Ultra-High Purity Modular Desiccant Air Dryers

FLOW CAPACITY: 3 to 1110 scfm





“With the requirement for Class 1.2.1 air for compressed air coming in contact with products for human consumption, we turned to nano as we needed complete confidence in our equipment requirements.”

Baby food manufacturer - UK

Clean, dry compressed air is essential for efficient and reliable manufacturing. Untreated ambient air contains moisture, dust, and contaminants that can cause corrosion, bacterial growth, and equipment failure, leading to increased maintenance, downtime, and product spoilage. While filters remove particles and liquids, they can’t eliminate moisture vapor, which condenses as air temperature and pressure change.

Desiccant air dryers effectively remove this moisture by using a drying agent to lower the dew point, making them ideal for critical or low-temperature applications. They protect systems from corrosion, ensure compliance with strict air quality standards, and help maintain product quality. With improved reliability and reduced energy waste, desiccant dryers boost operational efficiency and cut long-term costs.

www.nano-purification.com



Multi-Bank Design

The unique multi-bank design enables additional dryers to be added in the future as demand increases and provides redundancy for ease of maintenance. Your nano modular desiccant air dryer can grow with your company.

nano D[1|2|3] Modular Desiccant Compressed Air Dryers

- Removal of water vapor by lowering the pressure dew point of your compressed air stream to -40°F (-94°F optional) to ensure a continuous supply of dry air.
- Low pressure drop and consistent dew point performance
- Modular design allows installation in spaces too small for a traditional dryer.
- Ease of service with patented, pre-assembled snowstorm filled desiccant and built-in after filter cartridges on D[1] (NDL 010 to NDL 050) and D[2] (NDL 060N to NDL 130N) ranges.
- Low noise during the exhaust and regeneration cycle
- Energy saving option available
- Many other options available to suit your installation







Features

Reliable High Performance Valves

- D^1 Series (NDL 010 to NDL 050) use integrated check valves and two pilot operated solenoid valves for proven performance and reliability.
- D^2 Series (NDL 060N to NDL 130N) use four pilot operated solenoid valves.
- D_3 Series (NDL 2110N to NDL 6130N), Inlet, exhaust and outlet air are controlled using coaxial flow valves integrated into the upper and lower manifolds provide unrestricted flow capacity and designed for durability, ease of maintenance and long service life.

Tower Gauges

- Standard on models D^2 & D^3 (NDL 060N and larger)



Patented Combined Filter & Desiccant Cartridges

- High density snowstorm filled desiccant provides maximum adsorption capacity.
- Built-in outlet filtration to eliminate the cost, pressure drop and maintenance associated with a separate after filter.
- Easy to replace cartridges simplify maintenance requirements D^1 & D^2 (NDL 010 to NDL 130N).

Floor or Wall Mounted

- Can be floor or wall mounted - simply by rotating the feet 90 (standard on D^1, optional on D^2).

Powered by nTech (D^2 & D^3)

- *Intuitive. Reliable. Connected.* nTech offers a simplistic icon base interface with all operations being a button press away. Check active alarms, change required set points, start and stop the product with dedicated buttons. Despite the small display size, the dynamic information display cycles through all relevant operational data meaning no navigation is required to view real time data. Connect nTech to a BMS and monitor product operational data (optional plug-in module required). Built-in memory retention means nTech picks up where it left off in the drying cycles ensuring consistently clean, dry air downstream.

Unique Exhaust Air Silencers

- Significantly reduces noise level during depressurization and purge cycles.

Constant Flow and Pressure

- Columns are repressurized before switching columns to ensure uninterrupted compressed air and consistent air pressure. Equalization also ensures long desiccant life due to minimized desiccant attrition.

Maximum Corrosion Protection

- High tensile aluminum columns are alocrom protected then externally powder coated to provide maximum protection for corrosive environments.

Benefits

Complete Range to Suit any Requirement

- 20 models available with flow rates from 3 to 1110 scfm
- Designed for use in compressor room, point of application or integrated into original equipment.

Guaranteed Performance

- In accordance with ISO 8573.1:2010, Class 2 dirt (1 micron) and Class 2 water (-40°F pressure dew point). Class 1 water (-94°F) as an option.

Easy to Install Space Saving Design

- The compact design allows installation in spaces too small for a traditional design.
- Easy to install & ready for use, the D^1 includes brackets for either, D^2 require an additional mounting kit for either floor or wall mounting.

Simplicity of Service

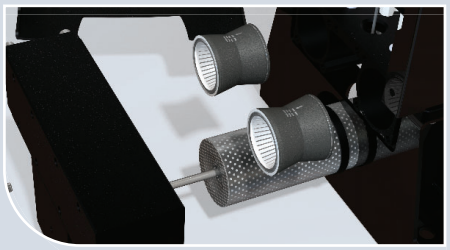
- Patented, pre-assembled snowstorm filled desiccant cartridges (D^1 & D^2) can be serviced in less than 15 minutes.
- Snowstorm filled columns with a built-in 1 micron after filter (D^3)

High Quality Construction

- 100% tested for leaks, proper operation and dew point performance.

