

Custom Engine Test Cell

Approved for
Export



CETC: PROFESSIONAL UAV PROPULSION VALIDATION

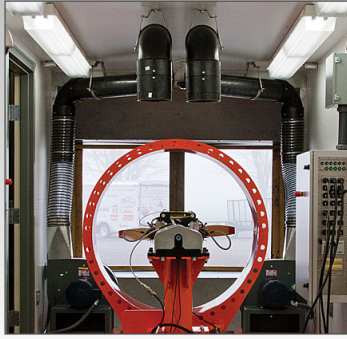
A TURNKEY, EXPORT-READY SOLUTION FOR RIGOROUS ENGINE ENDURANCE

Stop guessing about engine reliability. The CETC is a self-contained, USA-made testing environment designed for 20 or 40-foot deployments. It integrates high-density acoustic insulation with precision data acquisition to measure torque, fuel flow, and thermal performance. Whether testing individual components or a full airframe via integrated hatches, this system provides the repeatable, accurate data required for FAR 33 certification and mission success.

01. Fully Self-Contained Units for Indoor or Outdoor Use
02. Integrated Daq Measures Torque and Fuel Flow Accurately
03. USA-Made, Export-Ready, and Supports Full Airframe Testing

MILITARY PROVEN PROPULSION SOLUTIONS!





CETC: STANDARDIZED UAV PROPULSION VALIDATION

Engine reliability is verified through repeatable, controlled testing. The Custom Engine Test Cell (CETC) is a self-contained laboratory built into 20- or 40-foot containers. USA-manufactured and export-approved, these acoustic-insulated units provide a consistent environment for indoor or outdoor operations, ensuring your hardware is mission-ready anywhere in the world.



01. ENGINEERED FOR EXTREME ENDURANCE

Use the CETC to push systems to failure before flight. Perform durability cycles or FAR 33 certifications on components or full systems. We offer turnkey solutions with expert operators to manage hardware if your internal team is currently at capacity.

02. INTEGRATED HARDWARE AND SAFETY

Cells feature low-pressure gravity fuel systems for gasoline and heavy fuels. Dual blowers manage thermal loads while dedicated fans extract exhaust. Safety is primary, utilizing emergency stops and a 4-camera PTZ system with DVR for secure, remote operation.

03. ELECTRONICS & SOFTWARE

MEASUREMENT CAPABILITIES

Torque	Cylinder Head Temperature
Fuel Flow	Engine Speed (RPM)
Ambient Pressure	Brake Specific Fuel Consumption (BSFC)
Ambient Temperature	Horsepower
Relative Humidity	
Exhaust Gas Temperature	

OPTIONAL MEASUREMENT CAPABILITIES

Thrust
In-Cylinder Pressure Mapping
Exhaust Gas Carbon Monoxide

OTHER CAPABILITIES

Generator Electronic Loading

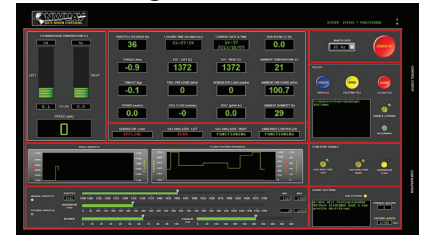
OPTIONAL BUILD

Side Hatches*

*Hatches in the side of the CETC allow the customer to place their entire airframe into the CETC for testing.

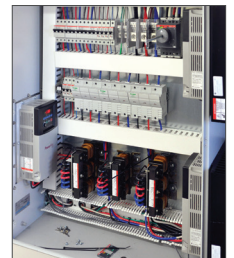
04. DATA-DRIVEN AIRFRAME VALIDATION

Precision DAQ tracks torque, fuel flow, and RPM, correcting for ambient pressure. Beyond engines, optional side hatches allow full airframe integration. Validate how propulsion interacts with aircraft structures. We handle global setup and training to ensure your technology works for you.



05. HARDWARE

- Fuel System:** The fuel system is low pressure gravity feed system compatible for use with gasoline and heavy-fuels.
- Cooling System:** The engine cooling system consists of two heavy duty blowers.
- Exhaust:** The purpose of the fan is to remove the exhaust from the CETC.
- Exhaust Gas Analyzer System (optional):** The gas analyzer system is capable of measuring four gases; carbon monoxide (CO), carbon dioxide (CO₂), hydrocarbons (HC), and oxygen (O₂), and allows accurate tuning.
- Camera System:** The camera system consists of four pan tilt zoom (PTZ) cameras and a DVR.
- Safety System:** The CETC is equipped with emergency stops that disable fuel and ignition to the engine.
- Remote Operation:** Allows control of the CETC from virtually any location.



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