



# Altitude Test Chamber Data Sheet

The Altitude Test Chamber is designed to measure the **deflection of a component over a change in altitude**. This is achieved through **controlling the pressure within the test chamber from 1 bar down to near vacuum** (approximately 0.03 bar). As well as controlling the pressure the rate of rise and fall of the pressure can be controlled. This can be used to simulate differing rates of ascent and descent.

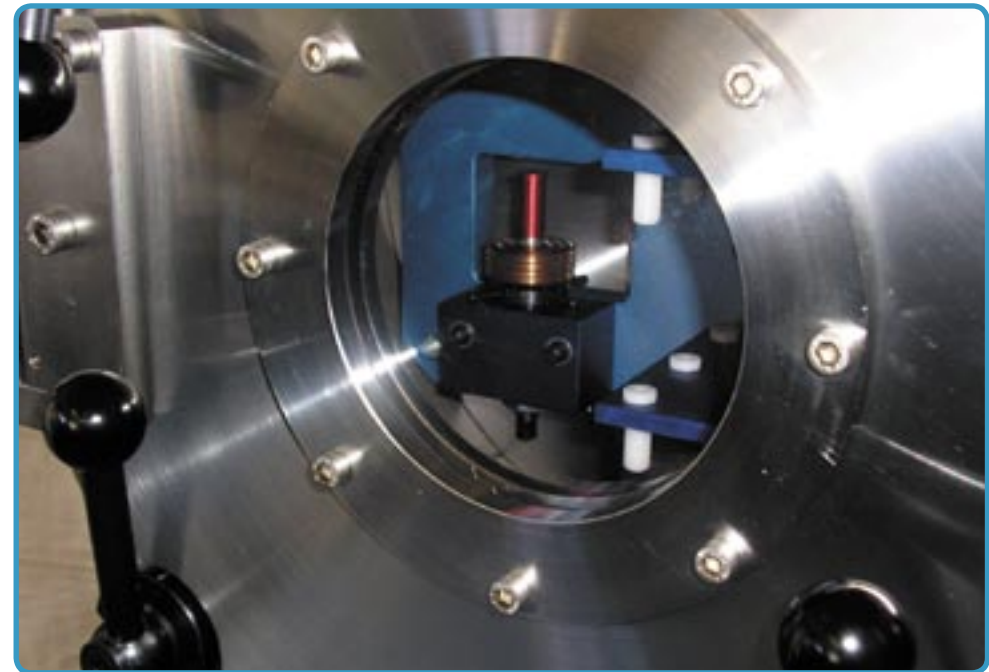
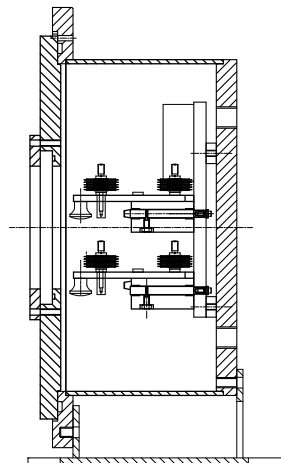
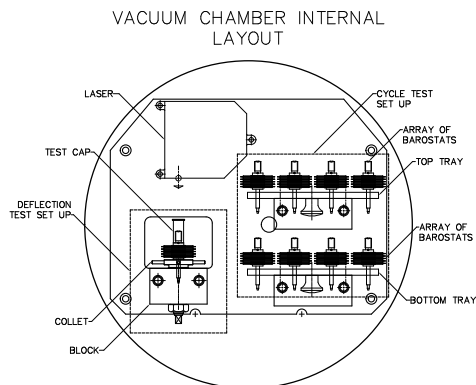
The equipment consists of a **vacuum chamber**, which has a **laser measurement device, pressure transducer and component fixtures mounted inside**. The pneumatic control system has various flow restrictors so that the ascent and descent are controllable. The **operator can program tests using custom built software**, which then runs the test and logs the results.

The tests carried out on the equipment can either be at a **fixed altitude (pressure) or a cycle based test**. A test at fixed altitude will measure the deflection of the test piece through a zone of interest at a specified altitude. A cyclic test will rapidly ascend and descend the test piece between two set altitudes.

*The equipment was originally designed for use within the aerospace industry but could also be used for applications such as weather station devices, exploration and high altitude sport equipment.*

Equipment capabilities:

- Simulate altitudes of up to 21,300 m (70,000 ft)
- Measure the deflection of a component to within 6µm
- Accelerated testing of the effects of continuous ascent and descent



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