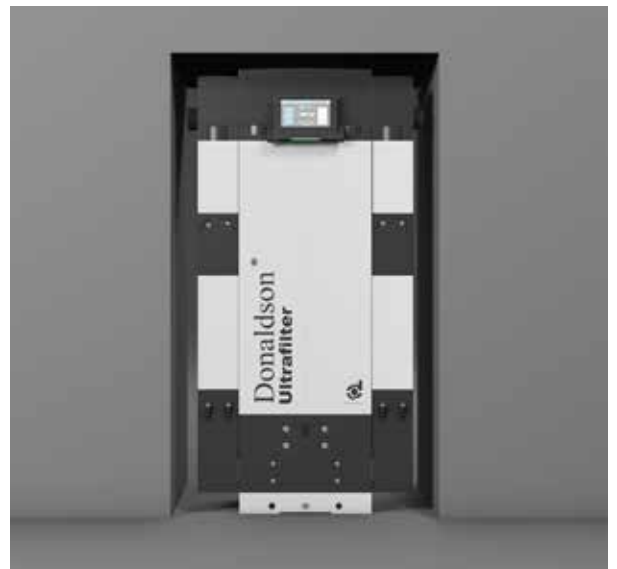
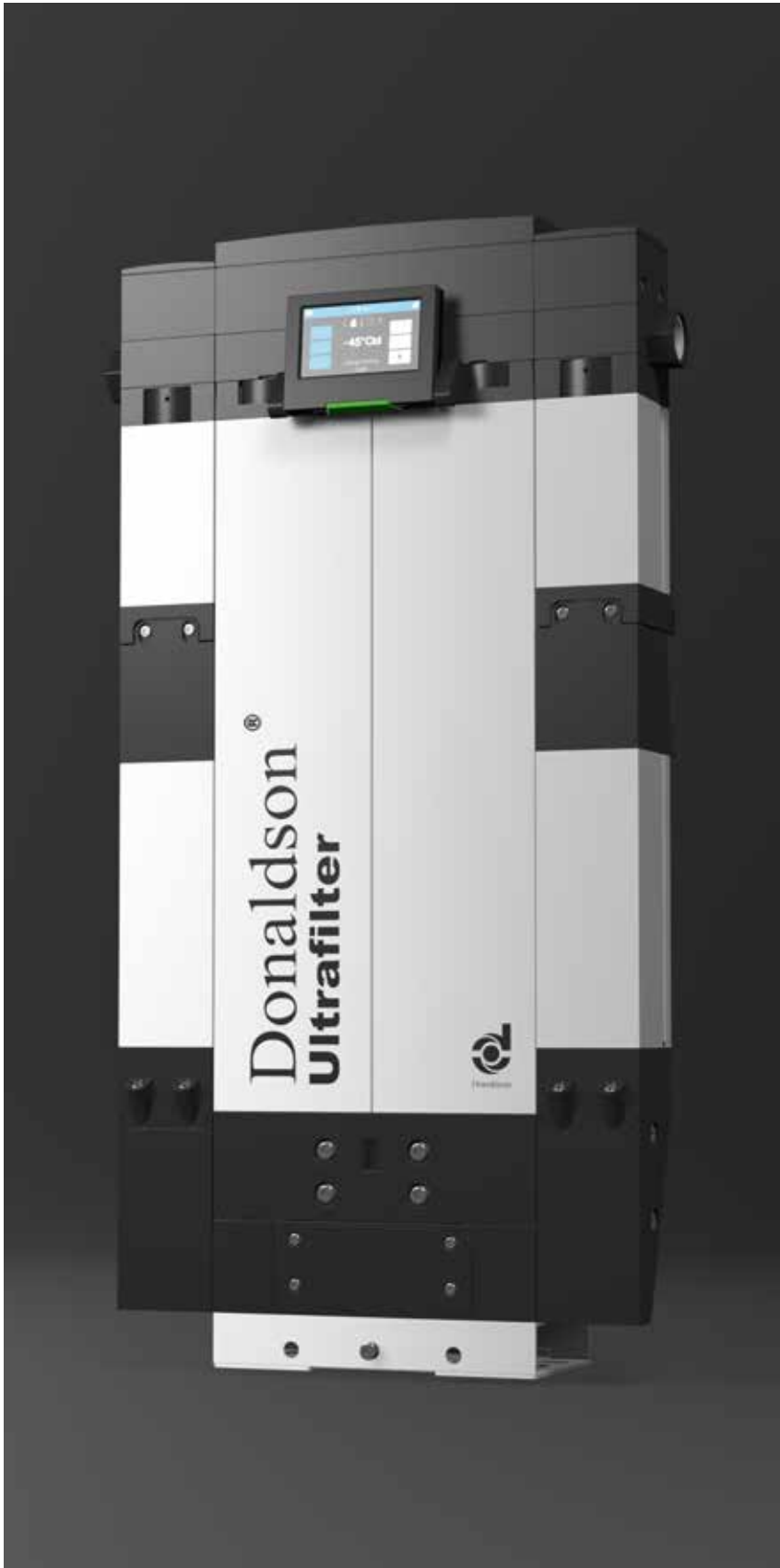




