

FIRED ENGINE TESTING

Intertek Transportation Technologies

Intertek Transportation Technologies possesses extensive global accreditations, recognitions, and agreements. Our knowledge of and expertise in overcoming regulatory, market, and supply chain hurdles is unrivalled.



Award-winning capabilities

Intertek is an industry leader with more than 43,000 employees in 1,000 locations in over 100 countries. We deliver Total Quality Assurance expertise 24 hours a day, 7 days a week with our industry-winning processes and customer-centric culture. Whether your business is local or global, we can help to ensure that your products meet quality, health, environmental, safety, and social accountability standards for virtually any market around the world. We hold extensive global accreditations, recognitions, and agreements, and our knowledge of and expertise in overcoming regulatory, market, and supply chain hurdles is unrivalled.

Intertek Transportation Technologies based in Milton Keynes UK, has over 30 years' experience in dynamometer-based performance, emissions and EMS mapping. This covers both diesel & gasoline engines and using industry standard instrumentation, analysis, data acquisition and post processing tools and our laboratory is trusted by many of the world's leading vehicle OEMs to deliver quality data and test hours with minimum facility down-time. Recent major investments mean our laboratory facility now offers some of the best commercially available development test cells in the world.

Intertek's VCA-recognised, award-winning 30 cell laboratory features many newly commissioned state-of-the-art test cells that

OUR KEY FEATURES

- 27 Fired Engine Test Cells
- 24/7 Operation
- E/C Dynos to 900 kW
- A/C Dynos to 600kW
- Thermal Shock
- Extensive Gas and Particulate Emissions Detection
- 6 Hybrid Powertrain Cells

are specified to handle engines of up to 1000 kW whilst providing high precision fuel, air and fluid conditioning systems for unrivalled consistency and highly repeatable testing. Intertek stocks more than 60 dynamometers with capacities from 50 to 900 kW including transient A/C machines to suit specific customer needs. Test efficiency is maximised by provision of 24/7 automated mapping techniques using AVL CAMEO software. All of our test cells can be used for European type approval engine power certification testing (to ECE Regulation 85), so unnecessary engine movements can be avoided.

To accompany this extensive experience of powertrain development our laboratory facilities offer full instrumentation capabilities to support dynamometer based testing here on-site, or for vehicle based testing outside of

our facilities.

Intertek has a proven track record in delivering highest levels of operational efficiency to maximise cycle hours delivered for our customers. This is achieved through 24/7 facility operation, with on-site expertise in test control and data acquisition systems, dynamometer and instrumentation maintenance and calibration.

Our experience of powertrain testing allows us the ability to offer very cost-effective test packages that saves you valuable time and money in your development programmes.

Intertek's lab is a 24/7 operation meaning engine maintenance, hardware changes, instrumentation calibration and servicing can be performed outside of the normal working day, maximising cell availability for customer work.

FOR MORE INFORMATION



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FIRED ENGINE TESTING OVERVIEW

Customer engineers can be accommodated on-site in 4 separate customer offices with capacity for up to 6 people.

All our test facilities are fully accredited to ISO 9001 and recognised by the UK Vehicle Certification Agency for European Engine Power certification.

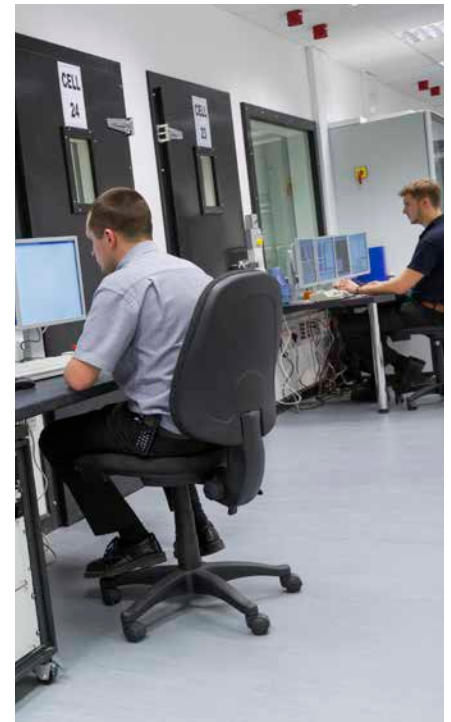
One of our test cells features full multi-axis tilting capability to allow a wide variety of engine and subsystem development tests to be performed including oil sump pan design and scavenge pump specification and efficiency testing. Intertek also has an Air-X real time in-line oil aeration measurement system which can be used on this (or any) test cell.

Intertek is fully licenced at the Milton Keynes test facility for the use and disposal of radioactive material and this is used to perform non-intrusive component wear testing using the Thin Layer Activation (TLA) technique to accurately measure low levels of wear between components in real-time. This unique capability means that Intertek is one of the only commercially available test facilities in the UK to offer this service. Combining this capability with Intertek's other NDT and component failure analysis laboratories means that full forensic investigation of engine robustness can be performed with Intertek.

Our capabilities

- 32 test cells / 65 dynamometers
- Power capacity from 50 to 1 000 kW
- Any size engine from small capacity gasoline to high capacity Diesel
- A/C transient dynos with HBM 2.0kN Torque Flange ($\pm 1.0\text{Nm}$ accuracy)
- Engine, Transmission or Full Powertrain testing capability
- Steady state or full transient test cycles available
- Multiple fuel variants and blends
- Fuel Flow: AVL FuelExact dual range precision fuel mass flow measurement systems on transient P&E cells. SCP TFMS high capacity Coriolis mass flow and fuel conditioning systems on mechanical development cells.
- Sierra CAHU charge air precision temperature & humidity control
- AVL CAMEO test bed automation software
- Horiba exhaust gas analysers with heated lines to all development cells

- AVL CPC particle counter
- Sierra BG3 & Soot Trak transient particle counter
- AVL Indimodul Combustion Indicator and AVL 365 Optical Encoder
- AVL Micro Soot Sensor (MSS)
- AVL 415SE smoke meters
- FTIR gaseous speciation available on all development test cells
- Fast response AFR meter & Wideband Lambda sensors
- Combustion Fast FID analyser
- Micro Epsilon turbo speed measurement
- ETAS / Inca v 7 with ASAP link to CP Cadet 14 system; 1,024 channels
- Coolant temp control: proven to $< \pm 1^\circ\text{C}$ 30°C to 105°C
- Oil temp control: proven to $< \pm 1^\circ\text{C}$ 30°C to 120°C
- Intercooler outlet temp control: 10°C to 90°C with chilled fluid control circuit.
- 25°C, 5°C and -30°C Fluid circuits to all cells
- Fully licenced for Radio Nuclide Testing (RNT) using the Thin Layer Activation (TLA) technique
- Extensive fuel farm with 9 separate fuel lines into each cell
- Oil & Fuel analysis service available from Intertek Laboratory
- Customer drive-cycles or bespoke tests available
- Photographic studio to support post-test analysis
- All tests fully monitored 24hrs a day
- Full instrumentation requirements catered for
- Bespoke manufacture and prototyping
- High capacity fluid cooling circuits to test cells at 25°C, 6°C and -30°C
- Customer drivecycles or bespoke tests available
- Photographic Studio to support Post Test Analysis
- Formal Test Reports and Data Supply
- All tests fully monitored 24hrs a day



To find an office or laboratory in a particular country, please visit [intertek.com/contact](https://www.intertek.com/contact)



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