

DUCT-M Eci

AKSIJALNI VENTILATOR SA ELEKTRONSKIM MOTOROM I INTEGRISANIM INVERTOTOM

DUCTED AXIAL FAN WITH EC MOTOR AND INTEGRATED INVERTER



APLIKACIJE

DUCT-M Eci linija se sastoji od aksijalnih kanalskih ventilatora sa aerodinamičkim lopaticama i impelerima direktno povezanim sa elektronski komutiranim motorom sa permanentnim magnetima (EC). DUCT-M Eci linija je pogodna kada su potrebni veliki kapaciteti vazduha sa relativno niskim pritiscima u primenama montiranim u kanale, sa savršenom regulacijom brzine, sa izuzetno visokom efikasnošću, u skladu sa zakonskom ErP regulativom. Primeri primene: ventilacija i klimatizacija u pomorstvu i rudarstvu, isparivački tornjevi, izmenjivači toplote, hlađenje električnih i rashladnih uređaja itd.

DOMET

Ova linija se sastoji od 10 veličina sa prečnikom impelera od 310 do 900 mm

KARAKTERISTIKE

DUCT-M Eci liniju karakteriše izuzetna čvrstoća konstrukcije, zahvaljujući prirubnicama direktno savijenim na kućištu i debljini materijala. EC motor sa permanentnim magnetima sa IE5 stepenom efikasnosti garantuje vrhunskupouzdanost i najnižu potrošnju energije, a to je zahvaljujući izuzetno jednostavnom povezivanju i pokretanju zahvaljujući invertoru integrisanom u motor.

KONSTRUKCIJA

- Kućište od čeličnog lima zaštićenog epoksidnim premazom. Prirubnice za fiksiranje prema standardima UNI EN ISO 13351/Tab.1.
- Impeler sa visoko efikasnim aeroprofilnim lopaticama od plastike ili od livenog aluminijuma. Glavčina od livenog aluminijuma. Balansiranje prema UNI ISO 21940-11. Promenljivi ugao nagiba u mirnom položaju.
- Sinhroni motor sa elektronski komutiranim permanentnim magnetima sa efikasnošću IE5, zaštitom IP 55, klasom F, oblikom B3, 100% podesivom brzinom pomoću ugrađenog drajvera (invertora).
- Raspored 4 (impeler direktno povezan sa vratilom motora).

TEHNIČKE SPECIFIKACIJE

- Transportovani vazduh: čist, neabrazivan.
- Temperatura transportovanog vazduha: -20°C / +50°C.
- Napon:
Trofazna verzija (T) 400V-3Ph.
Jednofazna verzija (M) 230V-1Ph.
- Protok vazduha od motora do impelera, položaj A (FMG)

VERZIJE

- DUCT-Mm: kućište srednje dužine. Sklop motora/impelera skoro potpuno zatvoren unutar dužine kućišta.
- DUCT-Ml: dugo kućište. Impeler i motor su potpuno zatvoreni unutar ukupne dužine kućišta.
- DUCT-Ms: kućište sa konzolnim nosačem motora. Motor delimično viri izvan zadnje montažne prirubnice

PRIBOR

- Ulazna mlaznica (IN).
- Prigušivači (SIL-DU).
- Ravna zaštitna rešetka (FPG-DU) i konična (CPG-DU). (Neophodno za upotrebu u otvorenom vazduhu).
- Inspekciona vrata.
- Fleksibilna veza (FC-DU).
- Antivibracioni nosači (AV).
- Kontraprirubnice (CF-DU).
- Nožice za fiksiranje (FF-DU).
- Regulator brzine 0-10V (SRC 10).

NA ZAHTEV

- Performanse se razlikuju od standardnih.
- Verzije sa impelerom sa lopaticama od livenog aluminijuma.
- Verzije sa reverzibilnim protokom vazduha (DUCT-REV).
- Verzije sa kućištem od nerđajućeg čelika, aluminijuma ili toplo pocinkovanog čelika.
- Verzije sa protokom vazduha od impelera do motora, položaj B (FGM).

APPLICATIONS

DUCT- M Eci line consists of axial ducted fans with airfoil blades impellers directly coupled with electronically commutated permanent magnets motor (EC). DUCT- M Eci line is suitable when large air capacities with relatively low pressures are required in duct mounted applications, with perfect speed regulation, with an extremely high efficiency, according to the ErP Regulation in law.

Examples of applications: ventilation and conditioning in naval and mining applications, evaporative towers, heat exchangers, cooling of electric and refrigerating equipments, etc.

RANGE

This line consists of 10 sizes with impeller diameter from 310 up to 900 mm.

ADVANTAGES

DUCT- M Eci line is characterised by the extreme sturdiness of construction, thanks to the flanges directly bended on the casing, and the thickness of the materials. EC permanent magnets motor with IE5, efficiency grade grants top reliability and lowest power consumption and it's by an extremely easy connection and start-up thanks to the inverter integrated in the motor.

CONSTRUCTION

- Casing in steel sheet protected with epoxy painting. Fixing flanges according to UNI EN ISO 13351/Tab.1 standards.
- Impeller with high efficiency airfoil blades in plastic material or in die-cast aluminum alloy. Hub in die-cast aluminum alloy. Balancing according to UNI ISO 21940-11. Variable pitch angle in still position.
- Electronically commutated permanent magnets synchronous motor with efficiency IE5, protection IP 55, class F, form B3, 100% speed adjustable with built-in driver (inverter).
- Arrangement 4 (impeller directly coupled to motor shaft).

