

Environmental Chambers





Application:

- Electronics, electrical appliances, sensors
- Semiconductor, PCB, LCD & LED
- Medicals tests
- Mechanical, Military, aerospace products
- Vehicles, Transport, automobile supply industries
- Chemicals, Petrochemical industries
- Building materials, Plastics, Textile industries
- Testing metal related industries like plating etc.
- Instrumentation.

Optional Accessories:

Cable Port: Size of cable port is available for Ø100mm

Water purifier RO 80: Continuously provide purified water for humidifying heater and wet-bulb

Dehumidifier: The rotation regenerating dehumidifier M-120 ensures precise control of low humidity (10C, 15%RH) for electrostatic reliability tests.

Defrosting Device: The chamber automatically detects and melts the frost on the evaporator when operating below 0°C in order to allow continuous operation

Electronic humidity sensor: Precision Humidity Sensor with stainless steel protection tube.

Conform standards:

IEC68-2-1 (GB-2423.1-2008) Testing A: Low temperature testing method

IEC68-2-2 (GB-2423.2-2008) Testing B: High temperature testing method

MIL-STD-202F (GJB360.8-87) High temperature life testing

MIL-STD-810D (GJB150.3) High temperature method

MIL-STD810D (GJB150.4) Low temperature method

IEC68-2-3 (GB2423.3-93) Testing Ca: Constant moist heat testing method.

IEC68-2-30 (GB2423.4-93) Testing Db: Alternate moist heat testing method.

MIL-STD-810D (GJB150.9-93) Moist heat testing method.

Programmable Temperature and Humidity Test Chamber Vertical Type

Programmable Temperature and Humidity Test Chamber simulates a full range of temperature and humidity conditions to test reliability, durability, climatic, freezing resistance, quality assurance, thermal endurance etc.

Features:

- Chamber exterior material is stainless steel with environmentally baking paint resists corrosion & provides impact resistance. Interior material is SUS304# stainless steel with excellent heat resistance and easy to clean.
- MRC HL-1000 touch screen controller is designed to save chamber programming and setup time with temperature limit and alarm to protect your product.
- Safety relay connection is provided to protect your device under test by removing power to it when the chamber is not running.
- RS-232 communications is for computer connection, programming can be set on computer by software, monitor testing process and automatically execute power on/off functions.
- Fog-free viewing window and interior light makes viewing workspace freely and observe the test under best conditions.
- Adjustable product shelf slides out for easier product access. Shelf design is non-tipping and supports large product loads.
- Left side of chamber with diameter 50mm cable port for power-on test.
- Optional electronic humidity sensor is used on all test chambers for accuracy and minimal maintenance.

Model	Temp./Humid. Ranges	Internal Dimension (W x H x D) mm	Outer Dimension (W x H x D) mm
HP-40V	0°C ~ +150°C 20% ~ 98%RH	500x500x400	700x1640x1067
HP-50V		500x600x500	750x1650x1400
HP-55V		500x750x600	750x1730x1490
HP-60V		700x850x700	950x1860x1550
HP-80V		1000x1000x800	1200x1970x1790
HP-100V		1000x1000x1000	1400x1950x2250
FP-40V	-20°C ~ +150°C 20% ~ 98%RH	500x500x400	700x1640x1067
FP-50V		500x600x500	750x1650x1400
FP-55V		500x750x600	750x1730x1490
FP-60V		700x850x700	950x1860x1550
FP-80V		1000x1000x800	1200x1970x1790
FP-100V		1000x1000x1000	1400x1950x2250
LP-40V	-40°C ~ +150°C 20% ~ 98%RH	500x500x400	700x1640x1067
LP-50V		500x600x500	750x1650x1400
LP-55V		500x750x600	750x1730x1490
LP-60V		700x850x700	950x1860x1550
LP-80V		1000x1000x800	1200x1970x1790
LP-100V		1000x1000x1000	1400x1950x2250
TP-40V	-70°C ~ +150°C 20% ~ 98%RH	500x500x400	700x1640x1067
TP-50V		500x600x500	750x1650x1400
TP-55V		500x750x600	750x1730x1490
TP-60V		700x850x700	950x1860x1550
TP-80V		1000x1000x800	1200x1970x1790
TP-100V		1000x1000x1000	1400x1950x2250

***For temperature only add suffix-T to model number**

20%~98%RH is standard range, optional customized 10%~98%RH or 5%~98%RH.

