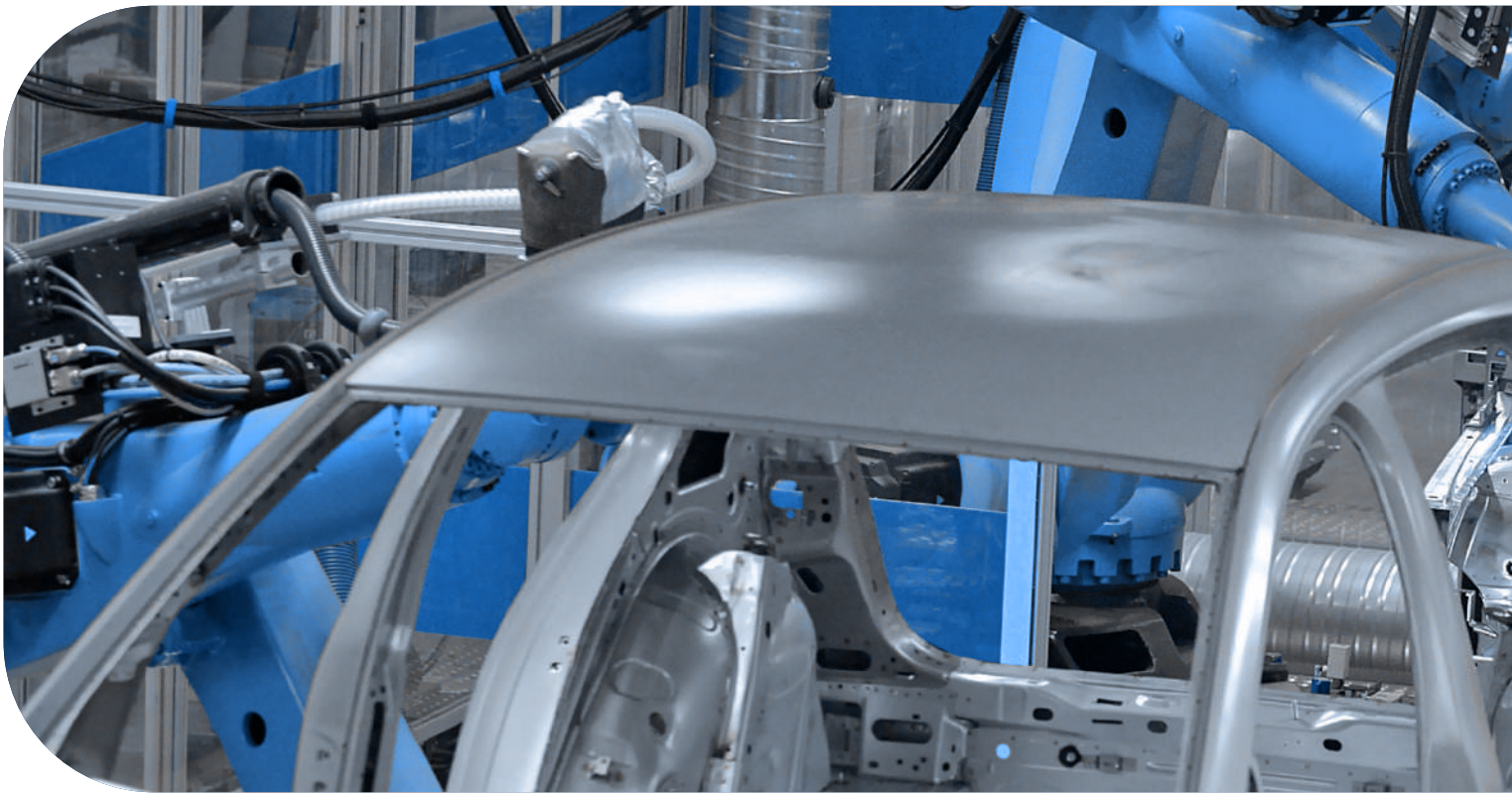
Twin Tower Desiccant Compressed Air Dryers

FLOW CAPACITY: 70 to 6,000 scfm



“We needed special options on our desiccant dryer. nano helped guide us to make informed decisions and built the perfect dryer for our company.”