TECHNICAL SPECIFICATIONS

- 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.
- Air flow from motor to impeller, position A (FMG).

VERSIONS

- DUCT-Mm: medium length casing. Motor/impeller assembly almost completely enclosed within the length of the casing.
- DUCT-Ml: long casing. Impeller and motor are completely enclosed within the overall length of the casing.
- DUCT-Ms: casing with cantilever motor support. Motor partially protrudes beyond the rear mounting flange.

ACCESSORIES

- Inlet nozzle (IN).
- Silencers (SIL-DU).
- Flat protection grid (FPG-DU) and conic (CPG-DU). (Necessary for use in free air).
- Inspection door.
- Flexible connection (FC-DU).
- Antivibration mounts (AV).
- Counter flange (CF-DU).
- Fixing feet (FF-DU).
- Speed regulator 0-10V (SRC 10).

UPON REQUEST

- Performances differing from standard.
- Versions with impeller with in die-cast aluminum blades.
- Versions with reversible airflow (DUCT-REV).
- Versions with casing in stainless steel, aluminum, or hot dip galvanised steel.
- Versions with air flow from impeller to motor, position B (FGM).

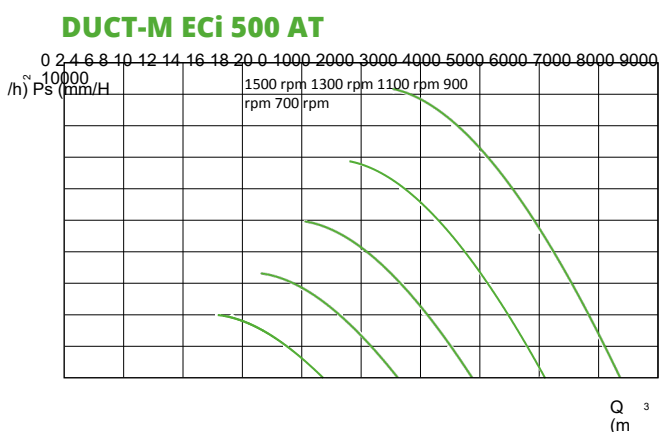
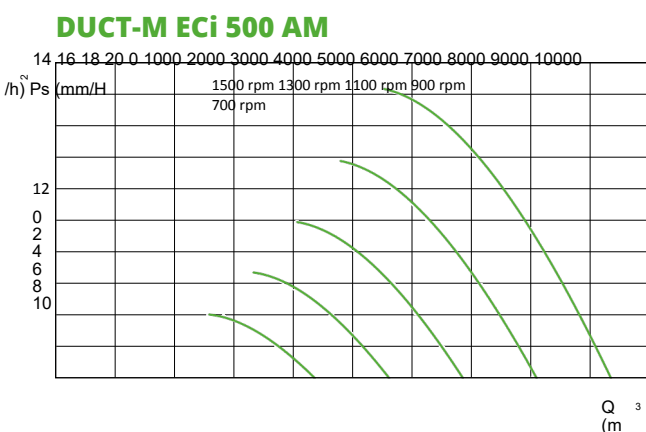
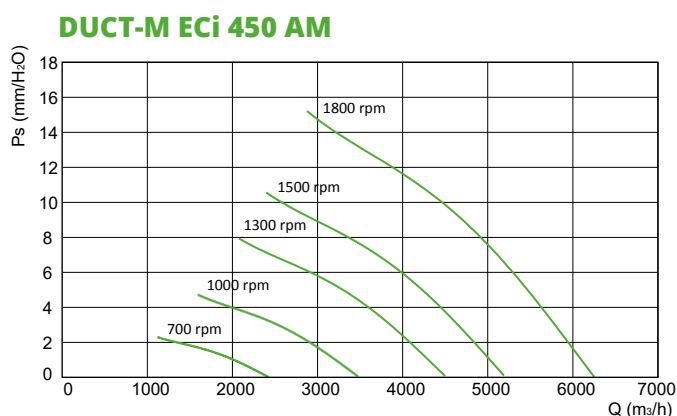
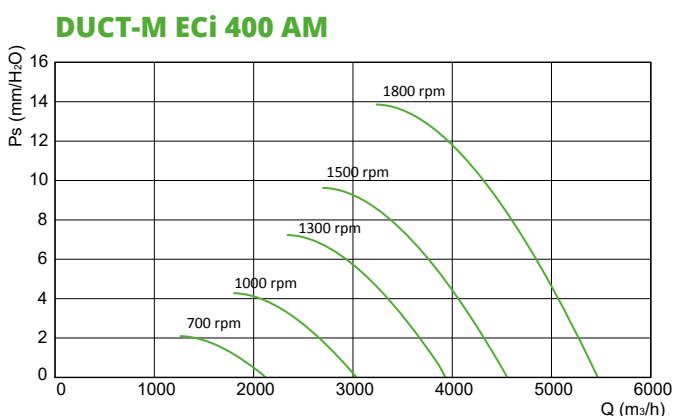
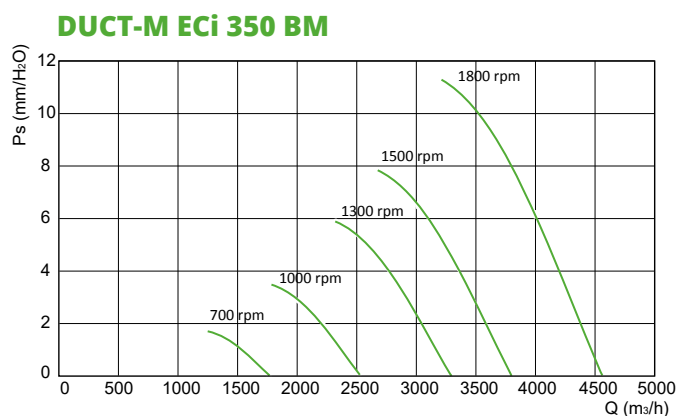
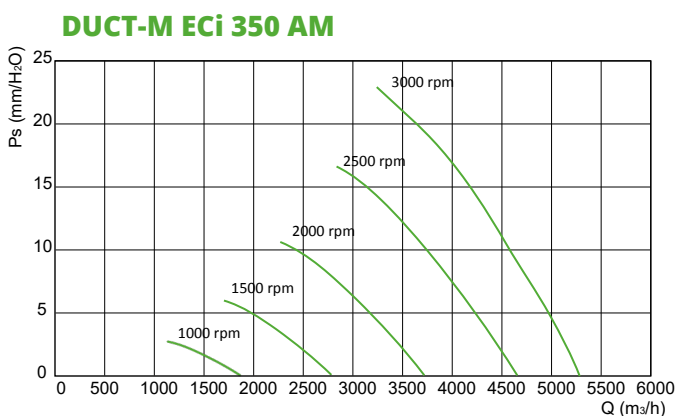
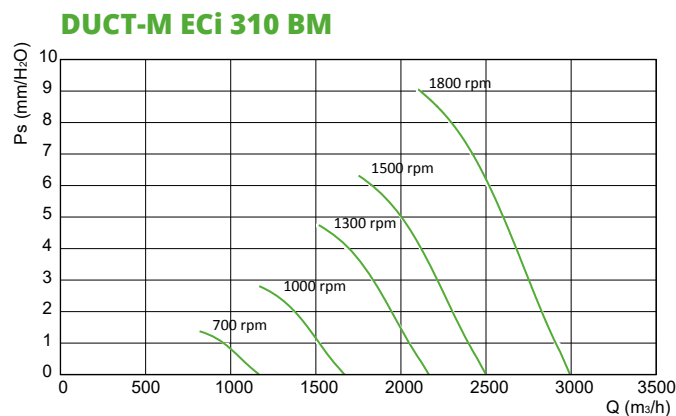
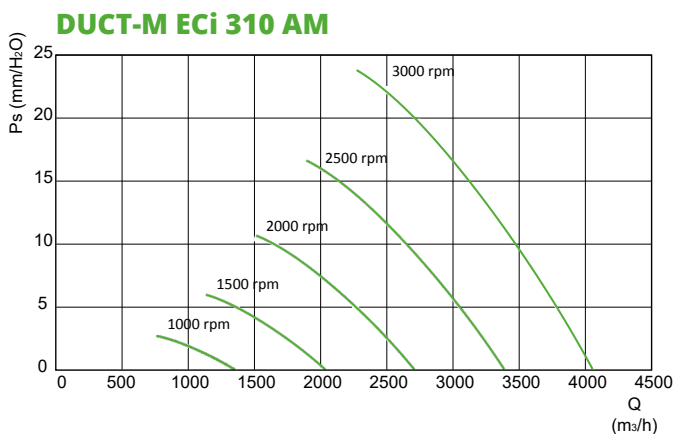
DUCT-M ECI

