

Desiccant dryers

# Heatless Adsorption Dryers



# Features and benefits

## Performance & air quality

- ✓ 7 dryer models cover the flow range between 400 and 2000 m<sup>3</sup>/h
- ✓ Dew point Class 1 and 2 guaranteed
- ✓ Combined with OMI filters, it guarantees high air quality, according to ISO 8573-1

## Superior reliability

- ✓ Proven electronic control with indication of performance
- ✓ Industry 4.0: Modbus RTU standard for all versions
- ✓ NEMA 3/IP54 Protection (also suitable for outdoor installation)

## Total cost of investment

- ✓ Reduced initial purchase cost - the OMI cheapest heatless dryer series
- ✓ Lower compressed air costs with the EMS option
- ✓ Purge reduction on compressed air demand (Compressor Interlock Function)
- ✓ Compact, space saving

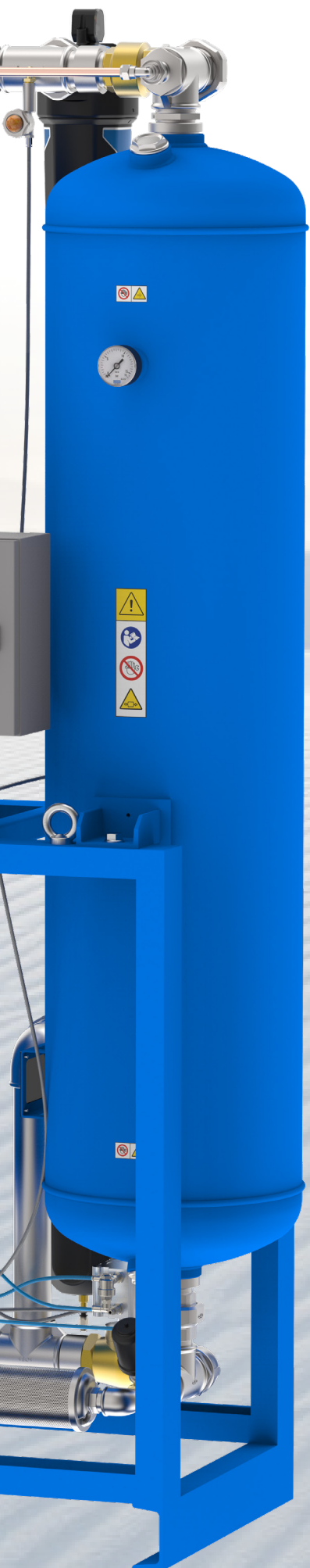
## Ease of use and serviceability

- ✓ Lifting points for a simple handling
- ✓ New electrical panel with intuitive label on the side, showing the main messages of the controller
- ✓ Low noise at Point-of-Use Silencers ≤ 75 DbA

## Performance improvement from previous HL/HU models

- ✓ From 2 series (HL and HU) to 1 (HLA): the -70° C version becomes an option of the HLA series
- ✓ Implementation of the EMS - Energy Management System - option





## Continuity

The HLA have been designed on the basis of a twenty-years experience in the field for the HL and HU series

## Robustness

Robust dryer, suitable for any installation, which maintains performance over time

## Optimized valves

Robust switching and purging valves normally opened Switching valves and normally closed Purge valves. Valves are designed for an high working cycle and long life. Purge valves are also provided with position indicators to facilitate performance check.

## Low profile design

Low profile design for easy access to key maintenance points at operator level, reducing the downtime. Lower silhouette which also minimizes transport costs.



## Standard features

- ✓ IP54 electrical enclosure
- ✓ Tower pressure gauges
- ✓ Colour change moisture indicator
- ✓ New digital controller
- ✓ MODBUS RS-485
- ✓ Compressor interlock function

## Optional features

- ✓ High Efficiency Pre-Filter and Dust Filter
- ✓ Fail-to-shift alarm - It monitors the dryer sequencing functions to ensure proper dryer operation by sensing the pressure in each tower and sending an alarm in case of anomalies. This option is available from models 1000m<sup>3</sup>/h and above
- ✓ IP65 electrical rating plus stainless steel control air tubing (from models 1000 m<sup>3</sup>/h and above)
- ✓ Stainless steel control air tubing
- ✓ -70° C pressure dew point
- ✓ Marine painting
- ... full options list available

## New Digital Controller

Preventative maintenance reminders alert Users to ensure consistent, uninterrupted service.

Thanks to the New digital controller Users will be relieved knowing that their operation will continue to run smoothly.

