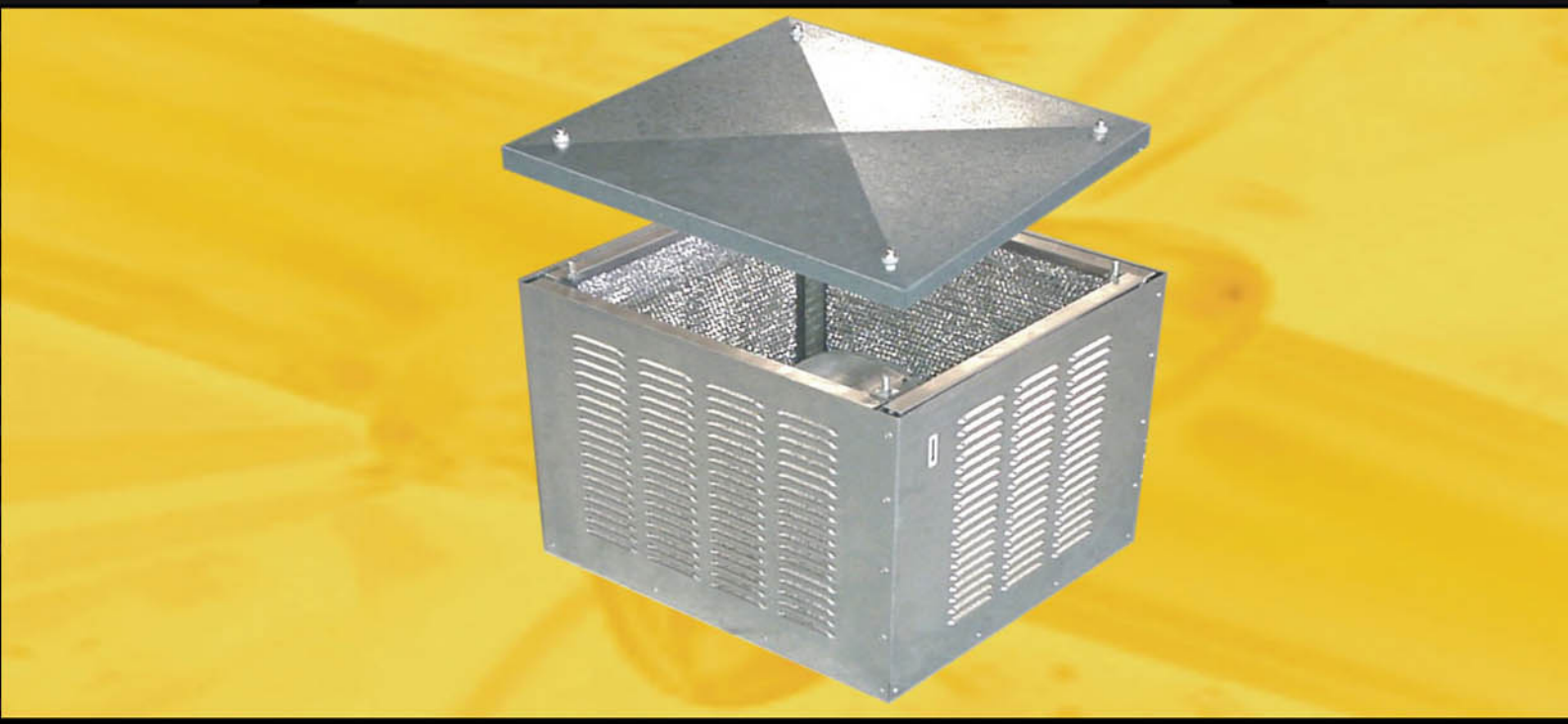
Fresh Air Make up Fans
Direct Driven
Type:MU

Die formed side louvers &
Removable washable aluminum filters



Saudi Fan®
Industries

2nd Industrial City
Tel. 8121866
Fax. 8121894
Email: rhadmin@refhouse.com
www.refhouse.com

Saudi Fan Industries

Management Commitment To Quality

We are continuously striving to provide higher quality products and services to achieve total customer satisfaction by understanding their requirements and anticipating their future expectations or needs.

We are committed to development and strengthening of partnership with our external and internal customers and suppliers.

We are dedicated to the continual improvement of all products and services through involvement of all employees.

We value all people by understanding and drawing upon their strengths i.e. abilities and knowledge and make efforts for their training and development.

President

Ali Saleh Al-Khalaf

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Company Profile

Saudi Fan Industries was established in 1999 as another manufacturing division of steadily growing organization **" Refrigeration House Group"** in order to fulfill requirements of local market for air movement and control equipments.
As a member of Refrigeration House Group, that has market research for ventilation equipments spread over 25 years, Saudi Fan Industries now has grown into a full swing manufacturing unit to satisfy the demanding needs of air movement and control equipments for modern residential, commercial and industiral zones.

Since its establishment, Saudi Fan Industries has acquired modern manufacturing technology in order to achieve **"Total Customer Satisfaction"**. Not only still it has been investing significant resources in latest technology but also has created a medium where every one in the organization can contribute. We have a stringent policy of ***research, development and making awarness of technology*** throughout the organization. Saudi Fan Industries' has been implementing **ISO 9002** Quality Assurance System. As a result, Saudi Fan Industries' products are manufactured precisely and consistently through all production stages under strict quality control procedures.
Saudi Fan Industries strictly acting on the policy of **"the high quality product should be delivered to our valued customers right from the beginning".**

Now Saudi Fan Industries is not only the leading supplier of air movement and control equipments in Kingdom but also a famous name in entire Gulf. It offers a wide range of fans and ventilator products for residential, commercial, institutional and industrial buildings in applications from comfort ventilation to manufacturing processes.
Products are available for exhaust, supply, re-circulate, filtered, process and gravity applications. Fans are available in either direct drive, or belt drive.
Saudi Fan Industries has significant production capacity in order to fulfill market's demand. It also has a pool of qualified staff, who are fully dedicated to give best advice to our valued customer's inquiries.

Saudi Fan Industires has technical collaboration with **Rosenberg Ventilator GmbH**. Who is a Certified ISO 9001 manufacturer and their products are listed under following ratings :

OUR SISTER ORGANIZATION

rosenberg

CERTIFIED RATINGS

to guarantee the bearing fit is free from play and to avoid corrosion of the tension ring it is sealed with a liquid synthetic.

ANTI SPARK PROTECTION

All fans which are installed in an explosion hazardous area must comply with the recommendations (Ex-RL) of the Employers Liability Insurance Association of the chemical industry or the VDMA specification leaflet 24 169, part 1 "Structural Explosion Protection Measures for Fans".

The explosion protection recommendations (Ex-RL) divide the explosion hazardous areas according to the probability of occurence into zones 0, 1 and 2.

Zone	explosion hazard	ignition sources to be avoided according to VDMA 24169
0	constant or longterm	with breakdown anticipated rarely
1	Occasional	with breakdown anticipated frequently
2	rare onal l	with normal operation

To determine the zones, the explosive atmosphere to be conveyed and the installation area of the tans are to be regarded separately.

Official approval is not necessary for fans in explosion hazardous
areas of zones 1 and 2.

The responsibility of adhering to the standards laid down in the VDMA-recommendations or the Ex-RL (Explosion proof guide fines) is left to the manufacturers, suppliers and operators.

According to Ex-RL recommendations a ventilation system with fans must be tested by specialist personnel.

The following ignition sources must be taken into account:

- hot surfaces, e.g. heat generated by friction of a bearing *or by* the jamming of an impeller.
- friction, abrasion or impact sparks, e.g. by rotating impeller contact with fixed fan parts
- sparks by electro statically charged component parts which are non-conductive, e.g. synthetic component parts and painted surfaces with very thick layers

All fans are suitable in the following areas:

1. Explosion proof areas zone 1 and zone 2
2. Explosion proof areas zone 1 and zone 2
3. Explosion proof areas zone 1 and zone 2, when installed in non-explosion hazardous areas for temperature categories

T1-T3, but only under the following conditions:

a) the maximum allowed revolutions must be reduced by 20%
b) the allowed drive power P_w should be reduced by 30%
C) only fans with horizontal shafts are to be used
d) fans must be equipped with guards to prevent foreign particles falling in or being sucked in

SOUND LEVELS

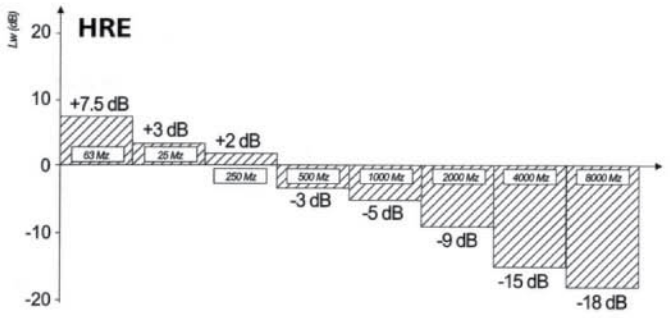
In order to make possible an assessment of sound projection adequate to the human ear the Assessed description of sound levels according to DIN 45635 has been chosen.

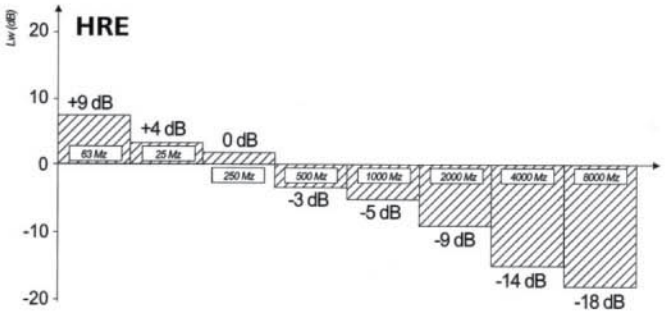
The ascertaining of the sound power level follows the enveloping surfaces method according to DIN 45635 section 38 or the channel technique DIN 45635, section 9.

The sound power level at the different

octave band mid-frequencies relevant for the interpretation of sound absorbers can be calculated by means of the following equation and seen in the diagram below:

LWOkt ° LWA + LWrel





The individual sound power performance curves are determined by the following formula:

LWA $_a$LWS + t OlgV + 20lgop$_t$

With the specific sound power level LWS having been measured for different fan sizes and revolutions.

For the determination of the A-assessed sound pressure level at a distance of 1 m supposing a semispherical sound projection the formula below is valid by approximation.

LpA s LWA- 7dB

However, it is very important to note that this formula is only valid under the condition that there are no influences from acoustic properties of a room, installed duct systems, reflection, inherent frequencies etc. (free sound field conditions). All these may have

a significant influence on the sound pressure level so that only an exact determination on the basis of the octave sound power level, taking into account these influences, can arrive at usable results.

PERFORMANCE CURVES

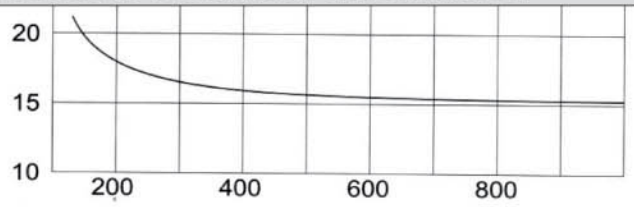
The performance fields of fans are divided into three individual performance curves in order to achieve an optimum reading. The top diagram shows the outline of the pressure - volume flow which is most important for fan selection. The middle diagram indicates the curve of shaft performance against volume flow. The bottom diagram depicts the A-assessed sound level as a function of volume flow. All values relate to an air density:

P 1 - 1,2 kg/m^3 at 20^0 C

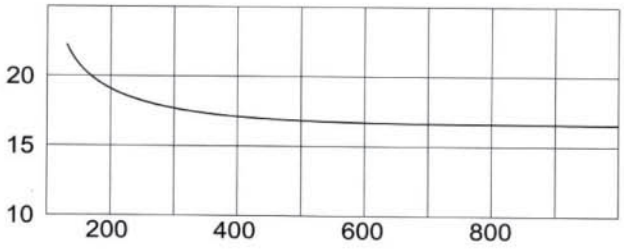
The dynamic pressure pd2 and the flow speed c2 respectively stated in the diagrams refer to the flange cross section of the outlet connection pieces.

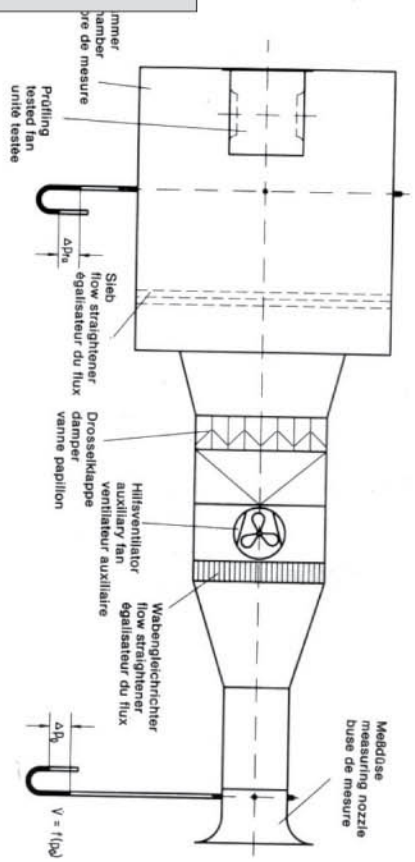
To compensate transmission losses when determining the motor rating required it is necessary to increase the shaft performance taken from the performance curve according to the following diagram. By doing so losses at the inlet and V-belt drive as well as mistakes when determining the operation point and possible temperature variations is accounted

General Technical Information



HRZ/HRE





The acceleration time of the fan can be calculated by the following equation:

$$t_a = 8 \frac{J.n2}{P}.10\text{-}6$$

ta = acceleration time in seconds
J = mass moment of inertia in kgm2
n = nominal speed of the fan in U/min
P = motor rating in kW

In case the acceleration time to be greater than the maximum acceleration time given by the motor manufacturer or the safety switch of the motor reacts during the period of acceleration, then a more powerful motor or a safety switch for heavy-duty acceleration must be used.

The performance curves provided in this catalogue were measured according to DIN 24163 (BS 848) in a test chamber.
The sketch below shows the principle set up of the test chamber.

Explanation of technical data:

Apt = total pressure loss
V = air flow
Pw = power consumption at the shaft
n = speed r.p.m.
u = peripheral speed
c2 = of the air
Pd2 = pressure
LWA = A sound power level
Nt = efficiency
P = air density
= do not operate in this zone

Make-up Saudi, Fresh Air, Supply Fans

FOR COMMERCIAL AND INDUSTRIAL USE.

Scope of application

Saudi Musfan replaces unwanted or contaminated air that is removed by a building's exhaust system.

Such make-up air is so essential that it is part of safety and building code requirements for commercial kitchens, chemical laboratories, electrical control rooms and where gas equipment is installed. Proper make-up air provisions should be part of every building plan.

Without adequate make-up air, air starvation can create negative pressures within a structure; examples are :

Doors open with difficulty. Dirt, insects, and debris are drawn in through entrances; Fumes and odor accumulate.

Pilot lights operate erratically; Moisture is sucked in through cracks in roofs and walls and around windows and doors;

Air becomes stale.

Back drafts occur. Air handling systems operate ineffectively, inefficiently, and expensively. Heated or cooled air is wasted when make-up air is not properly considered.

On the other hand, uncontrolled air flow through windows and doors creates drafts; admits moisture, dust, direct, and pollen; and lets cold air escape.

The Musfan's ability to regulate air flow assures proper replacement air volume under varying conditions.

The Musfan can be coordinated to match the exhaust velocity required to remove fumes, vapour, and grease while providing sufficient oxygen. The Musfan feeds the system effectively.

RANGE

MODELS : 6 Models (Consult factory for higher air flow)

FLOW RATE : up to 4000 c.f.m.

ADVANTAGES

- Easy installation and easy accessible components.
- Compact lower profile design
- Die formed louvered side panels
- Casing made from galvanized sheet metal
- Removable roof cap.
- Removable (25mm / 50mm) thick cleanable aluminum filters.
- Lower noise level and high efficiency radial fan.
- Extremely low starting current
- 100% speed controllable through auto transformer or electronic control.
- Built-in motor protection through thermal overload as standard.
- Integral motor disconnect switch

Instruction for Musfan selection:

1)To determine the Total Static Pressure (TSP), please allow a 0.40 inch WG SP pressure drop against "clean filter condition and casing/ system losses".

2)Also, please allow 0.50 inch WG SP pressure drop against "Dirty Filter" condition.

3)Also, please determine the External Static Pressure (ESP) pressure drop against total length of ducting & other field-installed devices.

