



Engine Endurance & Performance Testing



Propulsion Systems Laboratories (PSL) provides extensive engine testing capabilities focused on comprehensive performance characterization and durability assessment. We specialize in endurance testing, subjecting engines to prolonged operation under varied load conditions to evaluate long-term reliability. Beyond endurance, PSL conducts detailed performance mapping to optimize engine output, alongside precise measurements of fuel efficiency across the operating envelope. Our facilities are equipped to thoroughly analyze heat rejection characteristics, utilizing advanced thermal measurement techniques to identify potential hotspots and cooling system limitations. Critically, PSL supports durability assessments by integrating targeted instrumentation and post-test engine inspections to validate predicted failure modes and refine engine designs for enhanced robustness. This holistic approach delivers actionable data for improving engine performance, extending service life, and mitigating potential risks.

Competence

- NATO 400-hour Endurance Test, RAM TOP 01-01-030
- NATO 100-hour Endurance Test, RAM TOP 01-01-030
- 2400-hour Yuma Duty-cycle Test, Abrams Turbine Engine
- SAE J1995
- MIL-STD-810F
- Performance Testing
- Fuel Map Testing
- Heat Rejection Testing
- Mechanical Friction Runs
- Engine Controls, Calibration and Development



Engine Test

Capabilities

Dynamometer Specifications

- Power Absorption 175-3000 HP
- AC, Eddy Current, & Water Brake Dynamometers

Environmental Control

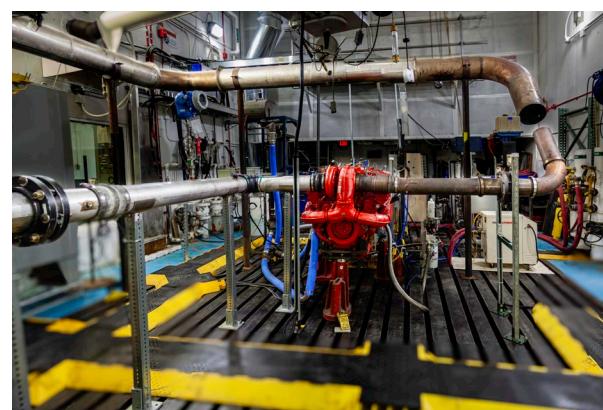
- Temperature: Ambient to 160°F
- Airflow Velocity: 0 - 5 mph
- Solar: 0 - 1,200 w/m²



Engine Test Setup

General Information

- Water Flow: 900 GPM @ Pressure 50 Psig
- Electrical Service: 440VAC @ 60/100 amps, 100 @ 20 amps, 24VDC @ 200 amps
- Room Size: Width 25ft X Length 40ft X Height 20ft
- Door Size: Width 12ft X Height 12ft
- Crane: 5 Ton



Engine Test Setup



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