A Parts Manufacturer - Southwestern USA

Clean, dry compressed a r s essent al n every eff c ent and pro table manufactur ng operat on worldw de. Amb ent a r conta ns h gh levels of mo sture, dust, hydrocarbons and other contam nants and, when left untreated, the results are corros on, bacter a, mold growth and freez ng w th n your compressed a r l nes. Th s contam nat on can cause damage to downstream equ pment and lead to ncreased ma ntenance, downt me and product spo lage.

Brand of Choice

Acquired by nano-purification solutions in 2022, the aircel brand is widely recognized for twin tower desiccant dryer engineering and manufacturing excellence. Made in the USA, aircel is the brand of choice for pressure swing adsorption twin tower drying applications.

Wh le compressed a r lters w ll remove sol d part culate, l qu ds and aerosols, they cannot remove the mo sture that rema ns n the form of vapor. Th s vapor condenses nto l qu d water throughout your compressed a r system as the pressure and temperature of the compressed a r changes.

nano aircel D^5 Twin Tower Desiccant Compressed Air Dryers

- Removal of water vapor by lower ng the pressure dew po nt of your compressed a r stream to -40°F (-94°F) opt onal on HL range) to ensure a cont nuous supply of dry a r.
- Low pressure drop and cons stent dew po nt performance
- Des gned for the most demand ng appl cat ons.
- Flex b l ty to bu ld a complete compressed a r solut on to match the requ rements of the customer.

Which Dryer is Right for You?

HL Heatless

Use expanded dry purge a r to regenerate des ccant beds

- Lowest n t al nvestment
- Requ re the most purge a r at 15
- -40°F dew po nt as standard for ISO Class 2 appl cat ons
- -94°F dew po nt ava lable as opt on for ISO Class 1 appl cat ons

AEHD Externally Heated

Use an electr c heater to heat the dry purge a r to regenerate the des ccant beds

- M d-pr ced n t al nvestment
- Excellent ROI
- Use less purge a r than heatless at approx mately 6-8
- -40°F dew po nt as standard for ISO Class 2 appl cat ons

ABP Blower Purge

Use a comb nat on of an amb ent blower and heater followed
by dry purge a r to regenerate the des ccant beds.

- Further reduces (or even el m nates) purge a r usage to approx mately 0-2 averaged over 4-hour cycle for dry a r cool ng.
- Dry a r cool ng can be turned off allow ng zero a r loss operat on.
- -40°F dew po nt as standard for ISO Class 2 appl cat ons
- H gher n t al nvestment
- Fastest ROI

How it Works

Heatless Range

In a tw n tower des ccant a r dryer, one tower s on-l ne dry ng the compressed a r wh le the other s off-l ne regenerat ng, wh ch means t s el m nat ng the water vapor t has collected so t can be used to dry aga n. The two towers sw tch back and forth so one s always dry ng wh le the other s regenerat ng or n standby.

The nano a rcel D[5] branded tw n tower des ccant dryers remove mo sture from your compressed a r system n the same way and to the same exact ng standards of performance and rel ab l ty. The d fference s how they regenerate and the amount of compressed a r and/or power requ red to do so.

A 0.01 m cron pre- lter removes all part culate, l qu d water and o l aerosols to 0.01 ppm.

B Clean, saturated a r enters the nlet valve wh ch d rects t to one of the des ccant towers.

C Compressed a r travels through tower a for 5 m nutes and mo sture vapor s adsorbed to -40°F PDP or better.

