cosmopia

Environmental Testing Apparatuses

Walk-in Type Temperature and Humidity Chambers / Temperature Chambers

*Photo for illustrative purposes only

This booklet was printed using waterless printing and environmentally-friendly non-VOC ink.

BECOMING THE WORLD'S TOP MANUFACTURER IN TERMS OF TECHNOLOGY AND PRODUCT STRENGTH IN THE FIELD OF HEAT CYCLE TESTING

Environmental testing apparatuses are used in a wide range of fields, including semiconductors, electronic components, automotive components, and secondary batteries, and these systems must continue to evolve day by day to meet the needs of increasingly advanced development and research.
As samples become larger and climate change needs increase, COSMOPIA HIGHTECH will respond quickly to these changes and help our customers all over the world to develop cutting-edge technologies.

Company profile

Name	COSMOPIA HIGHTECH CORP.
Address	8-1, Shinmidori-cho, Shimizu-ku, Shizuoka-shi, Shizuoka
Established	August 22, 2023
Capital	¥100,000,000
Business	Manufacturing, design, sales, and after-sales service for environmental testing apparatuses

Freeze control technology

Our heat cycle technology, which makes maximum use of our core competence of freeze control technology, utilizes scroll compressors to deliver efficient and stable performance at low temperatures.
Scroll compressors use gas more efficiently than reciprocating compressors, allowing them to deliver stable cooling performance under constant temperature conditions and extremely low-temperature conditions down to -40° C.

COSMOPIA HIGHTECH values

Purpose of our existence

A company is ultimately a public institution, and exists to meet the expectations of people and society.
This is certainly true of COSMOPIA HIGHTECH, and providing natural environments that are ever more accurate is our public mission.
We aim to increase our value as a means of making it easier to exchange values with stakeholders, and to help bring happiness to people.

Company history

1970 Began selling environmental testing apparatuses at Hitachi, Ltd.
1994 Transferred the environmental testing apparatus business from Hitachi, Ltd. to Hitachi Shimizu Engineering Co., Ltd.
2003 Changed the company name to Hitachi-kucho SE,Ltd
2018 Merged with Johnson Controls-Hitachi Air Conditioning
2023 Established COSMOPIA HIGHTECH CORP.
Transferred the environmental testing business from Hitachi-Johnson Controls Air Conditioning, Inc.
Began OEM production
2024 Began selling Cosmopia brand products

cosmopia

Walk-in Type Temperature and Humidity Chambers / Temperature Chambers

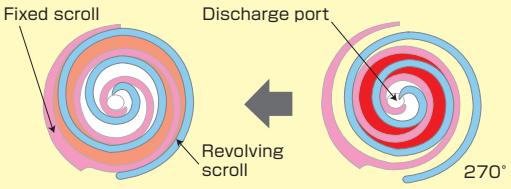
Cosmopia environmental testing apparatuses deliver the features and reliability that our customers need now.

Environmental testing apparatuses are used in a wide range of fields, including semiconductors, electronic components, and in-vehicle components, and these systems must continue to offer high functionality to meet the needs of increasingly advanced development and research.
At the heart of COSMOPIA HIGHTECH is our scroll compressors, which deliver efficient and stable performance at low temperatures.
We build testing environments crucial for improving product reliability and for conducting experiments and research in a wide range of fields, including food products, chemicals, and medical products.

*Photo for illustrative purposes only

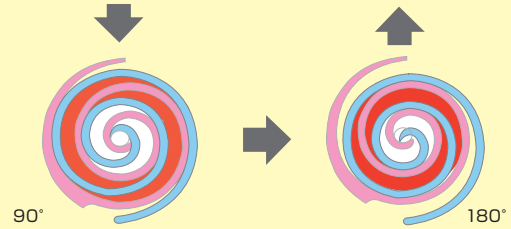
How scroll compressors operate

Gas sealed in the sickle-shaped compressed air area formed between the fixed scroll and revolving scroll is compressed toward the center and discharged from the discharge port at the center.



(1) The refrigerant is sucked into the suction inlet outside of the fixed scroll.

(4) The refrigerant reaches maximum compression in the center and is discharged. Back to (1).



(2) The refrigerant sealed in the compressed air area is compressed toward the center.

(3) The sickle shape is compressed and made smaller.

High Load Type

Pages 5-8

●Enhanced performance to handle heat generation loads in hot and humid areas (compared with standard Cosmopia products)

Walk-in Type Temperature and Humidity Chambers			
Model	Temperature range	Humidity range	Testing room floor space
EXNH	−10 to 80℃	20 to 95%RH	9.7m²(3.0)
EXHH	−30 to 80℃	10 to 95%RH	
EXMH	−40 to 80℃		

Walk-in Type Temperature Chambers			
Model	Temperature range	Humidity range	Testing room floor space
EXNT	−10 to 80℃	—	9.7m²(3.0)
EXHT	−30 to 80℃		
EXMT	−40 to 80℃		

Water-cooling Air-cooling

*Photo for illustrative purposes only

EXCELLENT SERIES - High Load Type

Basic Type

Pages 9-18

●Suitable for developing/testing test products in whole (completed products)

Walk-in Type Temperature and Humidity Chambers			
Model	Temperature range	Humidity range	Testing room floor space
NH	−10 to 80℃	20 to 95%RH	6.5m²(2.0) 9.7m²(3.0) 16.2m²(5.0)
HH	−30 to 80℃	10 to 95%RH	
MH	−40 to 80℃		

Walk-in Type Temperature Chambers			
Model	Temperature range	Humidity range	Testing room floor space
NT	−10 to 80℃	—	6.5m²(2.0) 9.7m²(3.0) 16.2m²(5.0)
HT	−30 to 80℃		
MT	−40 to 80℃		

Water-cooling Air-cooling

*Photo for illustrative purposes only

STANDARD SERIES - Basic Type

Integrated Type

Pages 19-20

●Integrated walk-in type temperature and humidity chambers and temperature chambers, with no on-site assembly required

Walk-in Type Temperature and Humidity Chambers			
Model	Temperature range	Humidity range	Testing room floor space
NH	−10 to 80℃	20 to 95%RH	3.0m²(0.9)
MH	−40 to 80℃	10 to 95%RH	
MHH	−40 to 120℃		3.3m²(1.0)

Walk-in Type Temperature Chambers			
Model	Temperature range	Humidity range	Testing room floor space
NT	−10 to 80℃	—	3.0m²(0.9)
MT	−40 to 80℃		
MTH	−40 to 120℃		3.3m²(1.0)

Water-cooling

*Photo for illustrative purposes only

STANDARD SERIES - Integrated Type

Options

Pages 21-24

●Our lineup of options for use with walk-in type temperature and humidity chambers and temperature chambers

Options

High Load Type

Walk-in temperature and humidity chambers	Walk-in temperature chambers
EXNH	EXNT
EXHH	EXHT
EXMH	EXMT

Handles high loads

●2 kW heat generation load: 40˚ C/95% RH conditions
(constant temperature and humidity operation)

Water-cooling	ER-105EXNH
Air-Cooling Remote Condenser Type	ER-105EXNH-R

●8 kW heat generation load: 40˚ C/95% RH conditions
(constant temperature and humidity operation)

Water-cooling	ER-105EXHH / ER-105EXMH
Air-Cooling Remote Condenser Type	ER-105EXHH-R / ER-105EXMH-R

●6 kW heat generation load: 40˚ C conditions
(constant temperature operation)

Water-cooling	ER-105EXNT
Air-Cooling Remote Condenser Type	ER-105EXNT-R

●10 kW heat generation load: 40˚ C conditions
(constant temperature operation)

Water-cooling	ER-105EXHT / ER-105EXMT
Air-Cooling Remote Condenser Type	ER-105EXHT-R / ER-105EXMT-R

*Photo for illustrative purposes only. (Includes optional specification)
[temperature (humidity) recorder]

Equipped with highly visible, user-friendly color LCD touch panel.

Refer to "STANDARD SERIES - Basic Type" for control panel features (P9 - P11).

●Operation mode select function

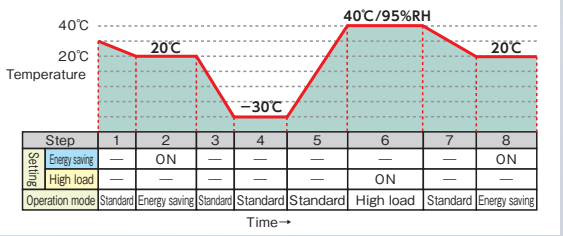
The operation mode can now be set for each step during program operation (energy saving mode or high load mode). System performance settings can now be changed based on the test pattern, such as electric conduction testing.

Energy saving mode	Operates at reduced system performance, for when there are few samples or samples do not generate heat.
High load mode	Operates at increased system performance, for when there are many samples or samples generate heat.

Note: The set temperature and humidity may not be reached when operating in energy saving mode or high load mode.

<Example program>(for illustrative purposes)

Energy saving mode during Step 2, high load mode during Step 4

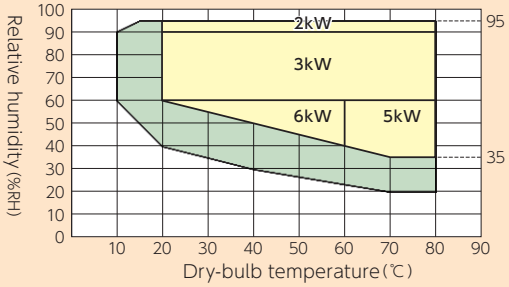


Step	1	2	3	4	5	6	7	8
Setting: Energy saving	—	ON	—	—	—	—	—	ON
Setting: High load	—	—	—	—	—	ON	—	—
Operation mode	Standard	Energy saving	Standard	Standard	Standard	High load	Standard	Energy saving

Heat generation load mapping tables

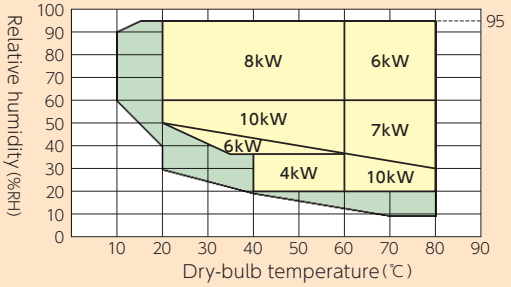
●Constant temperature and humidity operation High load mode

ER-105EXNH/ER-105EXNH-R



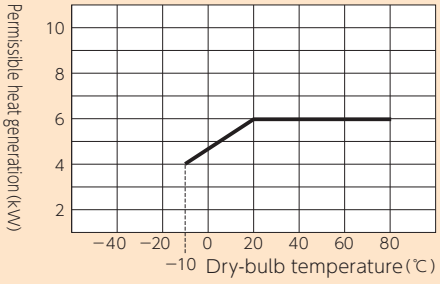
●Constant temperature and humidity operation High load mode

ER-105EXHH/ER-105EXHH-R/ER-105EXMH/ER-105EXMH-R



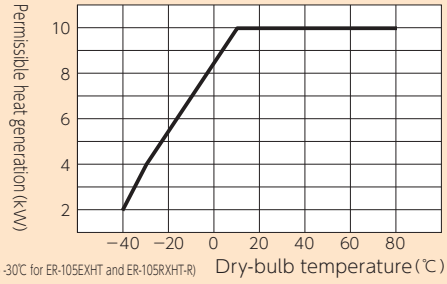
●Constant temperature operation High load mode

