DIFFUSER

IMPULSNI SPIRALNI DESTRATIFIKATOR
AKSIJALNO RASIPANJE IMPULSA

IMPULSE AXIAL SCATTER

APLIKACIJE

Destratifikatori serije DIFFUSER su idealni za mešanje vazduha industrijskih i civilnih objekata srednje i velike zapremine, kao što su skladišta, skladišta, natkrivene strukture za sportske vežbe, sredine za stočarske aktivnosti itd. U praksi, gde god želite da eliminišete fenomen raslojavanja toplote i vlage, sa posledičnim rasipanjem energije i nedostatkom blagostanja za ljude.

KARAKTERISTIKE

DIFFUSER izaziva mešanje vazduha u okruženju, čak i velikih dimenzija, ujednačavajući temperaturu u bilo kojoj tački i na bilo kojoj visini. Poznato je da se u zimskoj sezoni zagrejani vazduh podiže naviše, raspršujući se kroz krov i prozore. U industrijskoj sredini zagrejanoj grejačima vazduha mogli bismo da imamo i do 15°C razlike između poda i potkrovlja; velika količina toplotne energije se stoga gubi da bi se obezbedila zadovoljavajuća temperatura zemljišta. Tokom letnje sezone, međutim, dolazi do raslojavanja vazduha bogatog vlažnošću, pa mešanje ovog poslednjeg u kombinaciji sa otvaranjem postojećih prozora pogoduje obnavljanju vazduha,obezbeđujući bolje uslove za život. Usvajanje niskostrujnih apsorpcionih, male brzine i podesivih motora, dizajn difuzora, radnog kola i transportera omogućavaju rešavanje navedenih problema na najefikasniji način. Upotreba DIFFUSER u poređenju sa centrifugalnim sistemima ima prednost u manjem broju instalacija (manje priključaka i potrošnje električne energije), zahvaljujući većim uticajnim površinama. Dizajn difuzora i podesivi motori sprečavaju stvaranje dosadnih strujanja hladnog vazduha i isprekidan rad.

KONSTRUKCIJA

- Prstenasti transporter velikog radijusa u usisu i unutra snabdevanje sa difuzorom, zaštićeno od atmosferskih uticaja.
- Lanci za pričvršćivanje.
- Mreža sa strane motora, od čelične žice i zaštićena od atmosferskih uticaja.
- Radno kolo sa lopaticama od tehnopolimera i glavčinom od livenog aluminijuma. Balansiranje prema UNI ISO 21940-11 standardima.
- Trofazni ili jednofazni asinhroni elektromotor naizmenične struje sa termičkom zaštitom, podesivom brzinom, IP 55 zaštitom, izolacijom F klase.
- Izvedba 5 (direktna spojnica sa konzolnim radnim kolom).

TEHNIČKE SPECIFIKACIJE

DIFFUSER STANDARD

- Vazduh koji se prenosi: čist ili malo prašnjav, neabrazivan.
- Temperatura transportovanog vazduha: -20 ° C / + 50 ° C.
- Napon napajanja:
  trofazna verzija (T) 400V-3Ph pri 1 brzini.
  monofazna verzija (M) 230V-1Ph, podesiva.
- Frekfencija: 50Hz.
- Protok vazduha od motora do radnog kola, položaj A (FMG)

PRIBOR

- Regulatori brzine (SR)
- Sonda za temperaturu sa digitalnim termostatom (TDS).
- Kontrolni paneli za automatsku kontrolu temperature i brzin (KEA).
- Servisni prekidač (SV).

NA ZAHTEV

- Verzija za posebno visoke zgrade sa instalacijama na visini veće od 8/9 metara od zemlje.

NAPOMENA

- DIFUZORI nisu pogođeni ERP direktivom 2009/125/CE.

APPLICATIONS

Scatters of DIFFUSER line are designed to mix the air wherever there is the need to eliminate heat and humidity stratification, with consequent wastes of energy and discomfort for the people. For instance in industrial and commercial buildings, sporting halls, warehouses, stores, stock-farms etc.

ADVANTAGES

DIFFUSER provides the mixing of the air, even in big size environments, allowing a uniform temperature in any point and height. It is known that during the winter season, the hot air has the tendency to rise up to the top dispersing through the roof covering and windows.
An industrial environment heated with thermal appliances could have up to 15°C difference in temperature between the floor and the ceiling. A great amount of energy is therefore wasted to guarantee a satisfactory temperature to the ground. During the summer season there is a stratification of the dumpy air towards the ground, therefore the mixing of this air, together with the opening of the windows, consent the renewal improving the living conditions.
The use of low energy consumption motors, low speed and adjustable, the design of the diffuser, impeller and casing, allow the best possible solution to the above mentioned problems. DIFFUSER, if compared with the centrifugal systems, has the advantage of fewer installations (less connections and electrical consumptions), due to the greater area of influence. The design of DIFFUSER and the speed adjustable motors avoid the arising of troublesome cold airflows and pulsations.

