

WDEx



INTENDED USE

Anti-explosion version of roof fans is used for ventilation of rooms in which explosive mixtures of flammable gases and liquid vapours with air may appear.

They may be used in such rooms as: acetylation, painter's, cleaner's, chemicals storerooms etc.

UNIT DESCRIPTION

Series of types of the anti-explosion roof fans includes 5 sizes.

The fans consist of:

- statically and dynamically balanced highly efficient centrifugal rotor made of steel
- tri-phase anti-explosion electric motor
- support panel
- body
- cover

The latter three elements are made of highly percussive and certificated plastic resistant against atmospheric effects in range of temperature: $-20 \div +50^{\circ}\text{C}$ and solar radiation UV.

WORKING CONDITIONS

The fans may be used for forcing air which consists of gases and / or vapours of flammable liquids of the II explosion grade and temperature classes: T1, T2, T3 to extent corresponding with Z1 or Z2 categories of explosion hazard, but:

a) in case of Z2 category there may be gases and vapours of flammable liquids of any explosion subgroup i.e. IIA, IIB, IIC and temperature classes T1, T2, T3 in case of using motor with reinforced construction type KPER with ExellT3 marking.

b) in case of Z1 category there may be gases and vapours which belong to IIA and IIB explosive subgroups and to temperature classes T1, T2, T3, as it is specified in paragraph a.

DESIGNATIONS

Roof fan - anti-explosion version

WDEx - 16 - 1380 - K

Type 16; 20; 25; 31,5; 40

Motor 1380 rpm for WDEx-16, 20, 25

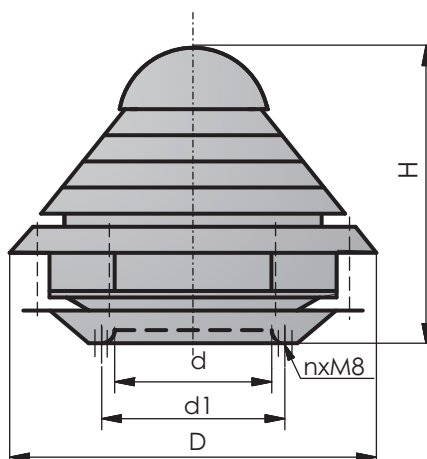
revolutions 920 rpm or 1380 rpm for WDEx-31,5

700 rpm or 925 rpm for WDEx-40

Stainless steel rotor

TECHNICAL DATA

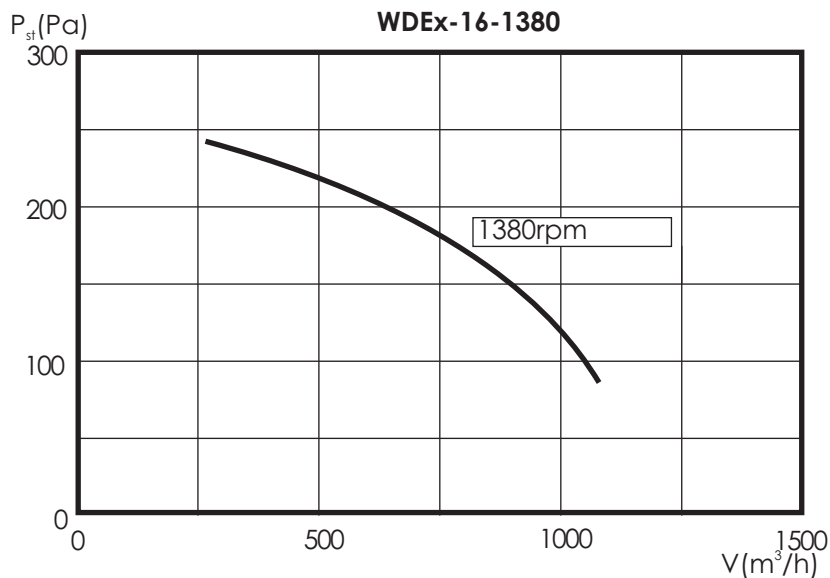
Basic dimensions



Fan size	d [mm]	d_1 [mm]	D [mm]	H [mm]	n	Weight [kg]
WDEx-16	140	190	500	400	4	18
WDEx-20	175	230	500	400	4	20
WDEx-25	220	280	605	470	6	21
WDEx-31,5	266	345	605	510	6	30
WDEx-40	360	430	810	640	8	45

