

**Product Name :**  
Astra Scientific Propeller Turbine

**Product Code :**  
Fluid Mechanics Lab0033



**Description :**

Astra Scientific Propeller Turbine

**Technical Specification :**

**DESCRIPTION:**

The Propeller Turbine is an inward flow reaction turbine, Similar to a Kaplan design, but with fixed blades. It is a very common turbine and works best with high flow rates. Its moving part (runner) is a propeller, similar to those that Push ships and submarines through water. The turbine has adjustable guide vanes that control the water flow in the turbine. They also direct the water at an angle to the back of the propeller. Students learn how the guide vane setting affects how the turbine works. The turbine has a clear viewing window around the guide vanes and a clear draft tube so that students can see the turbine working.

Consists of a framework base, which houses a large water reservoir and a circulating pump. A stainless steel top supports the turbine itself and a dynamometer assembly The propeller itself is housed in a clear acrylic pipe to enable maximum visibility of the workings.

A load cell measures the braking force, and hence the power, and an optical sensor measure the rotational speed of the turbine.

#### **FEATURES:**

- Determining the characteristics of a propeller turbine, including the relationships of volume flow rate, head, torque produced, power output and efficiency to rotational speed.
- Self-contained, small-scale hydropower unit designed to demonstrate the operating principles of a propeller turbine
- 75l water reservoir
- Circulating pump, which produces 14m head at 4.4 l/s
- Loaded by a magnetic brake unit, which is controlled direct from the PCL inks to a PC via a USB interface
- Export of data to Microsoft Excel or other spreadsheet software
- Electronic sensors monitor process variables
- Supplied with full education software package including comprehensive results processing and help facilities

#### **SPECIFICATION:**

- Maximum power: 55W
- Maximum speed: 3,500rpm
- Maximum torque: 0.60Nm
- Power required: 230v, 1ph

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**Astra Scientific**