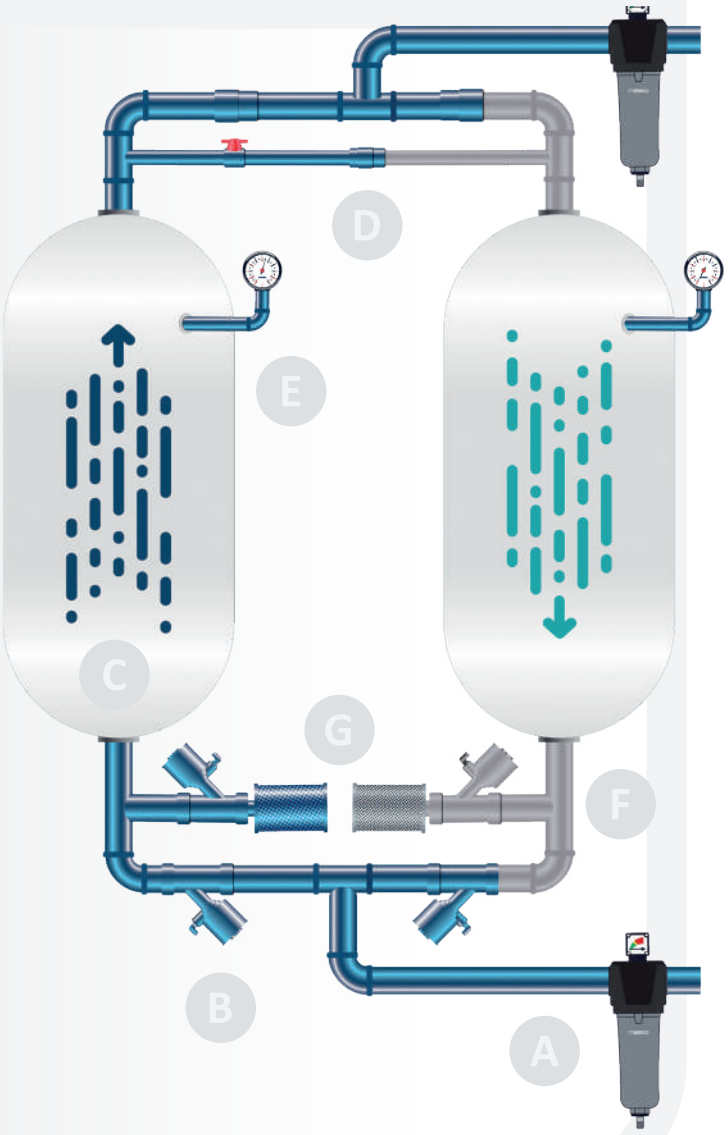
D A nal lter removes part culate to 1.0 m cron or better

E ~15 purge a r expands through an or ce and regenerates tower B (HL Range).

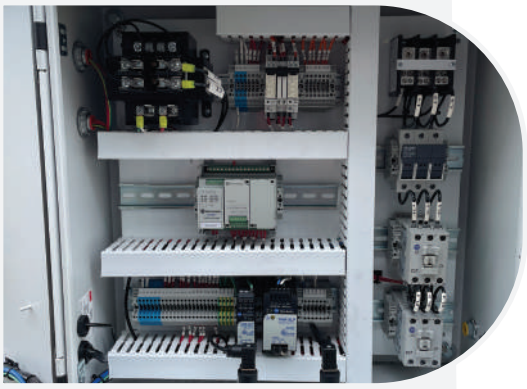
F After, the purge exhaust valve closes and tower B repressur zes and s ready for adsorpt on to beg n.

G At the 5-m nute mark (xed cycle), tower a exhaust valve opens to regenerate. A PLC controls all operat ons.

H Compressed a r s expens ve but nano dryers can be tted w th an energy sav ngs dev ce to save a r and save money. By measur ng actual pressure dew po nt, the PLC w ll extend the dryer cycle reduc ng compressor energy, wasted purge a r and valve wear and tear.

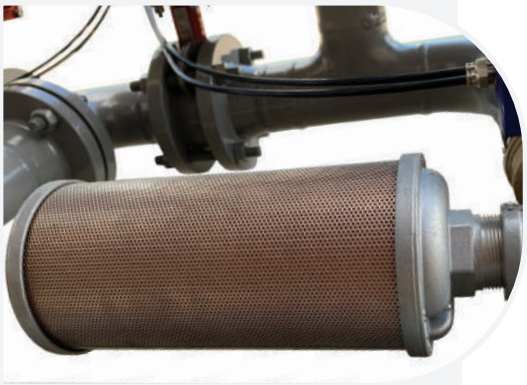


Features



PLC Controlled Operation

- The dryer s operated by a robust and rel able plc control system offer ng valuable features nclud ng 'power on', 'hours run' and 'serv ce requ red nd cators'.
- Memory retent on bu lt nto the plc enables the controller to p ck up where t left off n the dry ng cycle, ensur ng cons stently clean and dry a r downstream.
- Compressor synchron zat on s a standard energy sav ng feature on HL range wh ch starts and stops the dryer w th a s gnal from the compressor to el m nate purge loss when dry ng s not requ red.
- NEMA 4 control panel



Low Noise Exhaust Mufflers

- Spec cally des gned to m n m ze the no se of depressur zat on and purge exhaust.
- H gh ow des gn mproves regenerat on.

