

Auto-Electronic Dry Cabinet

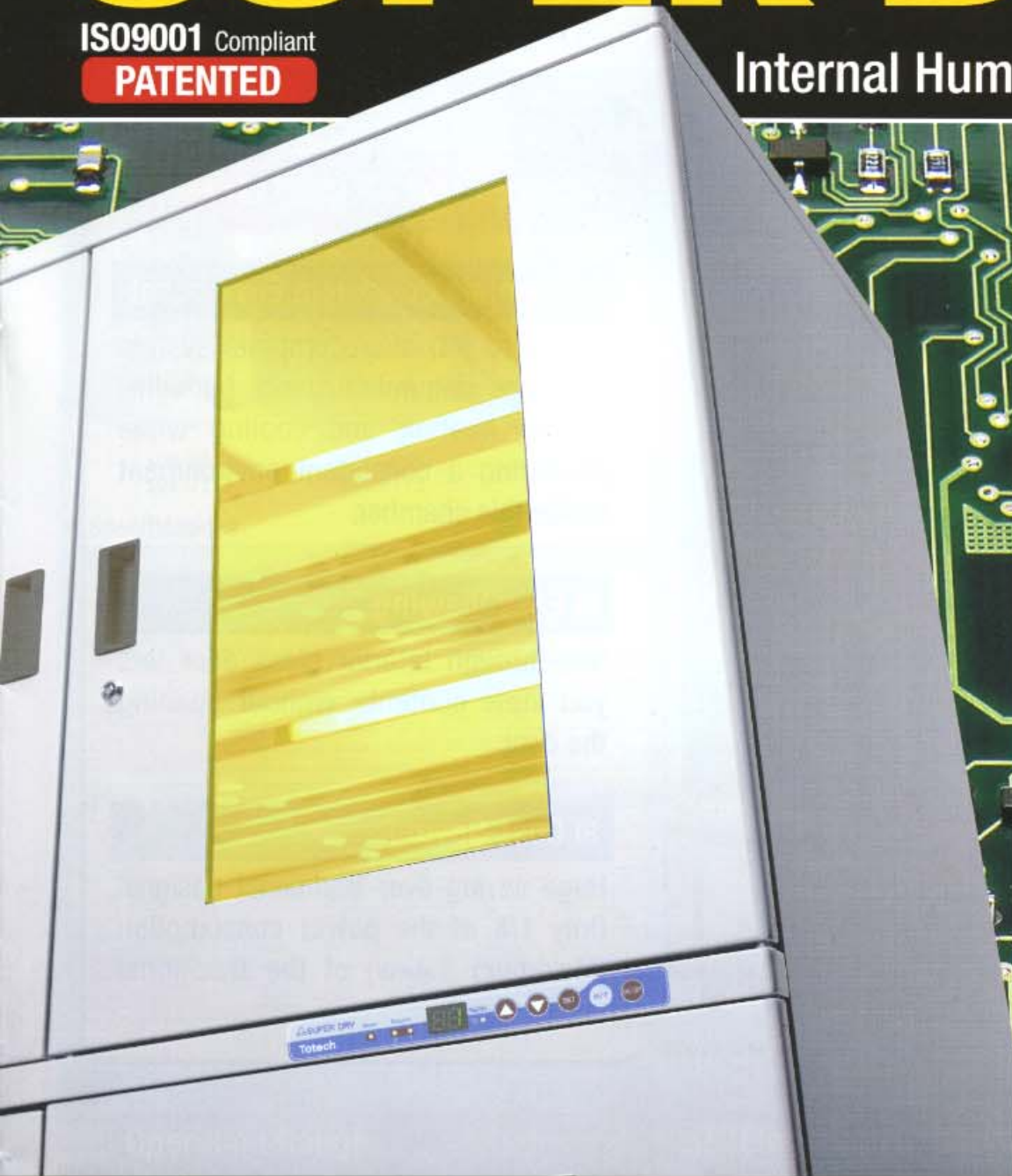
Totech

SUPER DRY®

ISO9001 Compliant

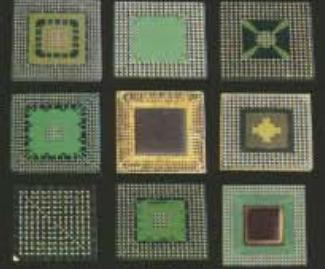
PATENTED

Internal Humidity **1** - 50%



Semiconductor Devices Storage

•Storage of all kinds of IC like QFP, BGA, CSP, SOP etc



PCB Storage

•Storage of Printed Wiring Boards, Polyimide PCB and Rework Devices etc



Customer List

Boeing	Motorola Inc.
Bosch	NASA
Hitachi	NEC Corporation
IBM	Philips
Infineon	Siemens
Intel Corporation	Solectron
Mazda	Sony
Mitsubishi	Toshiba

Museum Quality Storage

•Storage of Cultural Assets



Media Storage Applications

•Storage of Micro Film, Magnetic Tapes and CD-ROM



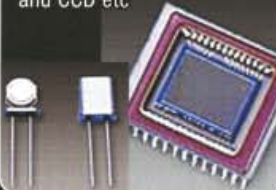
Industrial and Laboratory Applications

•Storage of Copper Foil, Precise Mold and Magnesium etc



Electronic Components Storage

