Partial User References (not complete list) of our Dehumidifying Dry Cabinets



1

SNo.	Customer's Name & City	Qty	SNo.	Customer's Name & City	Qty
1	509 Army Base Workshop, Agra	8	38	Computronic Sales Corporation, Allahabad	1
2	Aamstech Solution, Coimbatore	1	39	Continental Automotive Brake Systems (I) Pvt. Ltd.	3
3	ACD Communications Pvt.Ltd., Hyderabad	1	40	Converge Systems & Services Pvt. Ltd, Guwahati	2
4	Aforeserve Comm Ltd., Bangalore	2	41	Datasol Innovative Labs, Bangalore	1
5	Air Force Station, Pune	1	42	Delta Electric Corporation, Chennai	1
6	Alan Electronic Systems Pvt. Ltd., Ambernath	4	43	Department of Physics & Astrophysics, Delhi	1
7	Alligator Designs Pvt. Ltd., Bangalore	1	44	Digital Canvas, Balasore	3
8	Amara Raja Batteries Ltd., Karakambadi	1	45	Digital Core Technologies Pvt. Ltd, Kakkanad	1
9	Anand Industrial Enterprises, Bangalore	1	46	D-Link (India) Ltd., Karnataka	1
10	Ananth Technologies Limited, Hyderabad	5	47	Eastern Petro Technologies (India) Private Limited	1
11	Ananth Technologies Limited, Trivandrum	1	48	Eaton Power Quality Pvt. Ltd.	3
12	Apex Electronics, Secunderabad	6	49	Electro Scientific Solutions, Agra	2
13	Applied Electro-Magnetics Pvt. Ltd., Noida	1	50	Electronics & Radar Development Estab., Bangalore	3
14	Autotech Systems Pvt. Ltd., Bangalore	1	51	Electro-Scientific Solutions, Agra	2
15	Axiom Research Labs Pvt. Ltd., Bangalore	7	52	Encardio-Rite Electronics Pvt. Ltd., Lucknow	2
16	Azista BST Aerospace Private Limited, Ahmedabad	6	53	F. J.Tech Pvt. Ltd., Bangalore	1
17	BARC thru Rajshree Electro-Systems, Thane	2	54	Gallium Arsenide Eanabling Tech. Centre, Hyderabad	5
18	BEL-Thales Systems Limited, Bangalore	2	55	Goodrich Aerospace Services Pvt. Ltd., Bangalore	6
19	Bendra Aerospace Pvt. Ltd., Trivandrum	1	56	GVK Metal Form Pvt. Ltd., Jalandhar	5
20	Bharat Dynamics Limited, Visakhapatnam	3	57	HBL Power Systems Ltd, Hyderabad	1
21	Bharat Electronics Limited, Bangalore	61	58	Hindustan Aeronautics Limited, Hyderabad	38
22	Bharat Electronics Limited, Chennai	14	59	Hindustan Aeronautics Limited, Korwa	57
23	Bharat Electronics Limited, Ghaziabad	4	60	HI-REL Tech Private Limited, Hosur	2
24	Bharat Electronics Limited, Kotdwara	6	61	IND Micro Devices, Kolkata	2
25	Bharat Electronics Limited, Machilipatnam	2	62	Ind Sphnix Precision Ltd., Parwanoo	1
26	Bharat Electronics Limited, Panchkula	4	63	Indian Institute of Science Education & Research, Mohali	3
27	Bharat Electronics Limited, Pune	14	64	Indian Institute of Technology, Chennai	1
28	Blue Chip Electronics, Secunderabad	3	65	Indian Institute of Technology, Hyderabad	5
29	Bluechip Infotech, West Bengal	1	66	Indian Institute of Technology, Mumbai	2
30	Cedar Management Consulting Private Limited, Mumbai	1	67	Indian Institute of Technology, Roorkee	2
31	Centre for Development of Telematics, New Delhi	1	68	Infineon Technologies India Pvt. Ltd., Bangalore	2
32	Centre for High Energy Systems and Sciences (CHESS)	1	69	Initiative, Pune	1
33	Centum Electronics Limited, Bangalore	1	70	Innove3D Private Limited, Pune	1
34	Chakradhara Aerospace and Cargo Pvt. Ltd., Coimbatore	1	71	Institute for Plasma Research, Gandhinagar	1
35	China Steel Corporaton India Pvt. Ltd.	1	72	Instruments Research & Development Estab., Dehradun	6
36	Chitkara University	1	73	Iqor Global Services India Pvt. Ltd., Gurgaon	2
37	Cinehive Web Technologies Pvt. Ltd., Chennai	4	74	Mr. David Sunil Kumar, Bangalore	1

Warranty is 1 years from the date of invoice. It excludes any mechanically damaged part.