Low Watt Density Heater (AEHD & ABP ranges)

- Regenerat on c rcu t s fully nsulated for max mum eff c ency.
- Spec cally des gned for a long and dependable operat ng l fe n harsh ndustr al env ronments.

Secondary Heater Contactor (AEHD & ABP Ranges)

- Prov des protect on aga nst overheat ng n the event of a pr mary contactor fa lure.

Regenerative Blower (ABP Range)

- Ut l zes atmospher c a r for regenerat on.
- Easy ma ntenance and a rugged construct on w th TEFC prem um motor that ncludes ltered a r ntake.
- Vortex regenerat ve blower (models 2500 scfm and below) centr fugal blower (models 3000 scfm and larger).

Features

Pneumatically Operated Angle-Body Piston Valves

- Three-way valves w th sta nless steel nternals and Te on™ seats ensure rel able eld proven performance.
- Used for nlet valves on models HL 0070 to HL 0750.

High Performance Butterfly Valves

- Pneumat c actuators ensure prec se proport onal control and a bubble t ght seal no rubber seals.
- Rugged sta nless steel d sk and te on® seats comb ned w th a low pressure drop des gn.
- Used for nlet valves on HL range and AEHD ranges 800 scfm and larger for ABP range.

Stainless Steel Spring Check Valves

- Metal on metal seats for rel able operat on, even h gh temperature operat on
- Prov de worry-free operat on and m n mal ma ntenance.

Parallel Cooling Mode (ABP range)

- Features a un que parallel cool ng mode to further reduce the heat and dew po nt sp ke pr or to tower sw tch over. Dur ng the parallel cool ng mode, both nlet valves are open and d vert half-load to each tower, further cool ng the prev ously regenerated des ccant bed w th a larger volume of a r.
- Max mum sav ngs w th accurate dew po nt control

High Quality Construction

- ASME coded pressure vessels
- UL/cUL compl ant
- Act vated alum na des ccant made n the USA
- L ft ng lugs and/or fork l ft pockets on all products

Upgrades

Energy Saving Dew Point Control Option

- Standard on AEHD and ABP ranges
- W th th s opt on, a dew po nt sensor s ncorporated nto the dryer prov d ng the ult mate n energy and power sav ngs.
- Outlet dew po nt s constantly mon tored allow ng the cycle t me to be ad usted depend ng on the actual mo sture load sav ng valuable purge a r on all styles of dryers.
- Saves add t onal energy on heated dryers by reduc ng heater on-t me and blower run-t me.
- The -ES opt on reduces valve actuat on.

Validated Compressed Air Filter Packages

- nano pre and after ltrat on packages standard on HL, AEHD and ABP ranges.
- nano F² anged lters used on models above 1500 scfm
- 3-valve bypass ava lable for s ngle pre- and after- lter packages

Other Options Include

- Low amb ent k ts for outdoor env ronments
- Spec al pa nt n shes
- Enhanced corros on allowances for harsh amb ent cond t ons
- NEMA 7 explos on-proof des gns
- Rental packages w th a r dr ven controls and after cooler ava lable
- Custom des gns to comply w th spec cat ons welcome