# HEATLESS REGENERATED ADSORPTION DRYER ULTRAPAC™ SMART





# COMPRESSED AIR PURIFICATION IN THREE STAGES

## Adsorption drying - why?

Compressed air is an important process and energy medium applied in all areas of industrial production. The compressor inlet suction air contains contaminants, dirt particles and humidity e.g. water vapour, which condenses in the compressed air systems. This condensate can lead to considerable costs (corrosion, freezing etc.).

These costs can be avoided by the application of an Ultrapac™ Smart adsorption dryer.

This complete and compact purification package Ultrapac™ Smart is equipped with a prefilter and afterfilter with UltraPleat™ technology.

- 1** The integrated prefilter retains solid particulates and liquid aerosols (oil/water).
- 2** The adsorption dryer next in line adsorbs the moisture in the compressed air up to a pressure dew point of -40 °C.
- 3** Finally, remaining solid particulates are retained in the integrated afterfilter.

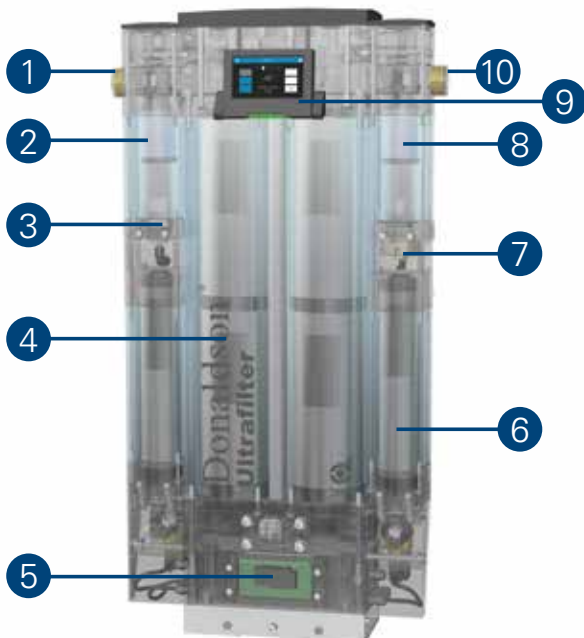
Due to the three-stage purification system a compressed air quality in accordance to ISO 8573-1:2010 is reliably achieved, which corresponds to the quality classes 1-2:1-2:1-2

Compressed air quality classes	Solid particles			Water	Oil (liquid and steam)
	Maximum particle count per m <sup>3</sup> (particle size, d in µm)			Pressure dew point	Concentration
	0.10 < d ≤ 0.5	0.5 < d ≤ 1.0	1.0 < d ≤ 5.0	°C	mg/m <sup>3</sup>
0	Specified according to application and better than Class 1				
1	20,000	400	10	≤ -70	≤ 0.01
2	400,000	6,000	100	≤ -40	≤ 0.1
3	n.a.	90,000	1,000	≤ -20	≤ 1
4	n.a.	n.a.	10,000	≤ +3	≤ 5
5	n.a.	n.a.	100,000	≤ +7	> 5

Compressed air quality classes according to ISO 8573-1:2010

n.a. = not specified

## Adsorption dryer Ultrapac™ Smart



### Compact design

1. Dryer inlet
2. Integrated UltraPleat™ prefilter
3. Condensate drain
4. Desiccant cartridge
5. Electronic control
6. UltraSilencer
7. Dew point transmitter (Superplus version)
8. Integrated UltraPleat™ afterfilter
9. Touch display (Superplus version)
10. Dryer outlet

# WELL THOUGHT-OUT

Validated performance data: Stable pressure dew point at minimal regeneration air requirements (ISO 7183), innovative UltraPleat™ filtration technology ensure a high filtration efficiency (ISO 12500).

