



Leading the Industry Since 1975

## S H E D

### SEALED HOUSING FOR EVAPORATIVE DETERMINATIONS



*Webber EMI manufactures a wide range of SHEDs in a variety of sizes, ranging from 10 cu-ft Micro SHEDs to full sized Vehicle SHEDs capable of testing HD construction vehicles. Starting with one of our standard configurations, a SHED can be custom-built to our customer specifications with specific regard to size, window placement, access door type, and other performance or testing needs.*

*All Webber EMI SHEDs incorporate a modular-systems design that allows the basic Fixed Volume / Fixed Temperature (FV/FT) enclosure to be upgraded to full Variable Volume / Variable Temperature (VV/VT) enclosure – even years later – on-site, and after installation.*



Leading the Industry Since 1975

### **FV/FT Vehicle SHED**

*The Webber EMI Model 101 Vehicle SHED has been an industry standard for decades. It incorporates an entry-level Fixed Volume / Fixed Temperature (FV/FT) test system design that, even years later, can be upgraded into a full Variable Volume / Variable Temperature (VV/VT) SHED evaporative emissions testing system.*

*It is available in several standard sizes suitable for testing complete vehicles, motorcycles, small tractors, off-road vehicles, lawn mowers, small machines & hand-held equipment.*



### **VV/VT Vehicle SHED**

*The Webber EMI Model 101 Vehicle Variable Volume / Variable Temperature (VV/VT) SHED system is designed as a 'turn key' evaporative test system that has the capability to automatically perform all EPA and California ARB evaporative test procedures and most other internationally-recognized evaporative tests. In addition to standardized testing, this complete test system offers the user full 'second-by-second' R&D capability.*

*This system's proven capabilities, rugged durable and verifiable accuracy have made it an international standard for both government agencies and leading OEM's around the world.*





Leading the Industry Since 1975

### **Mini SHED**

The Webber EMI Model 102 Mini-SHED is designed to facilitate testing applications which require a medium sized enclosure with the ability to resolve a very low emission concentration.

This test system incorporates all of the features associated with our 'full vehicle' SHED systems but, the enclosure has been re-sized to a smaller foot print. This helps to improve emission detections and is suitable for testing small equipment such as ATV's, lawn mowers, and other objects equivalent in size.



(Photo courtesy of the California Air Resources Board)

### **Micro SHED**

The Webber EMI Model 103 Micro-SHED test system is designed specifically for Ultra-low (ULEV) and Zero Emission (ZEV) level evaporative testing.

While incorporating most of the features associated with our 'full vehicle' SHED systems, the Micro-SHED test system has been re-sized to facilitate automated evaporative testing of smaller complete utility products, sub-systems and discrete components such as fuel tanks, valves, hoses, and canisters. With the ability to detect HC emission changes as low as 0.1 ppm/ mass emissions as low as 0.10mg.





Leading the Industry Since 1975

### ***Running Loss SHED***

*The Webber EMI Running Loss SHED is a modified version of our full-sized Vehicle SHED. This extra long SHED, equipped with special air handling equipment, a proportional speed fan, vehicle combustion makeup air, and an auxiliary personnel door, is combined with a centrally located dynamometer to accept both front and rear wheel drive vehicles.*

*In addition to full exhaust emissions testing capability, this SHED supports all applicable diurnal evaporative emissions testing protocols.*



*(Photo courtesy of the California Air Resources Board)*

### ***On-Board Refueling & Vapor Recovery***

*Webber EMI can provide On-Board Refueling / Vapor Recovery (OR/VR) capability to any of our SHEDs either new or existing with on-site installation. Locations, height and amount of ports can be placed in a variety of places to best suite the customer.*

*Using several different methods, vehicles or other fuel-dependent machines can be re-fueled from outside while the SHED is sealed.*



