

HSD 1704-52



Dry Cabinet



Outstanding performance

The HSD cabinet series has an outstanding performance for drying moisture sensitive components and pcb's as a result of a high performance drying unit. Therefore it is very suitable for operation with frequent approach.

The dynamic drying unit of the 5000 series reaches very reliable low humidity values $\leq 0,5\%$ RH and automatically regenerates if necessary.

Humidity, temperature and alarm functions are shown and can be adjusted on a digital display.

Data can be taken out from the cabinet through a standard Ethernet connection with optional software.



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Standard Features

✓ User friendly handling	Display with easy menu structure
✓ ESD features	Norm (IEC 61340-5-1) ESD metal painted body (<10 ⁶ Ohm/sq) Dissipative glazing (in- and outside 10 ⁸ Ohm/sq)
✓ Online functionality	Interface and data logging through standard Ethernet interface Compatible with new MSL 2.0 software
✓ Door & humidity alarm buzzer	Longer door openings are detected, high RH levels are detected
✓ Transport	Castors
✓ Lockable doors	4 doors locked with key
✓ Sliding shelves	In height adjustable chrome steel shelves (5 pcs)
✓ U-5000 series drying unit	≤0,5% RH, made in Germany
✓ Rotronic sensor	Precision sensor, accuracy +/- 0,8 % RH, +/- 0,3°C
✓ Power supply	Power cord 5 meter with IEC plug

Benefits

✓ Drying time (see reference table)	Fast drying time, Level 3 component, <1,4 mm = 18 hours (60°C / 1% RH)
✓ Recovery time after door opening	< 6 minutes to below 1% (with 1 cabinet and 1 door opening)
✓ Energy saving consumption	As a result of a Dynamic dry unit, 46 W/h
✓ Network	Standard ethernet interface
✓ IPC	According to IPC-JEDEC J-STD 033C & IPC-1601
✓ European Quality	Made in Germany
✓ Maintenance	Easy to service, low maintenance

Caution:

When the cabinet is equipped with multiple feederracks, adjustable feet are attached for safety-reasons.

Depending on the weight of feeders and reels, the cabinet may tend to tilt forward while the feederracks are extended. For this reason the cabinet must be secured to a stable surface such as a wall or pillar behind the cabinet

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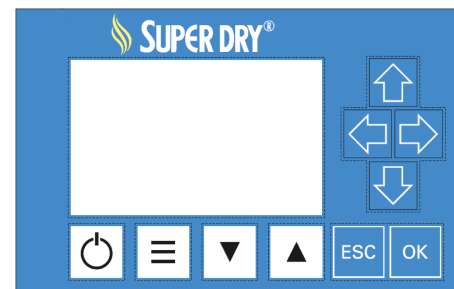
Technical data cabinet

- ✓ External dimensions: (W x H x D) 1200 x 1675/(1840) x 960 mm
- ✓ Internal dimensions: (W x H x D) 1190 x 1533 x 910 mm
- ✓ Weight: 197 kg
- ✓ Weight on shelf: 50 kg
- ✓ Max. loading capacity: 300 kg
- ✓ Body: Steel, conductive coated 10^6 - 10^8 Ω /sq
- ✓ Shelves (WxD): 5 pcs, 1150 x 780 mm.
- ✓ Volume: 1700 L
- ✓ Electric supply: 230 VAC (120 VAC optional)
- ✓ Power consumption: Average 46 W/h (excl. heating)
- ✓ Protection class: Class 1, hard grounded
- ✓ Humidity level cabinet: $\leq 0,5\%$ RH can be reached with drying unit U-5003
- ✓ Sensor accuracy: +/- 0,8 % RH, +/- 0,3°C

Technical data type 2 display

Settings

- ✓ Language Menu
- ✓ Nominal Value Humidity
- ✓ Nominal Value Humidity Alarm
- ✓ Delay Humidity Alarm (in combination with heater)
- ✓ Nominal Value Temperature (in combination with heater)
- ✓ Temperature Alarm (in combination with heater)
- ✓ Delay Temperature Alarm
- ✓ Doors Alarm
- ✓ Interlocking
- ✓ Manual Regeneration



Display

- ✓ Supply voltage (supplied by drying unit) 24 VAC/DC
- ✓ Input 4 function keys (tactile-touch keys)
- ✓ Display 61 x 33 mm, white, controllable backlight, adjustable contrast
- ✓ Ethernet connection
- ✓ Power consumption at 24 VDC, 40 mA

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Technical data Rotronic sensor HC2A-S



Based on the Airchip 3000 Technology use the HygroClip 2 probes can be used for control of temperature and humidity.

