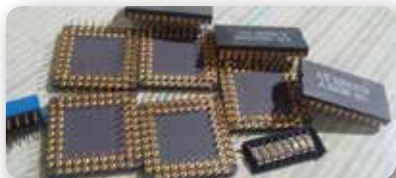# Dr.Storage®

## Humidity Solution Provider

# Ace Dragon Corporation

## Presents

## The "Dr.Storage Series" Synonymous with humidity management excellence

Ace Dragon Corporation operates worldwide with leading innovations, world class brands and advanced technologies in the Humidity Management industry .

Established in 1991, Ace Dragon Corporation's HQ (i.e. R&D and manufacturing center) is located in the Hsinchu Science Park, also known as the Silicon Valley of Taiwan, thus giving us access to the best engineering capabilities.

Our world-class brand, Dr. Storage, provides the best solution in Humidity Management. All of our products comply with J-STD-033D standard. Providing best humidity management solution, 80% of electronic factories throughout Asia to strengthen their competitive edges successfully. In addition, we have helped thousands of electronic factories globally to enhance their product qualities, thereby enabling our customers to secure recurring orders worth multibillion of US dollars.

### Users:

APPLE, ASUS, ASE Global, ACER, AUO, Advanced, AIDC Semiconductor, Alcatel, Bosch, BenQ, Celestica, CAMPAL, CHIMEI, Coretronic,Continental, D-link, ERICSSON, Everlight , Flextronics, FOXCONN,  GIGABYTE, GEM, Harris Cop.,  IBM, Invevtec,Johns Hopkins University, NASA ,National, National Science Council, Omron, Optimax, Philips, Panasonic,  Qualcomm, Quanta Computer, Quanta Storage, QSMC, Siemens, Samsung, Sony, Sintek ,SMIC, SUNPLUS, TSMC, TATA POWER, TPO, Tsinghua University, UTStarcom, UMC, UMEC, Wistron, Wellypower, 3M.

Taiwan HQ                                    Shanghai office                                    Kuanshan factory

# Introduction of Dry Cabinet

## Colorful Managent

1. **Classification:** Different colors can be classified by project, work sheet, order, client,component, storage life, expiration date or operator etc.

2. **Retrieving:** Small components in inside bin can be retrieved quickly to avoid opening the doors frequently.

3. **Archiving:** ISO documents such as work sheet , order, memo or quality instructions etc. can be put in outside bin for better QA management.

**Bin-R**        **Bin-Y**        **Bin-G**

440mm
340mm
30mm
90mm
365mm
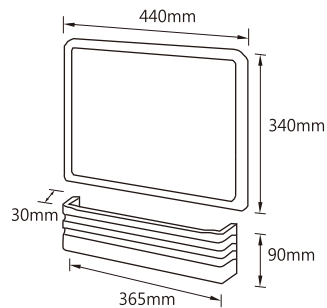
Maximum loading of bin: 5kgs
Bins can be installed or replaced within 10 seconds.

Inside Bin

OutsideBin

## Display Panel

Temperature   Humidity        RS232 port

High precision Sensor
Build-in alarm
Calibrating reminding

## Data Logger

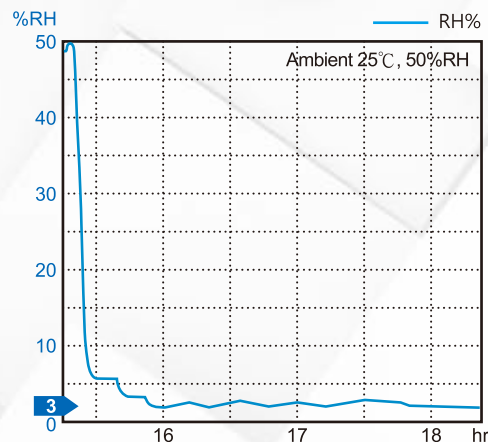Record temperature and relative humidity data of cabinet both interior and the ambient environment.

