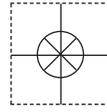


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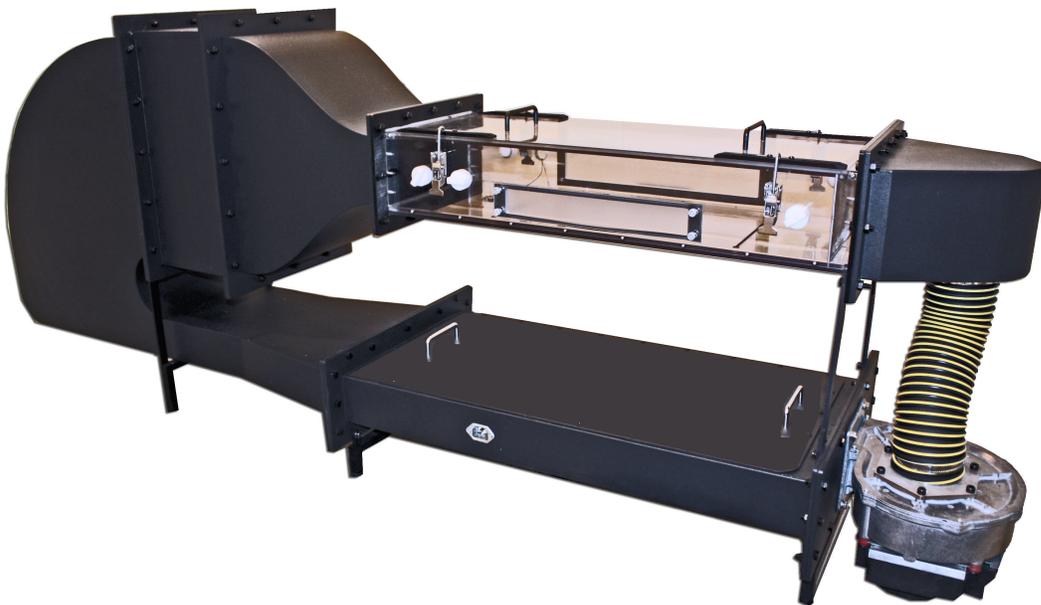
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WT-3115

Benchtop Closed Loop Wind Tunnel with Controller



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WARNING: These products are not designed for use in, and should not be used for, human applications.

SYSTEM CHARACTERISTICS

The WT-3115 is a unique closed loop wind tunnel for thermal characterization of components, boards and heat sinks. The unit is made of Aluminum, sheetmetal and LEXAN™ and produces flows up to 1000 ft/min (5 m/s) and temperature up to 80 °C. The general characteristics of the WT-3115 are shown in the table below.

ITEM	SPECIFICATION	EXPLANATION
Overall length	86.9" (220.8 cm)	
Overall width	19.4" (49.3 cm)	
Overall height	34" (86.5 cm)	
Test section length	30.5" (77.6 cm)	
Test section width	10.2" (26.0 cm)	
Test section height	4.55" (11.6 cm)	
Flow range	Up to 1000 ft/min (5.0 m/s)	
Temperature range	Up to 80 °C	
Fuse		Main AC fuse = 30 Amp Blower fuse = 3 Amp Electronic fuse = 1 Amp

The WT-3115 test section can be accessed from the top door and sides for mounting of the boards. A unique internal rail guides provide mechanisms for installation of test specimen of different sizes (e.g., PCB, heat sink). Instrument ports are provided throughout the test section (on the front and side-walls) for placement of temperature, velocity and pressure sensors. Sensors to measure the flow parameters are also supplied by Omega as optional accessories. The tunnel is equipped with an Ebm Papst EC gas blower model # G1G170AB0520 (115 VAC). The blower is also equipped with a PWM card that can be controlled with a 0-10 VDC input signal. Models with 220 VAC are available upon request.

A wind tunnel controller can also be supplied by Omega for controlling the flow and temperature automatically.

The WT-3115 can be used for the following applications:

- **Heat Sink Testing-** Characterize a variety of heat sink sizes for natural and forced convection cooling.
- **Heat Sink Comparison-** Test two heat sinks side by side and compare their thermal performance in the same environment.
- **Component Testing-** Test vehicle for component characterization.
- **PCB Testing-** Test actual or simulated PCBs for thermal and flow distribution.
- **Flow Visualization-** Observe flow distribution when a PCB or test object is placed in the tunnel by smoke or buoyant bubbles through the all Lexan™ test section.
- **Variable Speed-** Change the flow rate by controlling the fan RPM.
- **Quick Access-** Quickly change the test specimen through the top panel.
- **Sensor Port-** Measure pressure, velocity and temperature through the ports at the entrance and exhaust of the test section.