The HygroClip 2 probes can be configured with the ROTRONIC HW4 software and share the following features:

- ✓ Measurement of relative humidity and temperature
- ✓ Programmable automatic sensor test with failsafe mode and sensor drift compensation.

Technical data dry-unit U-5000 series

- ✓ Dehumidifying performance: 120 g/h max.
- ✓ Minimal humidity 0,2% RH
- ✓ Dehumidifying Temperature 10 – 60° C
- ✓ Electric supply: 230 VAC
- ✓ Dimensions (L x B x H): 487 x 487 x 150 mm
- ✓ Weight: 14 kg



Technical data heater SH-230-4

- ✓ Voltage: 230 VAC / 50 Hz (120 VAC / 60 Hz optional)
- ✓ Power: 780 W
- ✓ Temperature sensor: PTC 100
- ✓ Thermal protection: 90 °C
- ✓ Temperature range: 30 - 40 °C
- ✓ Air flow: 86 m³/h
- ✓ Display tolerance: 1 digit at 25 °C

Technical data N² (Auto) Flow

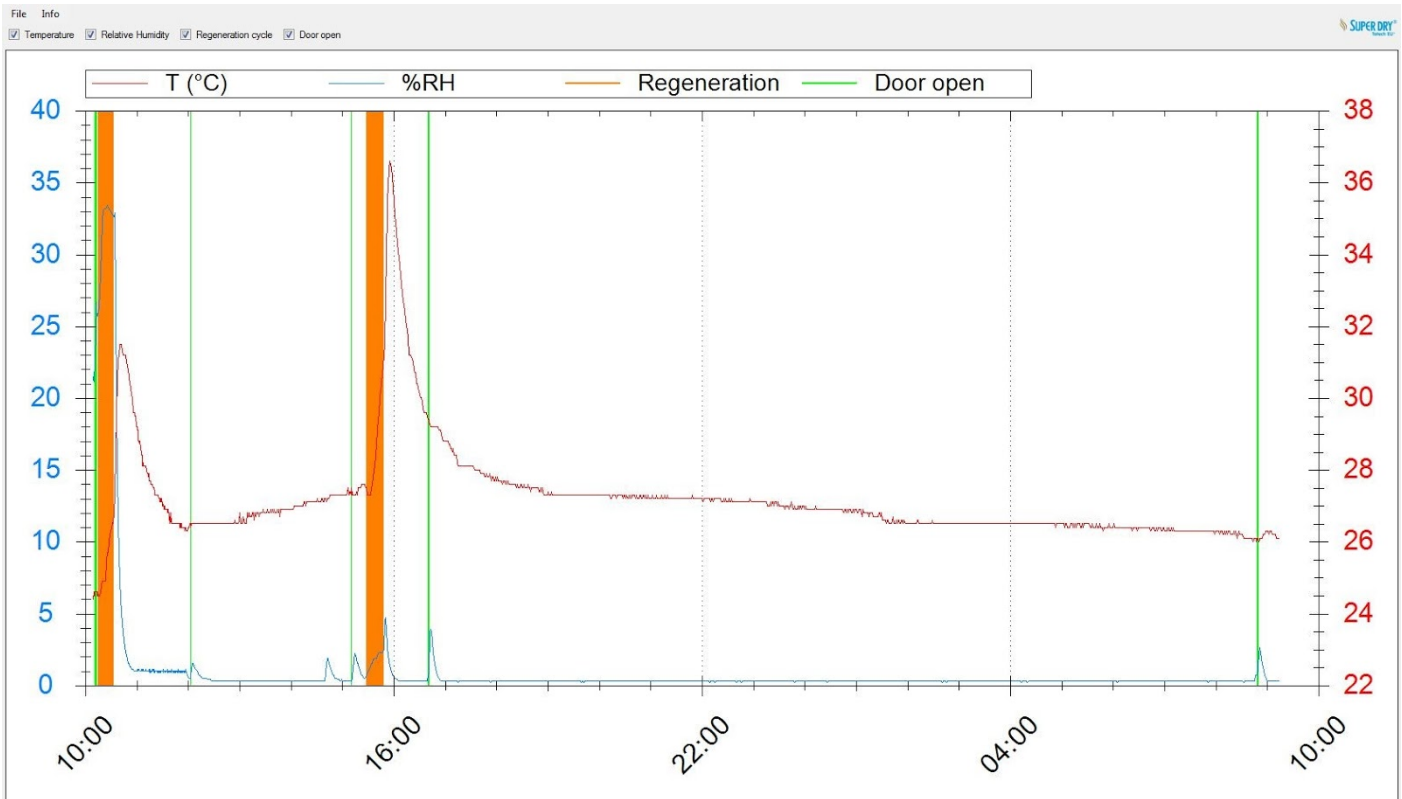
- ✓ Power supply: 90 - 230 VAC
- ✓ N² connection: 8mm hose connection
- ✓ N² pressure: 1 - 6 bar
- ✓ N² standby amount: 0 - 25 L/min
- ✓ N² purge: 0 - 100 L/min
- ✓ Purge time: 0 - 99 min