PERFORMANSE - PERFORMANCES

1 mm H₂O = 9,8 Pa

Performanse prikazane na dijagramima odnose se na vazduh na temperaturi od 15 ° C i nadmorskoj visini od 0 m. , a dobijeni su u instalacijama tipa "D" u nedostatku mreže i pribora.

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



DUCT-M ECI

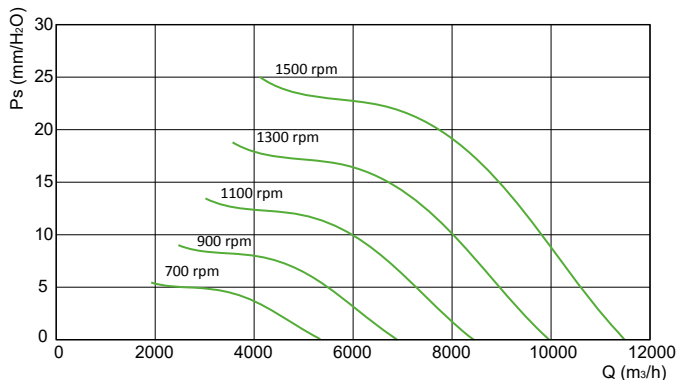
PERFORMANSE - PERFORMANCES

1 mm H₂O = 9,8 Pa

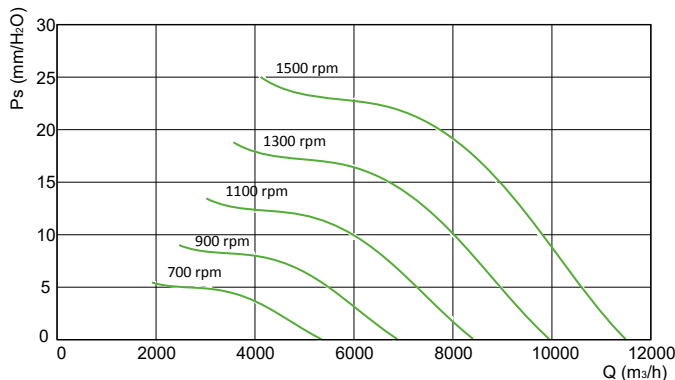
Performanse prikazane na dijagramima odnose se na vazduh na temperaturi od 15 °C i nadmorskoj visini od 0 m., a dobijeni su u instalacijama tipa "D" u nedostatku mreže i pribora.

