DELFIN · ACD VERSION FOR COMBUSTIBLE DUST IN ORDINARY LOCATION (IEC 60335-2-69 ANNEX AA -- INTERN KONSTRUKTION SVARENDE TIL ZONE 20, EKSTERN IKKE-ATEX)

Delfin CUBE 20 K2 PN ACD

The Delfin CUBE 20 K2 PN ACD is a stationary ACD deduster in Delfin's CUBE chassis -- an industrial particle collector for combustible dust in non-ATEX classified areas (IEC 60335-2-69 Annex AA). At its core is a 2.2 kW centrifugal fan (three-phase 400 V, IE3, IP65) delivering 2,500 m³/h airflow at 210 mmH²O (21 mbar) static vacuum. What sets the CUBE range apart is the filter system: 2 large cartridge filters (combined 200,000 cm² -- 4 times the filter surface of the ZFR EV's star filter) with automatic pulse-jet cleaning (PN). Compressed air is pulsed through the filter cartridges in an alternating pattern during operation, keeping filter surfaces clean without operator intervention -- built for continuous 8-24 hour operation without shutdown. The 90 L detachable container with internal plastic liner is on wheels for easy emptying. Forklift lifting points in the chassis make moving and positioning straightforward. Ideal for central dust collection systems, bakeries, feed plants and coating halls where dust is combustible but the area is not ATEX classified.

APPLICATIONS

- Central suction for combustible wood dust in furniture factories outside ATEX zone classification
- Medium-sized bakeries and flour industries where flour dust is combustible but the area is not ATEX
- Powder coating halls with continuous spray cycles and demanding filter cleaning
- Feed plants with grain, oil-cake or protein powder in non-classified zones
- MDF, OSB and chipboard processing where dust is combustible but ATEX is not required

Technical specifications

ATEX marking	ACD VERSION FOR COMBUSTIBLE DUST IN ORDINARY LOCATION (IEC 60335-2-69 Annex AA -- intern konstruktion svarende til Zone 20, ekstern ikke-ATEX)
Internal / external zone	20 / ikke-ATEX
Motor type	Centrifugalventilator IE3 (2,2 kW, 3-faset 400 V), ACD-konstruktion til braendbart stoev i ikke-ATEX-omraader (IEC 60335-2-69 Annex AA)
Airflow	2500 m³/h
Vacuum	21 mbar (210 mmH_2O)
Container	90 L
Sound pressure	72 dB(A)
Filter class	H class
Filter type	HEPA H14 (EN 1822-5), 99,995 % MPPS, slutfilter -- standard inkluderet
Primary filter	2 patron-filtre i polyester med PTFE-belagt overflade, klasse ANT M antistatisk, 200.000 cm² samlet filterflade
Cleaning system	Automatisk pulsejet-rensning (PN -- pneumatisk modstroemsskyl med trykluft), alternerende mellem patroner under drift
Collection system	Plastic bag
Material	Malet staalkonstruktion med gaffeltruck-loftepunkter i bunden (AISI 304 som option)
IP class	IP65
Power	2.2 kW
Voltage	400 V / 50 Hz / 3~
Inlet	Diameter 200 mm
Dimensions (L x W x H)	1350 x 880 x 2550 mm
Weight	250 kg

Questions and answers

What is ACD, and how does it differ from ATEX?

ACD (Approved for Combustible Dust) is a certification category in IEC 60335-2-69 Annex AA -- a standard for vacuum cleaners handling combustible dust in non-ATEX classified areas. The difference from ATEX is that the ACD area is NOT classified as an explosion-hazardous zone (Zone 20/21/22), but the dust itself is so combustible that it still requires constructive safety measures: earth grounding, antistatic filters, internal temperature limitation and closed enclosure. ACD is the correct certification when your risk analysis demonstrates combustible dust but no explosive atmosphere -- typically because the concentration never reaches LEL (Lower Explosive Limit). If the area IS classified as Zone 22, an ATEX version should be chosen (CUBE 20 K2 PN Z22).

How does the pulse-jet (PN) cleaning work on the cartridge filters?

Pulse-jet (PN -- pneumatic counter-flow cleaning) is an automatic filter cleaning system using short compressed-air pulses to clean the cartridge filters while the deduster operates. The principle is simple: a valve opens for a fraction of a second and sends a short compressed-air pulse (typically 5-7 bar) into the cartridge interior, causing the filter cloth to flex outward and shake the dust layer off the outer surface. Dust falls into the collection container. The pulses alternate between the two cartridges with 10-30 second intervals, so only one cartridge is out of service at a time while the other continues to filter. The result is stable suction-point vacuum over time without manual cleaning -- crucial for continuous operation.

How much compressed air does the pulse-jet cleaning require?

Consumption is modest because the pulses are short. Typical consumption is 50-150 nl/min at 5-7 bar -- in contrast to pneumatic venturi vacuums which draw 500-2,500 nl/min continuously. A standard industrial compressed-air installation at 6-8 bar with a 100-200 L buffer tank can easily supply it. Pulses are fired typically every 10-30 seconds depending on dust load -- the controller adjusts the interval automatically based on filter pressure drop. Important: compressed air must be clean (filter, water separator, cooler) to extend cartridge life -- oil and water in compressed air wear the cartridge coating and can permanently clog the filter cloth.

What does the dual suction inlet mean -- 1 x 200 mm or 2 x 150 mm?

The CUBE 20 has two inlet options. Standard is a single 200 mm inlet (oe200) used when the deduster serves one suction circuit or one extraction arm at full flow. Alternatively, 2 x 150 mm (oe150) can be configured -- two separate inlets each accepting an extraction arm or suction circuit. Total airflow remains 2,500 m³/h, but is now distributed across two points at ca. 1,250 m³/h each. The difference is that the dual configuration allows two operators to work independently without one's start-up disturbing the other's suction-point vacuum -- good for parallel work at welding booths or grinding stations. Choose configuration based on installation architecture.

Contact and advisory

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