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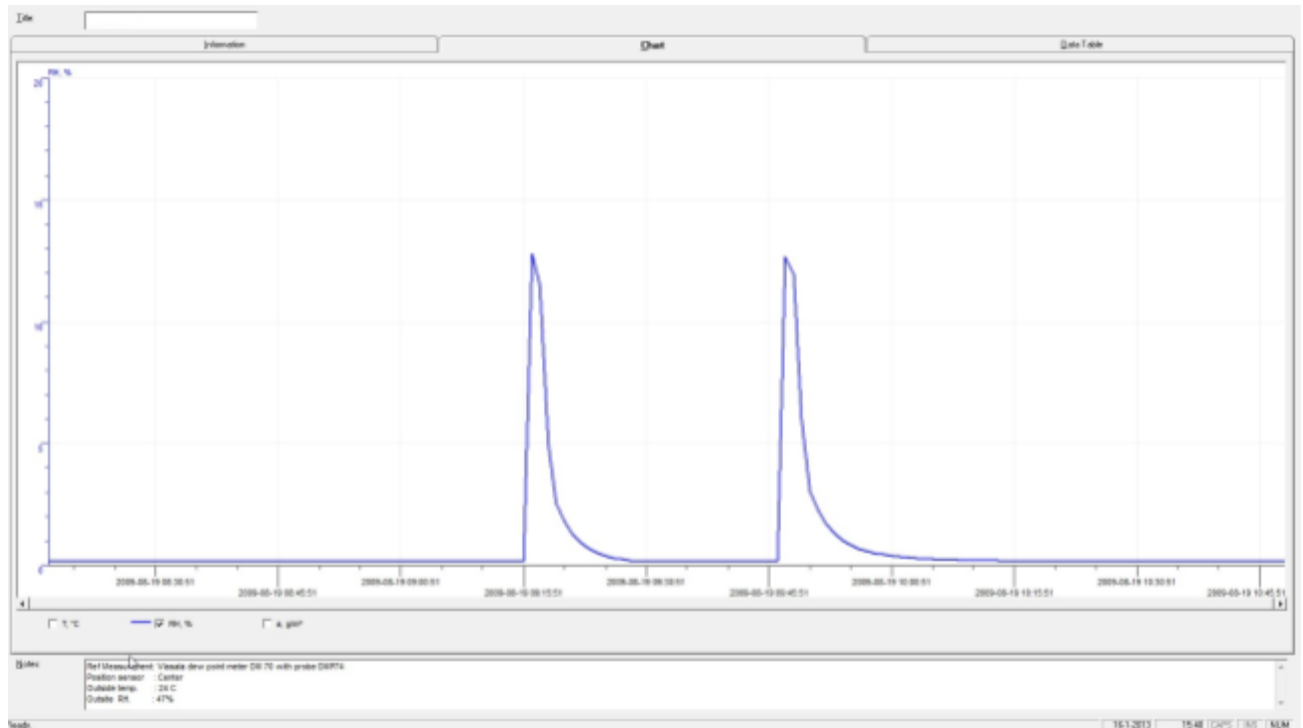
Free Totech viewer