## Dryer

Reliable modular design
CE & UL apporoval
Reliable modular design

Height adjustable shelves

**ESD safety**

%RH
50
40
30
20
10
0

—— RH%

Ambient 25℃, 50%RH

3

16        17        18    hr

**Accessories (optional) :**

| Data Logger | Bins |
| --- | --- |

| Flow Meter(1-25L/min) | Alarm tower | Nitrogen control module |
| --- | --- | --- |

**A1B-200**

Capacity:164L
Shelves:3 pcs
Outside Dim:W600xD672xH636mm
Internal Dim:W598xD644xH526mm
Power Consumption:Ave.48.6Wh;Max.145W

**A1B-400**

Capacity:413L
Shelves:3 pcs
Outside Dim:W600xD672xH1274mm
Internal Dim:W598xD644xH1072mm
Power Consumption:Ave.48.6Wh;Max.145W

**A1B-315**

Capacity:328L
Shelves:3 pcs
Outside Dim:W905xD452xH1045mm
Internal Dim:W903xD424xH870mm
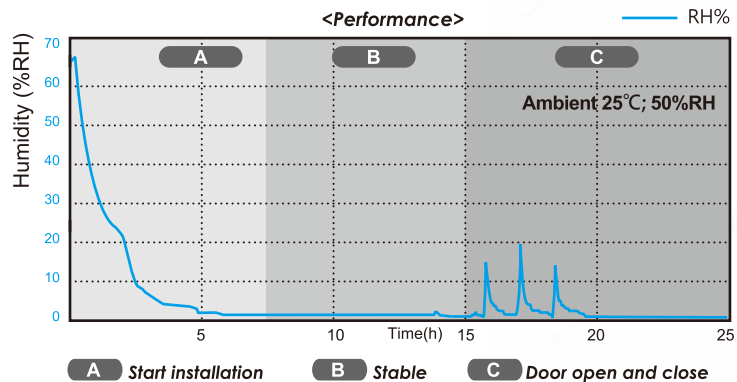Power Consumption:Ave.48.6Wh;Max.145W

**A1B-575**

Capacity:603L
Shelves:3 pcs
Outside Dim:W905xD800xH1045mm
Internal Dim:W903xD772xH870mm
Power Consumption:Ave.48.6Wh;Max.145W

**X2B type is especially suitable for storing electrical components,biological testing,PCB boards and pharmacy....etc.**

*Comply with J-STD-033D*



&lt;Performance&gt;  ——— RH%

A  B  C

Ambient 25℃; 50%RH

Humidity (%RH)

Time(h)

A  Start installation     B  Stable     C  Door open and close

**Accessories (optional) :**

| Data Logger | Bins |
| --- | --- |

| Flow Meter(1-25L/min) | Alarm tower | Nitrogen control module |
| --- | --- | --- |

**X2B-600**

Capacity:642L
Shelves:5 pcs
Outside Dim. :W600xD672xH1820mm
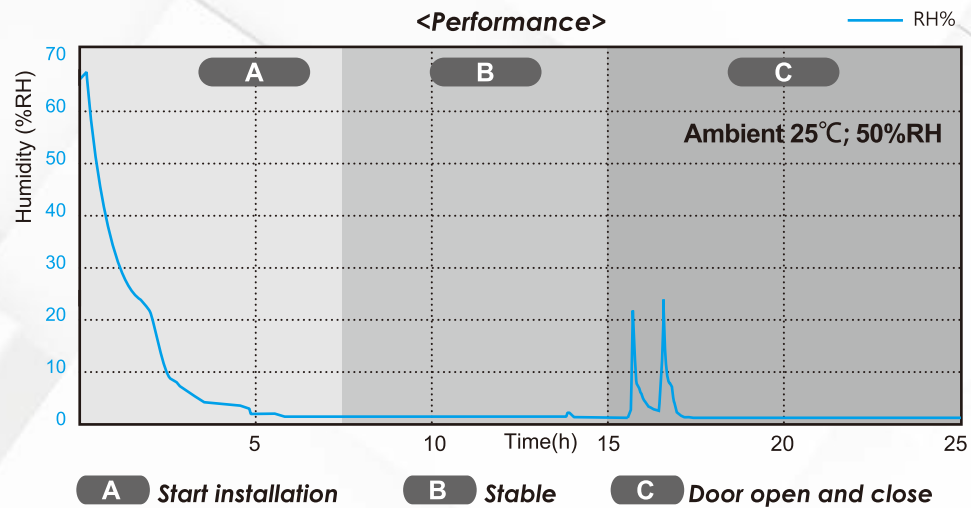Internal Dim. :W598xD644xH1618mm
Power Consumption:Ave.55Wh;Max.295W

