DELFIN · II 3D EX H TC IIIC T80°C (INT) /T165°C (EXT) DC

Delfin EXP 50 INERT

The Delfin EXP 50 INERT is the 4 kW variant of the DG EXP INERT series -- a stationary industrial vacuum with three-phase side-channel blower, 420 m³/h airflow and 44-litre neutralisation tank (37 L liquid + 7 L material) in AISI 304. Same pressure relief valve and H-HEPA final filtration as the ZFR 75 INERT, but with higher airflow and larger dimensions (66 x 118 x 145 cm). ATEX-certified for Zone 22 (II 3D Ex h tc IIIC) and performance-tested to EN 17348:2022. Used at process plants where airflow and continuous operation require a step up from the ZFR series.

APPLICATIONS

- Stationary process plants with large quantities of reactive metal powder
- Central 3D-print vacuuming with aluminium or titanium powder
- Defense ammunition facilities with continuous production
- Light-metal machining with high dust volume in Zone 22
- Powder metallurgy with round-the-clock operation and larger particle fractions

Technical specifications

ATEX marking	II 3D Ex h tc IIIC T80°C (int) /T165°C (ext) Dc
Internal / external zone	22 / 22
Motor type	Sidekanalblaeser, 3-faset (4 kW, 8,4 A)
Airflow	420 m³/h
Vacuum	314 mbar (3200 mmH_2O)
Container	44 L
Sound pressure	72 dB(A)
Filter class	H class
Filter type	Klasse H HEPA H14 (EN 1822-5), 99,995 % MPPS, 26.000 cm² filterflade
Primary filter	Stjerne/taske polyester ANT M-klasse antistatisk, 30.000 cm², diameter 500 mm
Cleaning system	Manuel filterrensning + trykudligningsventil inkluderet
Collection system	INERT neutralisation bath
Material	Lakeret staalkonstruktion (krop), AISI 304 INERT-beholder, ABS tilbehoersholder
IP class	IP65
Power	4.0 kW
Current	8.4 A
Voltage	400 V / 50 Hz / 3~
Inlet	Diameter 50 mm
Dimensions (L x W x H)	660 x 1180 x 1450 mm
Weight	137 kg

Questions and answers

What does INERT mean in this context?

INERT denotes a vacuum cleaner with a neutralising liquid bath in the collection tank. Dust is channelled directly into the liquid and inactivated immediately, so it cannot react with oxygen, heat or sparks. The technology is developed for reactive metallic dust (aluminium, titanium, magnesium, zirconium, lead dust from shooting ranges), where conventional dry collection would itself be an ignition source.

Is the INERT system tested to EN 17348:2022?

Yes. The entire Delfin INERT range is performance-tested to EN 17348:2022 -- the harmonized European standard for industrial vacuum cleaners in ATEX zones. The test confirms that the neutralisation bath actually inactivates reactive dust under real operating conditions, not just in a lab setup. Documentation available on request.

What types of dust is INERT technology intended for?

Reactive metallic dust: aluminium and aluminium alloys, titanium, magnesium, zirconium, fine iron powder, lead dust and primer residue from shooting ranges, and pyrophoric powders from aerospace and defense. For non-reactive dust (organic process dust, plastics, etc.) the INERT technology adds no further safety -- a standard ATEX or ACD model without liquid bath is selected instead.

How does the HEPA H14 final filter work together with the liquid bath?

The neutralisation bath inactivates dust at the moment of collection, but there will always be a fine aerosol fraction that passes the liquid surface. The HEPA H14 filter captures 99.995 % of particles down to 0.3 micrometres per EN 1822-5 (MPPS method) before exhaust. The combination secures both safe collection (no reactive dry particle) and clean exhaust (no health-hazardous aerosol). The filter is Included/Incluso as standard on all INERT models.

Contact and advisory

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