Quality is more than a word

ESPEC

Bench-Top Type Temperature (& Humidity) Chamber

SH·SU

CAT.NO.E13111-V1708

Compact design for personal use, to network with your computer.

The bench-top type temperature and humidity chamber series feature environmental testing performance in a compact design.
Available in 20 liters and 60 liters capacities, these models offer a temperature range from −20℃, −40℃, or −60℃, to +150℃ or +180℃, while achieving excellent performance.
The chamber comes with user-friendly touch panel display, allows three-way access to the chamber, and offering a broader range of options for superior expandability.

22.5L model

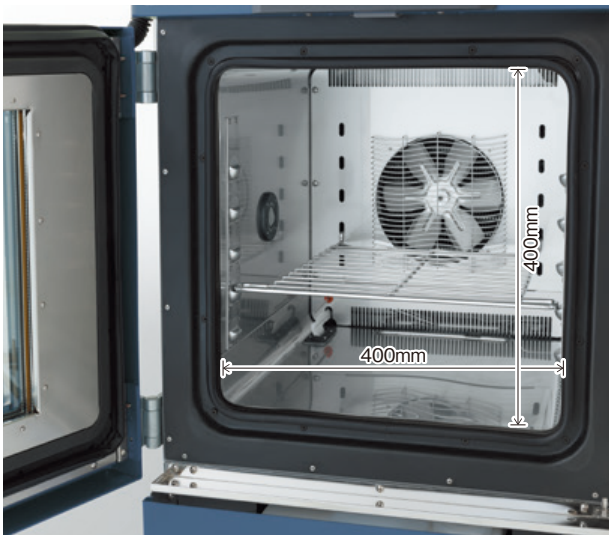
64L model

* Shown are equipped with options. (Standard: ϕ50mm cable port on the right (not shown))

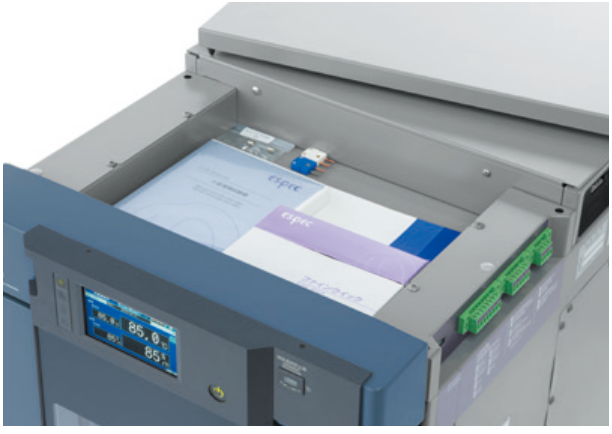
Characteristics

High performance in a box

22.5L model



Test area (64L model)


Chamber top free space (SH-262)

Wide Variations

With three temperature range patterns (−60℃, −40℃, or −20℃), two-volume selections (22.5L or 64L), and with or without humidity, the Bench-top chamber offers a total of 12 models to fulfill customers' needs.

Full-size chamber performance in a compact design

All our models now have a temperature range that extends up to 180℃, with a humidity range running from 30% to 95%rh, in a small and lightweight structure that can even fit on a desk (22.5L model).

Rapid temperature changes of 5k/min.

Utilizing unused space (Japanese patent No.5906225)

The top of the chamber has space, which was unused previously. But now it is redesigned as a storage space to store running cables neatly, store measuring instrument, or to store whatever equipment you feel necessary close to the chamber.
(not available on 242-5 models & 115V AC & 200V AC with NEC spec.)

Top storage box
Size: W310×D250mm (SH/SU-222, 242, 262)
W410×D400mm (SH/SU-642, 662)
Inside load capacity: 5kg

Characteristics

Viewing window with LED light

The viewing window (option) for observing the test area now comes with an LED light. The window also comes with a transparent metal deposited thin film heater for easy viewing without condensation probrem.

Viewing window (option)

Various ways to “observe,” “touch,” and “operate.”

A hand-in port can be installed to either the right or left side of the chamber. The chamber with both the viewing window and hand-in port allows you to operate the specimen while viewing the inside of the chamber without opening the door.


Hand-in port (option)

Various stands to optimize chambers’ footprint

Equipped with casters, you can use the stand (option) to arrange your equipment and save space by stacking chambers and moving them whenever necessary.

Stands with additional features

The stands come in various styles including a stand with shelves for integration with other test equipment, a stand with an option box to accommodate paperless recorder or output terminal, a stand with additional humidifier water tank, and a stand with 19-inch rack mount.

(See page 16 for details)


H stand with option box and C stand (option)

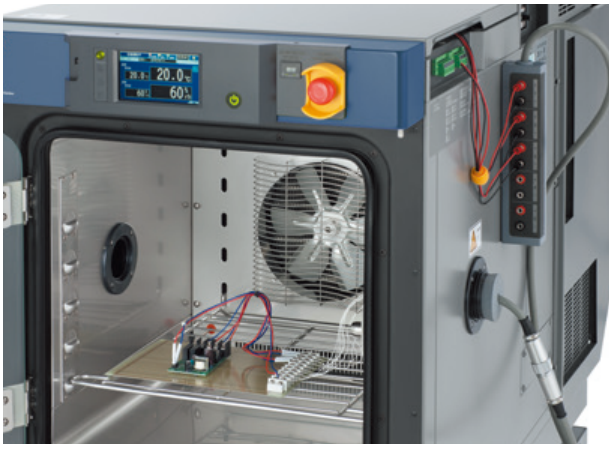

Stand with water supply and drain tank (option)

Convenient water supply method

You can access the standard water tank from the front of the chamber (Type SH). However, if you wish to execute a long or continuous humidity test, you can accommodate by adding a continuous water supply option or a roof top water tank option.

Characteristics

Instrumentation interlock terminals



EZ connect cable port plug (option)

Instrumentation Interlock I/O Terminals

The chamber comes with I/O terminal as a standard, which allows the chamber to work in synchronization with external measuring instrumentation such as a multimeter.

Three-way access

Chamber comes with a ϕ50mm cable port on the right side as a standard, but you can enlarge it and or add more cable ports on the right, left and the top.

EZ connect cable port plug (option)

The easier connection between a device under test (DUT) and external peripheral requires less time for a test preparation.

