PR381 Series Temperature & Humidity Standard Chamber

PANRAN

The upgraded

Calibrating all kinds of digital and mechanical thermo-hygrometers

√ Humidity is controllable within the range of 5℃~50℃

√ Humidity operating range: 10%RH~95%RH

√ Humidity stability: ±0.3%RH/30 minutes

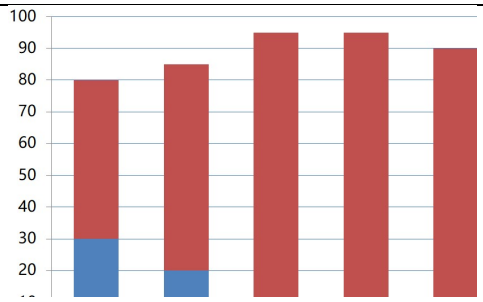
√ Support Panran Smart Metrology APP

PR381 series temperature & humidity standard chambers are high-performance temperature and humidity generating devices, which can be used to calibrate various digital and mechanical thermo-hygrometers. This series of products adopts the latest temperature and humidity controller developed by PANRAN. While expanding the temperature and humidity operating range, key technical parameters such as humidity control speed and stability have been significantly improved. In terms of structure, the product features designs such as three-side window openings, double-side wire outlet, and detachable pallets, enabling operators to carry out temperature and humidity calibration work more easily.

I. Product Features

- **Humidity can be Controlled Over Wide Temperature Area**

In the temperature range of 20°C~30°C, humidity control of 10%RH~95%RH can be achieved, and in the temperature range of 5°C~50°C, humidity control of 30%RH~80%RH can be achieved.



PR381A Effective Temperature & Humidity Working Area (red part)

■ **Excellent Humidity Control Performance**

The application of the new temperature and humidity control technology not only significantly expands the temperature and humidity operating range, but also greatly improves key technical parameters such as humidity control speed and stability. The humidity fluctuation is better than ±0.3%RH/30min.

■ **Dedicated Temperature and Humidity Controller**

The new generation Panran PR2612 main controller is specially designed with a decoupling algorithm for temperature and humidity sources. It can automatically control physical quantities such as heating, cooling, humidification, dehumidification, and air speed according to the set temperature and humidity values as well as the ambient temperature and humidity.

■ **Automatic/Manual Defrost Function**

To avoid humidity control lag caused by evaporator condensation under long-term high-humidity conditions, the controller will automatically monitor the operating status and activate the rapid defrost function when necessary.

■ **Powerful Environmental Adaptability**

It adopts a closed cycle structure, which is not sensitive to the influence factors of environmental temperature and humidity, and has a strong inclusiveness. It can work for a long time in a normal temperature environment of 10°C~28°C.

■ **Rich Human-machine Interaction Functions**

Equipped with a 7-inch color touch screen, it can display abundant process control parameters and control curves, and has auxiliary functions such as one-key start, alarm setting, SV preset, and timed start/stop.

■ **Support PANRAN Smart Metrology APP**

After optional WIFI module is installed, remote operation of the temperature and humidity standard chamber can be realized with Panran Smart Metrology APP, including viewing or modifying various real-time parameters, start/stop operations, etc.

II. Models and Technical Parameters

1. Basic Technical Parameters

Item/Model	PR381 A/B	PR382 A/B	PR383 A/B	PR382C	PR382D
External Dimensions	180×100×70cm	180cm×130×80cm	180×130×120cm	180×130×80cm	
Working Cavity Dimensions	47×48×50cm	47×78×60cm	47×78×100cm	47×78×60cm	
Effective Volume	110L	220L	365L	220L	
Weight	180kg	260kg	500kg	260kg	
Rated Power	3kW	3kW	3kW	3.3kW	
Power Supply	220V AC, 50Hz				
Operating Environment	10～28℃, ≤75%RH			(10～23)℃, ≤70%RH	(10～25)℃, ≤70%RH
Sales Attributes	Standard			Non-standard Customized	

2. Temperature and Humidity Control Parameters

Item/Model	PR381A/382A/383A	PR381B/382B/383B	PR382C	PR382D
Temperature Control Range	-5℃～65℃	-5℃～65℃	-20℃～80℃	-40℃～80℃
Humidity Control Range	10～95%RH@(20℃～30℃)	10～95%RH@(20℃～30℃)		
	30～80%RH@(5℃～50℃)	15～90%RH@(15℃～20℃)		
Auxiliary Cooling	●	○	●	
Temperature Resolution	0.01℃			
Temperature Uniformity	≤0.05℃@20℃(Note 4) ≤0.15℃@(15～30℃) ≤0.3℃@Other temperature ranges			
Temperature Stability	≤±0.15℃/30 minutes			
Temperature Rate of Change	≤0.02℃/minute		≤0.05℃/minute	

Temperature Accuracy	±0.1℃
Humidity Resolution	0.01%RH
Humidity Uniformity	≤0.8%RH
Humidity Stability	≤±0.3%RH/30minutes
Humidity Rate of Change	≤0.3%RH/minute
Humidity Accuracy	±1.0%RH@ (15～30℃)
	±1.5%RH @ Other temperature ranges

Note 1: The auxiliary cooling employs air-cooling method.

Note 2: For Model D products, when the set temperature is below -20℃, anhydrous ethanol must be used as the working medium.

Note 3: Tests are based on JJF1564-2016 Calibration Specification for Temperature and Humidity Standard Chambers. Technical indicators not specifically noted in the table are valid for the full measurement range.

Note 4: When the set temperature is 20℃, the 100mm×100mm×100mm range at the center of the working chamber can meet the requirements specified in JJF1171-2024 Calibration Specification for Temperature and Humidity Itinerant Detecting Instruments