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patents. We accept no liability of whatsoever for any faults and errors in the information contained herein. Contents of this catalogue and specifications of the products, are subject to change without notice due to continuous improvements.

Partial User References (not complete list) of our Dehumidifying Dry Cabinets



SNo.	Customer's Name & City	Qty	SNo.	Customer's Name & City	Qty
75	ISRO Inertial Systems Unit, Thiruvananthapuram	13	112	Research Center Imrat, Hyderabad	2
76	K M V Vacuum Technologies, Bangaluru	1	113	S H Enterprises, Mumbai	1
77	Keltron Electro Ceramics Ltd., Trivandrum	4	114	Saalfo Tech Pvt. Ltd., Mysore	1
78	Kerala State Electronics Dev. Corp. Ltd, Karakul	4	115	Sahajanand Laser Technology Ltd., Gandhinagar	1
79	KMV Vacuum Technologies, Bangalore	1	116	Sai Techno Vision, Panvel	1
80	Kokoku Intech India Private Limited, Alwar	1	117	Salzer Electronics Ltd., Coimbatore	1
81	KPIT Technologies Limited, Pune	1	118	SciGenom Labs Pvt. Ltd, Cochin	1
82	Liquid Propulsion Systems Centre, Trivandrum	16	119	Secure Meters Ltd., Ahemdabad	1
83	Logic Solutions, Ernakulam	3	120	Secure Meters Ltd., Udaipur	3
84	Lokolines, Vijayawada	4	121	Sentec India Co. Pvt. Ltd, Manesar	1
85	Lucas TVS Ltd., Pondicherry	1	122	Seshaasai Business Forms Pvt. Ltd, Mumbai	1
86	Maestros Electronics & Telecommunication, Mumbai	1	123	SFO Technologies Pvt. Ltd., Bangalore	2
87	Mar Baselios College of Engineering	1	124	Shah Eye Care Private Limited, Davangare	1
88	Maytech Systems, Hyderabad	1	125	Shakti Pumps (India) Limited, Pithampur	1
89	Meenakshi Metal Forms, Pune	1	126	Shiv Nadar University, Uttar Pradesh	27
90	Merritronix Pvt. Ltd., Hyderabad	1	127	Siddhi Vinayak Enterprises, Chennai	2
91	Micropack Pvt. Ltd., Bangalore	2	128	Sivavasu Industries, Trivandrum	1
92	Monolith Research and Traning Labs Pvt. Ltd, Chennai	1	129	Skanray Tecnologies Limited	1
93	Monolith Technologies Private Limited, Pune	1	130	Skyroot Aerospace Pvt. Ltd, Hyderabad, SEZ	1
94	Motherson Sumi Systems Limited, Noida	1	131	SLN Technologies Pvt. Ltd., Bangalore	1
95	MRM PROCOM Pvt. Ltd, Faridabad	1	132	Solid State Physics Laboratory, Delhi	2
96	Mar Baselios College of Engineering, Trivandrum	1	133	Space Applications Centre, Ahmedabad	4
97	Naval Physical & Oceanographic Lab., Kochi	8	134	Spectrum Infotech Pvt. Ltd., Bangalore	2
98	O/E/N India Limited, Ernakulam (Kerala)	1	135	SS Technology, Mysore	1
99	Olympus Medical Systems India Pvt. Ltd, Ernakulam	1	136	Stuam Technologies Limited, Hyderabad	1
100	Olympus Medical Systems India Pvt. Ltd., Gurgaon	6	137	Sumitron Exports Pvt. Ltd., Delhi	1
101	Ozak Technologies Pvt Ltd., Palakkad	1	138	TAK Technologies Pvt. Ltd., Noida	2
102	PCP Electronics (P) Ltd., Mysore	1	139	TATA Institute of Fundamental Research, Mumbai	1
103	Physical Research Laboratory, Ahmedabad	3	140	Thermosystems, Trivandrum	1
104	Prama Hikvision India Pvt. Ltd., Vasai	4	141	Toshiba Transmission & Distribution, Telangana	1
105	Quantum SMT Technologies Pvt. Ltd, Gurgaon	4	142	Toshvin Analytical Pvt. Ltd, Raighad	1
106	Radiant Corporation Private Limited, Medak	1	143	Trident Infosol Pvt. Ltd., Bangalore	1
107	Raja Ramana Center for Advanced Technology, Indore	11	144	Tymtix Technologies Pvt. Ltd., Bangalore	1
108	Rajshree Electro Systems, Panvel	2	145	University of Delhi, Delhi	2
109	Raman Research Institute, Bangalore	1	146	Venimadhav Moolchand Suppliers, Kanpur	1
110	Rashi Peripherals Pvt. Ltd., Chandigarh	3	147	Vikram Sarabhai Space Center, Thiruvananthapuram	53
111	Refurb Tech, Chennai	1	148	Young India Power Pvt. Ltd., Kolkata	1

