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PRODUCT DATA SHEET
Catalogue reference for product evaluation

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Air Flow Reaction Turbine | ThermoFlux - 7093

Category: Thermodynamics Lab Equipment · **Country of Origin:** India

Product Overview

The Air Flow Reaction Turbine ThermoFlux - 7093 is a standalone reaction turbine demonstration unit driven by compressed air, rated at approximately 50 W at 1500 rpm with a rotor diameter of 50 mm to 100 mm. This air flow reaction turbine features a transparent Plexiglass housing for direct rotor observation, a band brake on the impeller shaft for load application, and electronic moment measurement (0 to 2.5 Nm) via dynamometer or spring balance. Rotational speed is measured by an inductive proximity switch over a range of 0 to 10,000 rpm, with a speed and torque display interface housed within the unit. An optional air compressor (ThermoFlux - 7093) and LabVIEW-based DAQ software are available for continuous operation and PC-based data acquisition.

View this product online: https://scienticoindia.com/product/air-flow-reaction-turbine-thermoflux-7093/



Request a model-specific quotation
Include quantity and delivery country.

Technical Specifications

Air Flow Reaction Turbine ThermoFlux - 7093, Technical Specifications

Parameter	Value
Turbine Type	Reaction turbine
Turbine Rating	Approx. 50 W at 1500 rpm
Rotor Diameter	50 mm to 100 mm
Turbine Housing Material	Plexiglass (transparent)
Braking Device	Band brake on impeller shaft
Moment Measurement Method	Electronic dynamometer or spring balance
Moment Measuring Range	0 to 2.5 Nm
Speed Measurement Method	Inductive proximity switch
Speed Measuring Range	0 to 10,000 rpm
Air Supply	Separate compressor required
Speed and Torque Display	Interface housed within apparatus
PC Connectivity	Optional DAQ software

Technical Data

Turbine

Parameter	Value
Rating	Approx. 50 W at 1500 rpm
Rotor Diameter	50 mm to 100 mm
Housing Material	Plexiglass (transparent)

Moment Measurement

Parameter	Value
Method	Band brake with electronic dynamometer or spring balance
Measuring Range	0 to 2.5 Nm

Speed Measurement

Parameter	Value
Method	Inductive proximity switch
Measuring Range	0 to 10,000 rpm

Air Supply

Parameter	Value
Source	Separate air compressor (required for operation)
Optional Accessory	Air Compressor ThermoFlux - 7093

Key Features

Key Features

- **Air Flow Reaction Turbine Type:** Standalone reaction turbine demonstration unit
- **Turbine Rating:** Approx. 50 W at 1500 rpm
- **Rotor Diameter:** 50 mm to 100 mm
- **Turbine Housing:** Transparent Plexiglass for unobstructed rotor observation
- **Braking Device:** Band brake fitted to impeller shaft
- **Moment Measurement:** Electronic dynamometer or spring balance, 0 to 2.5 Nm
- **Speed Measurement:** Inductive proximity switch, 0 to 10,000 rpm
- **Display Interface:** Speed and torque display housed within the apparatus
- **Air Supply:** Compressed air from separate compressor
- **PC Connectivity:** Optional DAQ software for data measurement, processing, and storage
- **Optional Accessory:** Air Compressor ThermoFlux - 7093 for continuous operation
- **Software:** Optional LabVIEW-based DAQ software, Windows compatible

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Experiments

- Determination of power output
- Determination of efficiency

- Preparation of the characteristic curve
- Comparison of experiment and calculation

Construction and Design

The Air Flow Reaction Turbine ThermoFlux - 7093 is a standalone demonstration unit built around a reaction turbine rotor with a diameter of 50 mm to 100 mm, rated at approximately 50 W at 1500 rpm. The turbine housing is constructed from transparent Plexiglass, enabling unobstructed visual observation of the rotor and airflow during operation. A band brake is fitted directly to the impeller shaft as the braking device. The band brake allows a controlled load to be applied to the shaft, and the resulting moment is measured electronically using a dynamometer or on a spring balance within a range of 0 to 2.5 Nm. An inductive proximity switch measures rotational speed up to 10,000 rpm. A speed and torque display interface is housed within this air flow reaction turbine apparatus. Compressed air is supplied from a separate compressor connected via hose. An optional air compressor (ThermoFlux - 7093) is available for continuous operation. Measured data can be transmitted to a PC using optional DAQ software.

Software

ThermoFlux - 7093 Software (Optional)

- Developed in the National Instruments LabVIEW environment
- Designed specifically for data acquisition with this apparatus
- Measures, processes, and stores experimental data on a PC
- A set of electronic sensors is included when the software option is selected
- Compatible with any Windows operating system

Scope of Delivery

- 1 experimental unit
- 1 set of hoses
- 1 power cable
- 1 instruction manual

Optional Accessories

Item	Model
Air Compressor for Continuous Operation	Air Compressor ThermoFlux - 7093

Ordering & Delivery

- Send the product name, quantity, delivery country and destination with your enquiry.
- Production schedule, freight, payment terms and export documents are confirmed in the written quotation.

Frequently Asked Questions

Q1: What working fluid drives the Air Flow Reaction Turbine ThermoFlux - 7093?
The turbine is driven by compressed air supplied from a separate compressor. An optional air compressor (ThermoFlux - 7093) is available for continuous operation and must be sourced separately for standard operation.

Q2: How is the load and moment on the turbine shaft measured?
A band brake braking device is fitted to the impeller shaft. The moment is measured electronically using a dynamometer or on a spring balance, with a measuring range of 0 to 2.5 Nm.

Q3: How is turbine rotational speed measured in this air flow reaction turbine unit?
An inductive proximity switch measures rotational speed with a measuring range of 0 to 10,000 rpm. The speed and torque display interface is housed within the apparatus.

Q4: Why is the turbine housing made from Plexiglass?
The transparent Plexiglass housing allows unobstructed visual observation of the air-driven rotor and the reaction principle in operation during experiments.

Q5: Is the DAQ software included as standard?
No. The DAQ software is optional. When selected, it includes the required electronic sensors, enables data measurement, processing, and storage on a PC, and runs in a LabVIEW environment on any Windows operating system.

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