

Faster Temperature Cycling Models

Selectable temperature change rate (5°C to 20°C per minute) and internal capacity

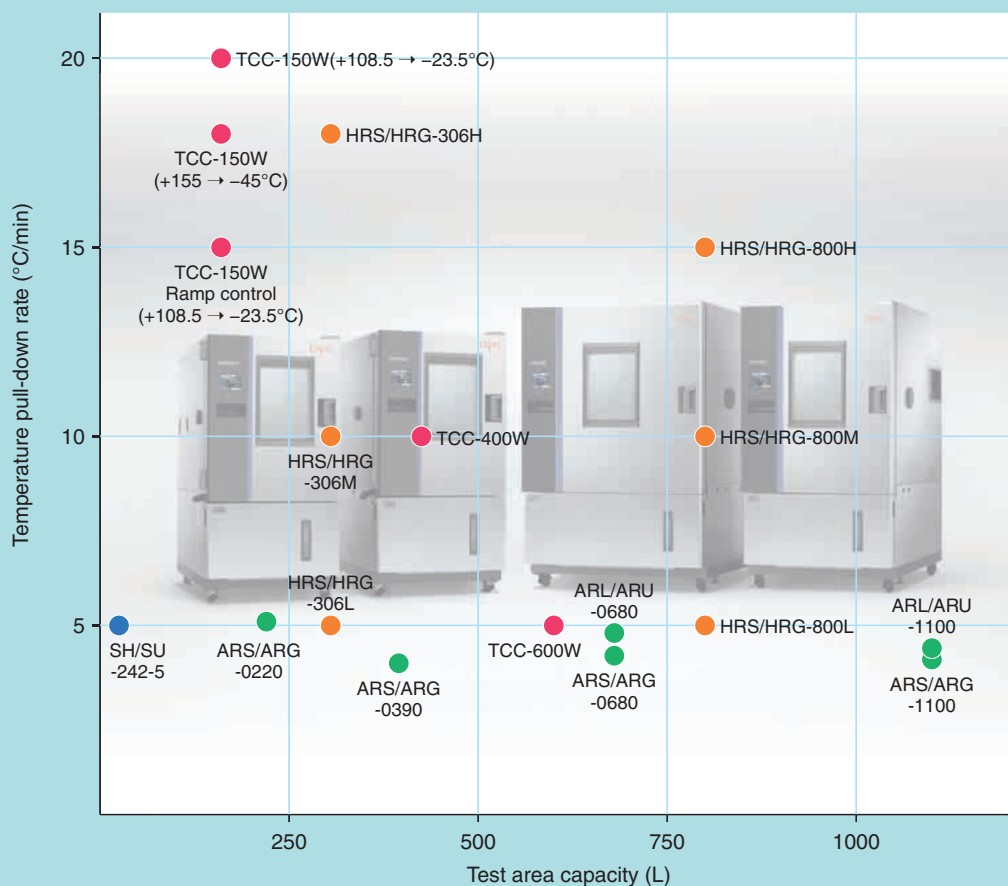
From JEDEC standards to screening, the demand for high-speed temperature change as specimen stress continues to grow.

ESPEC Faster Temperature Cycling Models provide you with a range of models from which you can choose based on temperature change rate, internal capacity, function, and other conditions based on test conditions.

They are designed especially for those who require environment testing of various size specimen samples under stringent test conditions.

High-speed temperature change plus high-power operation can provide your facility with versatile testing capabilities.

Faster Temperature Cycling Model Portfolio



* For each model, the temperature heat-up rate is greater than its temperature pull-down rate. For details, see the information starting from the next page.

● 5°C to 20°C/min

TCC

The TCC Series provides very high-speed temperature change of the specimen to meet a wide variety of applications from JEDEC standards to screening. An outstanding temperature change rate makes it possible to subject specimens to uniform temperature stress.

Two different control systems are employed: specimen temperature ramp control with a specimen temperature change rate of 15°C per minute, air temperature non-ramp control for temperature cycle testing and thermal shock testing.

* Specimen temperature change rate of 15°C per minute is TCC-150W performance. Ramp control is a control method that provides a fixed temperature change rate.



