Centrimaster GX

Technical Data

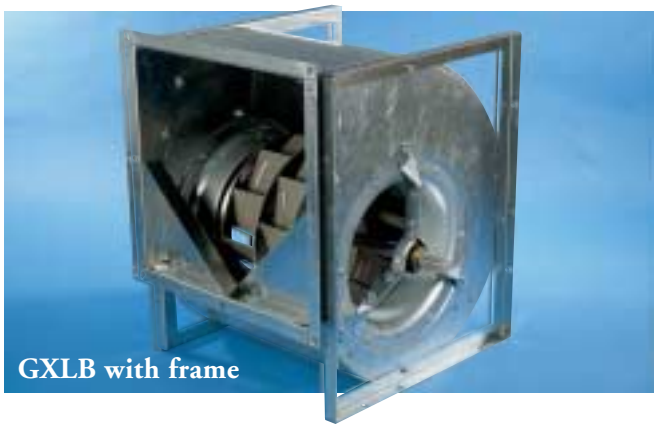
FläktWoods

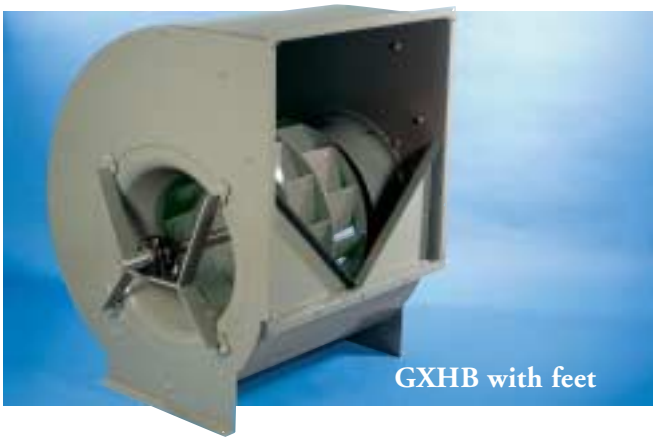
Contents

Versions

CENTRIMASTER GX is a new generation centrifugal fan for air handling units. It is available for air flow up to 35 m3/s and for pressure rise up to 3 300 Pa. The fan series consists of centrifugal fans with two impeller types, with forward curved blades (GXLF) and with backward curved blades (GXLB and GXHB). GXLB and GXHB have similar aerodynamic properties but the type GXHB is a reinforced version for higher speeds.

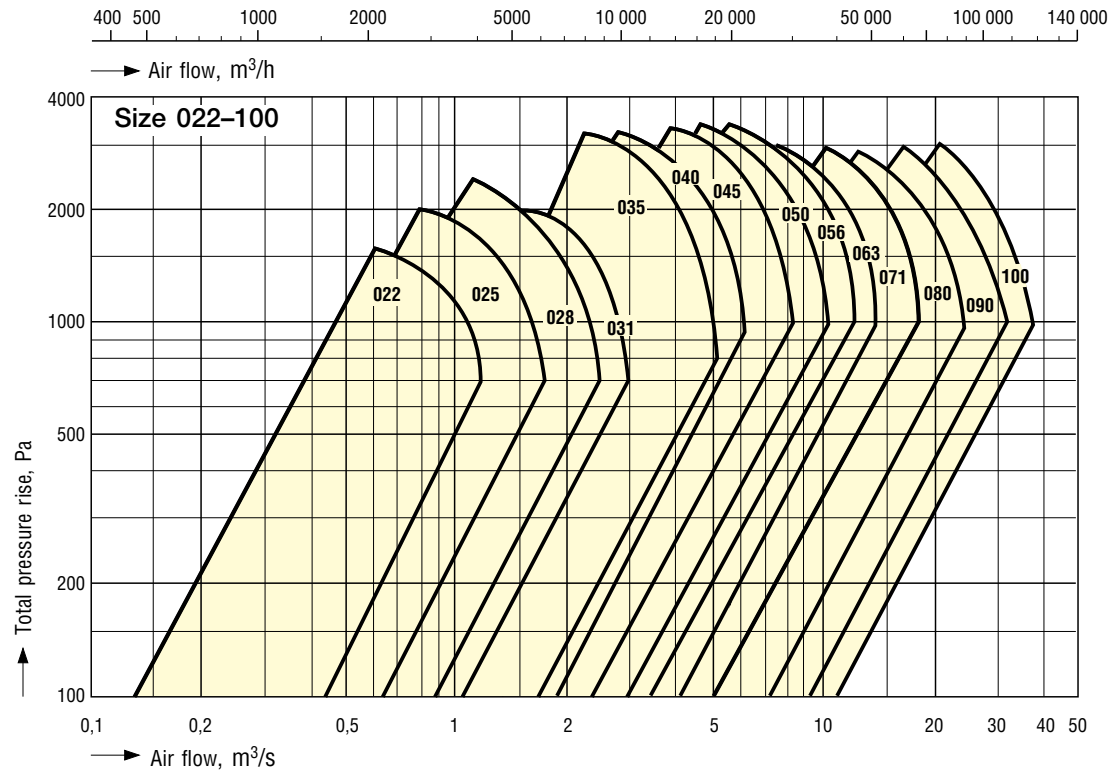
GXLF


GXLB with frame

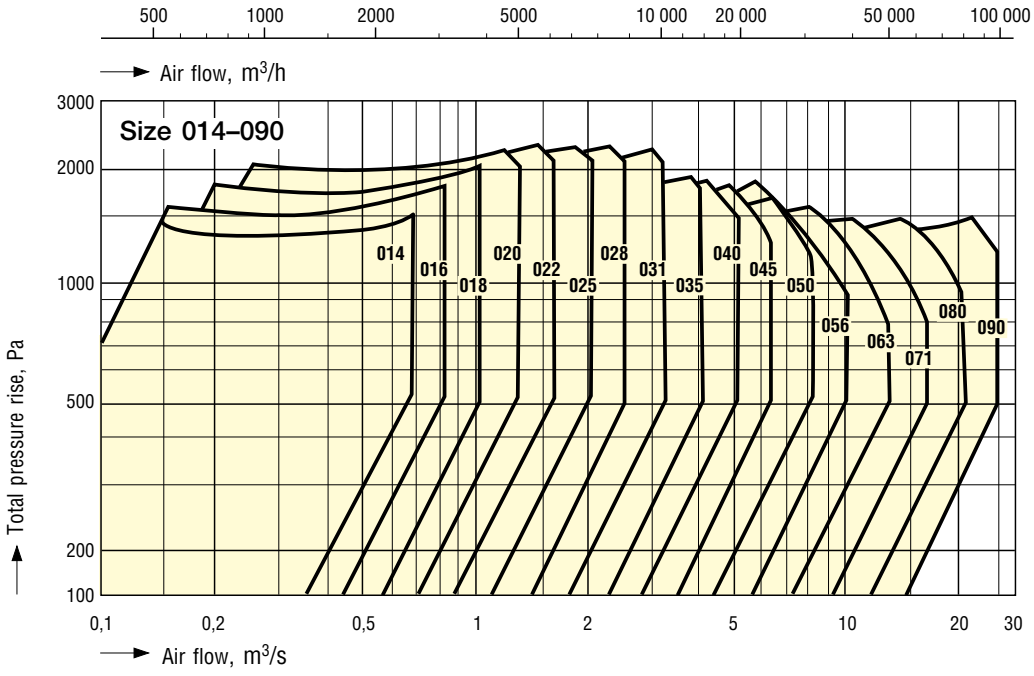

GXHB with feet

General Survey Charts

GXLB/GXHB



GXLF



Design

Fan Casing – Sizes 014–071

The fan casing is made of sendzimir-galvanized sheet steel. The casing side plates are stamped in one piece and the inlets are deep-pressed in the side plates. The side plates and the scroll plate of the casing are jointed by the “Pittsburg folding method” which produces tight, strong joints. Due to this folding method and the deep-pressed inlets, the construction is stable and of high and uniform quality. The casing side plates are internally provided with collar holes (up to size 031) or holes with welded-nuts (sizes 035 and larger) for fixing the supporting frame. The fan cut-off has a special design to ensure optimal aerodynamic properties.

Fan Casing – Sizes 080–100

The fan casing is made of sendzimir-galvanized sheet steel. The side plates and the scroll plate of the casing in sizes 080 and 090 are jointed by the “Pittsburg folding method” and the casing is equipped with a robust welded side plate frame. Size 100 consists of five sections with flanges. Size 100 can be dismantled.

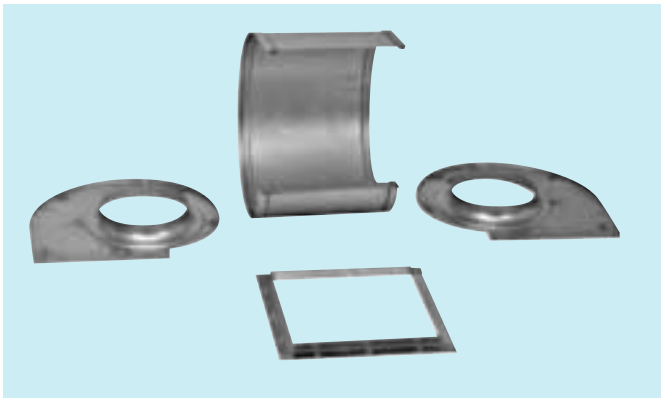
Fan Inlet

The design of the fan inlet is of vital importance to the fan efficiency and sound level. On the GXLF fans in size 014 – 071 the inlets are directly pressed into the side plate. On the GXLB and GXHB fans the inlet must be deeper and must also extend into the impeller with a certain amount of overlap and a small, accurately predetermined radial gap. The inlet cones of the GXLB and GXHB in sizes 022 – 071 fans are deep-drawn in one piece and fitted into the side plate of the corresponding GXLF fan. This implies that the GXLB and GXHB fans have a “double inlet” construction which gives additional rigidity to the fan casing. In size 080 – 100 the inlet cone is made separately for both fan types and mounted directly into the fan side plate. The inlet cones of normal version is made of galvanised steel.

