PR381 Temperature and Humidity Calibration Chamber

The upgraded

- ***Calibrating all kinds of digital and mechanical thermo-hygrometers***

1. Humidity can be controlled over wide temperature area
2. Humidity working rang:10%RH～95%RH
3. Humidity stability:±0.3%RH/30 min
4. Meeting the requirements of JJF(military industry)165-2017 calibration specification

PR381 series temperature and humidity standard device is a high performance generating device of temperature and humidity, which can be used to calibrate all kinds of digital and mechanical thermo-hygrometers.

It adopts the latest temperature and humidity control technology of PANRAN. When the temperature and humidity working range are widened， its humidity control speed is obviously accelerated and its stability is significantly improved.

This series of products adopts the design of three-side window opening, double-side wire outlet and detachable support plate in the structure, which can make it easier for operators to carry out temperature and humidity calibration.

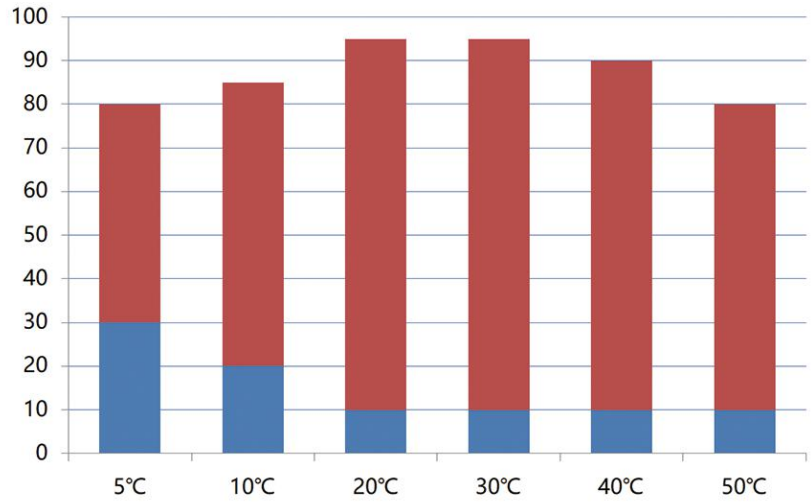
● Features

1. Humidity can be controlled over wide temperature area（5～50℃）

Between 20 ℃ and 30 ℃, the humidity from 10% RH to 95%RH can be controlled by the standard device; between 5 ℃ and 50 ℃, the humidity from 30%RH to 80%RH can be controlled by the standard device. Therefore, with PR381 series devices, we can carry out more kinds of calibration projects, test experiments or calibrate more kinds of thermo-hygrometers.

2. Excellent characteristics of humidity control

Humidity stability and uniformity are the key technology parameters of measuring temperature and humidity source performance. The adoption of the new temperature and humidity control technology has not only greatly broadened the temperature and humidity working range, but also greatly enhanced the humidity control characteristics. PR381 series standard device can make the humidity stability better than ±0.3%RH/30min and the humidity uniformity better than 0.8%RH in the whole effective working range.



PR381A Effective Temperature and Humidity Working Area (red part)

3. Special temperature and humidity controller

PR381 series standard device adopts the PANRAN's new generation PR2612 master controller, which is specially designed for the complex control of temperature and humidity source. So PR381 series standard device can control the stability of temperature and humidity with only a set of control parameters. The built-in temperature and humidity decoupling algorithm can automatically control physical quantities such as heating, cooling, humidification, dehumidification and wind speed according to the set temperature and humidity data and environmental temperature and humidity.

In addition, the main controller has the function of optional temperature input type, and the platinum resistance in the humidity probe can be used for temperature control. It is no longer necessary to use an independent platinum resistance temperature sensor.

4. Automatic/manual defrosting

In order to avoid the humidity control delay caused by evaporator condensation under long-term high humidity operation, PR381 series standard device will automatically monitor the operation status and start the rapid defrosting when needed during operation. The entire defrosting process of PR381A does not exceed 10 minutes.

5. Powerful environmental adaptability

With the advanced adaptive algorithm, PR381 series standard device are not sensitive to the temperature and humidity of the environment. Therefore, it can be operated of 10℃ ~ 30℃ for a long period of time.

6. Powerful human interface

With 7-inch color touch screen, PR381 can not only display rich process control parameters and control curves, but also has the auxiliary functions of one-button starting, alarm setting, SV preset, timing switch machine and so on.

Color touch screen

7. Supporting PANRAN Smart Metrology APP

After selecting the paired WIFI module, remote operation of temperature and humidity standard device can be realized by operating with PANRAN Smart Metrology APP. The operation includes checking or changing various real-time parameters, start-stop operation, etc.

Remote operation of PANRAN Smart Metrology APP

8. Working cavities of various sizes

In order to meet users' differentiated calibration needs, PanRan also provides PR382 and PR383 series temperature and humidity standard boxes. The working chamber volumes of the two products are 240L and 400L respectively.

PR382 and PR383 series of temperature and humidity standard devices are also provided to meet the differentiated calibration needs of customers. And the working cavity volumes of the two products are 240L and 400L respectively.

- ## Products model & Technical parameters

Specification /Model	PR381A Temperature and Humidity Standard Device	PR381B Temperature and Humidity Standard Device	Remarks
Range of temperature control	-5°C∽65°C		
Range of humidity control	10%∽95%RH (20°C∽30°C) 30%∽80%RH (5°C∽50°C)	10% ∽95%RH (20—30°C) 15%∽90%RH (15°C∽20°C)	PR381B can control humidity within a temperature setting data of 15°C ~ 30°C.
Temperature resolution	0.01°C		
Temperature uniformity	≤0.15°C(15°C∽30C), ≤0.3°C (-5°C∽65°C)		
Temperature stability	≤±0.1°C/30minutes		Temperature control with external platinum resistance
Rate of temperature change	≤± 0.02°C/minute		
Temperature accuracy	±0.1°C		
Humidity resolution	0. 01%RH		
Humidity uniformity	≤0.8%RH (5°C∽50°C, full range of humidity)	≤0.8%RH (15°C∽30°C, full range of humidity)	
Humidity stability	≤±0. 3%RH/30minutes（5°C∽50°C, full range of humidity）	≤±0. 3%RH/30minutes （15°C∽30°C, full range of humidity）	
Rate of humidity change	≤0.3% RH/minute		
Humidity accuracy	±1.0%RH (15°C∽30°C), ±1.5%RH (5°C∽50°C)		
Adjusting time of temperature and humidity	(15°C 80%RH) adjusted to (30°C 10%), 60 minutes (30°C 10%RH) adjusted to (15°C 80%), 50 minutes		Temperature and humidity at a stable state
Adjusting time of humidity	(20°C 20%RH) adjusted to (20°C 80%), 8 minutes (20°C 80%RH) adjusted to (20°C 20%), 10 minutes		Temperature and humidity at a stable state
Defrost duration	10minutes	20minutes	
Auxiliary cooling circuit	Yes	No	Cold air cooling
Working environment	10°C∽30°C, ≤80%RH		
working area dimensions	50cm X 50cm X 50cm		
Dimensions	180cm X 100cm X 70cm (Height X depth X width)		Pallet size not included
Power	3KW		
Power supply condition	220VAC, 50Hz		
Weight	180kg		