

X-Treme Series

AUTO DRY CABINETS

METAL POWDER and FILAMENT STORAGE CABINET



www.x-tremeseries.com

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ADDITIVE MANUFACTURING

Additive manufacturing (AM) is a technology that allows physical components to be made from virtual three-dimensional (3D) computer models by building the component layer-by-layer until the part is complete. Additive manufacturing, three-dimensional 3D printing (3DP), solid freeform fabrication (SFF), layered manufacturing (LM), and rapid prototyping (RP) are collectively technologies that can manufacture or fabricate a component additively. Metal powders are the base materials for the production of metallic components through the conventional powder metallurgy route or the emerging field of additive manufacturing. 3D printing filament spools are also used as consumables.

STORAGE OF METAL POWDERS

Metal powders used in additive manufacturing are usually stored in containers around the printer or ordinary closed cabinets until they are needed. However, in each opening of the container, ambient air and moisture get into the container which affects the chemical and physical properties of the powder and cause aging.

This issue causes deteriorating of powder and increasing of porosity. As a result, moisture and oxygen affect the tensile strength, thermal resistance and corrosion resistance of materials, causing losses. When it is stored in normal cabinets, metal powders can also react with the atmosphere inside the cabinet. Even if the cabinet is emptied, ambient air and moisture flow will cause contamination and deterioration each time the doors are opened.

X-Treme Series Powder Storage Cabinet has developed an innovative solution to solve this storage problem. The cabinet works with a humidity and temperature control unit to measure humidity levels continuously and delivers a high volume of nitrogen into the cabinet as soon as the doors are closed to remove moisture from the air quickly. When it comes to set humidity and temperature value then it keeps the values constant with the calculated amount of nitrogen that injected into the cabinet.

THE POWER OF NITROGEN

The use of nitrogen gas for dehumidification and storage is one of the oldest accepted methods in the market for a long time. Nitrogen gas is purging into the cabinet and the air is thrown out of the cabinet. Along with the air, moisture and oxygen are also thrown out. With that way, a moisture-free and oxygen-free environment is provided.

Nitrogen is commonly used because it does not react when exposed to other gases, especially as opposed to oxygen, which is highly reactive. Due to its chemical structure, nitrogen atoms need more energy to break down and react with other substances. On the other hand, oxygen is a much more reactive gas, as oxygen molecules break down easily. On the contrary, nitrogen gas enables obtaining non-reactive environments where necessary.

The non-reactive feature of nitrogen is its greatest feature, and so this gas is used to prevent slow and rapid oxidation. The electronics industry is an excellent example of this use because slow oxidation can occur in the form of corrosion during the production of PCB's (printed circuit boards) and other small components. In this case, nitrogen is used to displace or replace air to better protect the end product.

X-Treme Series Metal Powder and Filament Storage Cabinet is an ideal environment, an effective method, especially in cases where oxidation and corrosion are possible. Thanks to the positive pressure it provides, it prevents moisture penetration into the dry cabinet and provides a safe environment for the materials inside the dry cabinet.

HYBRID SYSTEM

X-Treme Series Metal Powder and Filament Storage Cabinet offers the fastest dehumidification solutions in the world, using desiccant dehumidification and smart nitrogen dehumidification technologies together in perfect form.

X-Treme Series Metal Powder and Filament Storage Cabinet optimally adjusts the nitrogen gas used thanks to its comprehensive software and sensitive sensors, keeping the humidity level to desired values, and saving by minimizing the consumable usage level. Users can increase or decrease nitrogen gas pressure according to process needs or it can be tailored to the process by changing the nitrogen gas injection settings on the touch screen control panel. In this way, the user can decide which unit works how much



Physical	XSC-300-DN2	XSC-600-DN2	XSC-900-DN2	XTC-510-DN2	XLC-510-DN2
Net Volume	300 Lt	625 Lt	925 Lt	1250 Lt	1840 Lt
Net Volume (Thermal Insulated)	285 Lt	600 Lt	890 Lt	1215 Lt	1790 Lt
External Dimensions (WxHxD)	606x1128x750mm	606x1990x750mm	606x1990x1050mm	1200x1990x750mm	1200x1990x1050mm
Internal Dimensions (WxHxD)	603x792x630 mm	603x1654x630mm	603x1654x930mm	1197x1654x630mm	1197x1654x930mm
Internal Dimensions (WxHxD) (Thermal Insulated)	584x772x630mm	584x1634x630mm	584x1634x930mm	1178x1634x630mm	1178x1634x930mm
Wight (Depends on configuration)	90 kg	134 kg	160 kg	190 kg	280 kg
Shelf Load Capacity	50 kg				
Height From Ground	30 mm				
Body Material	Electrostatic Painted Steel Body, Stainless Steel Interior Panel (AISI 430)				
Door Glass	24 mm Insulated Glazing				
Shelves and Drawers	2 pcs Stainless Steel	5 pcs Stainless Steel	5 pcs Stainless Steel	10 pcs Stainless Steel	Optional

