

Quality is more than a word

ESPEC



Temperature Chambers

Temperature & Humidity Chambers



Technical data

Type	Volume	Inside dimensions, W×H×D	Minimum temperature ¹	Maximum temperature	Temperature-changing rate cooling ²	Temperature-changing rate heating ²	Temperature deviation in time	Temperature homogeneity in space	Heat compensation ³ at +20°C	Heat compensation ³ at -20°C	Temperature & humidity control range
	L	mm	°C	°C	K/min	K/min	K	K	W	W	

PERFORMANCES FOR TEMPERATURE TESTS

With temperature-changing speed of 1K/min and 2K/min

SH/SU-242	22.5	300x300x250	-40	+150	2.1	3.2	±0.3 to ±0.5	2.5 to 4.0	150	80	*Refer to diagram 1
SH/SU-262	22.5	300x300x250	-60	+150	2.1	3.2			120	250	
SH/SU-642	64	400x400x400	-40	+150	1.7	2.9			320	260	
SH/SU-662	64	400x400x400	-60	+150	1.7	2.9			320	260	
PL/PU-1J	120	500x600x400	-40	+100	2.0	3.0	±0.3	1.5	850	850	*Refer to diagram 2
PL/PU-2J	225	500x750x600	-40	+100	2.0	3.0			1400	1050	
PSL/PG-2J	306	600x850x600	-70	+100	2.0	5.0			700	—	
PL/PU-3J	408	600x850x800	-40	+100	2.0	3.0			1500	1100	
PL/PU-4J	800	1000x1000x800	-40	+100	2.0	3.0			2850	—	
PSL/PG-4J	800	1000x1000x800	-70	+100	1.0	5.0			2200	—	

With temperature-changing speed of 3K/min

ARS/ARG-0390	390	700x800x700	-75	+180	4.0	5.0	±0.3	3.0	3000	1300	*Refer to diagram 3
ARL/ARU-0680	680	850x1000x800	-45	+180	4.8	6.3			4500	1400	
ARS/ARG-0680	680	850x1000x800	-75	+180	4.2	6.0			4500	1900	
ARL/ARU-1100	1100	1100x1000x1000	-45	+180	4.4	4.7			4500	1800	
ARS/ARG-1100	1100	1100x1000x1000	-75	+180	4.1	4.7			4500	3600	

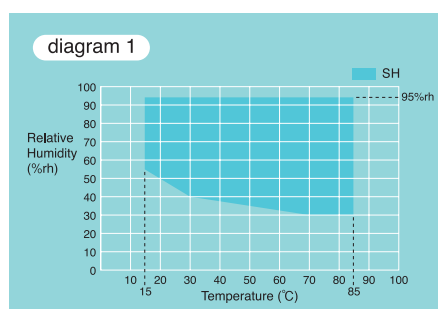
1: Discontinuously

2: Temperature of change in the temperature range excluding ±10% of max/min temperature.

3: Reference data (not guaranteed data)

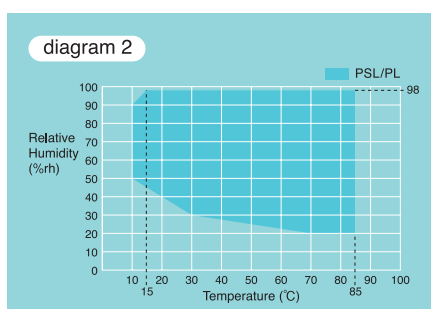
PERFORMANCES FOR CLIMATIC TESTS

Temperature & humidity control range



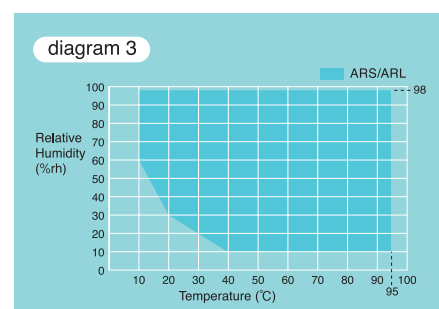
* With no specimen and under ambient temperature at +23°C.

