

Furnace Tracker® System

TB4600 Series Thermal Barriers for sustained high temperature operation in vacuum furnaces

Built specifically for high temperature operation in vacuum furnaces, the Datapaq® 4600 Series thermal barriers have been designed to operate at temperatures up to 1200°C (2192°F). These barriers are designed to withstand repeated heating and cooling cycles, providing maximum protection to the data logger.

This design uses an ultra high temperature grade of alumina-reinforced micro porous insulation and a phase-change heat sink to ensure the data logger can operate below a safe 70°C (158°F) level. The thermal barrier casing is manufactured from high grade reinforced Inconel®, which will resist distortion during repeated use at elevated temperatures above 1200°C (2192°F).

The TB4600 Series barriers incorporate internal gas flow vents to rapidly equalize the change from vacuum to high pressure gas quench. Externally removable gas quench deflector shields and taper lock catches maximize thermal barrier life by minimizing distortion.

The heat sink surrounding the data logger is fitted with high pressure filler seals to resist the high pressures experienced during a gas quench.

The TB4600 range of barriers are designed to give long term protection to the data logger, even in the toughest of conditions.

FEATURES AND BENEFITS

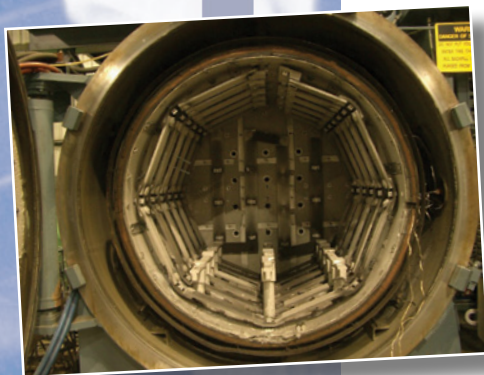
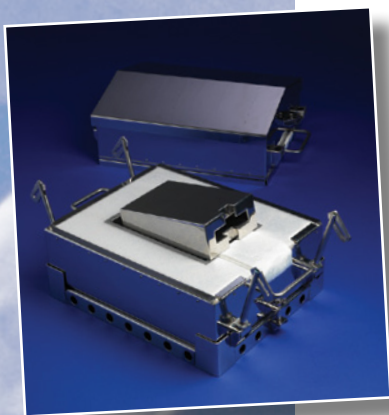
High grade reinforced Inconel casing for maximum protection at high temperatures (up to 1200°C/2192°F), with minimal barrier casing distortion.

Barrier strengthening on both lid and base minimizes barrier distortion at critical points, ensuring a positive barrier seal for maximum protection of the data logger.

Quench Deflector Shields minimize barrier distortion during rapid cooling periods.

Gas flow venting through insulation layers and heat sink holders instantly equalize pressure during a gas quench to prevent internal barrier damage.

High grade robust alumina-reinforced micro porous insulation allows repeated operation at high furnace temperatures (up to 1200°C/2192°F).



TECHNICAL SPECIFICATIONS



Gas Flow Venting



TB4626



TB9840D Heatsink

Thermal Barrier Specifications (without Quench Deflector)	TB4626	TB4633
Height	254 mm (10 in)	304 mm (12.0 in)
Width	363 mm (14.3 in)	410 mm (16.1 in)
Length (including handles)	571 mm (22.5 in)	613 mm (24.1 in)
Weight (including heat sink)	41.2 kg (90.8 lbs)	54.5 kg (120.1 lbs)
Heat Sinks	TB9840D (Weight: 5.7 kg/12.6 lbs)	
Suitable Data Logger	Tpaq21 (70°C/158°F ambient temperature operation)	
Thermal Barrier Specifications (with Quench Deflector)	TB4626	TB4633
Height	340.5 mm (13.4 in)	390 mm (15.4 in)
Width	371 mm (14.6 in)	420 mm (16.5 in)
Length (including handles)	571 mm (22.5 in)	613 mm (24.1 in)
Weight (including heat sink)	50.5 kg (111.3 lbs)	67 kg (147.7 lbs)
Heat Sinks	TB9840D (Weight: 5.7 kg/12.6 lbs)	
Suitable Data Logger	Tpaq21 (70°C/158°F ambient temperature operation)	

Duration including furnace ramp time in nitrogen (hrs)

	TB4626			TB4633		
	Furnace ramp time from ambient	Time @ temperature	Total duration	Furnace ramp time from ambient	Time @ temperature	Total duration
200°C/392°F	0:30:00	12:30:00	13:00:00	0:30:00	16:30:00	17:00:00
400°C/752°F	0:45:00	7:15:00	8:00:00	0:45:00	11:15:00	12:00:00
600°C/1112°F	0:55:00	5:05:00	6:00:00	0:55:00	7:05:00	8:00:00
800°C/1472°F	1:20:00	3:40:00	5:00:00	1:20:00	5:10:00	6:30:00
1000°C/1832°F	1:30:00	2:36:00	4:06:00	1:30:00	4:30:00	6:00:00
1150°C/2102°F	1:40:00	1:35:00	3:15:00	1:40:00	2:40:00	4:20:00
1200°C/2192°F	1:50:00	1:10:00	3:00:00	1:50:00	2:10:00	4:00:00

Duration including furnace ramp time in vacuum (hrs)

	TB4626			TB4633		
	Furnace ramp time from ambient	Time @ temperature	Total duration	Furnace ramp time from ambient	Time @ temperature	Total duration
200°C/392°F	0:30:00	17:30:00	18:00:00	0:30:00	25:30:00	26:00:00
400°C/752°F	0:45:00	11:15:00	12:00:00	0:45:00	15:15:00	16:00:00
600°C/1112°F	0:55:00	7:05:00	8:00:00	0:55:00	10:05:00	11:00:00
800°C/1472°F	1:20:00	4:40:00	6:00:00	1:20:00	7:10:00	8:30:00
1000°C/1832°F	1:30:00	3:30:00	5:00:00	1:30:00	5:30:00	7:00:00
1150°C/2102°F	1:40:00	1:50:00	3:30:00	1:40:00	3:10:00	4:50:00
1200°C/2192°F	1:50:00	1:22:00	3:12:00	1:50:00	2:40:00	4:30:00

Please Note: The TB4600 Series is intended for use in vacuum or inert atmospheres. It may also be used in combustion furnaces, but its thermal duration will be significantly reduced. For further information, please contact Dataq.

Please note: If the barrier is intended to be used for high vacuum levels of 10^{-3} to 10^{-7} Torr, ($1, 3 \times 10^{-3}$ to $1, 3 \times 10^{-7}$ mbar) contact Dataq for advice.

The Worldwide Leader in Temperature Profiling



015



Europe and Asia

DATAPAQ Limited
Lothbury House Cambridge Technopark
Newmarket Road, Cambridge
CB5 8PB, UK
Tel: +44 1223 652 400
Fax: +44 1223 652 401
E-mail: sales@datapaq.co.uk

North and South America

DATAPAQ Inc.
3 Corporate Dr.
Unit 1
Derry, NH 03038, USA
Tel: +1 603 537 2680
Fax: +1 603 537 2685
E-mail: sales@datapaq.com



www.datapaq.com

© 2013 Dataq (TB4600 Rev C) 7/2013
Dataq, the Dataq logo and Furnace Tracker
are registered trademarks of Dataq.
Specifications subject to change without notice.