Electrical	
Voltage	220 - 240 V AC 50 Hz - 110 V AC 60 Hz ($\pm 10\%$)
Current / Max. Power	10 A - 16 A (Maximum) / 2200 W Max
Average Power Consumption	50 W/h
Max. Power Consumption	1500 W/h

Operational	XSC-300-DN2	XSC-600-DN2	XSC-900-DN2	XTC-510-DN2	XLC-510-DN2
Humidity Set Range	0.5% - 95% RH (Ambient to Set Value)				
Temperature Set Range (Optional)	2°C / 15°C / 45°C / 60°C / 100°C / 125°C (Ambient to Set Value)				
Time to Reach to Set Humidity Level	<7 min. (values for 1% RH)				
N2 (Nitrogen) Purity	%99,99				
N2 (Nitrogen) Inlet Pressure Set	5-7 bar				
N2 (Nitrogen) Inlet Connection Diameter	1/4 "				
N2 (Nitrogen) Pressure Set	2 bar				
N2 (Nitrogen) Flow	4.5-4.8 m³/h				
Number of Doors	1	2	2	4	2
Door Lock	Automatic, Password Protected				

Version 3.0 Software - Industry 4.0		
Display -Control Panel	Type	Touch Screen Display
	Active Area	7" - (155 x 86mm)
	Resolution	800 x 480 Pixel
Datalogger	Capacity	2 GB
	Connection Type	Wi-Fi (Wireless), Ethernet Cable (Network), USB Flash Disk
	USB (AF Type)	Connector Right and Left Side of the Cabinet
RMS (Remote Monitoring)	Monitoring	via PC, Phone, Tablet
	Connection Type	Wi-Fi (Wireless), Ethernet Cable (Network)

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Sensor Specifications

Relative Humidity Measurement	Location	Cabinet Inside (Standard), Cabinet Outside (Optional)
	Range	0 - 99% RH
	Accuracy	$\pm 0.3\% \text{ RH}$ (0...20% RH) $\pm 1.5\% \text{ RH}$ (20...99% RH) (After Calibration) (Indoor Sensor)
	Resolution	0.01% RH < 10% RH - 0.1% RH > 10% RH (Indoor Sensor)
Temperature Measurement	Location	Cabinet Inside (Standard), Cabinet Outside (Optional)
	Range	-20 - +125°C
	Accuracy	$\pm 0.5^\circ\text{C}$ (at 25°C)
	Resolution	0.1°C
Date & Time	Date (dd.mm.yy) and Time (hh:mm:ss) Display With Real Time Clock (RTC)	