* Continuous operation at or below +40°C is limited because of frost formation on the cooler and dehumidifier.



* With no specimen and under ambient temperature at +23°C.

* Continuous operation at or below +40°C is limited because of frost formation on the cooler and dehumidifier.



* With no specimen and under ambient temperature at +20°C.

* Continuous operation at or below +40°C is limited because of frost formation on the cooler and dehumidifier.



Type	Volume	Inside dimensions, WxHxD	Minimum temperature ¹	Maximum temperature	Temperature-changing rate cooling ²	Temperature-changing rate heating ²	Temperature deviation in time ³	Temperature homogeneity in space	Heat compensation ³ at +20°C	Heat compensation ³ at -20°C	Temperature & humidity control range
	L	mm	°C	°C	K/min	K/min	K	K	W	W	

PERFORMANCES FOR TEMPERATURE TESTS

With temperature-changing speed of 5K/min

SH/SU-242-5	22.5	300x300x250	-40	+150	5.0	5.0	±0.3to±0.5	2.5to4.0	170	130	*Refer to diagram 1
ARS/ARG-0220	220	700x800x400	-75	+180	5.2	6.0	±0.3	3.0	3000	1300	*Refer to diagram 3
SML/SMU-2	1800	1200x1000x1500	-40	+180	5.0	5.0	±0.5 to ±1.0		12500	7000	*Refer to diagram 4
SMS/SMG-2	1800	1200x1000x1500	-70	+180	5.0	5.0			12500	7000	

With temperature-changing speed of 10K/min

ARSF/ARGF-0250-10	249	600x830x500	-70	+180	10.0	10.0	±0.3	1.5 to 2.0	6000	4900	*Refer to diagram 5
ARSF/ARGF-0400-10	398	600x830x800	-70	+180	10.0	10.0			6000	4900	
ARSF/ARGF-0800-10	784	1000x980x800	-70	+180	10.0	10.0			6000	6700	

With temperature-changing speed of 15K/min

ARSF/ARGF-0250-15	249	600x830x500	-70	+180	18.0	18.0	±0.3	1.5 to 2.0	6000	4900	*Refer to diagram 5
ARSF/ARGF-0400-15	398	600x830x800	-70	+180	15.0	15.0			6000	5900	
ARSF/ARGF-0800-15	784	1000x980x800	-70	+180	15.0	15.0			9000	6800	
TCC-150W	160	800x500x400	-70	+180	18.0	23.0	±0.5	—	—	8000	—

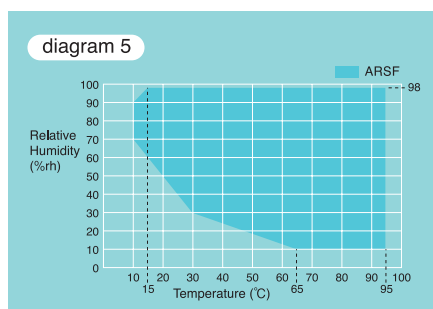
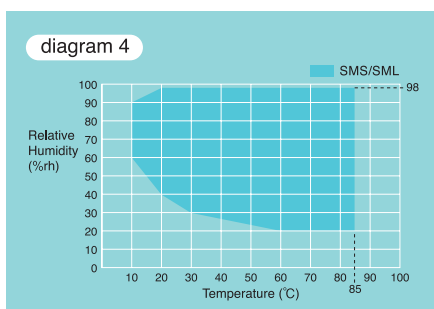
1:Discontinuously

2:Temperature of change in the temperature range excluding ±10% of max/min temperature.

3:Reference data (not guaranteed data)

PERFORMANCES FOR CLIMATIC TESTS

Temperature & humidity control range



* With no specimen and under ambient temperature at +23°C.

* Continuous operation at or below +40°C is limited because of frost formation on the cooler and dehumidifier.

