

TECHNICAL SPECIFICATION

Test furnace for ISO 12981-1



Construction	A steel case will provide the support for the inner insulation package. A double skin allows the passage of hot air and helps in keeping the outer case cool. The entire case will be painted in Carbolite's standard grey.
Overall dimensions	Height 520mm, width 600mm and depth 400mm. Please note that these dimensions are approximate only. Should they be considered critical by the end user, it should be highlighted prior to order placement.
Insulation type	High quality, suitably graded ceramic fibre material forms the basis of the insulation package. The vacuum formed hot face insulation is backed by low thermal mass blanket insulation material to ensure maximum thermal efficiency. Other high alumina components may be utilised in the construction of the insulation package.
Maximum temperature	1000°C
Heated zones	1 zone
Heated length	220mm
Operating temperature	Continuous operation close to maximum temperature will lead to early element failure.
Heating elements	Kanthal AF resistance wire will be coiled around a ceramic tube to form the heating element. The element wire will be fixed in place with high alumina cement.
Temperature sensor	Type 'N' (nicrosil) thermocouples will be located within the heating chamber. Each thermocouple will be located in a protective ceramic sheath.
Temperature control	Single zone control. A thermocouple will be positioned inside the heating chamber. The furnace temperature will be monitored by a single controller.
Temperature probe	A single Type 'N' (nicrosil) thermocouple will be located within a protective ceramic sheath. The thermocouple will be located in the heating chamber from the bottom of the worktube.
Instrumentation	The Eurotherm 3508 temperature controller is a high precision PID unit, offering one program with twenty programmable segments, each of which may be configured as a ramp, step or dwell. The controller offers straight line process control and high stability, its dual display offering both setpoint and measured temperatures.
Overtemperature control	An independent thermocouple and temperature controller within the control cabinet monitor the furnace temperature. Should an overtemperature condition occur, power to the heating elements will be cut, then resumed after the temperature has lowered.
Control location	The temperature controller and associated power control equipment will be housed within the integral control box.
Power control	Burst firing via zero voltage switching solid state relays driven by a low voltage signal from the controller.

Electrical supply	240/220V single phase, 50 Hz, suitably isolated and fused by the customer. Nominal power 0.95kw.
Gas system	For use with CO ₂ carbon dioxide. a. Mass-flow meter to an accuracy of better the +/- 2% b. Pressure regulator valve, scaled to 2 Bar.
Reactor tube	Supplied.
CE compliance	The equipment meets all applicable European Union Directives regarding Low Voltage Equipment and Electromagnetic Compatibility and is 'CE' marked accordingly.
Instruction Manuals	Manuals will be provided for the general operating and maintenance procedures. As part of the manuals, a copy of the electrical schematic will be provided along with a list of recommended spare parts. Manuals will be in English and will use metric measurements where appropriate.
Specification amendment	Carbolite reserve the right to amend this specification at any time and in any particular manner without prior notice provided that the ultimate performance of the equipment is not lessened by such application without prior consent of the customer.



Thank you for reading this data sheet.

For pricing or for further information, please contact us at our UK Office, using the details below.



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Please note - Product designs and specifications are subject to change without notice. The user is responsible for determining the suitability of this product.