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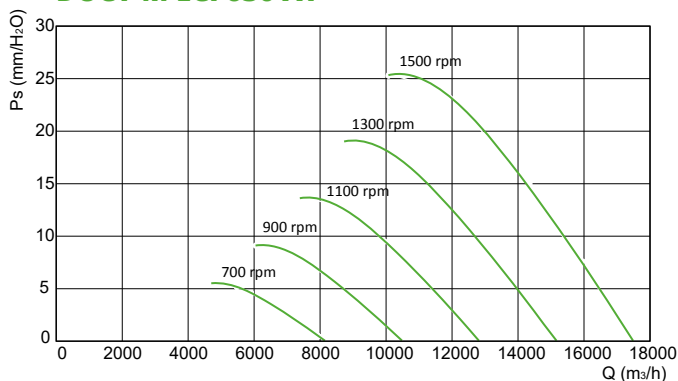
DUCT-M ECI 560 AM



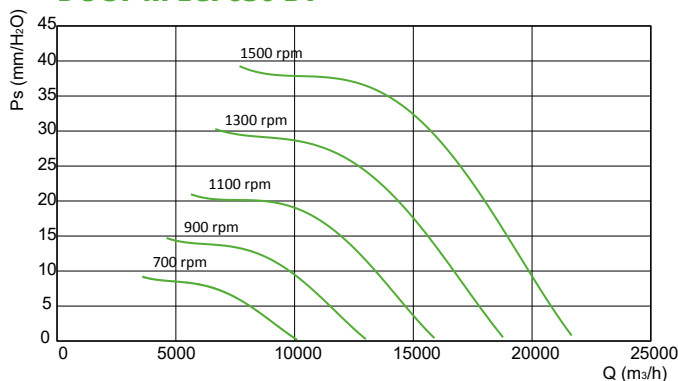
DUCT-M ECI 560 AT



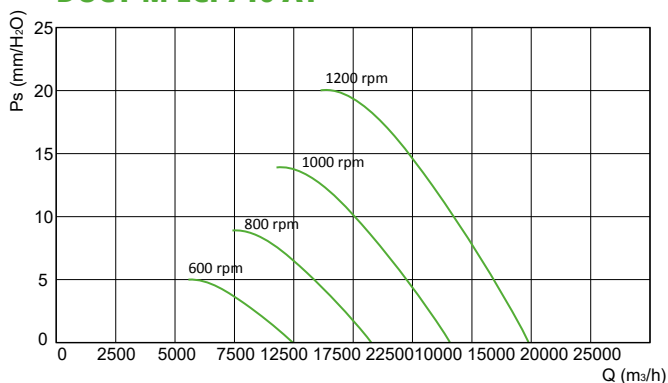
DUCT-M ECI 630 AT



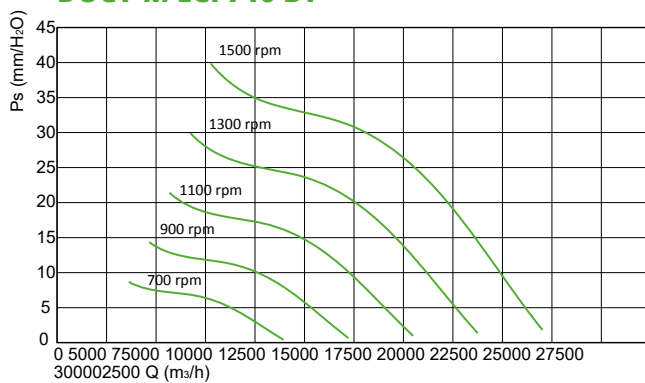
DUCT-M ECI 630 BT



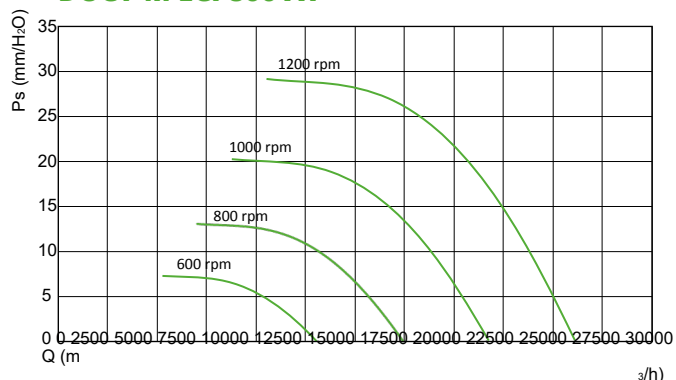
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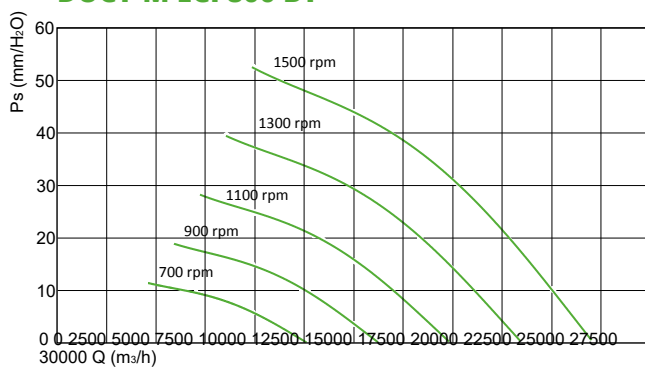
DUCT-M ECI 710 BT