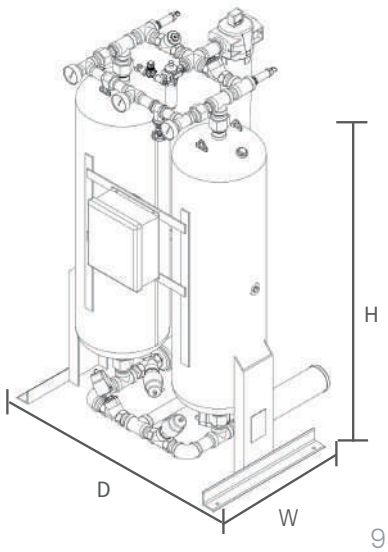
HL Heatless Specifications

MODEL	INLET & OUTLET (1)	RATED FLOW (2)	DIMENSIONS (INCHES)			APPROX. WEIGHT (3)	INCLUDED FILTRATION (4)	
	NPT(F)/FLG	SCFM	W	D	H	LBS	PRE FILTER	AFTER FILTER
HL 0070		70	30.5	22.6	71.5	275	GFN0085M01	GFN0085M1
HL 0100	1	100	34.0	25.5	74.0	300	GFN0105M01	GFN0105M1
HL 0150	1	150	34.0	25.5	74.0	415	GFN0175M01	GFN0175M1
HL 0200	1	200	38.5	32.8	83.5	540	GFN0325M01	GFN0325M1
HL 0250	1	250	38.5	32.8	83.5	590	GFN0325M01	GFN0325M1
HL 0300	1	300	48.0	35.5	84.1	600	GFN0325M01	GFN0325M1
HL 0350	2	350	48.8	42.3	84.4	735	GFN0450M01	GFN0450M1
HL 0450	2	450	48.8	42.3	84.4	1000	GFN0450M01	GFN0450M1
HL 0500	2	500	50.8	42.3	86.4	1100	GFN0700M01	GFN0700M1
HL 0600	2	600	50.8	42.3	86.5	1300	GFN0700M01	GFN0700M1
HL 0750	2	750	53.0	42.3	87.3	1500	GFN0850M01	GFN0850M1
HL 1000	3	1000	66.0	61.0	94.8	2600	GFN1250M01	GFN1250M1
HL 1250	3	1250	70.0	61.0	99.8	3000	GFN1250M01	GFN1250M1
HL 1500	3	1500	70.0	61.0	99.2	3400	GFN1500M01	GFN1500M1
HL 2000	4	2000	102.0	64.0	110.8	4600	NFZ2500M01	NFZ2500M1
HL 2500	4	2500	102.0	64.9	110.8	5000	NFZ2500M01	NFZ2500M1
HL 3000	6	3000	113.8	65.3	120.8	6500	NFZ3500M01	NFZ3500M1

SPECIFICATIONS	STANDARD	OPTIONAL
Max mum part cle s ze (ISO class)	class 2	class 1
Max mum water content (ISO class)	class 2	-
M n mum / des gn / max mum operat ng pressure range (HL 0070 to HL 1500) (ps g)	60 / 100 / 180	-
M n mum / des gn / max mum operat ng pressure range (HL 2000 to HL 3000) (ps g)	60 / 100 / 135	-
M n mum / des gn / max mum amb ent temperature (°F)	38 / 100 / 120	20 / 100 / 120
M n mum / des gn / max mum nlet temperature (°F)	38 / 100 / 120	-
Power supply requ rements	115V / 1Ph / 60Hz	230V / 1Ph / 60Hz & 12V DC

PRESSURE CORRECTION FACTORS (7)									
Operat ng pressure (ps g)	60	70	80	90	100	110	130	140	150
Correct on factor	0.65	0.74	0.83	0.91	1.00	1.04	1.12	1.16	1.20

TEMPERATURE CORRECTION FACTORS (7)								
Inlet temperature (°F)	70	80	90	100	105	110	115	120
Correct on factor	1.12	1.10	1.06	1.00	0.93	0.86	0.80	0.75



(1) 2 and below are NPT(F) threaded. 3 and above are flanged. All un ts w th 3 p p ng and above w ll be ans welded p pe
(2) In compl ance w th ADF 100 spec f cat ons for compressed a r dryers nlet temperature 100°F, amb ent temperature 100°F, nlet pressure dew po nt -40°F. For all other cond t ons refer to the correct on factors or contact support@nano-pur f cat on.com.
(3) Approx. we ght for all models does not nclude des ccant nstalled.
(4) Pre and after f lters mounted on dryer as standard.
(5) Per ISO 8573.1 2010
(6) Max mum work ng pressure for all models s 150 ps g. For h gher pressures, contact support@nano-pur f cat on.com.
(7) To be used as a rough gu de only. All appl cat ons should be conf rmed by nano. Contact nano for s z ng ass stance.
(8) All models are UL/cUL compl ant
(9) All models have ASME coded pressure vessels. CRN vessels for models HL 1500 and small. For other approvals, consult support@nano-pur f cat on.com.
(10) For s zes above 3000 scfm and pressure below 60 ps g, please contact support@nano-pur f cat on.com.