Warranty

- Backed by a 2-year product warranty



Reliable, High Performance Valves



nTech Controller



Patented Combined Filter & Desiccant Cartridges

Optional Upgrades

Additional Monitoring & Communications

- Monitor inlet pressure and temperature to guarantee optimal operational performance.
- Add a Modbus TCP server via a plug-in module to monitor real time operational data such as dew point, alarms, valve operation and running hours to reduce downtime and assist troubleshooting and preventative maintenance. Additional communication options available on request.

Energy Saving Dewpoint Control

- With this option, a dew point sensor and display is incorporated into the dryer providing the ultimate in energy and power savings.
- Outlet dew point is constantly monitored allowing the cycle time to be adjusted depending on the actual moisture load saving valuable purge air on all styles of dryers.
- Easy field retrofit (D^2 & D^3)

Other

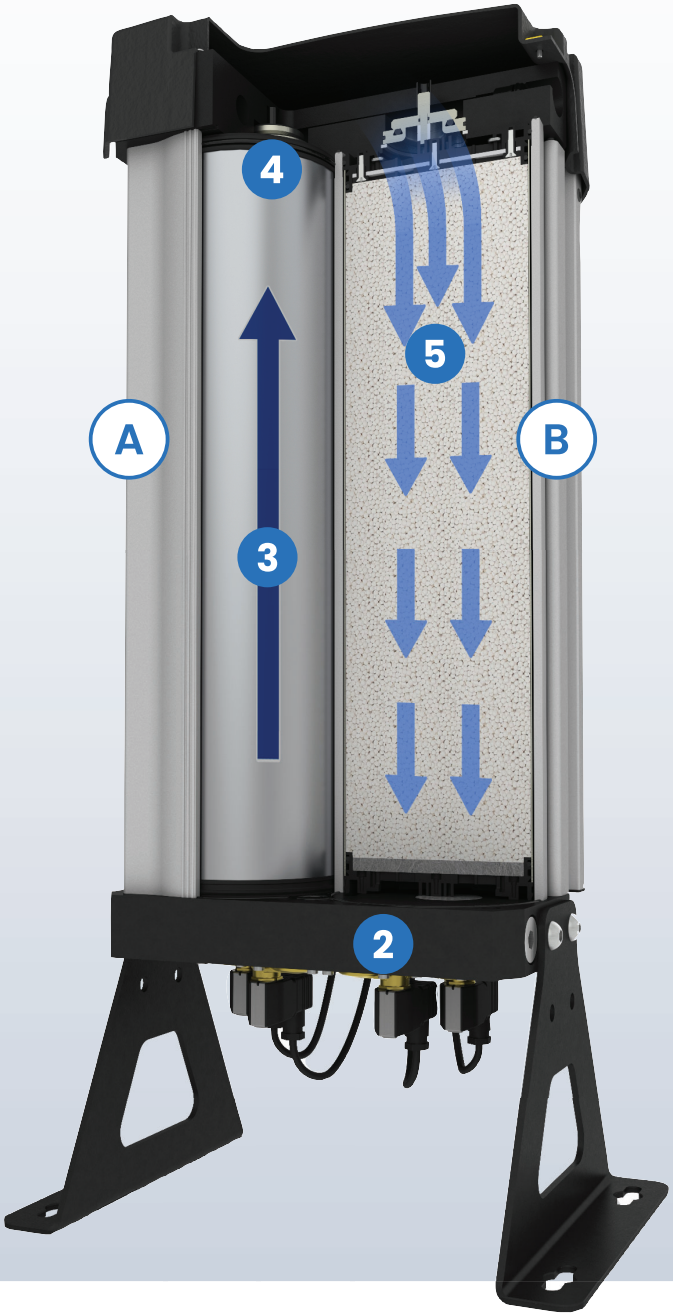
- 232 psig (MAWP) for higher pressure applications.
- Pneumatic controls; for safe operation, in remote locations where power is either limited or unavailable (available in D^2 and D^3 ranges).

How it works

Efficiently dry compressed air

The nano D[1|2|3] modular desiccant air dryers use the pressure swing adsorption principle to efficiently dry compressed air. They use a heatless twin tower configuration housed in a modular design. Each column contains a unique (and patented) desiccant cartridge which incorporates outlet filtration.

1. 0.01 micron pre-filter (external, supplied separately) removes all particulate, liquid water and oil aerosols to 0.01 ppm.
2. Clean, saturated air enters the dryer is a directed into Column A.
3. Compressed air travels through Column A for 2 minutes and moisture vapor is adsorbed to -40ºF PDP or better.
4. A final built-in filter removes particulate to 1.0 micron or better.
5. ~20% purge air expands through an orifice and regenerates Column B.
6. After 30 seconds, the purge exhaust valve closes and Column B repressurizes and is ready for adsorption to begin.
7. At the 2-minute mark (fixed cycle), Column A exhaust valve opens to regenerate. A PLC controls all operations.
8. Compressed air is costly, but nano dryers can be equipped with an energy-saving system to help reduce both air usage and operating expenses. By monitoring the actual pressure dew point, the PLC halts dryer cycling when the dew point is below the target, cutting down on compressor energy consumption, minimising purge air waste, and reducing valve wear.