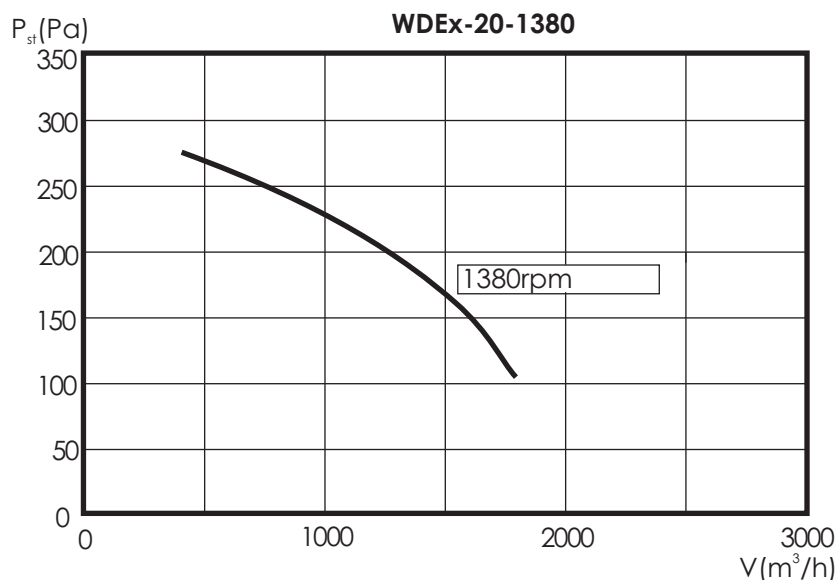
Motor

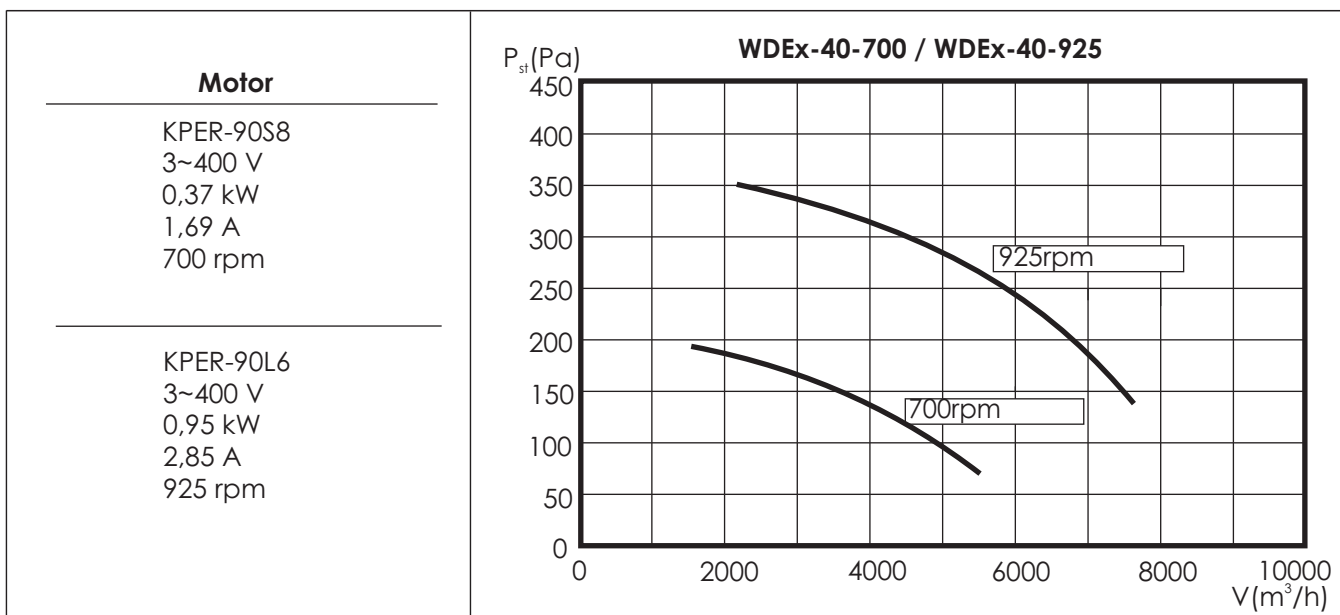