International standards

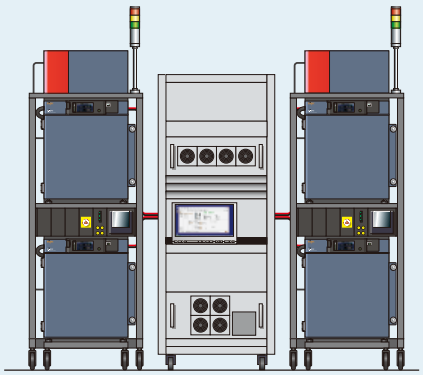
Complies with the following standards:

ISO 12100	Safety of Machinery
IEC 60204	Low Voltage
IEC 61000-6-2	EMC
IEC 61000-6-4	EMC

Custom-made Equipment

Battery charge / discharge testing

- Options prepared for battery testing, like safety doorlock, pressure relief vent, heat detector, gas detector, etc.
- All necessary features are prepared as one package for all units, offering a reduced total cost.



■ This product can be customized to your needs.
For further information, please contact us.

User-friendly touch-screen operation

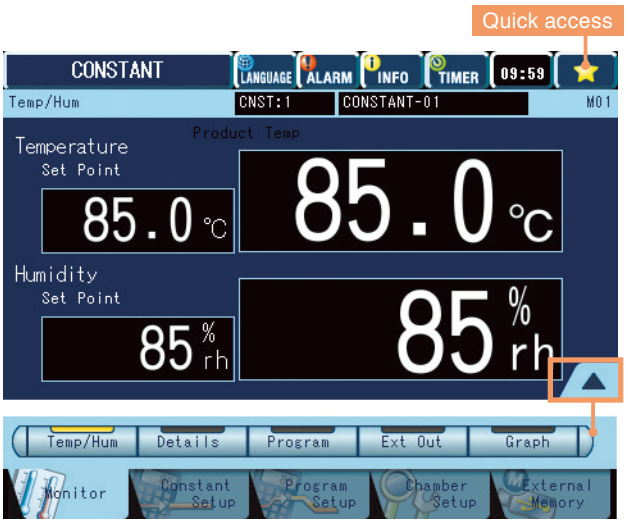
Color LCD touch panel

N-Instrumentation with 4.3-inch touch panel display comes with originally designed human-machine-interface that allows easy navigation throughout its functions. The touch panel is pressure sensitive resistive type which allows you to operate even with gloves on.

User-friendly stylus pen operation

Quick access icon

The star (★) mark on the top-right corner is a short-cut or quick access button, which you can assign by yourself. Once you assign it, you can access the function with a single push, instead of navigating through layers of menus.



Test data recording

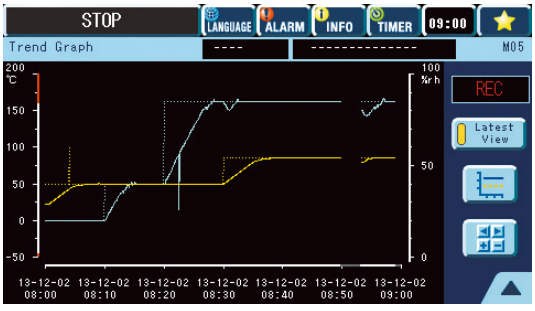
The instrumentation comes with internal memory, to store sampling data such as temperature and humidity settings, and measured values. You can set recording ON and OFF, and its interval manually.

Trend-graph display

Information notification

The INFO icon will blink when chamber information is requiring attention. By pressing the icon, you will find notifications such as “Check Humidity Tray” and “Check Wet Bulb Wick.”

Trend-graph



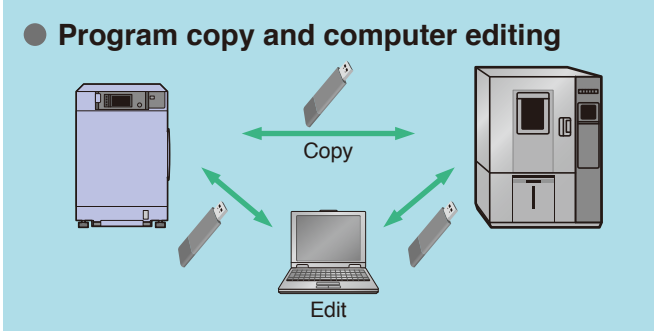
Test profile registration

The controller allows you to register three constant test profiles, and eight program test profiles with a maximum of 99 steps per program.

Multilingual support

The controller supports:
Japanese / English / Korean
Chinese (Traditional / Simplified)

Program copy and computer editing



Copy test profiles

Share the test profiles among chambers via USB memory* instead of PC.
* USB memory not included.

