

**Product Name :**  
Astra Scientific Axial Flow Turbine Test Bed

**Product Code :**  
ThermalLab0001



**Description :**

Astra Scientific Axial Flow Turbine Test Bed

**Technical Specification :**

The experimental axial flow engine-start turbine comprising a single-stage radial compressor, an annular combustion chamber and a low mass, high-performance axial flow turbine.

The engine has been integrated into a sturdy metal frame that holds it firmly, while enabling accurate measurement of the thrust produced by the engine.

The engine inlet has been replaced with a custom fabricated frontal duct, to enable the air mass flow rate to be accurately measured.

An electronic preprogrammed controller constantly supervises the engine, ensuring safe operating conditions at all times.

The engine is easy to start and stop from the software interface, and

automatic, optimal start-up and power-down sequences are already set to assure minimum mechanical stresses. There is no requirement for compressed air supply or propane gas to start the engine.

A tough, transparent polycarbonate screen is fitted in order to make the apparatus completely safe, but still provides excellent visibility of the engine when in use. The screen is removable, enabling full access to the engine and instrumentation.

The engine software runs on a personal computer, requiring only a single USB interface between the electronic console and the PC. This enables simple installation into a test cell or soundproof enclosure.

#### **FEATURES:**

- Complete aeronautical axial flow gas turbine engine
- Full instrumentation and sensors
- Easy installation into a test cell (single USB interface)
- High-performance centrifugal compressor
- High maximum RPM
- Fast response to speed changes
- Single point pivot on engine mounting enables accurate thrust measurement
- No need for external lubrication system; the lubricant is mixed with the fuel
- No need for external battery and charger
- Can be fuelled with common paraffin or kerosene – no need for difficult-to-find aviation fuel
- Simple ignition system, based on a common Rossi R8 glow plug
- Data acquisition and educational software included
- Small-scale equipment minimizes laboratory space needed
- Fully tested for high performance and safety
- Tough, transparent polycarbonate safety screen
- An optional floor-standing frame is available to house the unit together with its fuel tank and electronic console

**2001** typical

**Typical fuel** following choices:

- Paraffin
- Jet A-1
- JP-4/Kerosene

**Boiling gas temperature:**

**Mass flow:**

**Ignition system:**

**Compressor type:**

**Engine type:** low-mass axial flow

**Engine rpm:** typical

**Engine input:**



## Astra Scientific

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