*(Photo courtesy of International Center for Automotive Technology)*

***If you need additional equipment not shown here, contact us with your requirements.***



Leading the Industry Since 1975

## Why choose a Webber EMI SHED?

*Each Webber EMI SHED uses our exclusive ‘Ure-lok’ interlocking panel design, which serves to double the sealing surface between each panel. Panels are held together by a patented mechanical interlocking system to further increase sidewall rigidity and live load ratings. Each panel employs a chemically bonded cross-section with an exterior surface of aluminum, an interior surface of type-304 stainless steel, and a 4” thick fire retardant urethane foam core. The panels contain no organic materials (i.e., wood or other cellulose-based materials), which can warp or naturally deform. All panel-mounted windows use triple-pane safety glass and are fully sealed and trimmed inside and out. This ensures that all Webber EMI SHEDs have a durable and attractive exterior and an easy to clean interior surface that is impermeable and non-reactive to both hydrocarbons and test fuels.*

*Webber EMI SHEDs can be fitted with either a top-hinged, tilt-up or vertical-sliding, ‘guillotine’ style vehicle door. Vehicle SHEDs can also include a separate, side-opening personnel door. All door styles feature pneumatic seals and triple-pane safety glass windows.*

*Every Webber EMI SHED structure fully complies with the leakage limits and HC retention requirements stated in CFR 40 86.117-96. Additionally, the SHED structure is designed to safely withstand an internal-to-external pressure differential of +/- 2 “H2O (+/- 0.5 kPa) without deformation or other negative effect.*

*In addition to our exclusive Moveable-Roof volume compensation system, Webber EMI is the only manufacturer to offer a Mass-Flow Balance (MFB) orifice system. Additionally, Webber has experience with and can convert, conventional ‘bag-based’ volume compensation system to our user friendly and reliable SHED Operating System. These systems are designed to maintain a zero pressure differential relative to outside ambient conditions across the SHED’s entire temperature range. While all three systems provide excellent accuracy and repeatability, the Webber EMI Moveable-Roof system has been designed to eliminate the need for Tedlar bags or other artificial devices to facilitate SHED expansion. By eliminating the ‘dead space’ typically required in a ‘bag-based’ SHED, the working volume of a Moveable-Roof SHED is reduced, thereby resulting in improved testing accuracy – an absolute must for the new ‘zero evap’ regulations. Additionally, the Moveable-Roof system provides precise feedback of SHED volume at ALL times during the test procedure, thus allowing for real-time reporting of HC mass values.*

*Webber EMI SHEDs use dedicated, self-contained HVAC systems as standard equipment. Each system is sized according to the SHED enclosure and the customer’s temperature requirements. In the case of VV/VT SHEDs, the HVAC systems are capable of moving the SHED air temperature between 65 and 105 °F in approximately 1 hour. Custom systems are available to produce and maintain SHED air temperatures below 40 and above 140 °F. In all cases, Webber EMI SHEDs are capable of maintaining temperatures required for diurnal emission and hot soak testing as described in CFR 40-86.117.96 and CFR 40 part 86 subpart B, respectively.*

*All Webber EMI SHED systems utilize a Windows-based, proprietary SHED data acquisition and control system. This system is versatile, powerful and very user-friendly. It contains a menu of all pertinent U.S. EPA and California ARB SHED test procedures, ready for immediate use. It also provides the ability to easily develop and save custom test procedures for internal product development. This control system is capable of being used with a variety of HC analyzers. In addition to the PC-based controller, Webber EMI SHED systems include a local control panel, which allows for full manual operation of the SHED and various sub-systems.*

*All Webber EMI SHED systems are supplied with a number of safety systems such as a Low Explosion Limit (LEL) detection system and pressure / temperature limiting switches. Optional safety equipment includes fire suppression systems, retractable vehicle grounding straps, rotating light beacons, and audible alarms. All safety systems are interlocked with both the manual and computer control systems to ensure safe operation.*

**Webber EMI SHEDs... recognized for their accuracy, durability, and quality... since 1975**