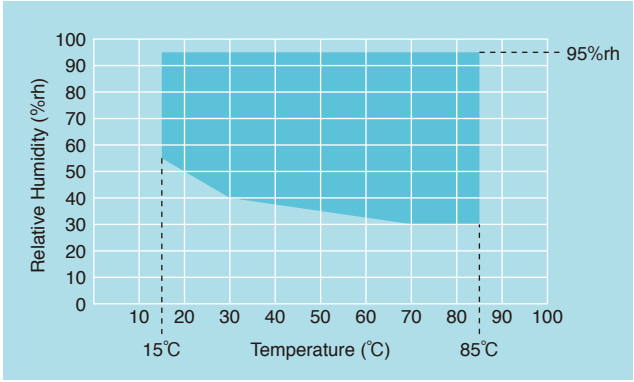
SH

−20／−40／−60 to +150℃(+180℃)·30 to 95%rh

Model			SH-222	SH-242	SH-262	SH-642	SH-662	SH-242-5
System			Balanced Temperature & Humidity Control system (BTHC system)					
Temp. performance *1	Temp. range		−20 to +150℃ (−4 to +302℉)	−40 to +150℃ (−40 to +302℉)	−60 to +150℃ (−76 to +302℉)	−40 to +150℃ (−40 to +302℉)	−60 to +150℃ (−76 to +302℉)	−40 to +150℃ (−40 to +302℉)
	Temp. fluctuation		±0.3℃ (−20 to +100℃) ±0.5℃ (+100.1 to +150℃)	±0.3℃ (−40 to +100℃) ±0.5℃ (+100.1 to +150℃)	±0.3℃ (−60 to +100℃) ±0.5℃ (+100.1 to +150℃)	±0.3℃ (−40 to +100℃) ±0.5℃ (+100.1 to +150℃)	±0.3℃ (−60 to +100℃) ±0.5℃ (+100.1 to +150℃)	±0.3℃ (−40 to +100℃) ±0.5℃ (+100.1 to +150℃)
	Temp. variation in space		2.5℃ (−20 to +100℃) 4.0℃ (+100.1 to +150℃)	2.5℃ (−40 to +100℃) 4.0℃ (+100.1 to +150℃)	2.5℃ (−60 to +100℃) 4.0℃ (+100.1 to +150℃)	2.5℃ (−40 to +100℃) 4.0℃ (+100.1 to +150℃)	2.5℃ (−60 to +100℃) 4.0℃ (+100.1 to +150℃)	2.5℃ (−40 to +100℃) 4.0℃ (+100.1 to +150℃)
	Temp. rate of change	Heat up rate	3.2℃ /min.			2.9℃ /min.		5.0°C /min.
		Pull down rate	2.1℃ /min.			1.7℃ /min.		5.0°C /min.
	Temp. extreme achievement time Heat up time		From −20 to +150℃ within 55 min.	From −40 to +150℃ within 60 min.	From −60 to +150℃ within 70 min.	From −40 to +150℃ within 70 min.	From −60 to +150℃ within 80 min.	From −40 to +150℃ within 40 min.
	Temp. extreme achievement time Pull down time		From +20 to −20℃ within 20 min.	From +20 to −40℃ within 50 min.	From +20 to −60℃ within 70 min.	From +20 to −40℃ within 60 min.	From +20 to −60℃ within 90 min.	From +20 to −40℃ within 20 min.
	Lowest attainable temp.		−20℃	−40℃	−60℃	−40℃	−60℃	−40℃
Humid. performance *1	Humid. range		30 to 95% rh (Refer to diagram on page 12)					
	Humid. fluctuation		±3.0% rh					
Construction	Heater		Nichrome strip wire heater					
	Humidifier		Stainless steel cartridge heater					
	Refrigeration unit	System	Mechanical single-stage refrigeration system		Mechanical cascade refrigeration system			
		Cooler	Plate fin cooler					
		Refrigerator	Hermetically sealed compressor, Air-cooled condenser, Expansion mechanism: Capillary tube system					
		Refrigerator capacity	400W		[Unit 1: 400W ×1, Unit 2: 400W ×1]			
		Refrigerant	R404A		R508A (R23 for 100V type), R404A			R23, R404A
Capacity			22.5 L			64 L		22.5 L
Chamber total load resistance			20 kg					
Inside dimensions mm (inch) *2			W300×H300×D250 (W11.8×H11.8×D9.8)			W400×H400×D400 (W15.7×H15.7×D15.7)		W300×H300×D250 (W11.8×H11.8×D9.8)
Outside dimensions mm (inch) *2			W440×H690×D696 (W17.3×H27.1×D27.4)		W440×H690×D786 (W17.3×H27.1×D30.9)	W540×H730×D921 (W21.2×H28.7×D36.2)		W440×H690×D786 (W17.3×H27.1×D30.9)
Weight			83 kg (78 for 100V type)		105 kg	130 kg		106 kg
Utility requirements	Allowable ambient conditions		+5 to +35℃ (+41 to +95℉)					
	Power supply *3	100V AC 1φ50/60Hz	11.3 A		15.0 A	17.5 A		16.7 A
		115V AC 1φ60Hz (NEC)	12.8 A		14.0 A	——		
		200V AC 1φ50/60Hz *4	——			14.5 A		12.8 A
		220V AC 1φ50/60Hz *5	5.4 A		13.5 A	14.0 A		9.3 A
		230V AC 1φ50Hz *5	5.3 A		13.5 A	14.0 A		9.2 A
Noise level *6			Between 42 and 50 dB		Between 42 and 54 dB	Between 48 and 53 dB		Between 42 and 54 dB
Exhaust heat quantity			3500 kJ/h (836 kcal/h)		4000 kJ/h (955 kcal/h)	5040 kJ/h (1204 kcal/h)		5700 kJ/h (1361 kcal/h)

*1 The performance values are based on IEC 60068-3-5:2001 for the temperature chamber, IEC 60068-3-6:2001 for the humidity chamber. Performance figures are given for a +23℃ ambient temperature, 65% rh, rated power supply and no specimens inside the test area. However, the lowest attainable temperature is given for a max. ambient temperature of +30℃ . Heat-up time is the achieved time from lowest temperature to highest temperature within temperature range.
*2 Excluding protrusions.
*3 At ambient temperature +23℃ .
*4 200V AC available with or without NEC specifications. SH-242-5 not available with NEC specification.
*5 Compliance with CE Marking.
*6 Measurements are to be taken in an anechoic room at a height of 1.2m from the floor and a distance of 1m from the chamber front panel (ISO 1996-1:2003 _ A-weighted sound pressure level)

TEMPERATURE & HUMIDITY CONTROL RANGE (SH)

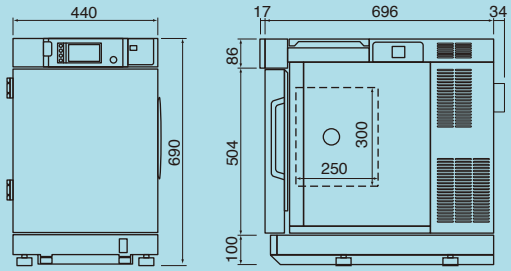


* At ambient temperature +23℃

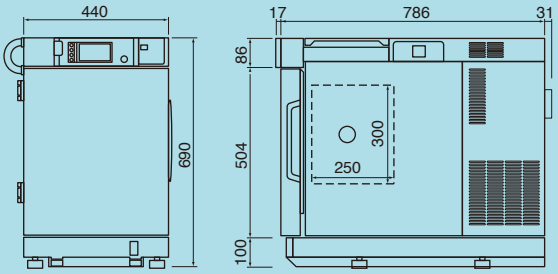
DIMENSIONS (SH)

unit:mm

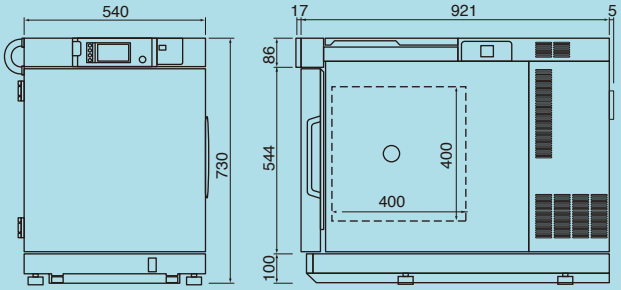
SH-222・242



SH-242-5・262



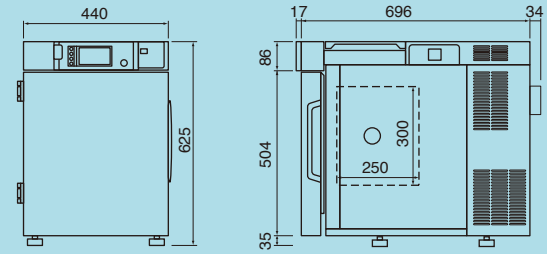
SH-642・662



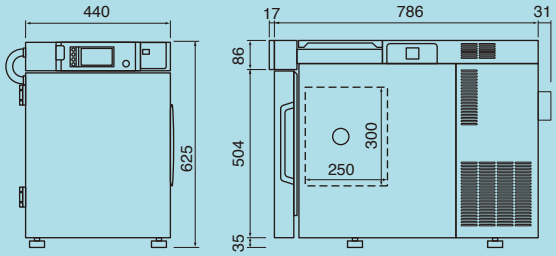
DIMENSIONS (SU)

