

# OPEN LOOP WIND TUNNEL



## WT-3100



- ✓ Quick Access Panel
- ✓ Sensor Ports (18)
- ✓ Change Flow Rates by Controlling the (4) Fan On/Off
- ✓ Operate Vertically or Horizontally
- ✓ Observe Flow Distribution Through the All Plexiglas® Test Section

### Applications

- ✓ **Component Temperature Testing:** Evaluate the Effects of Air Flow on an Individual or Multiple Component's Temperature and PCB Response and Reliability
- ✓ **Heat Sink Characterization: Natural or Forced Convection**
- ✓ **Sensor Calibration with Calibrated Flow Sensors (Sold Separately)**
- ✓ **Aerodynamic and Pressure Drop Measurement: Measure the Effect of Air Flow on Drag and Pressure Drop for Components and Boards**
- ✓ **Multiple PCB Testing: Test Actual or Simulated PCBs for Thermal and Flow Distribution\***

\*Visit [omega.com](http://omega.com) for the TVS-1000 series temperature/velocity profile packages.

The WT-3100 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 thermal flow distribution and pressure drop characterization.

Fans are tray-mounted and easily replaced with another tray to accommodate larger or smaller fans. 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).

The WT-3100 has 18 sensor ports on the front and sides of the test section, which allows inserting 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.



WT-3100 shown smaller than actual size.

The mounting plate can be adjusted in 2 directions using appropriate length standoffs. The flexibility of the movable mounting plate allows users to design and build their own modifications to suit specific needs.

The WT-3100 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. Rail guides are provided so the unit position can be adjusted.

A switch box is provided with the unit so some fans can be turned off for lowest possible air flow. An optional heat slug will provide the heat 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. Sensors to measure the flow parameters are also available by OMEGA as optional accessories.

### SPECIFICATIONS

**Wind Tunnel:** 197.6 L x 81.3 W x 68.6 cm D (77.8 x 32 x 27")

**Test Section:** 60.9 L x 40.6 W x 8.2 cm D (24 x 16 x 3.2")

**Number of Sensor Ports:** 18

**Flow Range:** 0 to 10 m/s (0 to 2000 ft/min)

**Flow Uniformity:** ±1%

**Weight:** 51.7 kg (114 lb)

**Power Supply Requirements:** 24 Vdc at 4.3 Amps (Power supply provided by customer)

### To Order

Model No.	Description
WT-3100	Open loop wind tunnel

Comes complete with (18) sensor ports, fan control box and operator's manual.

**Ordering Example:** WT-3100, open loop wind tunnel