

**Product Name :**  
Astra Scientific Basic Metacentric Height

**Product Code :**  
Fluid Mechanics Lab0002



**Description :**

Astra Scientific Basic Metacentric Height

**Technical Specification :**

The advanced metacenter can be varied to produce stable and unstable equilibrium. The equipment consists of a plastic rectangular floating pontoon, the center of gravity of which can be varied by an adjustable weight, which slides and can be clamped in any position on a vertical mast.

A single plumb bob is suspended from the mast, which indicates the angle of heel on a calibrated scale. A weight with lateral adjustment enables the degree of heel to be varied and hence the stability of the pontoon determined.

The equipment does not require a separate water tank as it may be used on the hydraulics bench by filling the volumetric tank.

To determine metacentric height of floating body and height variation with tilt angle. Rectangular pontoon; Centre of gravity can be

moved side way by moving horizontal jockey weight, and vertically via adjustable vertical weight on mast. Tilt angle indicated by plumb bob on attached scale.

## **FEATURES**

- This apparatus is used to determine the metacentric height of a ship model under load and unload condition, (flat bottomed vessel). This apparatus consists of:
- Ø A tank of size 60x60x30cm fitted with piezometer tube to measure the level of water. Transparent sheet is provided on the front of tank.
- Ø A pointer to measure the angle of heel up to +/-15 Degree.
- Ø A cross bar arrangement with the provision of angling movable weights at known distance from the vertical axis through C.G.
- Ø Additional five hanging weights (50 gm. Each) are provided.
- Rectangular floating pontoon with mast
- Variable center of gravity via movable weights (transverse and vertical)
- Clinometer indicates angle of heel
- Educational software available as an option.
- Determining the center of gravity of the pontoon
- Determining the metacentric height and from this the position of the metacenter for the pontoon
- Varying the metacentric height with angle of heel

## **SPECIFICATIONS:**

Max. Angle of heel:  $\pm 13^\circ$

Corresponding linear dimension:  $\pm 90\text{mm}$

Pontoon dimensions:

Length 350mm

Width 200mm

Overall height 475mm

#### **DIMENSIONS AND WEIGHT**

- L x W x H: 600-x450 x 450 mm
- Weight: 30kg



## **Astra Scientific**

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