DUCT-M ECI 800 AT



DUCT-M ECI 800 BT



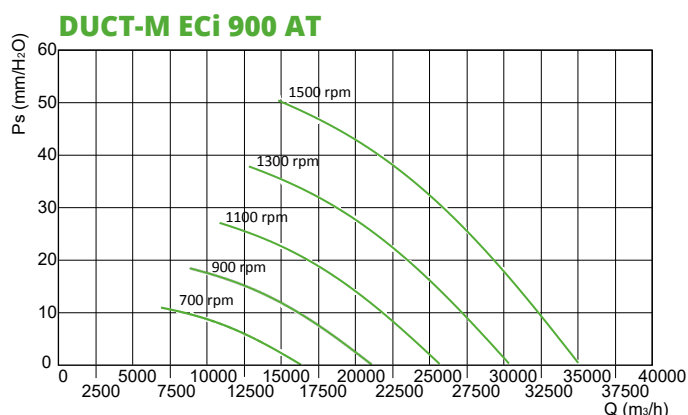
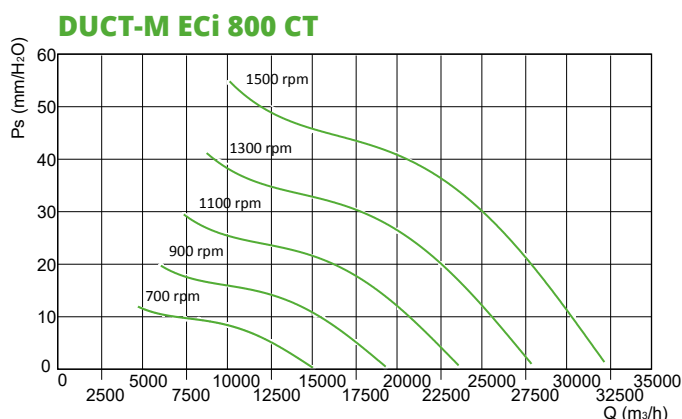
DUCT-M ECI

PERFORMANSE - PERFORMANCES

1 mm H₂O = 9,8 Pa

Performanse prikazane na dijagramima odnose se na vazduh na temperaturi od 15 °C i nadmorskoj visini od 0 m., a dobijeni su u instalacijama tipa "D" u nedostatku 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 in-stallation type "D" with no grid nor accessories.



VAŽNO: tokom upotrebe proverite da li apsorbovana struja nikada ne prelazi vrednost nominalne struje motora.

VAŽNO: tokom upotrebe nikada ne prekoračujte maksimalni broj obrtaja naveden u tabelama (*).

TOLERANCIJE: performanse i nivoi zvučne snage u okviru dozvoljenih tolerancija prema standardu DIN 24166 za klasu 2

IMPORTANT: during use check that the current absorbed never exceeds the value of the rated current of the motor.

IMPORTANT: during use never exceed the maximum RPM indicated in tables (*).

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

Pm = Snaga motora

Pr = Snaga osovine pri maksimalnim obrtajima ventilatora

In = Potrošnja struje

RPM = Maksimalna brzina okretanja ventilatora (ne sme se prekoračiti).

Lp = Nivo zvučnog pritiska u

slobodnom polju na 3 m od ventilatora sa kanalnim otvorima.

Pm = Power and speed motor

Pr = Shaft power at max fan RPM

In = Motor nameplate current

RPM = Maximum turning speed of the fan (not to be exceeded).

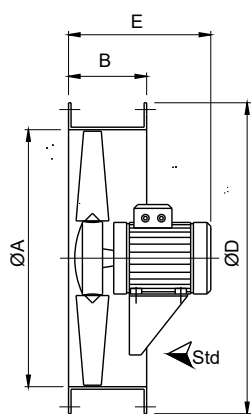
Lp = Sound pressure level in free field at 3 m distance

Model Model	Snabdevanje Supply	RPM fan max (*)	Pr (kW)	Pm motor (kW/RPM)	In max (Ams)	Lp (dB(A))
310 A M	230V/1ph	3000	0,35	0,55/3000	4,8	73
310 B M	230V/1ph	1800	0,15	0,37/1800	3,5	60
350 A M	230V/1ph	3000	0,47	0,55/3000	4,8	77
350 B M	230V/1ph	1800	0,24	0,37/1800	3,5	65
400 A M	230V/1ph	1800	0,28	0,37/1800	3,5	69
450 A M	230V/1ph	1800	0,36	0,37/1800	3,5	72
500 A M	230V/1ph	1500	0,63	0,75/1500	5,8	72
500 A T	400V/3ph	1500	0,63	0,75/1500	1,5	72
560 A M	230V/1ph	1500	0,74	0,75/1500	5,8	75
560 A T	400V/3ph	1500	0,74	0,75/1500	1,5	75
630 A T	400V/3ph	1500	1,4	1,5/1500	2,9	78
630 B T	400V/3ph	1500	2,9	3/1500	5,6	78
710 A T	400V/3ph	1200	1,2	1,5/1500	2,9	74
710 B T	400V/3ph	1500	2,3	3/1500	5,6	74
800 A T	400V/3ph	1200	2,5	3/1500	5,6	75
800 B T	400V/3ph	1500	2,9	3/1500	5,6	80
800 C T	400V/3ph	1500	3,8	4/1500	7,5	81
900 A T	400V/3ph	1500	3,7	4/1500	7,5	87

