



# A rapid change of temperature

Temperature Shock Test Chamber TS 120, TS 300 and TS 120/3



**Weiss Umwelttechnik GmbH**  
Simulationsanlagen • Messtechnik



# Temperature Shock Test System ...

## ... TS 120 Temperature shock test chamber new design and increa- sed performance

Our latest shock test chamber type TS 120 brings a fresh breeze into the field of environmental simulation.

The modern appearance of this new system positions Weiss, once again, a step ahead of the rest.

The smooth and continuous "evolution" of our products contra a hasty "revolution" has resulted in a system offering performance features that are far above standard.

- Cradle load: new 50 kg
- A system that not only offers high performance but that is also extremely quiet, a sound level of 58 dB(A)
- 20 % higher temperature changing rate for fulfilling the most crucial standards
- Temperature conditioning of the hot zone from +50° C to 220 °C (optional to +250 °C)  
Temperature conditioning of the cold zone from -80 °C to +70 °C
- Entry port 80 mm Ø
- Volume compensation system for long-term operation without defrosting integrated in the machine compartment
- High resolution colour touch panel with graphical display for the easy processing of environmental simulation programs
- Additional features and equipment such as air cooled refrigeration and largersized ports are available upon request



## Temperature shock test chambers TS 120 and TS 300

In addition to temperature stressing, extremely rapid temperature cycling rates in the range of -80 °C to +220 °C result in an extremely high mechanical stress of test specimens.

If electronic components are exposed to this rapid temperature cycling, weak points are revealed in a short time.

By assigning our shock test chamber, you not only reduce the number of premature failures but also increase the reliability of your products.

Our systems fulfill the requirements of international testing standards such as DIN, IEC and MIL.



The vertical arrangement of the test zones of our shock test chamber has proved to be highly successful. A ball spindle drive ensures reliable movement of the cradle.

# ...the 3-Zone System

Air guidance, designed according to experience gained in the field, combined with high air circulating rates result in rapid temperature cycles and a uniform distribution of temperature in the test space.

Up to 1000 cycles are possible without defrosting. This means we can guarantee virtually constant availability of the system.

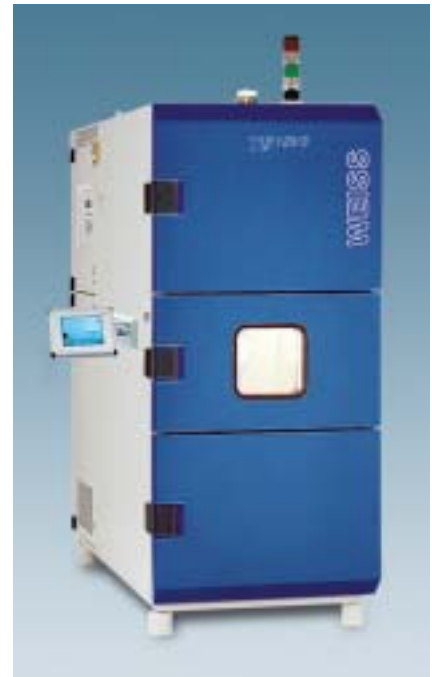
The single zones of shock test systems may also be operated as individual systems.

The integrated safety systems wrap up the image of this application-oriented shock test system (e. g. only 2.27 m<sup>2</sup> footprint etc.).

Thanks to innovative design techniques (water cooling, sound insulation), a relatively low noise level for this type of system has been achieved.

Besides the 120 I test system we also supply (especially for the screening of assemblies) a 300 I system – a unique system offering a most favourable cost-benefit ratio.

Our test systems allow you to expose 50 kg test specimens to thermal stress.



## Temperature shock test chamber TS 120/3

Tests in accordance with MIL-STD 883 C, method 1010.5 are performed with the TS 120/3.

Our test system type TS 120/3 offers you many favourable advantages. Our positive experience gained from the 2-zone design has been integrated into this system e. g. the well-proven vertical arrangement of the test zones.

Proximity sensors ensure exact cradle position and guarantee perfect tightness between the individual zones and thus very low energy consumption.

All test zones may be operated as individual systems. The middle zone allows the preconditioning and post conditioning of specimens.