Dimensions are also available for customized.

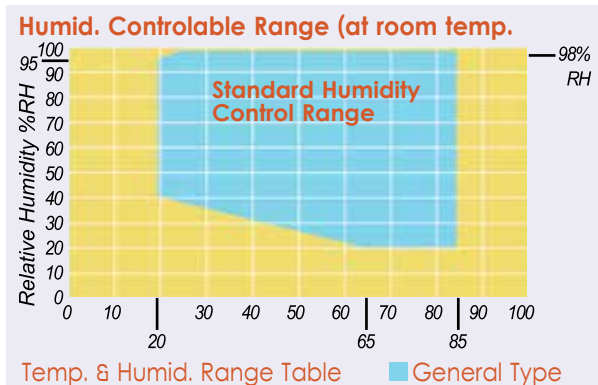
Control Mode	Balanced Temperature and Humidity Control System
Operating Temp. & Humid. Range	+5°C ~ +35°C; <85%RH
Temp. range	HP=0°C, FP=-20°C, LP=-40°C, TP=-70°C ~ +100°C (150°C)
Humid. range	20% ~ 98%RH (Optional: 5% ~ 98%RH)
Temp. & Humid. fluctuation	±0.5°C; ±2.5%RH
Temp. & Humid. uniformity	≤2.0°C; ≤3%RH
Temp. & Humid. Deviation	≤1.0°C; ≤2%RH
Temp. Heating Time	0°C ~ +100°C within 30min; -20°C ~ +150°C within 45min
Temp. Cooling Time	20°C ~ -40°C within 60min; 20°C ~ -70°C within 85min
Power Supply	AC380V, 50/60HZ, Three-phase (Specified by User)
Exterior Material	stainless steel with baking paint
Interior material	SUS304# Stainless steel
Insulation material	Rigid Polyurethane foam
Refrigeration system	Mechanical cascade refrigeration system; Fin type radiator
Circulation system	Mechanical convection system
Humidification Water Supply	Automatic water regulating, recoverable supply system, water shortage alarm system
Water quality	Distilled water only, 20L Water tank capacity
Controller	Touch Screen Controller
Safety devices	Overheat protector Switch, Compressor overload protector Switch water shortage protector Switch, Humidifier protector Switch Fault alarm system
Accessories	Viewing window, Chamber Illumination, Cable port Ø50mm, Product shelf slides 2 pieces, universal casters HL-1000 touch screen controller

Note:

- The performance values are no specimen inside the test area.
- At 20°C ambient temperature, relative humidity 65%rh, rated voltage
- According to IEC60068-3-5:2001 and IEC60068-3-6:2001
- The above specifications are for reference only.

CCG/PCG-Series, (Programmable) Bench Top Constant Temperature & Humidity Chamber, 80 or 120 Liter

Bench top Temperature & Humidity Test Chambers offer flexibility, uniformity and control accuracy required for cost effective testing for a variety of products. Ideal for testing smaller products such as computer components, automobile sensors or cellular phones, these chambers combine superior performance with compact design that is perfect for research and development or personal point-of-use testing. Available in two sizes, the Bench top Series chambers allow you to cost effectively select the exact chamber that best meets your environmental test criteria. These chambers can be mounted in an instrument rack or will easily sit on a laboratory bench top. This humidity chambers include an removable water storage tank, avoiding the need for water hook-ups.