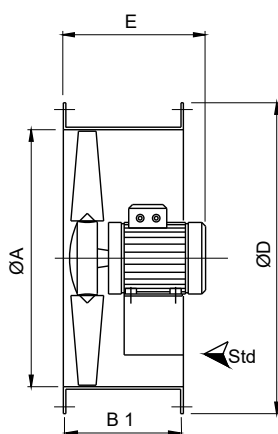
DUCT-M ECI

DIMENZIJE - DIMENSIONS

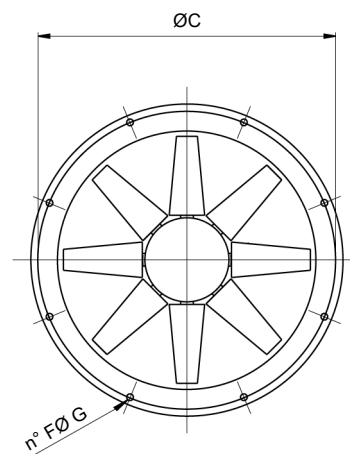
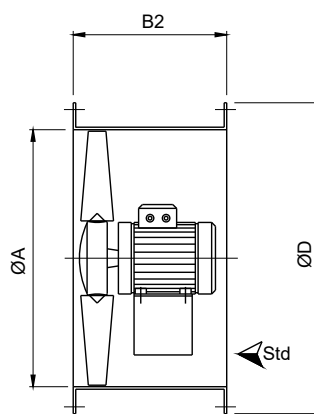
DUCT-Ms ECI



DUCT-Mm ECI

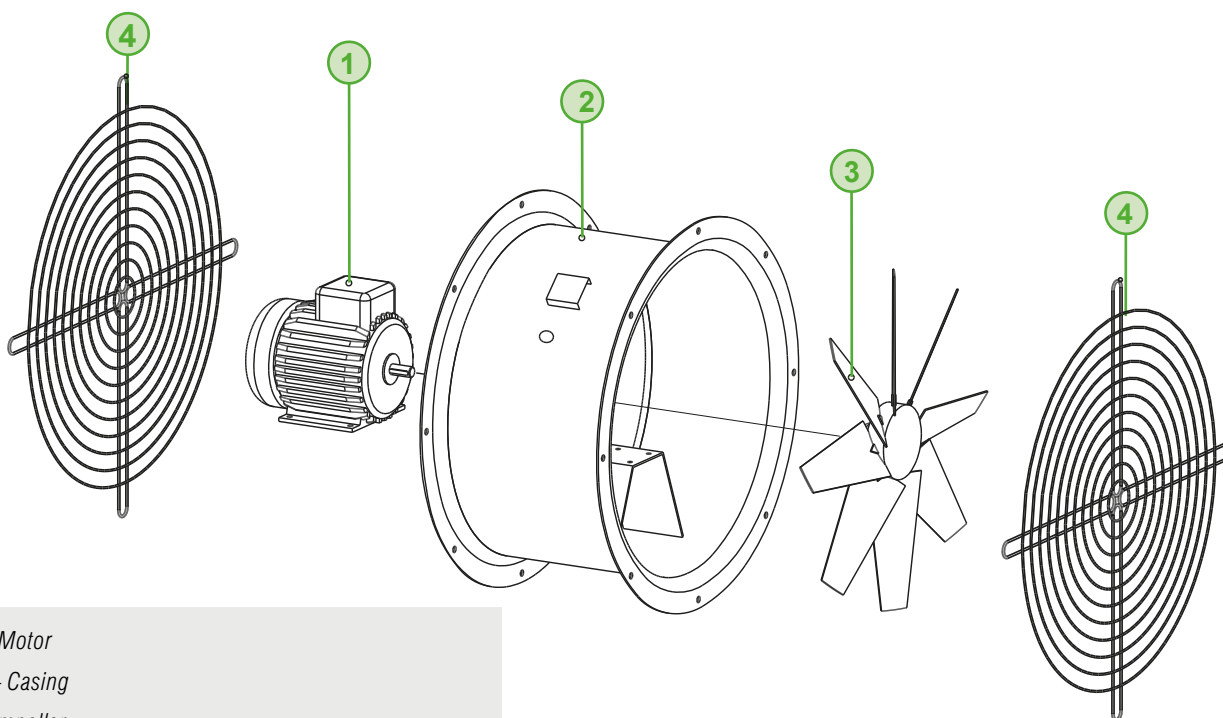


DUCT-MI ECI



Model Model	A	Mot.(H)	B (Ms)	B1 (Mm)	B2 (ML)	C	D	E (Ms)	E (Mm)	F	G	Kg
31	310	80	260	260	400	355	390	460	350	8	10	19
35	360	80	260	260	400	395	430	460	350	8	10	20
40	410	80	260	260	400	450	490	440	330	8	12	21
45	460	80	260	260	450	500	540	440	340	8	12	25
50	510	80	260	260	450	560	595	470	390	12	12	28
56	570	80	260	260	450	620	655	470	390	12	12	32
63	640	80100	260	350	500	690	725	450	470	12	12	58
71	710	80100	260	350	600	770	805	450	470	16	12	60
80	810	100	350	450	600	860	900	570	570	16	12	72
90	910	100	350	450	700	970	1010	570	570	16	16	90