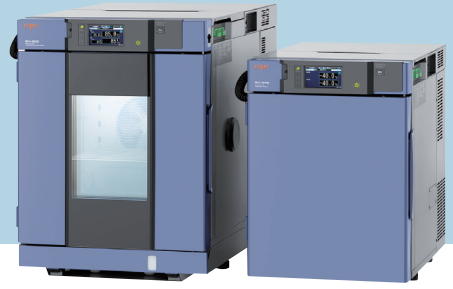
* With no specimen and under ambient temperature at +23°C.

* Totally frost free, no limitation on continuous operation.

Test standards and compatible models at a glance

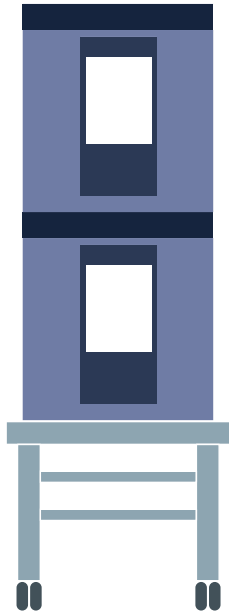
Type	IEC-60068-2-1:2007 Test A: Cold -25°C	IEC-60068-2-2:2007 Test B: Dry heat	IEC-60068-2-30:2005	IEC-60068-2-38:2009
With temperature-changing speed of 1K/min and 2K/min				
SH/SU-242/262/642/662	✓	✓		
PL/PU-1J/2J/3J/4J	✓	✓	✓ (PL)	✓ (PL)
PSL-2J/4J	✓	✓		
With temperature-changing speed of 3K/min				
ARS/ARG-0390	✓	✓	✓ (ARS)	✓ (ARS)
ARL/ARU-0680/1100	✓	✓	✓ (ARL)	✓ (ARL)
ARS/ARG-0680/1100	✓	✓	✓ (ARS)	✓ (ARS)
SML/SMU-2	✓	✓	✓ (SML)	✓ (SML)
SMS/SMG-2	✓	✓	✓ (SMS)	✓ (SMS)
With temperature-changing speed of 5K/min				
SH/SU-242-5	✓	✓		
ARS/ARG-0220	✓	✓	✓ (ARS)	✓ (ARS)
With temperature-changing speed of 10K/min				
ARSF/ARGF-0250-10	✓	✓	✓ (ARSF)	✓ (ARSF)
ARSF/ARGF-0400-10	✓	✓	✓ (ARSF)	✓ (ARSF)
ARSF/ARGF-0800-10	✓	✓	✓ (ARSF)	✓ (ARSF)
With temperature-changing speed of 15K/min				
ARSF/ARGF-0250-15	✓	✓	✓ (ARSF)	✓ (ARSF)
ARSF/ARGF-0400-15	✓	✓	✓ (ARSF)	✓ (ARSF)
ARSF/ARGF-0800-15	✓	✓	✓ (ARSF)	✓ (ARSF)
TCC-150W	✓	✓		

The test results may not meet specifications depending on the quantity of specimens or the setting method.



IEC-60068-2-78:2001 (30°C 93%rh)(40°C 85%) (40°C 93%)	IEC-60068-2-14:Nb -40 ~ +125°C 1°C/min 3°C/min -25 ~ +125°C 1°C/min -40 ~ +155°C 3°C/min	IEC-60068-2-14:Nb -40 ~ +125°C 1°C/min 3°C/min 5°C/min 10°C/min 15°C/min	ISO 16750-4 Part 4: Climatic loads 5.3 Temperature cycling tests	ISO 16750-4: Road Vehicles 5.3 Temperature cycling tests 5.6.2.2 Test 1: Damp heat cyclic test 5.6.2.3 Test 2: Composite temperature/humidity cyclic test 5.6.2.4 Test 3:Dewing test	JESD- A104B AEC-Q100/Q200
With temperature-changing speed of 1K/min and 2K/min					
✓ (SH)					
			✓	✓	
With temperature-changing speed of 3K/min					
✓ (ARS)	✓		✓	✓	
✓ (ARL)	✓		✓	✓	
✓ (ARS)	✓		✓	✓	
✓ (SML)	✓		✓	✓	
✓ (SMS)	✓		✓	✓	
With temperature-changing speed of 5K/min					
✓ (SH)	✓		✓	✓	
✓ (ARS)	✓		✓	✓	
With temperature-changing speed of 10K/min					
✓ (ARSF)	✓		✓	✓	
✓ (ARSF)	✓		✓	✓	
✓ (ARSF)	✓		✓	✓	
With temperature-changing speed of 15K/min					
✓ (ARSF)	✓	✓	✓	✓	
✓ (ARSF)	✓	✓	✓	✓	
✓ (ARSF)	✓	✓	✓	✓	
	✓	✓	✓	✓	✓