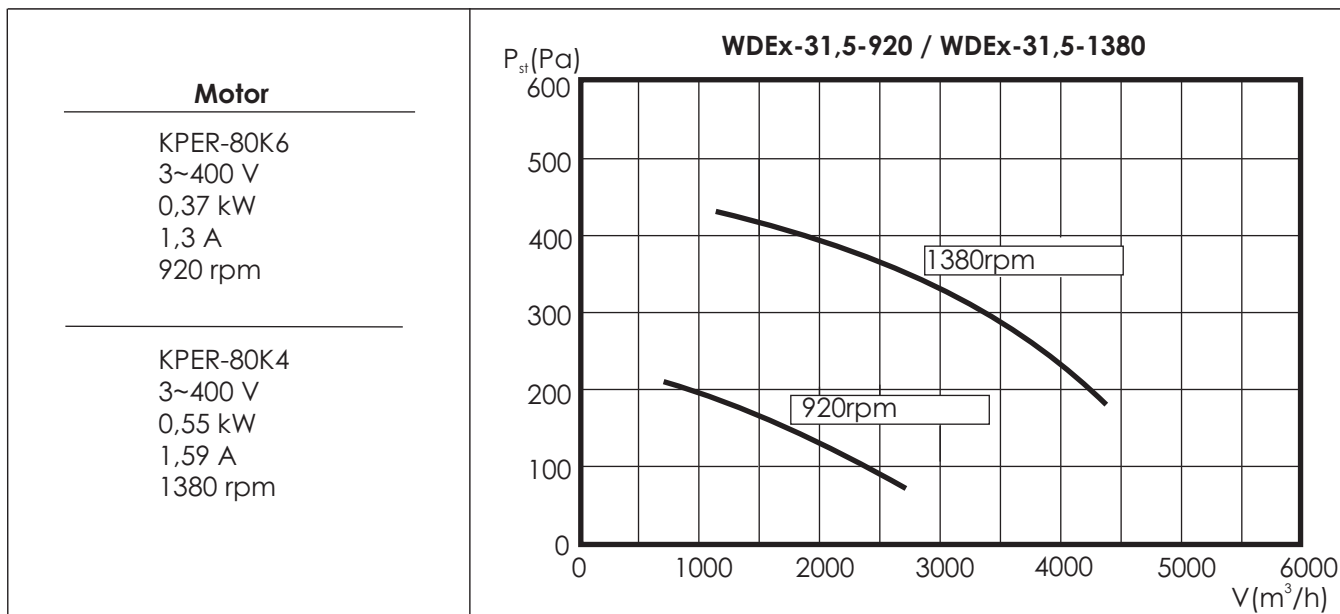
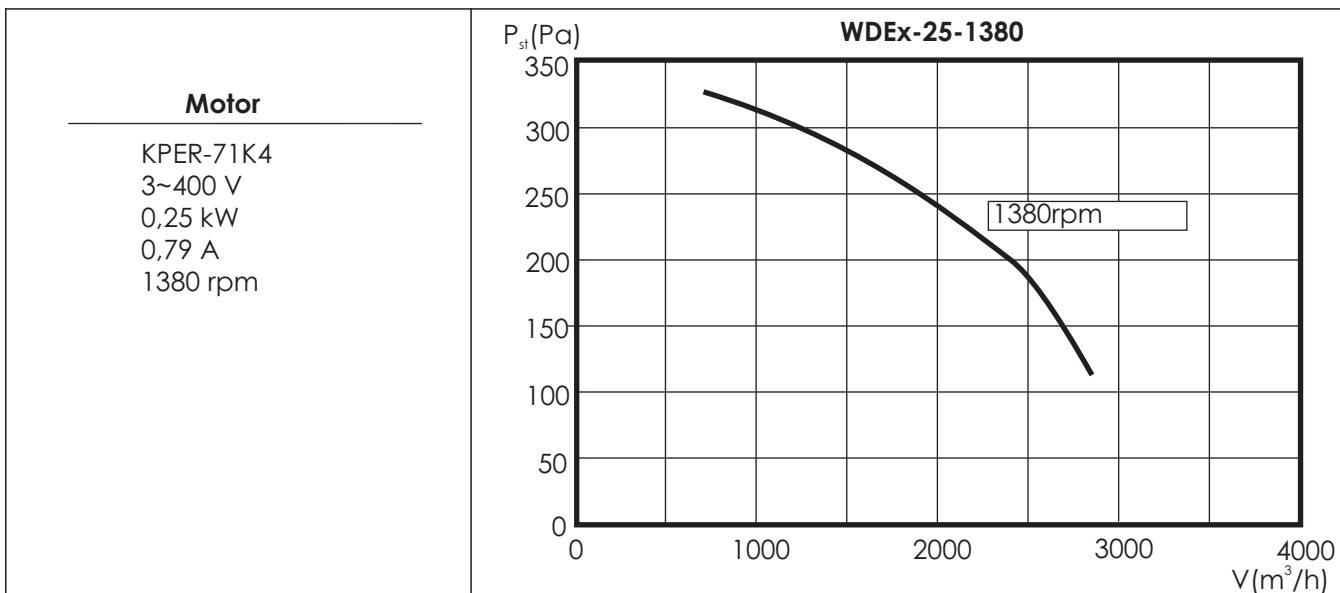
KPER-63G4
3~400 V
0,18 kW
0,66 A
1380 rpm