- ✓ Alerts based on running hours
- ✓ Maintenance alerts for:
  - ✓ Filter Element Change-out
  - ✓ Silencers Replacement
  - ✓ Valves replacement
  - ✓ Desiccant media change-out
- ✓ Dew point sensor service (only for dryers equipped with EMS)

Proactive maintenance for dryer reliability and customer uptime.



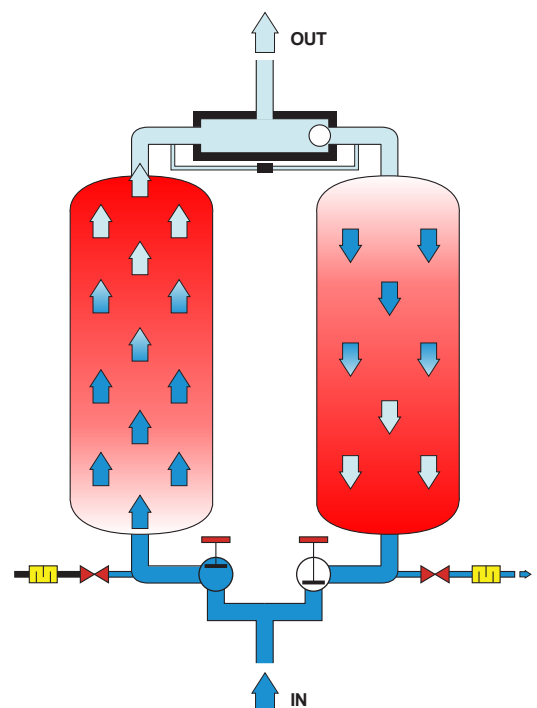
## How does it work?

Compressed air flows upwards within one tower, while the second tower is regenerated with a stream of dried air. Then the cycle is automatically reversed.

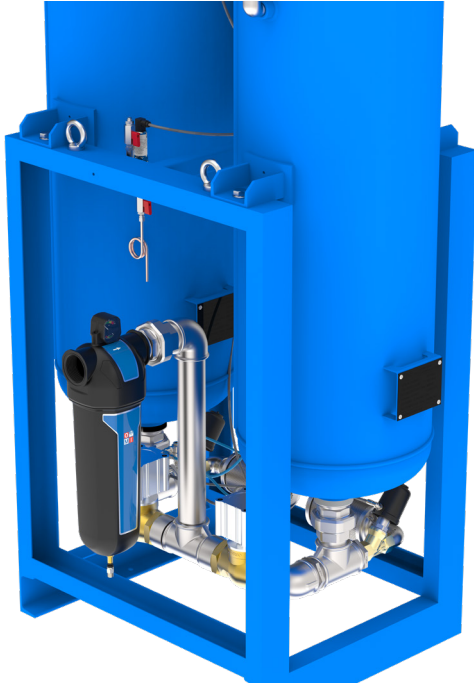
In operation, the activated alumina adsorbs a quantity of moisture in proportion to its weight and depending on working conditions. Every complete drying cycle lasts normally 10 minutes. This adsorbing phase is followed by a depressurising and a regeneration phase.

A portion of dried air - from 7 to 15% - is taken from the working receiver's outlet and is directed to the tower to be regenerated. The dried air, thanks to its low humidity content and to the expansion that occurs inside the second depressurised receiver, causes the drying material's "washing" by removing its humidity.

The humid purge air is exhausted to atmosphere through the purge valve and silencer. The regenerated tower is then gradually re-pressurised before it reverts to drying the compressed air stream.



# EMS - Energy Management System



The unit is provided with a High Precision Dew Point sensor connected to the Digital Controller.