unit:mm

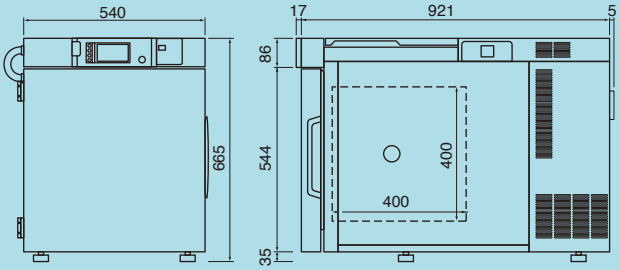
SU-222・242



SU-242-5・262



SU-642・662



SU

−20／−40／−60 to +150℃(+180℃)

Model			SU-222	SU-242	SU-262	SU-642	SU-662	SU-242-5
System			Balanced Temperature Control system (BTC system)					
Temp. performance *1	Temp. range		−20 to +150℃ (−4 to +302℉)	−40 to +150℃ (−40 to +302℉)	−60 to +150℃ (−76 to +302℉)	−40 to +150℃ (−40 to +302℉)	−60 to +150℃ (−76 to +302℉)	−40 to +150℃ (−40 to +302℉)
	Temp. fluctuation		±0.3℃ (−20 to +100℃) ±0.5℃ (+100.1 to +150℃)	±0.3℃ (−40 to +100℃) ±0.5℃ (+100.1 to +150℃)	±0.3℃ (−60 to +100℃) ±0.5℃ (+100.1 to +150℃)	±0.3℃ (−40 to +100℃) ±0.5℃ (+100.1 to +150℃)	±0.3℃ (−60 to +100℃) ±0.5℃ (+100.1 to +150℃)	±0.3℃ (−40 to +100℃) ±0.5℃ (+100.1 to +150℃)
	Temp. variation in space		2.5℃ (−20 to +100℃) 4.0℃ (+100.1 to +150℃)	2.5℃ (−40 to +100℃) 4.0℃ (+100.1 to +150℃)	2.5℃ (−60 to +100℃) 4.0℃ (+100.1 to +150℃)	2.5℃ (−40 to +100℃) 4.0℃ (+100.1 to +150℃)	2.5℃ (−60 to +100℃) 4.0℃ (+100.1 to +150℃)	2.5℃ (−40 to +100℃) 4.0℃ (+100.1 to +150℃)
	Temp. rate of change	Heat up rate	3.2℃ /min.			2.9℃ /min.		5.0°C /min.
		Pull down rate	2.1℃ /min.			1.7℃ /min.		5.0°C /min.
	Temp. extreme achievement time Heat up time		From −20 to +150℃ within 55 min.	From −40 to +150℃ within 60 min.	From −60 to +150℃ within 70 min.	From −40 to +150℃ within 70 min.	From −60 to +150℃ within 80 min.	From −40 to +150℃ within 40 min.
	Temp. extreme achievement time Pull down time		From +20 to −20℃ within 20 min.	From +20 to −40℃ within 50 min.	From +20 to −60℃ within 70 min.	From +20 to −40℃ within 60 min.	From +20 to−60℃ within 90 min.	From +20 to −40℃ within 20 min.
	Lowest attainable temp.		−20℃	−40℃	−60℃	−40℃	−60℃	−40℃
Construction	Heater		Nichrome strip wire heater					
	Refrigeration unit	System	Mechanical single-stage refrigeration system		Mechanical cascade refrigeration system			
		Cooler	Plate fin cooler					
		Refrigerator	Hermetically sealed compressor, Air-cooled condenser, Expansion mechanism: Capillary tube system					
		Refrigerator capacity	400W		[Unit 1: 400W ×1, unit 2: 400W ×1]			
		Refrigerant	R404A		R508A (R23 for 100V type), R404A			R23, R404A
Capacity			22.5 L			64 L		22.5 L
Chamber total load resistance			20 kg					
Inside dimensions mm (inch) *2			W300×H300×D250 (W11.8×H11.8×D9.8)			W400×H400×D400 (W15.7×H15.7×D15.7)		W300×H300×D250 (W11.8×H11.8×D9.8)
Outside dimensions mm (inch) *2			W440×H625×D696 (W17.3×H24.6×D27.4)		W440×H625×D786 (W17.3×H24.4×D30.9)	W540×H665×D921 (W21.2×H26.1×D36.2)		W440×H625×D786 (W17.3×H24.6×D30.9)
Weight			78 kg (73 for 100V type)		100 kg	123 kg		101 kg
Utility requirements	Allowable ambient conditions		+5 to +35℃ (+41 to +95℉)					
	Power supply *3	100V AC 1φ50/60Hz	9.3 A		15.0 A	17.5 A		16.7 A
		115V AC 1φ60Hz (NEC)	11.0 A		14.0 A	——		
		200V AC 1φ50/60Hz *4	——			14.5 A		12.8 A
		220V AC 1φ50/60Hz *5	4.3 A		13.5 A	14.0 A		9.3 A
		230V AC 1φ50Hz *5	4.3 A		13.5 A	14.0 A		9.2 A
Noise level *6			Between 42 and 50 dB		Between 42 and 54 dB	Between 48 and 53 dB		Between 42 and 54 dB
Exhaust heat quantity			3500 kJ/h (836 kcal/h)		4000 kJ/h (955 kcal/h)	5040 kJ/h (1204 kcal/h)		5700 kJ/h (1361 kcal/h)

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*2 Excluding protrusions.
*3 At ambient temperature +23℃ .
*4 200V AC available with or without NEC specifications. SU-242-5 not available with NEC specification.
*5 Compliance with CE Marking.
*6 Measurements are to be taken in an anechoic room at a height of 1.2m from the floor and a distance of 1m from the chamber front panel (ISO 1996-1:2003 _ A-weighted sound pressure level)

