 40.6 x 8.3 cm  
(24 x 16 x 3.3")

**NUMBER OF SENSOR PORTS**  
18

**FLOW RANGE**  
0 to 10 m/s (0 to 2000 ft/min)

**WEIGHT**  
51.7 kg (114 lbs.)

**POWER SUPPLY REQUIREMENTS**  
24VDC at 4.3 Amps



### FEATURES:

#### » **Component Temperature Testing**

Evaluate the effects of airflow on components, temperature and PCB response and reliability

#### » **Heat Sink Characterization**

Characterize a variety of heat sink sizes for natural and forced convection cooling

#### » **Sensor Calibration**

Uniform velocity profile at the test section allows accurate calibration of sensors

#### » **Heat Sink Comparison**

Test two heat sinks side by side and compare their thermal performance in the same environment

#### » **Pressure Drop Testing**

Measure pressure drop across components or PCB for a given flow

#### » **Multiple PCB Testing**

Test actual or simulated PCBs for thermal and flow distribution

#### » **Flow Visualization**

Observe air flow distribution in the tunnel by smoke or buoyant bubbles through the all Plexiglas™ test section

#### » **Variable Speed**

Change flow rates by controlling the fan RPM

#### » **Quick Access**

Quickly change the test specimen through the front access test section

#### » **Sensor Ports**

Measure pressure, velocity and temperature through the sensor ports

#### » **Orientation**

Wind tunnel can be operated horizontally or vertically

For further technical information, please contact Advanced Thermal Solutions, Inc. at **1-781-769-2800** or [www.qats.com](http://www.qats.com)