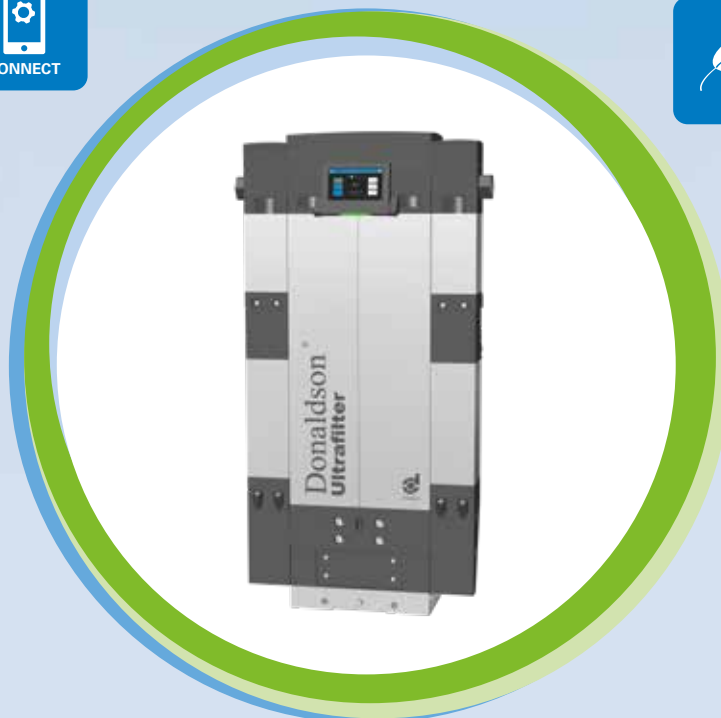
Smart Connectivity: Internet of Things (IoT) and Industry 4.0-ready. Bluetooth and current communication interfaces ensure a secure exchange of data.



Saving regeneration air through a capacity control and compressor coupling, lower differential pressure through UltraPleat™ compressed air filter.



The newly developed UltraSilencer ensures quiet operation (ISO 3744).



The adsorption dryer can be flexibly configured and installed, as well as integrated in machines and equipment.



Reliable achievement of compressed air quality suitable for the application in accordance to ISO 8573-1:2010.

Validations in accordance to ISO 7183 Ultracac™ Smart, ISO 12500-1 and 12500-3 UltraPleat™, ISO 3744 UltraSilencer.



The all-round package includes easy handling of maintenance and service. All relevant components are easily accessible, filter elements and desiccant cartridge can fast and easily be and fast exchanged.

# MODULAR, VARIABLE, COMPACT



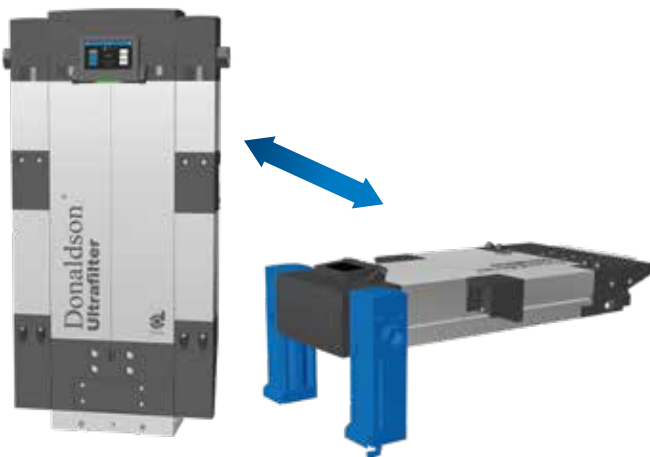
## Modular design

The Ultracpac™ Smart impresses through its variably arranged modules and flexible installation variants. Whether standing, vertical, horizontal or attached to the wall: The Ultracpac™ Smart always fits the spatial conditions.