ER-105EXNT/ER-105EXNT-R



●Constant temperature operation High load mode

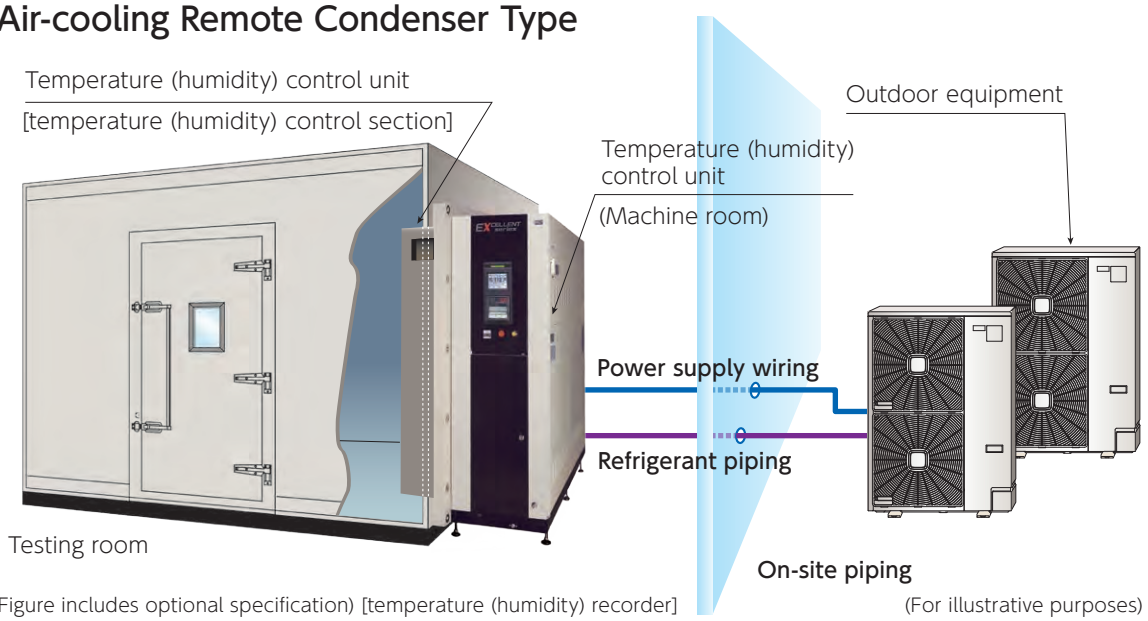
ER-105EXHT/ER-105EXHT-R/ER-105EXMT/ER-105EXMT-R



(Up to -30℃ for ER-105EXHT and ER-105RXHT-R)

Conceptual connection diagrams

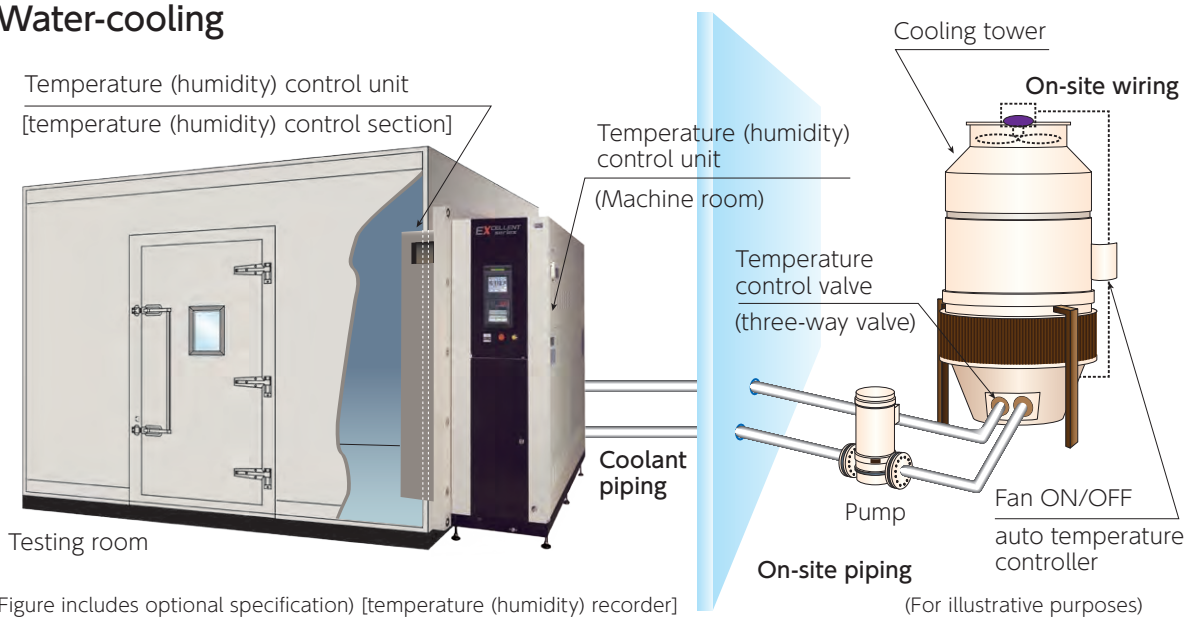
●Air-cooling Remote Condenser Type



(Figure includes optional specification) [temperature (humidity) recorder]

(For illustrative purposes)

●Water-cooling

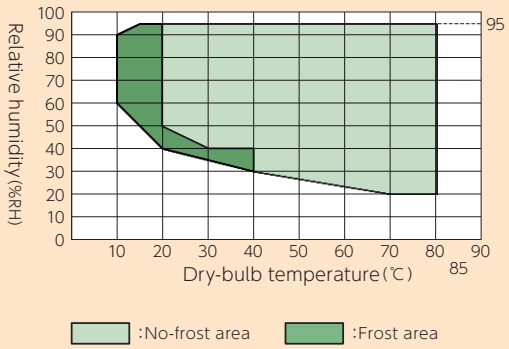


(Figure includes optional specification) [temperature (humidity) recorder]

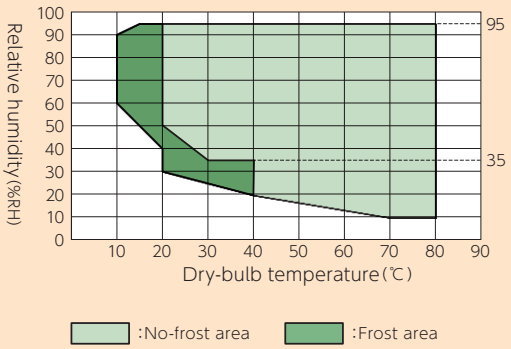
(For illustrative purposes)

Temperature/humidity control range

●EXNH



●EXHH・EXMH



Standard specification table

Category					Walk-in type temperature and humidity chambers					
					Water-cooling			Air-cooling Remote Condenser Type		
Item				Model	ER-105EXNH	ER-105EXHH	ER-105EXMH	ER-105EXNH-R	ER-105EXHH-R	ER-105EXMH-R
Performance	Temperature range			℃	−10 to 80	−30 to 80	−40 to 80	−10 to 80	−30 to 80	−40 to 80
	Humidity range			RH	20 to 95%RH	10 to 95%RH		20 to 95%RH	10 to 95%RH	
	JTM K09	Temperature/humidity fluctuation		℃/RH	±0.3 / ±2.5%					
		Temperature/humidity gradient		℃/RH	±2.5 / ±8.0%					
		Spatial temperature/humidity deviation		℃/RH	±2.0 / ±5.0%					
		Temperature change rate	Rise	—	2.0˚ C/min. (-1 to 71˚ C)	2.6˚ C/min. (-19 to 69˚ C)	2.3˚ C/min. (-28 to 68˚ C)	2.0˚ C/min. (-1 to 71˚ C)	2.6˚ C/min. (-19 to 69˚ C)	2.3˚ C/min. (-28 to 68˚ C)
			Drop	—	1.2˚ C/min. (71 to -1˚ C)	0.8˚ C/min. (69 to -19˚ C)	0.6˚ C/min. (68 to -28˚ C)	1.2˚ C/min. (71 to -1˚ C)	0.8˚ C/min. (69 to -19˚ C)	0.6˚ C/min. (68 to -28˚ C)
		Time to reach extreme temperatures	Rise	—	Within 50 min. (20 to 80˚ C)	Within 30 min. (20 to 80˚ C)		Within 50 min. (20 to 80˚ C)	Within 30 min. (20 to 80˚ C)	
			Drop	—	Within 60 min. (20 to -10˚ C)	Within 60 min. (20 to -30˚ C)	Within 120 min. (20 to -40˚ C)	Within 60 min. (20 to -10˚ C)	Within 60 min. (20 to -30˚ C)	Within 120 min. (20 to -40˚ C)
Prefabricated testing room	Testing room floor space			m²	9.7					
	External dimensions	Width		mm	3,600					
		Depth		mm	2,700					
		Height		mm	2,325					
	Internal dimensions	Width		mm	3,450					
		Depth		mm	2,550					
		Height		mm	2,100					
	Exterior/interior materials			—	Color steel plate (ivory) / stainless steel plate					
	Floor load capacity			kN/m²	5.9					
	Door (width x height)			mm	830 x 1,800 single opening, 1 location					
	Observation window (width x height)			mm	190 x 320 door area, 1 location					
	Inner light (60 W capacity)			Qty.	2					
	Cable hole			—	ø50, 1 location (with rubber plug)					
Temperature (humidity) control unit				Unit	EU-125EXNH	EU-125EXHH	EU-125EXMH	EU-125EXNH-R	EU-125EXHH-R	EU-125EXMH-R
Controller	Exterior			—	Painted finish on steel plate (natural gray [Munsell code: 1.0Y8.5/0.5])					
	Equipment			—	Color LCD panel					
Defrosting method				—	Off-cycle defrosting (refrigerator operation stopped, room temperature 5 to 40˚ C), temperature-increase defrosting (room temperature -40/-30/-10 to 5˚ C)					
Electrical characteristics	Power supply			—	Three-phase 200V 50/60Hz					
	Maximum load current			A	90	175		90	175	
	ELB capacity			A	125	200		125	200	
Coolant	Water volume			L/h	4,200	8,400		—		
	Water pressure			MPa	0.1 to 0.5					
	Water temperature			℃	18 to 32					
	Piping dimensions inlet/outlet			—	Rc1¼ / Rc1¼	Rc2 / Rc2				
Remote condenser	Model			—	—			RCR-R6S		
	Connected units			Unit				1	2	
	External dimensions			mm				Width 850 x Depth 315 x Height 1,240		
	Connection piping		Refrigerant gas side	—				ø15.88 copper pipe x 1	ø15.88 copper pipe x 2	
			Refrigerant liquid side	—				ø12.7 copper pipe x 1	ø12.7 copper pipe x 2	
Accessories (qty.)				—	Pressure reducing valve (1), wick (15), observation window breaking tool (1), pressure regulating valve (1), drain pan (1), and instruction manual (1)					
				—	Y strainer (2)			—		

Note: 1. Can be operated in an ambient temperature from 0 to 40˚ C and with a power supply voltage of 200V ±10%.
2. Performance values are given in accordance with JTMA Standard JTMK09 under the following conditions:
(1) There should be no load and no sample in the testing room.
(2) The power supply voltage is 200V ±5%.
(3) [Air-cooling] The ambient temperature is from 5 to 35˚ C. [Water-cooling] The coolant inlet temperature is from 18 to 32˚ C.
(4) The ambient temperature condition for "temperature change rate" and "time to reach extreme temperatures" is 23˚ C.
(5) The ambient temperature to reach the lower limit of the "temperature range" is from 5 to 35˚ C.
3. The maximum load current is the value at an ambient temperature of 23˚ C and power supply voltage of 200V.
4. If the set temperature is 40˚ C or lower, the continuous operation time will be limited due to frost forming on the cooler/dehumidifier.
5. Dimensions inside the testing room and product dimensions do not include protrusions on surfaces. Refer to the separate specifications document for details.
6. The coolant quality conforms to the JRAIA water quality standards.