Reference Code

MU	D	H	S	D			L
MU	E	R	A	E	225	-4	K

MU	musfan
E	single inlet; D=double inlet
R	forward curved H = backward inclined
A	external rotor motor S = standard motor
E	single phase A.C ; D=three phase
	impeller diameter
	number of poles
K	smaller motor L = large motor

Fan Performance Curves

Flow laws

Speed variation at constant fan size and constant density:

The volume flow changes proportionately to the speed

$$\frac{\dot{V}_1}{\dot{V}_2} = \frac{n_1}{n_2}$$

All pressures (static, dynamic and total) change proportionately to the square of the speed

$$\frac{p_{st\,1}}{p_{st\,2}} = \left(\frac{n_1}{n_2}\right)^2 = \left(\frac{\dot{V}_1}{\dot{V}_2}\right)^2$$

The power requirement changes proportionately to the third power of the speed

$$\frac{P_1}{P_2} = \left(\frac{n_1}{n_2}\right)^3 = \left(\frac{\dot{V}_1}{\dot{V}_2}\right)^3$$

In the case of changes in the wheel diameter of geometrically similar wheels at constant speed:

The volume flow changes proportionately to the third power of the wheel diameter

$$\frac{\dot{V}_1}{\dot{V}_2} = \left(\frac{D_1}{D_2}\right)^3$$

All pressures (static, dynamic and total) change proportionately to the square of the square of the wheel diameter

$$\frac{p_{st\,1}}{p_{st\,2}} = \left(\frac{D_1}{D_2}\right)^2$$

The power requirement changes proportionately to the fifth power of the wheel diameter

$$\frac{P_1}{P_2} = \left(\frac{D_1}{D_2}\right)^5$$

Changes in the density at constant speed (or change of the Kelvin temperature at a constant flow medium:

The volume flow is not affected

$$V = \text{constant}$$

All pressures (static, dynamic and total) change proportionately to the square of the speed

$$\frac{p_{st\,1}}{p_{st\,2}} = \frac{\varrho_1}{\varrho_2} = \frac{T_2}{T_1}$$

The power requirement changes proportionately to the density

$$\frac{P_1}{P_2} = \frac{\varrho_1}{\varrho_2} = \frac{T_2}{T_1}$$

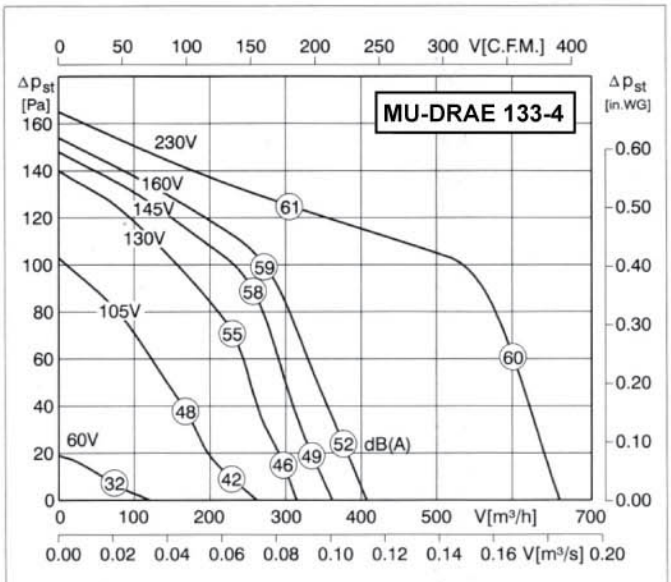
Volume flow units

Unit	Name of the unit	m^3/s	m^3/min	m^3/h	l/h	l/s	ft^3/s cu.ft/s	ft^3/min cu.ft/min	gal/min (UK)	gal/min (US)
1 m^3/s	cubic meter/sec.	1	60	3600	$3.6*10^6$	1000	35.31	2118.8	$1.32*10^4$	$1.587*10^4$
1 m^3/min	cubic meter/min.	0.01667	1	60	$6.0*10^4$	16.667	0.5885	35.31	220	260
1 m^3/h	cubic meter/hour	$2.778*10^{-4}$	0.01667	1	1000	0.2778	$9.808*10^{-3}$	0.5886	3.667	4.403
1 l/h = 1 dm^3/h	liter / hour	$2.778*10^{-7}$	$1.667*10^{-5}$	0.001	1	$2.778*10^{-4}$	$9.808*10^{-6}$	$5.886*10^{-4}$	$3.667*10^{-3}$	$4.403*10^{-3}$
1 l/s = 1 dm^3/s	liter / sec.	0.001	0.05999	3.6	3600	1	$3.531*10^{-2}$	2.1188	13.198	15.8502
1 cu.ft/s	cubic foot/sec.	$2.832*10^{-2}$	1.6992	102	$1.02*10^5$	28,3179	1	60	373.9	448.9
1 cu.ft/min	cubic foot/min.	$4.179*10^{-4}$	$2.832*10^{-2}$	1.70	$1.70*10^3$	0,47197	$1.667*10^{-2}$	1	6.229	7.480
1 gal/min (UK)	gallone/min.	$7.577*10^{-5}$	$4.546*10^{-3}$	$2.728*10^{-1}$	272.8	0,07577	$2.675*10^{-3}$	0.1605	1	1.201
1 gal/min (US)	gallone/min.	$6.302*10^{-5}$	$3.846*10^{-3}$	$2,271*10^{-1}$	227.1	0,06309	$2.227*10^{-3}$	0.1336	0.8328	1

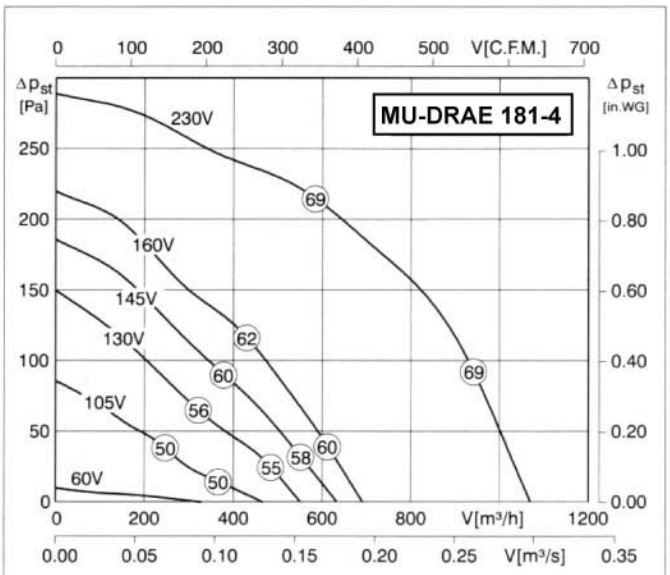
Pressure units

Unit	Name of the unit	Pa =N/m²	bar	mbar	kp/m^2 =mmWs	kp/cm^2 = at	atm	Torr = mm Hg	lbf/in^2	lbf/ft^2	in Hg
1 Pa = 1 N/m^2	Pascal	1	0.00001	0.1	0.10197	0.00001	-	0.0075	0.00014	0.02089	0.000295
1 bar	Bar	100000	1	1000	10197.2	1.01972	0.98692	750.062	14.5037	2088.54	29.53
1 mbar	Millibar	100	0.001	1	10.197	0.00102	0.000987	0.750	0.01450	2.08854	0.02953
1 kp/m^2=1 mmWS	mm column of water	9.80665	-	0.09807	1	0.0001	-	0.07356	0.00142	0.20482	0.0029
1 kp/cm^2= 1at	technical atmosphere	98066.5	0.98067	980.66	10000	1	0.96784	735.559	14.2233	2048.16	28.959
1 atm	physical atmosphere	101325	1.01325	1013.25	10332.3	1.03323	1	760	14.696	2116.22	29.9213
1 Torr = 1 mmHg	mm column of mercury	133.322	0.00133	1.3332	13.5951	0.00136	0.00132	1	0.01934	2.78449	0.03937
1 lbf/in^2	pound-force per square inch	6894.76	0.06895	68.9476	703.07	0.07031	0.06805	51.7149	1	144	2.03602
1 lbf/ft^2	pound force per square foot	47.8803	0.00048	0.47880	4.88243	0.00048	0.00047	0.35913	0.00694	1	0.01414
1 in Hg	inch column of mercury	3386.39	0.03386	33.8639	345.316	0.03453	0.03342	25.4	0.49115	70.7262	1
1 in H_2O	inch column of water	249	0.00249	2.4909	25.4	0.00254	-	1.8684	0.0315	5.2024	0.07366

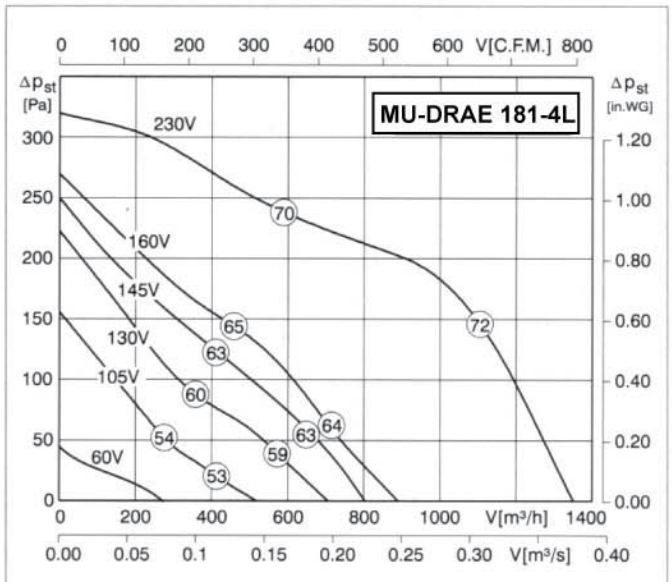
Performance Curves



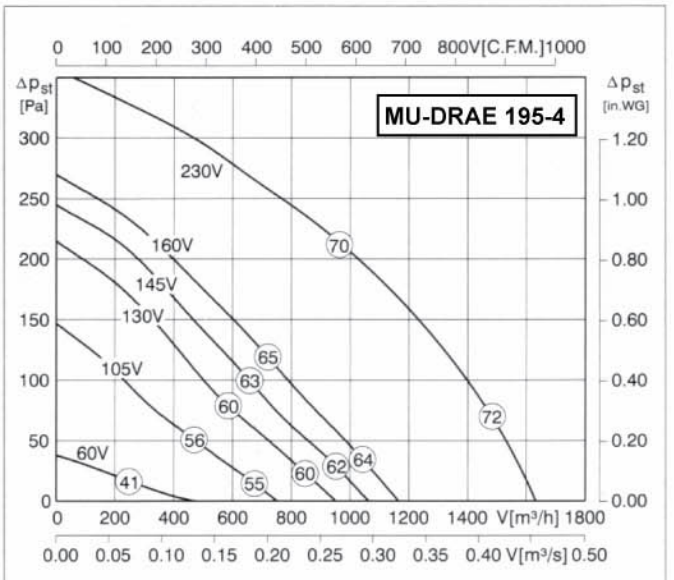
Typ	MU-DRAE 133-4		Artnr. ...	
U 230 V	60	Hz	I_A / I_N	1.1
P_1	0.09	kW		IP44
I_N	0.41	A		01.009
n	990	min^{-1}		4 kg
C_{400V}	2	µF		RE 1,5
t_R	60	°C		RSE 1,4
$\Delta p_{st\ min}$	--	Pa		ED 0,8
ΔI	--	%		--



Typ	MU-DRAE 181-4		Artnr. ...	
U 230 V	60	Hz	I_A / I_N	1.1
P_1	0.23	kW		IP54
I_N	1.05	A		01.025
n	960	min^{-1}		9.7 kg
C_{400V}	4	µF		RE/RTE 1,5
t_R	70	°C		RSE 1,4
$\Delta p_{st\ min}$	--	Pa		ED 2,5
ΔI	--	%		MSE 1

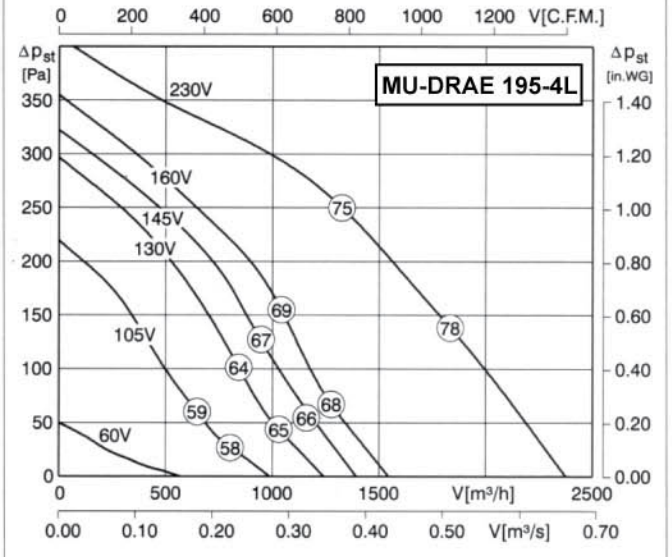


Typ	MU-DRAE 181-4L		Artnr. ...	
U 230 V	60	Hz	I_A / I_N	1.2
P_1	0.29	kW		IP54
I_N	1.25	A		01.025
n	985	min^{-1}		11 kg
C_{400V}	4	µF		RE/RTE 1,5
t_R	70	°C		RSE 1,4
$\Delta p_{st\ min}$	--	Pa		ED 2,5
ΔI	--	%		MSE 1

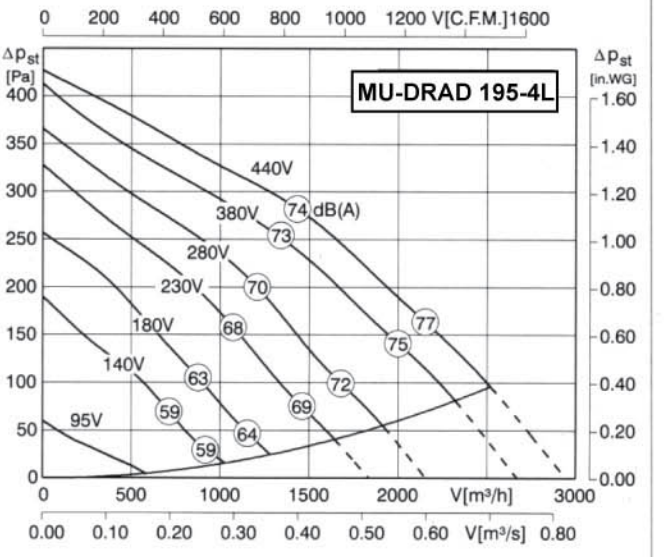


Typ	MU-DRAE 195-4		Artnr. ...	
U 230 V	60	Hz	I_A / I_N	1.2
P_1	0.32	kW		IP54
I_N	1.40	A		01.025
n	880	min^{-1}		11 kg
C_{400V}	5	µF		RE/RTE 3,2
t_R	60	°C		RSE 2,5
$\Delta p_{st\ min}$	--	Pa		ED 2,5
ΔI	--	%		MSE 1

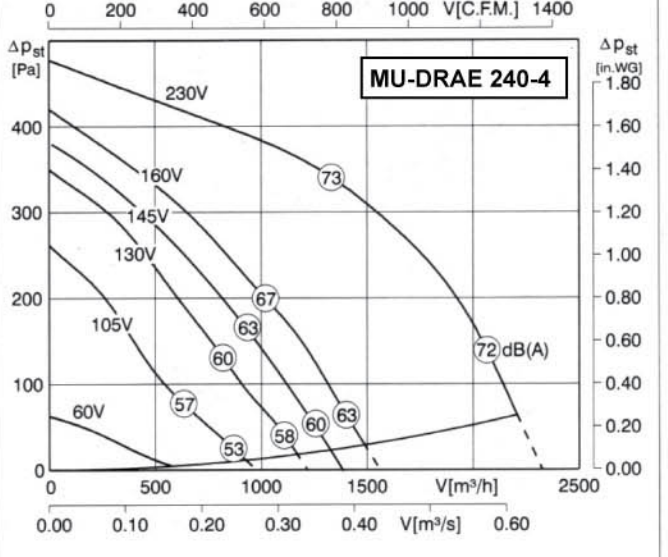
Performance Curves



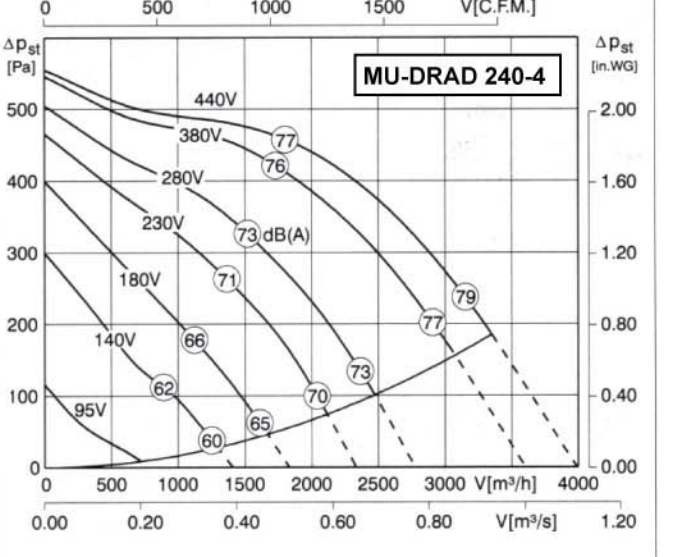
Typ	MU-DRAE 195-4L		Artnr. ...	
U	230 V 60	Hz	I_A / I_N	1.2
P_1	0.51	kW		IP54
I_N	2.40	A		01.025
n	1130	min^{-1}		13 kg
C_{400V}	8	µF		RE/RTE 3,2
t_R	50	°C		RSE 2,5
$\Delta p_{st\ min}$	--	Pa		ED 2,5
ΔI	--	%		MSE 1



Typ	MU-DRAD 195-4L		Artnr. ...	
U	380 / 440 V 60	Hz	I_A / I_N	2.3
P_1	0.50 / 0.58	kW		IP54
I_N	1.00 / 1.05	A		01.006
n	1350 / 1440	min^{-1}		13 kg
C_{400V}	--	µF		RTD 1,2
t_R	60 / 50	°C		--
$\Delta p_{st\ min}$	85 / 95	Pa		--
ΔI	--	%		MSD 1