CCG-80: Fix point PID control LED display.
PCG-80: 5 Programs. 50 steps. 999 cycles. LCD display

Features:

- Viewing window with interior light.
- Stainless steel access port with plug, for convenient access to test items.
- Easily accessible service areas.
- Stainless steel internal and external chamber.
- Solid state heating switching.
- Refrigeration system: high efficiency, maximum reliability & low vibration and low noise. The air cooled refrigeration is working with CFC free refrigerant. The total cooling circuits is working with solenoid valve bypass technique ensuring that the compressor will only be disconnected if cooling capacity has not been required for a prolonged period.
- Heating system: low mass electric resistance heater is located directly in front of the recirculating air blower.
- The PID microprocessor controllers with the solid state relays allows extremely precise & constant control.
- Adjustable stainless steel shelves.
- Optional 100mm chart recorder.



CCG-80 Controller

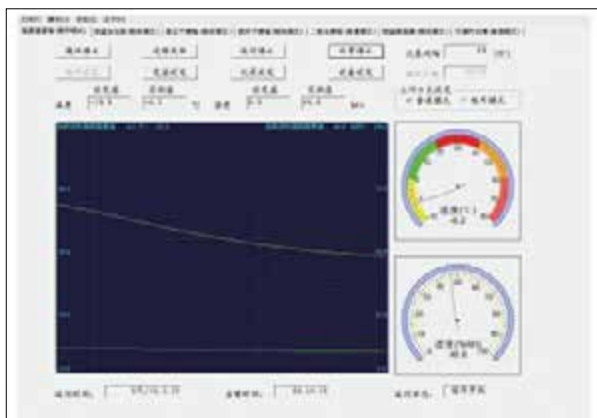
Model Controller	CCG-80
Model Programmer	PCG-80
Temp. range	-20°C~100°C
Humid. range	20%~98% R.H
Temp&Humid. constancy	±0.5°C±2.5% R.H
Temp&Humid. uniformity	±1°C±3%R.H
Heating up time	20°C~100°C within 30 min
Pull down time	20°C~-20°C within 60 min
Volume (Liter)	80Liter
Interior dimensions(mm)	W400xD400xH500
Exterior dimensions(mm)	W860xD810xH810
Interior/Exterior material	Stainless steel plate (SUS304)/(SUS304) tough powder-coated
Insulation	Rigid polyurethane foam
Refrigeration system	Single stage refrigeration
Safety devices	Refrigerator overload relay, refrigeration high pressure switch, protection relay protection fuse, boil dry protector, overheat protector, alarm viewing window
Accessories	Shelves (freely adjustable) 2pcs. Chamber lamp
Power source	AC220V 50/60Hz 1Φ



CCG-150N250N, Temp./Humidity chambers, -10°C

Features:

- Achieve tem. -10~100 degrees, humidity 10%rh~95%rh
- 5-level automatic defrosting function, stable and non-fluctuating temperature and humidity, Meets GMP, FDA-required frost-free operation (20 degrees or more)
- Manual defrost function
- Logging, audit trail function
- Adjustable wind speed control function (not available in PP and PTH series)
- Electronic signature function that meets FDA requirements to ensure more realistic test data
- Data real-time recording and export function (USB encryption export or host computer serial port export)
- Fault monitoring, alarm, recording and export functions (USB encryption export or PC serial port export)
- 4 level password function: login password, operator password, administrator password, advanced administrator password
- Three power-off mode selection functions: power failure recovery, stop or restart
- Historical data and historical curve query and download functions
- Maximum support for expanding 32GTF memory cards, which can store at least 10 years of data;
- Ambient temperature detection function
- PDF data export function (exported by PC software)
- Computer monitoring software monitoring and synchronization control function, support 32 devices Simultaneous control (H series and TH series).
- Network function for remote monitoring.
- Mobile APP remote monitoring function.
- GPRS SMS alarm function
- Water level monitoring and automatic water replenishment
- Provide communication code, access and pharmaceutical enterprise integrated equipment management platform.



Computer monitoring software

Optional computer monitoring software, the device is compatible with the data interface of the comprehensive equipment management platform of the pharmaceutical company.