Standard specification table

Category					Walk-in type temperature chambers					
					Water-cooling			Air-cooling Remote Condenser Type		
Item				Model	ER-105EXNT	ER-105EXHT	ER-105EXMT	ER-105EXNT-R	ER-105EXHT-R	ER-105EXMT-R
Performance	Temperature range			℃	−10 to 80	−30 to 80	−40 to 80	−10 to 80	−30 to 80	−40 to 80
	JTM K07	Temperature fluctuation		℃	±0.3					
		Temperature gradient		℃	±2.5					
		Spatial temperature deviation		℃	±2.0					
		Temperature change rate	Rise	—	2.0˚ C/min. (-1 to 71˚ C)	2.6˚ C/min. (-19 to 69˚ C)	2.3˚ C/min. (-28 to 68˚ C)	2.0˚ C/min. (-1 to 71˚ C)	2.6˚ C/min. (-19 to 69˚ C)	2.3˚ C/min. (-28 to 68˚ C)
			Drop	—	1.2˚ C/min. (71 to -1˚ C)	0.8˚ C/min. (69 to -19˚ C)	0.6˚ C/min. (68 to -28˚ C)	1.2˚ C/min. (71 to -1˚ C)	0.8˚ C/min. (69 to -19˚ C)	0.6˚ C/min. (68 to -28˚ C)
		Time to reach extreme temperatures	Rise	—	Within 50 min. (20 to 80˚ C)	Within 30 min. (20 to 80˚ C)		Within 50 min. (20 to 80˚ C)	Within 30 min. (20 to 80˚ C)	
			Drop	—	Within 60 min. (20 to -10˚ C)	Within 60 min. (20 to -30˚ C)	Within 120 min. (20 to -40˚ C)	Within 60 min. (20 to -10˚ C)	Within 60 min. (20 to -30˚ C)	Within 120 min. (20 to -40˚ C)
Prefabricated testing room	Testing room floor space			m²	9.7					
	External dimensions	Width		mm	3,600					
		Depth		mm	2,700					
		Height		mm	2,325					
	Internal dimensions	Width		mm	3,450					
		Depth		mm	2,550					
		Height		mm	2,100					
	Exterior/interior materials			—	Color steel plate (ivory) / stainless steel plate					
	Floor load capacity			kN/m²	5.9					
	Door (width x height)			mm	830 x 1,800 single opening, 1 location					
	Observation window (width x height)			mm	190 x 320 door area, 1 location					
	Inner light (60 W capacity)			Qty.	2					
	Cable hole			—	ø50, 1 location (with rubber plug)					
Temperature control unit				Unit	EU-125EXNT	EU-125EXHT	EU-125EXMT	EU-125EXNT-R	EU-125EXHT-R	EU-125EXMT-R
Controller	Exterior			—	Painted finish on steel plate (natural gray [Munsell code: 1.0Y8.5/0.5])					
	Equipment			—	Color LCD panel					
Defrosting method				—	Off-cycle defrosting (refrigerator operation stopped, room temperature 5 to 40˚ C), temperature-increase defrosting (room temperature -40/-30/-10 to 5˚ C)					
Electrical characteristics	Power supply			—	Three-phase 200V 50/60Hz					
	Maximum load current			A	60	167		60	167	
	ELB capacity			A	75	200		75	200	
Coolant	Water volume			L/h	4,200	8,400		—		
	Water pressure			MPa	0.1 to 0.5					
	Water temperature			℃	18 to 32					
	Piping dimensions inlet/outlet			—	Rc1¼ / Rc1¼	Rc2 / Rc2				
Remote condenser	Model			—	—			RCR-R6S		
	Connected units			Unit	—			1	2	
	External dimensions			mm	—			Width 850 x Depth 315 x Height 1,240		
	Connection piping		Refrigerant gas side	—	—			ø15.88 copper pipe x 1	ø15.88 copper pipe x 2	
			Refrigerant liquid side	—	—			ø12.7 copper pipe x 1	ø12.7 copper pipe x 2	
Accessories (qty.)				—	Observation window breaking tool (1), pressure regulating valve (1), drain pan (1), and instruction manual (1)					
				—	Y strainer (2)			—		
[High load mode] Heat generation load (40˚ C)				kW	6.0	10.0		6.0	10.0	
[Standard mode] Heat generation load (40˚ C)				kW	6.0					

Note: 1. Can be operated in an ambient temperature from 0 to 40˚ C and with a power supply voltage of 200V ±10%.
2. Performance values are given in accordance with JTMA Standard JTMK07 under the following conditions:
(1) There should be no load and no sample in the testing room.
(2) The power supply voltage is 200V ±5%.
(3) [Air-cooling] The ambient temperature is from 5 to 35˚ C. [Water-cooling] The coolant inlet temperature is from 18 to 32˚ C.
(4) The ambient temperature condition for "temperature change rate" and "time to reach extreme temperatures" is 23˚ C.
(5) The ambient temperature to reach the lower limit of the "temperature range" is from 5 to 35˚ C.
3. The maximum load current is the value at an ambient temperature of 23˚ C and power supply voltage of 200V.
4. If the set temperature is 40˚ C or lower, the continuous operation time will be limited due to frost forming on the cooler/dehumidifier.
5. Dimensions inside the testing room and product dimensions do not include protrusions on surfaces. Refer to the separate specifications document for details.
6. The coolant quality conforms to the JRAIA water quality standards.

Cosmopia STANDARD SERIES

Basic Type

Walk-in temperature and humidity chambers	Walk-in temperature chambers
NH	NT
HH	HT
MH	MT

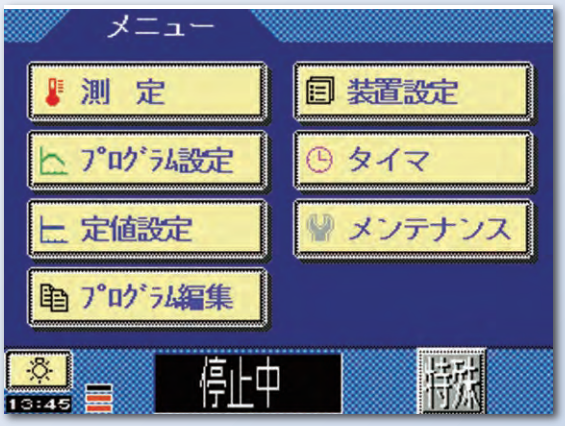
- **Equipped with a touch panel and graphic-display color LCD control panel.**
- **Equipped with a scroll compressor**

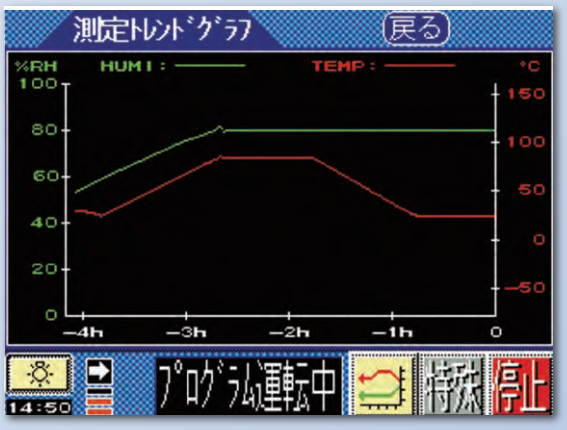
*Photo for illustrative purposes only. (Includes optional specification) [temperature (humidity) recorder, cable hole]

■Control panel

Equipped with highly visible, user-friendly color LCD touch panel.

The touch panel can be used to configure and control the system simply by touching the screen.
The color display is highly visible and provides a wide range of functionality.





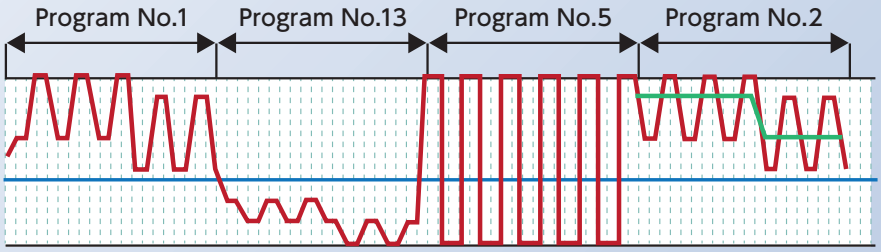
Available functions

- ■Set-point operation function
- ■Program operation function
- ■Program name input function
- ■Time signal function
- ■Program operation hold function
- ■Program operation jump function
- ■Step repeat function
- ■Combined-program operation function
- ■Trend graph display function
- ■Operation mode select function
- ■Wait function
- ■Excess temperature increase/decrease prevention function
- ■Black-out action function
- ■Power interruption safety function
- ■Fan delay function
- ■Timer function
- ■Fault detection function
- ■Measured temperature/humidity offset specification function

Combined-program operation function

This function allows two or more program settings (temperature, humidity, time, and repeat mode) to operate continuously (in combination). Up to five combined programs can be operated.

Example combination



(Example for illustrative purposes)

Program name input function

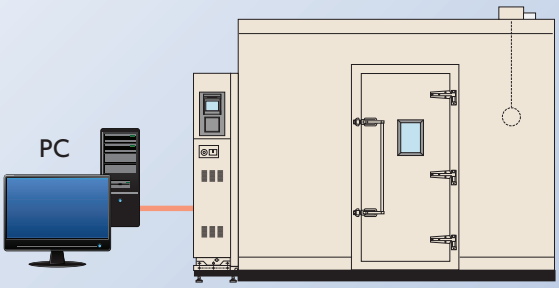
With this function, you can input a program name. Program names can include alphabets, numbers, and symbols (!"#%&'()@:,.=+-*/?_) up to 14 characters (maximum).

Time signal output function

A time signal (output signal) can be set for each program step to turn the sample ON/OFF.

Communication interfaces

Communication interfaces can be used to remotely control the system or take measurements from a PC or user system.



Remote control via PC (example)

Communication interfaces	
RS-232C	RS-485
Web interface (including Ethernet)	

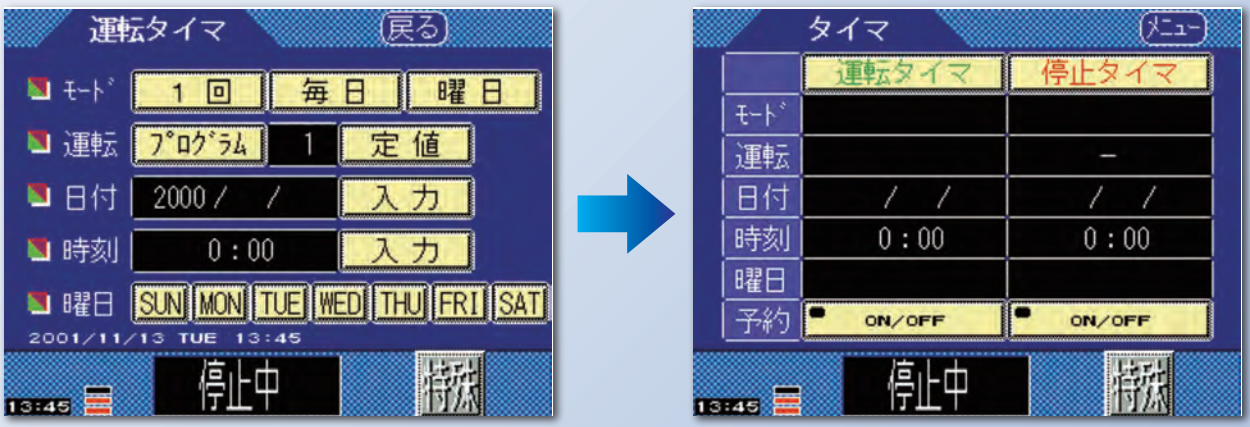
Note: Contact us for information on other communication interfaces.

Jump function

Press the jump switch during program operation to jump to the next program step.

Timer start function and timer stop function

These allow the system to be started or stopped at a set time.



Black-out auto recovery function

The LCD control panel can be used to select whether the system stays stopped or continues to run when power is restored after a black-out.

Wait function

The wait function is used to wait until the set temperature/humidity is reached before counting the set time.

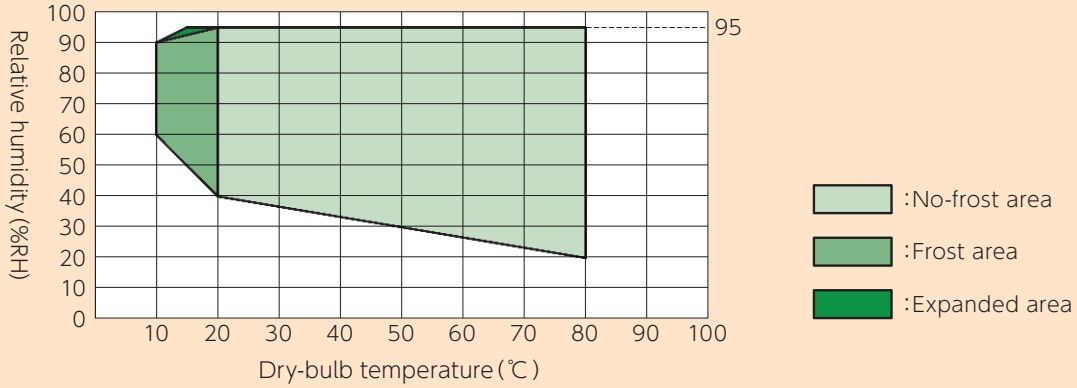
Auto drain function

This function automatically drains purified water from the humidification tray when outside the humidity control range. Water can also be drained manually.