MODEL

S□ – □□2

- Temperature range: 2: −20 to +150℃/180℃; 4: −40 to +150℃/180℃; 6: −60 to +150℃/180℃
- Capacity: 2: 22.5L; 6: 64.0L
- H: Temperature & humidity chamber; U: Temperature chamber

SAFETY DEVICES

- Control circuit overcurrent protection (except SH/SU-222, 242)
- Cartridge fuse for control circuit short-circuit protection
- System error (Error)
- Room temperature compensation burnout detection circuit
- Dry bulb temperature burnout detection circuit
- Absolute upper/lower temperature limit alarm (w/ built-in T/H controller)
- Expansion analog board sensor burnout detection circuit (SH/SU-242-5 only)
- Temperature switch for air circulator
- Thermal fuse
- Temperature switch for condenser fan
- Overheat protector
- Wet bulb temperature burnout detection circuit (SH only)
- Refrigerator-1 error detection
- Refrigrator-2 error detection (except SH/SU-222, 242)
- Humidifier dry heat protector (SH only)
- Humidifier water level detection (SH only)
- Temperature upper limit deviation alarm (w/ built-in T/H controller)
- Absolute upper/lower humidity limit alarm (SH only) (w/ built-in T/H controller)
- System error (Alarm)
- Water tank drought switch (SH only)
- Chamber door switch
- Water tank low-level switch (SH only)
- Specimen power supply control terminal

FITTINGS

- Temperature (Humidity) recorder terminal
- Specimen power supply control terminal
- Alarm output terminal
- External output terminal
- Cable port (ϕ50 mm ×1)
- Power cable (except 222, 242 model)
- Water supply tank (SH only)
- Humidifying tray drain plug (SH only)
- Drain hose
- Drain socket for water sensor box (SH only)
- Ethernet port (LAN)
- USB memory port
- Instrumentation interlock output terminal
- Instrumentation interlock input terminal

ACCESSORIES

- Shelf (Stainless steel)
  Load capacity (evenly distributed)
  SH/SU-222, 242, 262, 242-5 ..... 0.5kg
  SH/SU-642, 662 ..... 5kg
  Max. number of shelves
  SH/SU-222, 242, 262, 242-5 ..... 5 stages (pitch 35mm)
  SH/SU-642, 662 ..... 5 stages (pitch 50mm)
- Connector (For temperature/humidity recorder terminals)
  SH: 2/ SU: 1
- Cable port plug (rubber) ..... 1 (ϕ50 mm)
- Cartridge fuse
  SH/SU-222, 242, 262 (B type, 250V 7A) 1
  SH/SU-642, 662, 242-5 (B type, 250V 7A, 6A) ..... 1 of each
- Socket adapter
  (100V, 115V 222, 242, 262 models only)
- Wet-bulb wick ..... 1 box (SH only)
- Humidifying tray drain hose 2m ..... 1 (SH only)
- Drain hose for water sensor box (0.3m) 1
- Stylus pen (For touch panel operation) 1
- Operation manual ..... 1 set

Safety precautions

- Do not use specimens which are explosive or inflammable, or which contain such substances. To do so could be hazardous, as this may lead to fire or explosion.
- Do not place corrosive materials in the chamber. If corrosive substances or liquid is used, the life of the unit may be significantly shortened specifically because of the corrosion of stainless steel, resin and silicone materials.
- Do not place life forms or substances that exceed allowable heat generation.
- Be sure to read the user's manual before operation.

Options

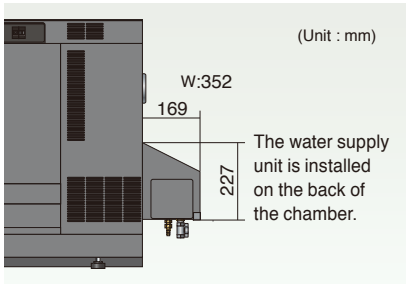
Utility

Power plug (220V AC only)

・C type
・O type
* For SH/SU-222, 242, 262 only

Continuous water supply

Equips the chamber with a connection for purifying water supply system. There are 2 types availale:
- Connection port with pressure-reducing valve
- Connection port without pressure-reducing valve



* A water purifier (sold separately) is also available.

Roof top water tank

An additional tank that supplements the volume of the standard cartridge tank is provided to carry out continuous operation.
Effective water volume: 5L
Location: Chamber ceiling
* The connection port without pressure-reducing valve is required when selecting this option.

Automatic water refill

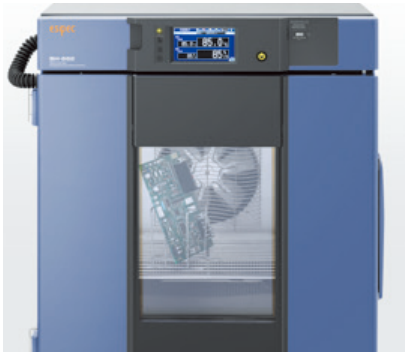
Automatically refill water to the humidifying tray and the wick pan periodically.

Wet-bulb wick

Same as the standard accessory.
1 box (24 wicks, 1 dropper)

Observation

Door with viewing window

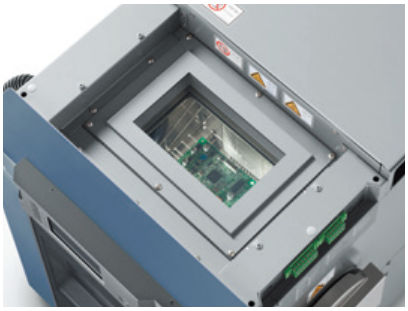


64L type

The door is equipped with an LED light so that the chamber can be more easily observed during testing.
22.5L type: W215×H190 mm
64L type: W215×H290 mm
* Standard performance may not be met under certain conditions. Inquire for details.
[Example]
・SH/SU-242 Temp. extreme achievement time
(Pull down time)
From +20 to −35℃ (Setting:−40℃)
Within 60 min.
・SH/SU-242-5 Temp. rate of change
(Heat up rate)
From −21 to +131℃ 4.0℃/min.
(Pull down rate)
From +131 to −21℃ 4.0℃/min.

