# technical data page 1

Liste 17_1 80Grad

| | |
|---|---|
| quotation item | KRV 201907859-00 - 3.02 |
| designation | |
| date | 13.08.2019 / crb |

| | | |
|---|---|---|
| fan type: MXE080-000930-00 | BU serial no.: 1 | comm. no.: - |
| your order no.: | type of control: valve | codeword: 373563 |

## fan type MXE080-000930-00

| | | OP 1* | | units acc. to customer's specification | |
|---|---|---|---|---|---|
| type of connection | | ducted | | | |
| operating condition | | discharge operation | | | |
| handled gas | | clean air | | | |
| designated volume flow | | 6,7 | m³/min | 6,7 | m³/min |
| designated static pressure increase | | 800 | daPa | 80 | mbar |
| humidity | | 0 | g/kg | 0 | g/kg |
| gas constant | R | 287 | J/(kg K) | 287 | J/(kg K) |
| coefficient of adiabatic compressibility Kappa | K | 1,4 | - | 1,4 | - |
| inlet temperature | t1 | 40 | °C | 40 | °C |
| discharge temperature | t2 | 56 | °C | 56 | °C |
| altitude | h | 0 | m | 0 | m |
| abs. atmos. pressure | P0 | 101,33 | kPa | 101,33 | kPa |
| athmos. density | ρ0 | 1,128 | kg/m³ | 1,128 | kg/m³ |
| density at inlet | ρ1 | 1,128 | kg/m³ | 1,128 | kg/m³ |
| volume flow | V1 | 6,7 | m³/min | 6,7 | m³/min |
| total pressure increase | Δpt | 737 | daPa | 73,69 | mbar |
| dynamic pressure | pd2 | 4 | daPa | 0,44 | mbar |
| dynamic pressure | pd1 | 3 | daPa | 0,3 | mbar |
| static pressure increase | Δpst | 735 | daPa | 73,55 | mbar |
| shaft power | PW | 2 | kW | 2 | kW |
| impeller speed | nl | 2900 | rpm | 2900 | rpm |
| rec. motor power | PM | 5,5 | kW | 5,5 | kW |
| motor synchronous speed | nM | 2950 | rpm | 2950 | rpm |
| tip speed | u2 | 100 | m/s | 100 | m/s |

| | | | |
|---|---|---|---|
| C-weighted meas.surf.sound pressure level at 1m distance with | | | |
| both sides ducted | LpCm | 81 | dB(C) |
| free inlet | LpC5 | 94 | dB(C) |
| free discharge | LpC6 | 105 | dB(C) |
| A-weighted total sound power level | | | |
| inlet | LwAi1 | 98 | dB(A) |
| discharge | LwAi2 | 109 | dB(A) |
| correct.value A-weight.dB(A) | dLkA | 6 | dB(A) |
| A-weighted meas.surf.sound pressure level at 1m distance with | | | |
| both sides ducted | LpAm | 77 | dB(A) |
| free inlet | LpA5 | 90 | dB(A) |
| free discharge | LpA6 | 101 | dB(A) |
| superficial dimension | Ls-k | 15 | dB |
| characteristic curve type | Δp/Pw | 1/1 | - |
| efficiency at total pressure increase | ηtot | 40,2 | % |
| efficiency at static pressure increase | ηstat | 40,1 | % |

* BP 1 : BP1

DN1 SFV1.0 EV1.0 RE1.0 AKZ1.0 AKZ2.0 AKZ1.1

3.0.0.8

Tolerances dependent on class of accuracy in accordance to DIN 24166 in range of efficiency η >= 0,9 x ηmax.. Coordination for class of accuracy (G.Kl.) 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