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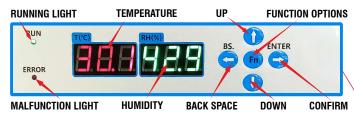


SUPER FAST to achieve set RH level • HIGHLY Stable to set as low as 1%RH

This Dehumidifying Cabinet is based on new generation Desiccator technology and has embedded software, to automatically switch the number of Desiccators as are required to achieve set humidity level, down to as low as 1%RH. Pre-set %RH humidity level is achieved quickly and is maintained with high stability.

Dehumidifying Dry Storage Cabinets are now used widely to store expensive ICs and PCBs as per IPC Standards, Lithium-ion Cells, Solar Cells and all other moisture sensitive items

Humidity range conforms to IPC/JEDEC J-STD 033C Standards for storing even expensive IC packages



Advanced Digital Control Panel to Set the desired parameters

Salient Features

- Dries out all stored components, PCBs and other articles to desired %RH level
- Virtually maintenance-free
- Low running costs does not require any sort of consumable materials
- 6 storage compartments with 5 height adjustable stainless steel shelves



Click here to view Video



Programmable Visual and Audible Buzzer

Set the lower and upper limits in accordance to set RH level. Buzzer will start if the RH level is not within pre-set range







Rugged self locking Handles can also be locked with Key



 $360\,^\circ$ rotatable ESD Safe Heavy Duty Castor Wheels, Front 2 Castor Wheels are lockable





Housing (painted with ESD Grey paint) and Castor Wheels

Alarm OFF Alarr

Alarm ON/OFF Switch

You can switch ON or OFF the Buzzer as per your suitability



USB Port for Datalogging

Plug-in the supplied Pen drive in the USB Port for automatic data transfer, this data can be transferred into customer's own computer. Supplied Pen drive has such software



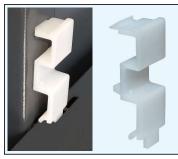
Fully ESD Safe Cabinet provides safe storage of static sensitive devices



Wrist Strap Terminals for additional ESD Safety



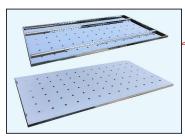
SUPER FAST to achieve set RH level • HIGHLY Stable to set as low as 1%RH



Shelf Locking Clamps
Keep the shelves in position



Shelf Holding Clamps
Adjust the height between shelves
by adjusting the position of
these clamps



Non-magnetic expensive Stainless Steel Shelves with holes for effective air circulation

No need for switching ON or OFF individual Desiccators manually, as these are automatically switched by the software as per set %RH level

Technical Specifications:

Humidity Range : $1\% \sim 60\%$ RH Display Resolution : 0.1%RH ; 0.1%C

External Dimensions : 1200W x 710D x 1910H mm approx.

Material : 1mm Steel with ESD Grey Paint

Number of Doors : 6 Doors with common lock keys

Number of Shelves : 5 adjustable (for up/down) Stainless Steel

Shelves each shelf can bear 80kg load

Input Supply : $220V \sim 240V$, 50Hz

Power Consumption : 40 Watt (approx. after set humidity level achieved)

; 680 Watt (max during moisture exhaust process)

Grounding Wire

Features:

- Effective Storage Capacity: 1430 litres (approx.)
- ESD Safe Glass Windows with magnetic sealing
- · Digital Display for Temperature and Humidity
- · Heavy Duty Zinc Alloy Locks
- Humidity Controller maintains stable RH Level
- Accuracy: ±3%RH (It is not ±3%)*
- * If the set humidity is 10%RH. Then the actual value will be within 7%RH & 13%RH. If it is set at 25%RH then actual value will be within 22%RH & 28%RH.