•Storage of LED, Condenser and CCD etc



Optics Applications

•Storage of Special Lens, Glass Wafer, Microlens, LCD's and PDP etc



Auto-Electronic Dry Box Pioneers established 1974



Totech

manufactured by
TOYO LIVING CO., LTD.

NEW

New Design For Precise Environment Settings



▲ SDE-1102S

Superior Features

1 Maintain Consistent Environment

Advanced PID microcomputer system manages dehumidification, humidification, heating and cooling while delivering a consistent environment inside this chamber.

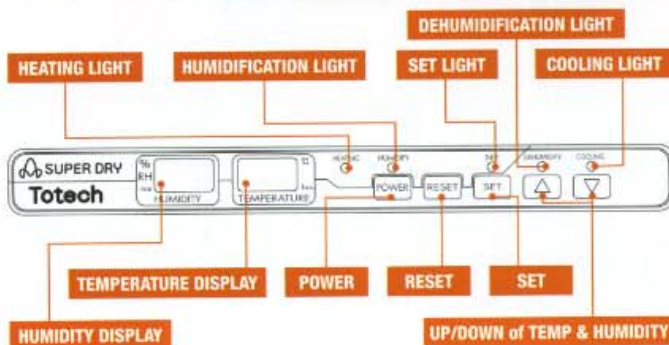
2 Easy Viewing

See-through interior glass door lets you view contents without opening the door.

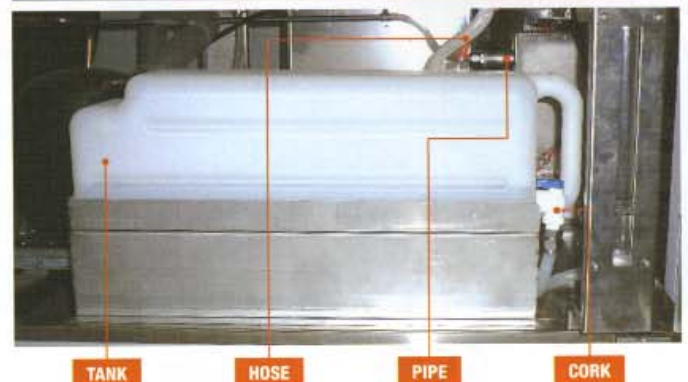
3 Cost-Saving

Huge saving over traditional designs. Only 1/8 of the power consumption (Maximum 1.4kw) of the traditional units is used.