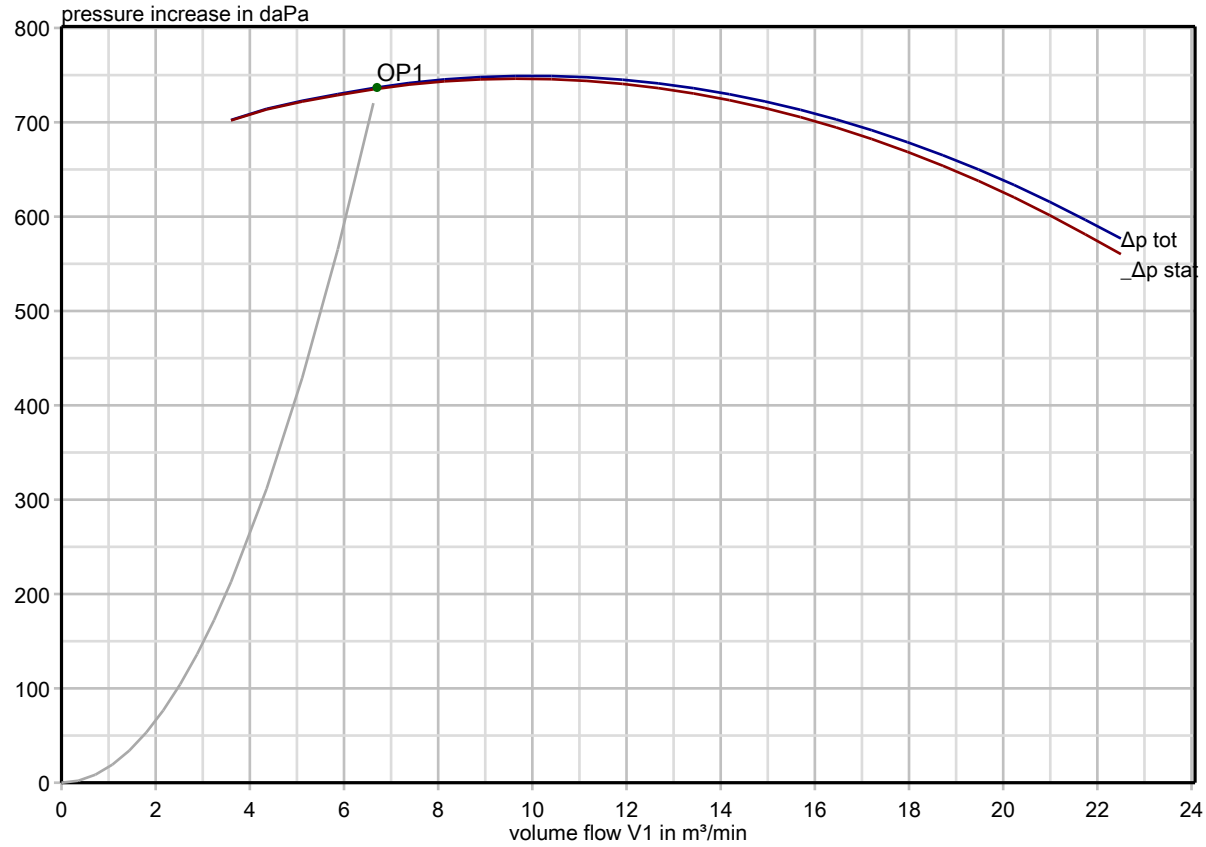
| class of accuracy | | 1 | 2 | 3 |
|---|---|---|---|---|
| Δpt and V1 | [ %] | +/- 2,5 | +/- 5 | +/- 10 |
| PW | [ %] | + 3 | + 8 | + 16 |
| Lw and Lp | [dB] | + 3 | + 4 | + 6 |