CONSTRUCTION

- *Ring casing, with double wide round shaped nozzles, and diffuser resistant to atmospheric agents.*
- *Chains and fixing bracket.*
- *Inlet grid in steel rod, protected against the atmospheric agents.*
- *Impeller with high efficiency air foil blades in plastic materials and hub in die-cast aluminum. Balancing according to UNI ISO 21940-11.*
- *Asynchronous electric motor three and single phase with thermal protection, speed adjustable, protection IP 55, Class F insulated, service S1.*
- *Arrangement 5 (impeller directly coupled to motor shaft).*

TECHNICAL SPECIFICATIONS

DIFFUSER STANDARD

- *Conveyed air: clean, not abrasive.*
- *Temperature of conveyed air: -20°C / +50°C.*
- *Voltage:*
  Three-phase version (T) 400V-3Ph.
- *Single-phase version (M) 230V-1Ph speed adjustable.*
- *Frequency: 50Hz.*
- *Air flow from motor to impeller, position A (FMG).*

ACCESSORIES

- *Speed regulator (SR).*
- *Temperature feeler with thermostat (TDS).*
- *Electric panels for automatic control of the temperature and speed (QEA).*
- *Service switch (SW).*

ON REQUEST

- *Versions equipped with an ECi electronically commutated motor with permanent magnets.*

NOTE

- *DIFFUSER are not affected by ERP Directive 2009/125/CE.*

DIFFUSER

KARAKTERISTIKE - CHARACTERISTICS

Performanse prikazane na dijagramima odnose se na vazduh na temperaturi od 15°C i na nadmorskoj visini od 0 metara, a dobijene su u instalacijama tipa "C" u odsustvu mreže i pribora.

Performances shown in the selection diagrams refer to air at 15°C temperature and 0 mt a.s.l. altitude, and they were obtained in installation type "C" with no grid nor accessories.

MONOFAZNO / *SINGLE-PHASE* **(1Ph-230V 50Hz)**

Modello *Model*	Portata - *Flow rate* (m^3/h)	Velocità - *Speed* (rpm)	Pm (kW)	In max (A)	Lp (dB(A))
80 M	9.000	500	0,12	2,3	32

TROFAZNO / *THREE-PHASE* **(3Ph-400V**

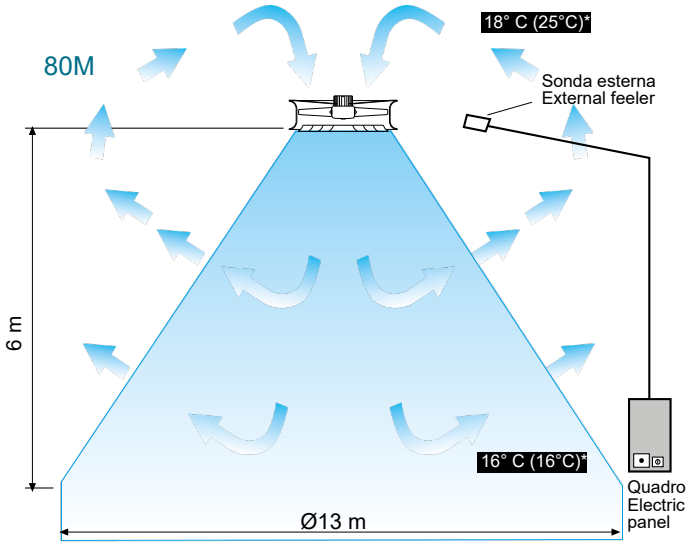
Modello *Model*	Portata - *Flow rate* (m^3/h)	Velocità - *Speed* (rpm)	Pm (kW)	In max (A)	Lp (dB(A))
80 T	10.500	650	0,12	0,7	27

