

Rolling Thin Film Oven

Fan Forced (+50°C to 200°C)

LABEC Rolling Thin Film Oven is designed and manufactured in Australia by LABEC according to the Australian Standard AS/NZS 2341.10:2015 with reference to the relevant rotary film standard.

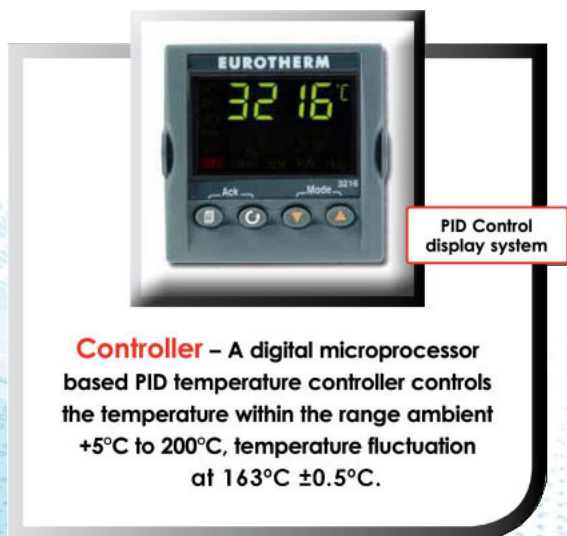
Rolling Thin Film Oven, RTFO, test is applicable for measuring the effect of heat and air on a film of semi-solid bitumen.

A unique triple walled stainless steel construction provides an air jacket heating system with elements within the air jacket walls to provide excellent temperature uniformity.

Optional upgrade available to satisfy AS/NZS 2341.13:1997 where long-term exposure to heat and air "endurance test" is carried out. This test requires the bitumen test sample to be dissolved in toluene and then dried in the RTFO. This model meets AS1681-2002.



Model RTFO24



Controller – A digital microprocessor based PID temperature controller controls the temperature within the range ambient +5°C to 200°C, temperature fluctuation at 163°C ±0.5°C.

Data Logging

When optioned the controller can be connected via RS232/RS485/Ethernet communication ports which can be connected directly to a data logger or computer to collect the information. Software is available for programming and monitoring.

Additional Options

To suit your requirements the addition of options such as programmable controllers, timers and cable access ports are also available.

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Structure

(1) Summary

The outer body is constructed from stainless steel sheet metal. The electrical controller components can be located on the top or the bottom depending on the customer requirements, and are manufactured in Australia in accordance with Australian standards. Located towards the rear wall of the working chamber of the RTFO is an eight place rotating carriage. The motor and gear box are located on the external rear wall of the oven.

(2) Working Chamber

The working chamber is constructed of stainless steel with an observation window in the door. There is a squirrel cage fan, ventilation tube, intake and rotating carriage which are essential to the RTFO test procedure.

(3) Ventilation

You will require compressed air for the test to AS2341.10 and CO₂ for the test to AS2341.13. Airflow is set via a Dwyer Flow Meter 4 L/min \pm 0.5 L/min. Additional flow meter for CO₂ gas, and NATA certification available if required at additional charge. Air from the flow meter enters the chamber and passes through a copper tube heat exchanger. It is then spouted into the sample plasma bottle on the rotating carriage by the nozzle. The air flow moves through the oven to provide even temperature throughout the chamber. Air from the nozzle, and fresh air heat and rise through the chamber and are exhausted through two ventilation ports in the roof of the chamber.

(4) Constant Temperature Heating

Rolling Thin Film Oven is fitted with convection electric heating elements to achieve uniform temperature throughout the inner working chamber. The PID constant temperature controller offers control accuracy of \pm 0.5°C.

(5) Rotating Carriage

Rolling Thin Film Oven is fitted with an eight place sample carriage with spring clips to hold sample bottles (to AS2341) in place. The carriage is carried on a shaft held by a hollow shaft gearbox motor combination. The carriage rotation is controlled by an electronic speed drive unit pre set at 15 RPM \pm 0.5 RPM. Sample bottles to AS2341 are available on request at additional cost.



Model RTFO24-1681



Inside the working chamber of RTFO24 with bottom mounted controls

SPECIFICATIONS

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Model	RTFO24	RTFO24-1681
Standard	AS2341.10:2015	AS2341.13:1997
	Non Flammable materials only	Flammable materials (max 40ml toluene)
Capacity (L)	160	
Int. Dim. (mm)	H600 x W500 x D500	
Ext. Dim. (mm)	H1175 x W740 x D820	H1175+110 x W740 x D820
Temp. Controller	Digital PID Controller	
Temp. Min	+50°C	
Temp. Max	+200°C	
Temp. Setting Accuracy	±0.5°C	
Temp. Fluctuation	±0.5°C at 163°C	
Air Flow	4 L/min ± 0.5 L/min	
Carriage Rotation	15 RPM ± 0.5 RPM	
Interior Material	Stainless Steel	
Exterior Material	Stainless Steel	
Inspection Window	W300 x H200 mm	
Explosion Relief Port	N/A	0.04m ² in roof
Safety Features	COMMON: Over temperature alarm, temperature protection cut off, Earth leakage breaker (ELB). RTFO24-1681 ONLY: Door open for purge interlock microswitch, Air supply pressure switch and purge timer.	
Power Supply	240V/50Hz	
Power (W)	2400	
Weight (kg)	105	

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