SYSTEM COMPONENTS

The numbers identified in Figure 1 show the system components of the WT-3115 system. These numbers are described below:

1. Test Section
2. Instrument ports
3. Blower
4. Diffuser section
5. Nozzle section
6. Settling Chamber
7. Controller and software (optional)
8. Test section top cover panel
9. Stands
10. Heater section
11. Heater Power Plug

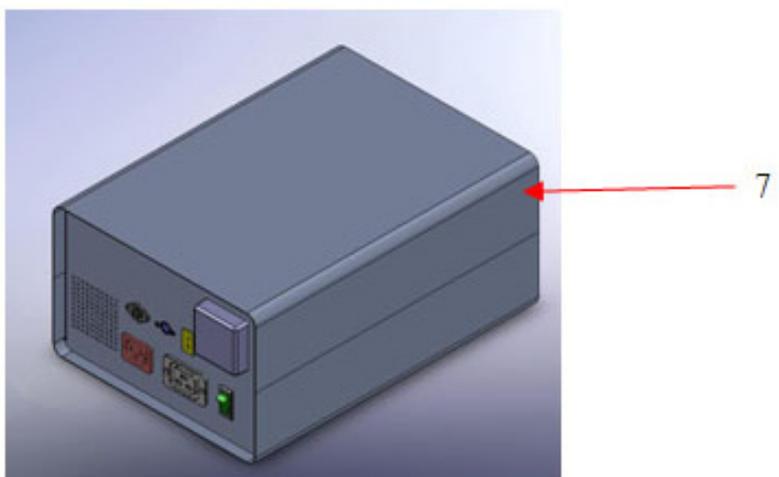
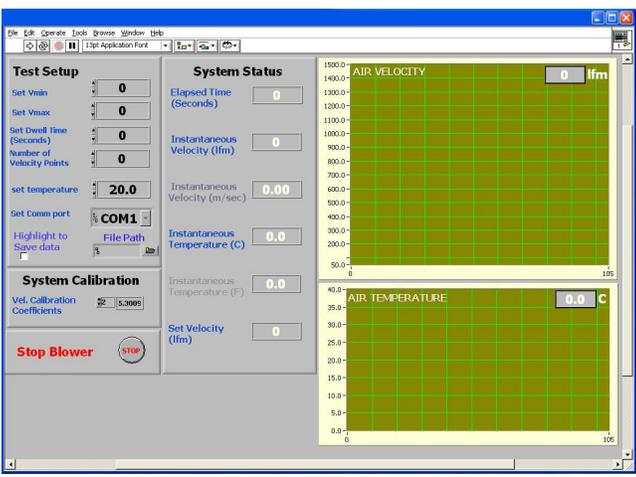
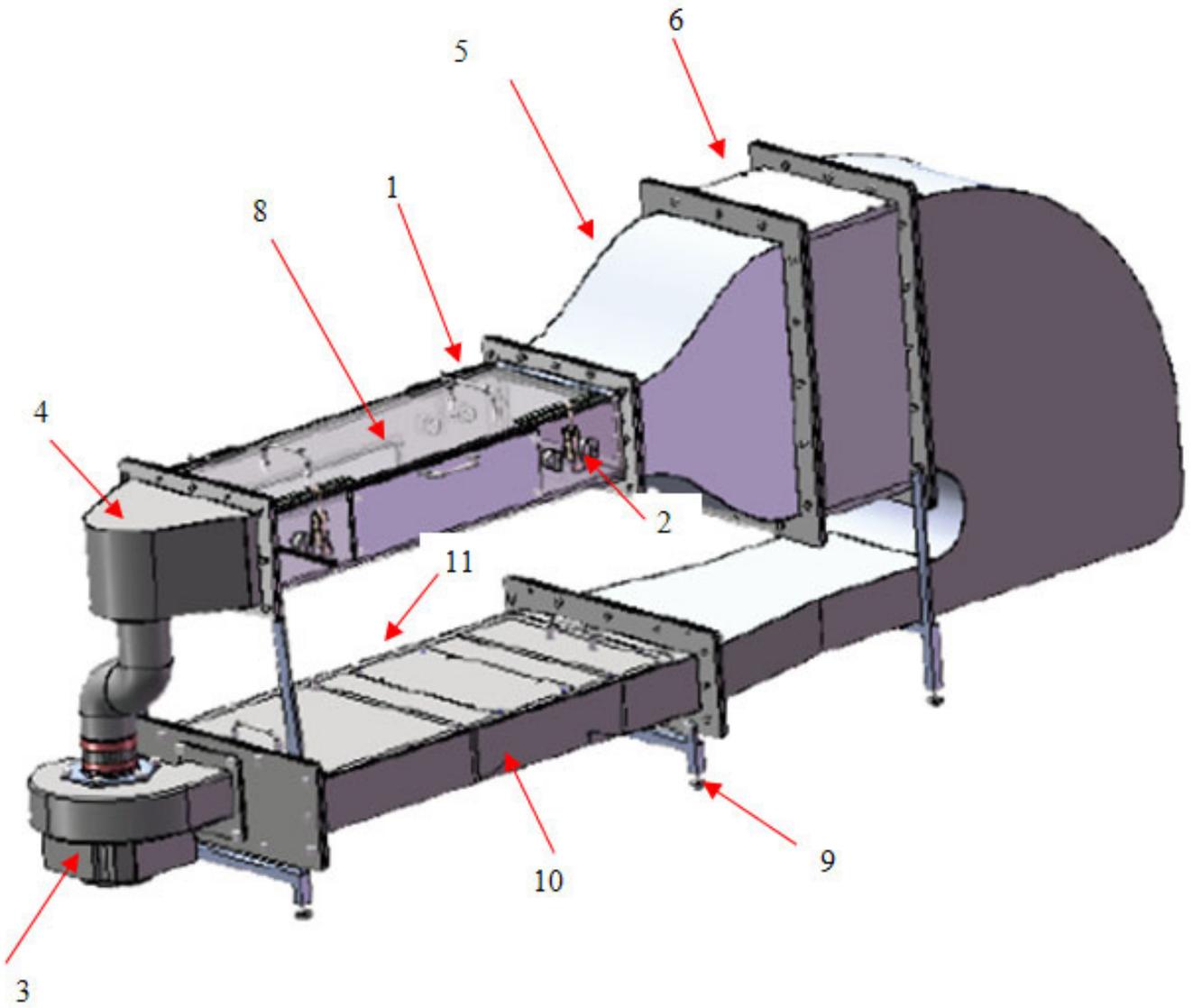


