

fan type MXE080-009030-00	FK serial no. 1	comm. no. 312402
your order no.	type of control valve	codeword 312402

fan type MXE080-009030-00

NP

type of connection		free inlet
operating condition		discharge operation
handled gas		clean air
designated volume flow		m³/min
designated static pressure increase		daPa
humidity		g/kg
gas constant	R	287 J/(kg K)
coefficient of adiabatic compressibility Kappa	K	1,4 -
inlet temperature	t1	20 °C
discharge temperature	t2	29 °C
altitude	h	0 m
abs. atmos. pressure	P0	101,33 kPa
athmos. density	ρ0	1,205 kg/m³
density at inlet	ρ1	1,205 kg/m³
volume flow	V1	90 m³/min
total pressure increase	Δpt	800 daPa
dynamic pressure	pd2	80 daPa
dynamic pressure	pd1	36 daPa
static pressure increase	Δpst	756 daPa
shaft power	PW	16 kW
impeller speed	nI	2940 rpm
rec. motor power	PM	18,5 kW
motor synchronous speed	nM	2955 rpm
tip speed	u2	102 m/s

C-weighted meas.surf.sound pressure level at 1m distance with

both sides ducted	LpCm	80 dB(C)
free inlet	LpC5	98 dB(C)
free discharge	LpC6	103 dB(C)

A-weighted total sound power level

inlet	LwAi1	101 dB(A)
discharge	LwAi2	105 dB(A)
correct.value A-weight.dB(A)	dLkA	7 dB(A)

A-weighted meas.surf.sound pressure level at 1m distance with

both sides ducted	LpAm	74 dB(A)
free inlet	LpA5	91 dB(A)
free discharge	LpA6	96 dB(A)
superficial dimension	Ls-k	15 dB

