

DELFIN · II 1/2D EX H IIIC T160°C DA/DB

Delfin DG 70 EXP EX1/2D



The Delfin DG 70 EXP EX1/2D is the flagship of the 100-litre DG EXP family with notified-body third-party certification per EN 17348:2022. The 5.5 kW three-phase side-channel blower delivers 560 m³/h airflow -- the highest in its class -- and the HEPA H14 filter area is doubled to 52,000 cm² compared to the DG 30 EXP, significantly reducing pressure drop and extending filter life under continuous operation with fine dust. The ATEX marking II 1/2D Ex h IIIC T160°C Da/Db covers internal Zone 20 + external Zone 21 and makes the model suitable for flagship installations in pharmaceutical production, chemical process plants and heavy metalworking where ATEX compliance is highly valued and where investment in notified-body certification is justified by insurance or audit requirements.

APPLICATIONS

- Primary vacuum in pharmaceutical GMP production in Zone 21 where notified-body certification is a contract requirement
- Continuous collection of conductive metal dust (aluminium, titanium, stainless grinding swarf) in IIIC class
- Central vacuum for installation with long hose runs and multi-operator use, where 560 m³/h ensures adequate reserve
- Chemical process plants with heavy dust loads where 52,000 cm² HEPA area gives 18-36 month filter life
- Mobile unit for relocation between multiple Zone 21/22 areas at the same plant -- the 1/2D class covers both zones
- Documentation-heavy industries (pharma, chemical, oil & gas) where the EU type-examination certificate eases the compliance process
- Heavy process-adjacent work where airflow and ATEX robustness are prioritised over purchase price and compact footprint

Technical specifications

ATEX marking	II 1/2D Ex h IIIC T160°C Da/Db
Internal / external zone	20 / 21
Motor type	Sidekanalblaeser, 3-faset (trifase)
Airflow	560 m ³ /h
Vacuum	196 mbar (2000 mmH ₂ O)
Container	100 L
Sound pressure	72 dB(A)
Filter class	H class
Filter type	HEPA H14 (EN 1822-5), 99,995 % MPPS, 52.000 cm ² filterflade, standard inkluderet
Primary filter	Stjerne/taske antistatisk polyester M-klasse (ANT M), 30.000 cm ² , Ø 500 mm
Collection system	Plastic bag
Material	AISI 304 rustfrit staal (beholder standard; filterhus som option)
IP class	IP65
Power	5.5 kW
Current	11.1 A
Voltage	400 V / 50 Hz / 3~
Inlet	Diameter 80 mm
Dimensions (L x W x H)	600 x 1030 x 1700 mm
Weight	145 kg

Questions and answers

Why does the DG 70 EXP EX1/2D have twice the HEPA area as the DG 30 EXP in the same cabinet?

The cabinet is identical (60 x 103 x 170 cm), but the HEPA filter element is dimensioned differently. The DG 30 EXP has 26,000 cm² HEPA area; the DG 70 EXP has 52,000 cm² -- a doubling achieved by using a deeper filter element with more filter folds. At the same flow this gives half the air velocity through the filter face and thus significantly longer filter life. When airflow is scaled to 560 m³/h (DG 70 EXP) vs 420 m³/h (DG 30 EXP), the actual load on the HEPA face is: DG 30 EXP = $420 / 2.6 = 162 \text{ m}^3/\text{m}^2/\text{h}$, DG 70 EXP = $560 / 5.2 = 108 \text{ m}^3/\text{m}^2/\text{h}$. The DG 70 EXP is therefore gentler on the filter per cubic metre of air, explaining the longer life under heavy dust loads.

Why is the vacuum lower on the DG 70 EXP (2000 mmH²O) than the DG 30 EXP (2400 mmH²O)?

This is a side-channel blower characteristic: there is a trade-off between flow and vacuum within the same motor family. The DG 70 EXP blower is dimensioned to deliver higher volume flow (560 m³/h) realised via a wider impeller and lower static pressure. The DG 30 EXP blower is dimensioned for lower flow (420 m³/h) but higher static pressure (2400 mmH²O). Practically: choose the DG 30 EXP when the application is pressure-driven (long hoses, bends, small suction openings such as filter cartridges or narrow channels) and choose the DG 70 EXP when the application is flow-driven (wide nozzle, short hoses, large surface). Both models can handle dust pickup up to Ø 80 mm suction opening, but the DG 70 EXP covers a larger area per unit time.

How does the DG 70 EXP EX1/2D compare to the self-certified DG 70 EXP (non-1/2D) on the same site?

The self-certified DG 70 EXP (marked II 3D Ex h tc IIIC T80°C/T165°C Dc) is categorised for external Zone 22 ONLY. Its ATEX conformity rests on the manufacturer's internal quality control without notified-body testing. The DG 70 EXP EX1/2D, by contrast, is third-party certified by a notified body and covers internal Zone 20 + external Zone 21 -- a substantial extension. The practical difference: the EX1/2D variant may be used in areas where an explosive dust atmosphere is likely during normal operation (Zone 21), and has documentation accepted by all European compliance regimes without further questions. Motor, cabinet and primary/HEPA filter are technically identical, but the third-party certified version also undergoes individual ATEX end-of-line testing before delivery.

Can the DG 70 EXP EX1/2D operate in sub-zero outdoor conditions?

The DG 70 EXP EX1/2D is dimensioned for operation at -10°C to +40°C ambient temperature in accordance with the standard. Below -10°C the side-channel blower lubricating oil and rubber seals are not specified and would most likely cause operational disturbances. For outdoor installation at the coldest winter temperatures (offshore, arctic climate, unheated storage), the model must be placed in a heated shed or cabinet. Alternatively, Delfin can supply an arctic version with synthetic cold-rated lubricating oil and EPDM seals upon request -- this is not the standard version and requires additional ATEX determination. At operating temperatures above +40°C motor derating must be considered: up to +60°C is possible with reduced continuous power and with manufacturer approval.

Contact and advisory

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