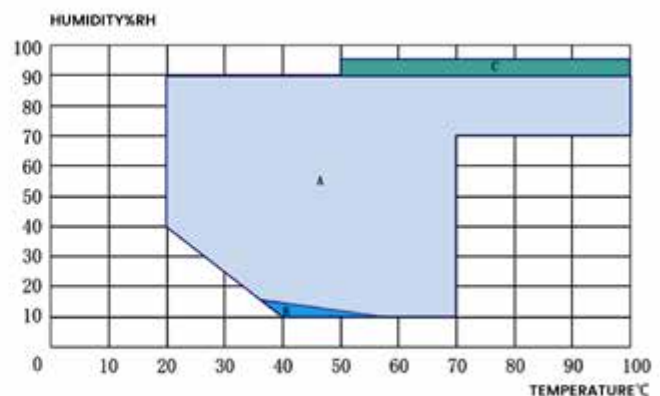
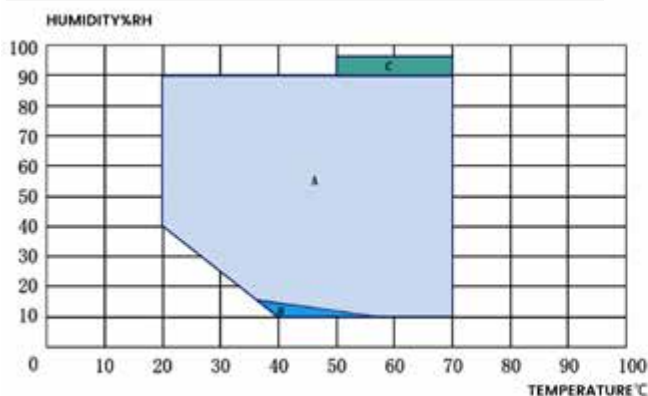
Ability to provide data access, audit trails and electronic signatures for review requirements.

Temperature and humidity range:

Comply with the pharmacopoeia drug stability test guidelines

40°C/75%RH or 30°C/60%RH 180 days

25°C/60%RH or 30°C/60%RH 365 days



Temperature & Humidity ENVIRONMENTAL CHAMBERS

Temperature and humidity meter of 0~70°C
temperature control range

A : Long-term stable operation range

B : This area may deviate from the technical parameters.

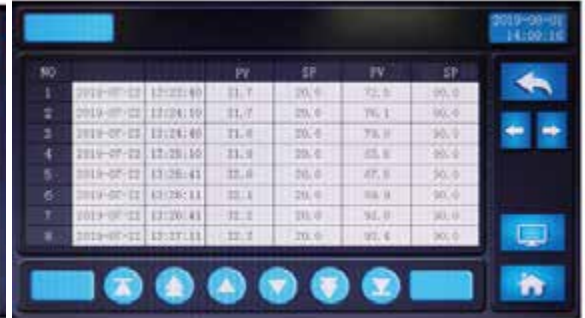
C : condensation area may appear in the inner cavity

Remark: The above temperature and humidity curve is collected at an ambient temperature of 25°C.

Easy to operate and use:

Logging, audit trail function
Data real-time recording and export function (USB encryption export or host computer serial port export)

Fault monitoring, alarm, recording and export functions (USB encryption export or host computer serial port export)
Historical data and historical curve query & download functions.



Air duct system:

Air duct system:

ZSVF TM no dead angle circulation air duct system, hot and cold mixed uniform circulation scientifically designed air duct system to meet the requirements of higher temperature and humidity uniformity.

45mm diameter measurement on each side

Test holes, with two silicone plugs inside.

Electronically controlled humidification and dehumidification system

E+E electronic humidity sensor is used.

Using Embraco refrigeration compressors and German

The national EBM condenser fan uses an environmentally friendly 134a refrigerant.