Spark-proof version

The GXLB and GXHB fans in spark-proof version are equipped with inlet cones made of brass. In GXLF fans the inlet cone is equipped with a brass lining. These fans meet the requirements of the German standards VDMA 24 169, 3.1 – 3.2 and 3.4.

Pittsburg



Fan casing GXLF

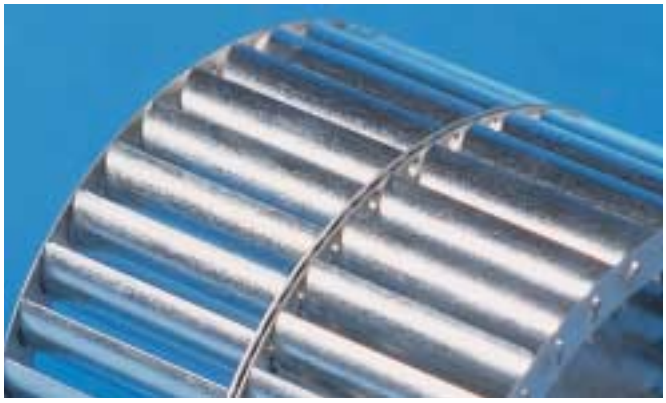
GX– Fan casing 100

Design

Impeller

The impellers with backward-curved blades (GXLB and GXHB) are made of steel, welded and painted with 60 my epoxy powder (color tone AM 8043, dark grey). The impellers with forward curved blades (GXLF) are made of galvanised steel. GXLB and GXHB impellers in sizes 035 – 100 are dynamically balanced to an accuracy of G 2.5 according to ISO 1940 – 1973 at the maximum speed. All GXLF and GXLB impellers in sizes 022 – 031 are dynamically balanced to an accuracy of G 6.3 according to ISO 1940 – 1973 at the maximum speed.The impeller is secured to the shaft with key.

GXHB Impeller with backward curved blades



GXLF Impeller with forward curved blades

Shaft

The shafts are made of steel and both shaft ends are equipped with key-ways for pulleys. The shafts are dimensioned so as to make them withstand fatigue and a critical speed t hat is at least 20% higher than the max. speed of the fan. The shafts are protected against corrosion.

Design

Bearings

The GXLB and GXLF fans are equipped with permanently lubricated single-row deep-groove ball bearings sealed at both sides. These bearings are secured to the shaft by means of an eccentric locking collar The bearings are supported by three or four-armed strong bearing supports. GXLF and GXLB fans in size 080 – 100 are equipped with plummer blocks with grease nipple. Plummer blocks with grease nipples can be supplied as an accessory for GXLF and GXLB fans in size 022 – 071, see Accessories.

The GXHB fans, sizes 035 – 050, are equipped with permanently lubricated single-row deep-groove ball bearings sealed at both sides. These bearings are secured to the shaft by means of a conical adapter sleeve. The bearings are supported by three or four-armed strong bearing supports. Plummer blocks with grease nipples can be supplied as an accessory.

The GXHB fans, sizes 056 – 100, are equipped as standard with plummer blocks which have self-aligning roller bearings mounted on a welded, sturdy bearing bracket made of flat steel. Roller bearings are equipped with grease nipples.

For bearing life time, see Selection of belt drive.

Materials and surface treatment

The standard design of the GX fans meet the requirements of the environment class M2.

Fan casing: Sendzimir-galvanized sheet steel (layer of zink 275g/m2)

Inlet cone: Sendzimir-galvanized sheet steel in normal version
Brass in spark-proof version

Shaft: Centerless ground steel with corrosion protection

Fan impeller: GXLB and GXHB:
Steel, welded and painted with 60 my epoxy powder, color tone AM 8043 dark grey.

GXLF:
Sendzimir-galvanized sheet steel

Bearing of GXLF and GXLB fans up to size 071

Bearing of GXLF in size 080 – 090 and GXLB in size 080 – 100.

Bearing of GXHB in size 035 - 050

Bearing of GXHB in size 056-100

Fan performance

Fan performance

1. Fan performance
The capacity data indicated by the fan diagram (the air flow qv, the total pressure rise Δpt and the power demand P) are measured by means of a test device described in Illustration 1 below. The test arrangement is according to the standards AMCA 210-85 (Fig. 11) and ISO 5801. The fan has free inlet and connected to a duct on the outlet side.

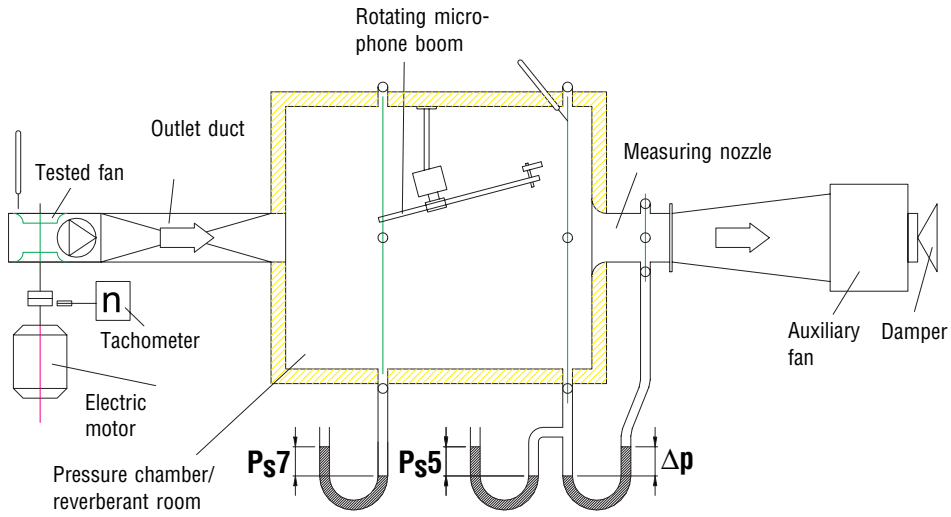


Illustration 1

Acoustic measurement

2. Sound data, fan outlet
The sound power levels to the outlet duct are measured in the reverberation chamber by tersband according to the test arrangement described in Illustration 1. The measuring result is presented in accordance with the AMCA standard 300-85 (Fig. 3). The fan diagram gives the A-weighted sound power level LWA to the outlet side. Separate tables give the correction factor Kokt per octave band to calculate the sound power level in different octave bands. See Sound data.

3. Sound data, surroundings
The sound power levels to the surroundings are measured according to Illustration 2 below, i.e. free-inlet fan in the reverberation chamber. The fan is connected to a duct on the outlet side. The test is performed and the measuring result is presented in accordance with the standards AMCA 300-85 (Fig. 2) and ISO 3741. The correction factor Kokt per octave band for the surroundings is calculated by means of the already calculated frequency division of the outlet side total sound power level in a way that makes it automatically correct.

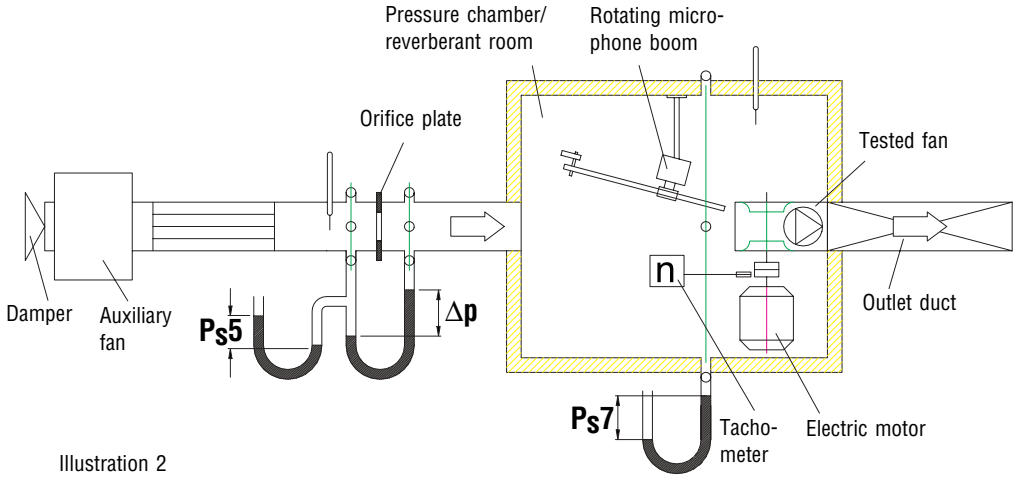


Illustration 2

Tolerances and quality

Tolerances

The fan data given for the GXLB and GXHB fans in sizes 035 – 100 is in accordance with DIN 24166, Class 1. Tolerance class 2 is valid for GXLB fans in sizes 022 – 031 and all GXLF fans.

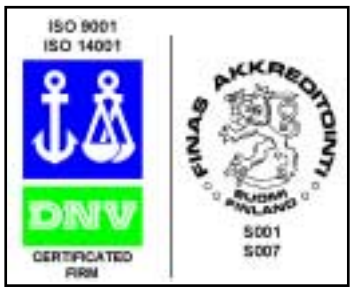
	Tolerance class		
DIN 24166	1	2	3
Air flow qv:	±2,5%	±5,0%	±10,0%
Pressure rise, Δp_t:	±2,5%	±5,0%	±10,0%
Power demand*, P:	+3,0%	+8,0%	+16,0%
Efficiency**, η:	–2,0%	–5,0%	–
A-weighted sound power level*, L_{WA}:	+3 dB	+4 dB	+6 dB

* negative deviation allowed

** positive deviation allowed

Quality standards ISO 9001 and ISO 14001

Fläkt Woods' production process is ISO 9001 certified. Responsibilities and quality control are documented at every stage from product development to production, purchase and sales. Our environmental management system is ISO 14001 certified. We aim to minimise environmental loading from both our own operations and the products themselves.