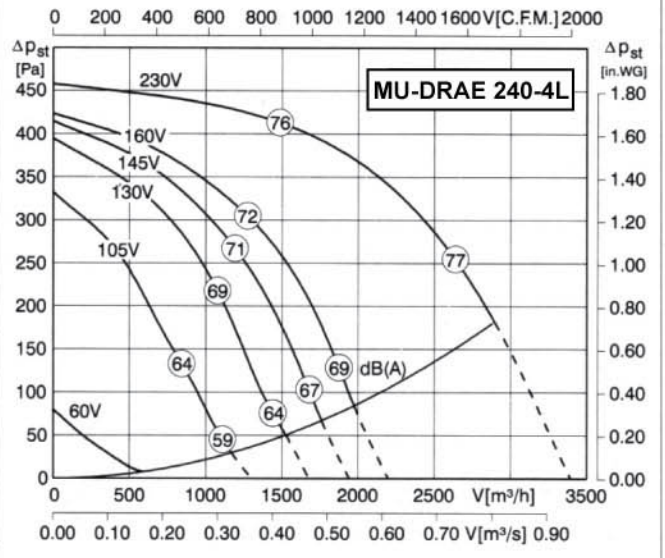


Typ	MU-DRAE 240-4		Artnr. ...	
U	230 V 60	Hz	I_A / I_N	1.2
P_1	0.60	kW		IP54
I_N	2.80	A		01.025
n	990	min^{-1}		17 kg
C_{400V}	8	µF		RE/RTE 3,2
t_R	50	°C		RSE 3,7
$\Delta p_{st\ min}$	80	Pa		ED 5
ΔI	--	%		MSE 1

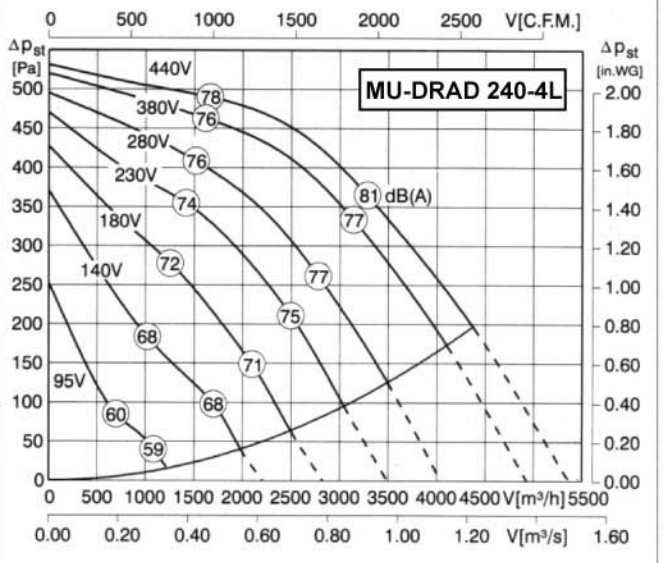


Typ	MU-DRAD 240-4		Artnr. ...	
U	380 / 440 V 60	Hz	I_A / I_N	2.6
P_1	1.0 / 1.2	kW		IP54
I_N	1.8 / 1.9	A		01.006
n	1300 / 1400	min^{-1}		17 kg
C_{400V}	--	µF		RTD 2,5
t_R	60 / 50	°C		--
$\Delta p_{st\ min}$	150 / 180	Pa		GDR8U
ΔI	--	%		MSD 1

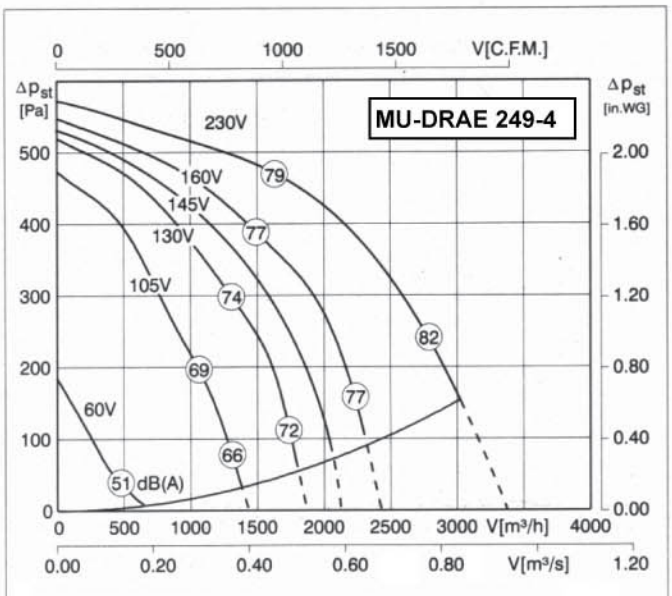
Performance Curves



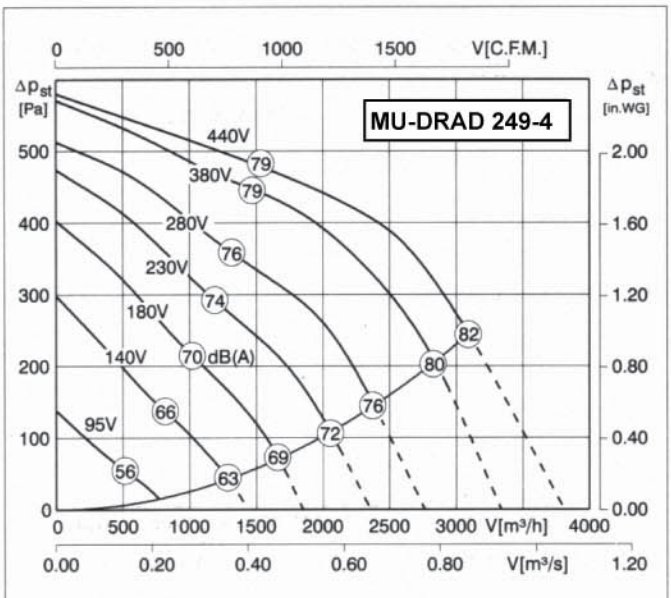
Typ	MU-DRAE 240-4L		Artnr. ...	
U	230 V 60 Hz		I_A / I_N	1.7
P_1	1.05	kW		IP54
I_N	4.80	A		01.025
n	1250	min^{-1}		21 kg
C_{400V}	14	µF		RE/RTE 5,0
t_R	50	°C		RSE 5,5
$\Delta p_{st\ min}$	180	Pa		ED 5
ΔI	--	%		MSE 1



Typ	MU-DRAD 240-4L		Artnr. ...	
U	380 / 440 V 60 Hz		I_A / I_N	2.5
P_1	1.42 / 1.56	kW		IP54
I_N	2.7 / 2.7	A		01.006
n	1360 / 1430	min^{-1}		21 kg
C_{400V}	--	µF		RTD 3,0
t_R	55 / 50	°C		--
$\Delta p_{st\ min}$	170 / 200	Pa		GDR8U
ΔI	--	%		MSD 1

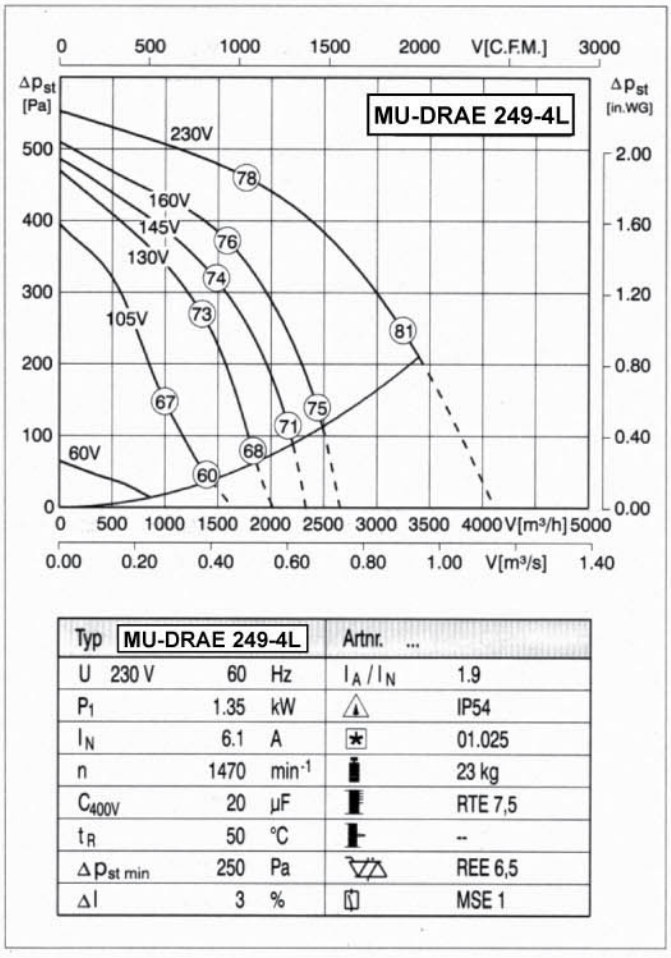


Typ	MU-DRAE 249-4		Artnr. ...	
U	230 V 60 Hz		I_A / I_N	1.8
P_1	1.15	kW		IP54
I_N	4.90	A		01.025
n	1380	min^{-1}		21 kg
C_{400V}	16	µF		RE/RTE 7,5
t_R	50	°C		RSE 5,5
$\Delta p_{st\ min}$	160	Pa		REE 6,5
ΔI	2	%		MSE 1

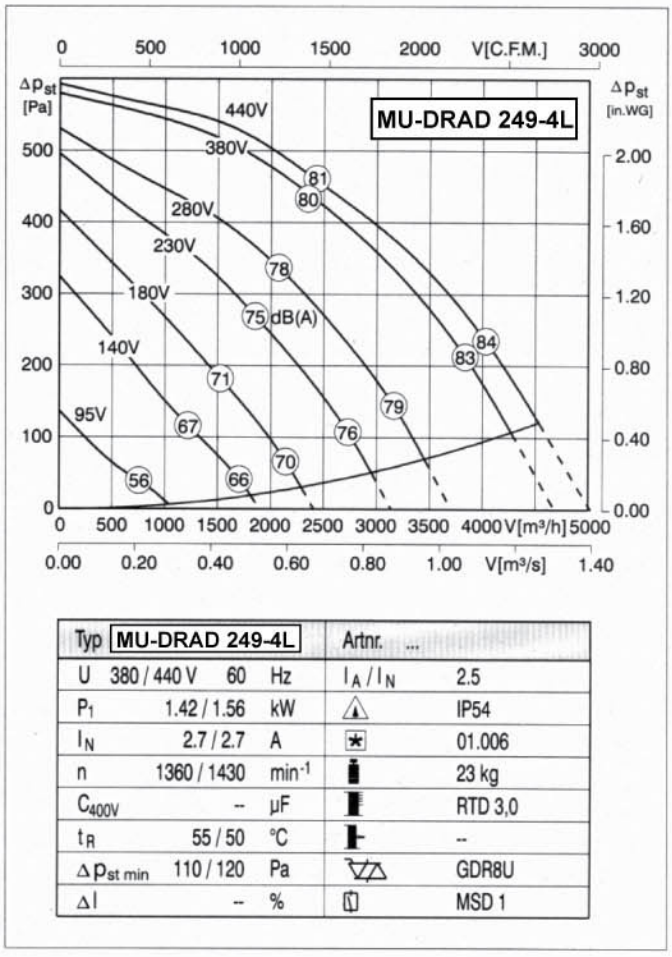


Typ	MU-DRAD 249-4		Artnr. ...	
U	380 / 440 V 60 Hz		I_A / I_N	2.5
P_1	0.93 / 1.04	kW		IP54
I_N	1.85 / 1.95	A		01.006
n	1320 / 1400	min^{-1}		21 kg
C_{400V}	--	µF		RTD 2,5
t_R	60 / 50	°C		--
$\Delta p_{st\ min}$	210 / 240	Pa		GDR8U
ΔI	--	%		MSD 1

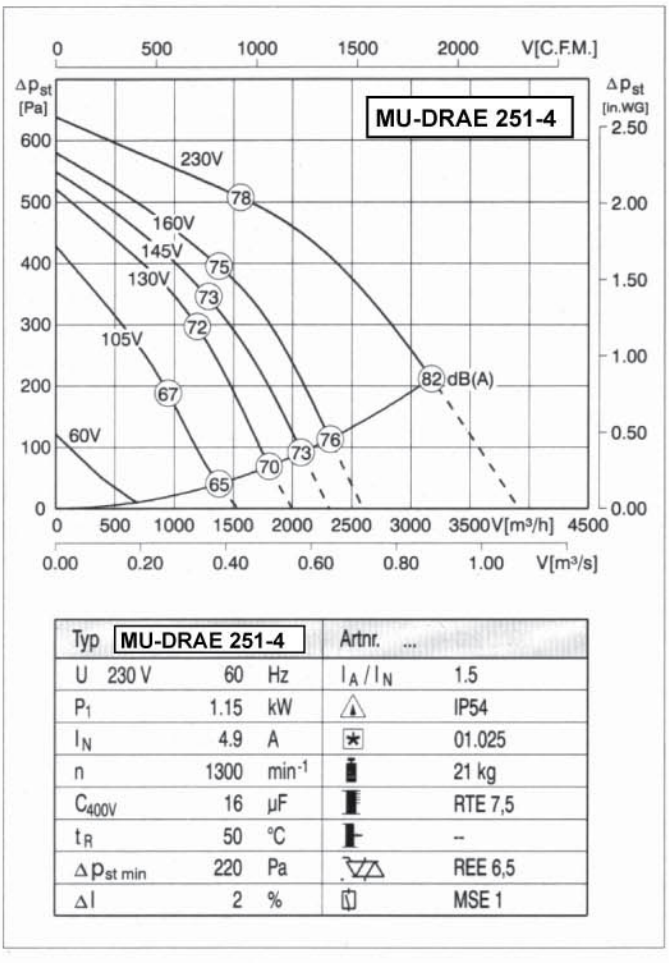
Performance Curves



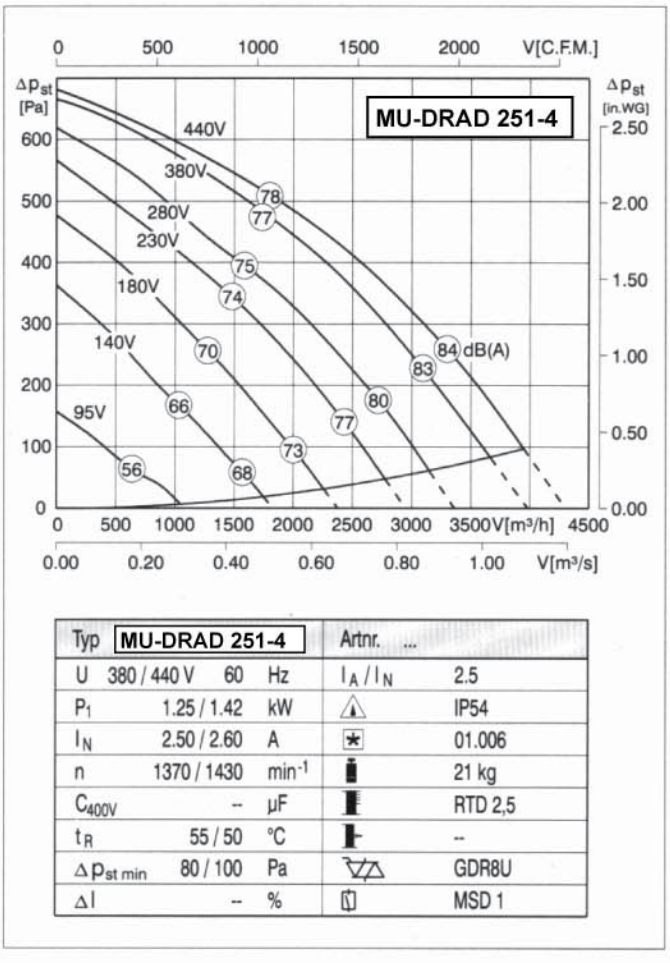
Typ MU-DRAE 249-4L			Artnr. ...	
U 230 V	60	Hz	I_A / I_N	1.9
P_1	1.35	kW		IP54
I_N	6.1	A		01.025
n	1470	min^{-1}		23 kg
C_{400V}	20	µF		RTE 7,5
t_R	50	°C		--
$\Delta p_{st\ min}$	250	Pa		REE 6,5
ΔI	3	%		MSE 1



Typ MU-DRAD 249-4L			Artnr. ...	
U 380 / 440 V	60	Hz	I_A / I_N	2.5
P_1	1.42 / 1.56	kW		IP54
I_N	2.7 / 2.7	A		01.006
n	1360 / 1430	min^{-1}		23 kg
C_{400V}	--	µF		RTD 3,0
t_R	55 / 50	°C		--
$\Delta p_{st\ min}$	110 / 120	Pa		GDR8U
ΔI	--	%		MSD 1