Model	CCG-150N	CCG-250N
Capacity (L)	150	250
Control range	0°C~70°C	
Temperature range	25~80%RH	
Temperature fluctuation	±3%RH	
Display	LCD display	
Liner size (WxDxH) mm	540x400x700	640x440x890
Dimensions (WxDxH) mm	700x830x1300	800x870x1470
Shelf	Three floors	
Temperature uniformity (40°C)	±0.5°C	
Cooling power	500W	750W
Heating tube power	1100W	1500W
Humidification tube power	750W	1000W
Weight	115kg	138kg

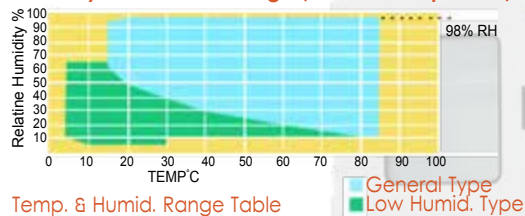


Features: Adjustable stainless steel shelves • Optional 100mm chart recorder • Over / under temp. protection devices • Automatic water level control • Volumes from 36 Liter up to 800 Liters • Viewing window with interior light • Stainless steel access ports with plug, for convenient access to test items • Swivel casters for mobility • Easily accessible service areas • Stainless steel internal chamber • Solid state heating & humidity switching • Stainless steel humidity generator with viewing window • Low water level humidity heater protection • Wet Dry bulb humidity sensor • Refrigeration system: high efficiency, maximum • reliability & low vibration & low noise. The air cooled refrigeration is working with CFC free refrigerant. The total cooling circuits is working with solenoid valve bypass technique ensuring that

Temp.&Humidity Environmental Chamber

Temperature and Temperature/Humidity test chambers provide superior performance over a wide range of applications. From prototype to durability to product component screening tests, the chambers has been designed to meet quality standards while still offering flexibility uniformity and control accuracy for cost-effective testing. Available in a multitude of chamber sizes, MRC is sure to have the exact chamber that best meets your environmental test criteria. For testing smaller products or for customers with limited space, MRC offers chambers starting at 36Liter capacity up to 800 Liters. MRC Test Chambers are able to perform both high and low temperature tests. Many of these chambers have a temperature range of -70°C to +150°C. Hermetically sealed compressors provide moderate temp. change rates while allowing the chamber to consume less power than comparable chambers. Temp./ Humidity models are equipped with a reliable, accurate and efficient full range humidity system capable of simulating conditions from 20 to 98% RH.

Humidity Controllable Range (at room temp. 20°C)



Temp. & Humid. Range Table

the compressor will only be disconnected if cooling capacity has not been required for a prolonged period • Heating system: low mass electric resistance heater is located directly in front of the recirculating air blower. The PID microprocessor controllers with the solid state relays allows extremely precise and constant control.

Model Programmer		HP-30	HP-40	HP-50	HP-60	HP-80	FP-40	FP-50	FP-60	FP-80	LP-40	LP-50	LP-60	LP-80	TP-50	TP-60	TP-80
Model Controller		HG-30	HG-40	HG-50	HG-60	HG-80	FG-40	FG-50	FG-60	FG-80	LG-40	LG-50	LG-60	LG-80	TG-50	TG-60	TG-80
Internal Dimensions (mm)	W	300	400	500	700	1000	400	500	700	1000	400	500	700	1000	500	700	1000
	H	400	500	600	850	1000	500	600	850	1000	500	600	850	1000	600	850	1000
	D	300	400	500	700	800	400	500	700	800	400	500	700	800	500	700	800
External Dimensions (mm)	W	720	930	1030	1230	1530	930	1030	1230	1530	930	1030	1230	1530	1030	1230	1530
	H	1060	1310	1410	1660	1810	1310	1410	1660	1810	1310	1410	1660	1810	1410	1660	1810
	D	620	810	910	1210	1310	810	910	1210	1310	810	910	1210	1310	910	1210	1310
Volume (Liters)		36	80	150	416	800	80	150	416	800	80	150	416	800	150	416	800
Temperature Range		0°C~100°C(150°)					-20°C~100°C(150°)				-40°C~100°C(150°)				-70°C~100°C(150°)		
Humidity & Temp. Uniformity		±0.5°C ±3%RH				±1°C ±5%	±0.5°C ±3%RH			±1°C ±5%	±0.5°C ±3%RH			±1°C ±5%	±0.5°C ±3%RH		±1°C ±5%
Temp. Rising Speed		0°C~100°C about 20min					-20°C~100°C about 35min				-40°C~100°C about 40min				-70°C~100°C about 60min		
Cooling Speed		20°C~0°C about 20min					20°C~-20°C about 45min				20°C~-40°C about 60min				20°C~-70°C about 90min		
Freezing System		Simoleon type full airtight air-cooled refrigeration system									Binary full airtight air-cooled refrigeration system						
Humidity Range		20%~98%RH						Temp. &humid. stability				±0.2% ±2%RH					
Temp. & Humidity Adjustment		Balancing temperature & humidity adjustment method						External material				SUS304 # Stainless steel					
Internal Material		SUS304 # Stainless steel						Humidification				Surface Steam type, stainless heating humidifier, with humid. water shortage power interruption & thermal protection					
Temp. Preservation		Material rock wool hard PU polyurethane foams						Temp. preservation heating system				Stainless steel heating type humidifier					
Circulation System		Fan forced recycling convection						Xeransis system				refrigeration invisible heat xeransis method					
Water Supply System		Front-positioned water tank, fully automatic water supply control, recycling filter re-utilization with water shortage alarm device															
Safety Device		Power leakage & overload protective device, compressor overload protective device, over-temperature & over-humidity circuit breaker protection, water shortage protection, humidifier over-heating protection, temperature limit protective device.															
Standard Accessory		2x Stainless steel adjustable board sets, vacuum glass perspective window, testing aperture, operating room light,motion wheel, control indicator															
Optional Accessory		Recorder						Power				AC220V, 1PH, 50/60Hz					