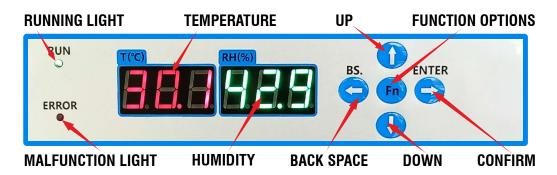
4 Powerful auto-switching Desiccators ensure faster dehumidification upto set RH level with high stability





SUPER FAST to achieve set RH level • HIGHLY Stable to set as low as 1%RH

Digital Display and Control Panel Instructions



Control Panel Description

- 1. **2 LED lights:** RED for temperature T(°C) and GREEN for humidity RH(%)
- 2. Light RUN (green) indicates normal working status, Light ERROR (red) indicates any malfunction. Besides, the ERROR this will also light up once the USB drive is connected successfully.
- 3. **UP/DOWN:** These buttons are for reducing or increasing the values.
- 4. **BS Button:** for back space
- 5. ENTER Button: for confirmation
- 6. Fn Button: for Menu mode. Press Fn to enter Menu mode

Function Modes

The Control Panel uses following 7 functions (other functions out of total 13 functions are not used)

Function Mode 01: Humidity Setting

Press Fn to enter admin mode. Select Function 01 by pressing UP or DOWN Buttons and press ENTER. Press UP or DOWN button to set the required RH Value and then press ENTER to confirm, green display shows SUC.

Function Mode 03: Setting Humidity Limits for Alarm

Press Fn to enter admin mode. Select Function 03 by pressing UP or DOWN buttons and press ENTER. Press UP or DOWN Button to set the limitation value. The value in RED will be the bottom limit value while the GREEN figure is the upper limit value. After setting press ENTER for confirm, green display shows SUC. The difference (default programed) between the bottom limit and upper limit is 5%RH (± 5 points of set value). Alarm starts if the RH level shown in the display is not within the set limit range. To deactivate the alarm, set the bottom limit as 0 and upper limit as 100.

Function Mode 04: Alarm Delay Time Setting

Press Fn to enter admin mode. Select **Function 04** by pressing UP or DOWN Buttons and press ENTER. Press UP or DOWN arrow to set the target value. The flickering value in RED will be the bottom limit value while the GREEN figure is the upper limit value. The time etting range is $0\sim99$ min. After setting, press ENTER for confirm, green display shows SUC. If the RH level is not within set limits then the alarm will not start immediately. It will start after the set delay time.

Function Mode 05: Resetting for Calibration Reminder

Normally there is no need of calibration in the first 3 years of installation. It is recommended to calibrate the Cabinet yearly after that to meet the ISO regulations. Press Fn to enter admin mode. Select *Function 05* by pressing UP or DOWN Buttons and press ENTER. The value in RED will be the due date while the GREEN figure will be the options of ON/OFF/Clr. After setting, press ENTER for confirm, green display shows SUC.

Function Mode 09: Sleep Mode for Control Panel

Press Fn to enter admin mode. Select **Function 09** by pressing UP or DOWN Buttons and press ENTER. Control Panel will be OFF but the Cabinet will keep working. To set normal display, repeat the procedure again.

Function Mode 10: System Restart

Press Fn to enter admin mode. Select *Function 10* by pressing UP or DOWN Button. Press ENTER to restart the Cabinet.

Function Mode 11: Setting Time Interval for data logging

The interval time to record the data is programmable. Press Fn to enter admin mode. Select Function 11 by pressing UP or DOWN Buttons and press ENTER. The flickering GREEN figure will be the current interval time for data logging. Press UP or DOWN button to set the value. After setting, press ENTER for confirm, green display shows SUC. The interval time range is $1\sim60$ min. The default interval time is 3min.