1 Easy Operation



2 Different Equipments for Water Supply



Purified water is recommended to be used.

Easy Control series (Humidity Setting:3-90%RH Temperature Setting : 0-65°C 0-99°C)

All Stainless Steel



SDE-201
SDE-211S

SDE-501
SDE-511S

SDE-1002
SDE-1102S

Specifications

Model	SDE-201	SDE-501	SDE-1002
Temperature Setting		0~65°C	
Humidity Setting		3~90%RH	
Accuracy		±2°C, ±5%RH	
Main Control System	PID micro-computer system		
Effective Capacity (L)	266	525	1032
Weight	100	124	188
External Dimensions / W x H x D cm	66×127×86	66×191×81	120×191×80
Internal Dimensions / W x H x D cm	56×51.5×70	56×127.5×70	110×127.5×70
Material	Stainless Steel SUS 304		
Max Power Consumption	1.2kW	1.3kW	1.4kW

Model	SDE-211S	SDE-511S	SDE-1102S
Temperature Setting		0~99°C	
Humidity Setting		3~90%RH	
Accuracy		±2°C, ±5%RH	
Main Control System	PID micro-computer system		
Effective Capacity (L)	266	525	1032
Weight	100	124	188
External Dimensions / W x H x D cm	66×127×86	66×191×81	120×191×80
Internal Dimensions / W x H x D cm	56×51.5×70	56×127.5×70	110×127.5×70
Material	Stainless Steel SUS 304		
Max Power Consumption	1.2kW	1.3kW	1.4kW

Specification is subject change without prior notice for better quality.

Main Applications

1 Semiconductor Industry Oven

Standard dry cabinet does not have any capacity for baking components. Easy Control series provide the ability to bake and to dehumidify. It is especially suitable for storage of MSD devices which are unable to undergo high temperature baking.

2 Environmental Test Chamber

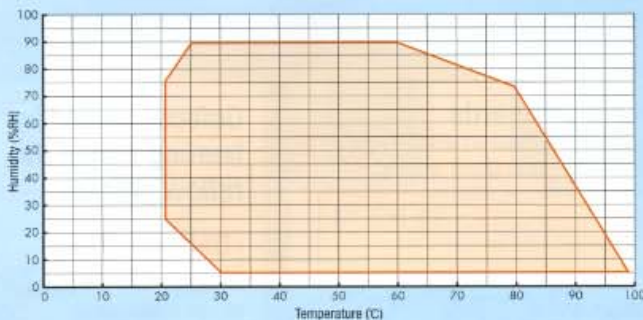
It provides an excellent environment condition for various duration and deterioration tests, especially ideal for Biotech, Pharmacy and Food Industries.

3 Others

Suitable for hardening Adhesion Material and Storage of Epoxy Resin.

Operation Range

(unloaded test for reference)



- Ambient Environment is 20-25°C
- SDE-1102S, SDE-511S and SDE-211
Temperature setting is 0-99°C, Humidity setting is 3-90%RH.
- SDE-1002, SDE-501 and SDE-201
Temperature setting is 0-65°C, Humidity setting is 3-90%RH.

Flexible Programmed Setting

Provides repeatable environmental conditions

Programmed Setting	Description
Step Programmed	
After Programmed Setting	

Repeat the set program for 1-99 times

Best Quality & High Reliability since 1974

SUPER DRY is the only choice for your ultra-low humidity storage



▲ HSD-1106-01

1 M Ground Wire

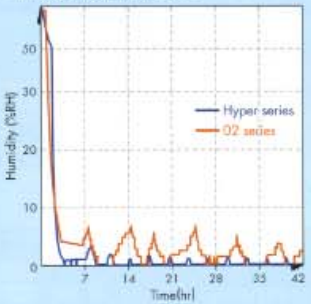
- Stainless Steel Shelves
- Conductive Painted Body
- Ground Wire on the Door
- Conductive Door Seal
- Conductive Glass

1 Exceptional Recovery Time PATENTED

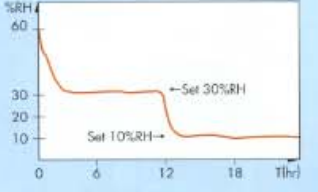
Unique patented design of U-2001 dry unit and an air circulation fan allow SUPER DRY to maintain ultra low humidity levels under 5%RH even when frequently accessed.

