SCIENTICO INDIA
Manufacturer & Exporter · Ambala, Haryana, India

PRODUCT DATA SHEET
Catalogue reference for product evaluation

Phone: +91 7015865225 **Email:** info@scienticoindia.com **Web:** scienticoindia.com **Address:** #71, Industrial Area, Ambala Cantt, Haryana, India

Exhaust Gas Calorimeter | ThermoFlux – 7105

Category: Thermodynamics Lab Equipment · **Country of Origin:** India

Product Overview

Exhaust Gas Calorimeter ThermoFlux – 7105 is a laboratory apparatus for determining thermal exhaust gas losses of internal combustion engines using the exhaust gas calorimeter method of calorimetric measurement. The unit consists of an insulated stainless steel tank with an internal looped finned pipe heat exchanger. Exhaust gas flows from bottom to top through the tank, transferring heat to cooling water circulating through the finned pipe. Heat exchange area on the exhaust gas side is 1.169 m²; on the water side, 0.164 m². Four temperature sensors record exhaust gas and water inlet and outlet temperatures (-100 to 400°C each pair). A flow meter records water flow rate (4 to 36 LPM). All values are recorded electronically and displayed digitally via a measuring amplifier. The engine connects to the unit via an exhaust gas hose. Specific heat capacity of the exhaust gas can also be determined. Supplied by SCIENTICO India with an instructional manual.

View this product online: https://scienticoindia.com/product/exhaust-gas-calorimeter-thermoflux-7105/



Request a model-specific quotation
Include quantity and delivery country.

Technical Specifications

Exhaust Gas Calorimeter ThermoFlux – 7105: Technical Specifications

Parameter	Value
Apparatus Type	Exhaust gas calorimeter with finned pipe heat exchanger and insulated tank
Tank Construction	Insulated, stainless steel
Exhaust Gas Flow Direction	Bottom to top through the tank
Heat Exchanger Type	Finned pipe, arranged in loops
Heat Exchange Area: Exhaust Gas Side	1.169 m²
Heat Exchange Area: Water Side	0.164 m²
Temperature Sensors	4 x sensors (exhaust gas inlet/outlet, water inlet/outlet)
Exhaust Gas Temperature Range	2 x -100 to 400°C
Water Temperature Range	2 x -100 to 400°C
Flow Rate Measurement Range	4 to 36 LPM
Instrumentation	4 temperature sensors, flow meter, measuring amplifier with digital display
Engine Connection	Exhaust gas hose
Data Recording	Electronic; digital display via measuring amplifier

Technical Data

Calorimeter

Parameter	Value
Construction	Insulated, stainless steel
Heat Exchanger Type	Finned pipe heat exchanger
Heat Exchange Area: Exhaust Gas Side	1.169 m²
Heat Exchange Area: Water Side	0.164 m²

Measuring Ranges

Parameter	Range
Exhaust Gas Temperature	2 x -100 to 400°C
Water Temperature	2 x -100 to 400°C
Flow Rate	4 to 36 LPM

Key Features

Key Features

- **Apparatus Type:** exhaust gas calorimeter for internal combustion engine thermal loss determination
- **Tank Construction:** insulated, stainless steel
- **Exhaust Gas Flow Direction:** bottom to top through the insulated tank
- **Heat Exchanger:** finned pipe arranged in loops for maximum heat exchange area
- **Heat Exchange Area: Exhaust Gas Side:** 1.169 m²
- **Heat Exchange Area: Water Side:** 0.164 m²
- **Temperature Sensors:** 4 sensors: exhaust gas inlet, exhaust gas outlet, water inlet, water outlet
- **Exhaust Gas Temperature Range:** 2 x -100 to 400°C
- **Water Temperature Range:** 2 x -100 to 400°C
- **Flow Rate Measurement Range:** 4 to 36 LPM
- **Measuring Amplifier:** with digital displays for all measured values
- **Data Recording:** electronic recording; digital display
- **Engine Connection:** via exhaust gas hose
- **Specific Heat Capacity:** determination of specific heat capacity of exhaust gas supported

---

Experiments

- Determination of exhaust gas thermal output power given up
- Determination of the amount of heat contained in the exhaust gas from test engines
- Determination of specific heat capacity of exhaust gas

Construction and Design

The **Exhaust Gas Calorimeter ThermoFlux – 7105** is built around an insulated stainless steel tank that forms the primary heat exchange enclosure. Exhaust gas from a test engine enters at the base of the tank and flows upward through the interior.

Inside the tank, a finned pipe heat exchanger carries cooling water. The pipe is arranged in loops to achieve the maximum possible heat exchange area. The heat exchange area on the exhaust gas side is 1.169 m² and on the water side is 0.164 m². As the exhaust gas flows upward past the finned pipe, it gives up its heat almost completely to the cooling water. The insulated tank construction minimises external heat losses, ensuring the **exhaust gas calorimeter** delivers a largely complete and loss-free measurement of the exhaust gas thermal output.

Four temperature sensors measure exhaust gas temperature at the inlet and outlet and water temperature at the inlet and outlet. A flow meter records the cooling water flow rate over the range 4 to 36 LPM. All sensor signals are recorded electronically. A measuring amplifier with digital displays presents all values for direct reading and calculation. The engine connects to the calorimeter via an exhaust gas hose.

Scope of Delivery

- 1 experimental unit
- 1 instructional manual

Ordering & Delivery

- Send the product name, quantity, delivery country and destination with your enquiry.
- Production schedule, freight, payment terms and export documents are confirmed in the written quotation.

Frequently Asked Questions

Q: What does the Exhaust Gas Calorimeter ThermoFlux – 7105 measure?
A: The unit determines the thermal output power of exhaust gases from internal combustion engines using calorimetric measurement. It records exhaust gas inlet and outlet temperatures, cooling water inlet and outlet temperatures, and water flow rate. These values enable calculation of the heat given up by the exhaust gas, the engine energy balance, and the specific heat capacity of the exhaust gas.

Q: What are the heat exchange areas in this exhaust gas calorimeter?
A: The heat exchange area on the exhaust gas side is 1.169 m². The heat exchange area on the water side is 0.164 m². The finned pipe is arranged in loops inside the insulated stainless steel tank to maximise the available heat transfer area.

Q: What temperature and flow measurement ranges does the unit cover?
A: Exhaust gas temperature is measured over 2 x -100 to 400°C. Water temperature is measured over 2 x -100 to 400°C. Cooling water flow rate is measured over the range 4 to 36 LPM.

Q: How is the engine connected to the calorimeter?
A: The test engine is connected to the calorimeter unit via an exhaust gas hose. Exhaust gas enters at the bottom of the insulated stainless steel tank and flows upward through the heat exchanger.

Q: How are measured values displayed on the ThermoFlux – 7105?
A: All measured values are recorded electronically and displayed digitally using a measuring amplifier with digital displays. The amplifier processes signals from all four temperature sensors and the flow meter simultaneously.