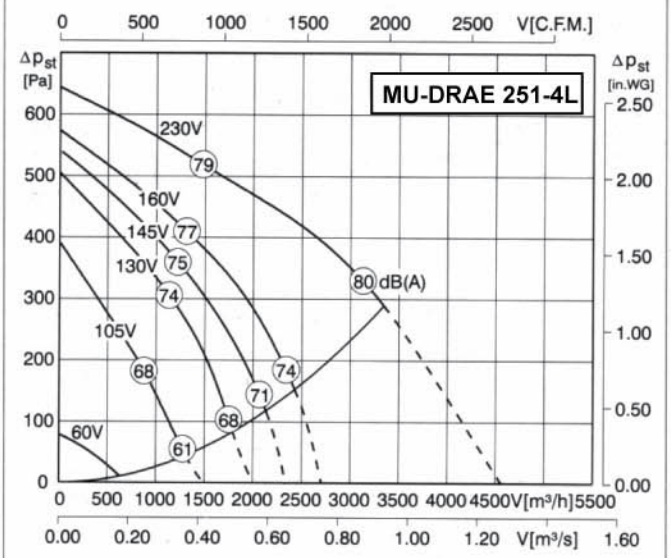


Typ MU-DRAE 251-4			Artnr. ...	
U 230 V	60	Hz	I_A / I_N	1.5
P_1	1.15	kW		IP54
I_N	4.9	A		01.025
n	1300	min^{-1}		21 kg
C_{400V}	16	µF		RTE 7,5
t_R	50	°C		--
$\Delta p_{st\ min}$	220	Pa		REE 6,5
ΔI	2	%		MSE 1

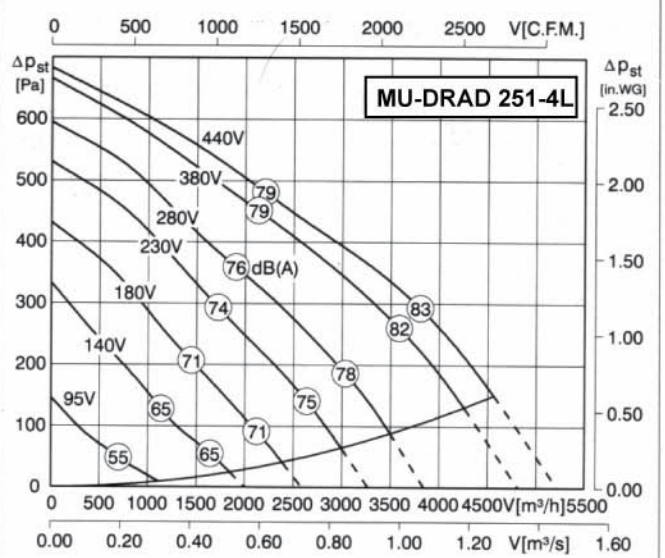


Typ MU-DRAD 251-4			Artnr. ...	
U 380 / 440 V	60	Hz	I_A / I_N	2.5
P_1	1.25 / 1.42	kW		IP54
I_N	2.50 / 2.60	A		01.006
n	1370 / 1430	min^{-1}		21 kg
C_{400V}	--	µF		RTD 2,5
t_R	55 / 50	°C		--
$\Delta p_{st\ min}$	80 / 100	Pa		GDR8U
ΔI	--	%		MSD 1

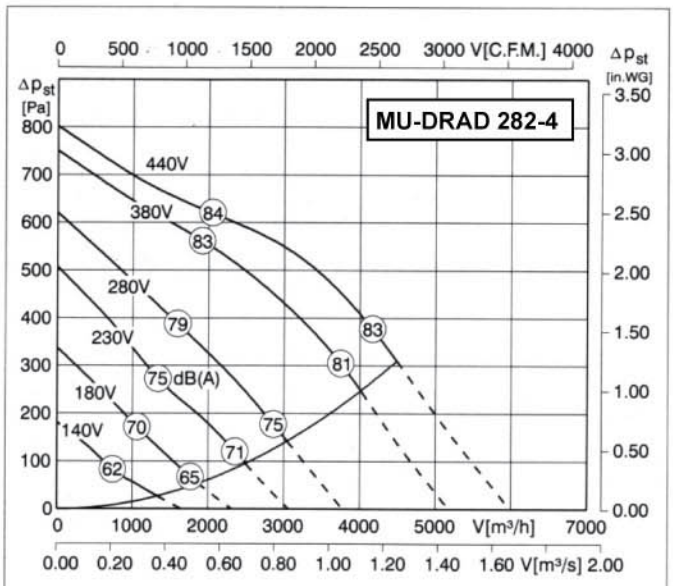
Performance Curves



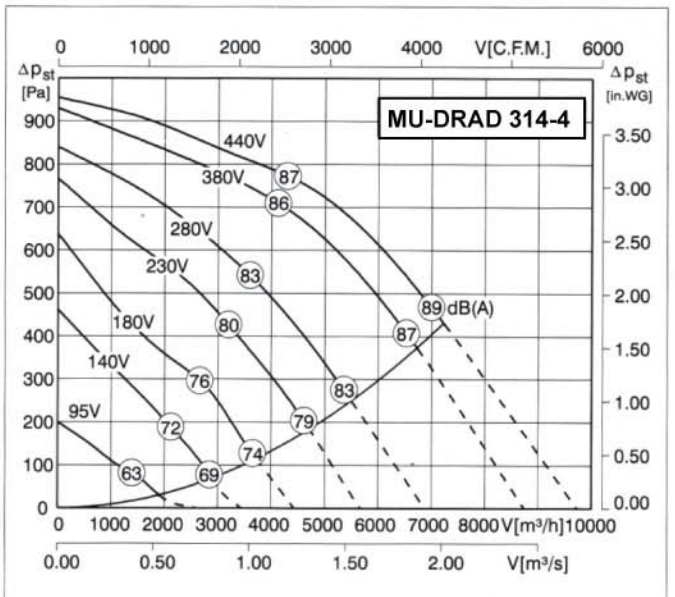
Typ	MU-DRAE 251-4L		Artnr. ...	
U	230 V	60 Hz	I_A / I_N	1.9
P_1	1.35	kW		IP54
I_N	6.1	A		01.025
n	1470	min^{-1}		23 kg
C_{400V}	20	µF		RTE 7,5
t_R	50	°C		--
$\Delta p_{st\ min}$	305	Pa		REE 6,5
ΔI	6	%		MSE 1



Typ	MU-DRAD 251-4L		Artnr. ...	
U	380 / 440 V	60 Hz	I_A / I_N	2.5
P_1	1.42 / 1.56	kW		IP54
I_N	2.7 / 2.7	A		01.006
n	1360 / 1430	min^{-1}		23 kg
C_{400V}	--	µF		RTD 3,0
t_R	55 / 50	°C		--
$\Delta p_{st\ min}$	130 / 150	Pa		GDR8U
ΔI	--	%		MSD 1

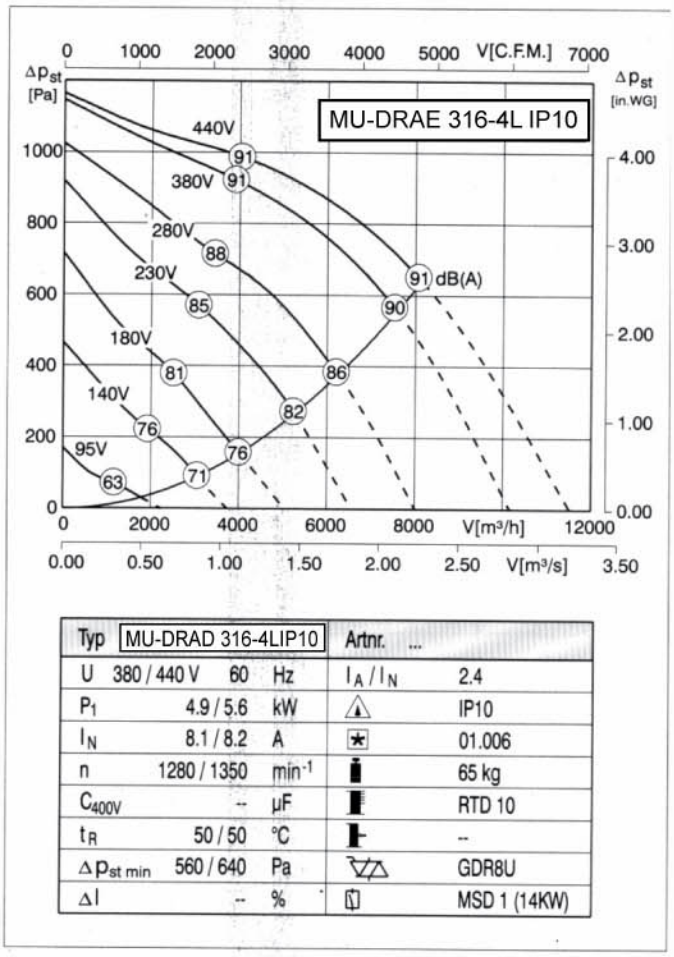


Typ	MU-DRAD 282-4		Artnr. ...	
U	380 / 440 V	60 Hz	I_A / I_N	2.1
P_1	1.60 / 1.84	kW		IP54
I_N	2.90 / 2.90	A		01.006
n	1160 / 1280	min^{-1}		32 kg
C_{400V}	--	µF		RTD 3,0
t_R	50 / 50	°C		--
$\Delta p_{st\ min}$	270 / 320	Pa		GDR8U
ΔI	--	%		MSD 1

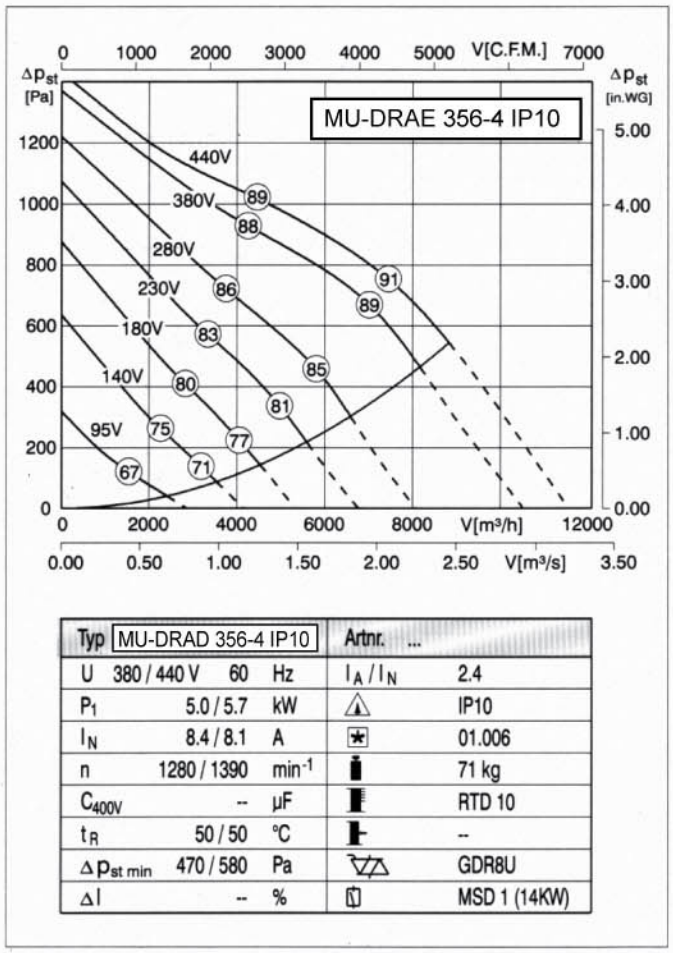


Typ	MU-DRAD 314-4		Artnr. ...	
U	380 / 440 V	60 Hz	I_A / I_N	2.8
P_1	3.6 / 4.0	kW		IP54
I_N	5.9 / 5.7	A		01.006
n	1340 / 1450	min^{-1}		53 kg
C_{400V}	--	µF		RTD 7,0
t_R	50 / 50	°C		--
$\Delta p_{st\ min}$	390 / 450	Pa		GDR8U
ΔI	-- / 3	%		MSD 1 (14KW)

Performance Curves



Typ	MU-DRAD 316-4LIP10		Artnr. ...	
U	380 / 440 V 60	Hz	I_A / I_N	2.4
P_1	4.9 / 5.6	kW		IP10
I_N	8.1 / 8.2	A		01.006
n	1280 / 1350	min^{-1}		65 kg
C_{400V}	--	µF		RTD 10
t_R	50 / 50	°C		--
$\Delta p_{st\ min}$	560 / 640	Pa		GDR8U
ΔI	--	%		MSD 1 (14KW)



Typ	MU-DRAD 356-4 IP10		Artnr. ...	
U	380 / 440 V 60	Hz	I_A / I_N	2.4
P_1	5.0 / 5.7	kW		IP10
I_N	8.4 / 8.1	A		01.006
n	1280 / 1390	min^{-1}		71 kg
C_{400V}	--	µF		RTD 10
t_R	50 / 50	°C		--
$\Delta p_{st\ min}$	470 / 580	Pa		GDR8U
ΔI	--	%		MSD 1 (14KW)

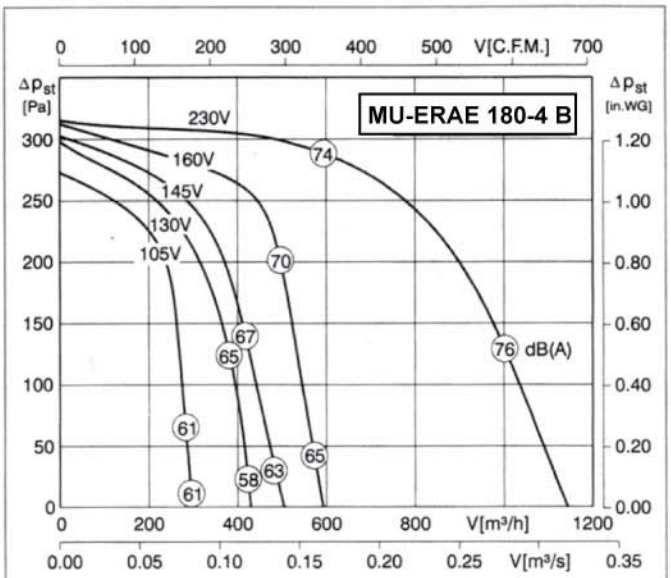
Instruction for Musfan Selection :

1) To determine the Total Static Pressure (TSP), please allow a 0.40inch WG SP pressure drop against "clean filter condition and casing / system losses".

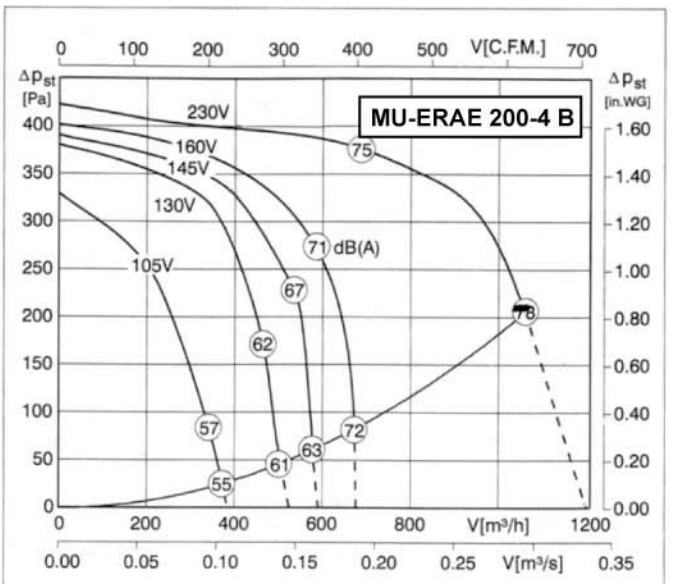
2) Also, please allow 0.50 inch WG SP pressure drop against "Dirty Filter" condition.

3) Also, please determine the External Static Pressure (ESP) pressure drop against total length of ducting & other field-installed devices.