■ **Hyper series**
< Unloaded test of HSD-1104-01 >

■ **O2 series**
< Unloaded test of SD-1104-02 >



■ **Constant humidity test**
< Unloaded test of HSD-1104-01 >



■ **Door open / close test**
< Unloaded test of HSD-1104-01 >



2 Convenient Digital Control Panel

Only SUPER DRY is equipped with a high quality hygrometer with an accuracy of $\pm 3\%RH$. The new design of **Humidity Alarm Settings** can be easily adjusted from 1-99%RH for 1-99 minutes to avoid unexpected humidity levels.



3 Prefect ESD Safe Design

Every SUPER DRY carries an EPA label shown its surface resistance value meets IEC613405-01 demands.



Causes of Defects during Mounting

1 IC packages

Level	Floor life after removing from a moisture barrier bag (30°C 60%RH)	Device Types
1	Unlimited at 30°C, 80%RH	DIP, PGA (Insertion Mount Device)
2	1 year	SOP, TSOP, QFP, BGA, CSP, FC (Surface Mount Device)
2a	4 weeks	
3	168 hours	
4	72 hours	
5	48 hours	Micro cracks happen if it has been placed above this time limit!
5a	24 hours	
6	Baking is necessary	

Baking is not necessary !!! Level 5a if stored inside in SUPER DRY.

2 Printed Circuit Boards

The relationship between the thickness of Laminated Plate and the Moisture Absorption Rate. (24hrs at 30°C, 85%RH)



The rate of moisture absorption will increase if the Laminated Plates become thinner.

Defects caused by heating during the reflow process

Delamination
Moisture inside the package causes delamination.

Measling
Micro cracks are caused by heating at the intersection of glass cloth.

Hyper series

(Digital Control: 1-50%RH)

Dry Unit $\times 2$



HSD-1104-01

HSD-1106-01

Superior Recovery after Frequent Door Openings

Hyper series are equipped with 2 powerful patented dry units to reach ultra low humidity level to minimum 1%RH which meets IPC(J-STD-033) demands, and provide the most effective solution to

- ① Micro-cracks in Integrated Circuits like QFP and BGA etc
- ② Delaminations in Printed Circuit Boards and Rework Devices
- ③ Defects caused by Heating in lead-free SMD devices

Specifications

Model	HSD-1104-01	HSD-1106-01
External Dimensions / W x H x D cm	120 x 184 x 67	
Internal Dimensions / W x H x D cm	119 x 156 x 62	
Effective Capacity (L)	1160	
Weight (kg)	162	167
Mean Power Consumption	56W/h = 40.4kW/month	
Rated Voltage	Variations in voltage are available	
Material	Steel Body and Conductive Glass Windows	
Shelves / Accessories	5 Stainless Shelves (Max Load: 100kg) & a key	

Specification is subject to change without prior notice for better quality.

02 series

(Digital Control: 2-50%RH)

Dry Unit $\times 1$



Medium to Long Term Constant Ultra-Low Humidity Storage

02 series are equipped with 1 patented dry unit to constantly maintain the ultra-low humidity to minimum 2%RH to meet IPC (J-STD-033) demands, and are ideal for the moistureproof and anti-oxidation storage of the following items.