Special Features



Bench Top Type

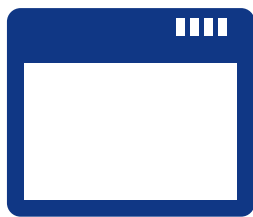
Temperature (& Humidity) Chamber

High Performance

-60°C ~ +150°C

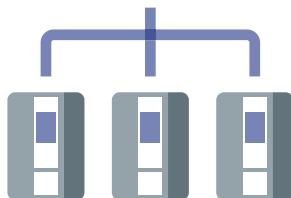
Compact design

- Stackable with optional rack
- Volume 22.5L / 64L



Simple Monitoring

By connecting a chamber in your network group, you can monitor the status of the chamber by browser. A specific application is not required.



Centralized Control Monitor

(sold separately : ESPEC Online core)

You can observe current operating status of all test equipment by one computer in real-time.



Customized Testing

We offer years of experience in customized chambers.
We can meet your individual specifications.



Wide Viewing Door

clear view at -40°C



Road Vehicle Testing



Training Room for Athletes

low oxygen



ESPEC CORP. <http://www.espec.co.jp/english>

Head Office

3-5-6, Tenjinbashi, Kita-ku, Osaka 530-8550, Japan
Tel: 81-6-6358-4785 Fax: 81-6-6358-4786

ESPEC NORTH AMERICA, INC.

Tel: 1-616-896-6100 Fax: 1-616-896-6150

ESPEC EUROPE GmbH

Tel: 49-89-1893-9630 Fax: 49-89-1893-96379

ESPEC ENVIRONMENTAL EQUIPMENT (SHANGHAI) CO., LTD.

Head Office

Tel: 86-21-51036677 Fax: 86-21-63372237

BEIJING Branch

Tel: 86-10-64627025 Fax: 86-10-64627036

TIANJIN Branch

Tel: 86-22-26210366 Fax: 86-22-26282186

GUANGZHOU Branch

Tel: 86-20-83317826 Fax: 86-20-83317825

SHENZHEN Branch

Tel: 86-755-83674422 Fax: 86-755-83674228

SUZHOU Branch

Tel: 86-512-68028890 Fax: 86-512-68028860

ESPEC TEST TECHNOLOGY (SHANGHAI) CO., LTD.

Tel: 86-21-68798008 Fax: 86-21-68798088

ESPEC ENGINEERING (THAILAND) CO., LTD.

Tel: 66-3-810-9353 Fax: 66-3-810-9356

ESPEC GLOBAL NETWORK

<http://www.espec-global.com/>



ISO 9001/JIS Q 9001

Quality Management System Assessed and Registered

ESPEC CORP. has been assessed by and registered in the Quality Management System based on the International Standard ISO 9001:2008 (JIS Q 9001:2008) through the Japanese Standards Association (JSA).

* Registration : ESPEC CORP.
(Overseas subsidiaries excluded)



ISO 14001 (JIS Q 14001)

Environmental Management System Assessed and Registered

ESPEC CORP.
(Overseas subsidiaries excluded)

the 70th anniversary

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