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Product Name :

Exhaust Gas Calorimeter for IC Engine Tests

Product Code :

SLE/EE/03



Science Lab
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Description :

Exhaust Gas Calorimeter for IC Engine Tests is a gas-to-water shell and multi-tube heat exchanger that measures the heat carried away in the exhaust of a test engine. Exhaust runs through the tubes inside a jacket of flowing cooling water, and thermocouples feed a four-channel digital display that also shows the water flow for the heat balance.

Shell and multi-tube exhaust calorimeter specifications

Parameter	Detail
Heat exchanger	Gas-to-water shell and multi-tube heat exchanger on a sturdy base plate
Gas path	Exhaust gases from the test engine on the test set flow through the tubes
Cooling water	Jacket of constantly flowing cooling water around the tubes
Flow measurement	Turbine flow meter for the cooling-water flow rate
Water flow control	Hand-operated control valve mounted on the control console of the test set
Temperature sensing	Thermocouples for gas and water temperatures at inlet and outlet
Display	Digital four-channel temperature and flow display unit on the instrumentation rail of the test set console frame
Pressure-relief valve	Fitted for the case of insufficient cooling water flow
Product code	SLE/EE/03
Minimum order	10 units
Dispatch	Usually within 7 to 10 working days
Manufacturer	ScienceLab (Jain Scientific Equipments Pvt Ltd), Ambala, India

Heat balance practicals with the shell and tube calorimeter

Full heat balance at one load. Run the test engine at a steady load and set the cooling water with the console valve. Measure fuel use with a manual volumetric fuel gauge, then log brake power, the engine jacket water heat and the calorimeter's four channels and flow. These figures fill one column of the heat balance sheet.

Load sweep. Repeat the readings at several loads on the 4 stroke diesel engine or the 4 stroke petrol engine. Plot exhaust heat and brake power against load, and compare how the exhaust share of the fuel energy changes from light load to full load.

Water flow trial. Hold the engine at one load and change the water flow in steps with the h
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