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PRODUCT DATA SHEET
Catalogue reference for product evaluation

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Air Flow Impulse Turbine | ThermoFlux - 7095

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

Product Overview

The Air Flow Impulse Turbine ThermoFlux - 7095 is a standalone table-top unit for investigating a single-stage axial flow impulse turbine driven by compressed air at approximately 6 bar. The turbine delivers a maximum of 200 W, features a 130 mm wheel with 45 blades at a 20° inlet/outlet angle, and is loaded by a belt brake dynamometer. This air flow impulse turbine measures torque (0 to 25 Nm via force sensor), speed (0 to 50,000 rpm via proximity switch), flow rate (25 to 315 ltr/sec), inlet pressure (0 to 10 bar), outlet pressure (0 to 0.5 bar), and temperature (-100 to 400°C), with digital displays for speed, torque, and temperature, and dial manometers for pressure. An optional air compressor (ThermoFlux - 7095) 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-impulse-turbine-thermoflux-7095/



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

Technical Specifications

Air Flow Impulse Turbine ThermoFlux - 7095, Technical Specifications

Parameter	Value
Turbine Type	Single-stage, axial flow, impulse
Maximum Power Output	200 W
Wheel Diameter	Approx. 130 mm
Number of Rotor Blades	45
Inlet/Outlet Angle	20°
Compressed Air Supply	Approx. 6 bar
Loading Method	Belt brake dynamometer
Torque Measurement Method	Force sensor
Torque Measuring Range	0 to 25 Nm
Speed Measurement Method	Proximity switch
Speed Measuring Range	0 to 50,000 rpm
Flow Rate Measuring Range	25 to 315 ltr/sec
Inlet Pressure Measuring Range	0 to 10 bar
Outlet Pressure Measuring Range	0 to 0.5 bar

Parameter	Value
Temperature Measuring Range	-100 to 400°C
Pressure Display	Dial manometers
Speed, Torque and Temperature Display	Digital displays

Technical Data

Turbine

Parameter	Value
Type	Single-stage, axial flow, impulse
Maximum Power Output	200 W
Wheel Diameter	Approx. 130 mm
Number of Rotor Blades	45
Inlet/Outlet Angle	20°
Compressed Air Supply	Approx. 6 bar
Loading Method	Belt brake dynamometer

Torque Measurement

Parameter	Value
Method	Force sensor
Measuring Range	0 to 25 Nm

Speed Measurement

Parameter	Value
Method	Proximity switch
Measuring Range	0 to 50,000 rpm

Flow Rate Measurement

Parameter	Value
Measuring Range	25 to 315 ltr/sec

Pressure Measurement

Parameter	Value
Inlet Pressure Range	0 to 10 bar
Outlet Pressure Range	0 to 0.5 bar
Display Type	Dial manometers

Temperature Measurement

Parameter	Value
Measuring Range	-100 to 400°C
Display	Digital

Key Features

Key Features

- **Air Flow Impulse Turbine Type:** Single-stage, axial flow, impulse machine with throttle valve
- **Maximum Power Output:** 200 W
- **Compressed Air Supply:** Approx. 6 bar
- **Wheel Diameter:** Approx. 130 mm
- **Number of Rotor Blades:** 45
- **Inlet/Outlet Blade Angle:** 20°
- **Turbine Loading:** Belt brake dynamometer
- **Torque Measurement:** Force sensor, 0 to 25 Nm
- **Speed Measurement:** Proximity switch, 0 to 50,000 rpm
- **Flow Rate Measurement:** 25 to 315 ltr/sec
- **Inlet Pressure Measurement:** 0 to 10 bar, dial manometer
- **Outlet Pressure Measurement:** 0 to 0.5 bar, dial manometer
- **Temperature Measurement:** -100 to 400°C, digital display
- **Display:** Speed, torque, and temperature on digital displays; pressures on dial manometers
- **Unit Format:** Standalone table-top unit
- **Optional Accessory:** Air Compressor ThermoFlux - 7095 for continuous operation
- **Software:** Optional LabVIEW-based DAQ software, Windows compatible

Experiments

- Determination of power as a function of volumetric flow rate, pressure, and speed
- Recording of torque characteristic
- Determination of turbine efficiency
- Partial pressurization (nozzle group circuit)

Construction and Design

The Air Flow Impulse Turbine ThermoFlux - 7095 is a standalone table-top unit built around a single-stage axial flow impulse machine with a throttle valve. The turbine wheel has a diameter of approximately 130 mm, carries 45 rotor blades, and operates with an inlet/outlet angle of 20°. Compressed air is supplied at approximately 6 bar. A belt brake dynamometer applies the load to the turbine shaft. A force sensor measures torque from 0 to 25 Nm. A proximity switch measures rotational speed from 0 to 50,000 rpm. Flow rate measurement covers 25 to 315 ltr/sec. Inlet pressure is measured from 0 to 10 bar and outlet pressure from 0 to 0.5 bar, both displayed on dial manometers. Temperature measurement covers -100 to 400°C with digital display. Speed, torque, and temperature readings are shown on dedicated digital displays. This air flow impulse turbine delivers a maximum power output of 200 W and supports optional PC-based data acquisition via LabVIEW DAQ software when connected to a separate compressor.

Software

ThermoFlux - 7095 Software (Optional)

- Developed in the National Instruments LabVIEW environment
- Designed specifically for data acquisition with this apparatus
- Measures, processes, and stores experimental results 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 instructional manual

Optional Accessories

Item	Model
Air Compressor for Continuous Operation	Air Compressor ThermoFlux - 7095

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 type of turbine is used in the Air Flow Impulse Turbine ThermoFlux - 7095?
The unit uses a single-stage axial flow impulse turbine. In this configuration, the fluid pressure drop and velocity increase occur in the stator, and the fluid passes through the rotor at approximately constant pressure.

Q2: What are the key turbine performance parameters of this air flow impulse turbine?
The turbine delivers a maximum power output of 200 W. The wheel diameter is approximately 130 mm with 45 rotor blades, an inlet/outlet angle of 20°, and is supplied with compressed air at approximately 6 bar.

Q3: How is turbine torque and speed measured?
Torque is measured by a force sensor over a range of 0 to 25 Nm. Speed is measured by a proximity switch over a range of 0 to 50,000 rpm. Both values are shown on dedicated digital displays.

Q4: How are pressures displayed on the unit?
Inlet pressure (0 to 10 bar) and outlet pressure (0 to 0.5 bar) are displayed on dial manometers. Speed, torque, and temperature readings are shown on digital displays.

Q5: Is a compressor included with the unit?
No. Compressed air is supplied from a separate compressor. An optional air compressor suitable for continuous operation (Air Compressor ThermoFlux - 7095) is available as an accessory.

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