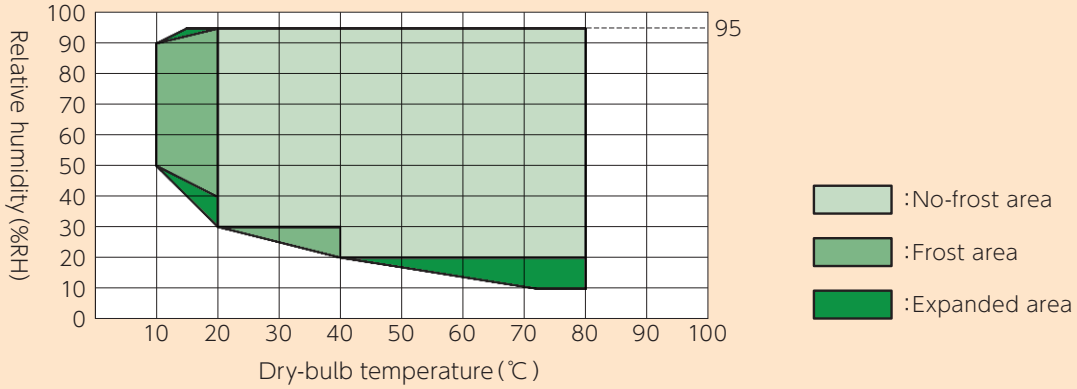
Expanded temperature/humidity control range

The temperature/humidity control range has been partially expanded through the use of a scroll compressor and electronic expansion valve, and by controlling the output of the temperature and humidity heaters (compared with previous Cosmopia models).

●NH

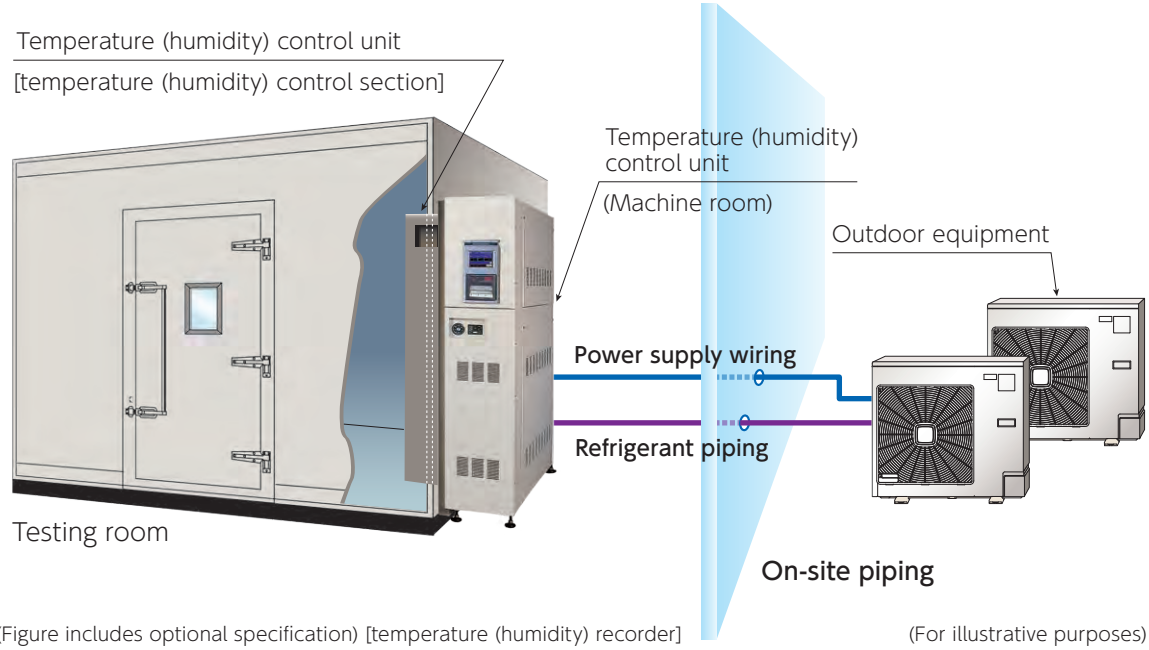


●HH・MH



Conceptual connection diagrams

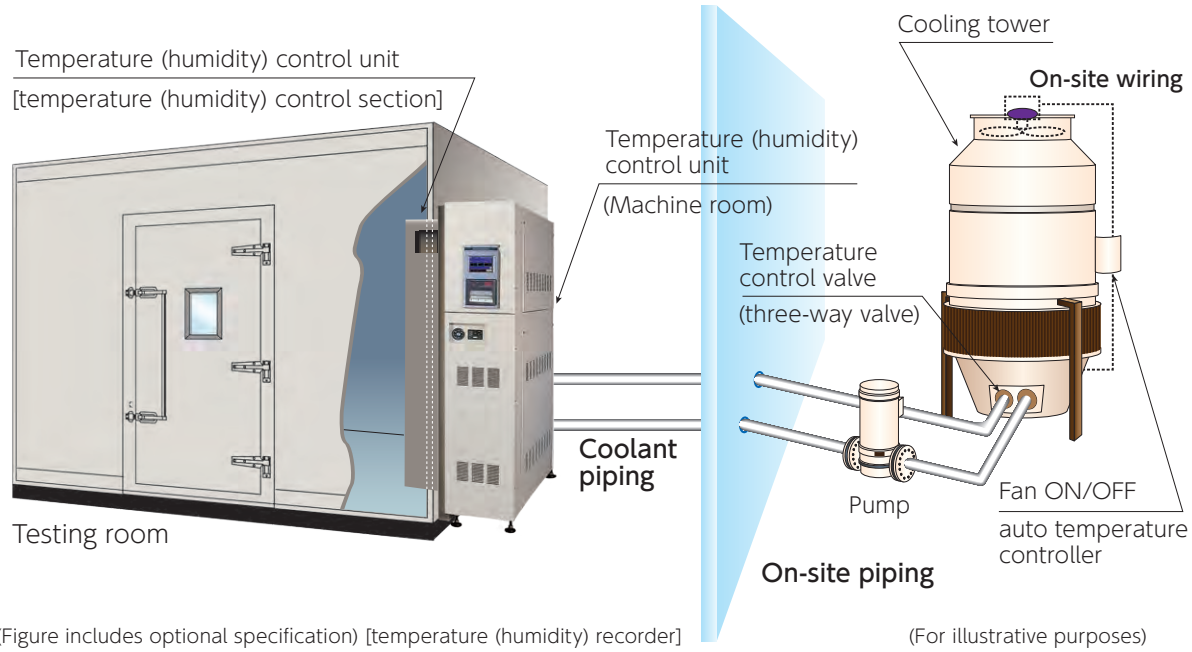
●Air-cooling Remote Condenser Type



(Figure includes optional specification) [temperature (humidity) recorder]

(For illustrative purposes)

●Water-cooling



(Figure includes optional specification) [temperature (humidity) recorder]

(For illustrative purposes)

Standard specification table

Category				Walk-in type temperature and humidity chambers					
				Water-cooling			Air-cooling Remote Condenser Type		
Item \ Model				ER-65NHP	ER-105NHP	ER-165NHP	ER-65NHP-R	ER-105NHP-R	ER-165NHP-R
Performance	Temperature range		℃	−10 to 80					
	Humidity range		RH	20 to 95%					
	JTM K09 Temperature/humidity fluctuation		℃/RH	±0.3／±2.5%					
	JTM K09 Temperature/humidity gradient		℃/RH	±2.5／±8.0%					
	JTM K09 Spatial temperature/humidity deviation		℃/RH	±2.0／±5.0%					
	JTM K09 Temperature change rate	Rise	—	2.0℃/min. (−1 to 71℃)	1.5℃/min. (−1 to 71℃)	2.0℃/min. (−1 to 71℃)		1.5℃/min. (−1 to 71℃)	2.0℃/min. (−1 to 71℃)
		Drop	—	0.6℃/min. (71 to −1℃)	0.4℃/min. (71 to −1℃)	0.6℃/min. (71 to −1℃)		0.4℃/min. (71 to −1℃)	0.6℃/min. (71 to −1℃)
	JTM K09 Time to reach extreme temperatures	Rise	—	Within 60 min. (20 to 80℃)	Within 70 min. (20 to 80℃)		Within 60 min. (20 to 80℃)	Within 70 min. (20 to 80℃)	
		Drop	—	Within 80 min. (20 to −10℃)	Within 110 min. (20 to −10℃)		Within 80 min. (20 to −10℃)	Within 110 min. (20 to −10℃)	
Prefabricated testing room	Testing room floor space		m²	6.5	9.7	16.2	6.5	9.7	16.2
	External dimensions	Width	mm	3,600		4,500	3,600		4,500
		Depth	mm	1,800	2,700	3,600	1,800	2,700	3,600
		Height	mm	2,325					
	Internal dimensions	Width	mm	3,450		4,350	3,450		4,350
		Depth	mm	1,650	2,550	3,450	1,650	2,550	3,450
		Height	mm	2,100					
	Exterior/interior materials		—	Color steel plate (ivory) / stainless steel plate					
	Floor load capacity		kN/m²	5.9					
	Door (width x height)		mm	830 x 1,800 single opening, 1 location					
	Observation window (width x height)		mm	190 x 320 door area, 1 location					
	Inner light (60 W capacity)		Qty.	1	2	3	1	2	3
	Cable hole		—	ø50, 1 location (with rubber plug)					
Temperature (humidity) control unit			Unit	EU-65NH×1		EU-65NH×2	EU-65NH-R×1		EU-65NH-R×2
Controller	Exterior		—	Painted finish on steel plate (natural gray [Munsell code: 1.0Y8.5/0.5])					
	Equipment		—	Color LCD panel					
Defrosting method			—	Off−cycle defrosting (refrigerator operation stopped, room temperature 5 to 40℃), temperature−increase defrosting (room temperature −10 to 5℃)					
Electrical characteristics	Power supply		—	Three-phase 200V 50/60Hz					
	Maximum load current		A	50		50×2	50		50×2
	ELB capacity		A	75		75×2	75		75×2
Coolant	Water volume		L/h	1,200		1,200×2	—		
	Water pressure		MPa	0.1 to 0.5					
	Water temperature		℃	18 to 32					
	Piping dimensions inlet/outlet		—	Rc1/Rc1		Rc1×2/Rc1×2			
Remote condenser	Model		—	—			RCR-R3S		
	Connected units		Unit				1		2
	External dimensions		mm				Width 850 x Depth 315 x Height 800		
	Connection piping	Refrigerant gas side	—				ø12.7 copper pipe x 1		ø12.7 copper pipe x 2
		Refrigerant liquid side	—				ø9.52 copper pipe x 1		ø9.52 copper pipe x 2
Accessories (qty.)			—	Pressure reducing valve (1), wick (15), observation window breaking tool (1), pressure regulating valve (1), drain pan (1), and instruction manual (1)					
			—	Y strainer (2)		Communication cable (1) Y strainer (2)	—		Communication cable (1)

Note: 1. Can be operated in an ambient temperature from 0 to 40℃ and with a power supply voltage of 200V ±10%.
2. Performance values are given in accordance with JTMA Standard JTMK09 under the following conditions:
(1) There should be no load and no sample in the testing room.
(2) The power supply voltage is 200V ±5%.
(3) [Air−cooling] The ambient temperature is from 5 to 35℃. [Water−cooling] The coolant inlet temperature is from 18 to 32℃.
(4) The ambient temperature condition for "temperature change rate" and "time to reach extreme temperatures" is 23℃.
(5) The ambient temperature to reach the lower limit of the "temperature range" is from 5 to 35℃.
3. The maximum load current is the value at an ambient temperature of 23℃ and power supply voltage of 200V.
4. If the set temperature is 40℃ or lower, the continuous operation time will be limited due to frost forming on the cooler/dehumidifier.
5. Dimensions inside the testing room and product dimensions do not include protrusions on surfaces. Refer to the separate specifications document for details.
6. The coolant quality conforms to the JRAIA water quality standards.