SUPER FAST to achieve set RH level • HIGHLY Stable to set as low as 1%RH

INSTRUCTION FOR USB DATA LOGGING SOFTWARE

Works on Windows 10 or above Operating System

1. Install USB Driver:

Insert the Pen Drive in the PC, which is provided with the Dehumidifying Dry Storage Cabinet. Open the folder USB Drivers from Pen Drive and execute the below file to install the USB drivers.

** NDP452-KB2901907-x86-x64-AllOS-ENU.exe

Change

2. Open folder Recording System from Pen Drive and Install the Temperature Humidity Recording System software in your PC.

language

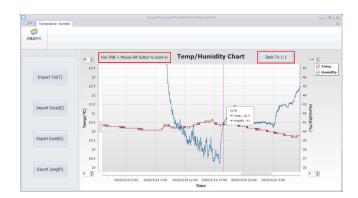
Temperature humidity Recording System_USB.exe

Open the file of Data Logger Software (Temperature and Humidity Recording Software) in your PC. Switch the language to English

Take out the Pen Drive from the USB Port of the Cabinet, and connect to the PC, click the Import Txt(T) button to import the humidity and temperature data record from the Pen Drive, then you can read and analyze the curve in this software.



Roll the Mouse Wheel up and down to zoom in or zoom out, or use Shift+ Mouse Left Button to zoom in, click back to 1:1 to zoom out, so you can check curve in different time interval



Few Application Notes

- Door opening is recommended to be of as short duration as possible. This will minimize the humidity rising.
- Always keep the power ON (if possible) to keep the Cabinet in good working condition.
- When the items are put inside the Cabinet, the humidity will rise due to the moisture contained in the items. Initially first time, it is advisable to keep it for longer period like 24 hours or more to dehumidify to set %RH level.
- The Cabinet has memory function. There is no need to set the humidity again after the last setting, even if the power goes off.
- Please ensure there should be minimum 30 cm gap between Cabinet and any near by wall.
- Do not ever cover the exhaust vent of Desiccators on the back of the Cabinet.
- If power supply remain OFF for over like 24 hours, it is recommendable to get stored items out of the Cabinet.
- Please ensure the body of the Cabinet is firmly connected with good quality electrical earthing for safety.
- It is normal that the surface temperature of the Cabinet will rise a little when desiccators are under moisture exhausting process.
- Always avoid to place the Cabinet at high temperature location, direct air flow such as in front of AC or fan, direct sunlight and in areas where there is smoke or steam.



SUPER FAST to achieve set RH level • HIGHLY Stable to set as low as 1%RH

Distance between 2 Shelves is adjustable as per requirement

The distance between shelves of this Dehumidifying Dry Storage Cabinet is adjustable as per requirement of stored articles. The Cabinet uses track design with detachable clamps to adjust the distance in steps of approx. 2.5 mm. To adjust the distance, just lift the shelf to detach all the clamps. Fix the clamps again at required positions and place the shelf back on the clamps.



Perforated Shelves provide effective air circulation

These shelves have perforated design. Shelves have small vent holes which ensures good and effective air circulation inside the Cabinet. This ensures that the humidity is same at all corners of the cabinet.

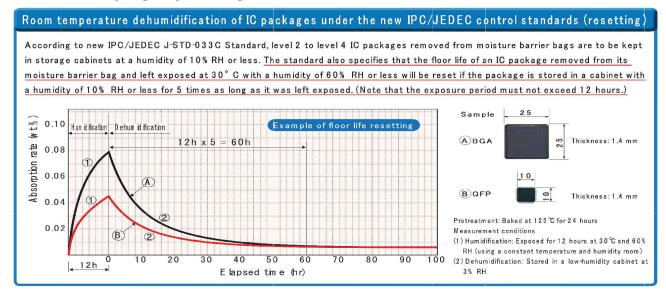


inside Humidity level will never be more than ambient humidity level Temperature has no control, it will be as per inside temperature.

This is a Dehumidifying Cabinet and not humidity generator, inside humidity %RH level must be set lower than outside humidity level as the Cabinet can not generate humidity.

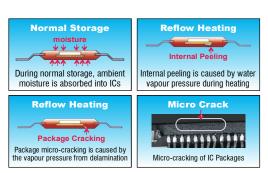
This is not a temperature cycling chamber, this Cabinet does not have forced heating and refrigeration cooling. For this reason, temperature can not be set and can not be controlled; inside temperature of Cabinet is only displayed.