Roof top viewing window

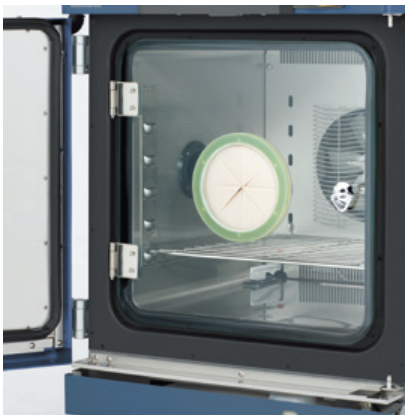
Effective view: W181×D107 mm
* Not available on SH/SU-242-5
* Standard performance may not be met under certain conditions. Inquire for details.
[Example]
・SH/SU-242 Temp. extreme achievement time
(Pull down time)
From +20 to −35℃ (Setting:−40℃)
Within 60 min.



SH-242

Inner glass door

A glass door is provided between the test area and the chamber door to observe specimens.
The glass door is equipped with a wiper for models with humidity.
* Standard performance may not be met under certain conditions. Inquire for details.
[Example]
・SH/SU-242-5 Temp. rate of change
(Heat up rate)
From −21 to +131℃ 4.0℃/min.
(Pull down rate)
From +131 to −21℃ 4.0℃/min.



Hand-in port

Equip the chamber with hand-in port to operate specimen under test.
<For inner glass door>
ϕ130mm ×1, at the center of the inner glass door.
<For chamber side wall>
ϕ130mm ×1 (select left or right side)
Any hand-in port selected comes with radial rubber seal.

Dew tray to catch dripping water are also available to detect and prevent water damages.

Options

Specimen setting

Additional cable port

Provided in addition/ replacement of the standard cable port (right side, ϕ50mm).
Available location:
- Left side, right side
- Ceiling

Available dimensions:
- ϕ25 mm
- ϕ50 mm
- ϕ100 mm
- flat cable port (W100×H25 mm)

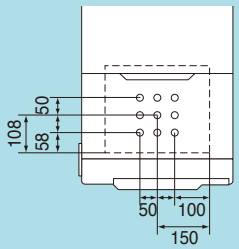
* Comes with a rubber plug and a cap.
* Standard performance may not be met under certain conditions. Inquire for details.

Left side ϕ100 Cable port (option)

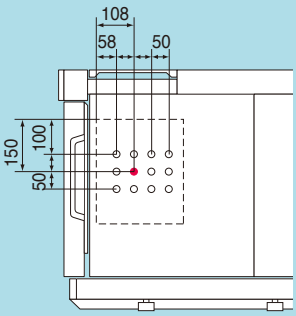
●Additional cable port location

(Unit : mm)

〈SH/SU-222･242･262･242-5〉
* Top not available on SH/SU-242-5

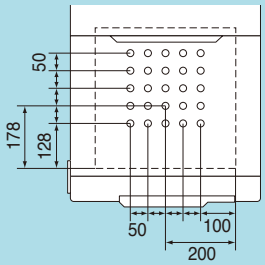


Top side

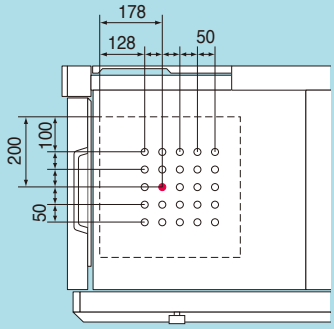


Right side
* Same location points for left side

〈SH/SU-642･662〉



Top side



Right side
* Same location points for left side

● Standard equipped

Cable port rubber plug

Comes with the cable port.
- for ϕ25 mm
- for ϕ50 mm
- for ϕ100 mm
- spiral-wrapped plug (5×50×2000 mm)
- For flat cable port
- For ϕ50 mm with slits
- For ϕ100 mm with slits

for ϕ50mm

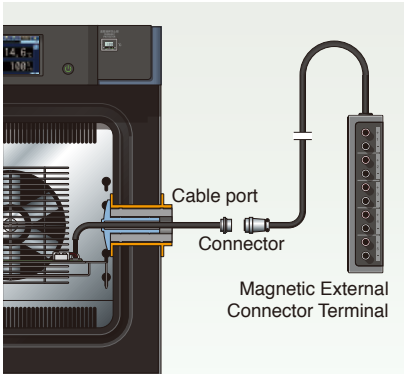
spiral-wrapped plug

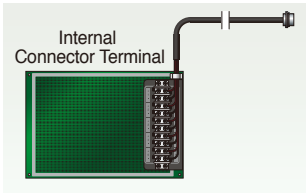
for flat cable port

with slits

EZ connect cable port plug

Cable port plug w/ embedded terminals for power supply.
Cable port plug with embedded terminals (inside and outside) to ease specimen connection to an external device.
Spec.: AC 6 to 24V 0.1 to 3A
DC 1.5 to 60V 0.1 to 3A
Connector Type: Block 10P (+5P, −5P)
Enclosure: Magnetized box with isolator
Temperature Range:
−70 to +180℃ 30 to 95%rh





Options

Specimen setting

Shelf

Same as standard shelf.
18-8 Cr-Ni Stainless steel

SH/SU-222, 242, 262, 242-5

SH/SU-642, 662

	20L type	60L type
Effective dimensions	W284 H34 D231 mm	W392 H21 D378 mm
Load capacity	0.5 kg	5 kg

Specimen basket

For small specimens that cannot be placed on the shelf.
Material: 18-8 Cr-Ni Stainless steel
Dimensions: W206×H40×D156 mm

* Place the specimen on the shelf.
* Do not use when exceeding the shelf load capacity.

Cable organizer kit

The kit includes:
cable ties
magnetic cable cover
dew tray

Noise reduction rear cover

A cover is added on the rear side of the chamber to help:
lower further chamber noise
direct exhaust air toward the ceiling
store wires in order inside the cover

Network

Interface

Communication ports to connect the chamber to a PC.
- RS-485
- RS-232C
- GPIB

Communication cables

- RS-485 5m／10m／30m
- GPIB 2m／4m

Options

Measurement

Paperless recorder

A temperature & humidity recorder that utilizes a liquid-crystal display fitted with a touch-panel.
Display: 5.7inch color touch panel
Scan interval: 5 sec. (default)
Internal recording media:
Flash memory 8MB
External recording media:
CF memory card port
(Includes a 256 MB CF card)
USB memory port

< Temperature & humidity type >
No. of inputs:
Temperature 1, Humidity 1
(4 more channels can be turned ON)

< Temperature type >
No. of inputs:
Temperature 1
(5 more channels can be turned ON)

- Portable type
- Installed on the option box OB

Temperature (humidity) recorder

Portable type
Recording method: Dot
Recording paper: Effective width 100 mm
No. of inputs:

< Temperature & humidity type >
Temperature 5, Humidity 1

- −50 to +150°C/0 to 100% rh
- −100 to +150°C/0 to 100% rh
- −100 to +200°C/0 to 100% rh

< Temperature type >
Temperature 6

- −100 to +200°C

External output terminal set (×3) OB

The following contact signals are installed on the option box, or stand with option box.

