

## Data sheet

# Environmental Chamber



*The large environmental chamber offers the capacity to test a whole fleet of vehicles together delivering cost savings to customers*

QinetiQ Environmental Testing Services are widely used by a variety of military and commercial organisations to simulate the extreme conditions that equipment must be able to operationally withstand.

Extremes of environmental conditions are simulated in two insulated chambers with the capacity to test systems such as, aircraft, trains, trucks, battle tanks, boats, and helicopters in the large chamber and commercial vehicles, generators, communications equipment and test rigs in a small chamber. The environmental conditions can be controlled between +70°C to -70°C with full humidity control and heating effect of the sun using solar arrays.

Low temperature storage trials can take place at -70°C, with operating equipment trials at -50°C. Personnel working in the chamber must wear arctic weather clothing which is supplied. Electrical and hydraulic systems can be checked using ground test

rigs and cold air can be introduced to run auxiliary power units. There are special provisions for the extraction of exhaust gases from the facility. The test piece engines, APU and propellers can be run continuously whilst maintaining the test environment. Layers of ice can also be applied within the chamber to check equipment operation.

The QinetiQ Environmental test facility large chamber measures 24.5m x 25m x 5.4m high with a 6.75m high recess, making it suitable for aircraft fins and the small chamber measures 7.5m x 4.0m x 5.0m high.

For high temperature and humid environments air is circulated capable of raising the temperature to +70°C. The water content of the air can be increased by injecting steam into the chamber to achieve a 95 ± 5% relative humidity at +40°C.

To reproduce the heating effect of the sun the facilities use an infra red system consisting of three arrays having a controlled intensity of up to 1120W/m<sup>2</sup>, over a simulated combined area of 50m<sup>2</sup>. A second system, which replicates the spectrum of sunlight, is used to expose transparent materials such as aircraft cockpits to solar effects.



*The small chamber offers faster heating/cooling times and a cost effective option for smaller test items*



*A temperature range from +70°C to -70°C, and full humidity control, means the exact customer required scenario can be simulated.*

This facility also has a capability to provide instrumentation services and calibration of equipment in-house, should this be required. The system is capable of handling 500 parameters, with up to 16 pages of real time parameter displays. Permanent records of data can be made on CD or DVD for subsequent analysis.

By using QinetiQ facilities, customers from around the world benefit from the fully controlled conditions, the ability to test large and small systems, monitoring of the crew operating the equipment and the wealth of expertise gained as an official testing centre.

Further information is available upon request and interested parties are welcome to view the facility and discuss their requirements with prior arrangement.

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