Dehumidifying Dry Storage Cabinets conforms to IPC/JEDEC J-STD-033C



ESD Safe Dehumidifying Storage Cabinets are must to maintain high reliability of Bare/Assembled PCBs, expensive SMD ICs & other components to avoid Micro Cracks, depanelling and delamination

Miniaturization in electronics field require use of expensive large size SMD ICs which are not only static charge sensitive but are also moisture sensitive. They need higher level of moisture control as otherwise they will have internal cracking during reflow process because of moisture expansion. Prevention lies in storing the same in ESD Safe and humidity controlled Dry Storage Cabinets.



Normally these defects occurs during reflow process, incase of lead free soldering process, risk of defects increases almost 3 times as the soldering temperature requirement is higher. To avoid these soldering process defects, all such moisture sensitive devices needs to be stored in humidity controlled cabinets.



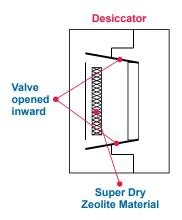
SUPER FAST to achieve set RH level • HIGHLY Stable to set as low as 1%RH

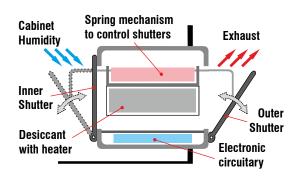
Why this Cabinet is virtually maintenance-free Working of Desiccant technology works in this Cabinet.

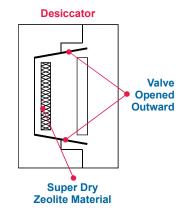
Desiccant technology of this Cabinet uses highly porous crystalline material called Zeolite. Zeolite desiccant is refreshed by controlled heating and allows the trapped moisture in it to escape thru the vents located at the back side of the Cabinet. Once Zeolite desiccant material is refreshed thru heating, it seals off the back side vents and opens to the interior side for dehumidification to set level as programmed. The dehumidification level inside is continuously compared to the preset level till it achieves the desired RH level.

Re-heating of the Zeolite desiccant material starts only when the humidity inside the Cabinet exceeds the absorption capacity of Zeolite drying material. Normally it take about 8 minutes heating to re-generation of the Zeolite desiccant material.









Absorption Stage: Valves are opened inward and closed outward in order to absorb moisture from the Cabinet and stored articles to maintains the set humidity with repeated process

Exhaustion Stage: Valves are closed inward and opened outward to exhaust moisture from saturated desiccators to atmosphere outside the dehumidifying dry cabinet

User never needs lower than 1%RH step settings

Accuracy of humidity level is $\pm 3\%$ RH (and not $\pm 3\%$). If set humidity is 10%RH, then actual value will be within 7%RH and 13%RH. If it is set at 25%RH, then actual value will be within 22%RH & 28%RH. If it is set at 50%RH, then actual value will be within 47%RH & 53%RH. For this reason user never needs lower than 1%RH step settings.

No Spare Parts and No AMC is required for this Dehumidifying Dry Storage Cabinet

As explained above, this desiccant based technology works for years together reliably, without replacement of Zeolite material at all. For this reason, user neither needs any spare parts nor any annual maintenance contract. The Cabinets supplied by us are used by so many customers for more than 10 years without any maintenance and replacement of any spare part

Why user does not need any installation and operation training?

This Dehumidifying Dry Storage Cabinet merely needs Mains AC Power Supply switching ON. User need to set %RH level as required from the front panel. The Cabinet will start working. Few points worth practicing are:

- 1) Dehumidifying Cabinet should not kept near an air outlet such as air conditioning slot, exhaust fan slot, under the fan, near the door etc. also these should not be kept under direct sunlight in the room. These will affect the stability of Humidity Control.
- 2) Ensure at least 30 cm gap between Dehumidifying Cabinet and any nearby wall.

How to achieve low humidity level and higher humidity level inside the Cabinet

For achieving lower and higher humidity level, there is not need to switch ON or OFF the desiccators manually. These cabinets uses latest generation technology based Desiccators in which embedded software automatically switches the number of Desiccators as required to achieve the set %RH level and maintain the same RH level with high stability. It can not achieve higher %RH level than actual environmental %RH level as there is not any humidity generator inside the cabinet.