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



- 1 Motor - Motor
- 2 Kućište - Casing
- 3 Imper - Impeller
- 4 Rešetka „dodatak“ (obavezno za slobodan vazduh)
Grid “accessory” (mandatory for free air)

DUCT-M ECI**NIVO BUKE - NOISE LEVEL**

Model Model	63	125	250	500	1k	2k	4k	8k	Total
	Hz								
310 A M	55	64	62	66	67	65	59	49	73
310 B M	42	51	49	53	54	52	46	36	60
350 A M	59	68	66	70	71	69	63	53	77
350 B M	47	56	54	58	59	57	51	41	65
400 A M	51	60	58	62	63	61	55	45	69
450 A M	54	63	61	65	66	64	58	48	72
500 A M	54	63	61	65	66	64	58	48	72
500 A T	54	63	61	65	66	64	58	48	72
560 A M	57	66	64	68	69	67	61	51	75
560 A T	57	66	64	68	69	67	61	51	75
630 A T	59	68	66	70	71	69	63	53	77
630 B T	60	69	67	71	72	70	64	54	78
710 A T	56	65	63	67	68	66	60	50	74
710 B T	57	66	64	68	69	67	61	51	75
800 A T	57	66	64	68	69	67	61	51	75
800 B T	62	71	69	73	74	72	66	56	80
800 C T	63	72	70	74	75	73	67	57	81
900 A T	69	78	76	80	81	79	73	63	87

SRC 10: REGULATOR - REGULATOR

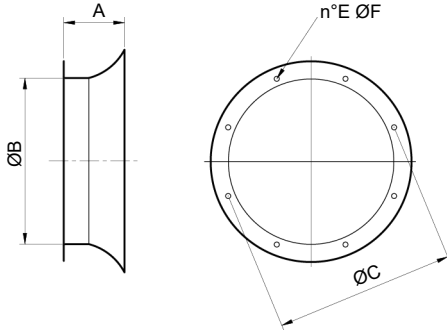
KONTROLIRAJUĆI POTENCIOMETAR
(regulator brzine) sa izlazom 0-10V
i integrisanim prekidačem
UKLJUČENO/ISKLJUČENO (suvi
kontakt).

CONTROL POTENTIOMETER
(speed regulator) with 0-10V
output and integrated ON /
OFF switch (dry contact).



DUCT-M ECI**PRIBOR - ACCESSORIES****IN-DU: ULAZNI KONS**

Poboljšava efikasnost ventilatora u slučaju slobodnog ulaza ili izlaza. Proizvedeno od čeličnog lima, jedna prirubnica je dizajnirana da se pričvrsti za prirubnicu ventilatora u skladu sa standardima UNI EN ISO 13351/Tab.1, a ostale prirubnice su okruglog oblika. Zaštićeno od atmosferskih uticaja.

**IN-DU: INLET CONE**

It improves the fan efficiency in case of free inlet or outlet. Manufactured in steel sheet, one flange is designed to be fixed with the fan flange according to UNI EN ISO 13351/Tab.1 standards, and the other flange is round shaped. Protected against the atmospheric agents.

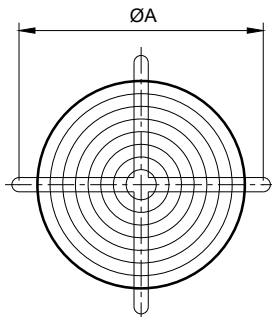
Model Model	ØA	ØB	C	ØD	E	kg
IN-DU 31	150	310	355	8	10	3,9
IN-DU 35	150	360	395	8	10	4,2
IN-DU 40	150	410	450	8	12	3,3
IN-DU 45	160	460	500	8	12	6,2
IN-DU 50	160	510	560	12	12	7,2
IN-DU 56	160	570	620	12	12	6
IN-DU 63	160	640	690	12	12	9,7
IN-DU 71	180	710	770	16	12	11,8
IN-DU 80	200	810	860	16	12	16,4
IN-DU 90	250	910	970	16	16	15

FPG-DU: ZAŠTITNIK

Zaštićeni su od slučajnog kontakta sa rotirajućim delovima ventilatora. Proizvedeni su od čelične šipke u skladu sa standardima UNI EN ISO 12499, EUROVENT1/3 i zaštićeni su od atmosferskih uticaja. (Neophodno za upotrebu na otvorenom vazduhu).

FPG-DU: PROTECTION GUARD

They preserve from the casual contact with the rotating parts of the fan. Manufactured in steel rod according to UNI EN ISO 12499, EUROVENT1/3 standards and protected against the atmospheric agents. (Necessary for use in free air).



Versione piana per DUCT-M
Safety grid for DUCT-M

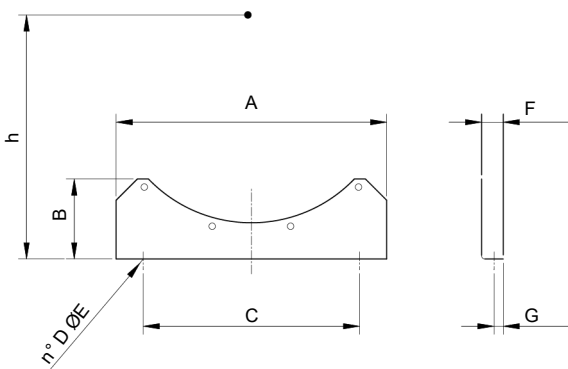
Model Model	ØA	kg
FPG-DU 31	355	0,6
FPG-DU 35	395	0,7
FPG-DU 40	450	0,9
FPG-DU 45	500	1
FPG-DU 50	560	1,3
FPG-DU 56	620	1,5
FPG-DU 63	690	1,8
FPG-DU 71	770	2,5
FPG-DU 80	860	3
FPG-DU 90	970	4

FF-DU: POPRAVLJANJE NOGALA

Omogućavaju fiksiranje ventilatora. Proizvedeni su od čeličnog lima i zaštićeni od atmosferskih uticaja.