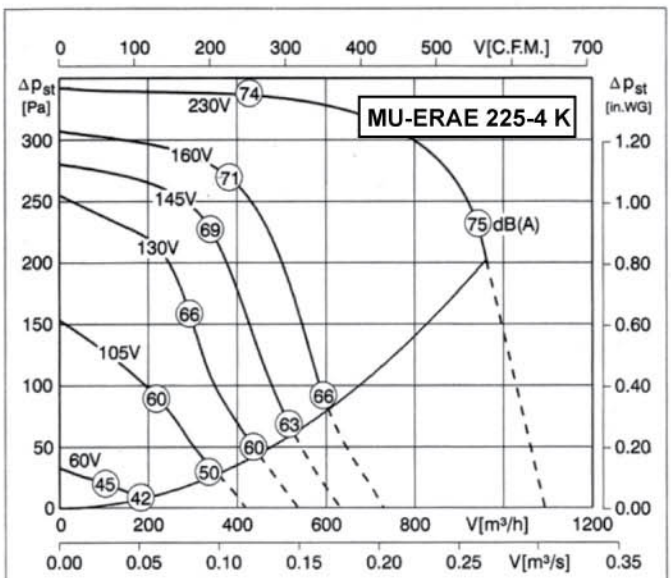
Performance Curves



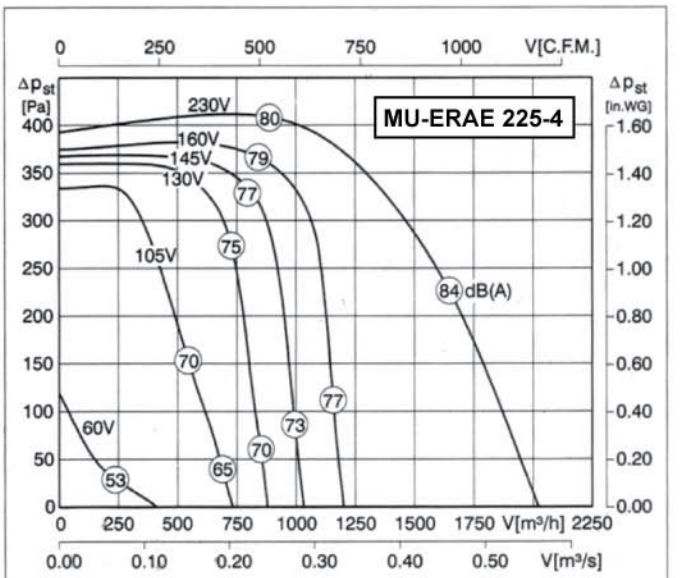
Typ	MU-ERAE 180-4 B		Artnr. ...	
U 230 V	60	Hz	I_A / I_N	1.6
P_1	0.30	kW		IP44
I_N	1.40	A		01.024
n	1430	min^{-1}		8 kg
C_{400V}	4	µF		RE/RTE 1,5
t_R	60	°C		RSE 1,4
$\Delta p_{st\ min}$	--	Pa		ED 2,5
ΔI	--	%		MSE 1



Typ	MU-ERAE 200-4B		Artnr. ...	
U 230 V	60	Hz	I_A / I_N	1.6
P_1	0.36	kW		IP44
I_N	1.60	A		01.024
n	1440	min^{-1}		9 kg
C_{400V}	5	µF		RE/RTE 3,2
t_R	50	°C		RSE 2,5
$\Delta p_{st\ min}$	210	Pa		ED 2,5
ΔI	--	%		MSE 1

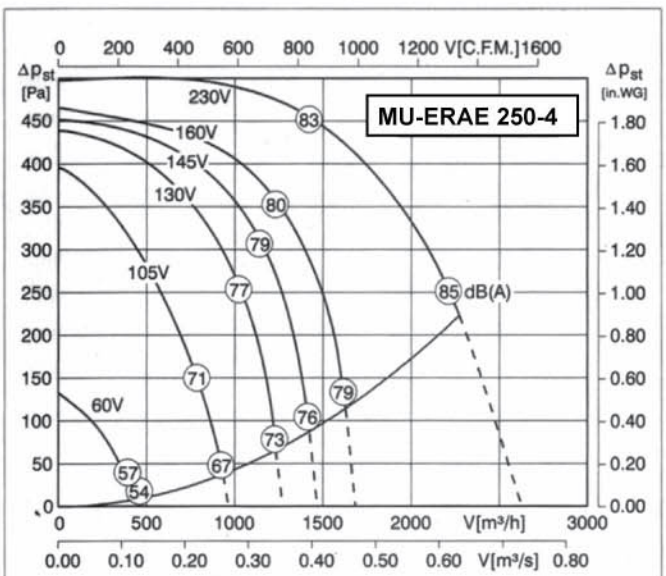


Typ	MU-ERAE 225-K		Artnr. ...	
U 230 V	60	Hz	I_A / I_N	1.3
P_1	0.33	kW		IP44
I_N	1.50	A		01.024
n	1300	min^{-1}		10 kg
C_{400V}	6	µF		RE/RTE 1,5
t_R	40	°C		RSE 2,5
$\Delta p_{st\ min}$	200	Pa		ED 2,5
ΔI	--	%		MSE 1

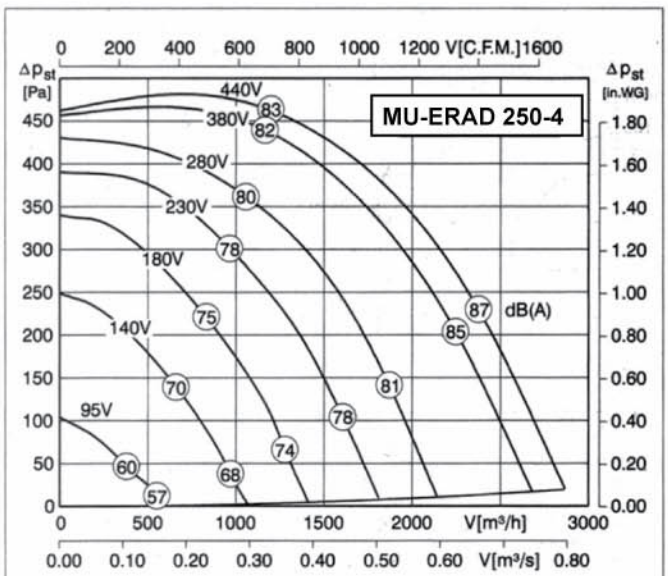


Typ	MU-ERAE 225-4		Artnr. ...	
U 230 V	60	Hz	I_A / I_N	1.5
P_1	0.79	kW		IP44
I_N	3.70	A		01.024
n	1440	min^{-1}		15.5 kg
C_{400V}	12	µF		RE/RTE 5,0
t_R	50	°C		RSE 3,7
$\Delta p_{st\ min}$	--	Pa		ED 5,0
ΔI	--	%		MSE 1

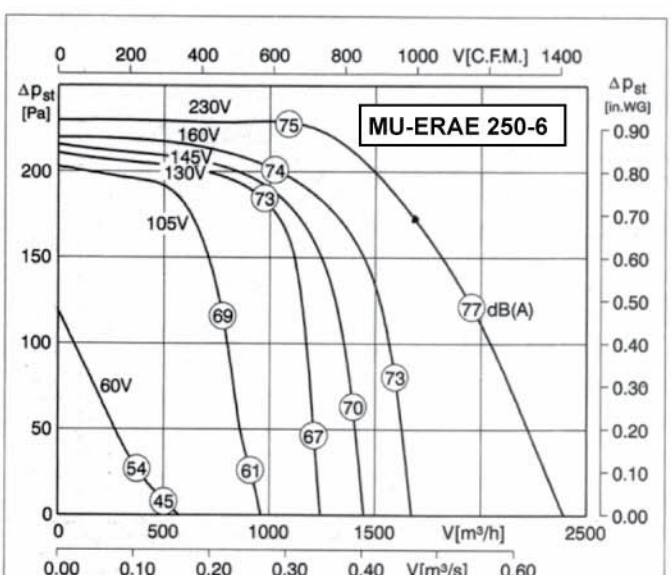
Performance Curves



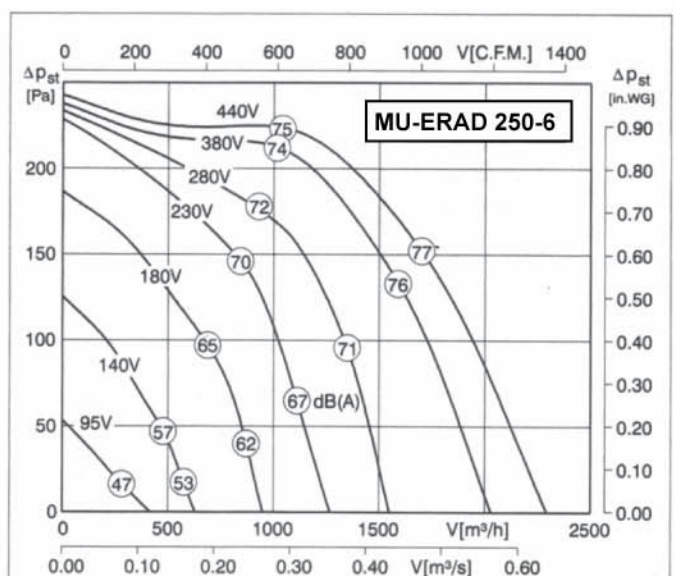
Typ	MU-ERAE 250-4		Artnr. ...	
U	230 V	60 Hz	I_A / I_N	2
P_1	1.0	kW		IP44
I_N	4.5	A		01.024
n	1460	min^{-1}		19 kg
C_{400V}	16	µF		RE/RTE 5,0
t_R	50	°C		RSE 5,5
$\Delta p_{st\ min}$	220	Pa		ED 5,0
ΔI	2	%		MSE 1



Typ	MU-ERAD 250-4		Artnr. ...	
U	380 / 440 V	60 Hz	I_A / I_N	2.3
P_1	1.02 / 1.14	kW		IP44
I_N	2.0 / 2.0	A		01.006
n	1290 / 1370	min^{-1}		19 kg
C_{400V}	--	µF		RTD 2,5
t_R	50 / 50	°C		--
$\Delta p_{st\ min}$	20 / 20	Pa		GDR8U
ΔI	--	%		MSD 1

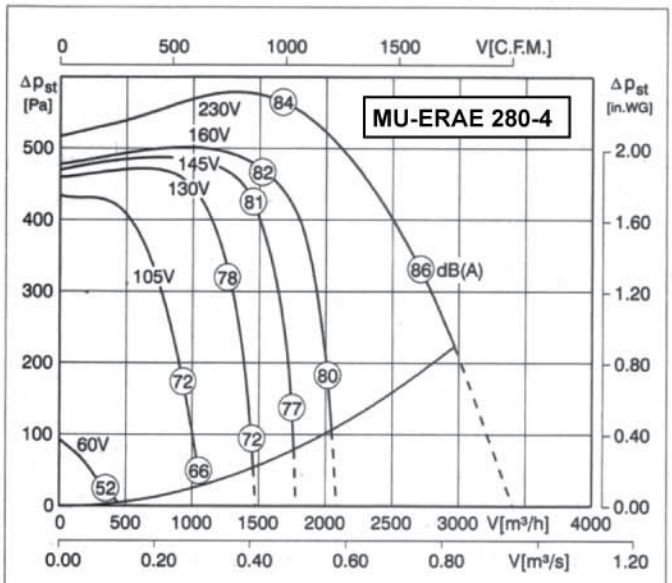


Typ	MU-ERAE 250-6		Artnr. ...	
U	230 V	60 Hz	I_A / I_N	1.6
P_1	0.55	kW		IP44
I_N	2.50	A		01.024
n	1020	min^{-1}		17 kg
C_{400V}	10	µF		RE/RTE 3,2
t_R	50	°C		RSE 2,5
$\Delta p_{st\ min}$	--	Pa		ED 2,5
ΔI	--	%		MSE 1

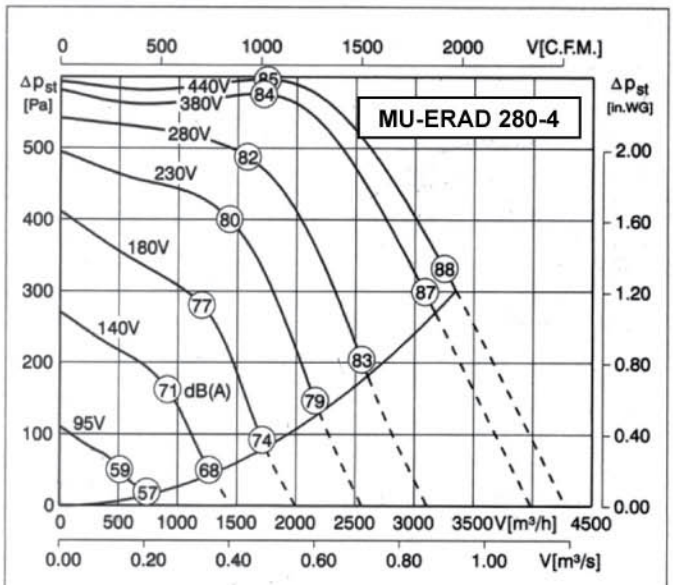


Typ	MU-ERAD 250-6		Artnr. ...	
U	380 / 440 V	60 Hz	I_A / I_N	2.1
P_1	0.42 / 0.50	kW		IP44
I_N	0.78 / 0.81	A		01.006
n	830 / 900	min^{-1}		16 kg
C_{400V}	--	µF		RTD 1,2
t_R	50 / 50	°C		--
$\Delta p_{st\ min}$	--	Pa		GDR8U
ΔI	--	%		MSD 1

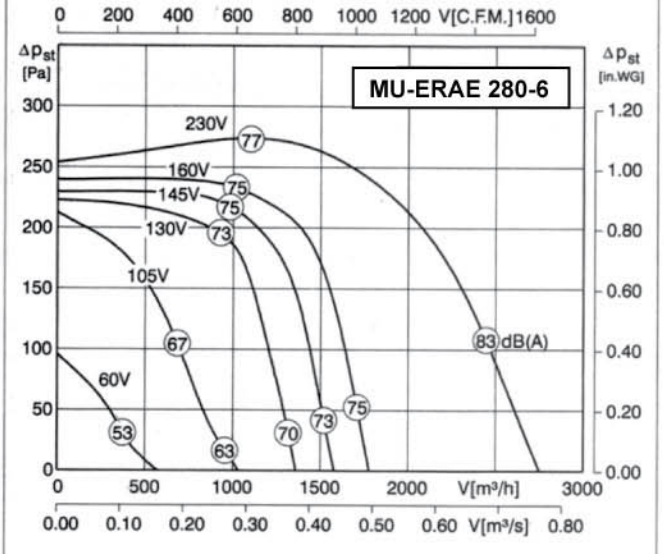
Performance Curves



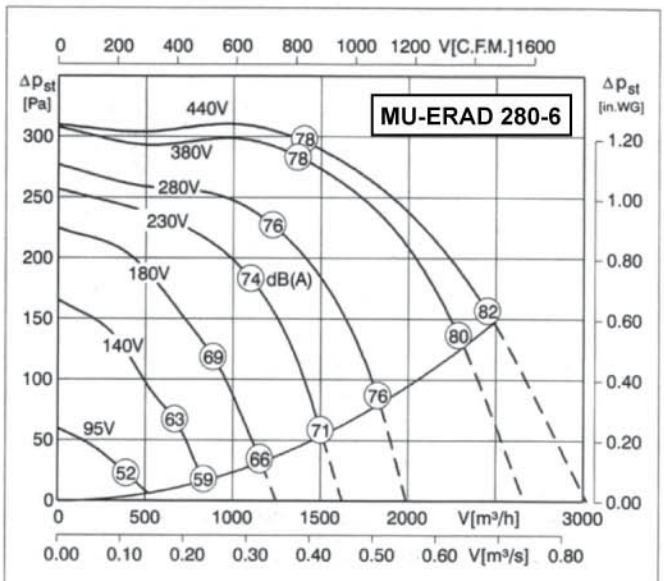
Typ	MU-ERAE 280-4		Artnr. ...	
U	230 V	60 Hz	I_A / I_N	2.2
P_1	1.55	kW		IP44
I_N	7.15	A		01.024
n	1550	min^{-1}		24 kg
C_{400V}	25	µF		RE/RTE 7,5
t_R	50	°C		--
$\Delta p_{st\ min}$	225	Pa		--
ΔI	6	%		MSE 1



Typ	MU-ERAE 280-4		Artnr. ...	
U	380 / 440 V	60 Hz	I_A / I_N	3
P_1	1.80 / 1.95	kW		IP44
I_N	3.30 / 3.20	A		01.006
n	1440 / 1530	min^{-1}		21 kg
C_{400V}	--	µF		RTD 3,8
t_R	50 / 50	°C		--
$\Delta p_{st\ min}$	270 / 300	Pa		GDR8U
ΔI	- / 4	%		MSD 1

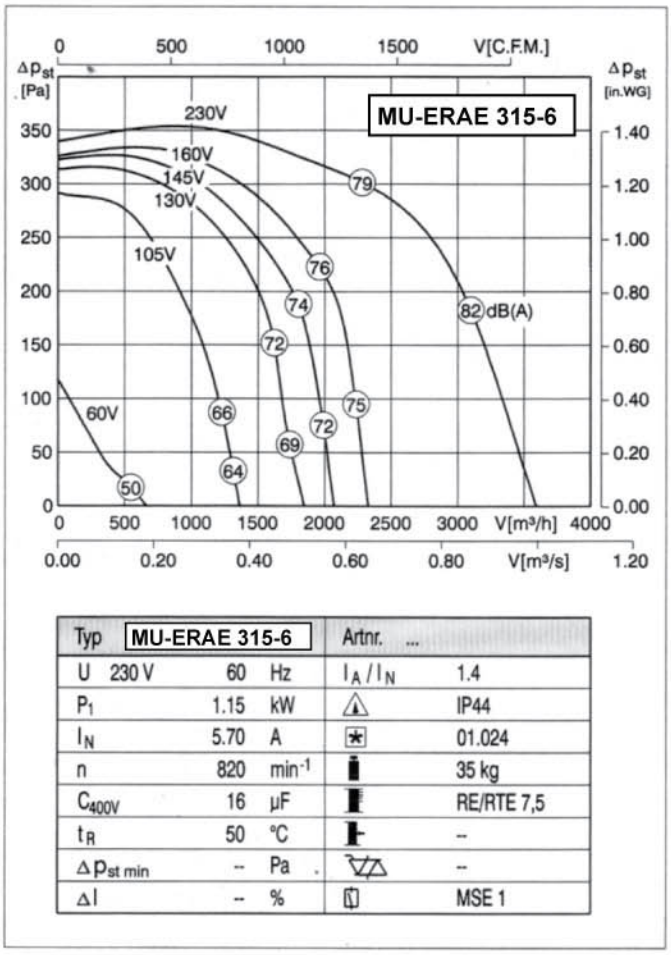


Typ	MU-ERAE 280-6		Artnr. ...	
U	230 V	60 Hz	I_A / I_N	1.3
P_1	0.70	kW		IP44
I_N	3.3	A		01.024
n	835	min^{-1}		19 kg
C_{400V}	12	µF		RE/RTE 3,2
t_R	50	°C		RSE 3,7
$\Delta p_{st\ min}$	--	Pa		ED 5,0
ΔI	--	%		MSE 1