- ✓ Writing of climate data, door openings and alarms to SD card
- ✓ Transfer data through Ethernet to PC (history data)
- ✓ User-friendly display of all relevant data
- ✓ Data processing in MS-Excel

- ✓ Seamless documentation
- ✓ Excellent process safety



Performance test

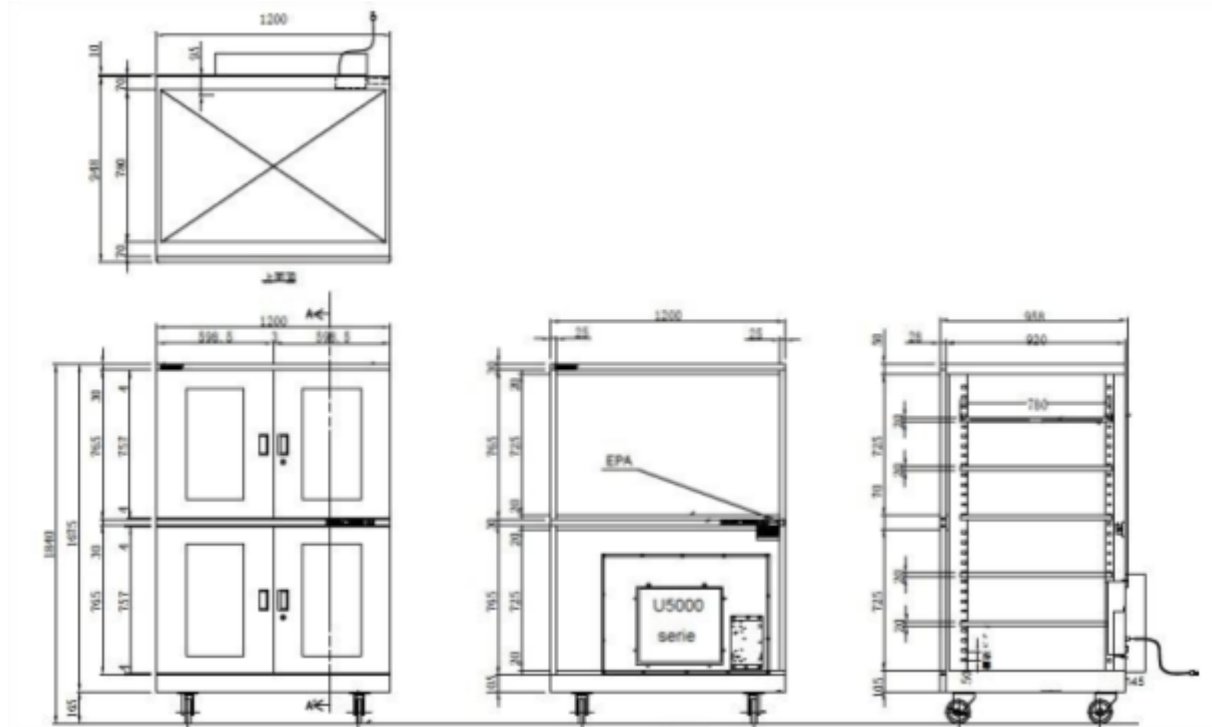


Test conditions

- ✓ Type of dew point sensor: 1x Vaisala drycap 180M
- ✓ Accuracy of dew point sensor: $\pm 0,3^{\circ}$ C at $+ 20^{\circ}$ C ($+ 68^{\circ}$ F)
- ✓ Location of sensors: In the direct surrounding of cabinet sensor
- ✓ Ambient conditions: Hum. $50 \pm 5\%$ rH, 22° C $\pm 2^{\circ}$ C, Pressure 994 ± 20 hPa
- ✓ Dooropenings: 2 door openings, 15 sec. (average RH 0,70%)

For more detailed test results, please refer to our website.