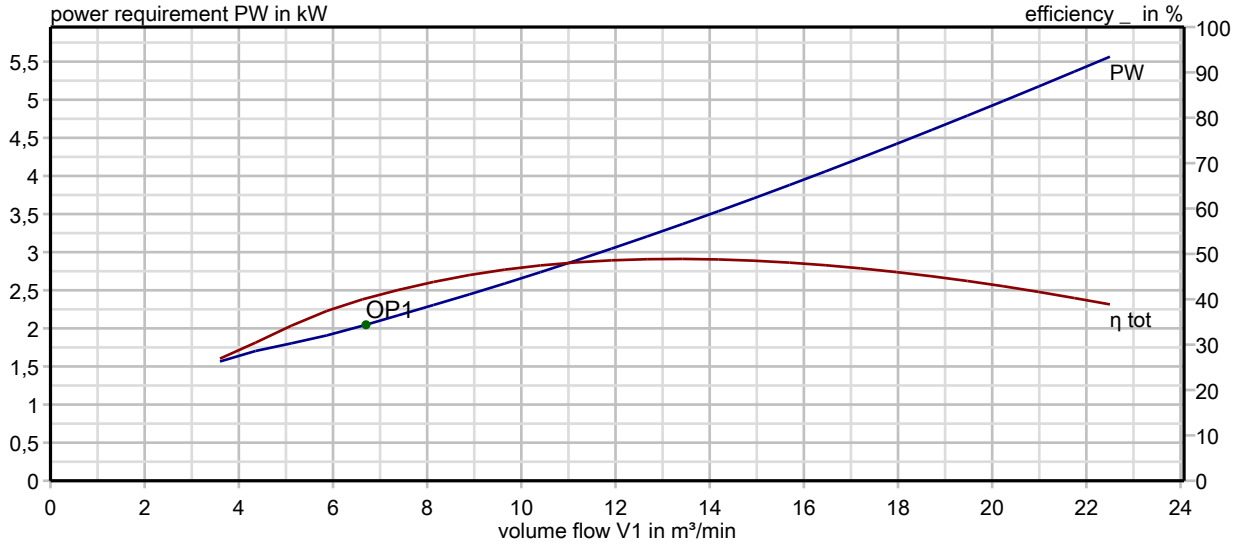
# FAN CHARACTERISTIC CURVE

Liste 17_1 80Grad

| | |
|---|---|
| quotation item | KRV 201907859-00 - 3.02 |
| designation | |
| date | 13.08.2019 / crb |

| | | |
|---|---|---|
| fan type<br>MXE080-000930-00 | BU serial no.<br>1 | comm. no.<br>- |
| your order no. | type of control<br>valve | codeword<br>373563 |




| | | NP | OP 1 | OP 2 | OP 3 | OP 4 | OP 5 | OP 6 |
|---|---|---|---|---|---|---|---|---|
| volume flow V1 | m³/min | | 6,7 | | | | | |
| total pressure increase Δpt | daPa | | 737 | | | | | |
| density at inlet ρ1 | kg/m³ | | 1,128 | | | | | |
| impeller speed nl | rpm | | 2900 | | | | | |
| inletguidevane/damp. | | | | | | | | |

DN1 SFV1.0 EV1.0 RE1.0 AKZ1.0 AKZ2.0 AKZ1.1

3.0.0.8

Tolerances dependent on class of accuracy in accordance to DIN 24166 in range of efficiency η >= 0,9 x ηmax.. Coordination for class of accuracy (G.Kl.) see product specification.
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pressure units : 1 daPa = 10 Pa = 10 N/m² = 0,1 mbar = 1,0197 mmWC

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

# SOUND DATA

Liste 17_1 80Grad

| | |
|---|---|
| quotation item | KRV 201907859-00 - 3.02 |
| designation | |
| date | 13.08.2019 / crb |

| fan type | BU serial no. | comm. no. |
|---|---|---|
| MXE080-000930-00 | 1 | - |
| your order no. | type of control | codeword |
| | valve | 373563 |

technical data of fan at ρ-1 =1,128 kg/m³ (OP 1 BP1) :

