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Manufacturer & Exporter · Ambala, Haryana, India

PRODUCT DATA SHEET
Catalogue reference for product evaluation

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Tray Dryer | ThermoFlux - 7101

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

Product Overview

The Tray Dryer ThermoFlux - 7101 is a laboratory unit for investigating convection drying of granular solids in a rectangular drying channel (approx. 2000 mm long, 350 x 350 mm internal dimensions) using four corrosion-resistant 300 x 300 mm trays. It features an adjustable-speed axial fan (33 W, max. 700 m³/h, max. 950 min^{-1}), a 0 to 3500 W heater with temperature limiter, and a digital balance (0 to 10,000 g, 0.1 g resolution). This tray dryer measures humidity (0 to 100% rel.) and temperature (-100 to 400°C) via combined sensors before and after the drying zone, and air velocity (0 to 2.5 m/s) via a dedicated sensor. Optional LabVIEW-based DAQ software transfers all parameters to a PC via USB and is compatible with Windows 7 or later.

View this product online: https://scienticoindia.com/product/tray-dryer-thermoflux-7101/



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

Technical Specifications

Tray Dryer ThermoFlux - 7101, Technical Specifications

Parameter	Value
Drying Channel Length	Approx. 2000 mm
Drying Channel Internal Dimensions	350 x 350 mm
Number of Drying Trays	4
Drying Tray Dimensions	300 x 300 mm each
Tray Material	Corrosion resistant
Transparent Door	Yes, for process observation
Fan Power	33 W
Fan Maximum Output	700 m³/h
Fan Maximum Speed	950 min^{-1}
Fan Speed	Adjustable
Heater Power	0 to 3500 W
Heater Control	Adjustable temperature limiter
Balance Measuring Range	0 to 10,000 g

Parameter	Value
Balance Resolution	0.1 g
Balance Application Temperature	0 to 75°C
Humidity Measuring Range	0 to 100% rel.
Temperature Measuring Range	-100 to 400°C
Air Velocity Measuring Range	0 to 2.5 m/s
Humidity and Temperature Sensors	1 combined sensor before and 1 combined sensor after drying zone
Air Velocity Sensor	1 dedicated sensor
Stopwatch	Digital, battery operated
PC Connectivity	Optional DAQ via USB, Windows 7 or later

Technical Data

Drying Channel

Parameter	Value
Length	Approx. 2000 mm
Internal Dimensions	350 x 350 mm
Drying Trays	4 x 300 x 300 mm, corrosion resistant

Fan

Parameter	Value
Power	33 W
Maximum Output	700 m^3/h
Maximum Speed	950 min^{-1}
Speed Control	Adjustable

Heater

Parameter	Value
Power	0 to 3500 W
Control	Adjustable temperature limiter

Balance

Parameter	Value
Measuring Range	0 to 10,000 g
Resolution	0.1 g

Parameter	Value
Application Temperature	0 to 75°C

Measuring Ranges

Parameter	Value
Humidity	0 to 100% rel.
Temperature	-100 to 400°C
Air Velocity	0 to 2.5 m/s

Key Features

Key Features

- **Tray Dryer Configuration:** Rectangular drying channel, approx. 2000 mm long, 350 x 350 mm internal dimensions
- **Drying Trays:** 4 corrosion-resistant removable trays, 300 x 300 mm each
- **Transparent Door:** Allows direct observation of the drying process
- **Fan:** Axial flow, 33 W, adjustable speed, max. 700 m³/h, max. 950 min^{-1}
- **Heater:** 0 to 3500 W with adjustable temperature limiter
- **Balance:** Digital, 0 to 10,000 g, 0.1 g resolution, 0 to 75°C application range
- **Humidity Measurement:** 0 to 100% rel., combined sensor before and after drying zone
- **Temperature Measurement:** -100 to 400°C, combined sensor before and after drying zone
- **Air Velocity Measurement:** 0 to 2.5 m/s, dedicated sensor
- **Sensor Configuration:** 1 combined humidity and temperature sensor before the solid, 1 combined humidity and temperature sensor after the solid
- **Stopwatch:** Digital, battery operated
- **PC Connectivity:** Optional DAQ via USB, Windows 7 or later
- **Software:** Optional LabVIEW-based DAQ software, Windows compatible

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Experiments

- Influence of air temperature and humidity on drying intensity
- Plotting of drying curves with constant external conditions
- Determination of drying rate with different air parameters and different solid properties
- Evaluation of drying processes using energy and mass balances

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Construction and Design

The Tray Dryer ThermoFlux - 7101 is built around a rectangular drying channel approximately 2000 mm in length with internal dimensions of 350 x 350 mm. An axial flow fan rated at 33 W is positioned at the left end of the duct, drawing air in at an adjustable speed up to 950 min^{-1} and a maximum output of 700 m³/h. A bank of electric heaters downstream of the fan adjusts air temperature from 0 to 3500 W with a temperature limiter. A transparent door on the drying channel provides direct visual access to the drying process.

Four corrosion-resistant removable trays of 300 x 300 mm are placed in the channel, each holding the solid to be dried. The tray rack is suspended from a digital balance positioned above the duct, with a range of 0 to 10,000 g and a resolution of 0.1 g, enabling continuous weight change monitoring during drying. One combined humidity and temperature sensor is positioned before the solid and one after, measuring humidity (0 to 100% rel.) and temperature (-100 to 400°C) at both inlet and outlet of the drying zone. A dedicated air velocity sensor covers 0 to 2.5 m/s. This tray dryer transmits all measured parameters directly to a PC via USB when the optional DAQ software is selected, running on Windows 7 or later in a LabVIEW environment.

Software

ThermoFlux - 7101 Software (Optional)

- Developed in the National Instruments LabVIEW environment

- Designed specifically for data acquisition with this apparatus
- Transfers weight changes, humidity, temperature, and air velocity data directly to a PC via USB
- Compatible with Windows 7 or later
- A set of electronic sensors is included when the software option is selected

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

Q1: How many drying trays are included with the Tray Dryer ThermoFlux - 7101 and what are their dimensions?
Four corrosion-resistant removable drying trays are included, each measuring 300 x 300 mm. They are placed in the drying channel and exposed to the adjustable hot airflow from the fan and heater assembly.

Q2: How is the weight of the solid monitored during drying in this tray dryer unit?
A digital balance suspended above the duct holds the tray rack and measures the total weight of the solid continuously. The balance has a measuring range of 0 to 10,000 g, a resolution of 0.1 g, and an application temperature range of 0 to 75°C.

Q3: How is humidity and temperature measured in the drying channel?
One combined humidity and temperature sensor is positioned before the air flow passes over the solid, and one after. Both sensors measure humidity (0 to 100% rel.) and temperature (-100 to 400°C), enabling comparison of inlet and outlet air conditions.

Q4: How is the airflow rate controlled and measured?
The axial flow fan speed is adjustable, with a maximum output of 700 m^3/h and a maximum speed of 950 min^{-1}. A dedicated air velocity sensor measures flow from 0 to 2.5 m/s.

Q5: Is the DAQ software included as standard with this tray dryer?
No. The ThermoFlux - 7101 DAQ software is optional. When selected, it transfers all measured parameters directly to a PC via USB, runs in a LabVIEW environment, and is compatible with Windows 7 or later.

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