Specification – GXLB

CENTRIMASTER GXLB

Double inlet centrifugal fan for belt drive.
Fan casing made of Sendzimir galvanized sheet steel and jointed by Pittsburg folding method, in size 100 consisting of five sections equipped with flanges. Steel impeller with backward curved blades, blades welded to the shroud. Impeller is degreased, iron phosphatized and painted with epoxy-powder paint 60 mm. Impeller is dynamically balanced to an accuracy of G 2.5 (sizes 035 – 100) or G 6.3 (sizes 022 – 031) according to ISO 1940 - 1973.

Fan cut-off is specially designed for optimal aerodynamical properties. Steel shaft with keyways at both ends and designed for a critical speed which is 20% higher than the maximum speed of the fan. Impeller secured to the shaft by means of a key.

Permanently lubricated single-row deep-groove ball bearings sealed at both sides, secured to the shaft by means of an eccentric locking collar. The bearings are supported by three or four-arm spider. GXLB-fans in sizes 080 – 100 have plummer blocks with grease nipples supported by a welded bracket.
Fan performance is measured according to AMCA 210-85 and sound data according to AMCA 300-85.

Fan data is presented according to DIN 24166
class 1 for sizes 035 - 071
class 2 for sizes 022 - 031.
The manufacturer's quality system is ISO 9001 certified and environmental management system is ISO 14001 certified.

Air flow, q_v.....m^3/h, m^3/s
Total pressure rise, Δp_t.....Pa
Power demand, P .....kW
Min. efficiency, η.....%
Max. A-weighted total sound power level, L_{WA}.....dB

Specification – GXHB

CENTRIMASTER GXHB

Double inlet centrifugal fan for belt drive.
Fan casing is made of Sendzimir galvanized sheet steel and jointed by Pittsburg folding method, in size 100 consisting of five sections equipped with flanges. Steel impeller with backward curved blades, blades continuously welded to the shroud. Impeller is degreased, iron phosphatized and painted with epoxy-powder paint 60 mm. Impeller is dynamically balanced to an accuracy of G 2.5 according to ISO 1940 - 1973. Fan cut-off is specially designed for optimal aerodynamical properties.

Steel shaft with keyways at both ends and designed for a critical speed which is 20% higher than the maximum speed of the fan. Impeller secured to the shaft by means of a key.

GXHB-fans in sizes 035 to 050 have permanently lubricated single-row deep-groove ball bearings sealed at both sides, secured to the shaft by means of a taper mounting sleeve. The bearings are supported by three or four-arm spider. GXHB-fans in sizes 056 to 100 have plummer blocks with self-aligning roller bearings equipped with grease nipples. The roller bearings are supported by a welded bracket. Fan performance is measured according to AMCA 210-85 and sound data according to AMCA 300-85.

Fan data is presented according to DIN 24166, class 1
The manufacturer's quality system is ISO 9001 certified and environmental management system is ISO 14001 certified

Air flow, q_v.....m^3/h, m^3/s
Total pressure rise, Δp_t.....Pa
Power demand, P .....kW
Min. efficiency, η.....%
Max. A-weighted total sound power level, L_{WA}.....dB

Specification – GXLF

CENTRIMASTER GXLF

Double inlet centrifugal fan for belt drive.
Fan casing made of Sendzimir galvanized sheet steel and jointed by Pittsburg folding method. Impeller with forward curved blades, made of Sendzimir galvanised sheet steel. Impeller is dynamically balanced to an accuracy of G 6.3 according to ISO 1940 - 1973.

Steel shaft with keyways at both ends and designed for a critical speed which is 20% higher than the maximum speed of the fan.

Permanently lubricated single-row deep-groove ball bearings sealed at both sides, secured to the shaft by means of an eccentric locking collar. The bearings are supported by three or four-arm spider. GXLF-fans in sizes 080 and 090 have plummer blocks with grease nipples supported by a welded bracket.
Fan performance is measured according to AMCA 210-85 and sound data according to AMCA 300-85.

Fan data is presented according to DIN 24166, class 2
The manufacturer's quality system is ISO 9001 certified and environmental management system is ISO 14001 certified.

Air flow, q_v.....m^3/h, m^3/s
Total pressure rise, Δp_t.....Pa
Power demand, P .....kW
Min. efficiency, η.....%
Max. A-weighted total sound power level, L_{WA}.....dB

Selection of belt drive

The table below gives the min. diameter of the pulley (D_{min}) at max. speed (n_{max}) and max. power (P_{max}). If the speed of the fan is lower a smaller pulley can be selected according to the diagram below.

Min. diameter (D_{min}) of the fan pulley at lower speed (F_r)) and power (P).

GXLF-5

Fan size	n_{max} rpm	P_{max} kW	D_{min} for 20 000 h	D_{min} for 40 000 h	F_r
014	4 200	1,0	75		450
016	4 250	2,5	75		450
018	4 000	3,5	75		450
020	3 800	4	67		450
022	3 400	5	118	125	450
025	3 000	6	160	170	450
028	2 700	8	180	212	620
031	2 400	10	250	280	670
035	1 900	10	212	250	900
040	1 700	11	280	300	1050
045	1 500	12	224	315	1200
050	1 300	15	315	355	1500
056	1 200	15	280	315	1900
063	1 000	18,5	355	400	2200
071	850	22	500	500	2300
080	750	37	500	630	2880
090	650	48	710	900	3550

GXLB-5

Fan size	n_{max} rpm	D_{min} for 20 000 h	D_{min} for 40 000 h	F_r
022	4 500	67	67	450
025	4 500	67	67	450
028	4 200	67	80	560
031	3 600	85	106	620
035	3 300	80	112	900
040	2 800	106	132	900
045	2 500	106	150	1200
050	2 100	132	180	1350
056	2 000	170	200	1600
063	1 600	170	212	1900
071	1 450	236	315	1950
080	1 350	315	400	2880
090	1 200	375	450	3550
100	1 030	375	450	4300

GXHB-5

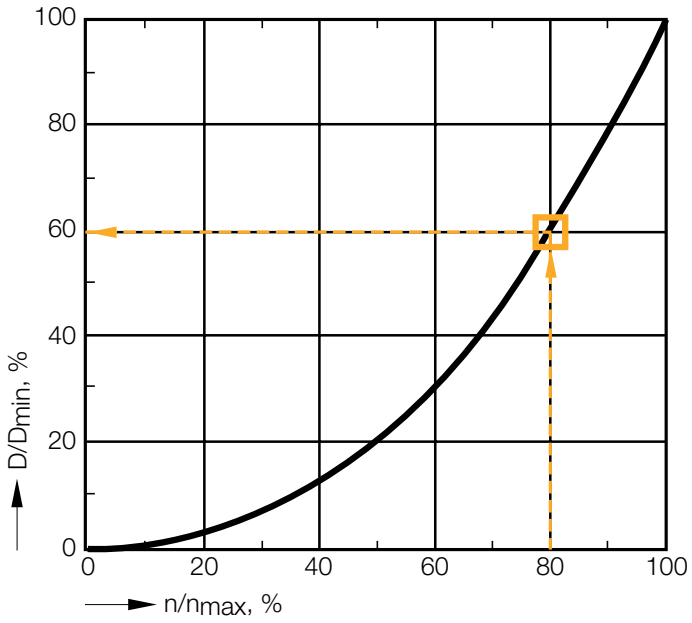
n_{max} rpm	D_{min} for 40 000 h	F_r
4 000	100	1100
3 500	125	1200
3 200	150	1500
2 800	190	1650
2 500	85	5000
2 100	95	6000
1 900	140	6000
1 660	132	8000
1 480	180	8000
1 360	224	8000

Selection of belt drive

GXLB-5 and GXHB-5

Min. diameter (D_{min}) of the pulley at lower speed (n).

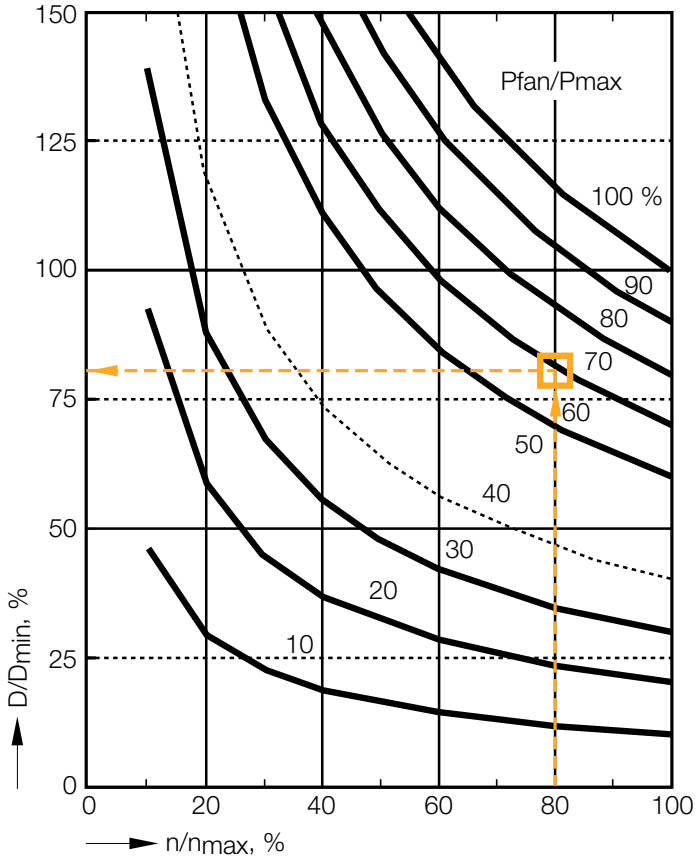
Example:
The speed of the GXLB fan is 80% of the max. speed (n/nmax = 80 %). The impeller with backward-curved blades has a self-restricting power curve, D/Dmin = 59% as shown in the adjecent diagram. The pulley can be reduced to 59% of Dmin.