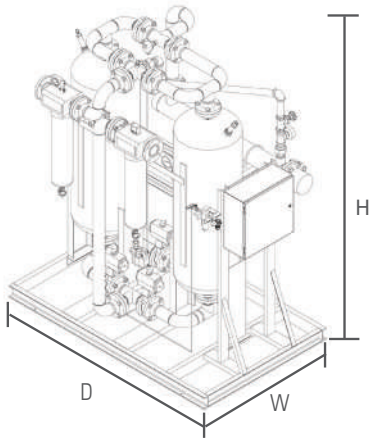
AEHD Externally Heated Specifications

MODEL	INLET & OUTLET [1]	RATED FLOW [2]	HEATER	DIMENSIONS (INCHES)			APPROX. WEIGHT [3]	INCLUDED FILTRATION [4]	
	NPT(F)/FLG	SCFM	Kw	W	D	H	LBS	PRE FILTER	AFTER FILTER
AEHD 150	1	150	2.5	36	58	77	1000	GF0175M01	NHT0150M1
AEHD 250	1	250	3.75	44	58	87	1500	GF0325M01	NHT0300M1
AEHD 350	2	350	6	53	62	87	2000	GF0450M01	NHT0450M1
AEHD 500	2	500	7	53	66	87	2300	GF0700M01	NHT0650M1
AEHD 750	2	750	11	53	70	89	2700	GF0850M01	NHT1000M1
AEHD 1000	3	1000	15	68	80	92	4100	GF1250M01	NHT1000M1
AEHD 1250	3	1250	18	68	85	97	4900	GF1250M01	NHT1250M1
AEHD 1400	3	1400	22	68	85	97	5200	GF1500M01	NHT1600M1
AEHD 1600	4	1600	27	73	85	99	7200	NFZ2500M01	NHT1600M1
AEHD 2000	4	2000	32.5	91	94	109	7800	NFZ2500M01	NFZ2500M1HT
AEHD 2500	4	2500	37	94	94	109	9500	NFZ2500M01	NFZ2500M1HT
AEHD 3000	6	3000	45	113	113	119	11500	NFZ3500M01	NFZ3500M1HT

SPECIFICATIONS	STANDARD	OPTIONAL
Max mum part cle s ze (ISO class) [5]	class 2 (1 m cron)	class 1 (0.01 m cron)
Max mum water content (ISO class) [5]	class 2 (-40°F PDP)	-
M n mum / des gn / max mum operat ng pressure range (ps g) [6]	60 / 100 / 150	58 to 250
M n mum / des gn / max mum amb ent temperature (°F)	38/ 100 / 120	-
M n mum / des gn / max mum nlet temperature (°F)	38 / 100 / 120	-
Power supply requ rements	460V AC/60Hz	-

PRESSURE CORRECTION FACTORS [7]									
Operat ng pressure (ps g)	60	70	80	90	100	110	130	140	150
Correct on factor	0.65	0.73	0.82	0.91	1.00	1.09	1.27	1.35	1.44

TEMPERATURE CORRECTION FACTORS [7]								
Inlet temperature (°F)	70	80	90	100	105	110	115	120
Correct on factor	1.20	1.15	1.10	1.00	0.90	0.80	0.70	0.60



(1) 2 and below are NPT(F) threaded. 3 and above are flanged. All un ts w th 3 p p ng and above w ll be ANSI welded p pe.
(2) In compl ance w th ADF 100 spec f cat ons for compressed a r dryers nlet temperature 100°F, amb ent temperature 100°F, nlet pressure dew po nt -40°F. For all other cond t ons refer to the correct on factors or contact support@nano-pur f cat on.com.
(3) Approx. we ght for all models ncludes des ccant un ts 1000 scfm and above sh p w th des ccant loose.
(4) Pre and after f lters mounted on dryer as standard.
(5) Per ISO 8573.1 2010
(6) Max mum work ng pressure for all models s 150 ps g. For h gher pressures, contact support@nano-pur f cat on.com.
(7) To be used as a rough gu de only. All appl cat ons should be conf rmed by nano. Contact nano for s z ng ass stance.
(8) All models are UL/cUL compl ant.
(9) All models have asme coded pressure vessels. For other approvals, consult support@nano-pur f cat on.com.