Motor

KPER-71K4
3~400 V
0,25 kW
0,79 A
1380 rpm





P_{st} –static negative pressure in the fan inlet

Operating noise level [dB(A)]

Fan size	Revolutions [rpm]	at the air outlet side*		at the air inlet side**	
		at the distance of 1 m	at the distance of 5m	at the distance of 1 m	at the distance of 5m
WDEX-16	1380	63	51	59	54
WDEX-20	1380	65	53	61	56
WDEX-25	1380	67	55	63	59
WDEX-31,5	920	62	50	58	53
	1380	70	58	66	61
WDEX-40	700	65	53	61	56
	925	70	58	66	61

* Operating noise level defined as the acoustic pressure at the side of the air discharge, in open air, taking the directivity factor $Q=2$ and distance from the fan 1 and 5m.

** Operating noise level is defined as the acoustic pressure at the side of the air inlet, taking into account the dispersion factor of room $A=100m^2$ and the directivity factor $Q=2$ and distance from the fan 1 and 5m.

ADDITIONAL INFORMATION

The fans are provided with "Certificate of Anti-Explosion Safety" issued by the Central Mining Institute Experimental Mine "Barbara".

Certificate number KDB no 97238W

List of regulations referring to using fans in rooms with high explosion risk:

- Decree of Home Secretary dated 3rd November 1992 concerning fire protection of buildings, other structural objects and areas Dz.U. no 92 dated 10.12.1992.
- Polish Standard PN-83/E-08110 "Electric Anti-Explosion Plants. Common Requirements and Tests".

All sizes of fans may be provided with rotors made of acid-proof steel. It should be specified in the order.

AUTOMATICS

Description of operation and fans automatics components selection are presented in the section: VENTILATORS CONTROL AND AUTOMATICS in this catalogue