**X2B-1200-6**

Capacity:1250L
Shelves:5 pcs
Outside Dim. :W1200xD672xH1820mm
Internal Dim. :W1198xD644xH1618mm
Power Consumption:Ave.105Wh;Max.585W

## F1      <1%RH Ultra Low Dry Cabinet

**F1 can reach <1%RH automatically just by plugging the power cable in.**

<Performance>

— RH%

**Ambient 25℃; 50%RH**

Humidity (%RH): 0, 10, 20, 30, 40, 50, 60, 70

A

B

C

Time(h): 5, 10, 15, 20, 25

**A** Start installation     **B** Stable     **C** Door open and close

**Accessories (optional) :**

| Data Logger | Bins | Nitrogen control module | Flow Meter(1-25L/min) | Alarm tower |
|---|---|---|---|---|

**F1-1200-6**

Capacity:1250L
Shelves:5 pcs
Outside Dim. :W1200xD672xH1820mm
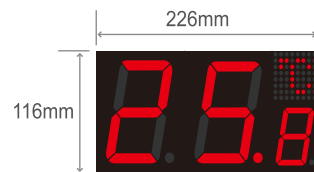Internal Dim. :W1198xD644xH1618mm
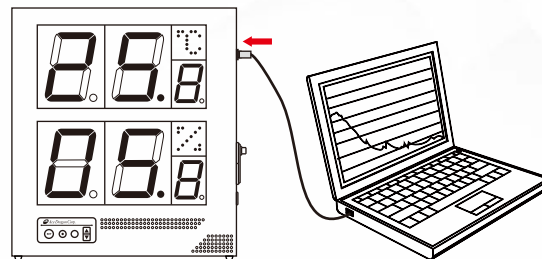Power Consumption:Ave.48.6Wh;Max.145W

5

Alarm Hygrometer is installed at precisely controlled environment, such as storage room of precious collections, production line of high tech electronic components, optical and medical industries …etc. It can not only display the temperature and relative humidity, but also help engineers to check and repair the facilities immediately by flash buzzer alarm that is activated as soon as the temperature or relative humidity exceeds desired RH/Temp. With this function, millions of dollars could be saved in time. To save monitoring manpower at a huge plant, sets of HT series can be connected to a PC through intranet network. Data of temperature and relative humidity can be recorded and the fluctuation shown in the graph.
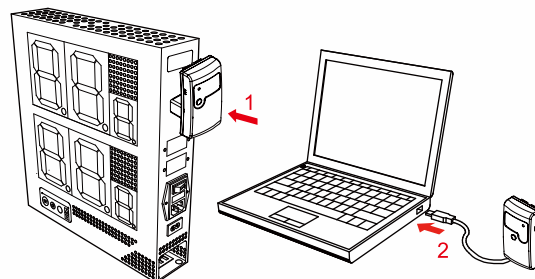
## Master Hygrometer     CP03U

### Technical data

| Model | CP03U |
|---|---|
| Measuring range | 0.1~99.9%RH ; -20~65.9℃ |
| Accuracy | ±2%RH (1%~80%RH) ; ±0.2℃ (at 25℃) |
| Dimensions | 68 x 45 x 25mm |
| Memory | 40,000 measuring values |

Humidity and temperature data can be downloaded to PC through the USB connector and software CP03U Reader.