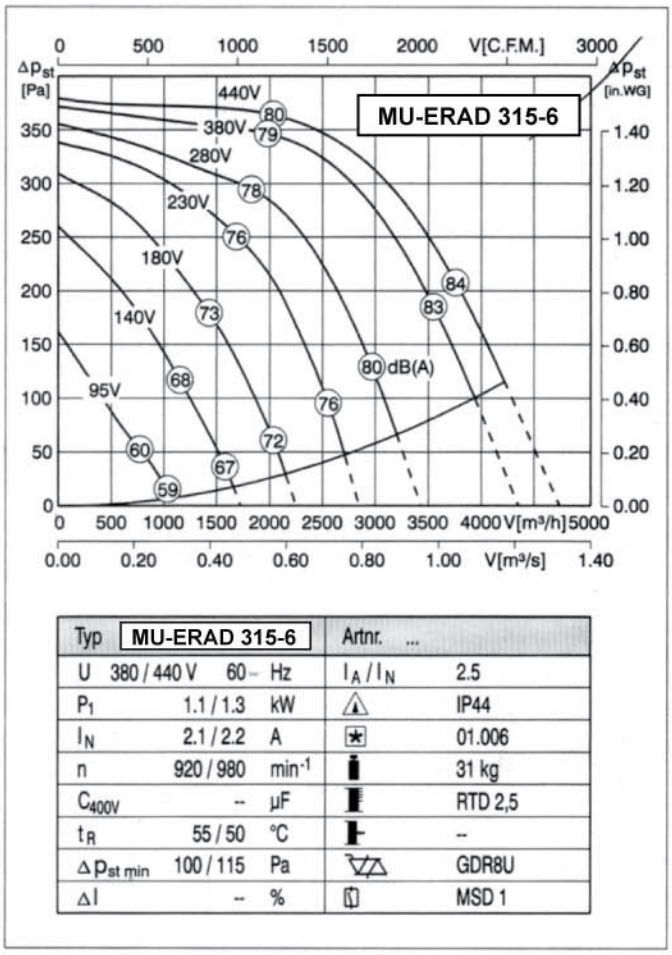


Typ	MU-ERAD 280-6		Artnr. ...	
U	380 / 440 V	60 Hz	I_A / I_N	2.2
P_1	0.62 / 0.66	kW		IP44
I_N	1.15 / 1.10	A		01.006
n	910 / 980	min^{-1}		16.5 kg
C_{400V}	--	µF		RTD 1,2
t_R	50 / 50	°C		--
$\Delta p_{st\ min}$	130 / 150	Pa		--
ΔI	- / 4	%		MSD 1

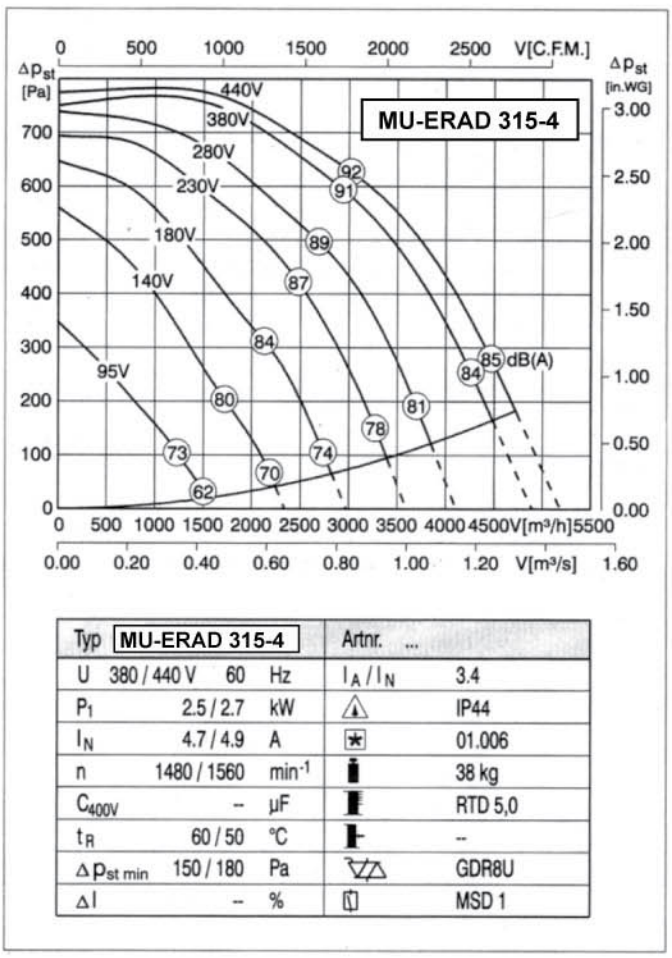
Performance Curves



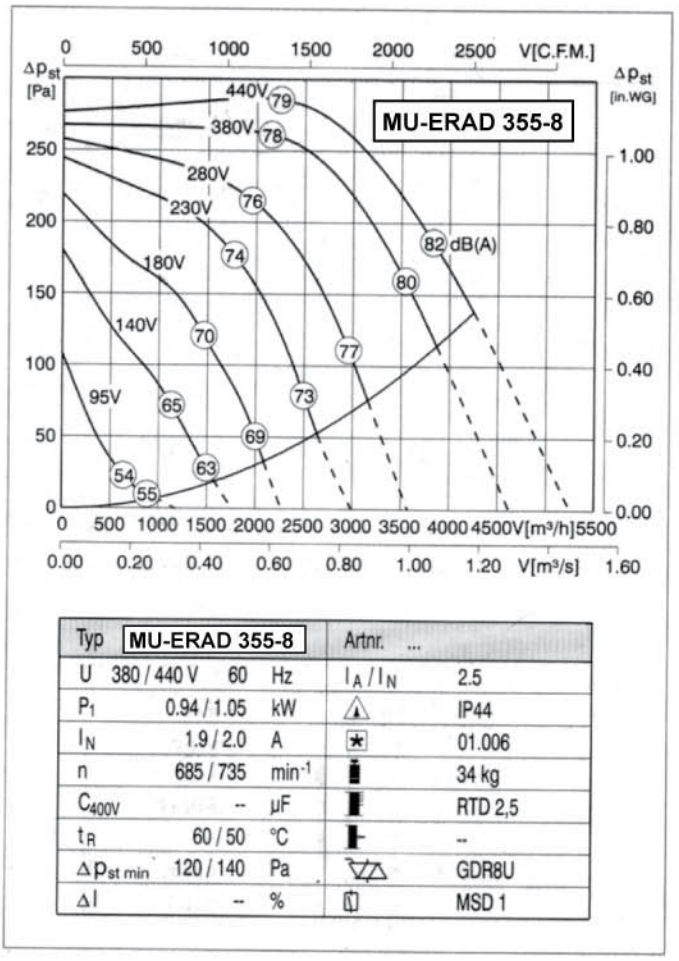
Typ	MU-ERAE 315-6		Artnr. ...	
U	230 V	60 Hz	I_A / I_N	1.4
P_1	1.15	kW		IP44
I_N	5.70	A		01.024
n	820	min^{-1}		35 kg
C_{400V}	16	µF		RE/RTE 7,5
t_R	50	°C		--
$\Delta p_{st\ min}$	--	Pa		--
ΔI	--	%		MSE 1



Typ	MU-ERAD 315-6		Artnr. ...	
U	380 / 440 V	60 Hz	I_A / I_N	2.5
P_1	1.1 / 1.3	kW		IP44
I_N	2.1 / 2.2	A		01.006
n	920 / 980	min^{-1}		31 kg
C_{400V}	--	µF		RTD 2,5
t_R	55 / 50	°C		--
$\Delta p_{st\ min}$	100 / 115	Pa		GDR8U
ΔI	--	%		MSD 1

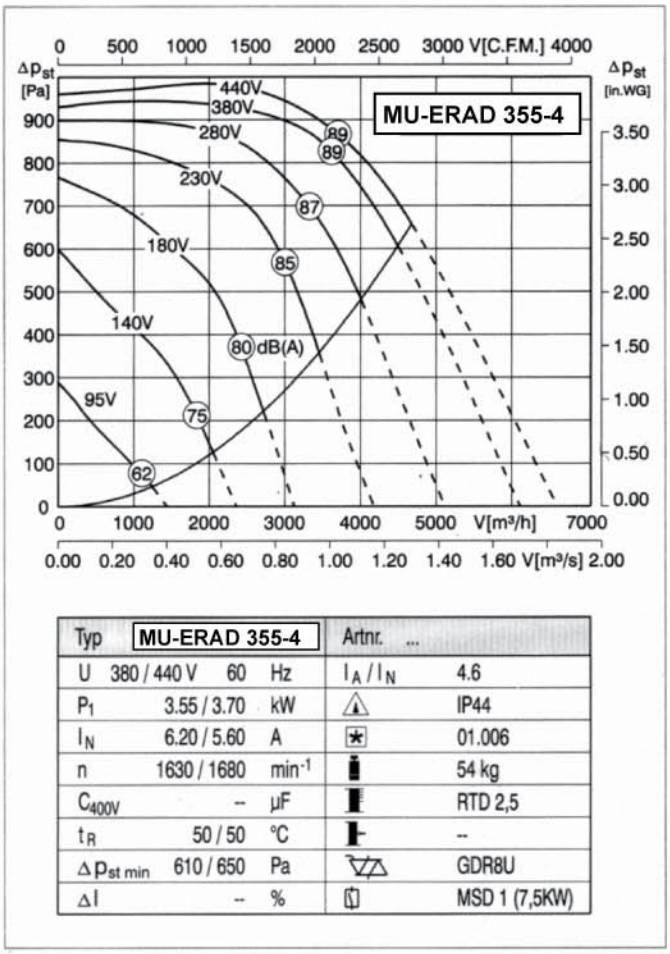


Typ	MU-ERAD 315-4		Artnr. ...	
U	380 / 440 V	60 Hz	I_A / I_N	3.4
P_1	2.5 / 2.7	kW		IP44
I_N	4.7 / 4.9	A		01.006
n	1480 / 1560	min^{-1}		38 kg
C_{400V}	--	µF		RTD 5,0
t_R	60 / 50	°C		--
$\Delta p_{st\ min}$	150 / 180	Pa		GDR8U
ΔI	--	%		MSD 1

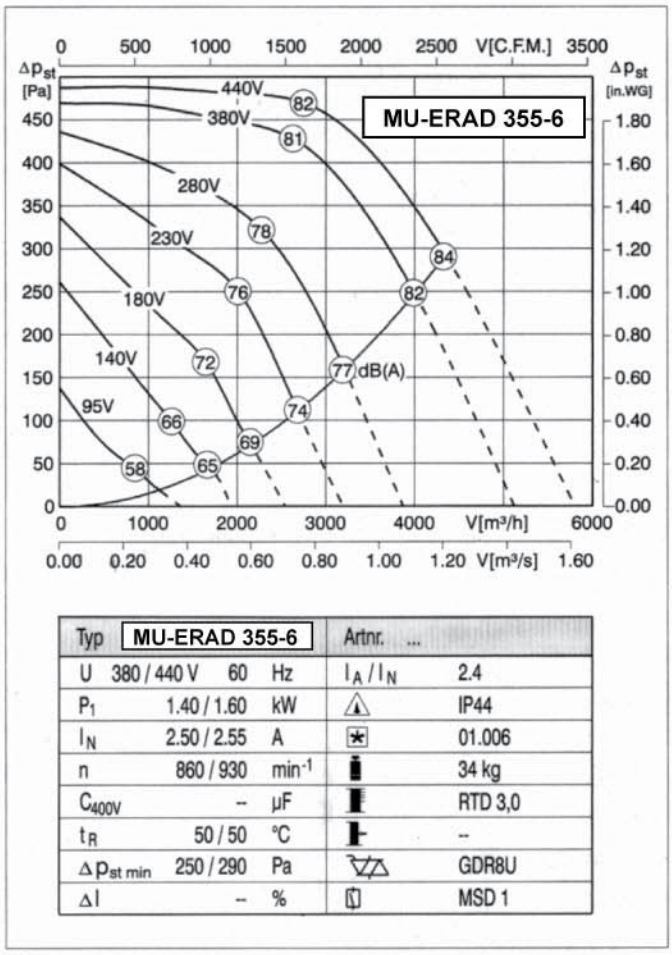


Typ	MU-ERAD 355-8		Artnr. ...	
U	380 / 440 V	60 Hz	I_A / I_N	2.5
P_1	0.94 / 1.05	kW		IP44
I_N	1.9 / 2.0	A		01.006
n	685 / 735	min^{-1}		34 kg
C_{400V}	--	µF		RTD 2,5
t_R	60 / 50	°C		--
$\Delta p_{st\ min}$	120 / 140	Pa		GDR8U
ΔI	--	%		MSD 1

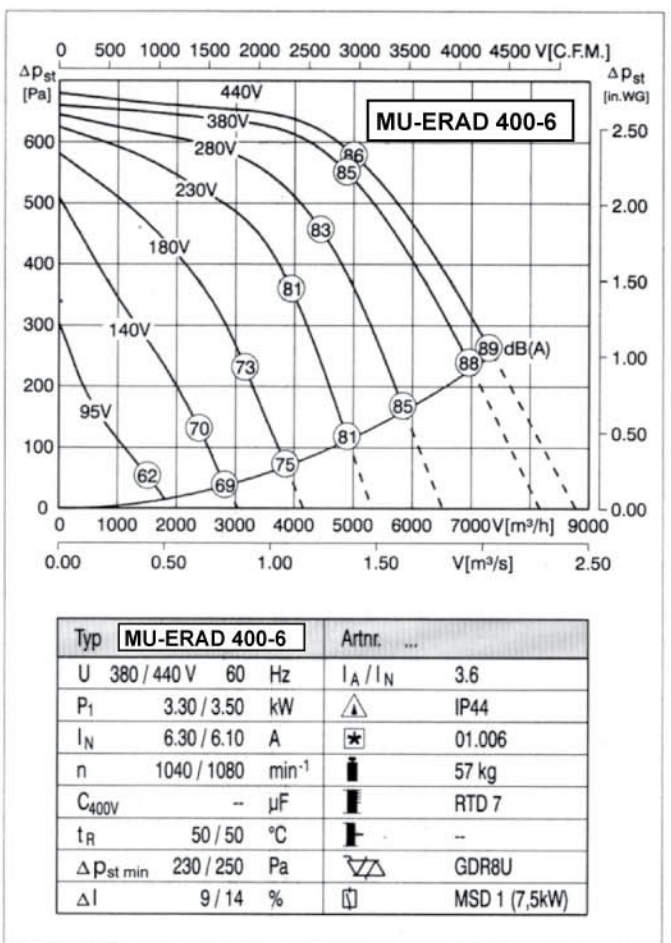
Performance Curves



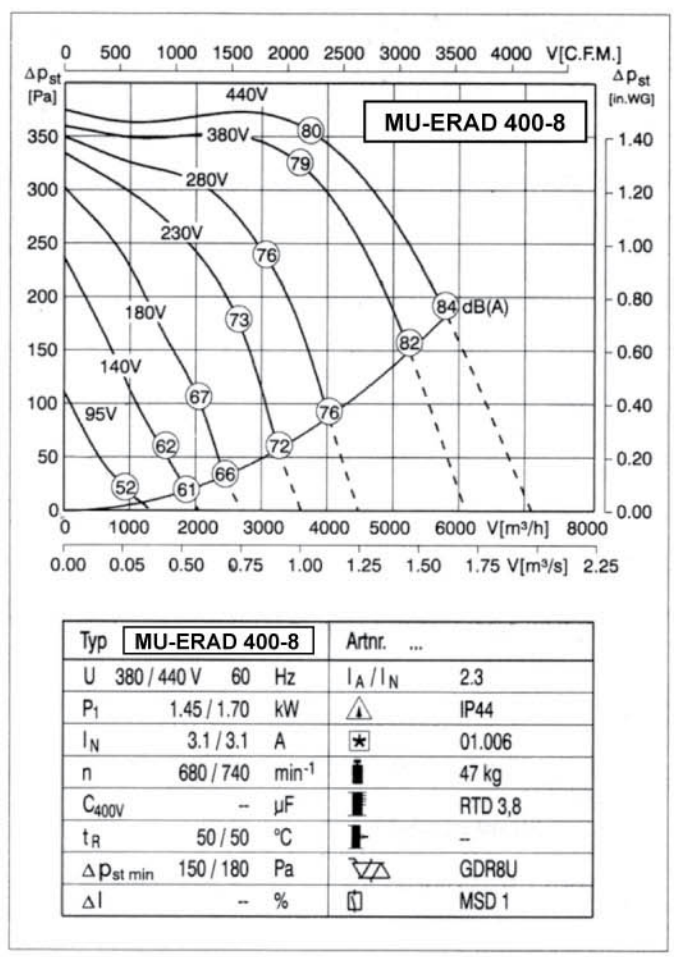
Typ	MU-ERAD 355-4		Artnr. ...	
U	380 / 440 V 60	Hz	I_A / I_N	4.6
P_1	3.55 / 3.70	kW		IP44
I_N	6.20 / 5.60	A		01.006
n	1630 / 1680	min⁻¹		54 kg
C_{400V}	--	µF		RTD 2,5
t_R	50 / 50	°C		--
$\Delta p_{st\ min}$	610 / 650	Pa		GDR8U
ΔI	--	%		MSD 1 (7,5KW)