GXLF-5

Min. diameter (D_{min}) of the fan pulley at lower speed (n) and power (P).

Example:
The speed of the GXLF fan is 80 % of the max. speed (n/n_{max}= 80 %) and the power is 70 % of the max. power (P/P_{max}=70 %). Aus dem Diagramm kann abgelesen werden D/D_{min}= 80 % => as shown in the adjecent diagram. The pulley can be reduced to 80 % of D_{min}.



Selection of motor

Selection of motor

Power demand on fan shaft (P, kW) is given in the fan diagrams. For the selection of the motor the power demand on fan shaft should be increased by the following safety factors:

P, kW	GXLF	GXLB/GXHB
up to 10 kW	+20 %	+15 %
over 10 kW	+15 %	+12 %

Safety factor covers the transmission losses and the slight variations of fan speed due to the use of standardised series of pulleys.

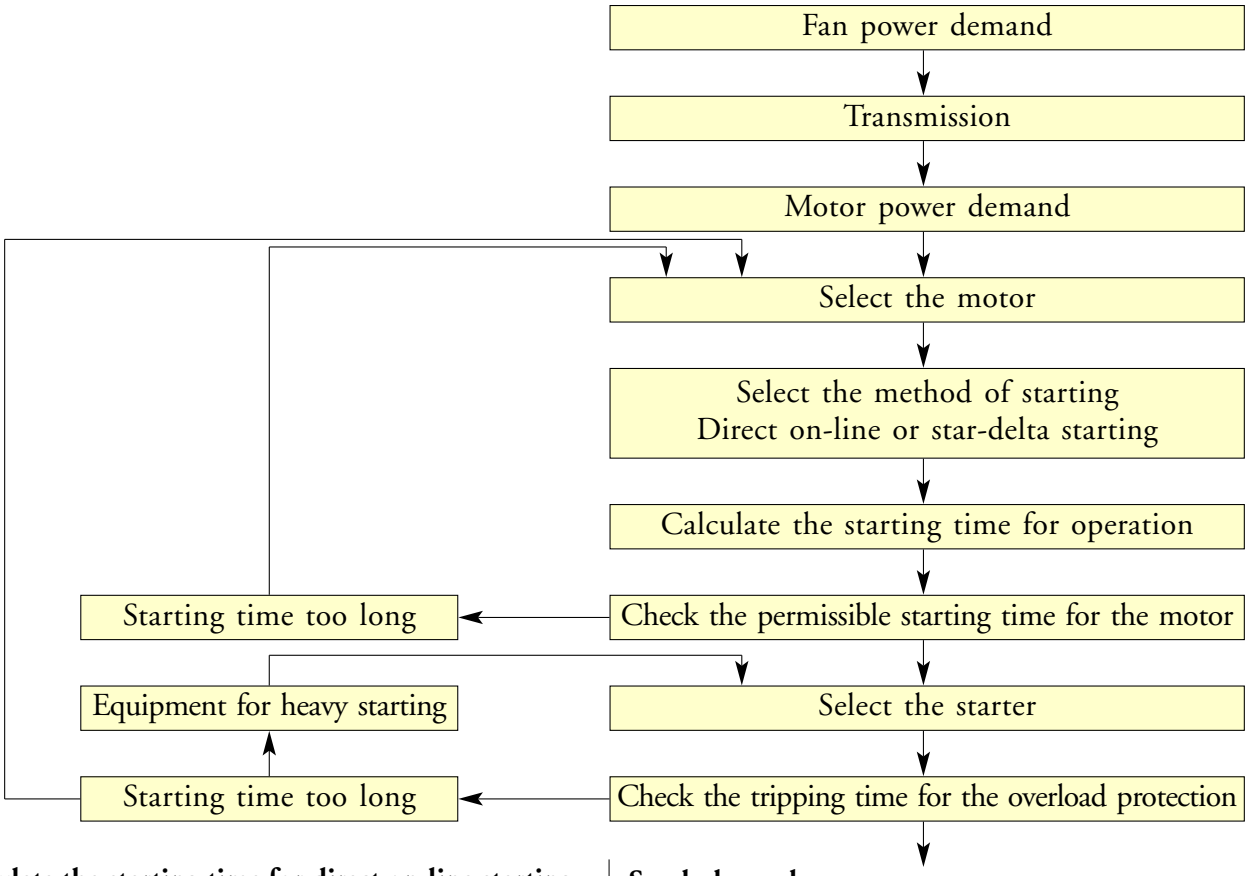
In the "Scandinavian" type of fan diagrams the minimum recommended motor rating (PM) for direct online starting is given, i.e. the safety factor is already taken into account. The motor selection should be based on this PM-value.

Recommendations

In case of GXLB and GXHB fans (impeller with backward curved blades), i.e. fans on which the maximum power demand occurs within the operating range of the fan at a given speed, this maximum point should be used when the value of PM is read, and not the power demand at the operating point.

In case of GXLF fans (impeller with forward curved blades), i.e. fans on which the power at a given speed continuously increases with increasing flow, first read PM at the operating point. If there is any uncertainty concerning the location of the actual operating point, select a motor with a rating which is 15 – 20% higher than the PM value read from the chart.

Fan starting



To calculate the starting time for direct on-line starting
Use the following formula:

$$t = \frac{J \cdot n_f^2 \cdot 10^{-3}}{46 \left[P \left(\frac{M_{max}}{M} + \frac{M_{st}}{M} \right) - P_m \right]}$$

The calculated staring time is the time for accelerating the fan from rest to full speed.

To calculate the starting time for star-delta starting
Use the following formula:

$$t = \frac{J \cdot n_f^2 \cdot 10^{-3}}{46 \left[P \left(\frac{1}{3} \cdot \frac{M_{max}}{M} + \frac{1}{4} \cdot \frac{M_{st}}{M} \right) - P_m \right]}$$

The calculated starting time is the time during which the star-delta starter must be in star connection for the fan to reach approx. 90% of full speed, whereupon it switches over to delta connection.
For star-delta starting, a check must also be made to ensure that the motor torque curve is higher than the fan torque curve during the star connection peridod. The lowest possible motor rating for star-delta can be calculated by means of the following expression.

$$P_{Y/\Delta} = \frac{2{,}6}{\frac{M_{max}}{M}} \cdot P_m$$

Symbols used

P	= motor rating	kW
P_m	= power demand of the fan at rated speed (including belt drive losses, if any)	kW
$P_{Y/\Delta}$	= lowest motor rating for which star-delta starting is possible	kW
$\frac{M_{st}}{M}$	= ratio of starting torque to normal torque of the motor	
$\frac{M_{max}}{M}$	= ratio of maximum torque to mormal torque of the motor	
n_f	= rated speed of fan	r/min
J 1)	= moment of inertia of the system referred to the fan shaft	kg m^2
t	= starting time	s

2) The moment of inertia of the fan impeller is specified in the fan chart and the moment of inertia of the rotor can generally be ignored.
3) See the calalogue of the motor supplier.

Fan Charts – Explanation

Fan Charts – Explanation

The pressure rise Δp_t serves as the function of the air flow qv in the fan diagram. The efficiency h given in the fan diagram is valid for the max. speed nmax. The efficiency is lower at reduced speeds. The correction factor kh is used to determine the efficiency at a lower speed. By using the data from the fan diagram for the efficiency calculation, the exact efficiency is directly obtained. (Correction factor must not be used).

q_v, m³/s (m³/h)	=	air flow
Δp_t, Pa	=	total pressure rise
n, r/min	=	fan speed
η, %	=	efficiency
k_η	=	correction factor of efficiency
L_{WA}, dB	=	A-weighted total sound power level
P, kW	=	power demand
P_M, kW	=	min. recommended motor power for direct on-line start
p_d	=	dynamic pressure
$\Delta p_b + p_d$	=	adjusted dynamic pressure of a free-outlet fan
v	=	outlet velocity
J	=	moment of inertia

Density correction

The pressure rise and the power given in the fan diagram are valid for a density of 1.2 kg/m³. If the density is different, the diagram values are corrected as follows:

$\Delta p_{t2} = \Delta p_{t1} \times \rho_2/1{,}2$ Subscript 1 = diagram value

$p_2 = p_1 \times \rho_2/1{,}2$ Subscript 2 = value for changed density

The outlet velocity v and the dynamic pressure pd are calculated on the basis of the nominal area of the fan outlet.

The static pressure rise of the fan connected to a duct on the outlet side is obtained by subtracting the dynamic pressure pd from the total pressure Δp_t, $\Delta p_s = \Delta p_t - p_d$.