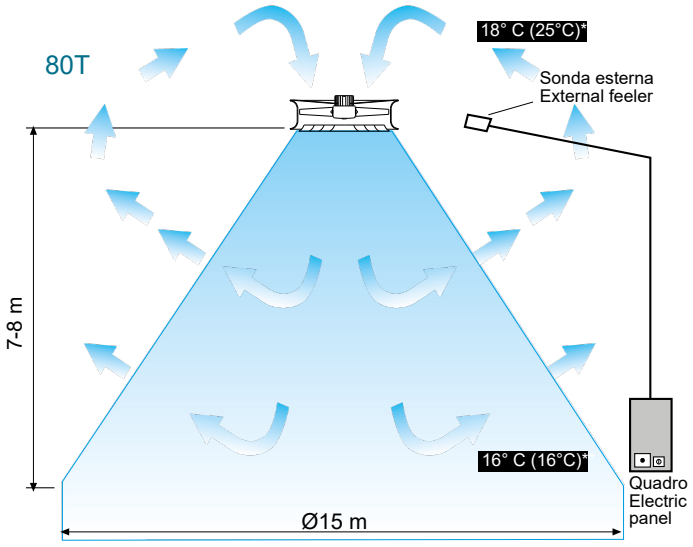
NIVO ZVUČNOG PRITISKA NA 6M U SLOBODNOM POLJU
SOUND PRESSURE LEVEL (Lp) IN FREE FIELD AT 6 m

80 M	**rpm**	500	340	250
	dB (A)	54	46	40

NIVO ZVUČNOG PRITISKA NA 6M U SLOBODNOM POLJU
SOUND PRESSURE LEVEL (Lp) IN FREE FIELD AT 6 m

80 T	**rpm**	650	480	270
	dB (A)	59	51	43





**Konduktovana temperatura vazduha u radu i (zaustavljena) ./ Temperatura vazduha u radu i zaustavljeni uslovi.
- Air temperature in operation and stopped conditions.

Tolerancije: aerodinamičke performanse i buka su unutar tolerancija navedenih u DIN 24166, klasa 2.

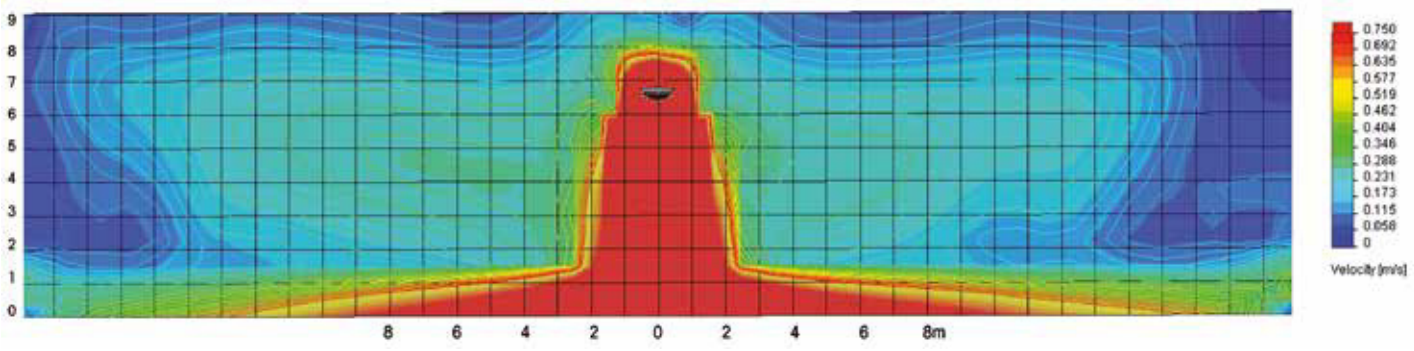
Tolerances: performances and sound power levels within the tolerances allowed by the DIN 24166 standard for Class 2.

DIFFUSER: 80 T

- Analiza dinamičke tečnosti o distribuciji brzine
- Ventilator postavljen 7m od tla.
- Rezidualna brzina 0,75 m/s (obojena oblast).

DIFFUSER: 80 T

- *Velocity distribution cfd analysis*
- *Fan placed at 7 mt from the floor.*
- *Residual velocity (colored area).*



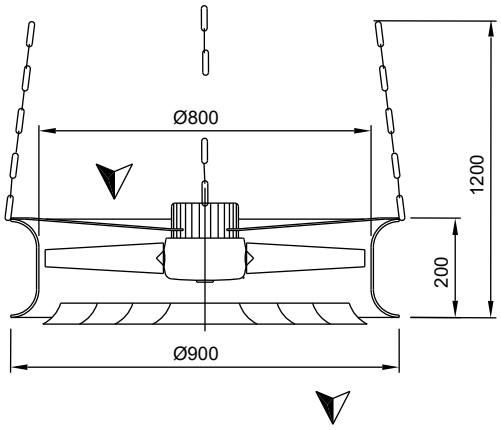
"GRAFIČKI PRIKAZ PROFILA BRZINE, PREUZETOG SA NAJMANJE 8 METARA OD AKSIJALNE OSE RASEJANJA"