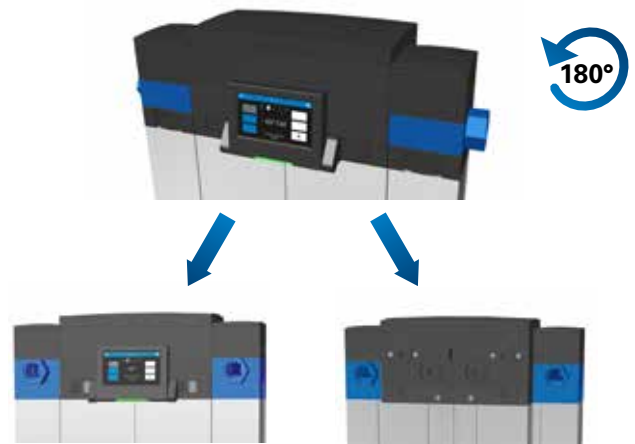
Additionally the inlet and outlet compressed air connections can be aligned in different directions and the prefilter and afterfilter are integrated into the adsorption dryer.

## Space-saving application through compact design and modular arrangement

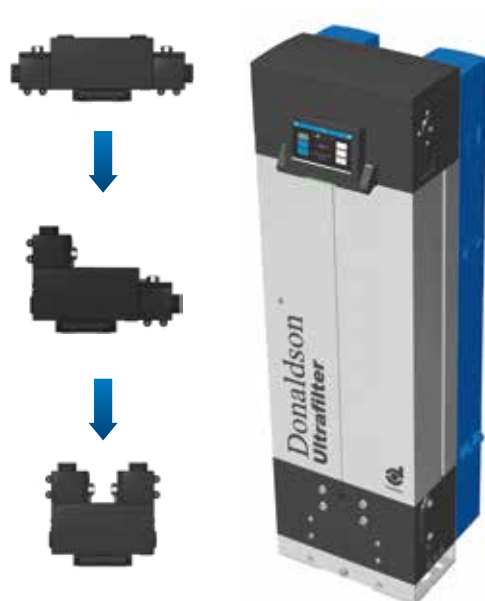
### Vertical and horizontal alignment



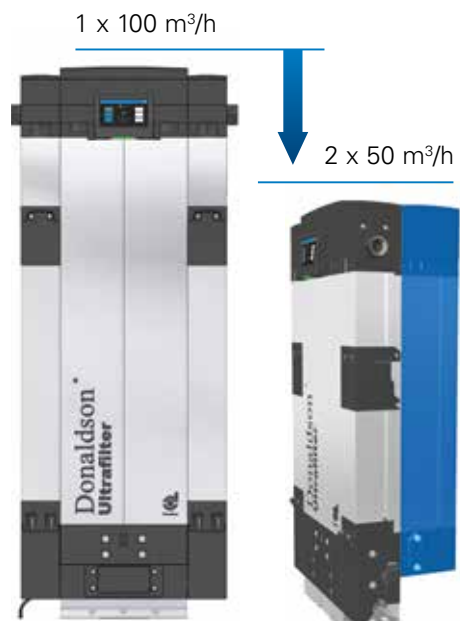
### Inlet and outlet variable rotatable



### Variable, compact arrangement



### Height reduction



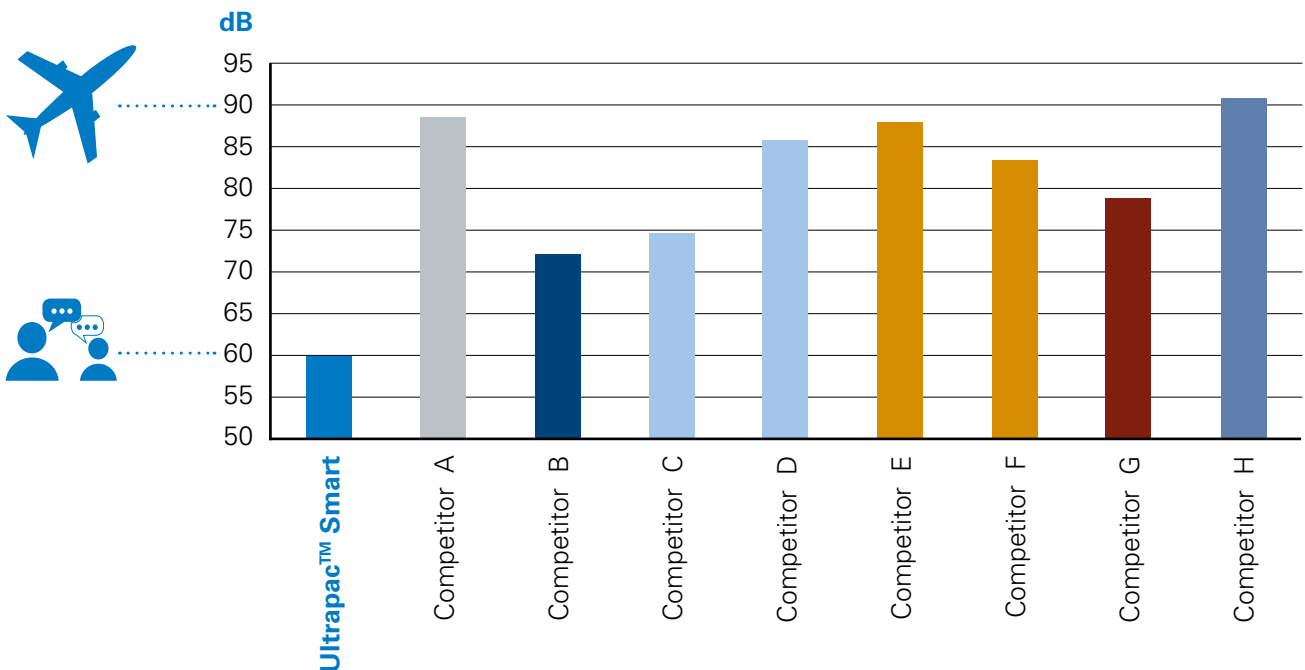
# QUIET, CLEVER, STABLE



## New silencer, quiet sounds

The Ultrapac™ Smart is significantly quieter than comparable adsorption dryers. It operates with noise emissions in the range of just 60 dB. This matches the volume of a normal conversation and effectively leads to a noise reduction in the work place.

The noise minimization is made possible by the development of the powerful UltraSilencer.



## Service-friendly cartridge, stable pressure dew point

The desiccant has a high adsorption capacity and excellent regeneration capabilities. The flow-optimized design leads to an optimum utilization of the desiccant volume even in partial load operation.

An additional plus point is the spring-loaded desiccant bed, which prevents abrasion of the desiccant and extends service life. The desiccant is protected against external influences such as pressure shocks by spring-loading.