226mm
116mm

■ Connected to a computer to record H/T graph.

■ Connected to a Data Logger (option) and download to PC.

1
2

HT-5D

| Type | HT-5D |
|---|---|
| Operation Range | 0~50℃, 0~90%RH |
| Precision | ±0.5℃, ±2.0%RH(at 50%RH/25℃) |
| Resolution | 0.1℃, 0.1%RH |
| Dimension | W310xD70xH350mm |
| Weight | 3kgs |
| Power | 110V/230V (select voltage in advance) |
| Visibility Distance | 30m |
| Power Consumption (average) | 12Wh |
| Calibration Reminding | √ |
| Alarm Setting (%RH) | √ |
| Alarm Setting (℃) | √ |
| Alarm Buzzer | √ |
| Alarm Flash | √ |
| Humidity Manager V3 (software) | √ |
| RS232 Port | √ |
| Calibration Report | √ |
| SensorLook V3 (software) | Option |
| Data Logger | Option |

■ **Easy operation: T40W can reach <5%RH and 40C automatically just by plugging the power cable in.**

■ **Reset floor life: SMD  packages which are exposed to the air and exceed the floor life should be stored in the T40W series for resetting the floor life.**
**(see J-STD-033D table 4-1, 4-3)  For example: If MSD parts of MSD Level 4, 5 and 5a are exposed for less than eight hours, they can be stored in a dry cabinet for resetting the floor life. However, if exposure time is longer than eight hours, the SMD packages should be stored at 40℃ in a T40W series to reset the floor life.**

■ **Fast recovery time: The baking cabinet combines drying and heating functions. Through mild temp. baking cabinet allows moisture of the SMD package to be fully evaporated, and the moisture can be absorbed by dryers to reverse recovery time. Compare to high temp. oven, mild temp. baking cabinet can greatly avoid thermal oxidation.**



**<T40W Performance>**

— RH%
— Temp.

Humidity (%RH)

Temperature (℃)

Ambient 25℃; 50%RH

A    B    C

Time(h)

(A) Start installation  (B) Stable  (C) Door open and close
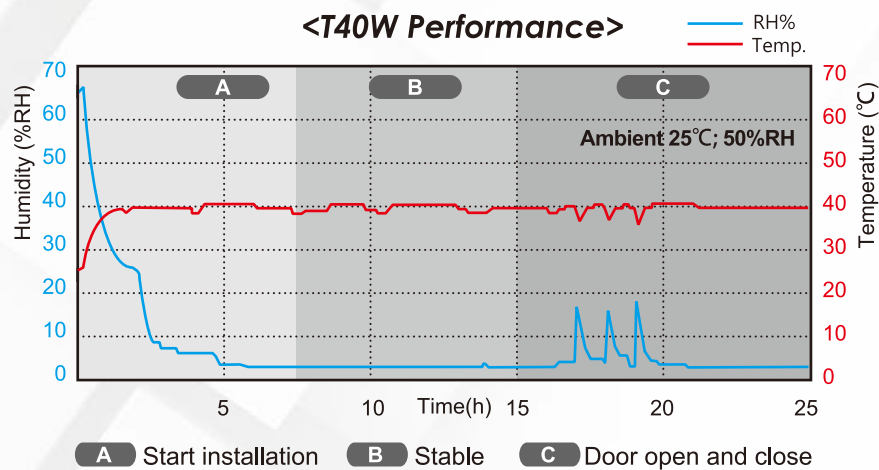
Memo Card /Cover Sheet
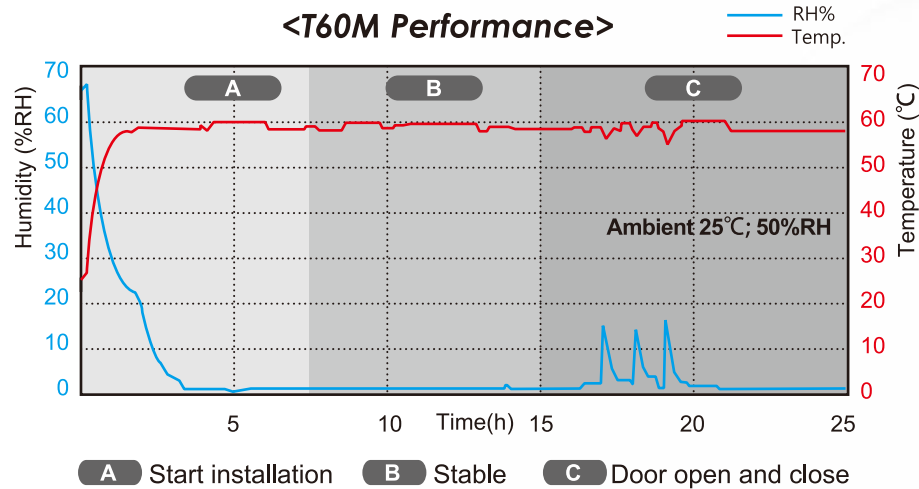
**T40W-600**