Standard specification table

Category					Walk-in type temperature chambers					
					Water-cooling			Air-cooling Remote Condenser Type		
Item				Model	ER-65NTP	ER-105NTP	ER-165NTP	ER-65NTP-R	ER-105NTP-R	ER-165NTP-R
Performance	Temperature range			℃	−10 to 80					
	JTM K07	Temperature fluctuation		℃	±0.3					
		Temperature gradient		℃	±2.5					
		Spatial temperature deviation		℃	±2.0					
		Temperature change rate	Rise	—	2.0℃/min. (−1 to 71℃)	1.5℃/min. (−1 to 71℃)	2.0℃/min. (−1 to 71℃)		1.5℃/min. (−1 to 71℃)	2.0℃/min. (−1 to 71℃)
			Drop	—	0.6℃/min. (71 to −1℃)	0.4℃/min. (71 to −1℃)	0.6℃/min. (71 to −1℃)		0.4℃/min. (71 to −1℃)	0.6℃/min. (71 to −1℃)
		Time to reach extreme temperatures	Rise	—	Within 60 min. (20 to 80℃)	Within 70 min. (20 to 80℃)		Within 60 min. (20 to 80℃)	Within 70 min. (20 to 80℃)	
			Drop	—	Within 80 min. (20 to −10℃)	Within 110 min. (20 to −10℃)		Within 80 min. (20 to −10℃)	Within 110 min. (20 to −10℃)	
Prefabricated testing room	Testing room floor space			m²	6.5	9.7	16.2	6.5	9.7	16.2
	External dimensions	Width		mm	3,600		4,500	3,600		4,500
		Depth		mm	1,800	2,700	3,600	1,800	2,700	3,600
		Height		mm	2,325					
	Internal dimensions	Width		mm	3,450		4,350	3,450		4,350
		Depth		mm	1,650	2,550	3,450	1,650	2,550	3,450
		Height		mm	2,100					
	Exterior/interior materials			—	Color steel plate (ivory) / stainless steel plate					
	Floor load capacity			kN/m²	5.9					
	Door (width x height)			mm	830 x 1,800 single opening, 1 location					
	Observation window (width x height)			mm	190 x 320 door area, 1 location					
	Inner light (60 W capacity)			Qty.	1	2	3	1	2	3
	Cable hole			—	ø50, 1 location (with rubber plug)					
Temperature control unit				Unit	EU-65NT×1		EU-65NT×2	EU-65NT-R×1		EU-65NT-R×2
Controller	Exterior			—	Painted finish on steel plate (natural gray [Munsell code: 1.0Y8.5/0.5])					
	Equipment			—	Color LCD panel					
Defrosting method				—	Off−cycle defrosting (refrigerator operation stopped, room temperature 5 to 40℃), temperature−increase defrosting (room temperature −10 to 5℃)					
Electrical characteristics	Power supply			—	Three-phase 200V 50/60Hz					
	Maximum load current			A	35		35×2	35		35×2
	ELB capacity			A	75		75×2	75		75×2
Coolant	Water volume			L/h	1,200		1,200×2	—		
	Water pressure			MPa	0.1 to 0.5					
	Water temperature			℃	18 to 32					
	Piping dimensions inlet/outlet			—	Rc1/Rc1		Rc1×2/Rc1×2			
Remote condenser	Model			—	—			RCR-R3S		
	Connected units			Unit				1		2
	External dimensions			mm				Width 850 x Depth 315 x Height 800		
	Connection piping		Refrigerant gas side	—				ø12.7 copper pipe x 1		ø12.7 copper pipe x 2
			Refrigerant liquid side	—				ø9.52 copper pipe x 1		ø9.52 copper pipe x 2
Accessories (qty.)				—	Observation window breaking tool (1), pressure regulating valve (1), drain pan (1), and instruction manual (1)					
				—	Y strainer (2)		Communication cable (1) Y strainer (2)	—		Communication cable (1)
Heat generation load (40℃)				kW	3.7		7.4	3.7		7.4

Note: 1. Can be operated in an ambient temperature from 0 to 40℃ and with a power supply voltage of 200V ±10%.
2. Performance values are given in accordance with JTMA Standard JTMK07 under the following conditions:
(1) There should be no load and no sample in the testing room.
(2) The power supply voltage is 200V ±5%.
(3) [Air−cooling] The ambient temperature is from 5 to 35℃. [Water−cooling] The coolant inlet temperature is from 18 to 32℃.
(4) The ambient temperature condition for "temperature change rate" and "time to reach extreme temperatures" is 23℃.
(5) The ambient temperature to reach the lower limit of the "temperature range" is from 5 to 35℃.
3. The maximum load current is the value at an ambient temperature of 23℃ and power supply voltage of 200V.
4. If the set temperature is 40℃ or lower, the continuous operation time will be limited due to frost forming on the cooler/dehumidifier.
5. Dimensions inside the testing room and product dimensions do not include protrusions on surfaces. Refer to the separate specifications document for details.
6. The coolant quality conforms to the JRAIA water quality standards.

Standard specification table

Category					Walk-in type temperature and humidity chambers					
					Water-cooling			Air-cooling Remote Condenser Type		
Item				Model	ER-65HHP	ER-105HHP	ER-165HHP	ER-65HHP-R	ER-105HHP-R	ER-165HHP-R
Performance	Temperature range			℃	−30 to 80					
	Humidity range			RH	10 to 95%					
	JTM K09	Temperature/humidity fluctuation		℃/RH	±0.3／±2.5%					
		Temperature/humidity gradient		℃/RH	±2.5／±8.0%					
		Spatial temperature/humidity deviation		℃/RH	±2.0／±5.0%					
		Temperature change rate	Rise	—	2.0℃/min. (−19 to 69℃)	1.5℃/min. (−19 to 69℃)	2.0℃/min. (−19 to 69℃)		1.5℃/min. (−19 to 69℃)	2.0℃/min. (−19 to 69℃)
			Drop	—	1.2℃/min. (69 to −19℃)	0.8℃/min. (69 to −19℃)	1.2℃/min. (69 to −19℃)		0.8℃/min. (69 to −19℃)	1.2℃/min. (69 to −19℃)
		Time to reach extreme temperatures	Rise	—	Within 60 min. (20 to 80℃)	Within 70 min. (20 to 80℃)		Within 60 min. (20 to 80℃)	Within 70 min. (20 to 80℃)	
			Drop	—	Within 80 min. (20 to −30℃)	Within 110 min. (20 to −30℃)		Within 80 min. (20 to −30℃)	Within 110 min. (20 to −30℃)	
Prefabricated testing room	Testing room floor space			m²	6.5	9.7	16.2	6.5	9.7	16.2
	External dimensions	Width		mm	3,600		4,500	3,600		4,500
		Depth		mm	1,800	2,700	3,600	1,800	2,700	3,600
		Height		mm	2,325					
	Internal dimensions	Width		mm	3,450		4,350	3,450		4,350
		Depth		mm	1,650	2,550	3,450	1,650	2,550	3,450
		Height		mm	2,100					
	Exterior/interior materials			—	Color steel plate (ivory) / stainless steel plate					
	Floor load capacity			kN/m²	5.9					
	Door (width x height)			mm	830 x 1,800 single opening, 1 location					
	Observation window (width x height)			mm	190 x 320 door area, 1 location					
	Inner light (60 W capacity)			Qty.	1	2	3	1	2	3
	Cable hole			—	ø50, 1 location (with rubber plug)					
Temperature (humidity) control unit				Unit	EU-65HH×1		EU-65HH×2	EU-65HH-R×1		EU-65HH-R×2
Controller	Exterior			—	Painted finish on steel plate (natural gray [Munsell code: 1.0Y8.5/0.5])					
	Equipment			—	Color LCD panel					
Defrosting method				—	Off-cycle defrosting (refrigerator operation stopped, room temperature 5 to 40℃), temperature−increase defrosting (room temperature −30 to 5℃)					
Electrical characteristics	Power supply			—	Three-phase 200V 50/60Hz					
	Maximum load current			A	65		65×2	65		65×2
	ELB capacity			A	100		100×2	100		100×2
Coolant	Water volume			L/h	2,400		2,400×2	—		
	Water pressure			MPa	0.1 to 0.5					
	Water temperature			℃	18 to 32					
	Piping dimensions inlet/outlet			—	Rc1/Rc1		Rc1×2/Rc1×2			
Remote condenser	Model			—	—			RCR-R3S		
	Connected units			Unit				2		4
	External dimensions			mm				Width 850 x Depth 315 x Height 800		
	Connection piping		Refrigerant gas side	—				ø12.7 copper pipe x 2		ø12.7 copper pipe x 2 x 2
			Refrigerant liquid side	—				ø9.52 copper pipe x 2		ø9.52 copper pipe x 2 x 2
Accessories (qty.)				—	Pressure reducing valve (1), wick (15), observation window breaking tool (1), pressure regulating valve (1), drain pan (1), and instruction manual (1)					
				—	Y strainer (2)		Communication cable (1) Y strainer (2)	—		Communication cable (1)

Note: 1. Can be operated in an ambient temperature from 0 to 40℃ and with a power supply voltage of 200V ±10%.
2. Performance values are given in accordance with JTMA Standard JTMK09 under the following conditions:
(1) There should be no load and no sample in the testing room.
(2) The power supply voltage is 200V ±5%.
(3) [Air−cooling] The ambient temperature is from 5 to 35℃. [Water−cooling] The coolant inlet temperature is from 18 to 32℃.
(4) The ambient temperature condition for "temperature change rate" and "time to reach extreme temperatures" is 23℃.
(5) The ambient temperature to reach the lower limit of the "temperature range" is from 5 to 35℃.
3. The maximum load current is the value at an ambient temperature of 23℃ and power supply voltage of 200V.
4. If the set temperature is 40℃ or lower, the continuous operation time will be limited due to frost forming on the cooler/dehumidifier.
5. Dimensions inside the testing room and product dimensions do not include protrusions on surfaces. Refer to the separate specifications document for details.
6. The coolant quality conforms to the JRAIA water quality standards.