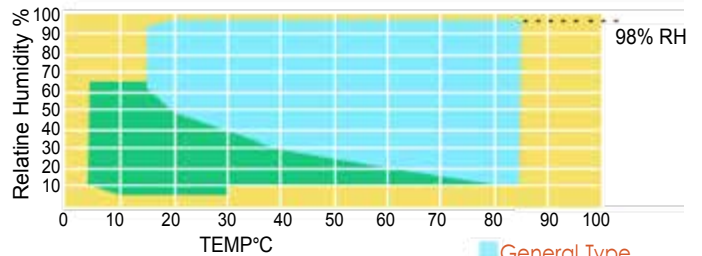


H243-LPVST

H243-LPVST, The Walk-In Environmental Test Room

The walk-in environmental test room is composed of the thermal wallboard by means of pu foaming. It is easy to disassemble & transport. According to the environmental conditions that customers required, the test machine may be used as the burning room, thermostat room and thermostat-humidistat room if it is equipped with the accurate control system of microcomputer for test room have two kinds to be selected: one is the stainless steel and the other one is the sheet baked by paintings.

Humidity Controllable Range (at room temp. 20°C)



Temperature & Humidity Range Table

Model description: H243-LPVST			
H	Width A=900mm B=1800mm C=2700mm D=3600mm E=4500mm F=5400mm G=6300mm H=7200mm I=8100mm		
24	Height 21=2100mm 24=2400mm 27=2700mm 36=3600mm		
3	Deep 1=1800mm 2=2700mm 3=3600mm 4=4500mm 5=5400mm 6=6300mm 7=7200mm 8=8100mm		
L	Temp. Range B=rm. temp. +5°C~70°C H=0°C~70°C F=20°C~70°C G=30°C~70°C L=40°C~70°C T60°C~70°C		
P	G=set value of thermostat and humidistat, P=programmable thermostat and humidistat, C=thermostat room		
V	O=thermostat&humidistat control by set value, T=T-type programmable thermostat and humidistat control, E=E-type Programmable thermostat and humidistat control humidistat room, M=M-type programmable thermostat and humidistat control, N=thermostat control by set value, V=V-type programmable control, P=P-type programmable control, H=H-type programmable control		
S	Outside material, S=stainless steel, T=sheet coated with resin		
T	Inside material, S=stainless steel, T=sheet coated with resin		
Construction	Thermostat and humidity	Thermostat room	Heat engine room
Temperature Range	H=0°C~70°C L=40°C~70°C F=20°C~70°C T=60°C~70°C G=30°C~70°C		B=RT. +5°C~70°C
Control accuracy	±0.3°C ±3%RH		±0.3°C
Accuracy of distribution	±1°C ±5%RH		±1°C
Circulatory system	Convection by fan forced circulation		Convection by fan forced circulation with an additional hot air exhausting unit
Humidifying system	Vaporized from surface		
Heating system	Heat dissipated by stainless steel		
Dehumidifying system	Desiccated by frozen latent heat		
Freezing system	Heat desiccated by way of air or water cooling with high effective freezing unit		
Power source	AC220V/AC380V, 50/60Hz		
Safety device	Leakage and overload protection device, compressor overload protection device, power-off device for over-temperature and over humidity, water insufficient protection device, over-temperature protection, device for humidifier and the protection device for limit of temperature		