The static pressure rise of the free-outlet fan is obtained by subtracting the corrected dynamic pressure $\Delta p_b + p_d$ pd from the total pressure Δp_t, $\Delta p_s = \Delta p_t - (\Delta p_b + p_d)$

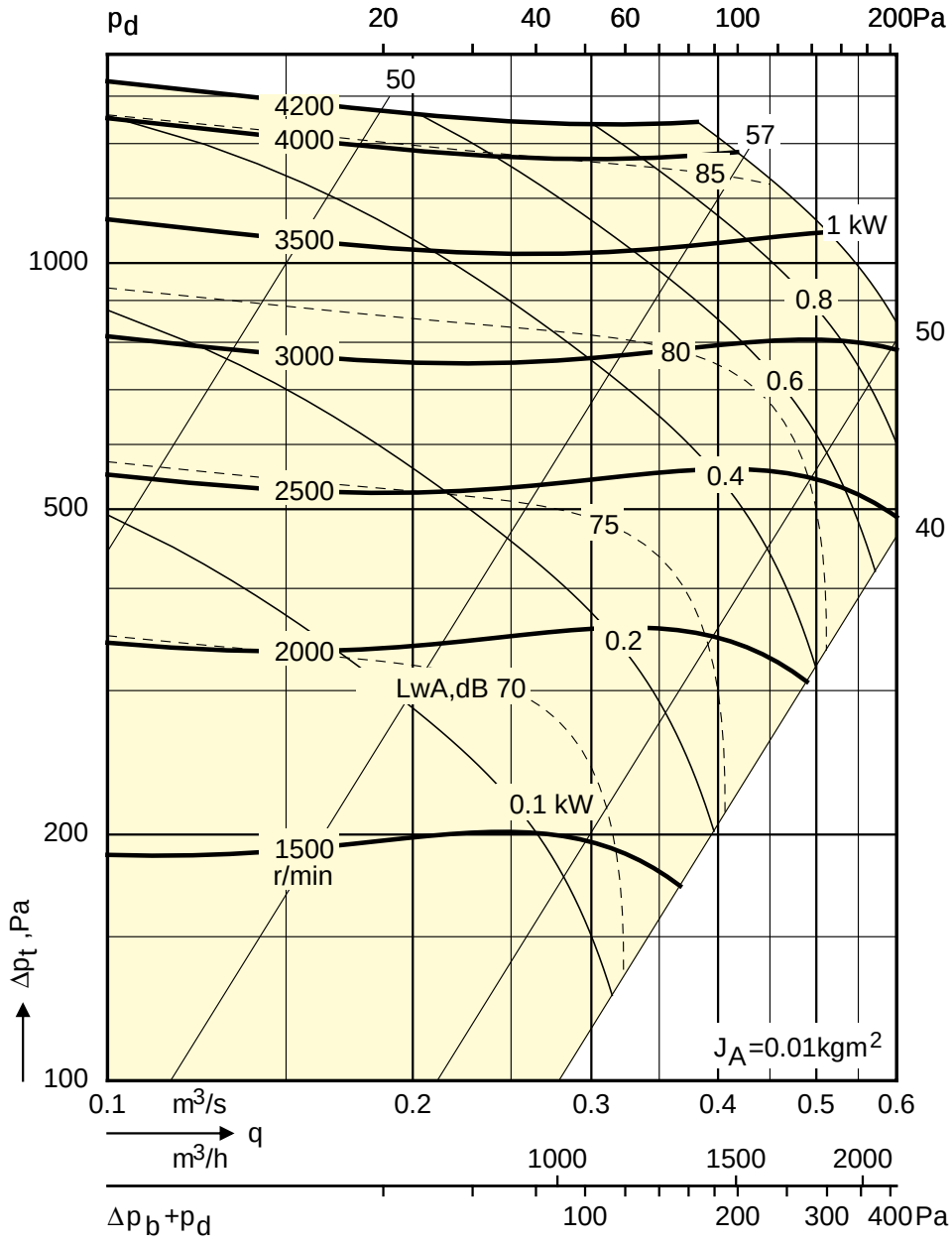
The power demand of the fan is given in the fan diagram.

Note that at the beginning, the power demand of the fan equipped with new bearings can be a little higher, especially by smaller fan sizes.

Fan charts – acoustic data – GXLF-5-014

Belt-driven, double-inlet, forward-curved blades

Impeller diameter: 140 mm



Acoustic Data

The total A-weighted sound power level to the outlet duct, L_{WA}, can be read from the fan diagram. Use the following formula to determine the sound power level in different octave bands:

$$L_{wokt} = L_{WA} + K_{ok}$$

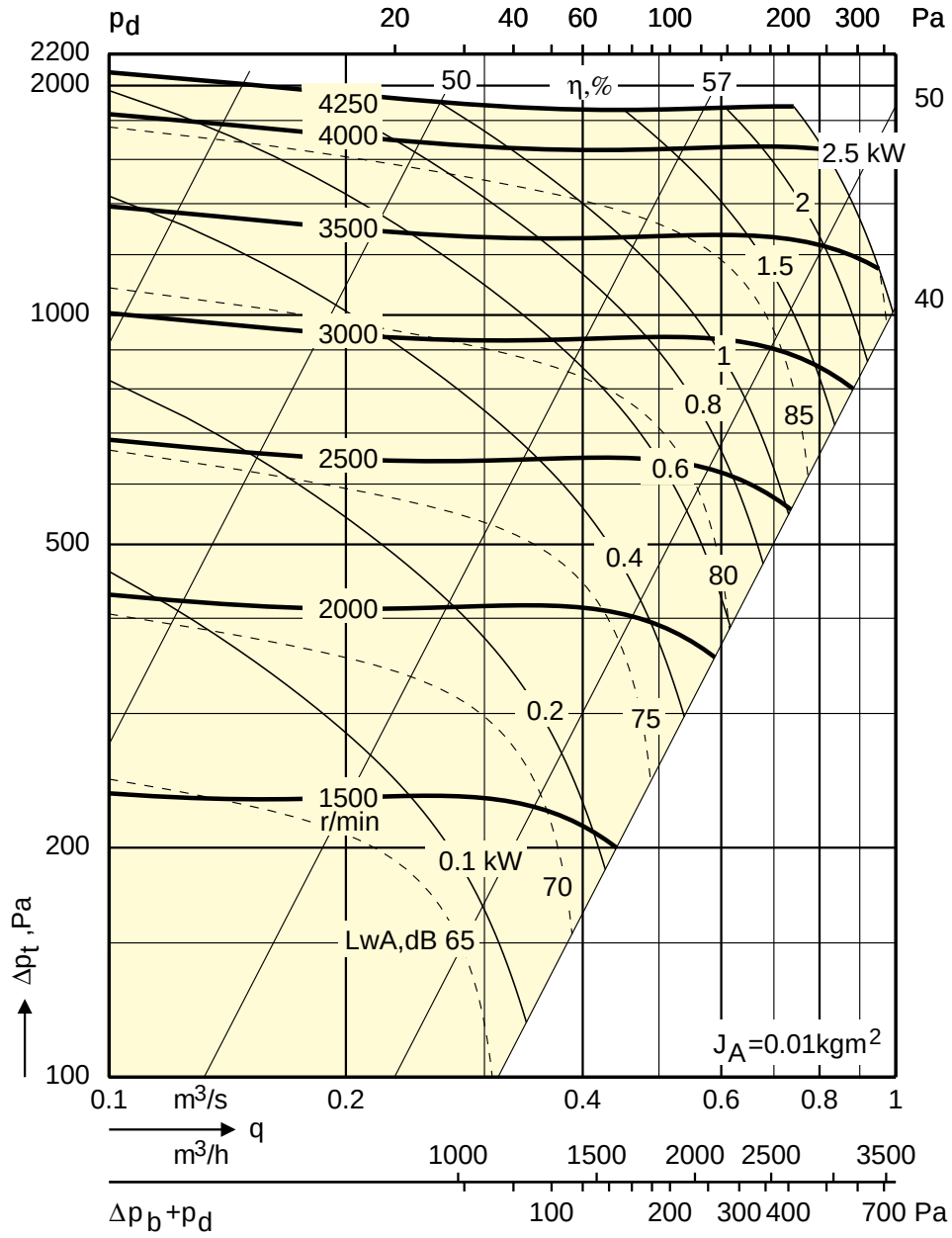
where Kok can be read from the table below:

Sound path	Speed range r/min	Correction K_{ok}, dB, Octave band, mit-frequency, Hz 63	125	250	500	1000	2000	4000	8000	$L_{Wt} - L_{WA}$
To the outlet duct	0 – 800	4	-2	-3	-5	-4	-8	-10	-15	6.7
	801 – 1800	3	-3	-3	-4	-5	-7	-10	-15	6.1
	1801 – 4200	2	-3	-4	-5	-6	-6	-9	-14	5.4
To the surroundings	0 – 800	-1	0	-1	-2	-2	-6	-9	-15	4.3
from a free-inlet fan	801 – 1800	-3	-2	-1	-1	-2	-6	-8	-15	3.5
	1801 – 4200	-5	-3	-2	-3	-2	-4	-8	-12	2.7

Fan charts – acoustic data – GXLF-5-016

Belt-driven, double-inlet, forward-curved blades

Impeller diameter: 160 mm



Acoustic Data

The total A-weighted sound power level to the outlet duct, L_{WA}, can be read from the fan diagram. Use the following formula to determine the sound power level in different octave bands:

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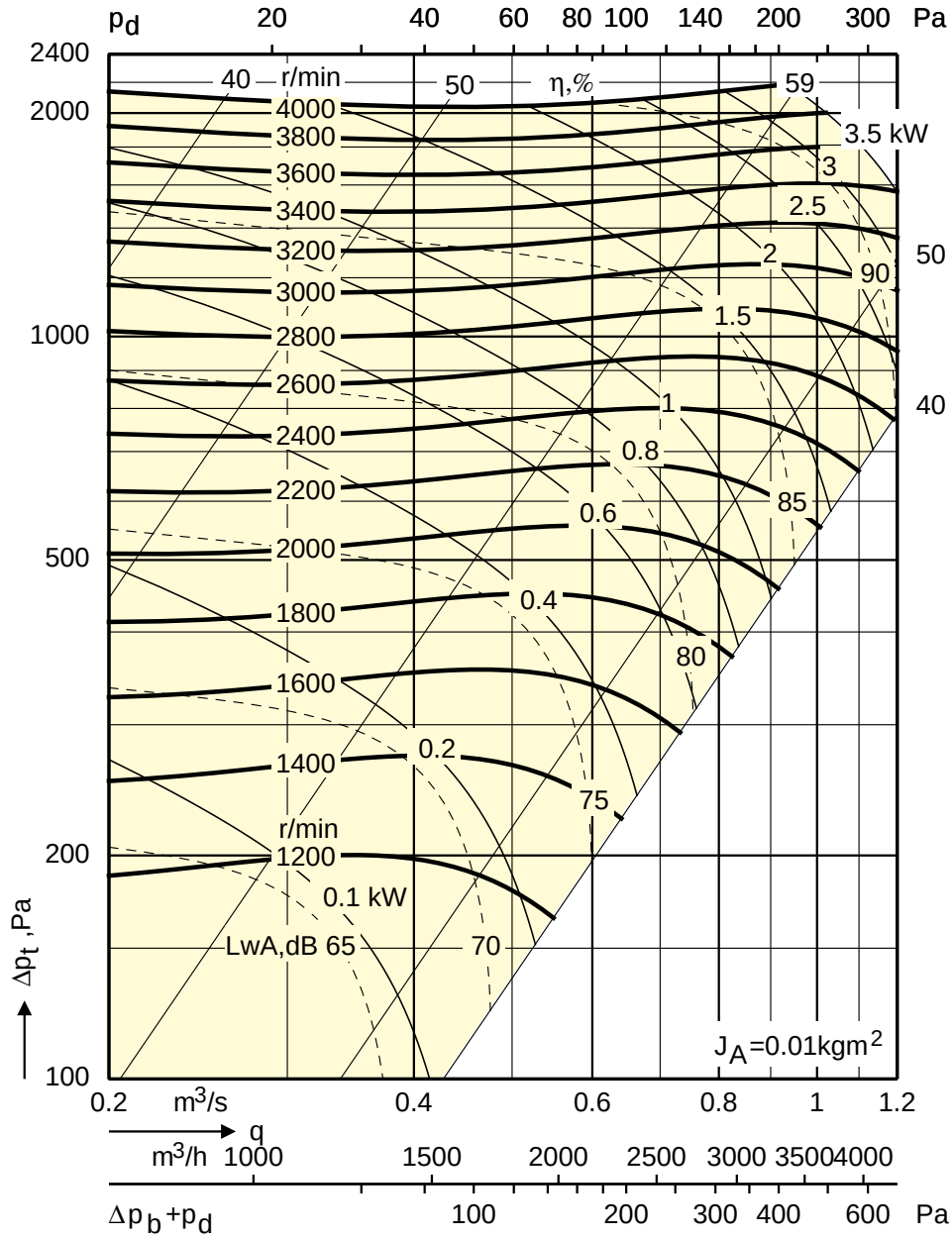
Sound path	Speed range r/min	Correction K_{ok}, dB Octave band, mit-frequency, Hz 63	125	250	500	1000	2000	4000	8000	$L_{Wt} - L_{WA}$
To the outlet duct	0 – 800	4	-2	-3	-5	-4	-8	-10	-15	6.7
	801 – 1800	3	-3	-3	-4	-5	-7	-10	-15	6.1
	1801 – 4250	2	-3	-4	-5	-6	-6	-9	-14	5.4
To the surroundings	0 – 800	-1	0	-1	-2	-2	-6	-9	-15	4.3
from a free-inlet fan	801 – 1800	-3	-2	-1	-1	-2	-6	-8	-15	3.5
	1801 – 4250	-5	-3	-2	-3	-2	-4	-8	-12	2.7

Fan charts – acoustic data – GXLF-5-018

Belt-driven, double-inlet, forward-curved blades

Impeller diameter: 180 mm



Acoustic Data

The total A-weighted sound power level to the outlet duct, L_{WA}, can be read from the fan diagram. Use the following formula to determine the sound power level in different octave bands:

$$L_{wokt} = L_{WA} + K_{ok}$$

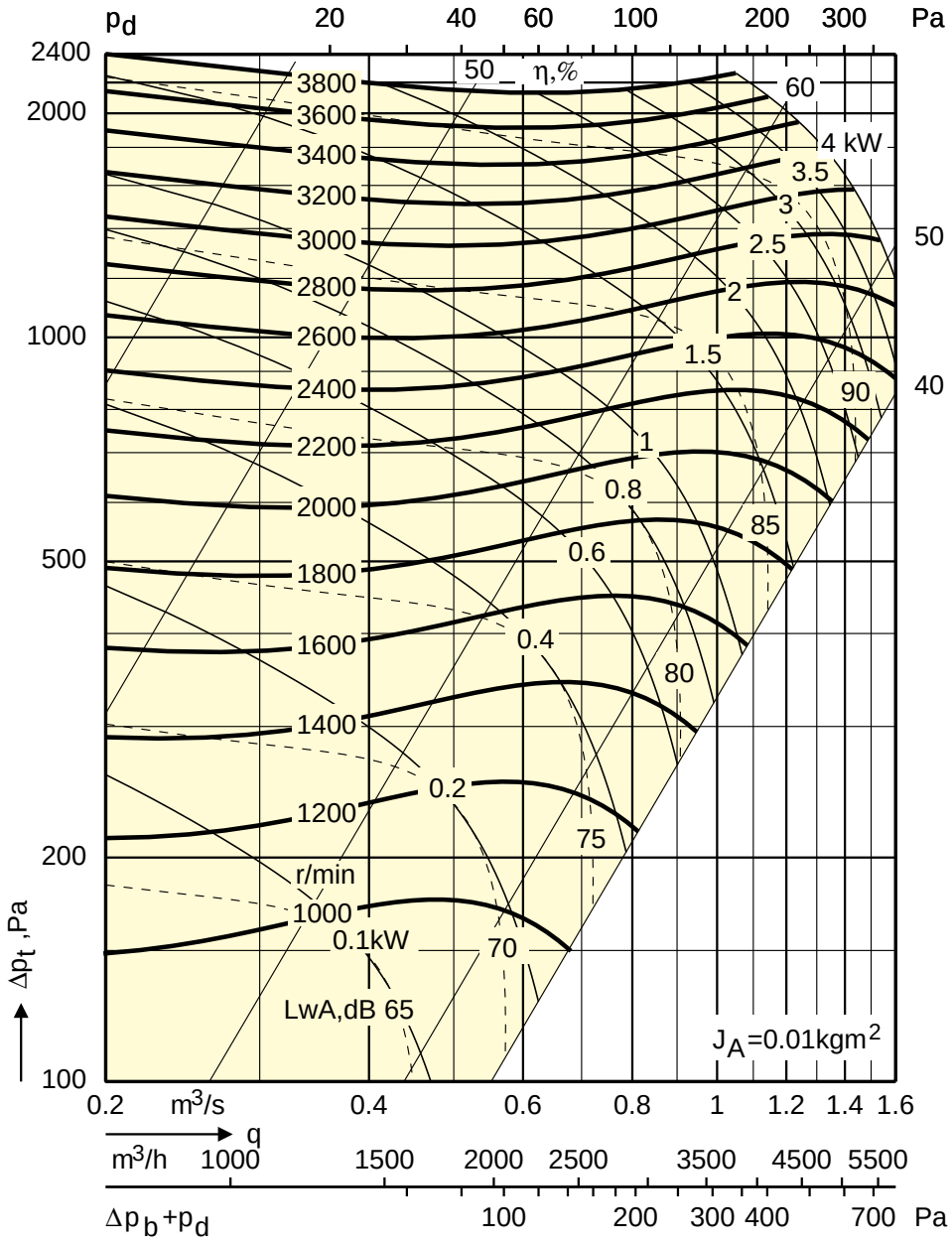
where Kok can be read from the table below:

Sound path	Speed range r/min	Correction K_{ok}, dB, Octave band, mit-frequency, Hz 63	125	250	500	1000	2000	4000	8000	$L_{Wt} - L_{WA}$
To the outlet duct	0 – 800	4	-2	-3	-5	-4	-8	-10	-15	6.7
	801 – 1800	3	-3	-3	-4	-5	-7	-10	-15	6.1
	1801 – 4000	2	-3	-4	-5	-6	-6	-9	-14	5.4
To the surroundings	0 – 800	-1	0	-1	-2	-2	-6	-9	-15	4.3
from a free-inlet fan	801 – 1800	-3	-2	-1	-1	-2	-6	-8	-15	3.5
	1801 – 4000	-5	-3	-2	-3	-2	-4	-8	-12	2.7