Typ	MU-ERAD 355-6		Artnr. ...	
U	380 / 440 V 60	Hz	I_A / I_N	2.4
P_1	1.40 / 1.60	kW		IP44
I_N	2.50 / 2.55	A		01.006
n	860 / 930	min⁻¹		34 kg
C_{400V}	--	µF		RTD 3,0
t_R	50 / 50	°C		--
$\Delta p_{st\ min}$	250 / 290	Pa		GDR8U
ΔI	--	%		MSD 1

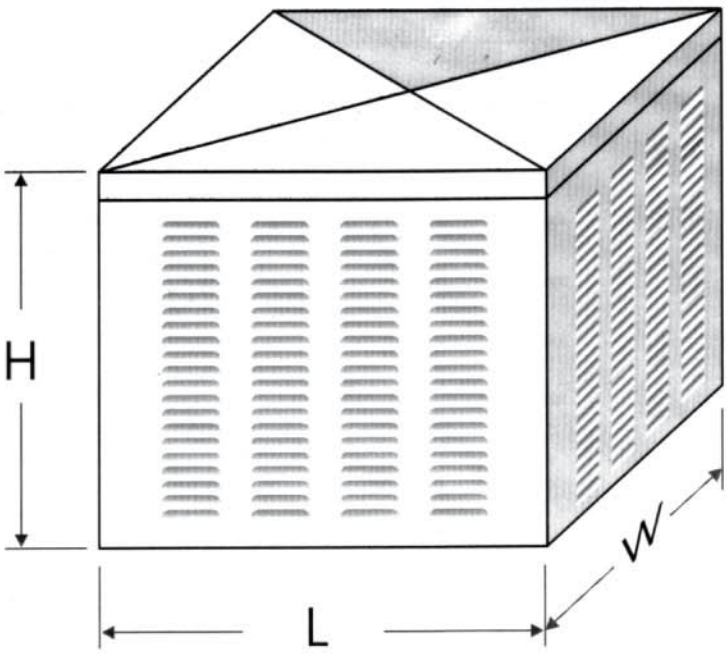


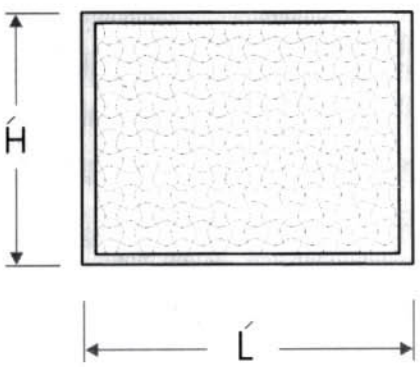
Typ	MU-ERAD 400-6		Artnr. ...	
U	380 / 440 V 60	Hz	I_A / I_N	3.6
P_1	3.30 / 3.50	kW		IP44
I_N	6.30 / 6.10	A		01.006
n	1040 / 1080	min⁻¹		57 kg
C_{400V}	--	µF		RTD 7
t_R	50 / 50	°C		--
$\Delta p_{st\ min}$	230 / 250	Pa		GDR8U
ΔI	9 / 14	%		MSD 1 (7,5kW)



Typ	MU-ERAD 400-8		Artnr. ...	
U	380 / 440 V 60	Hz	I_A / I_N	2.3
P_1	1.45 / 1.70	kW		IP44
I_N	3.1 / 3.1	A		01.006
n	680 / 740	min⁻¹		47 kg
C_{400V}	--	µF		RTD 3,8
t_R	50 / 50	°C		--
$\Delta p_{st\ min}$	150 / 180	Pa		GDR8U
ΔI	--	%		MSD 1

Dimensions





Ĺ = L - C
Ẃ = W - C
Ĥ = H - C

Model	Outer Frame				Filter Dimension	
SWSI	L	W	H	C	QTY	Dim
MU-ERA 180	500	500	450	30	4	Ĺ x Ĥ
MU-ERA 200 / 225	550	550	450	30	4	Ĺ x Ĥ
MU-ERA 250	600	600	500	30	4	Ĺ x Ĥ
MU-ERA 280 / 315	800	800	600	30	4	Ĺ x Ĥ
MU-ERA 355 / 400	1000	1000	750	40	4	Ĺ x Ĥ
DWDI						
MU-DRA 133	450	450	300	30	4	Ĺ x Ĥ
MU-DRA 181 / 181L / 195	500	500	400	30	4	Ĺ x Ĥ
MU-DRA 240 / 249 / 251	650	650	500	30	4	Ĺ x Ĥ
MU-DRA 195L / 240L / 249L / 251L	800	800	550	30	4	Ĺ x Ĥ
MU-DRA 279 / 281	800	800	600	40	4	Ĺ x Ĥ
MU-DRA 314 / 316	900	900	650	40	4	Ĺ x Ĥ
MU-DRA 356	1000	1000	750	40	4	Ĺ x Ĥ

All Dimension in mm

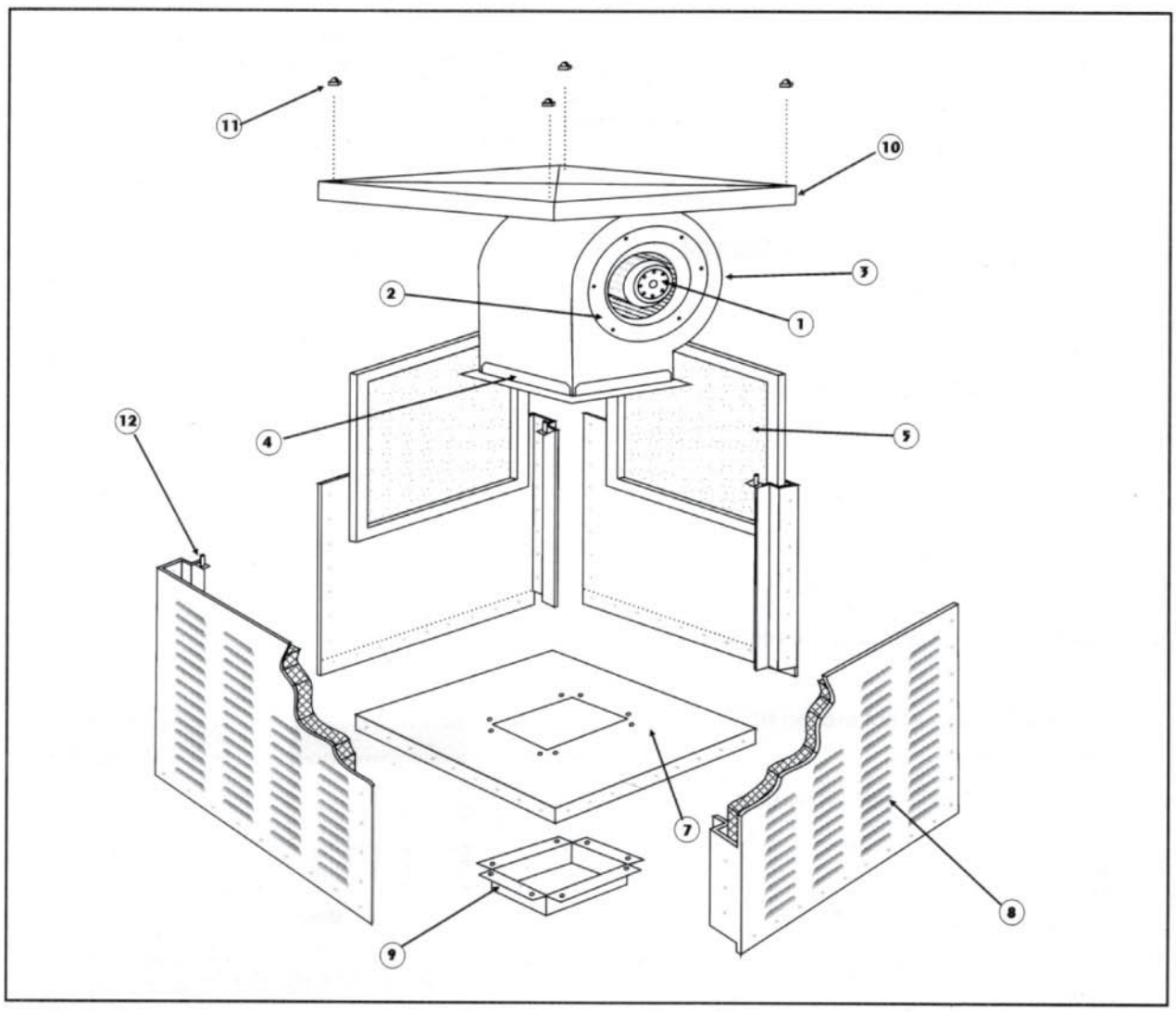
Note. FOR OTHER SIZES OUR ENGINEERS ARE READY TO DESIGN AS PER YOUR REQUIREMENT

Installation Guide

Musfan units are normally pre-assembled for speedy and easy installation. However, Musfan can also be provided in knocked down condition.

- **For Pre-Assembled unit**
  Place the unit on the top of roof curb and fasten in its place surely. Make electrical connection as according to wiring diagram labeled in connection box. Check for proper rotation of impeller. Place the roof cap on the casing and tight the nuts safely.

- **For Knockdown Condition**
  Place the base plate on the top of roof crub and fasten the curb with base surely. Next place the fan assembly on base, match the fasten and tight them carefully. Rivet the side panels and slide the removable filters in the rail, make wiring according to wiring diagram labeled in electrical box and fix the box on the fan casing in its defined location. Connect the power supply and check the proper rotation of impeller. Place the roof cap on the casing and tight the nuts safely.



Direct driven

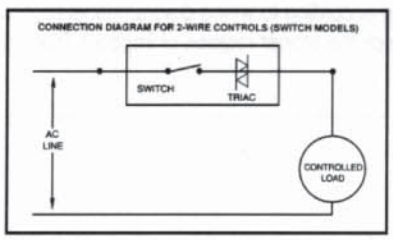
► 1- Motor	► 7- Base
► 2- Inlet Cone	► 8- Die Formed Louver
► 3- Blower Housing	► 9- Outlet Flange
► 4- Mounting Flange	► 10- Top Cover
► 5- Filters	► 11- Crown Head Nuts
► 6- Side Panels	► 12- Fixing Bolt

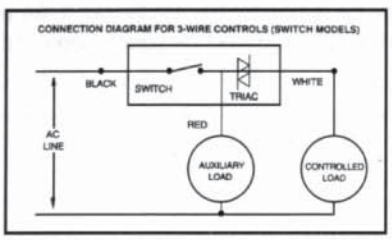
Accessories

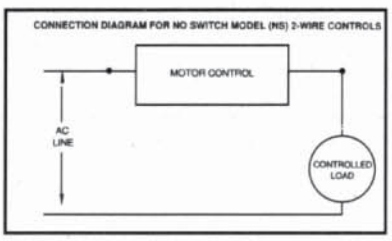
SPEED CONTROL (for single phase)

Reducing Speed for fan

Speed Controls are available in various models for different applications up to 10 Amps, this speed controller requires 50x100 handy box and its circuit is illustrated on the drawing below for (single phase motors).







Speed Control (For Three Phase)

TD

Transformers for installation in controllers
(three phase)
6 taps without casing

according to VDE 0550 with mounted terminal strip for use in switchgear panels.

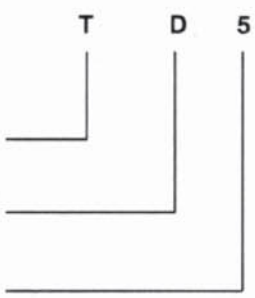
Three phase transformers are wired in V connection.

The rated output is achieved in a large or ventilated casing.

Ambient temperature should not exceed 40° C.

TD 20, TD 30
three coil transformer, data sheet on request.

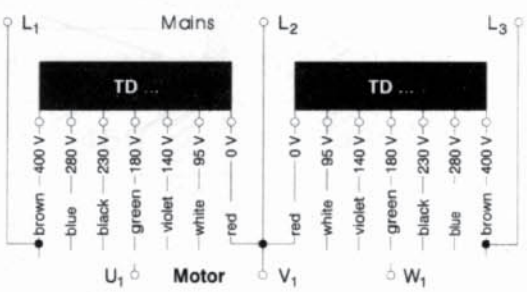
Reference Code

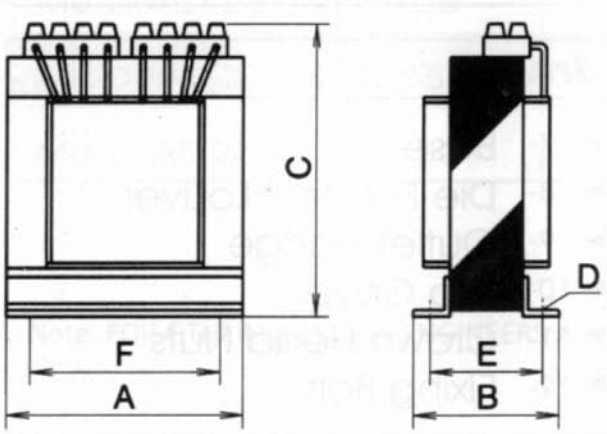


Transformer

D : Three phase

Max. ampere (A)





Primary 400 V / Secondary 400,280,230,180,140,95 V

Mod.	I_N [A]	A	B	C	øD	E	F	weight [kg]
TD 1	1,2	66	76	109	4,5x6,5	63	50	4
TD 3	3	120	94	122	5,5x10,5	78	90	10
TD 5	5	135	102	130	5,5x10,5	86	110	14
TD 7	7	135	121	126	5,5x10,5	104	110	18
TD 10	10	135	150	130	5,5x10,5	133	110	25
TD 14	14	175	136	155	5,5x10,5	114	135	34
TD 19	19	180	163	180	11x6,5	130	155	35

SPEED CONTROL (for single phase)

RTE

Single phase A.C. 5-step speed controllers with mains contactor and monitor lamp.

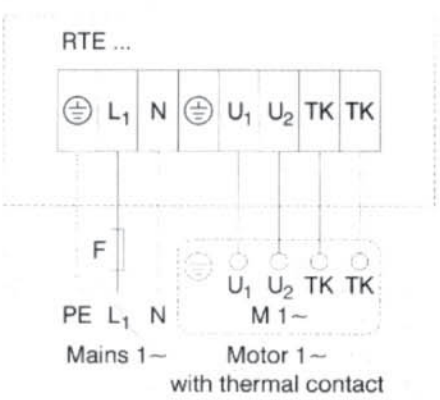
Appliance with motor protection through thermal contacts. When the maxiumum permissible temperature is reached, the thermal contacts mounted in the motor windings opens the control circuit. The mains contactor drops and disconnects the motor. After the fault has been eliminated, a re-connection is only possible with position "0" of the main switch.

Model
RTE 1,5, RTE 3,2, RTE 5 stable light grey casing, protection class IP 54

RTE 7,5, RTE 10 buttom part of casing made of die cast aluminium, upper part of light grey plastic, protection class IP 54

RTE 12 plastic coated steel sheet casing, protection class IP 54

RTE 20 plastic coated steel sheet casing, protection class IP 21



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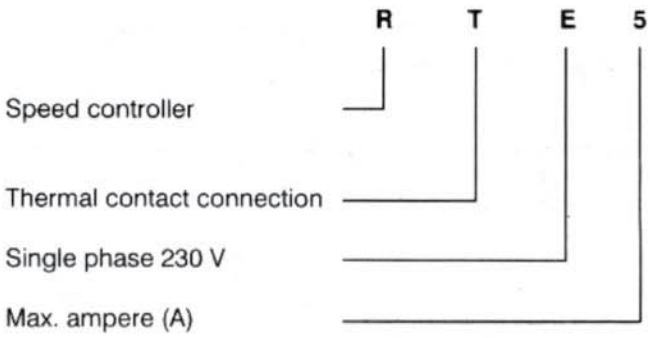
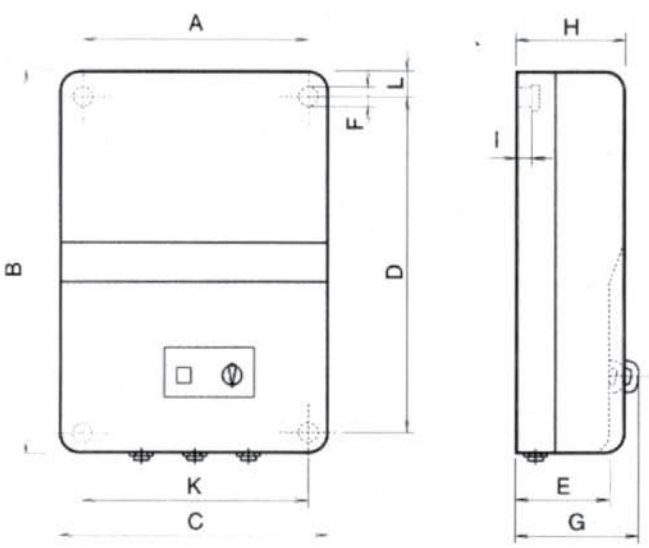




Type	max. capacity [A]	Protection class	A	B	C	D	E	F	G	H	I	K	L	weight [kg]
RTE 1,5	**1,5**	IP 54	96	180	116	160	85	5	100	100	5	96	10	2,2
RTE 3,2	**3,2**	IP 54	130	220	168	180	-	6	145	120	5	130	20	4,0
RTE 5	**5,0**	IP 54	130	220	168	180	-	6	145	120	5	130	20	5,0
RTE 7,5	**7,5**	IP 54	180	290	230	253	120	7	136	145	3,5	205	10	7,4
RTE 10	**10**	IP 54	180	290	230	253	120	7	136	145	3,5	205	10	10
RTE 12	**12**	IP 54	216	315	245	285	-	7	151	133	-	216	15	16
RTE 20	**20**	IP 21	315	410	380	345	-	7	173	155	-	315	33	21

SPEED CONTROL (for Three phase)

RTD

Three phase 5-step speed controllers with mains contactor and monitor lamp.