Technical drawings



Dimensions mentioned in mm.

Shelves

Number of different types of shelves that can be mounted in the cabinet

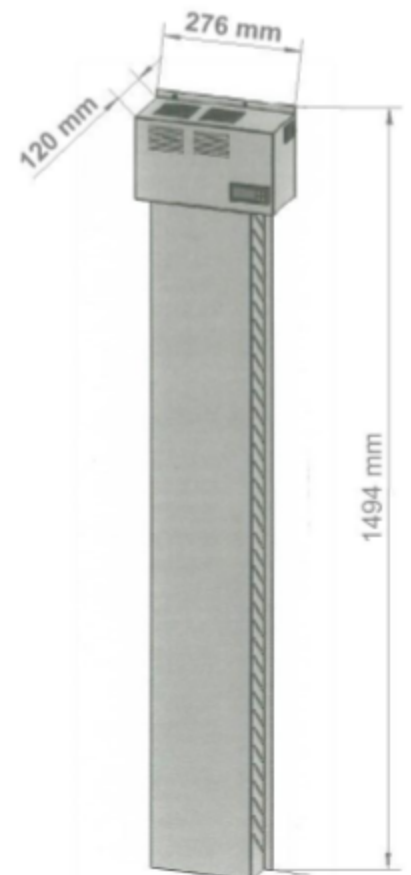
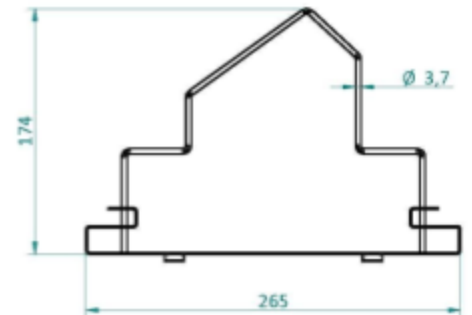
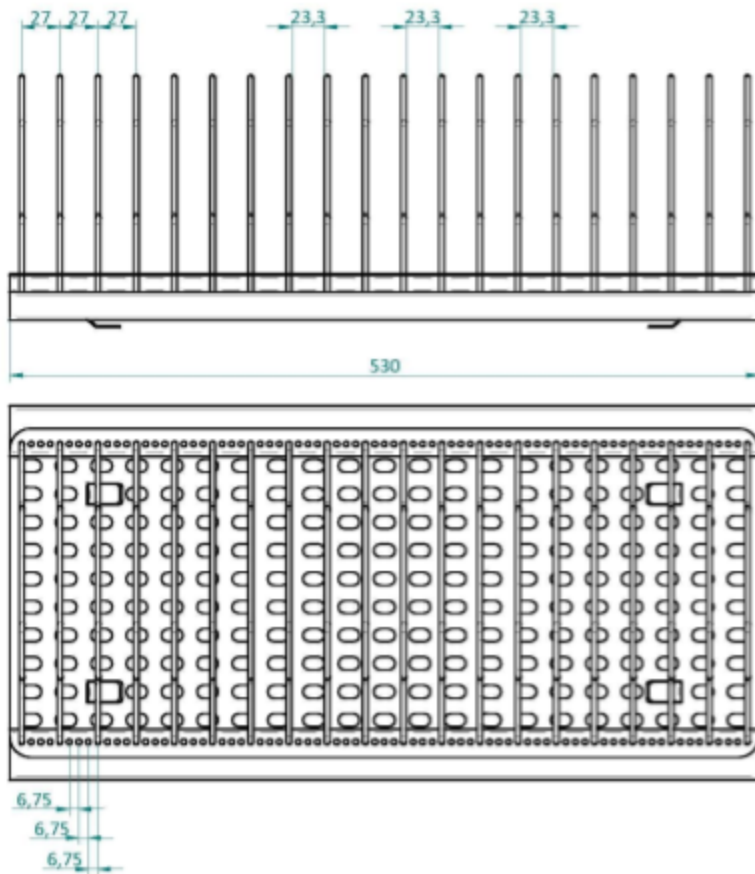
Number of shelves bottom section	2	3	4	5
Distance (in mm) between shelves if equally divided in bottom section	230	180	130	80
Remaining space between top shelf and middle beam	230	130	105	175
Remaining space between bottom shelf and bottom cabinet	225	175	75	125
Loading capacity shelves m ² (1155 mm x 780 mm)	1.80	2.74	3.60	4.50