Standard specification table

Category					Walk-in type temperature chambers					
					Water-cooling			Air-cooling Remote Condenser Type		
Item				Model	ER-65HTP	ER-105HTP	ER-165HTP	ER-65HTP-R	ER-105HTP-R	ER-165HTP-R
Performance	Temperature range			℃	−30 to 80					
	JTM K07	Temperature fluctuation		℃	±0.3					
		Temperature gradient		℃	±2.5					
		Spatial temperature deviation		℃	±2.0					
		Temperature change rate	Rise	—	2.0℃/min. (−19 to 69℃)	1.5℃/min. (−19 to 69℃)	2.0℃/min. (−19 to 69℃)		1.5℃/min. (−19 to 69℃)	2.0℃/min. (−19 to 69℃)
			Drop	—	1.2℃/min. (69 to −19℃)	0.8℃/min. (69 to −19℃)	1.2℃/min. (69 to −19℃)		0.8℃/min. (69 to −19℃)	1.2℃/min. (69 to −19℃)
		Time to reach extreme temperatures	Rise	—	Within 60 min. (20 to 80℃)	Within 70 min. (20 to 80℃)		Within 60 min. (20 to 80℃)	Within 70 min. (20 to 80℃)	
			Drop	—	Within 80 min. (20 to −30℃)	Within 110 min. (20 to −30℃)		Within 80 min. (20 to −30℃)	Within 110 min. (20 to −30℃)	
Prefabricated testing room	Testing room floor space			m²	6.5	9.7	16.2	6.5	9.7	16.2
	External dimensions	Width		mm	3,600		4,500	3,600		4,500
		Depth		mm	1,800	2,700	3,600	1,800	2,700	3,600
		Height		mm	2,325					
	Internal dimensions	Width		mm	3,450		4,350	3,450		4,350
		Depth		mm	1,650	2,550	3,450	1,650	2,550	3,450
		Height		mm	2,100					
	Exterior/interior materials			—	Color steel plate (ivory) / stainless steel plate					
	Floor load capacity			kN/m²	5.9					
	Door (width x height)			mm	830 x 1,800 single opening, 1 location					
	Observation window (width x height)			mm	190 x 320 door area, 1 location					
	Inner light (60 W capacity)			Qty.	1	2	3	1	2	3
	Cable hole			—	ø50, 1 location (with rubber plug)					
Temperature control unit				Unit	EU-65HT×1		EU-65HT×2	EU-65HT-R×1		EU-65HT-R×2
Controller	Exterior			—	Painted finish on steel plate (natural gray [Munsell code: 1.0Y8.5/0.5])					
	Equipment			—	Color LCD panel					
Defrosting method				—	Off−cycle defrosting (refrigerator operation stopped, room temperature 5 to 40℃), temperature−increase defrosting (room temperature −30 to 5℃)					
Electrical characteristics	Power supply			—	Three-phase 200V 50/60Hz					
	Maximum load current			A	45		45×2	45		45×2
	ELB capacity			A	75		75×2	75		75×2
Coolant	Water volume			L/h	2,400		2,400×2	—		
	Water pressure			MPa	0.1 to 0.5					
	Water temperature			℃	18 to 32					
	Piping dimensions inlet/outlet			—	Rc1/Rc1		Rc1×2/Rc1×2			
Remote condenser	Model			—	—			RCR-R3S		
	Connected units			Unit	—			2		4
	External dimensions			mm	—			Width 850 x Depth 315 x Height 800		
	Connection piping		Refrigerant gas side	—	—			ø12.7 copper pipe x 2		ø12.7 copper pipe x 2 x 2
			Refrigerant liquid side	—	—			ø9.52 copper pipe x 2		ø9.52 copper pipe x 2 x 2
Accessories (qty.)				—	Observation window breaking tool (1), pressure regulating valve (1), drain pan (1), and instruction manual (1)					
				—	Y strainer (2)		Communication cable (1) Y strainer (2)	—		Communication cable (1)

Note: 1. Can be operated in an ambient temperature from 0 to 40℃ and with a power supply voltage of 200V ±10%.
2. Performance values are given in accordance with JTMA Standard JTMK07 under the following conditions:
(1) There should be no load and no sample in the testing room.
(2) The power supply voltage is 200V ±5%.
(3) [Air−cooling] The ambient temperature is from 5 to 35℃. [Water−cooling] The coolant inlet temperature is from 18 to 32℃.
(4) The ambient temperature condition for "temperature change rate" and "time to reach extreme temperatures" is 23℃.
(5) The ambient temperature to reach the lower limit of the "temperature range" is from 5 to 35℃.
3. The maximum load current is the value at an ambient temperature of 23℃ and power supply voltage of 200V.
4. If the set temperature is 40℃ or lower, the continuous operation time will be limited due to frost forming on the cooler/dehumidifier.
5. Dimensions inside the testing room and product dimensions do not include protrusions on surfaces. Refer to the separate specifications document for details.
6. The coolant quality conforms to the JRAIA water quality standards.

Standard specification table

Category					Walk-in type temperature and humidity chambers					
					Water-cooling			Air-cooling Remote Condenser Type		
Item				Model	ER-65MHP	ER-105MHP	ER-165MHP	ER-65MHP-R	ER-105MHP-R	ER-165MHP-R
Performance	Temperature range			℃	−40 to 80					
	Humidity range			RH	10 to 95%					
	JTM K09	Temperature/humidity fluctuation		℃/RH	±0.3／±2.5%					
		Temperature/humidity gradient		℃/RH	±2.5／±8.0%					
		Spatial temperature/humidity deviation		℃/RH	±2.0／±5.0%					
		Temperature change rate	Rise	—	2.0℃/min. (−28 to 68℃)	1.5℃/min. (−28 to 68℃)	2.0℃/min. (−28 to 68℃)		1.5℃/min. (−28 to 68℃)	2.0℃/min. (−28 to 68℃)
			Drop	—	1.0℃/min. (68 to −28℃)	0.6℃/min. (68 to −28℃)	1.0℃/min. (68 to −28℃)		0.6℃/min. (68 to −28℃)	1.0℃/min. (68 to −28℃)
		Time to reach extreme temperatures	Rise	—	Within 60 min. (20 to 80℃)	Within 70 min. (20 to 80℃)		Within 60 min. (20 to 80℃)	Within 70 min. (20 to 80℃)	
			Drop	—	Within 200 min. (20 to −40℃)	Within 240 min. (20 to −40℃)		Within 200 min. (20 to −40℃)	Within 240 min. (20 to −40℃)	
Prefabricated testing room	Testing room floor space			m²	6.5	9.7	16.2	6.5	9.7	16.2
	External dimensions	Width		mm	3,600		4,500	3,600		4,500
		Depth		mm	1,800	2,700	3,600	1,800	2,700	3,600
		Height		mm	2,325					
	Internal dimensions	Width		mm	3,450		4,350	3,450		4,350
		Depth		mm	1,650	2,550	3,450	1,650	2,550	3,450
		Height		mm	2,100					
	Exterior/interior materials			—	Color steel plate (ivory) / stainless steel plate					
	Floor load capacity			kN/m²	5.9					
	Door (width x height)			mm	830 x 1,800 single opening, 1 location					
	Observation window (width x height)			mm	190 x 320 door area, 1 location					
	Inner light (60 W capacity)			Qty.	1	2	3	1	2	3
	Cable hole			—	ø50, 1 location (with rubber plug)					
Temperature (humidity) control unit				Unit	EU-65MH×1		EU-65MH×2	EU-65MH-R×1		EU-65MH-R×2
Controller	Exterior			—	Painted finish on steel plate (natural gray [Munsell code: 1.0Y8.5/0.5])					
	Equipment			—	Color LCD panel					
Defrosting method				—	Off-cycle defrosting (refrigerator operation stopped, room temperature 5 to 40℃), temperature−increase defrosting (room temperature −40 to 5℃)					
Electrical characteristics	Power supply			—	Three-phase 200V 50/60Hz					
	Maximum load current			A	65		65×2	65		65×2
	ELB capacity			A	100		100×2	100		100×2
Coolant	Water volume			L/h	2,400		2,400×2	—		
	Water pressure			MPa	0.1 to 0.5					
	Water temperature			℃	18 to 32					
	Piping dimensions inlet/outlet			—	Rc1/Rc1		Rc1×2/Rc1×2			
Remote condenser	Model			—	—			RCR-R3S		
	Connected units			Unit				2		4
	External dimensions			mm				Width 850 x Depth 315 x Height 800		
	Connection piping		Refrigerant gas side	—				ø12.7 copper pipe x 2		ø12.7 copper pipe x 2 x 2
			Refrigerant liquid side	—				ø9.52 copper pipe x 2		ø9.52 copper pipe x 2 x 2
Accessories (qty.)				—	Pressure reducing valve (1), wick (15), observation window breaking tool (1), pressure regulating valve (1), drain pan (1), and instruction manual (1)					
				—	Y strainer (2)		Communication cable (1) Y strainer (2)	—		Communication cable (1)

Note: 1. Can be operated in an ambient temperature from 0 to 40℃ and with a power supply voltage of 200V ±10%.
2. Performance values are given in accordance with JTMA Standard JTMK09 under the following conditions:
(1) There should be no load and no sample in the testing room.
(2) The power supply voltage is 200V ±5%.
(3) [Air−cooling] The ambient temperature is from 5 to 35℃. [Water−cooling] The coolant inlet temperature is from 18 to 32℃.
(4) The ambient temperature condition for "temperature change rate" and "time to reach extreme temperatures" is 23℃.
(5) The ambient temperature to reach the lower limit of the "temperature range" is from 5 to 35℃.
3. The maximum load current is the value at an ambient temperature of 23℃ and power supply voltage of 200V.
4. If the set temperature is 40℃ or lower, the continuous operation time will be limited due to frost forming on the cooler/dehumidifier.
5. Dimensions inside the testing room and product dimensions do not include protrusions on surfaces. Refer to the separate specifications document for details.
6. The coolant quality conforms to the JRAIA water quality standards.

Standard specification table

Category					Walk-in type temperature chambers					
					Water-cooling			Air-cooling Remote Condenser Type		
Item \ Model					ER-65MTP	ER-105MTP	ER-165MTP	ER-65MTP-R	ER-105MTP-R	ER-165MTP-R
Performance	Temperature range			℃	−40 to 80					
	JTM K07	Temperature fluctuation		℃	±0.3					
		Temperature gradient		℃	±2.5					
		Spatial temperature deviation		℃	±2.0					
		Temperature change rate	Rise	—	2.0℃/min. (−28 to 68℃)	1.5℃/min. (−28 to 68℃)	2.0℃/min. (−28 to 68℃)		1.5℃/min. (−28 to 68℃)	2.0℃/min. (−28 to 68℃)
			Drop	—	1.0℃/min. (68 to −28℃)	0.6℃/min. (68 to −28℃)	1.0℃/min. (68 to −28℃)		0.6℃/min. (68 to −28℃)	1.0℃/min. (68 to −28℃)
		Time to reach extreme temperatures	Rise	—	Within 60 min. (20 to 80℃)	Within 70 min. (20 to 80℃)		Within 60 min. (20 to 80℃)	Within 70 min. (20 to 80℃)	
			Drop	—	Within 200 min. (20 to −40℃)	Within 240 min. (20 to −40℃)		Within 200 min. (20 to −40℃)	Within 240 min. (20 to −40℃)	
Prefabricated testing room	Testing room floor space			m²	6.5	9.7	16.2	6.5	9.7	16.2
	External dimensions	Width		mm	3,600		4,500	3,600		4,500
		Depth		mm	1,800	2,700	3,600	1,800	2,700	3,600
		Height		mm	2,325					
	Internal dimensions	Width		mm	3,450		4,350	3,450		4,350
		Depth		mm	1,650	2,550	3,450	1,650	2,550	3,450
		Height		mm	2,100					
	Exterior/interior materials			—	Color steel plate (ivory) / stainless steel plate					
	Floor load capacity			kN/m²	5.9					
	Door (width x height)			mm	830 x 1,800 single opening, 1 location					
	Observation window (width x height)			mm	190 x 320 door area, 1 location					
	Inner light (60 W capacity)			Qty.	1	2	3	1	2	3
	Cable hole			—	ø50, 1 location (with rubber plug)					
Temperature control unit				Unit	EU-65MT×1		EU-65MT×2	EU-65MT-R×1		EU-65MT-R×2
Controller	Exterior			—	Painted finish on steel plate (natural gray [Munsell code: 1.0Y8.5/0.5])					
	Equipment			—	Color LCD panel					
Defrosting method				—	Off-cycle defrosting (refrigerator operation stopped, room temperature 5 to 40℃), temperature−increase defrosting (room temperature −40 to 5℃)					
Electrical characteristics	Power supply			—	Three-phase 200V 50/60Hz					
	Maximum load current			A	45		45×2	45		45×2
	ELB capacity			A	75		75×2	75		75×2
Coolant	Water volume			L/h	2,400		2,400×2	—		
	Water pressure			MPa	0.1 to 0.5					
	Water temperature			℃	18 to 32					
	Piping dimensions inlet/outlet			—	Rc1/Rc1		Rc1×2/Rc1×2			
Remote condenser	Model			—	—			RCR-R3S		
	Connected units			Unit				2		4
	External dimensions			mm				Width 850 x Depth 315 x Height 800		
	Connection piping		Refrigerant gas side	—				ø12.7 copper pipe x 2		ø12.7 copper pipe x 2 x 2
			Refrigerant liquid side	—				ø9.52 copper pipe x 2		ø9.52 copper pipe x 2 x 2
Accessories (qty.)				—	Observation window breaking tool (1), pressure regulating valve (1), drain pan (1), and instruction manual (1)					
				—	Y strainer (2)		Communication cable (1) Y strainer (2)	—		Communication cable (1)

Note: 1. Can be operated in an ambient temperature from 0 to 40℃ and with a power supply voltage of 200V ±10%.
2. Performance values are given in accordance with JTMA Standard JTMK07 under the following conditions:
(1) There should be no load and no sample in the testing room.
(2) The power supply voltage is 200V ±5%.
(3) [Air−cooling] The ambient temperature is from 5 to 35℃. [Water−cooling] The coolant inlet temperature is from 18 to 32℃.
(4) The ambient temperature condition for "temperature change rate" and "time to reach extreme temperatures" is 23℃.
(5) The ambient temperature to reach the lower limit of the "temperature range" is from 5 to 35℃.
3. The maximum load current is the value at an ambient temperature of 23℃ and power supply voltage of 200V.
4. If the set temperature is 40℃ or lower, the continuous operation time will be limited due to frost forming on the cooler/dehumidifier.
5. Dimensions inside the testing room and product dimensions do not include protrusions on surfaces. Refer to the separate specifications document for details.
6. The coolant quality conforms to the JRAIA water quality standards.