FF-DU: FIXING FEET

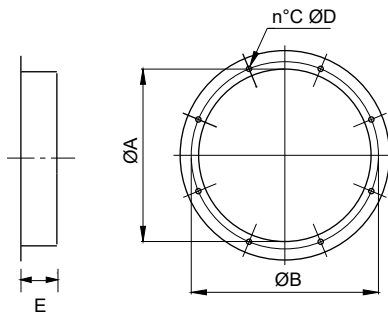
They allow the fan fixing. Manufactured in steel sheet and protected against the atmospheric agents.



Model Model	A	B	C	D	ØE	h	F	G	kg
FF-DU 31	350	100	1x250	2	10	235	40	16	2
FF-DU 35	350	100	1x250	2	10	260	40	16	2
FF-DU 40	350	100	1x250	2	10	310	40	16	2
FF-DU 50	500	200	2x200	3	12	380	40	16	4,6
FF-DU 56	560	215	2x230	3	12	410	40	16	5,6
FF-DU 63	630	230	2x240	3	12	450	40	16	6
FF-DU 71	700	200	2x275	3	12	490	40	16	6,2
FF-DU 80	800	215	2x330	3	12	540	40	16	7,6
FF-DU 90	900	230	2x370	3	12	600	40	16	12,8

PRIBOR - ACCESSORIES

CF-DU: KONTRAPRIRUBNICA COUNTER FLANGE



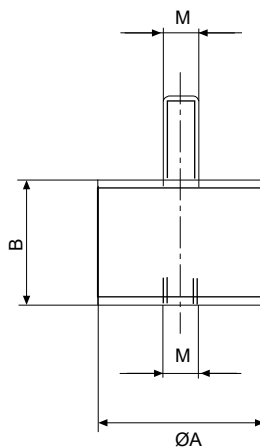
Model Model	ØA	ØB	C	ØD	E	kg
CF-DU 31	310	355	8	10	80	1
CF-DU 35	360	395	8	10	80	1,2
CF-DU 40	410	450	8	12	80	1,9
CF-DU 45	460	500	8	12	80	2,1
CF-DU 50	510	560	12	12	80	2,4
CF-DU 56	570	620	12	12	80	2,6
CF-DU 63	640	690	12	12	80	2,9
CF-DU 71	710	770	16	12	80	3,4
CF-DU 80	810	860	16	12	80	3,9
CF-DU 90	910	970	16	16	100	6,8

AV: AV NOSAČI

Postavljaju se ispod nosača kako bi se izbegao prenos vibracija i buke sa konstrukcija. Napravljeni su od specijalnog metala i gume. Drugi modeli i tipovi AV nosača dostupni su na zahtev u skladu sa različitim primenama. Pogodni su samo za kompresione napone.

AV: AV MOUNTS

They are fitted under the support brackets to avoid the transmission of vibrations and rumors of the structures. Made in special metal-rubber. Other models and types of AV mounts are available upon request according to the different applications. Suitable for compression strains only.



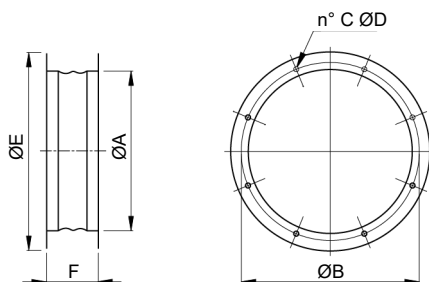
Model	Opterećenje za 1 nosač Load for 1 support	A	B	M	g (weight)
AV 20	10÷20 kg	20	15	6	20
AV 30	21÷50 kg	30	20	8	45
AV 40	51÷65 kg	40	30	8	95
AV 50	66÷130 kg	50	30	10	150
AV 75	220÷340 kg	75	50	12	450

FC-DU: FLEKSIBILNA VEZA

Dizajnirano da spreči širenje vibracija duž kanala. Radna temperatura -30°C + 80°C. Komponente od čeličnog lima zaštićene od atmosferskih uticaja. Za različite temperature predviđene su posebne konstrukcije.

FC-DU: FLEX CONNECTION

Designed to prevent the propagation of the vibrations along the duct. Working temperature -30°C + 80°C. Components in steel sheet protected against the atmospheric agents. For different temperatures are foreseen special constructions.



Model	A	B	C	D	E	F	kg
FC-DU 31	310	355	8	10	390	200	2,2
FC-DU 35	360	395	8	10	430	200	2,6
FC-DU 40	410	450	8	12	490	200	4
FC-DU 45	460	500	8	12	540	200	4,5
FC-DU 50	510	560	12	12	600	200	5,2
FC-DU 56	570	620	12	12	650	200	5,5
FC-DU 63	640	690	12	12	725	200	6,2
FC-DU 71	710	770	16	12	805	200	7,2
FC-DU 80	810	860	16	12	910	200	8,3
FC-DU 90	910	970	16	16	1010	220	14