- ① Storage of all kinds of Integrated Circuits and Silicon Wafers etc
- ② Storage of PDP Inspection Equipments and Liquid Crystal Cleaning Equipments etc
- ③ Storage of Aerospace related Instruments and Tools
- ④ Storage of Optical Equipments and Digital Media
- ⑤ Storage of Cultural Assets



SD-1106-02

SD-1104-02

SD-702-02



SD-151-02

SD-502-02

SD-252-02

SD-302-02

Specifications

Model	SD-1106-02	SD-1104-02	SD-702-02	SD-151-02	SD-502-02	SD-252-02	SD-302-02
External Dimensions / W x H x D cm	120 x 184 x 67		62 x 184 x 78	50 x 63 x 58	88 x 90 x 74	88 x 90 x 38	50 x 123 x 64
Internal Dimensions / W x H x D cm	119 x 156 x 62		61 x 156 x 73	49 x 56 x 53	87 x 83 x 69	87 x 83 x 33	49 x 116 x 59
Effective Capacity (L)	1160		680	145	510	252	340
Weight (kg)	160	155	110	29	60	39	60
Mean Power Consumption	28W/h = 20.2kW/month			21W/h = 15.1kW/month		28W/h = 20.2kW/month	
Rated Voltage	Variations in voltage are available						
Material	Steel Body and Conductive Glass Windows						
Shelves / Accessories	5 Stainless Shelves (Max Load: 100kg) & a key			3 Stainless Shelves (Max Load: 50kg) & a key			7 Stainless Shelves (Max Load: 50kg) & a key

Specification is subject to change without prior notice for better quality.

Tape Feeder 1 series

(Digital Control : 1-50%RH)

Dry Unit ×2



New Deep Design Handles Tape Feeders



▲ SDF-1104-01

Prefect Ultra-Low Humidity Storage for Tape Feeder at 1%RH

Tape Feeder can be stored directly inside the dry cabinet



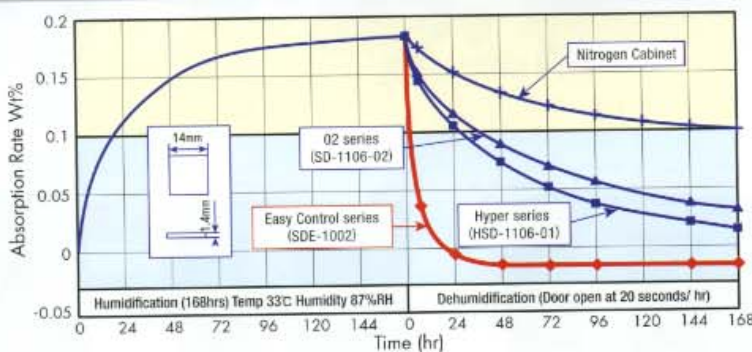
Rack Holders for Popular Tape Feeders
(available as custom order)

Specifications

Model	SDF-1104-01
External Dimensions / W x H x D cm	120 x 184 x 96
Internal Dimensions / W x H x D cm	119 x 156 x 91
Effective Capacity (L)	1708
Weight (kg)	197
Mean Power Consumption	56W/h=40.4kWh/month
Rated Voltage	Variations in voltage are available
Material	Steel Body and Conductive Glass Windows
Shelves / Accessories	5 Stainless Shelves (Max Load: 100kg) & a key

Specifications subject to change without prior notice for better quality.

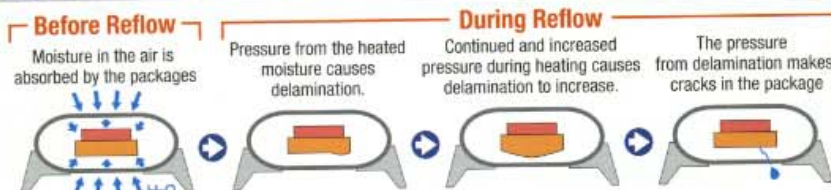
Dehumidification Test of semiconductor devices



Experiment Measure the absorption rate (Wt%) of devices at 33°C 87%RH.