Cosmopia STANDARD SERIES

Integrated Type

Walk-in temperature and humidity chambers	Walk-in temperature chambers
NH	NT
MH	MT
MHH	MTH

Our lineup of integrated walk-in type temperature (humidity) chambers for conducting environmental testing of automotive components, large LCD panels, and other parts. No on-site assembly required.

*Photo for illustrative purposes only.
(Includes optional specification) [temperature (humidity) recorder]

Equipped with highly visible, user-friendly color LCD touch panel.

Refer to "STANDARD SERIES - Basic Type" for control panel features (P9 - P11).

Settings screen

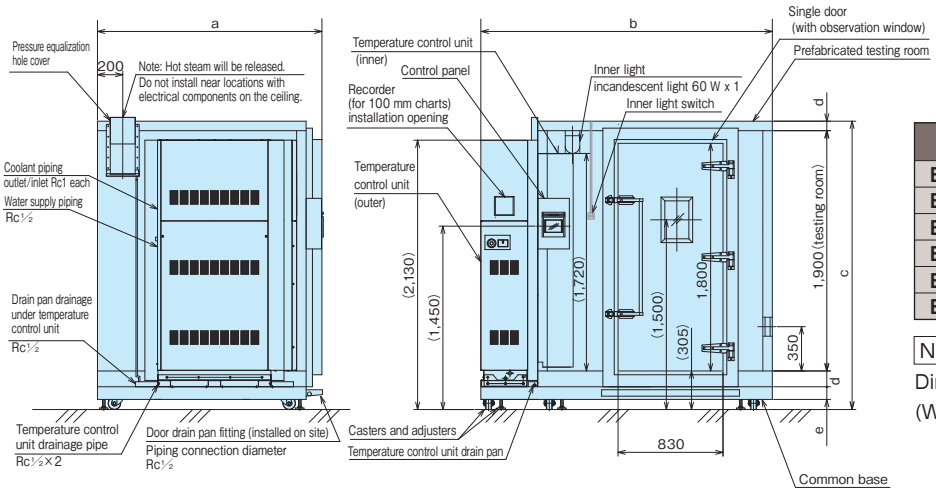
Options

Item	Specifications
Large observation window	600 (W) x 400 (H) mm
Cable hole	Inner diameter: ø50 mm, ø100 mm, ø150 mm (One ø50 mm cable hole is provided for the standard specification.)
Safety switch	The inner switch can be used to sound the buzzer and raise an alarm on the control panel.
Outlet	100V 15A / 200V 15A / 200V 20A / 200V 30A
Ventilation fan	Used for ventilation within the prefabricated room. One is provided to supply air.
Oxygen alarm	Raises an alarm if the oxygen content in the air drops.
Operation indicator	Located above and outside the door and used to indicate that the system is in operation.
Fault alarm	Select an alarm buzzer, fault indicator, rotating light, or signal indicator.
Temperature (humidity) recorder	Select either paperless or a paper chart (100 mm width).
Communication interface	Select either RS-485 or web interface (including Ethernet).
Communication interface cable	RS-232C: 4 m, 10 m

*We offer a wide range of options to suit various needs.
(Refer to P21 through P24.)

Dimensions

(Unit: mm)



Model	a	b	c	d	e
ER-35NHP	1,750	2,315	2,280	75	150
ER-35NTP					
ER-35MHP					
ER-35MTP					
ER-35MHHP	1,850	2,365	2,330	125	100
ER-35MTHP					

Note(s)

Dimensions do not include protrusions.
(Wiring ducts, door fixtures, control switches, etc.)

Standard specification table

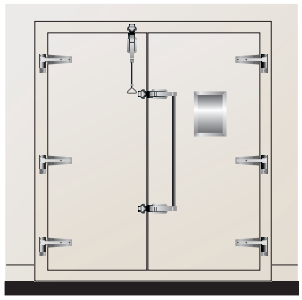
Category				Walk-in type temperature and humidity chambers			Walk-in type temperature chambers		
Item \ Model				ER-35NHP	ER-35MHP	ER-35MHHP	ER-35NTP	ER-35MTP	ER-35MTHP
Performance	Temperature range		℃	−10 to 80	−40 to 80	−40 to 120	−10 to 80	−40 to 80	−40 to 120
	Humidity range		RH	20 to 95%	10 to 95%				
	JTM K09	Temperature/humidity fluctuation	℃/RH	±0.3/±2.5%			–		
		Temperature/humidity gradient	℃/RH	±2.5/±8%					
		Spatial temperature/humidity deviation	℃/RH	±2.0/±5%					
	JTM K07	Temperature fluctuation	℃	–			±0.3		
		Temperature gradient	℃				±2.5		
		Spatial temperature deviation	℃				±2.0		
	JTM K09 & K07	Temperature change rate — Rise	—	2.0℃/min. (−1 to 71℃)	2.0℃/min. (−28 to 68℃)	2.5℃/min. (−24 to 104℃)	2.0℃/min. (−1 to 71℃)	2.0℃/min. (−28 to 68℃)	2.5℃/min. (−24 to 104℃)
		Temperature change rate — Drop	—	0.6℃/min. (71 to −1℃)	1.0℃/min. (68 to −28℃)	0.8℃/min. (104 to −24℃)	0.6℃/min. (71 to −1℃)	1.0℃/min. (68 to −28℃)	0.8℃/min. (104 to −24℃)
		Time to reach extreme temperatures — Rise	—	Within 50 min. (20 to 80℃)		Within 100 min. (20 to 120℃)	Within 50 min. (20 to 80℃)		Within 100 min. (20 to 120℃)
		Time to reach extreme temperatures — Drop	—	Within 70 min. (20 to −10℃)	Within 100 min. (20 to −40℃)		Within 70 min. (20 to −10℃))	Within 100 min. (20 to −40℃)	
Prefabricated testing room	Testing room floor space		m²	3.0		3.3	3.0		3.3
	External dimensions	Width	mm	2,315		2,365	2,315		2,365
		Depth	mm	1,746		1,846	1,746		1,846
		Height	mm	2,280		2,330	2,280		2,330
	Internal dimensions	Width	mm	1,500					
		Depth	mm	1,500					
		Height	mm	1,900					
	Exterior/interior materials		—	Color steel plate (ivory) / stainless steel plate					
	Floor load capacity		kN/m²	5.9					
	Door (width x height)		mm	830 x 1,800 single opening, 1 location					
	Observation window (width x height)		mm	190 x 320 door area, 1 location					
	Inner light (60 W capacity)		Qty.	1					
	Cable hole		—	⌀50, 1 location (with rubber plug)					
Controller	Exterior		Unit	Painted finish on steel plate (natural gray [Munsell code: 1.0Y8.5/0.5])					
	Equipment		—	Color LCD panel					
Defrosting method			—	Off-cycle defrosting (refrigerator operation stopped, room temperature 5 to 40℃), temperature−increase defrosting (room temperature −40/−10 to 5℃)					
Electrical characteristics	Power supply		—	Three-phase 200V 50/60Hz					
	Maximum load current		A	50	65		35	45	
	ELB capacity		A	75	100		75		
Coolant	Water volume		L/h	1,200	2,400		1,200	2,400	
	Water pressure		MPa	0.1 to 0.5					
	Water temperature		℃	18 to 32					
	Piping dimensions inlet/outlet		—	Rc1 ／ Rc1					
Accessories (qty.)			—	Pressure reducing valve (1), wick (15), pressure regulating valve (1), drain pan (1), Y strainer (2), and instruction manual (1)			Pressure regulating valve (1), drain pan (1), Y strainer (2), and instruction manual (1)		

Note: 1. Can be operated in an ambient temperature from 0 to 40℃ and with a power supply voltage of 200V ±10%.
2. Performance values are given in accordance with JTMA Standard JTMK07/JTMK09 under the following conditions:
(1) There should be no load and no sample in the testing room.
(2) The power supply voltage is 200V ±5%.
(3) [Air−cooling] The ambient temperature is from 5 to 35℃. [Water−cooling] The coolant inlet temperature is from 18 to 32℃.
(4) The ambient temperature condition for "temperature change rate" and "time to reach extreme temperatures" is 23℃.
(5) The ambient temperature to reach the lower limit of the "temperature range" is from 5 to 35℃.
3. The maximum load current is the value at an ambient temperature of 23℃ and power supply voltage of 200V.
4. If the set temperature is 40℃ or lower, the continuous operation time will be limited due to frost forming on the cooler/dehumidifier.
5. Dimensions inside the testing room and product dimensions do not include protrusions on surfaces. Refer to the separate specifications document for details.
6. The coolant quality conforms to the JRAIA water quality standards.

Options for walk-in type temperature and humidity chambers and temperature chambers

Double doors

Opening area dimensions
Standard dimensions are 1,400 (W) x 1,800 (H) mm.
Up to 4,000 (W) x 4,700 (H) mm is supported.



Note(s)
(Integrated models are not supported.)

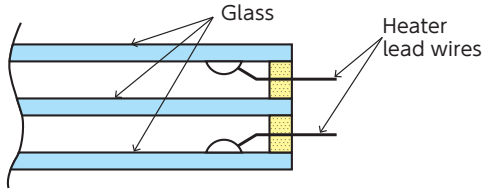
Single door

Opening area dimensions
Standard dimensions are 830 (W) x 1,800 (H) mm.
Up to 2,000 (W) x 4,700 (H) mm is supported.

Note(s)
(Integrated models are not supported.)

Observation window

Comes equipped with a heater to prevent frosting.
Standard dimensions are 190 mm (W) x 320 mm (H).
Contact us to customize other dimensions
(300 mm x 300 mm, 400 mm x 400 mm, and 600 mm x 400 mm).

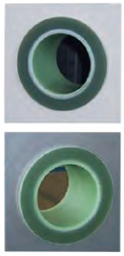


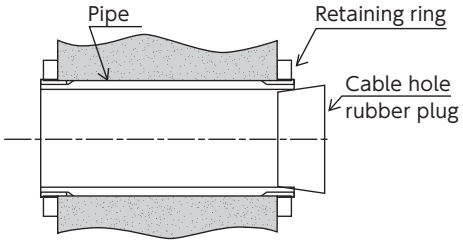
* The outer heater is powered when the temperature inside the testing room is low, and the inner heater is powered when the temperature inside the testing room is high.

Note(s)
Installing a special−order observation window will limit the cooling performance.

Cable hole

The cable hole is used to run cables, etc.
Adding a cable hole will affect the temperature increase/decrease performance.
Contact us for information on the number to add, cable holes, and other options to maintain performance.





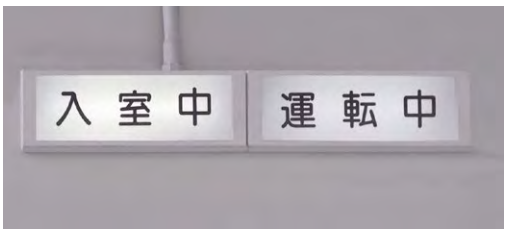
Cable hole cross-section shape

Note(s)
Inner diameter: ø50 mm, ø100 mm, ø150 mm (one ø50 mm cable hole is provided for the standard specification.)