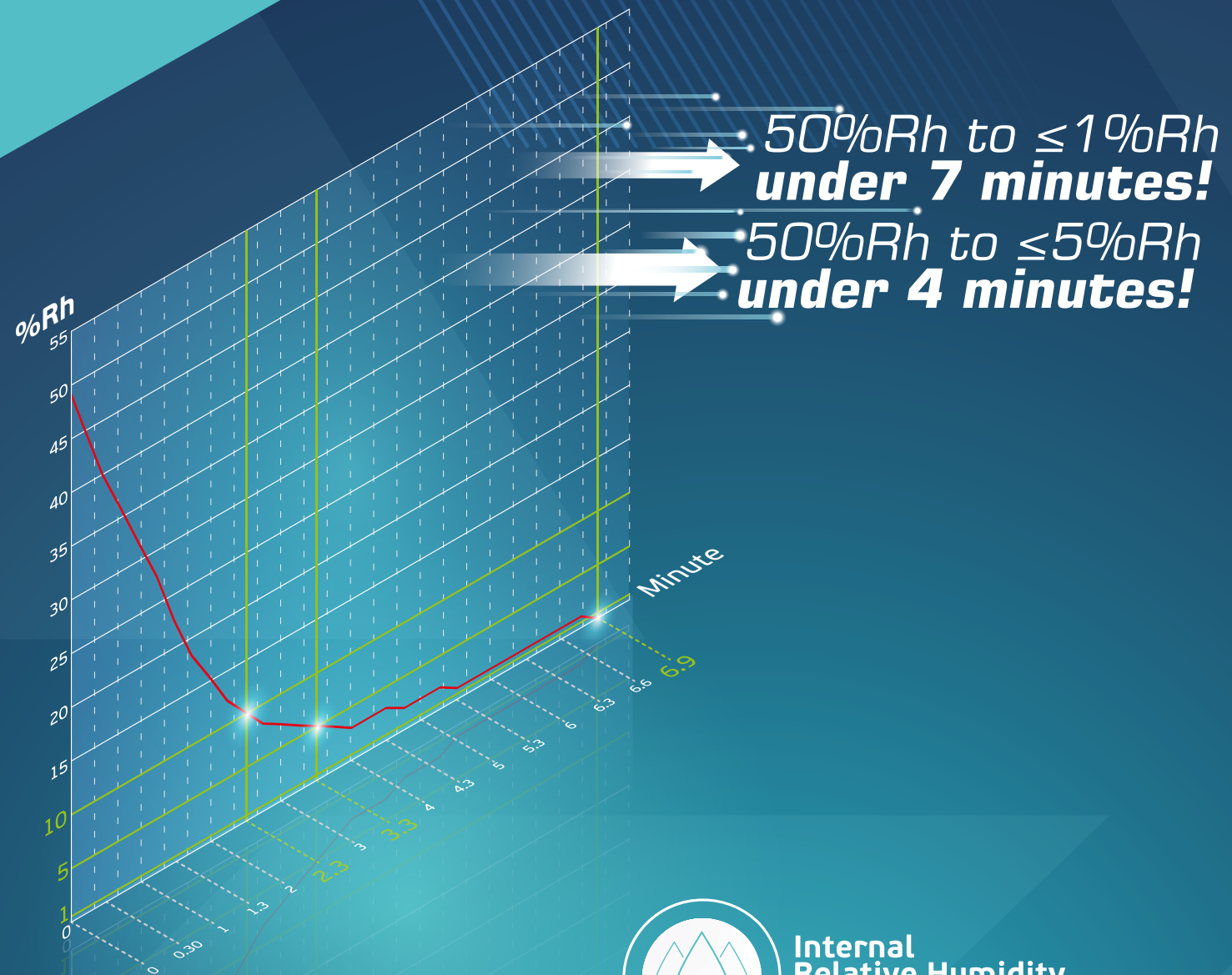
Alarm Function

Alarm Type	Standard Internal Buzzer, Optional Alarm Light Bar
Alarm Duration	Adjustable, Internal Buzzer: 5 - 255 sec. Alarm L. Bar: 1 - 60 min.
Humidity Level Alarm	Adjustable Offset: 0% RH - 40% RH
Temperature Level Alarm	Adjustable Time After Door Close: 1 - 60 minutes
Door Left Open Alarm	Adjustable Time to Alarm: 10 - 240 seconds



Cabinet Specifications

		XSC-300-DN2	XSC-600-DN2	XSC-900-DN2	XTC-510-DN2	XLC-510-DN2
UV Light	Capacity	2 x 15W				
	Type	UV-A				
	Socket Type	G13				
	Lamp Type	T8				
	Efficiency	20,6 uW/cm2				
	Wavelength	350-390 nm				
	Control	Manuel				
Extraction	Capacity	350 m3/h				
	Control	Manuel				
Heater	Capacity	2 X750 W				
	Heater Type	Electrical Heating Elements and Fans				
	Insulation Material	Elastomeric Rubber Foam, Thermal Conductivity < 0.036 W/mK				
	Control	Automatic				
Shelf Capacity	Material	Stainless Steel				
	Max Pcs / Cabinet	8	16	16	36	36
	Min. Shelf Height	60mm				
	Mounting / Demounting	With Shelf Holder Parts, No Tools Required				
Customized Storage Options (Depends on Customers' Requirement)	Sliding Shelves					
	Sliding Shelf Dividers					
Alarm Light Bar	Type	Buzzer and Two-Colored Lights, Magnetic Base				
	Buzzer Noise Level	70 dB (A)				
	Light Type and Color	Yellow and Red, 12 V, 5 W Lamps				
	Shape and Visibility	Cylindrical, 360° View				
	Mounting	Easy Attachable with Magnetic Base Plate, Built-In Screw Holes				
	Connection	4-Pin XLR Connector Behind Cabinet				



**The best place
for your product**



**Internal
Relative Humidity**
0.5% Rh • 95% Rh



**Internal
Temperature**
2°C-15°C-45°C-60°C-100°C
up to 125°C



**Sensor
Accuracy**
 ± 0.3 Rh Humidity
 $\pm 0.5^\circ\text{C}$ Temperature

The choice of
55 COUNTRIES

SOME OF
OUR REFERENCES

LOCKHEED MARTIN



BOEING

BOSCH
Invented for life

SIEMENS

AIRBUS



Honeywell

THALES

Fraunhofer

BAE SYSTEMS

LEONARDO

RHEINMETALL

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GENTEX
CORPORATION

BNA

ESEN

Collins Aerospace

Heraeus

SYSTEM
SENSOR

SEAGATE

MOOG

JABIL

and many more...

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Manufactured by EMT Electronics

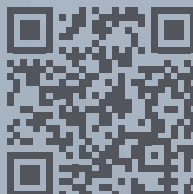
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Compliance with IPC/JEDEC-J-STD-033D standards
Compliance with CE and Rohs