

Top hat furnace - V-L

General Information

The V-L soldering tube furnace is suitable for generating the lowest achievable operation pressures. Due to this vacuum capability, the highest purity gas atmosphere can be achieved.

The V-L is a vertically mounted tube furnace with automated controls for the sample loading and unloading, in addition to, raising and lowering the furnace hearth over the integrated quartz tube containing the sample material. The quartz tube is connected to the furnace, so in loading the soldering furnace, the quartz tube and furnace hearth are raised upwards to freely access the sample area. After the sample is loaded, the quartz tube and furnace hearth are lowered and locked into position for the heat treatment process where high vacuum operation is achievable. The furnace hearth can also be raised upward and away from the quartz tube after the heating process for fast cooling of the specimen in vacuum, air, or in an inert gas atmosphere.



The soldering furnace utilizes CrFeAl wire elements and ceramic fibre insulation. The temperature is monitored and controlled via thermocouples. The maximum temperature is limited by the quartz tube and can be as high as 1050 °C under vacuum operation. The quartz tube is closed at the top section with the bottom section open where samples are loaded and vacuum systems can be attached by a polymer sealing. The usable space has a diameter of 180 mm and a height of 300 mm providing an approximate volume of 2 l that can be rapidly evacuated. Additionally, the quartz tube provides a very clean operating space. Lastly, the V-L offers fast cooling possibilities and a high degree of user accessibility to the furnace.

High vacuum levels of 5×10^{-6} mbar and better are achievable. Gases are controlled by various dosing and controlling devices. The vacuum is provided by different pumping stations depending on the vacuum requirements.

Standard features

- Precise defined atmosphere with highest possible purity (6N or better)
- Best possible vacuum
- Designed for rapid heating and cooling
- Certified safety management for flammable and toxic gases
- Fully automatic operation
- Movable quartz recipient
- Data recording for quality management

Technical Specifications

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V-L 180-300/10-1G

Dimensions:	2300 x 1400 x 1400
External H x W x D (mm)	
Usable space	
Volume (l)	7.6
Ø x H (mm)	180 x 300
Thermal values	
Tmax vacuum (°C)	1050
-Delta-T (K) according to DIN 17052	± 3 *
Cooling time (min)	30
Thermocouple type	K
Connecting values	
Power (kW)	12
Voltage (V)	400 (3P)
Current (A)	3 x 30
Series fuse (A)	3 x 35
Controller	
Manual operation	Eurotherm with KP 300 panel
Automatic operation	Siemens
Cooling water required	
Flow (l/min)	30

V-L 450-600/10-1G

Dimensions:	3200 (open) x 2300 x 2000
External H x W x D (mm)	
Usable space	
Volume (l)	95
Ø x H (mm)	450 x 600
Thermal values	
Tmax vacuum (°C)	1050
-Delta-T (K) according to DIN 17052	± 3 *
Cooling time (min)	30
Thermocouple type	K
Connecting values	
Power (kW)	58
Voltage (V)	400 (3P)
Current (A)	3 x 110
Series fuse (A)	3 x 150
Controller	
Manual operation	Eurotherm with KP 300 panel
Automatic operation	Siemens
Cooling water required	

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Flow (l/min) 30

Please note:

* at a height of 300 mm with a three zone furnace