

Air Circulation Heating Oven 500°C WU 6100



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Temperature stability and stress tolerance of high-grade materials take on increasing relevance. Closely associated with these concerns is the steadily growing need for technically perfect heating and testing ovens. In response to these exigencies, Heraeus has developed the new Air Circulation Heating Oven for temperatures up to 500°C. Model WU 6100 combines precision and economy with convenience and utility so vital for the daily laboratory routine.



Top Priority Focuses on Precision

Heating processes make it possible to deliberately alter certain material properties. In order to successfully accomplish this objective, it is absolutely necessary that during heat treatment the materials remain consistently within a defined temperature range.

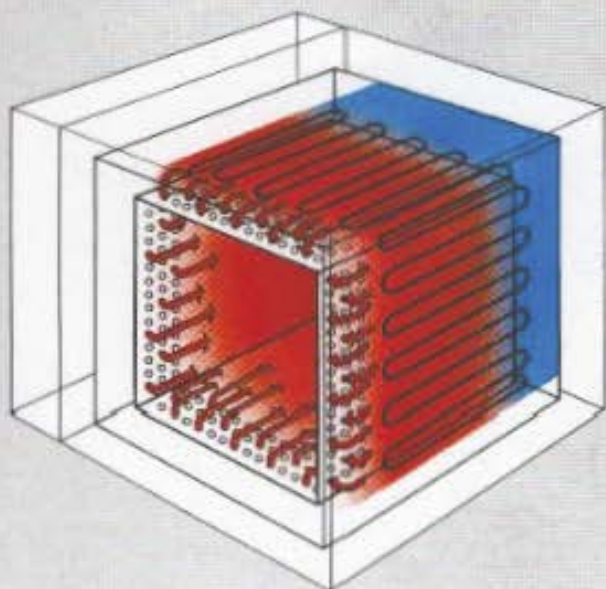
A drift of only a few degrees could be enough to cause their destruction.

Slight temperature variations, likewise, have a definite bearing on the outcome of temperature stability tests.

Given these facts, temperature constancy and uniformity were assigned a major role in the development phase of the new oven. As a result, the WU 6100 delivers precision performance at a spatial temperature uniformity of $< \pm 3^{\circ}\text{C}$ and a temperature constancy in time of $\pm 0.5^{\circ}\text{C}$ at rated temperature.

The fresh air flow rate, moreover, can be adjusted accurately. Defined orifice plates can be attached to the fresh air socket to thus maintain correctly metered changes of air in accordance with the temperature conditions inside the oven.

The WU 6100 is delivered with two additional orifice plates of differing cross sections. For specific air change rates/temperature conditions not covered, Heraeus will, on request, determine the necessary orifice size and document the required conditions in a test report.



The Air Jacket Principle

The WU 6100 is designed as a mechanical convection oven in order to maintain adequate temperature distribution, even when fresh air is admitted to the unit.

Efficient tubular heating elements in an air duct are laid like a jacket around five sides of the work space. The fresh air entering from outside is thoroughly mixed with the hot circulating air before the fan forces the mixture into the air duct.

En route to the inlets on the front, the air flows around the tubular heating elements where it is uniformly heated before getting into the work space.

The Pluses

Fully Equipped

The basic WU 6100 model features the following equipment:

- microprocessor-based program controller: Thermicon® P with a temperature/time program of up to nine segments
- adjustable overtemperature protection: temperature limit cut-out, in acc. with Thermal Safety Class 2
- damper in the fresh air socket to regulate the air supply
- 2 stainless steel shelves
- exhaust socket with chimney

Versatile

In addition to the basic accessories, there are many optional extras to adapt the WU 6100 to user-specific applications:

- microprocessor-based program controllers Eurotherm 2404 P4
- computer interfaces RS 232 and RS 422/485 for Eurotherm temperature controllers
- elapsed time meter
- provision for connection to an external temperature recorder. Additional NiCr-Ni thermocouple in the work space with recorder connection outlet
- round chart temperature recorder to record the oven temperature with separate thermocouple
- provision for connection to a central monitoring system, for ex. warning signal. This signal will be triggered if the overtemperature protection responds.
- tubular leadthrough in the right side wall

Handy

- compact overall dimensions
- work space: 95 liters
- inner casing of corrosion-resistant stainless steel
- readjustable door
- easily replaced door gasket
- 5 shelf supports

Safe and Energy-Efficient

High-grade, microporous insulating materials and fibers of aluminium silicate ensure

- that consumption of energy is low: Heat loss into the surroundings is effectively contained
- low surface temperatures: Max. surface temperature is 60°C. At rated temperature, the operator-accessible areas do not reach above 40°C – so that there is no risk of getting burned.