Product Specifications

MODEL	SERIES	INLET & OUTLET (1)	RATED FLOW (2)	DIMENSIONS (INCHES)			WEIGHT	STANDARD AFTER FILTER (3)	RECOMMENDED PRE FILTER
		NPT	SCFM	A	B	C	LBS		
NDL 010	D[1]	⅜"	3	17.3	10.4	8.7	19.8	Integrated	GFN 0006 M01
NDL 020	D[1]	⅜"	5	17.3	10.4	8.7	19.8	Integrated	GFN 0006 M01
NDL 030	D[1]	⅜"	10	25.6	10.4	8.7	29.8	Integrated	GFN 0015 M01
NDL 040	D[1]	⅜"	15	35.0	10.4	13.0	40.8	Integrated	GFN 0015 M01
NDL 050	D[1]	½"	20	46.8	10.4	13.0	56.2	Integrated	GFN 0025 M01
NDL 060N	D[2]	1"	34	29.2	16.8	11.1	88	Integrated	GFN 0050 M01
NDL 070N	D[2]	1"	41	29.2	16.8	11.1	88	Integrated	GFN 0050 M01
NDL 080N	D[2]	1"	53	36.3	16.8	11.1	119	Integrated	GFN 0070 M01
NDL 090N	D[2]	1"	66	36.3	16.8	11.1	119	Integrated	GFN 0070 M01
NDL 100N	D[2]	1"	88	43.2	16.8	11.1	141	Integrated	GFN 0105 M01
NDL 110N	D[2]	1"	016	49.1	16.8	11.1	167	Integrated	GFN 0125 M01
NDL 120N	D[2]	1"	132	58.9	16.8	11.1	200	Integrated	GFN 0175 M01
NDL 130N	D[2]	1"	177	72.7	16.8	11.1	247	Integrated	GFN 0175 M01
NDL 2110N	D[3]	2"	212	50.0	15.7	26.9	214	Integrated	GFN 0280 M01
NDL 2120N	D[3]	2"	276	59.9	15.7	26.9	394	Integrated	GFN 0280 M01
NDL 2130N	D[3]	2"	400	73.7	15.7	26.9	575	Integrated	GFN 0450 M01
NDL 3130N	D[3]	2"	560	73.7	15.7	33.4	548	Integrated	GFN 0700 M01
NDL 4130N	D[3]	2 ½"	750	73.7	15.7	40.0	729	Integrated	GFN 0850 M01
NDL 6120N	D[3]	2 ½"	828	59.9	15.7	53.2	967	Integrated	GFN 0850 M01
NDL 6130N	D[3]	2 ½"	1110	73.7	15.7	53.2	1373	Integrated	GFN 1250 M01

SPECIFICATIONS	STANDARD	OPTIONAL
Maximum particle size (ISO Class) (4)	class 2 (1 micron)	class 1 (0.01 micron) (5)
Maximum water content (ISO Class) (4)	class 2 (-40°F pdp)	class 1 (-94°F)
Minimum operating pressure (psig) (6)	58	-
Maximum operating pressure (psig)	145 /232 (6)	(D^3) 232
Recommended operating temp range (°F)	35 to 100	-
Design operating temperature range (°F)	35 to 122	-
Power supply requirements	85 to 264V AC 50/60 Hz	24V DC

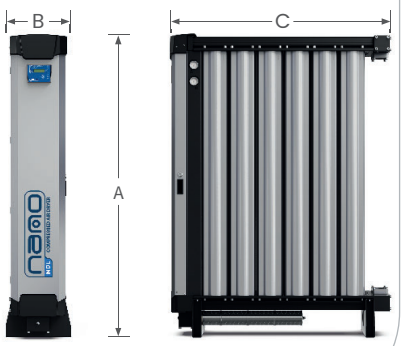
PRESSURE CORRECTION FACTORS (7)							
Operating pressure (psig)	60	75	90	100	115	130	145
Correction factor	0.63	0.75	0.88	1.00	1.13	1.25	1.38

TEMPERATURE CORRECTION FACTORS (7)						
Inlet temp (°F)	77	86	95	104	113	122
Correction factor	1.0	1.0	1.0	0.9	0.8	0.7

(1) NDL 010 to NDL 050 have push to connect fittings on the inlet and outlet. All other models have NPT threaded connections.
(2) At inlet conditions of 100 psig and 100°F and a -40°F outlet pressure dew point. For all other conditions refer to the correction factors above.
(3) Dryer includes built in 1 micron after filter.
(4) Per ISO 8573:1:2010 (E)
(5) With separate M01 grade after filter
(6) Maximum operating pressure as follows: models NDL 010 to 130N are 232 psig (MAWP) as standard; models NDL 2110N to 6130N are 145 psig (MAWP) as standard (optional 232 psig).
(7) To be used as a rough guide only. All applications should be confirmed by nano. Contact support@airandgassolutions.com.
(8) Technical specifications subject to change without notice. Direct inquiries to support@airandgassolutions.com.



NDL 010 to NDL 130N



NDL 2110N to NDL 6130N

Experience.
Customer.
Service.

nano

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