Model	Temperature range	Performance			Inside dimensions (mm)	Outside dimensions (mm)	Capacity (L)
		Ramp control	Specimen	Temp. extreme achievement time Temp. rate of change			
TCC-150W	-70 to +180°C	Off	None	-45 ⇄ +155°C (Target temp.: -70°C +180°C) Heat up rate: Max. 9 min. (23°C/min.) Pull down rate: Max. 11 min. (18°C/min.)	W800 H500 D400	W1000 H1808 D1915	160
				-23.5 ⇄ +108.5°C (Target temp.: -40°C +125°C) Heat up rate: Max. 5 min. (26°C/min.) Pull down rate: Max. 7 min. (20°C/min.)			
On		PCB 5 kg + jig 4 kg *1	-23.5 ⇄ +108.5°C (Target temp.: -40°C +125°C) 15°C/min. (ramp control.)				
TCC-400W*2		Off	Aluminium 35 kg	-40 ⇄ +120°C 10°C/min.	W800 H891 D600	W1000 H1808 D2065	427
TCC-600W*2			Aluminium 85 kg	-40 ⇄ +120°C 5°C/min.	W800 H941 D800	W1000 H1879 D1915	602

*1 Specimen: (glass epoxy PCB) 5 kg + Jig: 4 kg (ESPEC standard jig)
*2 Custom support item

● 5°C/min

SH/SU

This chamber delivers high performance in a compact design. New N instrumentation enables high-precision control of temperatures ranging from -60°C to +150°C. Versatile functions and options let you easily create a configuration that is able to support your testing, research, and experimentation needs.



Model	Temperature/ humidity range	Performance		Inside dimensions (mm)	Outside dimensions (mm)	Capacity (L)
		Temp. extreme achievement time	Temp. rate of change			
SH-242-5	-40 to +150°C 30 to 95%rh	-45 ⇄ +150°C Heat up rate: 40 min. Pull down rate: 20 min.	-21 ⇄ +131°C Heat up rate: 5.0°C/min. Pull down rate: 5.0°C/min.	W300 H300 D250	W440 H690 D785	22.5
SU-242-5	-40 to +150°C			W440 H620 D785		

* An option is available to change the upper limit control temperature to +180°C.



The AR Series enables reliable testing by reproducing accurate environments over limited spans of time. They provide means for dealing with thermal load from specimens, for improving temperature change rates, and for expanding the temperature/humidity control range. They are also equipped with a specimen temperature control function tests that demand greater severity, and to meet the testing needs of automotive components and mobile products.

Model	Temperature/ humidity range	Performance		Inside dimensions (mm)	Outside dimensions (mm)	Capacity (L)
		Temp. extreme achievement time	Temp. rate of change			
ARS-0220	-75 to +180°C 10 to 98%rh	+20°C → +180°C Heat up rate: Max. 35 min. +20°C → -75°C Pull down rate: Max. 40 min.	-49.5 ⇄ +154.5°C Heat up rate: 6.0°C/min. Pull down rate: 5.2°C/min.	W700 H800 D400	W900 H1742 D1455	220
ARS-0390		+20°C → +180°C Heat up rate: Max. 45 min. +20°C → -75°C Pull down rate: Max. 50 min.	-49.5 ⇄ +154.5°C Heat up rate: 5.0°C/min. Pull down rate: 4.0°C/min.	W700 H800 D700	W900 H1742 D1705	390
ARS-0680		+20°C → +180°C Heat up rate: Max. 35 min. +20°C → -75°C Pull down rate: Max. 50 min.	-49.5 ⇄ +154.5°C Heat up rate: 6.0°C/min. Pull down rate: 4.2°C/min.	W850 H1000 D800	W1050 H1955 D1805	680
ARS-1100		+20°C → +180°C Heat up rate: Max. 45 min. +20°C → -75°C Pull down rate: Max. 50 min.	-49.5 ⇄ +154.5°C Heat up rate: 4.7°C/min. Pull down rate: 4.1°C/min.	W1100 H1000 D1000	W1300 H1955 D2005	1100
ARL-0680	-45 to +180°C 10 to 98%rh	+20°C → +180°C Heat up rate: Max. 30 min. +20°C → -45°C Pull down rate: Max. 50 min.	-22.5 ⇄ +157.5°C Heat up rate: 6.3°C/min. Pull down rate: 4.8°C/min.	W850 H1000 D800	W1050 H1955 D1805	680
ARL-1100		+20°C → +180°C Heat up rate: Max. 40 min. +20°C → -45°C Pull down rate: Max. 50 min.	-22.5 ⇄ +157.5°C Heat up rate: 4.7°C/min. Pull down rate: 4.4°C/min.	W1100 H1000 D1000	W1300 H1955 D2005	1100
ARG-0220	-75 to +180°C	+20°C → +180°C Heat up rate: Max. 35 min. +20°C → -75°C Pull down rate: Max. 40 min.	-49.5 ⇄ +154.5°C Heat up rate: 6.0°C/min. Pull down rate: 5.2°C/min.	W700 H800 D400	W900 H1742 D1455	220
ARG-0390		+20°C → +180°C Heat up rate: Max. 45 min. +20°C → -75°C Pull down rate: Max. 50 min.	-49.5 ⇄ +154.5°C Heat up rate: 5.0°C/min. Pull down rate: 4.0°C/min.	W700 H800 D700	W900 H1742 D1705	390
ARG-0680		+20°C → +180°C Heat up rate: Max. 35 min. +20°C → -75°C Pull down rate: Max. 50 min.	-49.5 ⇄ +154.5°C Heat up rate: 6.0°C/min. Pull down rate: 4.2°C/min.	W850 H1000 D800	W1050 H1955 D1805	680
ARG-1100		+20°C → +180°C Heat up rate: Max. 45 min. +20°C → -75°C Pull down rate: Max. 50 min.	-49.5 ⇄ +154.5°C Heat up rate: 4.7°C/min. Pull down rate: 4.1°C/min.	W1100 H1000 D1000	W1300 H1955 D2005	1100
ARU-0680	-45 to +180°C	+20°C → +180°C Heat up rate: Max. 30 min. +20°C → -45°C Pull down rate: Max. 50 min.	-22.5 ⇄ +157.5°C Heat up rate: 6.3°C/min. Pull down rate: 4.8°C/min.	W850 H1000 D800	W1050 H1955 D1805	680
ARU-1100		+20°C → +180°C Heat up rate: Max. 40 min. +20°C → -45°C Pull down rate: Max. 50 min.	-22.5 ⇄ +157.5°C Heat up rate: 4.7°C/min. Pull down rate: 4.4°C/min.	W1100 H1000 D1000	W1300 H1955 D2005	1100