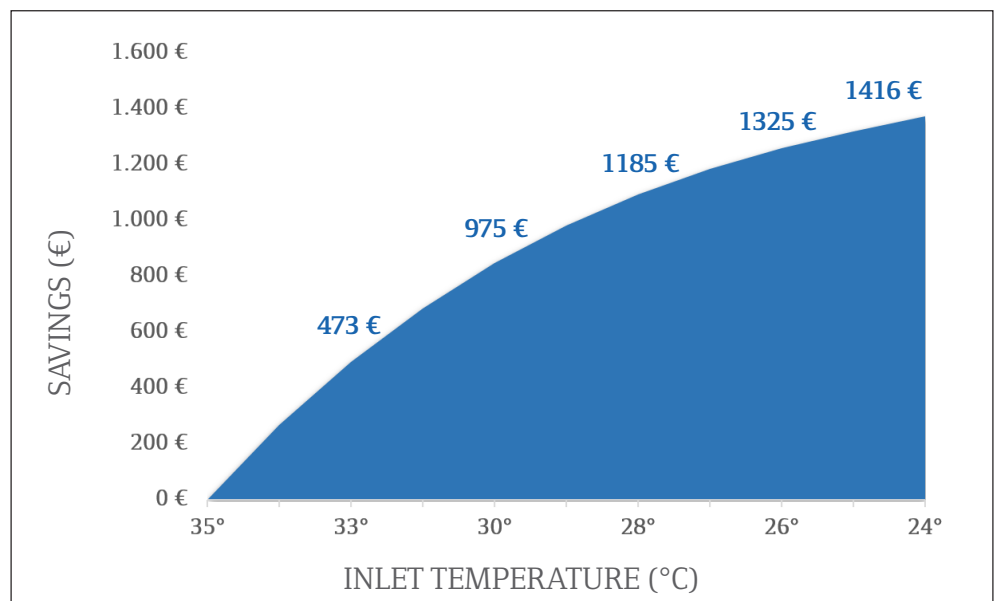
EMS adjusts the dryer's cycle according to the Dew Point Temperature of the outlet air, measured by the sensor.

When choosing the EMS option?

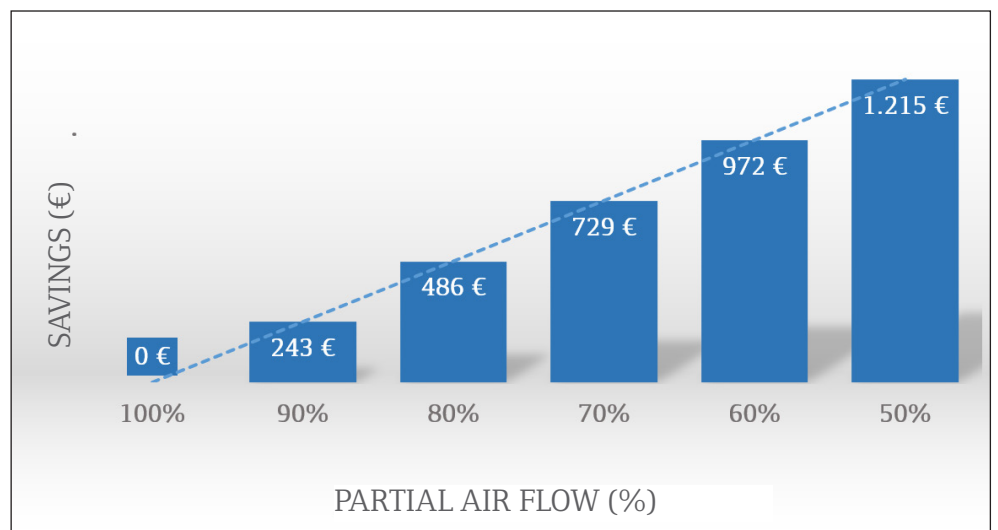
- ✓ for installations with variable partial airflows
- ✓ for installations with variable inlet air temperature
- ✓ for dryers working under their duty point

**Example: dryer HLA900, working 2000 hours per year, sized for a flow of 900 m<sup>3</sup>/h and for an inlet air temperature = 35°C**

Savings based on the reduction of the inlet air temperature



Savings based on a dryer working with a variable partial airflow half of the operating time (1000 hours)



## Product Selection & Performance

Dryer model	Connections	Flow rate			ISO8573-1: 2010 Classification Water content															
	BSPP	m³/h	l/min	CFM	Class 2 Standard		Class 1 Option													
HLA 400	1" ½	400	6667	235			Not available													
HLA 500	1" ½	500	8333	294																
HLA 750	2"	750	12500	441																
HLA 900	2"	900	15000	529	<table><tr><td colspan="2">Dewpoint</td></tr><tr><td>°C</td><td>°F</td></tr><tr><td>-40</td><td>-40</td></tr></table>		Dewpoint		°C	°F	-40	-40	<table><tr><td colspan="2">Dewpoint</td></tr><tr><td>°C</td><td>°F</td></tr><tr><td>-70</td><td>-100</td></tr></table>		Dewpoint		°C	°F	-70	-100
Dewpoint																				
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HLA 1200	2" ½	1200	20000	706																
HLA 1500	2" ½	1500	25000	882																
HLA 2000	2" ½	2000	33333	1176																

Performances refer to air suction of FAD 20°C (68°F), 1 bar (14.5 psig), and the following operating conditions:

7 bar (100 psig) working pressure, -40°C (-40°F) pressure dewpoint, 25°C (77°F) ambient temperature, 35°C (95°F) compressed air inlet temperature.