Switching between adsorption and regeneration of the cartridges takes place thanks to a dew point transmitter integrated in the Superplus variant only when the desiccant is saturated. The pressure dew point remains stable at below -40 °C. This leads to high efficiency and operational safety.

## Clean and easy exchange of the desiccant cartridge



# SMART CONNECTIVITY



## Superplus Touch Display



- Bluetooth
- Smart connectivity
- Ultraeconomy (dew point control)
- Intermittent operation (compressor coupling)

## Plus LED Display



- Bluetooth
- Alarm contact
- Intermittent operation (compressor coupling)

## Standard LED Signal



- Alarm contact
- Intermittent operation (compressor coupling)



# ULTRAPLEAT™ TECHNOLOGY



The innovative UltraPleat filtration technology uses a new structure of coated high-tech fibres that are processed into a pleated filter medium with a high separation efficiency of liquid particles and a huge adsorption capacity for solid particles.



## Success Factors of the UltraPleat Technology

- 1 New filter media
- 2 Improved pleat (form and structure)
- 3 Improved filter media coating
- 4 Outer stainless steel support sleeve

# EXTENSIVE APPLICATION OPTIONS



Adsorption dryers are always applied where highly purified and dry compressed air is required in accordance with ISO 8573-1.

**Examples of application areas:**

- Food processing
- Beverage
- Pharmaceutical
- Medical
- Industrial machinery
- Plastic industry
- Laser cutting
- Packaging and bottling
- Packaging
- Optical measuring machines
- Automotive
- Energy



Feel free to send your request to [CAP-europe@donaldson.com](mailto:CAP-europe@donaldson.com)