- Test Result**
- ① SUPER DRY can effectively prevent defects caused by heating.
 - ② Easy control series have ten times absorption capability than other models.
 - ③ Easy Control series provides the best dehumidification capability than normal baking (120°C 60hr).

The mechanism of micro-crack in Integrated Circuits Packages



Micro Film Storage

Many universities, museums and libraries use SUPER DRY to protect their micro film at about 40%RH from mold, stickiness, delamination of film surface and deterioration of TAC base.

Ideal Storage Condition for Micro Film (Ref : JIS Z 6009-1994)

Condition	Relative Humidity (%RH)		Temp (°C)
	Max	Min	Max
Medium Storage	60	Cellulosic Ester	25
		Polyester	
Long Term Storage	40	15	21

NEW **Long Term series**
(Flexible setting 20-50%RH)

Most Economic Choice for Long Term Storage

Main Applications

- ① Storage of micro-films and positive / negative films
- ② Storage of antiques and ancient documents
- ③ Storage of electronic devices, PCB and IC packages before removing from moisture barrier bag
- ④ Storage of Powdered Medicines and Water Solution
- ⑤ Storage of micro-lens and microscope lens etc



ASD-1006

Specifications

Model	ASD-1006
External Dimensions / W x H x D cm	120 x 184 x 69
Effective Capacity (L)	1160
Weight (kg)	1.55
Mean Power Consumption	12.6W/h = 9kW/month
Rated Voltage	Variations in voltage are available
Material	Steel Body and Conductive Glass Windows
Shelves / Accessories	5 Stainless Shelves (Max Load: 100kg) & a key

Specification is subject to change without prior notice for better quality

NEW **Dry Bag series**
(Perfectly Protect Your Valuables in All Seasons!!)

Main Applications

- ① Storage of semi-conductor devices or electronic devices etc
- ② Storage of optical equipments and other portable equipments etc

Tough, rugged design featuring a special desiccant along with a precise thermo-hygrometer makes this unit ideal for police, fire, airline, broadcasting, medical and personal uses.



Watertight Design



Durable Material & Rugged Design



F-16

External Dimensions: W42 x H33 x D17 cm
Internal Dimensions: W39 x H27 x D15 cm
Weight: 2.3kg. Equipped with an adjustable foam, a shoulder strap and a Mobil Dry.

F-29

External Dimensions: W51 x H43 x D20 cm
Internal Dimensions: W48 x H36 x D18 cm
Weight: 6kg. Equipped with an adjustable foam, a shoulder strap and a Mobil Dry.

Mobile Dry (Portable Recycled Desiccant)



MD-1

External Dimensions: W12 x H8 x D3 cm Weight: 200g
Appropriate from 100V to 240V Mean Power Consumption: 65w min 10 w

- All Dry Bags are equipped with a Mobile Dry
- Effective capacity : 50L
- 1 year warranty

AUTO DRY series
(Flexible Settings: 30-50%RH)

Suitable for low- humidity storage of

- ① Electronic Devices ② Precise Equipments ③ Optical Lens ④ Seeds
- ⑤ Deliquescent Materials ⑥ Microfilms and positive / negative films

Possible to place one cabinet on the top of another cabinet



ED-138



ED-268



ED-508



ED-83G



ED-103G



ED-123G

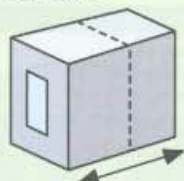

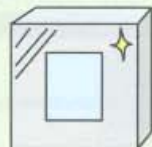
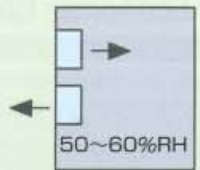
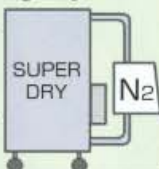