Figure 1: The WT-3115 and the Controller System Components

SYSTEM OPERATION

1. Release the clamps on top panel to have access to the test section.
2. Mount your specimen (e.g., component, PCB or heat sink) in the test section.
3. Clamp the door back on the WT-3115.
4. Place flow measurement instrument in the instrument port. Place the velocity sensor and the thermocouple in the test section. Place the sensor and the thermocouple very close to each other, since the velocity sensor needs the temperature values to calculate the velocity. Wind tunnel will be controlled based on the local temperature and velocity values at the sensor locations.
5. Connect the blower cables (power cable and control cable) to the controller box.
6. Connect the heater wires to the control box.
7. Turn on the controller.
8. Set the velocity range and temperature on the controller and run the software. The controller will automatically measure and control the air velocity and temperature. It can also save the temperature and velocity data on the PC.



WARRANTY/DISCLAIMER

OMEGA ENGINEERING, INC. warrants this unit to be free of defects in materials and workmanship for a period of **13 months** from date of purchase. OMEGA's WARRANTY adds an additional one (1) month grace period to the normal **one (1) year product warranty** to cover handling and shipping time. This ensures that OMEGA's customers receive maximum coverage on each product.

If the unit malfunctions, it must be returned to the factory for evaluation. OMEGA's Customer Service Department will issue an Authorized Return (AR) number immediately upon phone or written request. Upon examination by OMEGA, if the unit is found to be defective, it will be repaired or replaced at no charge. OMEGA's WARRANTY does not apply to defects resulting from any action of the purchaser, including but not limited to mishandling, improper interfacing, operation outside of design limits, improper repair, or unauthorized modification. This WARRANTY is VOID if the unit shows evidence of having been tampered with or shows evidence of having been damaged as a result of excessive corrosion; or current, heat, moisture or vibration; improper specification; misapplication; misuse or other operating conditions outside of OMEGA's control. Components in which wear is not warranted, include but are not limited to contact points, fuses, and triacs.

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RETURN REQUESTS/INQUIRIES

Direct all warranty and repair requests/inquiries to the OMEGA Customer Service Department. BEFORE RETURNING ANY PRODUCT(S) TO OMEGA, PURCHASER MUST OBTAIN AN AUTHORIZED RETURN (AR) NUMBER FROM OMEGA'S CUSTOMER SERVICE DEPARTMENT (IN ORDER TO AVOID PROCESSING DELAYS). The assigned AR number should then be marked on the outside of the return package and on any correspondence.

The purchaser is responsible for shipping charges, freight, insurance and proper packaging to prevent breakage in transit.

FOR **WARRANTY** RETURNS, please have the following information available BEFORE contacting OMEGA:

1. Purchase Order number under which the product was PURCHASED,
2. Model and serial number of the product under warranty, and
3. Repair instructions and/or specific problems relative to the product.

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1. Purchase Order number to cover the COST of the repair,
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OMEGA's policy is to make running changes, not model changes, whenever an improvement is possible. This affords our customers the latest in technology and engineering.

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