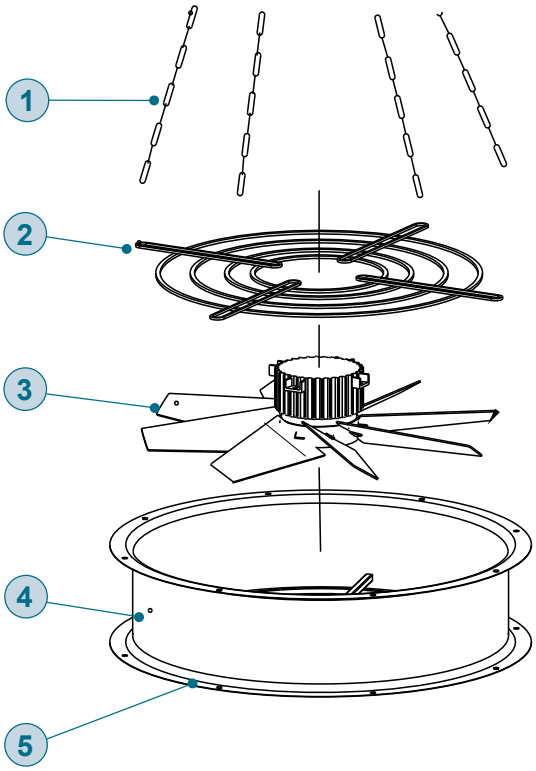
"GRAPHICAL REPRESENTATION OF THE VELOCITY PROFILE, TAKEN FROM AT LEAST 8 METER FROM THE AXIAL SCATTER AXIS"

DIFFUSER

DIMENZIJE - DIMENSIONS

Dimenzionalne tolerancije u ± 5 mm - *Dimensional tolerances ± 5 mm*





- **1** Lanci za pričvršćivanje - *Fixing chains*
- **2** Podrška motora - *Motor support*
- **3** Motor-ventilatorska jedinica - *Motor-impeller assembly*
- **4** Transporter - *Casing*
- **5** Difuzor - *Diffuser*

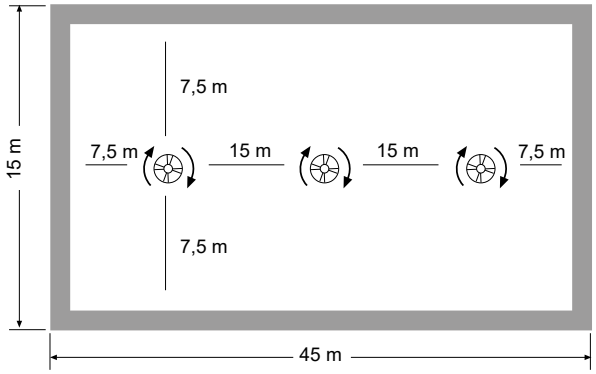
N.B.: Iz bezbednosnih razloga moraju biti postavljeni na visini od najmanje 4 metra kako bi se izbegao pristup rotirajućim delovima.

Remark: for safety reasons they shall be installed at a minimum height of 4 m in order to avoid the access of the rotating parts.

INSTALACIJA - INSTALLATION

Idealna instalacija podrazumeva pokrivanje celog poda uzimajući u obzir DIFUZOR na svakih 200/250 m2, vodeći računa da se ne preklapaju ventilisani prostori i izbegavaju perimetarski zidovi, u takvim uslovima ne stvaraju se dosadne vertikalne struje vazduha. Maksimalna visina ugradnje 7-8 metara iznad zemlje. Preporučljivo je instalirati DIFFUSER sa automatskom kontrolnom tablom ili, alternativno, regulatorom brzine sa (ili bez) termostatom i sondom. Predlažemo postavljanje termostata na radnu temperaturu ventilatora ne nižu od 20 ° C, kako bi se izbeglo kretanje "hladnog" vazduha.

The ideal installation consists to place one DIFFUSER each 200/250 m² covering all the flooring, paying attention not to overlap the ventilation areas and keeping distance from perimeter walls, so to avoid troubleso-me vertical airflow currents. Maximum height of installation: 7-8 meters from the ground. We suggest to install DIFFUSER with an automatic re-gulation panel, or in alternative with a speed regulator with (or without) thermostat and feeler. We also recommend setting thermostat with a temperature not lower than 20°C, to avoid the movement of "cold" air.



REGULATORI - REGULATORS

SRE-M

QEA