● 5°C to 20°C/min

HR

The HR Series are temperature and humidity chambers that are perfect choices automotive component environment testing, which is demanding ever stricter testing.

Internal capacities are 306 L and 800 L, while temperature change rates are 5°C, 10°C, and 15°C per minute. You can specify whether to include humidity control to suit your needs.

But these chambers also offer more than just high temperature change rates. It is possible to shorten humidity attainment time and ensure that automotive components meet condensation test standards.

The operation display panels of these models are based ESPEC's Plantinous J Series functions, and cable holes can be provided on both the left and right sides for superior operability.



Model	Temperature range	Humidity range	Performance		Inside dimensions (mm)	Outside dimensions (mm)	Capacity (L)			
			Specimen	Temp. extreme achievement time Temp. rate of change						
HRS-306L	-70 to +180°C	20 to 98%rh	Iron 5 kg	-55 ⇄ +125°C Heat up rate: Max. 36 min. (5°C/min.) Pull down rate: Max. 36 min. (5°C/min.)	W600 H850 D600	W1050 H1975 D2159	306			
HRG-306L		—		-55 ⇄ +125°C Heat up rate: Max. 18 min. (10°C/min.) Pull down rate: Max. 18 min. (10°C/min.)						
HRS-306M		20 to 98%rh						-45 ⇄ +155°C Heat up rate: Max. 9 min. (23°C/min.) Pull down rate: Max. 11 min. (18°C/min.)		
HRG-306M		—		None						
HRS-306H		20 to 98%rh	Iron 5 kg					-55 ⇄ +125°C Heat up rate: Max. 36 min. (5°C/min.) Pull down rate: Max. 36 min. (5°C/min.)	W1000 H1000 D800	W1450 H1975 D2370
HRG-306H		—		-55 ⇄ +125°C Heat up rate: Max. 18 min. (10°C/min.) Pull down rate: Max. 18 min. (10°C/min.)						
HRS-800L		20 to 98%rh			-45 ⇄ +155°C Heat up rate: Max. 13 min. (15°C/min.) Pull down rate: Max. 13 min. (15°C/min.)					
HRG-800L		—		None						
HRS-800M		20 to 98%rh	None		-45 ⇄ +155°C Heat up rate: Max. 13 min. (15°C/min.) Pull down rate: Max. 13 min. (15°C/min.)	W1450 H1975 D2962				
HRG-800M		—								
HRS-800H		20 to 98%rh	None	-45 ⇄ +155°C Heat up rate: Max. 13 min. (15°C/min.) Pull down rate: Max. 13 min. (15°C/min.)	W1450 H1975 D2962					
HRG-800H		—								

* Custom support item All models come equipped with a specimen temperature control function.

• Specifications are subject to change without notice due to design improvements.

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