**Capacity: 395L**
**Grid Shelves: 5 pcs**
**Outside Dim. :W600xD770xH1805mm**
              **(Exclude door handles)**

**Internal Dim. :W540xD500xH1460mm**
**Power Consumption: Ave.600Wh; Max.1200W**

■ **T60M can reach <1%RH & 60C automatically just by plugging the power cable in.**

■ **Temperature control: T60M can be adjusted from room temperature to 60C. The user can also turn the heater off and use it as a <5%RH dry cabinet.**

■ **Applications in resetting the floor life: Moisture sensitivity SMD packages which are exposed to the air and exceed the floor life should be stored in the T60M series for resetting the floor life. (see J-STD-033D table 4-1, 4-3)**

**<T60M Performance>**

RH%
Temp.

A | B | C

Humidity (%RH)
Temperature (℃)

Ambient 25℃; 50%RH

Time(h)

A Start installation   B Stable   C Door open and close

**Memo Card /Cover Sheet**

**T60M-1200-6**

**Capacity: 833L**
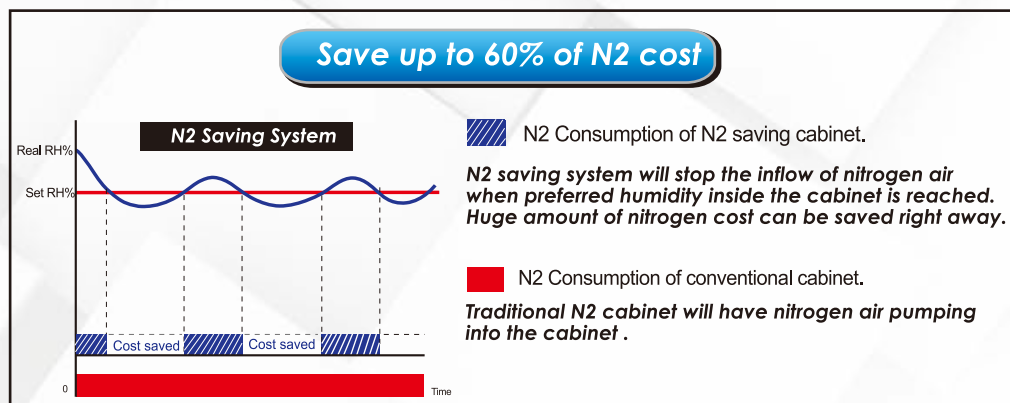**Grid Shelves: 5 pcs**
**Outside Dim. :W1200xD770xH2005mm**
           **(Exclude door handles)**

**Internal Dim. :W1140xD500xH1460mm**
**Power Consumption: Ave.850Wh;Max.1700W**

# QS    Smart Nitrogen Control  Cabinet

Smart  N2 cabinet is designed to control dry air filling into the cabinet, so thedesired relative humidity in the cabinet can be reached. The dry air can be nitrogen, CO2 or inert gas. Nitrogen is the most frequently used dry air for anitrogen cabinet. Traditional Nitrogen cabinet allows N2 to fill in 24/7.
Use Dr. Storage smart nitrogen saving cabinet, 30~60% of N2 consumption can be saved.