Fan charts – acoustic data – GXLF-5-020

Belt-driven, double-inlet, forward-curved blades

Impeller diameter: 200 mm



Acoustic Data

The total A-weighted sound power level to the outlet duct, L_{WA}, can be read from the fan diagram. Use the following formula to determine the sound power level in different octave bands:

$$L_{wokt} = L_{WA} + K_{ok}$$

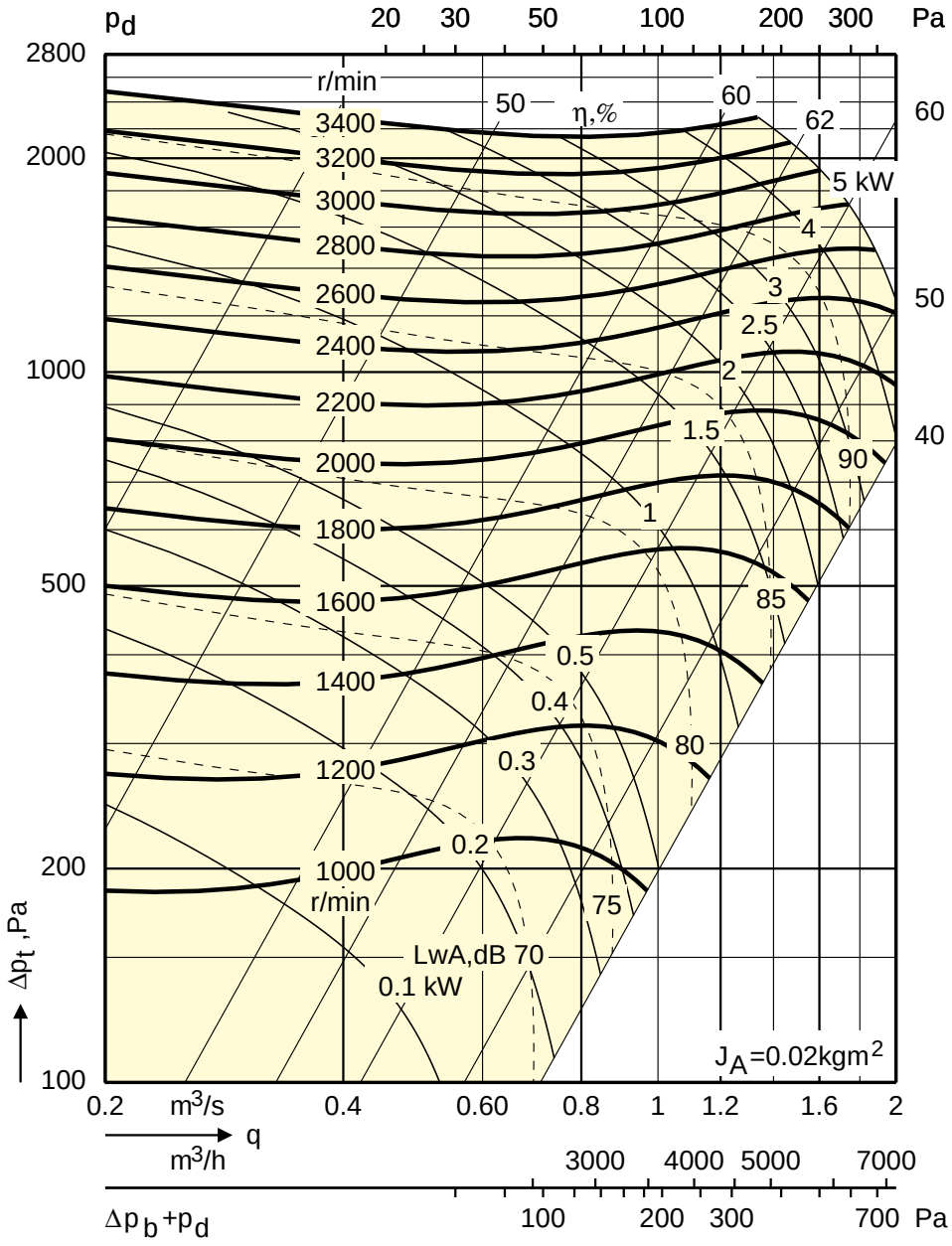
where Kok can be read from the table below:

Sound path	Speed range r/min	Correction K_{ok}, dB, Octave band, mit-frequency, Hz 63	125	250	500	1000	2000	4000	8000	$L_{Wt} - L_{WA}$
To the outlet duct	0 – 800	4	-2	-3	-5	-4	-8	-10	-15	6.7
	801 – 1800	3	-3	-3	-4	-5	-7	-10	-15	6.1
	1801 – 3800	2	-3	-4	-5	-6	-6	-9	-14	5.4
To the surroundings	0 – 800	-1	0	-1	-2	-2	-6	-9	-15	4.3
from a free-inlet fan	801 – 1800	-3	-2	-1	-1	-2	-6	-8	-15	3.5
	1801 – 3800	-5	-3	-2	-3	-2	-4	-8	-12	2.7

Fan charts – acoustic data – GXLF-5-022

Belt-driven, double-inlet, forward-curved blades

Impeller diameter: 220 mm



Acoustic Data

The total A-weighted sound power level to the outlet duct, L_{WA}, can be read from the fan diagram. Use the following formula to determine the sound power level in different octave bands:

$$L_{wokt} = L_{WA} + K_{ok}$$

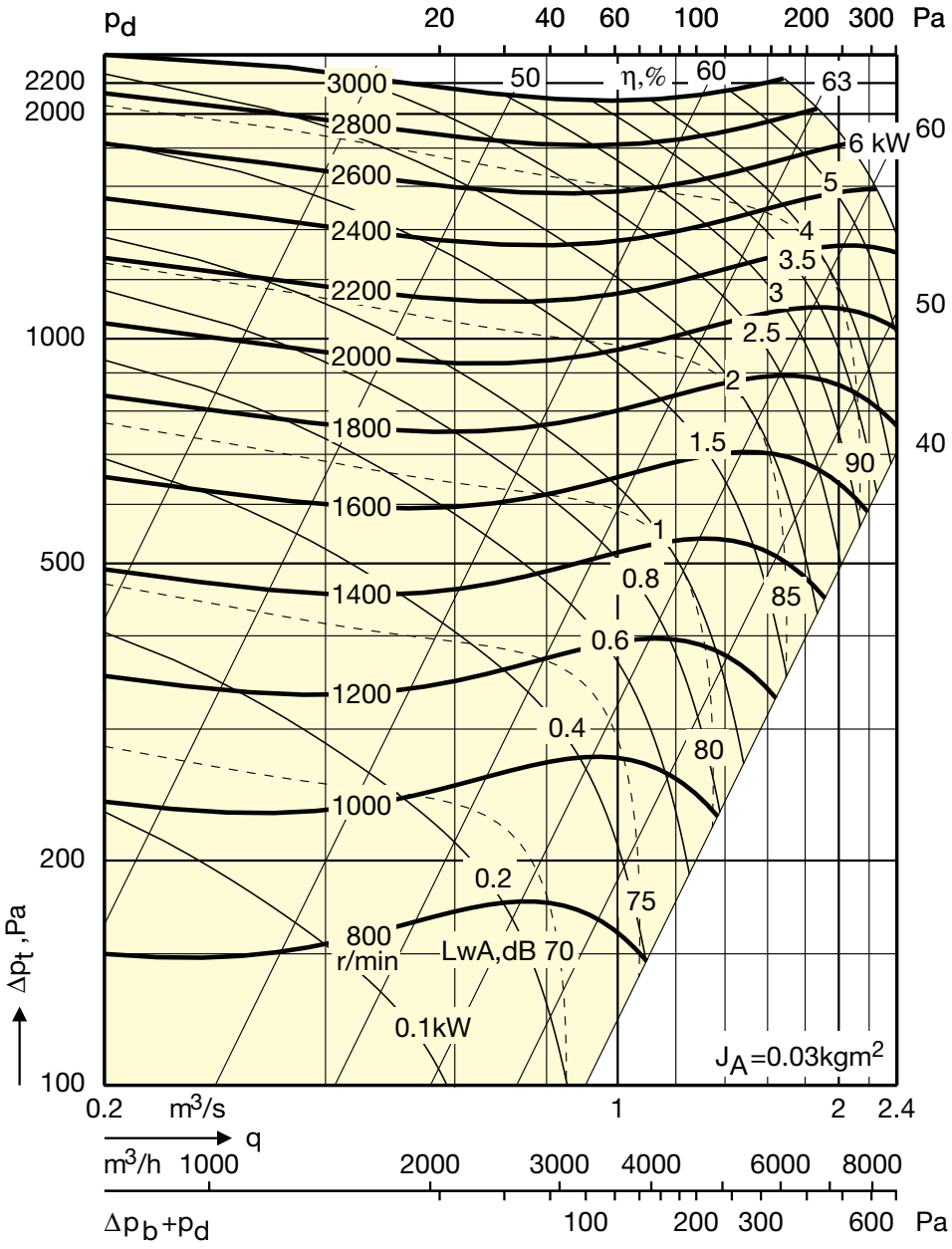
where Kok can be read from the table below:

Sound path	Speed range r/min	Correction K_{ok}, dB Octave band, mit-frequency, Hz 63	125	250	500	1000	2000	4000	8000	$L_{Wt} - L_{WA}$
To the outlet duct	0 – 800	4	-2	-3	-5	-4	-8	-10	-15	6.7
	801 – 1800	3	-3	-3	-4	-5	-7	-10	-15	6.1
	1801 – 3400	2	-3	-4	-5	-6	-6	-9	-14	5.4
To the surroundings	0 – 800	-1	0	-1	-2	-2	-6	-9	-15	4.3
from a free-inlet fan	801 – 1800	-3	-2	-1	-1	-2	-6	-8	-15	3.5
	1801 – 3400	-5	-3	-2	-3	-2	-4	-8	-12	2.7