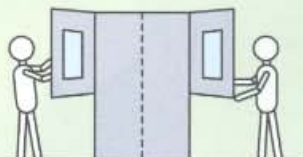

Specifications

Model	ED-138	ED-268	ED-508	ED-83G	ED-103G	ED-123G
External Dimensions / W x H x D cm	44 x 90 x 40	88 x 90 x 40	88 x 90 x 76	40 x 55 x 38	40 x 83 x 38	40 x 95 x 38
Effective Capacity (L)	121	252	510	68	103	121
Weight (kg)	21	33	58	10	14	16
Mean Power Consumption	1.9W/h = 1.4kW/month	6.3W/h = 4.5kW/month		1.9W/h = 1.4kW/month		
Rated Voltage	Variations in voltage are available					
Material	Steel Body and Conductive Glass Windows			Steel Body and Conductive Glass Windows		
Shelves / Accessories	3 Stainless Shelves (Max Load: 50kg) & a Key			2 Styrol Resin Shelves (Load 12kg), a Rack & a Key		4 Styrol Resin Shelves (Load 12kg), a Rack & a Key

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Custom Cabinets

Custom designs are available to satisfy unique applications about constant humidity storage.

<p>1 Custom size</p> 	<p>2 Custom color</p> 	<p>3 Stainless Steel Cabinet (SUS 304, 430)</p> 	<p>4 Humidifier Function</p> 
<p>5 N₂ Auto-Purge System</p> <p>Custom Constant humidity storage using N₂ assist for faster refresh.</p> 	<p>6 Air Clean Cabinet</p> 	<p>7 Pass Box Design</p> 	<p>8 Custom Shelving for Your Specific Application</p> 

Options

Fully experience the high performance of SUPER DRY with the following options.

<p>1 Additional Stainless Steel Shelf</p>  <p>Additional Shelves can greatly increase the useable space inside SUPER DRY.</p>	<p>2 Reel Rack</p>  <p>Suitable for the storage of components on tape and reel. Available for all SUPER DRY.</p>	<p>3 Divider</p>  <p>Divider allows better organization of SUPER DRY in different configurations.</p>	<p>4 L Shape Metal Fitting</p>  <p>Anti tip stabilizer.</p>
<p>5 Humidity Alarm Light</p>  <p>Alarm light flashes when its internal RH level exceeds unit set point.</p>	<p>6 Humidity Alarm Buzzer</p>  <p>Humidity alarm buzzer sounds when the internal RH level exceeds unit set point.</p>	<p>7 Door Alarm Buzzer</p>  <p>Door alarm buzzer sounds when the internal RH level exceeds unit set point.</p>	<p>8 Wrist Strap Connection</p>  <p>Allows grounding while handling ESD sensitive materials.</p>
<p>9 Casters</p>  <p>Castors are available as an option for SUPER DRY that have not installed as standard.</p>	<p>10 Adjustable Legs</p>  <p>Adjustable Legs are available for effective stabilization.</p>	<p>11 N₂ Auto-Purge System</p>  <p>Effective usage of N₂ combined with SUPER DRY.</p>	<p>12 Data Logger</p>  <p>Data logging hygrometer and thermometer.</p>

 **Totech** 31 years History ISO9001 Compliant
 manufactured by **TOYO LIVING CO., LTD.**

Head Office and Showroom
 1-6-1 22F, Kamioooka Nishi, Konan-ku, Yokohama 233-0002, JAPAN
 TEL: (81) 45-841-5511 FAX: (81) 45-843-3611
 Email: thanks@totech.com

Sales Offices : Fukuoka, Nagoya & Osaka
Factory : Nasu
Global Network : North & South America, Asia, EU, Oceania

For more information in English, please visit
<http://www.totech.com>
 For more information in Chinese, please visit
<http://www.china.totech.com>



Unit 7, Forest Row Business Park,
 Station Road,
 Forest Row,
 East Sussex,
 RH18 5DW
 United Kingdom

Tel: +44 (0)1342 822844
 Fax: +44 (0)1342 824155
 E-mail: info@almit.co.uk