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| total pressure increase | Δpt | 737 | daPa | volume flow | V1 | 6,70 | m³/min |
| impeller speed | nl | 2900 | rpm | shaft power | PW | 2 | kW |
| no. of blades | z | 13 | - | main residual frequency | f | 628 | Hz |
| drive motor | PM | 5,5 | kW | motor speed | nM | 2950 | rpm |

sound data:

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| superficial dimension | Ls-k | 14,6 | dB | corr. value A-weighting | dlkA | 5,7 | dB(A) |
| A-weighted total sound power level at inlet: | LwAi1 | 98,5 | dB(A) | at discharge | LwAi2 | 109,5 | dB(A) |
| A-weighted free inlet resp. free discharge sound pressure level at 1m distance from hemisphere radius at inlet: | LpA5 | 89,9 | dB(A) | at discharge | LpA6 | 100,9 | dB(A) |
| A-weighted external sound power level | | | | | LwAa | 91,7 | dB(A) |
| A-weighted meas. surf. sound pressure level | | | | | LpA | 77,1 | dB(A) |
| A-weight. meas.surface sound pressure level of drive | | | | LpAMo | | 68,0 | dB(A) |
| A-weight. meas. surface sound press.level fan and drive | | | | LpAMo+LpA | | | dB(A) |

sound correction value

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| speed correction | dLn | 0 | dB | deviation of nominal point | dLbp | +2 | dB |
| density correction | dLt | 0 | dB | other corrections | dLs | 0 | dB |

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 | 1,3 | 0,3 | 0,0 | 0,0 | 0,0 | dB |
| relative octave spectrum | dLw-okt | -8,4 | -5,8 | -5,3 | -7,1 | -10,9 | -17,0 | -25,2 | -35,7 | 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 | 106,4 | 109,0 | 109,5 | 109,1 | 104,2 | 97,9 | 89,6 | 79,2 | dB |
| | Lwi1-okt | 95,4 | 98,0 | 98,5 | 98,1 | 93,2 | 86,9 | 78,6 | 68,2 | dB |
| | LwAi2-okt | 80,2 | 92,9 | 100,9 | 105,9 | 104,2 | 99,1 | 90,6 | 78,1 | dB(A) |
| | LwAi1-okt | 69,2 | 81,9 | 89,9 | 94,9 | 93,2 | 88,1 | 79,6 | 67,1 | dB(A) |
| A-weighted external sound power level | LwAa-okt | 62,5 | 75,2 | 83,1 | 88,1 | 86,4 | 81,3 | 72,8 | 60,3 | dB(A) |
| A-weighted meas. surf. sound pressure level | LpA-okt | 47,9 | 60,6 | 68,5 | 73,6 | 71,8 | 66,7 | 58,2 | 45,7 | 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)
DN1 SFV1.0 EV1.0 RE1.0 AKZ1.0 AKZ2.0 AKZ1.1 3.0.0.8

Tolerances dependent on class of accuracy in accordance to DIN 24166 in range of efficiency η >= 0,9 x ηmax.. Coordination for class of accuracy (G.Kl.) 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

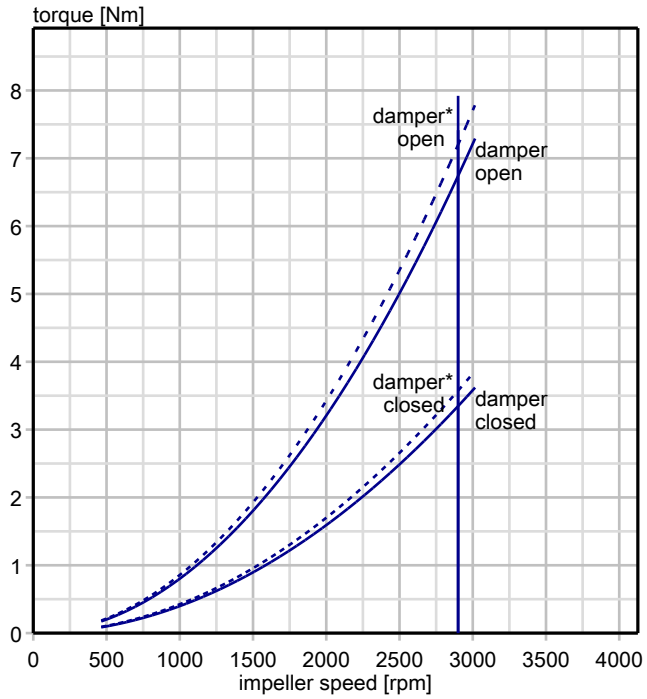
| class of accuracy | | 1 | 2 | 3 |
|---|---|---|---|---|
| Δpt and V1 | [ %] | +/- 2,5 | +/- 5 | +/- 10 |
| PW | [ %] | + 3 | + 8 | + 16 |
| Lw and Lp | [dB] | + 3 | + 4 | + 6 |