Number of shelves top section	2	3	4	5
Distance (in mm) between shelves if equally divided in bottom section (if bottom shelf is mounted at lowest possible position in top section)	330	230	180	130
Remaining space between top shelf and top beam	375	225	225	125
Remaining space between bottom shelf and middle beam	0	0	0	0
Loading capacity shelves m ² (1155 mm x 780 mm)	1.80	2.74	3.60	4.50

Measurements can slightly deviate. For loading capacity shelves see specification SDF 1704.

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Technical drawings



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Options



SMD Reel rack with reel supports

L x W = 530 x 265 mm incl. 18 reel supports.

Item number 20014006



Reel support

Additional reel supports for 20014006.

Item number 20014200



Humidity alarm signal lamp

Two-color (orange/green or red/green), magnetically fixed, providing optical signals on operational states and exceeded limit values. Operates on 24V.

Item number 20016030



N₂ Autoflow system

The autoflow system is developed to use in combination with a Totech drying cabinet. The device is used for the quick removal of moisture in the cabinet after the doors have been opened. The drying process is realised by using Nitrogen (N₂), which is purged automatically after the doors are closed. (timer controlled)

Item number 22613001



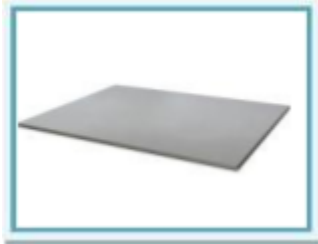
N₂ flow system

The flow system is developed to use in combination with a Totech drying cabinet. The device is used for the quick removal of moisture in the cabinet. The drying process is realised by using Nitrogen (N₂). Adjustable 10 - 100 L/min.

Item number 20010020

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Options



Shelf standard

For cabinets type SDF-1704

Item number 20001001

Brackets 2 pcs

Item number 30005019



X Feeder system

This feeder rack is suitable for Siemens X Feeder systems.
Sold in combination with reel rack.

Item number 46204004



S Feeder system

This feeder rack is suitable for S Feeder systems.
Sold in combination with reel rack.

Item number 46204009



Hygroclip 2

Probe with maximum accuracy for all climate measurements.

Item number 470000027

Exchange calibrated sensor:

Item number 470000040



Humidity calibrator Hygropalm 22

Precision measuring device for calibrating sensors.

Set including Hygroclip sensor, case and cable:

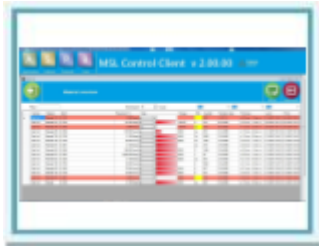
Item number 20001019

Hygropalm only:

Item number 20001016

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Options



MSL 2.0 software for 1000 components

Software solution for the monitoring of moisture sensitive components and their MSL states during storage and processing in the production. The exact drying state individually for each component is monitored and displayed with the software. One of the possibilities is that it can read out multiple HC2A-S sensors. To adjust storage conditions, picking of stock, removal of used parts and more stock control. A complete history for each component is traceable up to the full processing. The evaluation of the drying conditions is based on the requirements of the IPC / JEDEC J-STD-033B1 directive.

Item number 20010036



MSL software upgrade with additional 1000 components

Upgrade to monitor an additional 1000 components

Item number 200174502



Totech Monitor software

Realtime cabinet monitoring with alarm function, sending e-mails with detailed information on the status of the cabinet. History data files with graphical overview

Item number 47000583



Rotronic datalogger set

Including HW4-E software and cable AC3006

Item number 47000580



Adjustable legs

4 in height adjustable legs (63 - 80 mm).

Item number 20010010