

# LOCAL HEAT TRANSFER ELEMENT H352B



Year 1  
study

## Description

The accessory includes a black plastic plate with circular access hole designed to fit the aperture in the Cross Flow Heat Exchanger H352 duct. The active element has a circular graduated flange that fits in the access hole and allows the active element to be rotated about its central axis while in the airstream. It also consists of a non-metallic circular cylinder coated with an electrically conductive surface and circumferential contacts at each end. By passing an electrical current through the conducting surface, heat is generated that is carried away by convection until a stable temperature condition is established. Measurement of the power, the surface temperature and the air stream temperature, the convective heat transfer coefficient local to the thermocouple may be calculated. By rotating the cylinder in angular steps results of the type shown may be recorded. The cylindrical active element plugs directly into the Cross Flow Heat Exchanger H352 instrumentation console and this allows measurement of the low voltage power supplied to the heater and the surface temperature.

## Related Laws/Applications

- Cross Flow Heat Exchangers
- Turbulent Flow
- Thermal Conductivity
- Surface Heat Transfer Coefficient
- Flow Velocity
- Reynold's Number
- Nusselt Number

## Learning capabilities

- Determination of the relationship between Nusselt and Reynolds Number for the Forward Stagnation Point on a Cylinder in Cross Flow Using the Local Heat Transfer Cylinder.
- Determination of the Variation in Convective Heat Transfer Coefficient Around a Cylinder in Cross Flow.

## Technical Specification

- Tube diameter:  $\varnothing 22\text{mm}$
- Heated Surface length: 65mm
- Angular graduations:  $10^\circ$

**Essential Ancillaries**

- H352

**Recommended Ancillaries**

- H352A
- H352C
- H352D
- H352E
- H352F
- H352G

**What's in the Box?**

- 1 x H352B
- Instruction manual
- Packing List
- Test Sheet

**You might also like**

- H352A
- H352C
- H352D
- H352E
- H352F
- H352G

**Weights & Dimensions**

- Weight: 6.5 kg
- Length: 210mm
- Width: 80mm
- Height: 200mm

**Essential Services**

- H352

**Ordering information**

To order this product, please call PA Hilton quoting the following code:  
H352B

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COUNTRY OF ORIGIN - UK WARRANTY PERIOD - 5 YEARS