# Standard equipment and technical data ...

- Colour Touch Panel
- Microprocessor monitoring and control unit SIMCON/32\*-NET
- Temperature control using mobile sensor in cradle or alternatively fixed sensor in warm or hot zone
- Digital I/O, 4 inputs/outputs
- Stored programmes
- Independent adjustable temperature limiter  $t_{\min}$  /  $t_{\max}$  in cradle
- Adjustable software temperature limiter min/max.
- Door with window in hot zone, (for TS120/3 in the middle door)
- Test space illumination
- Chloride-free refrigerant
- 1 ultra-lightweight shelf incl. rails
- Entry port
- Max. loading capacity of cradle 50 kg (for TS120/3 = 20 kg)
- Serial interface RS 232 C
- European socket
- Potential-free contact for switching-off of test specimens
- Water-cooled refrigeration unit
- Trend display
- Cradle in loading position locked
- Defrosting cycles automatic and programable
- Dwell time start programable
- Operating hour counter, cycle counter, total no. of cycles/remaining run time
- WKD Calibration of 2 temperature values

Further information and representatives world-wide see

[www.weiss.info](http://www.weiss.info)

Temperature shock test chamber	Type		TS 120	TS 300	TS 120/3
Space volume	Litre		125	300	120
Number of zones			2	2	3
Temperature range	hot zone	°C	+50 to +220	+50 to +220	+50 to +220
Temperature range	middle zone	°C	----	----	-10 to +90
Temperature range	cold zone	°C	-80 to +70	-75 to +70	-80 to +70
Temperature fluctuation in time		K		±0.3 to ±1.0	
Temperature deviation in space		K		±0.5 to ±2.0	
Temperature gradient <sup>1)</sup>		K		1 to 4	
Calibrated values	cold zone	°C	-40	-40	-40
	hot zone	°C	+125	+125	+125
	middle zone	°C	--	--	+25
Test space dimensions	Width	mm	470	770	470
	Depth	mm	650	650	650
	Height	mm	410	610	400
External dimensions	Width	mm	970	1290	960
	Depth	mm	2350	1800	2150
	Height (...) <sup>2)</sup>	mm	1985 (2450)	2220 (2885)	2130 (2625)
Machine unit	Width	mm		800	
	Depth	mm	integrated	1850	integrated
	Height	mm		1900	
Loading capacity, max.		kg	50	50	20
Sound pressure level <sup>3)</sup>		dB(A)	58	65	70
Refrigeration unit			water-cooled		
Electrical connection			3/N/PE AC 400 V ±10 %, 50 Hz		
Rated power		kW	10	30	13.5

#### Standards – TS 120 + TS 300

MIL STD 883 F, method 1010.8, severity of test A,B,C,D <sup>4)</sup>, F – MIL STD 810 E, method 503 MIL STD 202 F, method 107 G – IEC 60068-2-14, test Na – BS 2011 – DIN 40046, test Na, JESD22 – A101 – A

#### Standards – TS 120/3

MIL STD 883 C, method 1010.5, severity of test A,B,C,D,G – MIL STD 202 E, method 107 D – Of course as well all standards of two-chamber versions are met.

<sup>1)</sup> in accordance with IEC 60068-3-5 - <sup>2)</sup> height of installation room necessary for operation of chamber -

<sup>3)</sup> free field, 1 m distance from the front, as per DIN 45635, part 1, accuracy class 2 - <sup>4)</sup> only TS 120

We reserve the right of changes in construction resulting from technical progress.

Some of the illustrated systems contain optional extras.

## Options

- Software SIMPATI\*
- Analogue transducer I/O
- Temperature measuring on test specimen
- Temperature range extension to +250 °C (only TS 120)
- Interface RS 232 C <--> IEEE 488 or RS 232 C <--> RS 422/485
- Interface RS 422/485 (network card for test cabinet)
- Ethernet interface (only together with Option SIMPATI\*)
- Various printers
- Wire mesh and insert shelves
- Additional entry ports (TS 120/300)
- Connection for nitrogen-inertisation/compressed air dryer
- Shock cooling with LN<sub>2</sub>
- Compressed air unit (TS 120/3)
- Air-cooled refrigeration unit
- Special voltages
- Spatial WKD or DKD calibration



**Weiss Umwelttechnik GmbH**  
**Simulationsanlagen • Messtechnik**

35447 Reiskirchen-Lindenstruth / Germany • Greizer Str. 41–49  
 Telefon (0 64 08) 84-0 • Telefax (0 64 08) 84-87 10  
[www.weiss.info](http://www.weiss.info) • [www.wut.com](http://www.wut.com) • eMail: [info@wut.com](mailto:info@wut.com)