characteristic curve type

Δp/Pw 4/4 -

efficiency at total pressure increase

ηtot 75,0 %

efficiency at static pressure increase

ηstat 70,9 %

fan type
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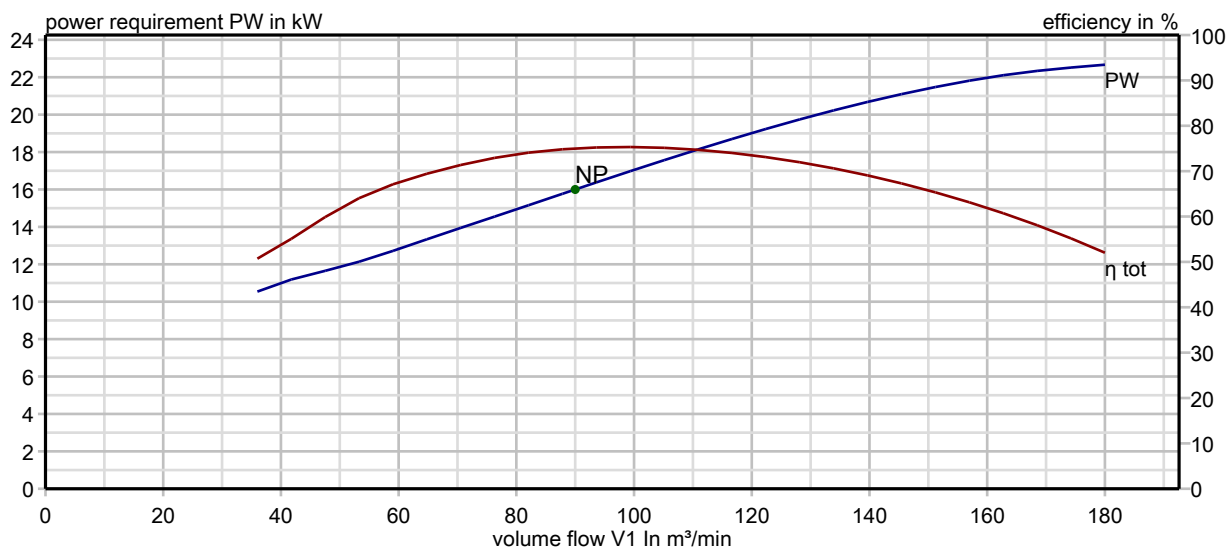
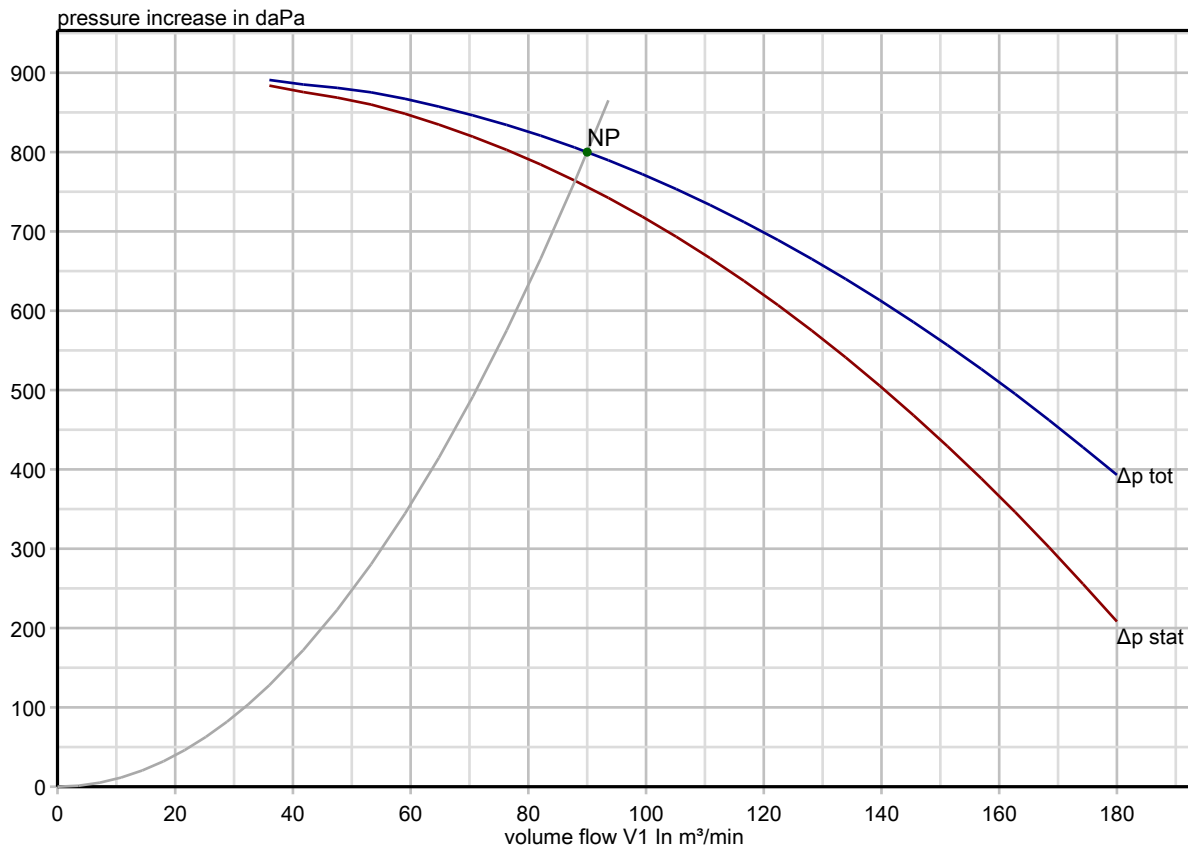
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		NP	OP 1	OP 2	OP 3	OP 4	OP 5	OP 6
volume flow V1	m³/min	90						
total pressure increase Δpt	daPa	800						
density at inlet ρ1	kg/m³	1,205						
impeller speed n1	rpm	2940						
inletguidevane/damp.								

DN2 SFV1.0 EV1.0 RE1.0 AKZ1.0 AKZ2.0 AKZ1.1

2.2.1.20

Tolerances dependent on class of accuracy in accordance to DIN 24166 in range of efficiency $\eta \geq 0,9 \times \eta_{max}$. Coordination for class of accuracy (G.KI.) see product specification.
At any rate, please pay attention to the techn. indications made in our Handbook of fans.
pressure units : 1 daPa = 10 Pa = 10 N/m² = 0,1 mbar = 1,0197 mmWC

class of accuracy	1	2	3
Δpt und V1 [%]	+/- 2,5	+/- 5	+/- 10
PW [%]	+ 3	+ 8	+ 16
Lw und Lp [dB]	+ 3	+ 4	+ 6

SOUND DATA

Liste 17_1 80Grad

quotation item
KRV 201809976-00 - 1.02

designation

date
10.12.2018 / cab

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technical data of fan at $p_1 = 1,205 \text{ kg/m}^3$ (nominal point) :

total pressure increase	Δp_t	800 daPa	volume flow	V1	90,00 m ³ /min
impeller speed	n1	2940 rpm	shaft power	PW	16 kW
no. of blades	z	11 -	main residual frequency	f	539 Hz
drive motor	PM	18,5 kW	motor speed	nM	2955 rpm

sound data:

superficial dimension	Ls-k	15,1 dB	corr. value A-weighting	dLkA	7,3 dB(A)
A-weighted total sound power level at inlet:	LwAi1	100,6 dB(A)	at discharge	LwAi2	105,5 dB(A)
A-weighted free inlet resp. free discharge sound pressure level at 1m distance from hemisphere radius					
at inlet:	LpA5	91,4 dB(A)	at discharge	LpA6	96,4 dB(A)
A-weighted external sound power level				LwAa	89,1 dB(A)
A-weighted meas. surf. sound pressure level				LpA	74,0 dB(A)
A-weight. meas. surface sound pressure level of drive			LpAMo		70,0 dB(A)
A-weight. meas. surface sound press. level fan and drive			LpAMo+LpA		dB(A)

octave spectrum

frequency	fm in Hz	63	125	250	500	1000	2000	4000	8000	Dim
main residual frequ.	dLD-okt	0,0	0,0	0,0	2,1	0,4	0,1	0,0	0,0	dB
relative octave spectrum	dLw-okt	-4,7	-5,4	-7,1	-9,7	-13,2	-17,6	-22,9	-29,1	dB
A-weighting	dLA	-26,2	-16,1	-8,6	-3,2	0,0	1,2	1,0	-1,1	dB
total sound power	Lwi2-okt	107,8	107,0	105,3	104,8	99,7	94,9	89,6	83,3	dB
	Lwi1-okt	102,9	102,1	100,4	99,9	94,8	90,0	84,6	78,4	dB
	LwAi2-okt	81,6	90,9	96,7	101,6	99,7	96,1	90,6	82,2	dB(A)
	LwAi1-okt	76,7	86,0	91,8	96,7	94,8	91,2	85,6	77,3	dB(A)
A-weighted external sound power level										
	LwAa-okt	65,3	74,6	80,4	85,3	83,3	79,8	74,2	65,9	dB(A)
A-weighted meas. surf. sound pressure level										
	LpA-okt	50,1	59,4	65,3	70,1	68,2	64,6	59,1	50,7	dB(A)

Remark : The rounding of the values to whole figures results necessarily in differences of further calculations.
At calculation of the sound pressure level a reduction of 3 dB for self shielding of the fan housing is to be taken into account.
LpA = LwAa - Ls - 3 dB(A)
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class of accuracy	1	2	3
Δp_t und V1 [%]	+/- 2,5	+/- 5	+/- 10
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Lw und Lp [dB]	+ 3	+ 4	+ 6

TORQUE DIAGRAM

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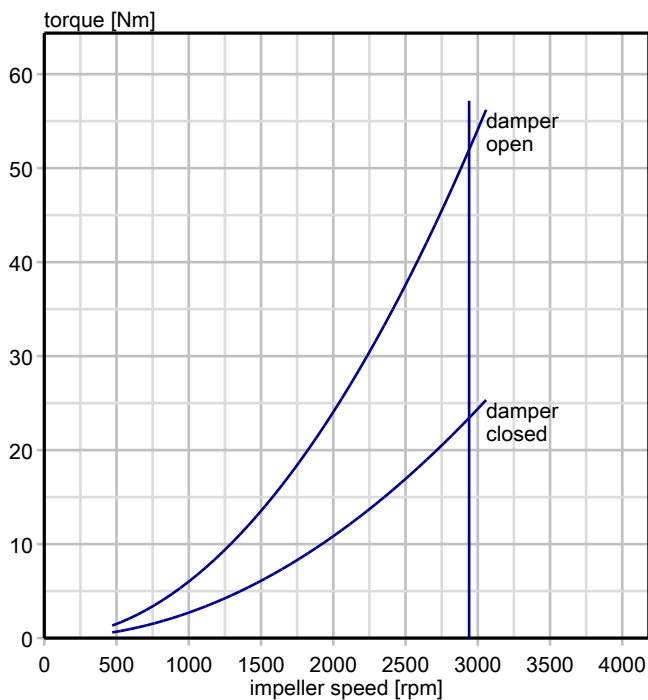
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nominal point : NP —

V1 = 90 m³/min
 Δp_t = 800 daPa
 PW = 16 kW
 n_l = 2940 rpm
 ρ_1 = 1,205 kg/m³
 J (imp.) = 2,05 kgm²

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MOTOR DATA / START-UP

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The following data apply to the fan nominal point.

Start-up data

rated output motor torque	59,8	Nm
torque Y	45,2	Nm
torque Δ	167,4	Nm
load torque in NP	52,0	Nm
load torque closed damper	26,0	Nm
moment of inertia relative to nM	2,1	kgm ²
start-up time in NP Y	27,0	s
start-up time closed damper Y	18,9	s
start-up time in NP Δ	4,5	s
start-up time closed damper Δ	4,2	s
theoretical starting time	6,5	s
mass inertia ratio Iv/Im	14,6	-

Δ-start-up possible (DOL start-up)

YΔ-start-up possible (star-delta start-up)

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