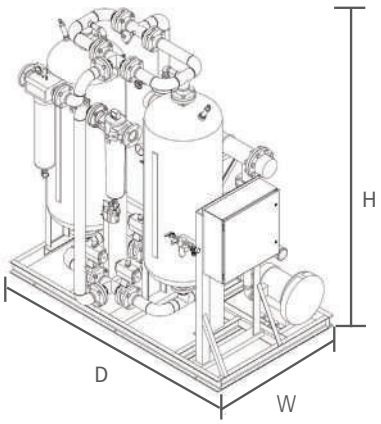
ABP Blower Purge Specifications

MODEL	INLET & OUTLET (1)	RATED FLOW (2)	HEATER	BLOWER	DIMENSIONS (INCHES)			APPROX. WEIGHT (3)	INCLUDED FILTRATION (4)	
	FLG	SCFM	Kw	HP	W	D	H	LBS	PRE FILTER	AFTER FILTER
ABP 800	3	800	18	5	60	87	100	3600	GF0850M01	NHT1000M1
ABP 1000	3	1000	22	5	60	90	100	4500	GF1250M01	NHT1000M1
ABP 1200	3	1200	27	7.5	61	98	105	5400	GF1250M01	NHT1250M1
ABP 1400	3	1400	32.5	10	70	105	106	6800	GF1500M01	NHT1600M1
ABP 1600	4	1600	37	10	81	106	107	7500	NFZ2500M01	NHT1600M1
ABP 2000	4	2000	45	10	81	106	116	9000	NFZ2500M01	NFZ2500M1HT
ABP 2500	4	2500	52	15	83	128	116	10700	NFZ2500M01	NFZ2500M1HT
ABP 3000	6	3000	64	15	111	131	127	13400	NFZ3500M01	NFZ3500M1HT
ABP 3500	6	3500	78	15	105	134	120	15600	NFZ3500M01	NFZ3500M1HT
ABP 4000	6	4000	90	15	106	147	128	17900	NFZ4000M01	NFZ4000M1HT
ABP 5000	6	5000	110	20	109	163	138	22300	NFZ5000M01	NFZ5000M1HT
ABP 6000	8	6000	120	25	118	169	147	26800	NFZ7500M01	NFZ7500M1HT

SPECIFICATIONS	STANDARD	OPTIONAL
Max mum part cle s ze (ISO class) (5)	class 2 (1 m cron)	class 1 (0.01 m cron)
Max mum water content (ISO class) (5)	class 2 (-40°F PDP)	-
M n mum / des gn / max mum operat ng pressure range (ps g) (6)	60 / 100 / 150	58 to 250
M n mum / des gn/ max mum amb ent temperature (°F)	38 / 100 / 120	-
M n mum / des gn / max mum nlet temperature (°F)	38 / 100 / 120	-
Power supply requ rements	460V AC/60Hz	-

PRESSURE CORRECTION FACTORS (7)									
Operat ng pressure (ps g)	60	70	80	90	100	110	130	140	150
Correct on factor	0.65	0.73	0.82	0.91	1.00	1.09	1.27	1.35	1.44

TEMPERATURE CORRECTION FACTORS (7)								
Inlet temperature (°F)	70	80	90	100	105	110	115	120
Correct on factor	1.20	1.15	1.10	1.00	0.90	0.80	0.70	0.60



(1) All un ts are flanged, ANSI welded p pe.
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(3) Approx. we ght for all models ncludes des ccant un ts 800 scfm and above sh p w th des ccant loose.
(4) Pre and after f lters mounted on dryer as standard.
(5) Per ISO 8573.1 2010
(6) Max mum work ng pressure for all models s 150 ps g. For h gher pressures, contact support@nano-pur f cat on.com.
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(8) All models are UL/cUL compl ant.
(9) All models have asme coded pressure vessels. For other approvals, consult support@nano-pur f cat on.com.

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