

# Benchmarking Black Soldier Fly Smart Shed

	Environmental Chamber	Dog Trailer	Portable Mini Storage	Smart Shed
<b>Origin</b>	ThermoFisher	Diamond Deluxe	American Portable	RIT MSD Project
<b>Metrics Collected</b>	Temperature	Temperature	Temperature, Humidity	Temperature, Humidity, Energy Consumption
<b>Technology</b>	Cooling and Heating Unit, 0-60 degrees Celsius - SENSOR UNIT: Watlow Microprocessor - PID, with RTD sensor	Temperature Monitor, Alert and Pager system -13,500 BTU Roof Mount refrigerated air conditioner with 5600 BTU heater, minimum 4800 watt Generator with electric start, low oil shutdown, starting battery and 12 gallon fuel tank.	Thermostat control head is located on the outside of the storage box -RH (Relative Humidity Sensor)	TBD
<b>Size/Capacity</b>	29 cubic feet	24"x 64" x 30" (26.67 cubic ft.) Storage + 10 x 24"W x 30"T x 32"L (13.33 cubic ft)	8 foot x 12 foot unit can hold up to 1200 sq ft of contents	TBD
<b>Cost</b>	~\$16,000	Cheapest option: \$9725+\$7315 (Climate Control)	No Information	TBD
<b>Source</b>	<a href="https://www.thermofisher.com/us/en/home/life-science/lab-equipment/microbiological-incubators-environmental-chambers/environmental-chambers/temperature-controlled-chambers.html">https://www.thermofisher.com/us/en/home/life-science/lab-equipment/microbiological-incubators-environmental-chambers/environmental-chambers/temperature-controlled-chambers.html</a>	<a href="https://www.diamonddeluxe.com/stainless-steel-dog-trailers.php">https://www.diamonddeluxe.com/stainless-steel-dog-trailers.php</a>	<a href="https://www.americanportable.com/climate-controlled.htm">https://www.americanportable.com/climate-controlled.htm</a>	<a href="https://edge.rit.edu/edge/P18422/public/Home">https://edge.rit.edu/edge/P18422/public/Home</a>
<b>Notes</b>	Stainless Steel Body, Temperature LED display attached to unit	Fully insulated, double wall construction -Air vents for cross circulation in hot weather	-The unit will hold humidity levels to less than 70 percent in the cooling mode when the outside humidity is 90 percent. -The portable mini storage unit is wood framed and wood sided then steel panels are installed on the outside of that (Reduce Sweating) -The portable mini storage container has an easy to operate insulated steel door -will hold temperatures to greater than 65 degrees when the outside temperature is 35 degrees.	-Current designs require constant power to maintain the temperature and humidity inside of shed - Need for solar power