**Food processing**



**Automotive**



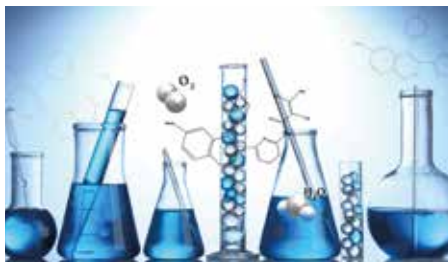
**Energy**



**Pharmaceutical**



**Chemical**



**Medical**



**Packaging and bottling**



**Beverage**

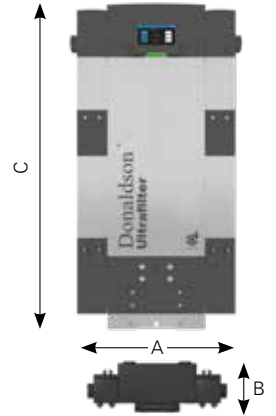


**Industrial machinery**



# ULTRAPAC SMART TECHNICAL DATA

Ultrapac Smart Superplus		Volume flow rate* inlet m <sup>3</sup> /h	Regeneration air consumption* m <sup>3</sup> /h	Compressed air connection Inch	Dimensions		
					Width (A) mm	Height (C) mm	Depth (B) mm
Mini	0005	5	0.85	1/2	314	497	114
	0010	10	1.70	1/2	314	764	114
	0015	15	2.55	1/2	314	1031	114
	0020	20	3.40	1/2	314	1298	114
	0025	25	4.25	1/2	314	1565	114
Midi	0035	35	5.95	1	464	866	168
	0050	50	8.50	1	464	1130	168
	0065	65	11.05	1	464	1394	168
	0080	80	13.60	1	464	1658	168
	0100	100	17.00	1	464	1922	168



Explanations: \*related to the intake condition of the compressor +20 °C, 1 bar (abs), at compressed air inlet temperature of +35 °C and 7 bar (g) operating pressure. Pressure dew point: -40 °C minimum pressure: 4 bar (g) Maximum pressure: 16 bar (g) inlet temperature: min +5 °C, max +55 °C (dimensioning see below).

## Sizing

f	4 bar (g)	5 bar (g)	6 bar (g)	7 bar (g)	8 bar (g)	9 bar (g)	10 bar (g)	11 bar (g)	12 bar (g)	13 bar (g)	14 bar (g)	15 bar (g)	16 bar (g)
20 °C	0.91	0.99	1.08	1.16	1.23	1.30	1.37	1.43	1.49	1.55	1.61	1.66	1.72
25 °C	0.89	0.98	1.07	1.15	1.22	1.29	1.36	1.42	1.47	1.53	1.59	1.65	1.70
30 °C	0.83	0.97	1.06	1.13	1.21	1.27	1.34	1.40	1.46	1.51	1.56	1.62	1.67
35 °C	0.63	0.75	0.88	1.00	1.12	1.25	1.33	1.39	1.45	1.50	1.55	1.60	1.65
40 °C	0.48	0.57	0.67	0.76	0.86	0.95	1.05	1.14	1.24	1.33	1.43	1.52	1.62
45 °C	0.37	0.44	0.51	0.58	0.66	0.73	0.81	0.88	0.95	1.03	1.10	1.17	1.25
50 °C	0.28	0.34	0.40	0.46	0.51	0.57	0.63	0.68	0.74	0.79	0.85	0.91	0.97
55 °C	0.22	0.27	0.31	0.36	0.40	0.44	0.49	0.53	0.58	0.62	0.67	0.71	0.76

$\dot{V}_{\text{corr}} = \frac{\dot{V}_{\text{nom}}}{f}$  Example:  $\dot{V}_{\text{nom}} = 22 \text{ m}^3/\text{h}$ , inlet temperature = 25 °C, operating pressure = 12 bar (g)

$\dot{V}_{\text{corr}} = \frac{22 \text{ Nm}^3/\text{h}}{1.47} = 14,97 \text{ Nm}^3/\text{h}$   
calculated dryer size: **Ultrapac Smart, type 0015**

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Compressed Air Filtration · Filters for Sterile Air, Steam and Liquids · Refrigerant Drying · Adsorption Drying · Condensate Drains · Condensate Purification Systems · Process Air and Gas Processing



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Donaldson Europe B.V.  
Research Park Building No. 1303 · Interleuvenlaan 1  
B-3001 Leuven · Belgium  
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[CAP-europe@donaldson.com](mailto:CAP-europe@donaldson.com) · [www.donaldson.com](http://www.donaldson.com)