Spatial temperature variation in accord. with DIN 12880 Part 2

Set temperature (°C)	Temperature variation with air circulation (°C)	Temperature variation with fresh air operation (°C)
100	≤ +1	≤ +2
200	≤ ±1.5	≤ ±4
300	≤ +2	≤ +6
400	≤ +3	≤ ±6.5
500	≤ ±3	≤ ±7

Amount of fresh air m³/h

	100°C	300°C	500°C
Air flap open (fresh air)	18.6	17.3	14.6
Orifice plate Ø 16 mm	7.3	7.1	5.4
Orifice plate Ø 10 mm	2.7	2.7	2.6

Technical Data WU 6100

Rated temperature	°C	500
Spatial temperature variation in accord. with DIN 12880 Part 2 (at rated temperature)	approx. K	± 3
Temperature variation in time in accord. with DIN 12880 Part 2 (at rated temperature)	approx. K	± 0.5
Volume of chamber	l	95
Shelves:		
max. number possible		5
dimensions:		
width	mm	465
depth	mm	365
permissible load	kg/shelf	15 ¹⁾
Int. dimensions:		
width	mm	475
height	mm	475
depth	mm	420
Ext. dimensions:		
width	mm	695
height	mm	840
depth	mm	905
incl. door handle		
chimney	Ø mm	40
Weight of empty oven	kg	195
Rated power (connected load)	kW	5.4
Rated voltage	V (AC)	380
Holding power at rated temperature	kWh/h	2.0
Rise time up to 500°C	min	70
Degree of protection in accord. with DIN 40050 Part 1		IP 20

¹⁾ Max. overall permissible load: 45 kg

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Equipment alternatives WU 6100

Temperature controllers

Thermicon® P	<input checked="" type="radio"/>
Eurotherm 2404 P4	<input type="radio"/>
Eurotherm 2404 P4 with interface RS-232	<input type="radio"/>
Eurotherm 2404 P4 with interface RS-422/485	<input type="radio"/>

Temperature Recording

NI-Cr-NI Connection with separate thermocouple	<input type="radio"/>
Temperature recorder	<input type="radio"/>

Elapsed time meter

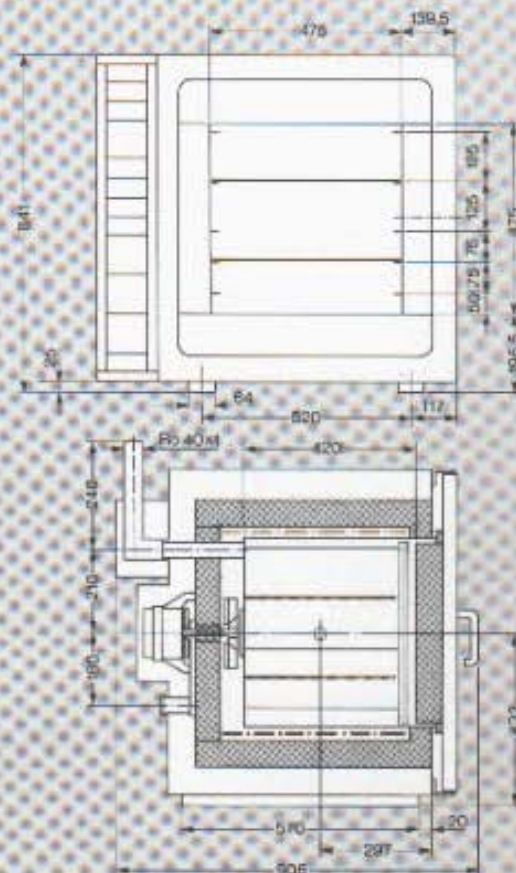
Connection for a Central Monitor

1. Within this marking, only one choice is possible

● = Basic equipment ○ = optional

Accessories

Accessories	Order No.
Additional stainless steel shelf	50034234
Tubular leadthrough \varnothing 24 mm in right side wall	50034607
Support frame	50034246



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