- Time up output terminal
  Enables power supply and/or temperature measurement of the specimen synchronised with the timer.
- Time signal terminal
  Add up to 10 signal terminals to the 1 equipped as standard.
- Temp. & humid. SP attainment output
  Sends out a contact signal when the chamber reaches temperature (humidity) set values.

Temperature recorder output terminal (Wet-bulb temperature)

This terminal outputs the test area wet bulb temperature.
* SH type only.

Thermocouple

Attached to specimen to measure specimen temperature.
Thermocouple with a brass ball tip
Thermcouple type T (Copper/ Copper-Nickel)

- 2m
- 4 m
- 6 m

Applying DC power supply OB

Capable of applying voltage to the specimen, used for bias testing. The DC power supply unit synchronizes with constant program operations, and can be set for each temperature and humidity program step.

- 5V
- 12V
- 15V
- 24V
- 48V

* Not available on SH/SU-242-5

Option box

Box prepared to install additional options such as:

- Paperless recorder (stand embedded)
- External output terminal set (x3)
- Specimen temperature control
- Program-synched DC power supply

The option box can be embedded on a stand (Refer to stand configuration page 20), or standalone (for example, put on the chamber top free space, etc.)


Option box B (stand-embedded paperless recorder)

OB The option box is required when selecting these options.

Options

Performance

Specimen temperature control OB

Sensors are attached to the specimen to allow exposure tests that provide temperature stress to the specimen.

• Insulated type

* Not available on SH/SU-242-5

Electrostatic capacitance-type humidity sensor control

Attached in place of the wet bulb wick.
Measurement range: 0 to 100%rh
Accuracy: ±2%rh
(−20 to +40℃ and 0 to 90%rh)

Airflow adjuster

Used when tests require low airflow velocity or constant velocity.
Setting value range: 4 levels.

Safety

Overcool protector

If the temperature inside the chamber decreases excessively, the chamber stops operating to prevent the specimens from being damaged.

External device alarm intput terminal

Equips the chamber with a terminal that is used to stop operation of the chamber in the event that an external device linked to the chamber malfunctions.

Door opening signal output terminal

Equips the chamber with a terminal that outputs the door open status.
Capable of controlling an external device that operates along with door operation and records the temperature disturbance history.

Document

Operation maual

• CD
• Booklet

Status indicator light

Please select lighted or blinking, and requirement of buzzer sound.
Displayed levels: up to level 4
Pole length: 226mm

* The length can be reduced by 10mm (up to 56mm)
* With stand or stacking chamber, please contact us.

Emergency stop pushbutton

Stops the chamber immediately.
Available with or without guard.

With guard

Chamber dew tray

Prevents water leaks from the chamber onto the floor.

Reports & certificates

• Testing and inspection report
• Test data
• Temperature (& humidity) uniformity measurement
• Calibration report
• Calibration certificate
• Traceability system chart
• Traceability certificate

Options

Stand variation

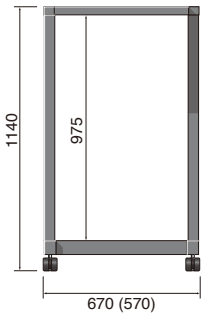
Stand equipped with casters for easy transfer or transportation. (leveling feet provided)
Choose among 3 sizes: C (Dolly type), L (Low type) or H (High type)

Dimensions : mm　For SH/SU-642·662 (For 222·242·262·242-5)

H type

The C type stand fits on the lower part.

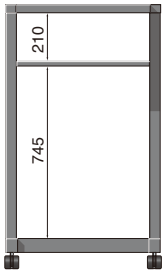
Chamber with L stand
can fit under the H stand.



Depth : 925 (815)

· With shelf

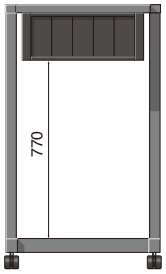
Move the shelf to install instrumentation or measurement devices.



Shelf size : W577×D900
(W473×D790)

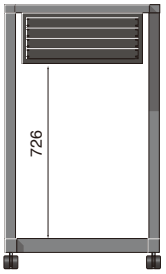
· With option box

Following options can be installed.
· Paperless recorder
· Output terminal set
· Specimen temperature control
· Program-synched DC power supply



· With 19 inch rack

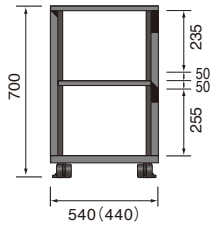
19 inch size instrumentation or controller can be set to the rack.



M type

· With shelf

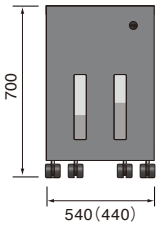
shelf : adjustable 3 pitches



Depth : 860(750)

· With water tank

With water capacity : 20L (10L)
Drainage capacity : 20L (10L)



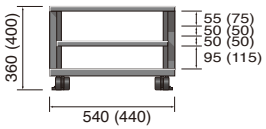
Depth : 952(842)

* The connection port without pressure-reducing valve is required when selecting this option.
* except 115V AC NEC, 200V AC NEC

L type

· With shelf

shelf : adjustable 3 pitches



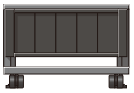
Shelf size : W480×D850 (W378×D740)
Depth : 860 (750)

· With water tank

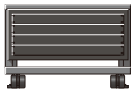
Capacity : 18L

* The connection port without pressure-reducing valve is required when selecting this option.
* except 115V AC NEC, 200V AC NEC

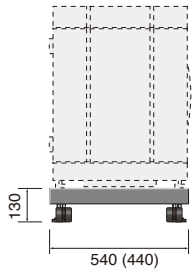
· With option box



· With 19 inch rack



C type



Depth : 860 (750)

Stand configuration (exa

· H type with 19 inch rack and C type

· H type and L type with option box

* For safety reasons, make sure to secure the chamber and the stand together with anchoring fixtures. We also recommend to fix the stand itself to the floor.
* Please inquire for 2-stage stacked chambers.

Options

● Retrofit is not available. ○ Retrofit is available.