ECUV-P, UV Weather Resistance Test Chamber

UV Weather resistance test chamber is equipped with fluorescent UV lamp which can completely simulate the UV spectra of sunlight, exposes materials to alternating cycles of UV light and moisture at controlled, elevated temperatures. It simulates dew and rain with condensing humidity and/or water spray.

The UV Weather resistance test chamber is the world's most widely used weathering tester to test types of damages include color change, gloss loss, chalking, cracking, crazing, hazing, blistering, strength loss and oxidation.

Models:

• UV/BASIC

UV/basic uses fluorescent UV lamps and a condensation system for moisture simulation, does not include the SOLAR EYE irradiance control.

• UV/CW

Some industry test methods specify the use of cool white fluorescent lamps for indoor photostability testing. To reproduce these indoor light conditions, the UV/cw uses ordinary cool white fluorescent lamps. It has a SOLAR EYE irradiance control system that monitors & controls visible light output, rather than UV.

• UV/SPRAY

The UV/spray has the same functions as a standard UV/se, but also includes a water spray system. Short periods of spray can be used to create a thermal shock. Longer periods can be used to achieve mechanical erosion.

• UV/SE

UV/se is the most popular model features the SOLAR EYE irradiance control, for precise maintenance of UV light intensity. The UV/SE tester uses a proven condensation mechanism to simulate outdoor moisture attack.

UV Lamps:

- **UVA-340** – Especially suitable for comparison tests of the different formulations. Recommended for most plastics, textiles, pigments, & UV stabilizers and other products testing, as also outdoor test results correlation test.
- **UVB-313EL** – Suitable for the quality control and research, development applications, recommended for the testing of some durable materials, such as roofing point.
- **QFS-40(F40 UVB)** – Test the vehicle exterior point.
- **UVA-351** – Suitable for the gloss solar UV simulation, Recommended for use in automotive interior parts, textiles and ink testing.

The solar eye system:

Most UV Weather resistance test chamber are equipped with solar eye irradiance control. It is a precision control system that automatically maintains light intensity through a feedback loop. The controller monitors UV intensity and compensates for lamp aging and variability by adjusting power to the lamps.

- **Extends lamp life** – Operates lamps until set point can't be maintained Reduces maintenance
- **Accelerate results** – Maximizes effects with high irradiance operates at 75% higher irradiance than noon, summer sunlight
- **Controls irradiance** – Monitors light intensity. Maintains preprogrammed intensity. Maximizes repeatability & reproducibility.

Model	ECUV-P
Workroom Dimensions	1150X400X400 (WxHxD) mm
Exterior Dimensions	1312X1500X500 (WxHxD) mm
Controller	LCD touch screen controller, programmable of temperature, humidity, UV(sun), spray (rain) and time. Maximum 999 cycles.
Temp. Range	RT+10°C – 70°C
Humidity Range	≥95%R.H
Temp. Resolution	±0.5°C
Temp. Uniformity	±2°C
Humid. Fluctuation	±2%
Humid. Uniformity	±2%
Black board Temperature	63°C ~ 83°C ± 0.3°C
Distance Between Lamps	70mm
Distance of Lamps And Samples	50mm
Lamp Power	40W
UV Wave Length	290nm – 400nm
Specimen Standard Dimension	150X75 (mm)
Number of Specimens	48 pcs
Range of Radiation	0.5–0.83w/m²/nm