Appliance with motor protection through thermal contacts. When the maximum permissible temperature is reached, the thermal contacts mounted in the motor windings open the control circuit.

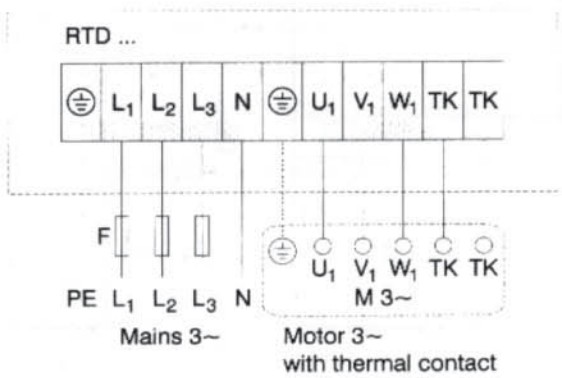
The mains contactor drops and disconnects the motor. After the fault has been eliminated, a re-connection is only possible with position "0" of the main switch.

Model

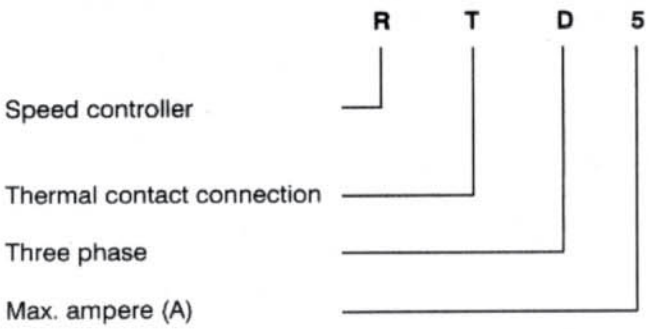
RTD 1,2, RTD 2,5, RTD 3, RTD 3,8
buttom part of casing made of die cast aluminium, upper part of light grey plastic, protection class IP 54

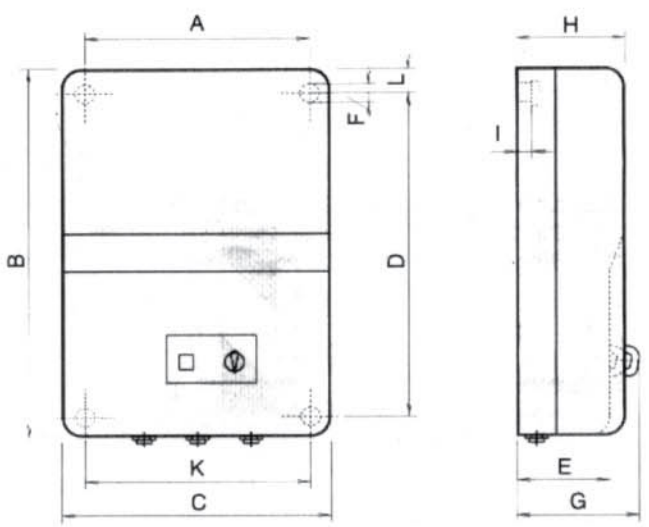
RTD 5, RTD 7, RTD 10
plastic coated, grey steel sheet casing, protection class IP 54

RTD 14, RTD 19
plastic coated, grey steel sheet casing and lateral ventilating slots, protection class IP 21



Reference Code





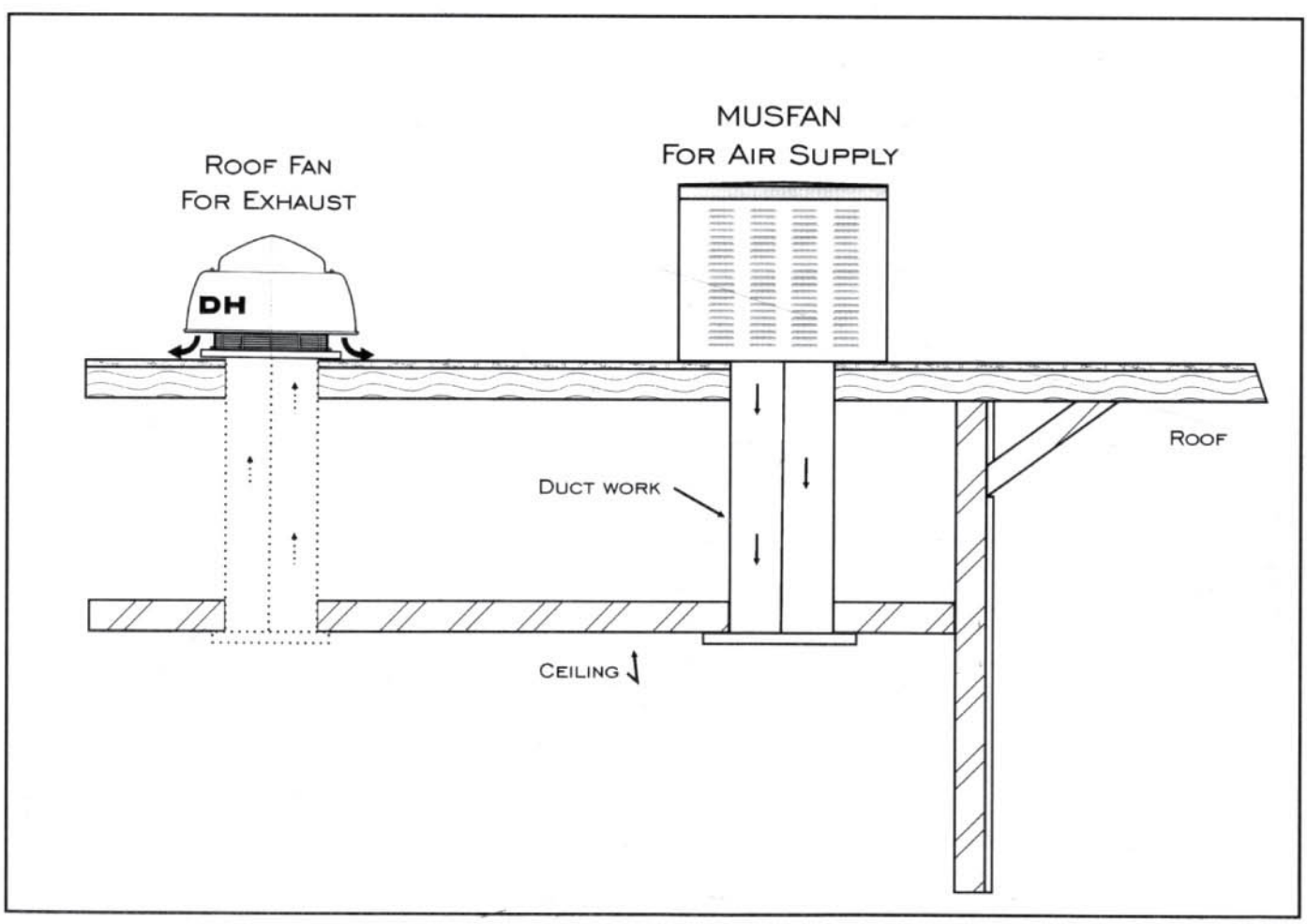
Type	max. capacity [A]	Protection class	A	B	C	D	E	F	G	H	I	K	L	weight [kg]
RTD 1,2	**1,2**	IP 54	180	290	230	253	120	7	-	145	6	205	12	6,0
RTD 2,5	**2,5**	IP 54												10,5
RTD 3,0	**3,0**	IP 54												12
RTD 3,8	**3,8**	IP 54												14
RTD 5,0	**5,0**	IP 54	216	315	245	285	-	7	151	133	-	216	15	15
RTD 7,0	**7,0**	IP 54	315	410	380	345	-	7	173	155	-	315	33	26
RTD 10	**10**	IP 54												32
RTD 14	**14**	IP 21		385	310					225				27
RTD 19	**19**	IP 21		500	360					275				33

Guide For Specification

Fresh Air Supply fan shall be as manufactured by **Saudi Fan Industries.** Casing/housing shall be low profile, shall incorporate die formed louvered side panels and direct air flow design, and shall be made from galvanized sheet steel having a G90 coating. Removable, permanent, washable aluminum (25mm/50mm thick) filters shall be mounted behind all louvered openings. The centrifugal wheel shall be either single width-single inlet (SWSI) or double width-double inlet (DWDI). Supply fan shall be high efficiency direct driven external rotor motor with either 50Hz or 60Hz suitable for 127Vor 220V-1Phase or 380V/440V-3Phase power supply where required.

- External rotor motor shall be 100% compatible with ordinary electronic speed controller by a varying speed from 100% to 10% of rated speed.
- For 3 Phase external rotor motor other methods of motor speed control variable speed drive or multi-tap step down transformer where applicable.
- Motor shall have a built-in thermal overload protection.
- Both impellers external rotor motor shall be balanced at 2 levels as per DIN/ISO 1940 G 2.5.
- Provide an internally wired disconnect switch.
- Fan shall be equipped into an IP44 terminal box with a wiring diagram.
- Where external corrosion protection is required, an epoxy coating or powder coating shall be provided where required.

Typical Application



Saudi Fan Industries

Call for Tender

Project: _____

plant: _____

Sno	Qty	DESCRIPTION	U/Price

SFI Make-up fresh air supply fan Direct Driven Forward Curved series

Enclosure casing made from galvanized steel with louvered sides and removable roof cap. Easy access to fan for service. The outlet dimensions are standardized and comply to DIN 24155.

Fans are equipped with forward curved blades made from galvanized steel, mounted onto the rotor of a speed controllable external rotor motor. The fans are balanced on two levels according to quality level G 2.5 DIN /ISO 1940.

Motor closed, protection class IP 44 and IP 54 with protection against humidity and thermal contacts wired in series in motor winding for motor protection. Electrical connection via external terminal boxes in IP 44 installed in the box. Cable outlets are provided in the casing.

Maintenance free ball bearings, closed on both sides, sealed for life.

Documentation:
Manufacturers declaration and operating instruction are according to machinery directive 89/392/EEC, CE identification in accordance to EMC-directive 89/336/EEC and low voltage directive 73/23/EEC. Motor operating instruction is available from manufacturer.

Silent fan as described before:

Air volume flow	V	_____	m^3/h
Pressure increase	Δp_{fa}	_____	Pa
Voltage	U	_____	V
Frequency	f	_____	Hz
Motor Size	P_1	_____	KW
Current consumption	L	_____	A
Speed	N	_____	Rpm
Sound power level			
Casing	L_{WA2}	_____	dB (A)
Inlet	L_{WA5}	_____	dB (A)
Outlet	L_{WA6}	_____	dB (A)
Temperature of ventilated medium	t_R	_____	°C
Connection diameter		_____	mm
Dimension	L x B x H	_____	mm
Weight	M	_____	Kg
SFI product	Type	_____	

Accessories

⑨ On/Off – Switch	Type GS
⑨ Clamps (1 pair)	Type
⑨ Back draught damper	Type
⑨ Shutter plastic	Type
⑨ Duct silencer	Type

WARRANTY

Saudi Fan Industries warrants this equipment to be free from defects in material and workmanship for a period of two years from the purchase date. Any units or parts, which proved defective during the warranty period, will be replaced at our option when return to our factory, transportation prepaid.

Notes

For contacts & inquiry

Refrigeration House Group
P. O. Box 1823 - Al-Khobar 31952
SAUDI ARABIA

- **Head Office** (Sales & Marketing)
  Tel. : (03) 882 1713 - 882 3515 Fax : (03) 882 3066
  E-mail : sales@refhouse.com / rhadmin@refhouse.com

- **Manufacturing Divisions**
  Dammam 2nd Industrial City
  National Factory Tel. : (03) 812 1282 Fax : (03) 812 1280
  Saudi Fan Industries Tel. : (03) 812 1866 Fax : (03) 812 1894

- **Contracting Division**
  Klimatechnik Tel. : (03) 882 3534 Fax : (03) 882 2807
  Riyadh Tel. : (01) 465 6198 Fax : (01) 462 8347

- **Trading Divisons**
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  Al-Khobar Tel. : (03) 869 1043 Fax : (03) 898 4161
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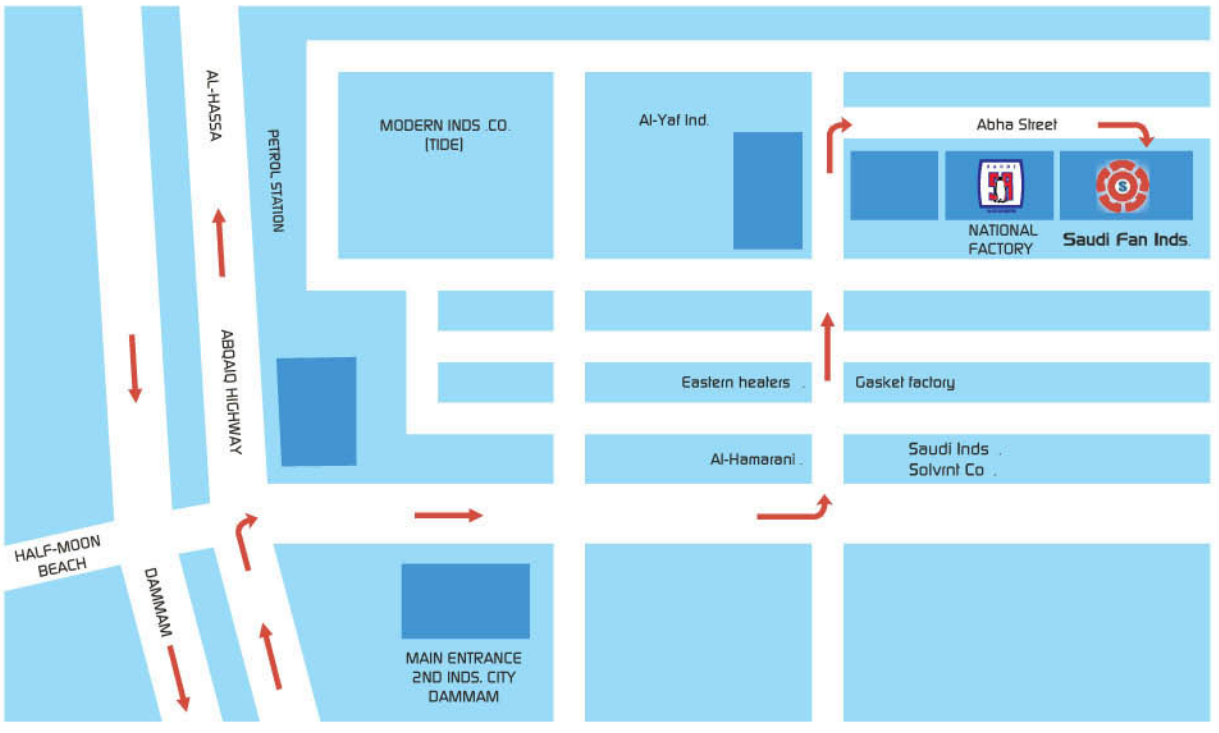
  Jeddah Tel. : (02) 665 2276 Fax : (02) 661 2265

- **Bahrain Regional Office**
  Tel.: ++973 537784 Fax : ++973 537138

www.refhouse.com

Klimatechnik



OUR LOCATION

Saudi Fan® Industries

Second Manufacturing Division of

Refrigeration House Group

Centrifugal Roof Fan
Direct Drive DH / DV

Centrifugal Roof Fan
Belt & Direct Driven / RTC

Centrifugal Radial Fan
Direct Drive ERAE-ERAD / DRAE-DRAD

Centrifugal Radial Fan
Belt Driven HRE-TRE / HRZ-TRZ

Square Inline Fans
Belt & Direct Driven / ISQ

Fresh Air Musfan
Belt & Direct Driven MU

Air Box Fresh Air Fan
Belt & Direct Driven AirBox

Centrifugal Twin Fan
Belt & Direct Driven TW

Axial Low Pressure Fan
Direct Drive EQ / DQ

Axial High Pressure Fan
Direct Drive AND

Inline Centrifugal Duct Fan
Direct Drive EKAE / EKAD

Inline Centrifugal Tube Fan
Direct Drive R / RS

Centrifugal Silent Fan
Direct Drive SSF

Axial Circulation Fan
Direct Drive SACF 30"-36"

Axial Agricultural Fan
Direct Drive SAAF 125"

Axial Portabl Tunnel Fan
Direct Drive SPTF 8"-12"

- Head Office Tel:(03) 882 1713 - 882 3515 Fax: (03)882 3066
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