Page	OPTION	SH						SU					
		222	242	262	642	662	242-5	222	242	262	642	662	242-5
11	Power plug (220V AC)	●	●	●	●※3	●※3	●※3	●	●	●	●※3	●※3	●※3
	Continuous water supply *1	○	○	○	○	○	○	—	—	—	—	—	—
	Roof top water tank *1	○	○	○	○	○	—	—	—	—	—	—	—
	Automatic water refill *1	○	○	○	○	○	○	—	—	—	—	—	—
	Wet-bulb wick	○	○	○	○	○	○	—	—	—	—	—	—
	Door with viewing window *1	○	○	○	○	○	○	○	○	○	○	○	○
	Roof top viewing window *1	●	●	●	●	●	—	●	●	●	●	●	—
	Inner glass door	○	○	○	○	○	○	○	○	○	○	○	○
	Hand-in port	Inquire for details.											
12	Additional cable port	Inquire for details.											
	Cable port rubber plug	○	○	○	○	○	○	○	○	○	○	○	○
	EZ connect cable port plug	○	○	○	○	○	○	○	○	○	○	○	○
13	Shelf	○	○	○	○	○	○	○	○	○	○	○	○
	Specimen basket	○	○	○	○	○	○	○	○	○	○	○	○
	Cable organizer kit	○	○	○	○	○	○	○	○	○	○	○	○
	Noise reduction rear cover	○	○	○	○	○	○	○	○	○	○	○	○
	Interface *1	○	○	○	○	○	○	○	○	○	○	○	○
	Communication cables	○	○	○	○	○	○	○	○	○	○	○	○
14	Paperless recorder	○	○	○	○	○	○	○	○	○	○	○	○
	Temperature (humidity) recorder	○	○	○	○	○	○	○	○	○	○	○	○
	External output terminal set (x3) *1 *2	○	○	○	○	○	○	○	○	○	○	○	○
	Temperature recorder output terminal	○	○	○	○	○	○	—	—	—	—	—	—
	Thermocouple	○	○	○	○	○	○	○	○	○	○	○	○
	Applying DC power supply *1 *2	○	○	○	○	○	—	○	○	○	○	○	—
	Option box	○	○	○	○	○	○	○	○	○	○	○	○
15	Specimen temperature control *1 *2	○	○	○	○	○	—	○	○	○	○	○	—
	Electrostatic capacitance-type humidity sensor control	●	●	●	●	●	●	—	—	—	—	—	—
	Airflow adjuster *1	○	○	○	○	○	○	○	○	○	○	○	○
	Overcool protector *1	○	○	○	○	○	○	○	○	○	○	○	○
	External device alarm intput terminal *1	○	○	○	○	○	○	○	○	○	○	○	○
	Door opening signal output terminal *1	○	○	○	○	○	○	○	○	○	○	○	○
	Status indicator light	●	●	●	●	●	●	●	●	●	●	●	●
	Emergency stop pushbutton *1	○	○	○	○	○	○	○	○	○	○	○	○
	Chamber dew tray	●	●	●	●	●	●	●	●	●	●	●	●
	Operation maual	○	○	○	○	○	○	○	○	○	○	○	○
	Reports & certificates	●	●	●	●	●	●	●	●	●	●	●	●
16	Stand variation	Inquire for details.											

*1 except 115V AC NEC, 200V AC NEC
*2 The option box is required when selecting these options.
*3 C type only

Chamber performance may not satisfy specifications depending on the combination of options.

Network

* Requires an intranet Supported browser: Internet Explorer 11

Chambers can be operated from PC and tablet

Remote monitoring and control (Ethernet connection)

The chambers are equipped with unique web applications that enable chamber status to be confirmed and operated from a web browser screen (PC or tablet terminal). It is also possible to start operations with a PC or other device from a remote location.

Editing test profiles through a browser

It is possible to edit the test profiles registered in the chamber through a web browser.

Displaying data in trend-graph

Settings and measured data saved in the chamber can be displayed in graphs on a web browser.

E-mail notifications

Details on alarms that have been triggered will be sent to pre-registered e-mail addresses. It is also possible to transmit e-mails when testing has finished.

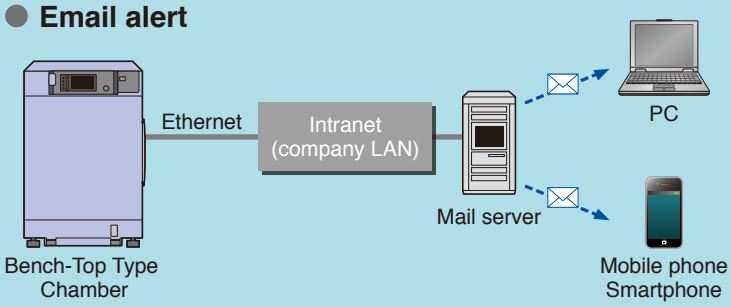
* An Intranet environment is required to transmit e-mails.

Image

Login privileges

Screen / Privileges	Chamber monitor	Constant/ Program setup	Run/Stop	Configuration
Administrator	✓	✓	✓	✓
Operator	✓	✓	✓	
User	✓			

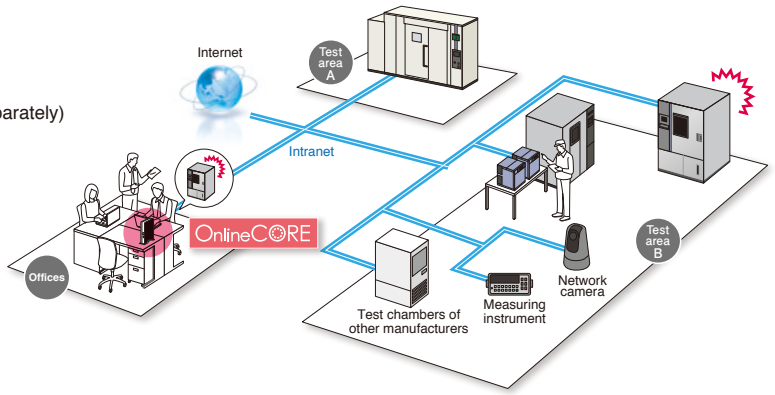
Email alert



ESPEC OnlineCore

OnlineCORE (Sold separately)

Central control system recommended for multiple environmental test chambers installations



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JSA QMS JIS Q 9001 JSAQ 004

MS JAB CM001

MS JAB CM021

ISO 14001 JACO EC99J2046

UKAS MANAGEMENT SYSTEMS 051

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 9001:2015 (JIS Q 9001:2015) through the Japanese Standards Association (JSA).

∗ Registration : ESPEC CORP.
(Overseas subsidiaries not included)

ISO 14001 (JIS Q 14001)
Environmental Management System Assessed and Registered

ESPEC CORP.
(Overseas subsidiaries not included)