# TORQUE DIAGRAM

Liste 17_1 80Grad

| | |
|---|---|
| quotation item | KRV 201907859-00 - 3.02 |
| designation | |
| date | 13.08.2019 / crb |

| | | |
|---|---|---|
| fan type<br>MXE080-000930-00 | BU serial no.<br>1 | comm. no.<br>- |
| your order no. | type of control<br>valve | codeword<br>373563 |




design point : OP1 ——

| | | | |
|---|---|---|---|
| V1 | = | 6,7 | m³/min |
| Δpt | = | 737 | daPa |
| PW | = | 2 | kW |
| nl | = | 2900 | rpm |
| ρ1 | = | 1,128 | kg/m³ |
| J (imp.) | = | 1,28 | kgm² |

*OP1 - - - - - -

| | | | |
|---|---|---|---|
| V1 | = | 6,7 | m³/min |
| Δpt | = | 787 | daPa |
| PW | = | 2,2 | kW |
| nl | = | 2900 | rpm |
| ρ1 | = | 1,205 | kg/m³ |
| J (imp.) | = | 1,28 | kgm² |

DN1 SFV1.0 EV1.0 RE1.0 AKZ1.0 AKZ2.0 AKZ1.1

3.0.0.8

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pressure units : 1 daPa = 10 Pa = 10 N/m² = 0,1 mbar = 1,0197 mmWC

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

# MOTOR DATA / START-UP

Liste 17_1 80Grad

| | |
|---|---|
| quotation item | KRV 201907859-00 - 3.02 |
| designation | |
| date | 13.08.2019 / crb |

| | | |
|---|---|---|
| fan type<br>MXE080-000930-00 | BU serial no.<br>1 | comm. no.<br>- |
| your order no. | type of control<br>valve | codeword<br>373563 |

The following data apply to the fan nominal point.

Start-up data

| | | |
|---|---|---|
| rated output motor torque | 18,0 | Nm |
| torque Y | 8,7 | Nm |
| torque Δ | 32,4 | Nm |
| load torque in NP | 8,7 | Nm |
| load torque closed damper | 4,3 | Nm |
| moment of inertia relative to nM | 1,3 | kgm² |
| start-up time in NP Y | 76,3 | s |
| start-up time closed damper Y | 57,4 | s |
| start-up time in NP Δ | 13,9 | s |
| start-up time closed damper Δ | 13,1 | s |
| theoretical starting time | 13,4 | s |
| mass inertia ratio Iv/Im | 54,3 | - |

Please note the heavy-duty start for the Δ-start-up type. It is necessary to have the start-up behaviour checked by the motor producer.

Please note the heavy-duty start for the YΔ-start-up type. It is necessary to have the start-up behaviour checked by the motor producer.



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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 and V1 | [ %] | +/- 2,5 | +/- 5 | +/- 10 |
| PW | [ %] | + 3 | + 8 | + 16 |
| Lw and Lp | [dB] | + 3 | + 4 | + 6 |