NPT connections are available on request.

## Technical Data

Models	Operating pressure				Operating temperature				Ambient temperature			
	Min		Max		Min		Max		Min		Max	
	bar g	psi g	bar g	psi g	°C	°F	°C	°F	°C	°F	°C	°F
HLA 400 - 2000	5	72	10	203	20	68	50	122	2	36	46	115

Models	Electrical supply		Drying cycle time*		Noise level
	Standard	Optional	Single column Refrigeration/ working cycle	Single column Total working cycle	
	V/ph/Hz	V/ph/Hz	min	min	
HLA 400 - 2000	230/1/50-60	115/1/60	5	10	<75

\*Drying cycle time on standard units for dryers without Energy Management System (EMS).

## Controller Options

[illegible]

# Correction Factors

FC1 - Correction factor for working pressure							
Minimum inlet pressure							
bar	5	6	7	8	9	10	
psi	73	87	102	116	131	145	
FC1	0,75	0,87	1	1,12	1,25	1,38	

FC2 - Correction factor for inlet air temperature							
Maximum inlet temperature							
°C	20	25	30	35	40	45	50
°F	68	77	86	95	104	113	122
FC2	1,18	1,15	1,09	1	0,88	0,72	0,52

FC3 - Correction factor for pressure dewpoint							
Class 1 option							
°C	-70	Apply this correction factor only on models with Class 1 dewpoint option					
°F	-100						
FC3	0,8						

Calculation of the dryer REAL FLOW RATE = nominal dryer flow rate x [FC1] x [FC2] x [FC3]

# Weights and Dimensions

Model	Connections	Dimensions						Weight	
		Width (W)		Depth (D)		Height (H)			
	BSPP	mm	in	mm	in	mm	in	kg	lbs
HLA 400	1" ½	825	32,5	530	20,8	2160	85	285	628,3
HLA 500	1" ½	796	31,3	550	21,6	2380	93,7	400	881,8
HLA 750	2"	970	38,2	620	24,4	2117	83,3	520	1146,4
HLA 900	2"	970	38,2	620	24,4	2305	90,7	700	1543,2
HLA 1200	2" ½	1220	48	710	27,9	2475	97,4	805	1774,72
HLA 1500	2" ½	1220	48	710	27,9	2790	109,8	920	2028,2
HLA 2000	2" ½	1370	53,9	853	33,6	2470	97,2	1250	2755,8

# Suggested Filtration

Dryer model		Suggested filter	
	Connections		Connections*
HLA 400	1½"	AF400	1½"
HLA 500		AF500	
HLA 750	2"	AF800	2"
HLA 900		AF1000	
HLA 1200	2" ½	AF 1560	3"
HLA 1500		AF 1560	
HLA 2000		AF 2700	

\* You may need some adaptors in order to match dryers and filters connections.



Pre-filter (Filtration grade)	Dryer		Post-filter (Filtration grade)	Applications
HF	⇒	HLA Series	⇒ PF + HF + Sterile filter*	Food & beverages (direct contact*), Pharmaceutical industry
			⇒ PF + HF + CF	Micro-electronics manufacture, Photographic film processing, Precise spray painting
			⇒ PF + HF	Chemical applications, Sensor-fluidics
			⇒ PF	Air gauging

\* Recommended. It refers to applications where compressed air is in direct contact with raw materials because a lower dew point guarantees less germ proliferation.

Filtration grades		ISO 8573-1 Max solid dimension intercepted		ISO 8573-1 Max oil concentration (aerosol and vapour)	
		µm	Class	mg/m³	Class
QF	Pre-filter suitable for the removal of solid particles. The strong mechanical resistance makes this filter the ideal initial protection of a compressed air system to retain impurities.	1	3	-	-
PF	Interception type filters suitable for solid and oil particles. These filters, by means of the impact, interception and coalescing principles, compel the submicronic liquid particles, which from the inside strain through the element, to collide and thus become larger micro droplets, which will drip to the bottom of the filter housing.	0,1	2	0,1	2
HF		0,01	1	0,01	1
CF	The activated carbon filter through the adsorption process attracts all odors and vapors left after desoiling and keep them on the surface of the activated carbon grain molecules. The element is made by thick activated carbon layer covered by fiber coating kept in place by an inside and outside stainless steel wall.	-	-	0,003	1

\*\* For further details on Sterile filters please contact our technical department



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