DATAPAQ®
Fluke Process Instruments

Thermal Barriers

Exclusively for Use in Vacuum Processes

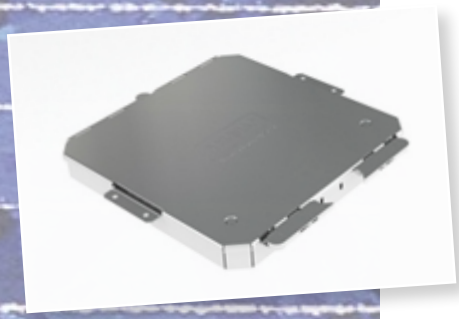
Datapaq has been manufacturing in-process temperature profiling systems for over 25 years. This expertise gained across a wide range of industrial heating process enables us to custom design new methods of thermal protection as new processes emerge. This datasheet details a family of thermal barriers that are designed specifically for use in vacuum heat treat and coating applications.

VACUUM BARRIER TECHNOLOGY

Conventional thermal barriers designed for use in processes conducted under a standard atmosphere generally make use of ceramic fibre or ceramic microporous insulation. This approach is not suited to use in vacuum and any attempt to do so results in out gassing as the vacuum is created. Outgassing leads to increased pump down times and process disruption. The new range of reflective plate thermal barriers is designed exclusively for use in vacuum processes; they do not contain any ceramic insulation. Outgassing is thus minimized and the profiler system can be passed through the process without it disturbing the normal operation. The higher the vacuum used the better the thermal performance of the barrier becomes.

Note: Thermal performance indications are given as a guideline only and will vary from process to process depending on process heating methods and vacuum levels at every stage. The logger should be removed from the thermal barrier as soon as feasible once it has exited the process, as there is no conventional insulation when the vacuum is removed the logger will rapidly heat up.

VB7400 ULTRA-LOW HEIGHT VACUUM BARRIER



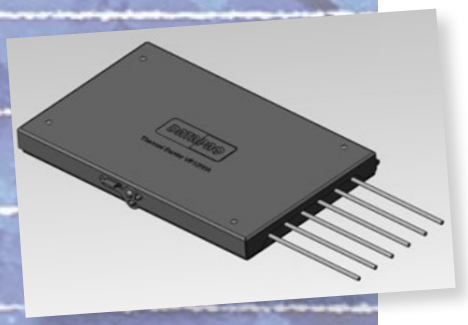
Ultra-low height, 18mm high and designed specifically for use in the solar photovoltaic (PV) anti-reflective coating process. The VB7400 is designed to be used with the DQ1863. The square design enables it to fit in place of one standard sized photovoltaic cell when used to monitor the anti-reflective coating process. This unique feature means the potential user does not have to modify the expensive carrier. The VB7400 is optimized for the anti-reflective coating process but has also found use in other low temperature vacuum coating processes in lens manufacture and glass coating.

Weight 1 kg (2.2 lb)

Dimensions (H x W* x L*) 18 x 146 x 146 mm (0.7 x 5.75 x 5.75 in)
** Dimensions excluding the support tabs (add 20mm for tabs).*

Thermal Duration				
Temperature °C	100	200	300	450
Temperature °F	212	392	572	842
Duration (mins)	300+	75	40	20

Note: these values are guide lines of expected performance in high vacuum applications. Please contact Datapaq with exact process details if known.



VB1200 LOW HEIGHT VACUUM BARRIER

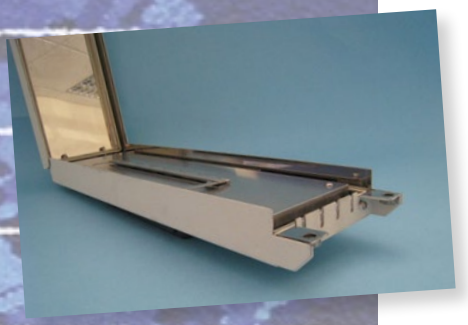
Low height, 20 mm high and designed specifically for use in low temperature vacuum processes. The VB1200 is designed to be used with the DQ1800. The compact design enables it to fit in the very height restricted process chambers that are a feature of vacuum coating systems for flat products such as glass sheets. We recommend the use of mineral insulated thermocouples in processes where the system is directly exposed to the plasma, this ensures correct operation even with the coating plasma energized.

Weight 1.5 kg (3.3 lb)

Dimensions (H x W x L) 20 x 142 x 210 mm (0.8 x 5.6 x 8.3 in)

Thermal Duration				
Temperature °C	100	200	300	450
Temperature °F	212	392	572	842
Duration (mins)	400+	100	50	26

Note: these values are guide lines of expected performance in high vacuum applications. Please contact Datapaq with exact process details if known.



VB2040 HIGH TEMPERATURE VACUUM BARRIER

A 35 mm high reflective plate thermal barrier designed specifically for use in CIGs coating process used in the fabrication of thin film solar PV panels. It features an external ceramic coating and internal steel heat-sink. It is designed for use with the DQ1840 datalogger. We recommend the use of mineral insulated thermocouples in processes where the thermocouples are directly exposed to the plasma, this ensures correct operation of the system even with the coating plasma energized.

Weight 6 kg (13.2 lb)

Dimensions (H x W x L) 35 x 105 x 386 mm (1.4 x 4.1 x 15.2 in)

Thermal Duration			
Temperature °C	300	400	600
Temperature °F	572	752	1,112
Duration (mins)	400+	100	50

Note: these values are guide lines of expected performance in high vacuum applications. Please contact Datapaq with exact process details if known.

Fluke Process Instruments

EMEA
Cambridge, UK
Tel: +44 1223 652 400
sales@flukeprocessinstruments.co.uk

Americas
Salem, NH USA
Tel: +1 425 446 6780
sales@flukeprocessinstruments.com

China
Beijing, China
Tel: +86 10 6438 4691
sales@flukeprocessinstruments.com.cn

Asia East and South
India Tel: +91 22 2920 7691
Singapore Tel: +65 6799 5596
sales.asia@flukeprocessinstruments.com

Worldwide Service
Fluke Process Instruments offers services, including repair and calibration. For more information, contact your local office.

www.flukeprocessinstruments.com

© 2019 Fluke Process Instruments
Specifications subject to change without notice.

01/2019 OT_SolarPaq_TB Vacuum_DS_RevA1_EN