Entry indicator and operation indicator

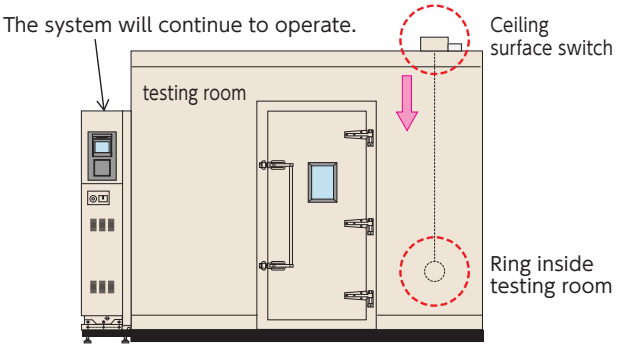
- The entry indicator turns on when the entry switch is pressed when entering the testing room.(The buzzer on the control panel can also be configured to go off after a certain time has elapsed. Contact us for details.)
- The operation indicator turns on during system operation.

Note(s)
The color of the acrylic board and text can be customized.



Inner safety switch

Pulling the ring inside the testing room raises an external alarm.
The system will continue to operate.



Outlet

Contact us for information on pole arrangement, voltage, and waterproof options.

Note(s)
We can also provide outlet plugs.
You will need to provide your own power supply for the outlet.

Temperature (humidity) recorder

Paper (chart width 100 mm) and paperless temperature (humidity) recorders are available.

Paper

Paperless

Fault indicator (rotating light)

The rotating light turns on if a fault occurs.
It can be installed anywhere, such as on the ceiling of the testing room.

Note(s)
Audio option is also available.

Signal indicator

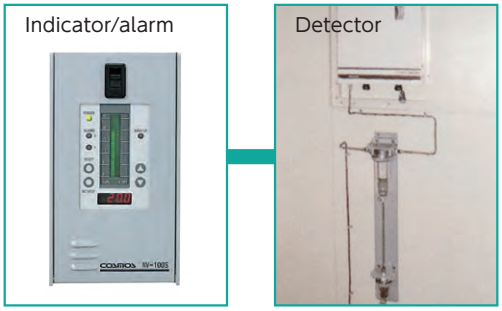
The optional signal indicator shows the operational status of the system.

- Green: The system is running.
- Yellow: The earth leakage circuit breaker is ON.
- Red: The safeguard is operating and the system has stopped running.

Oxygen concentration detector

This raises an alarm when the oxygen concentration drops inside the testing room.

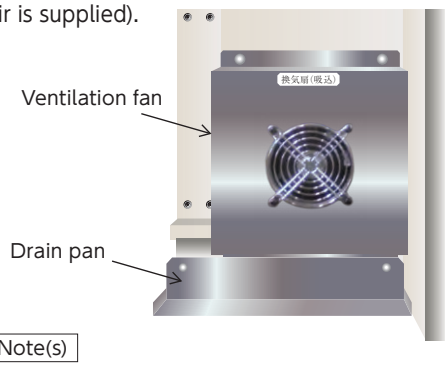
(Example system)



Note(s)
You will need to connect your own power supply.

Ventilation fan (for air supply)

This will need to be installed to conduct work inside the testing room (temperature/humidity may fluctuate when air is supplied).



Note(s)
The rubber plug is used inside the testing room when not in use.

Humidity sensor

This is a capacitive humidity sensor.
(There is no need to replace the wet–bulb temperature detection wick.)

Note(s)
The sensor controller is installed inside the temperature (humidity) control unit mechanism.
The sensor is installed on the testing room nozzle.

Gas detector (CO_2, etc.)

This raises an alarm when the gas concentration rises inside the testing room.

Water purifier

Cartridge type water purifier
Purified water yield: Approx. 1,900 L
Standard flow: 50 to 200 L/h

Dehumidifier (low temperature/humidity specification)

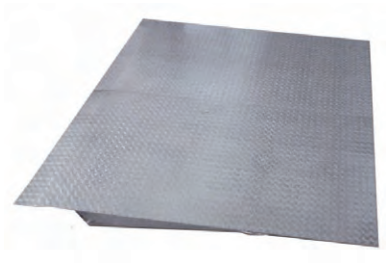
Low temperature/humidity specification.
Select a dehumidifier based on the desired humidity.

Note(s)
A separate waste heat treatment will be required.

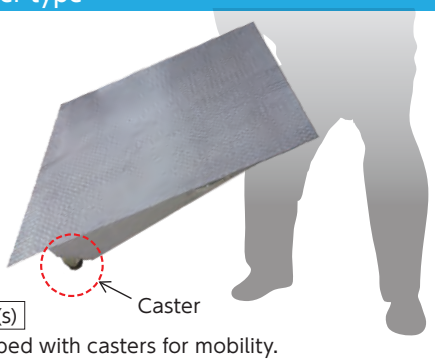
Slope

This slope is for transporting samples into the testing room.

Removable type

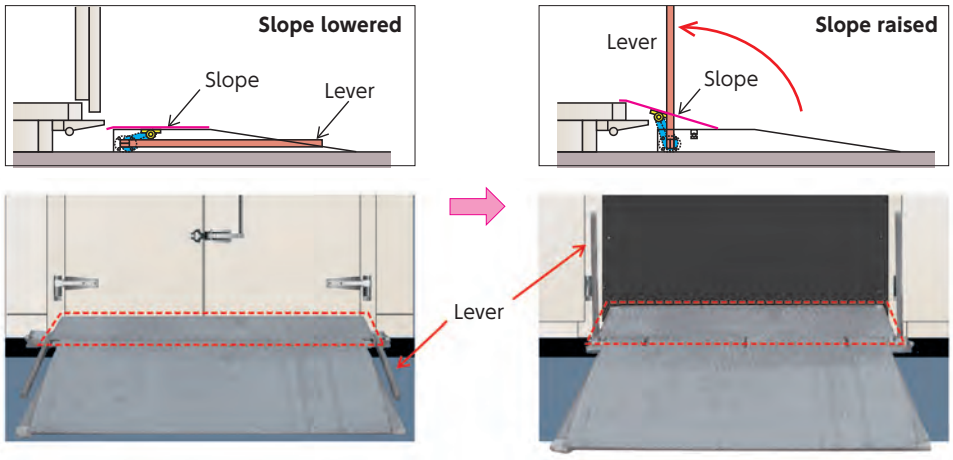


Caster type



Note(s)
Equipped with casters for mobility.

Sliding type



Note(s)
After opening the door, raise the slope lever to set the slope in place.

Ceiling punching

The ceiling can be punched to reduce wind speed (0.5 to 1 m/s) and improve heat (humidity) distribution inside the testing room.

Fire extinguisher

A fire extinguisher (CO_2, etc.) can be installed.

Communication interface functionality

RS-232C, RS-485, and a web interface (including Ethernet) are available for communication interface functionality. Any one of those can be installed to the system.

Smoke detector

This can be installed inside the temperature (humidity) control unit operation panel.

Floor load capacity

The system supports a load of up to 19 kN/㎡.

Special specifications

Continuous low-temperature operation specification.

Alternating the defrosting of the temperature (humidity) control unit controls temperature fluctuations, allowing for continuous low-temperature operation (for up to 30 days).

Irregular/large dimensions

The system can be designed for a large room (exceeding 16.2 ㎡) and a ceiling height of up to 5.0 m.

Independent/multiple operation switching function

The testing room can be split into two chambers operated independently. This allows the system to be operated according to the sample size or testing room size based on the heat generation load.

Overview of the web interface (optional circuit board)

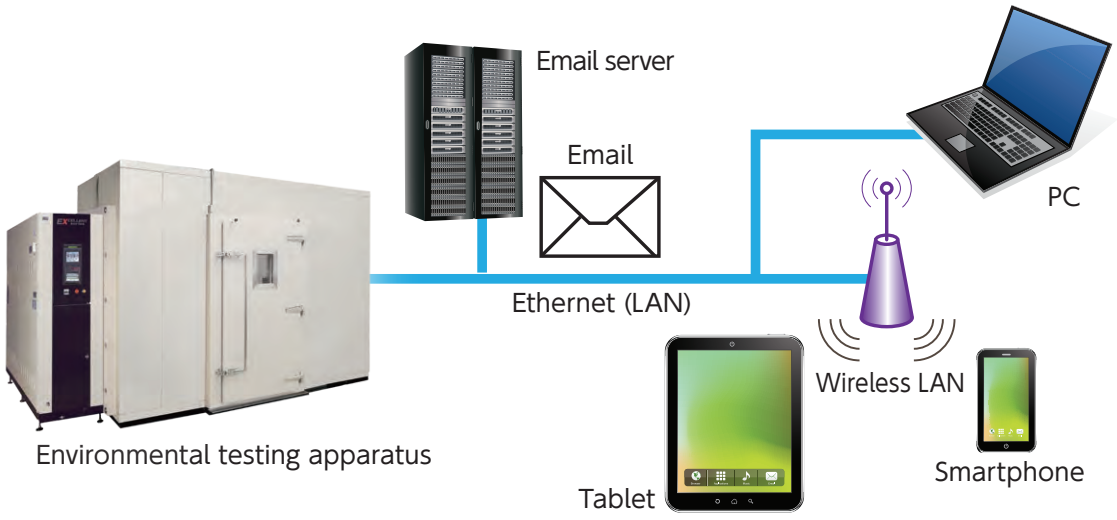
Features

Easy connectivity

The operational status can be monitored and the testing apparatus can be controlled even from a remote location. It is controlled using a web browser, so there is no need to install any specialized software on devices. It can be used with a PC, smartphone, or tablet.

Email transmission

Email notifications can be sent when there is a change in the status of the testing apparatus (for example, if an alarm occurs, testing starts or ends, or operation starts or stops).



Web browser

*Photos and illustrations for illustrative purposes only.
*An email server is required to use the email transmission function. Only a single unit can be operated if multiple devices are connected.
A wireless LAN environment is required to use the wireless LAN.
*If using a model that uses a parent-child configuration, install the web interface (optional circuit board) in the parent device (not the child device).
Installing the web interface (optional circuit board) in the parent device will require modifications to the RS-485 communication on the CPU board of the parent device (RS-485 is used to communicate between the parent and child devices).

memo

memo

SAFETY PRECAUTIONS

- ●Read the Instruction Manual thoroughly prior to use, to ensure that the system is used properly.
- ●Do not bring volatile or flammable objects inside the testing room. Doing so could cause an explosion. Do not use the system for conducting carbide floating tests, testing living things such as animals or plants, or testing materials that could corrode substances such as stainless steel, resin, and silicon.
- ●The products described in this catalog are for indoor use only. Use and store products away from rain.
- ●Installation work and electrical work are required. Contact your place of purchase or a qualified service contractor for support.

Refrigerant

- ●The disposal of testing apparatuses (refrigeration cycle) requires separate fees for the recovery, transportation, and destruction of fluorocarbons, in compliance with the Act on Rational Use and Proper Management of Fluorocarbons.

Installation precautions

1. Do not install in environments with corrosive gas atmospheres such as hydrogen sulfide.
2. Do not install near flammable or explosive materials, or near high-temperature heating elements.
3. If installing in a location with devices that generate electromagnetic waves or noise, avoid installing the system in such a way that it directly faces these devices. Install the system at least three meters away from these devices to avoid the effects of noise propagation in the air.

Manufactured by

COSMOPIA HIGHTECH CORP. 8-1, Shinmidori-cho, Shimizu-ku, Shizuoka-shi, Shizuoka 424-0927

Cosmopia website ▶
https://www.cosmopia.co.jp

We may provide personal information to our parent company group or partner companies in order to handle your inquiry or request.

For reliable and attentive service, contact:

■Actual product colors may differ slightly from the colors printed in this catalog due to the nature of the paper used.
The information contained in this catalog may be changed without prior notice.

Published: November 2024
ER-EN2400.00