**Save up to 60% of N2 cost**

Real RH%

Set RH%

**N2 Saving System**

Cost saved    Cost saved

0

Time

N2 Consumption of N2 saving cabinet.

*N2 saving system will stop the inflow of nitrogen air when preferred humidity inside the cabinet is reached. Huge amount of nitrogen cost can be saved right away.*

N2 Consumption of conventional cabinet.

*Traditional N2 cabinet will have nitrogen air pumping into the cabinet .*

## Accessories (optional) :

| Data Logger | Bins |

| Flow Meter(1-25L/min) | Alarm tower | Nitrogen control module |

**QS-600**   (Made of Stainless Steel)

Capacity:624L
Shelves:5 pcs
Outside Dim. :W600xD672xH1820mm
　　　　　　　　(Exclude door handles)
Internal Dim. :W598xD635xH1647mm
Power Consumption:Ave.20Wh;Max.50W
N2 / Dry air is required

**QS-1200-6**   (Made of Stainless Steel)

Capacity:1250L
Shelves:5 pcs
Outside Dim. :W1200xD672xH1820mm
　　　　　　　　(Exclude door handles)
Internal Dim. :W1198xD635xH1647mm
Power Consumption:Ave.20Wh;Max.50W
N2 / Dry air is required

9

**Upgrade your traditional Nitrogen cabinet to Smart Nitrogen Cabinet!**

Nitrogen controller NC-5R can be installed on your traditional Nitrogen Cabinet. It is used to designed to control dry air filling into the cabinet, so the desired relative humidity in the cabinet can be reached. The dry air can be nitrogen, CO2 or inert gas. Traditional Nitrogen cabinet allows N2 to fill in 24/7. Use Dr. Storage nitrogen controller NC-5R,30~60% of dry air/N2 can be saved.
In order to protect components/devices/SMD packages inside the cabinet, the controller NC-5R will continuously fill Nitrogen in even during power outage.

**30~60%** of dry air/N2 can be saved!

Setting Range: 1~99%RH,
Precision of Sensor: ±0.3℃,±2.0%RH
Dimensions: W250*D210*H90mm

| Type | GB-250X | GB-250A | GB-250Q | GB-250 |
|------|---------|---------|---------|--------|
| Humidity Range | <5%RH | 5~50%RH | 1~50%RH | X |
| Control Mode | Auto | Adjustable | Adjustable (N2 is required) | Non (Empty box) |
| Capacity | 250L | | | |
| Outside Dimension | W900xD600xH630mm | | | |
| Internal Dimension | W880xD580xH510mm | | | |
| Box Frame | Acrylic | | | |

# Drawer Dry Cabinet

■ *Improve management efficiency: Different kinds of slide drawers can store various components such as Reel/ PCB/IC/BGA/ SMD components, etc. Well organized items can be retrieved quickly to avoid leaving the door open long time.*

■ *The cabinet is made of carbon steel with ESD paint. Customer can choose 3 colors storage bins on windows of the cabinet for color management as an option.*

*Select drawers:*



SD1   DW1   DW2   DW3

DW4   DW5   DW6

DW7   DW8   DW9

DX2B-1200-6

*Capacity:1250L*
*Outside Dim. :W1200xD672xH1820mm*
*Internal Dim. :W1198xD644xH1618mm*
*Power Consumption:Ave.105Wh;Max.585W*