



Single Cylinder Engine Research



Test Cell 7 is a dedicated single-cylinder engine research facility equipped for detailed performance analysis under precisely controlled conditions. A Schneider dynamometer, coupled with a high-resolution crank angle encoder, enables accurate torque/speed measurement and timing of combustion events. Comprehensive instrumentation includes in-cylinder pressure transducers, an assortment of thermocouples for temperature mapping, and a Horiba exhaust gas analyzer for emissions quantification, all integrated with an AVL data acquisition system. Crucially, the facility features a temperature-controlled environmental chamber up to 160°F, alongside dedicated fuel and induction air conditioning systems capable of independent temperature control of both fuel and intake air, allowing for rigorous investigation of engine performance across a broad range of operating and environmental parameters.

Testing Capabilities

- Combustion research (exhaust emissions and heat release rate)
- In-cylinder pressure research and analysis
- Piston temperature research and analysis
- Fuel effects on combustion research and analysis
- Induction air effects on combustion research and analysis
- Fuel consumption measurement



Test Cell Interior

Test Chamber Overview

Dynamometer Specifications

- Power Absorption 120 kW
- Speed 0-8000 RPM

Environmental Control

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

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

