

Product Name :
Astra Scientific Separating and Throttling Calorimeter with mini boiler Test Bench

Product Code :
ThermalLab0025



Description :

Astra Scientific Separating and Throttling Calorimeter with mini boiler Test Bench

Technical Specification :

The experimental closed system vapour content x is a dimensionless ratio between 0 and 1. It is defined by the ratio of mass of vapour and total mass. The total mass is calculated from the sum of fluid mass and vapour mass. If the vapour content is $x=0$, the evaporation medium is completely liquid, $x=1$ means dry saturated vapour, a value in between means wet vapour with a variable liquid content. Separating and throttling calorimeters are used to determine the vapour content. In practice, devices to determine the vapour content are used in steam power plants, downstream of steam turbines or at steam boilers upstream of the super heater.

A downstream throttling calorimeter is used to determine vapour contents between $x=0.95$ and $x=1$. The wet vapour is depressurized in this process. The remaining vapour part is depressurized and then liquefied in a water-cooled condenser and also collected in a measuring cup. The two quantities can be used to determine vapour mass and total mass to calculate the vapour content.

Sensors measure the pressure and temperature before and after

depressurization. The measuring results can be used to determine the vapour content with the h-s diagram.

FEATURES:

- determining the vapour content using
 - o a separating calorimeter with cyclone water separator
 - o a throttling calorimeter with vapour depressurization
- using an h-s diagram

SPECIFICATIONS:

Supplied vapour

- temperature: 240°C
- pressure: 10bar

Safety valve: 10bar

Measuring ranges

- temperature: 0...400°C
- pressure (inlet): 0...16bar
- pressure (outlet): -150...100mbar

230V, 50Hz, 1 phase

230V, 60Hz, 1 phase

120V, 60Hz, 1 phase



Astra Scientific

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