Fan charts – acoustic data – GXLF-5-025

Belt-driven, double-inlet, forward-curved blades

Impeller diameter: 250 mm



Acoustic Data

The total A-weighted sound power level to the outlet duct, L_{WA}, can be read from the fan diagram. Use the following formula to determine the sound power level in different octave bands:

$$L_{wokt} = L_{WA} + K_{ok}$$

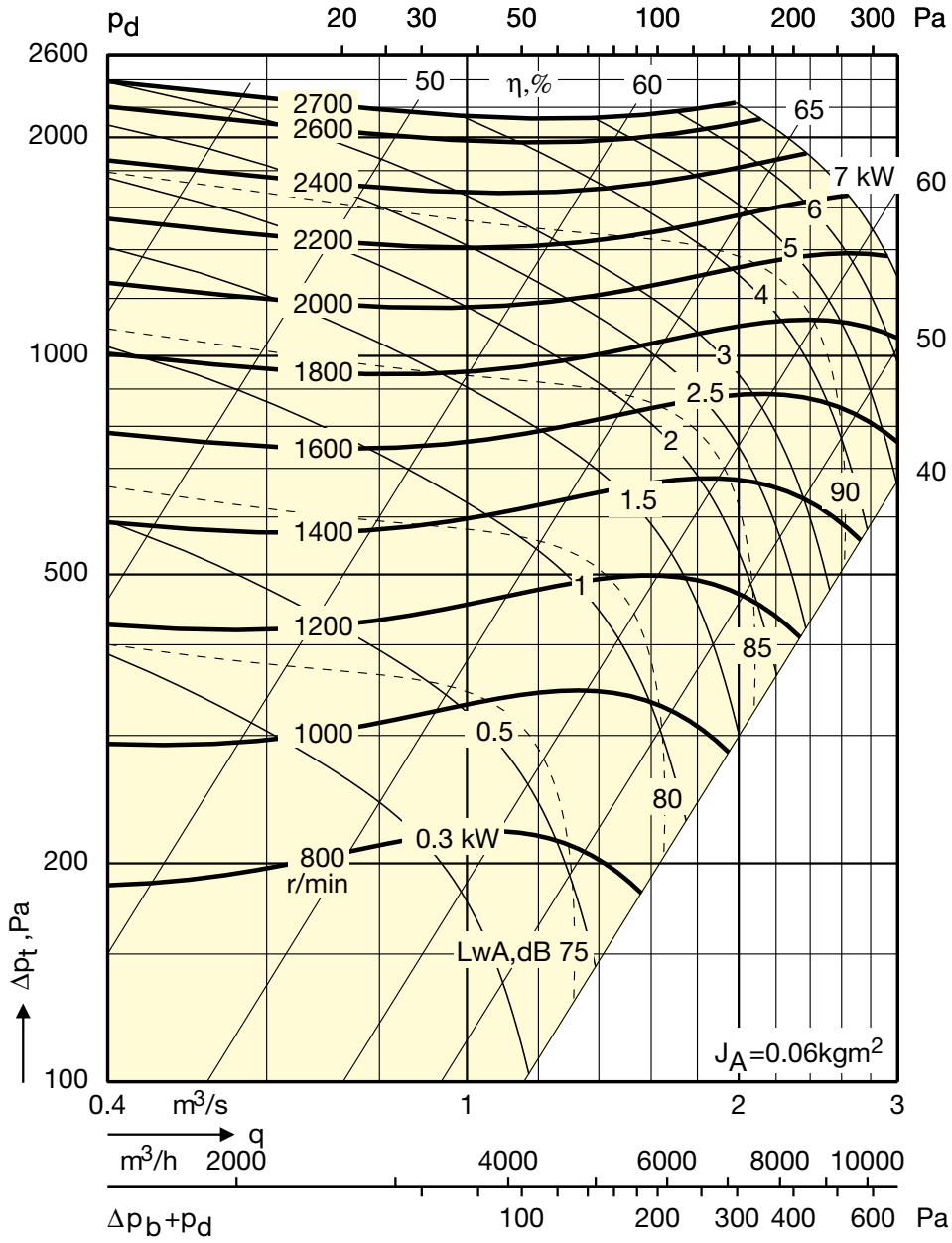
where Kok can be read from the table below:

Sound path	Speed range r/min	Correction K_{ok}, dB, Octave band, mit-frequency, Hz 63	125	250	500	1000	2000	4000	8000	$L_{Wt} - L_{WA}$
To the outlet duct	0 – 800	4	-2	-3	-5	-4	-8	-10	-15	6.7
	801 – 1800	3	-3	-3	-4	-5	-7	-10	-15	6.1
	1801 – 3000	2	-3	-4	-5	-6	-6	-9	-14	5.4
To the surroundings	0 – 800	-1	0	-1	-2	-2	-6	-9	-15	4.3
from a free-inlet fan	801 – 1800	-3	-2	-1	-1	-2	-6	-8	-15	3.5
	1801 – 3000	-5	-3	-2	-3	-2	-4	-8	-12	2.7

Fan charts – acoustic data – GXLF-5-028

Belt-driven, double-inlet, forward-curved blades

Impeller diameter: 280 mm



Acoustic Data

The total A-weighted sound power level to the outlet duct, L_{WA}, can be read from the fan diagram. Use the following formula to determine the sound power level in different octave bands:

$$L_{wokt} = L_{WA} + K_{ok}$$

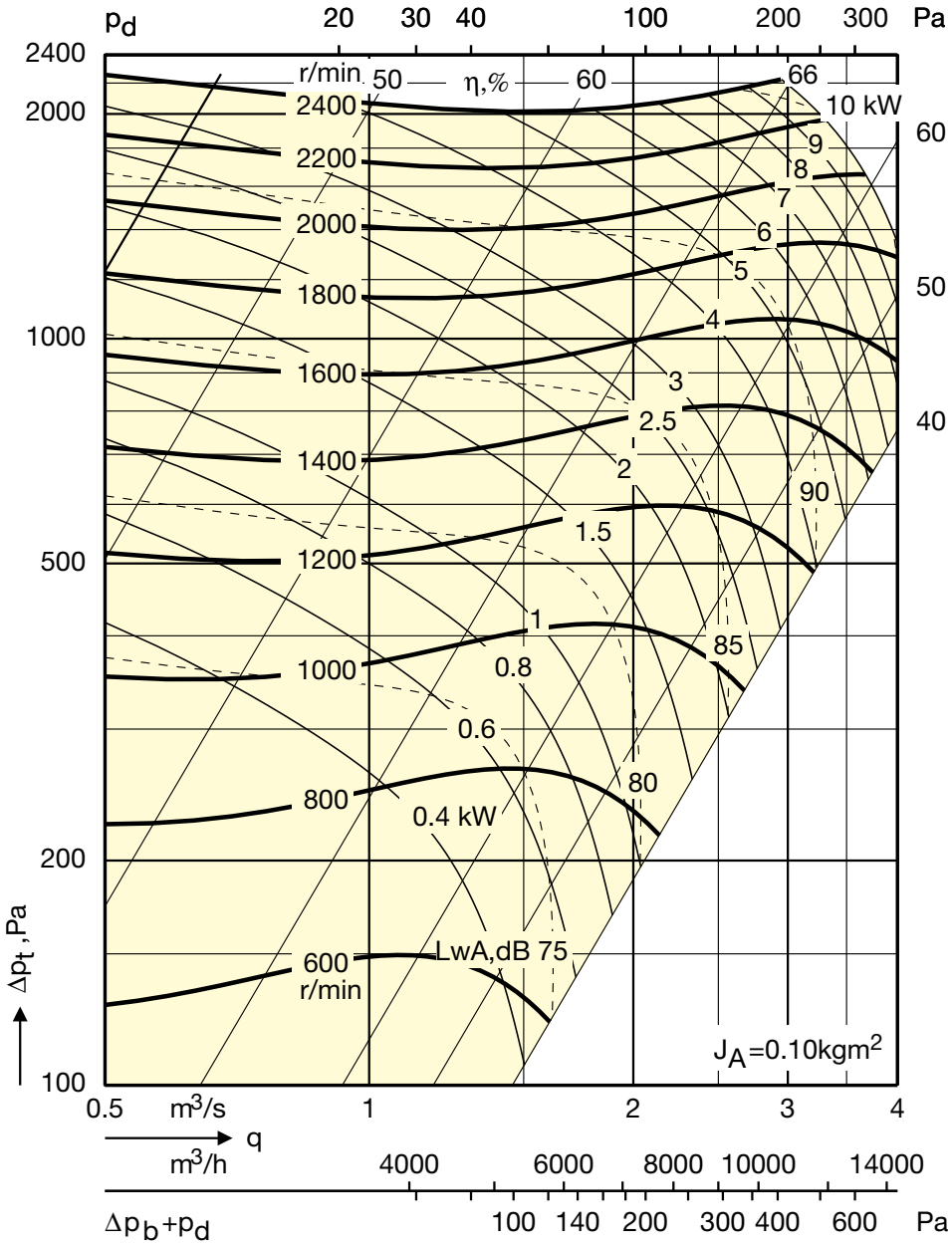
where Kok can be read from the table below:

Sound path	Speed range r/min	Correction K_{ok}, dB, Octave band, mit-frequency, Hz 63	125	250	500	1000	2000	4000	8000	$L_{Wt} - L_{WA}$
To the outlet duct	0 – 800	4	-2	-3	-5	-4	-8	-10	-15	6.7
	801 – 1800	3	-3	-3	-4	-5	-7	-10	-15	6.1
	1801 – 2700	2	-3	-4	-5	-6	-6	-9	-14	5.4
To the surroundings	0 – 800	-1	0	-1	-2	-2	-6	-9	-15	4.3
from a free-inlet fan	801 – 1800	-3	-2	-1	-1	-2	-6	-8	-15	3.5
	1801 – 2700	-5	-3	-2	-3	-2	-4	-8	-12	2.7

Fan charts – acoustic data – GXLF-5-031

Belt-driven, double-inlet, forward-curved blades

Impeller diameter: 310 mm



Acoustic Data

The total A-weighted sound power level to the outlet duct, L_{WA}, can be read from the fan diagram. Use the following formula to determine the sound power level in different octave bands:

$$L_{wokt} = L_{WA} + K_{ok}$$

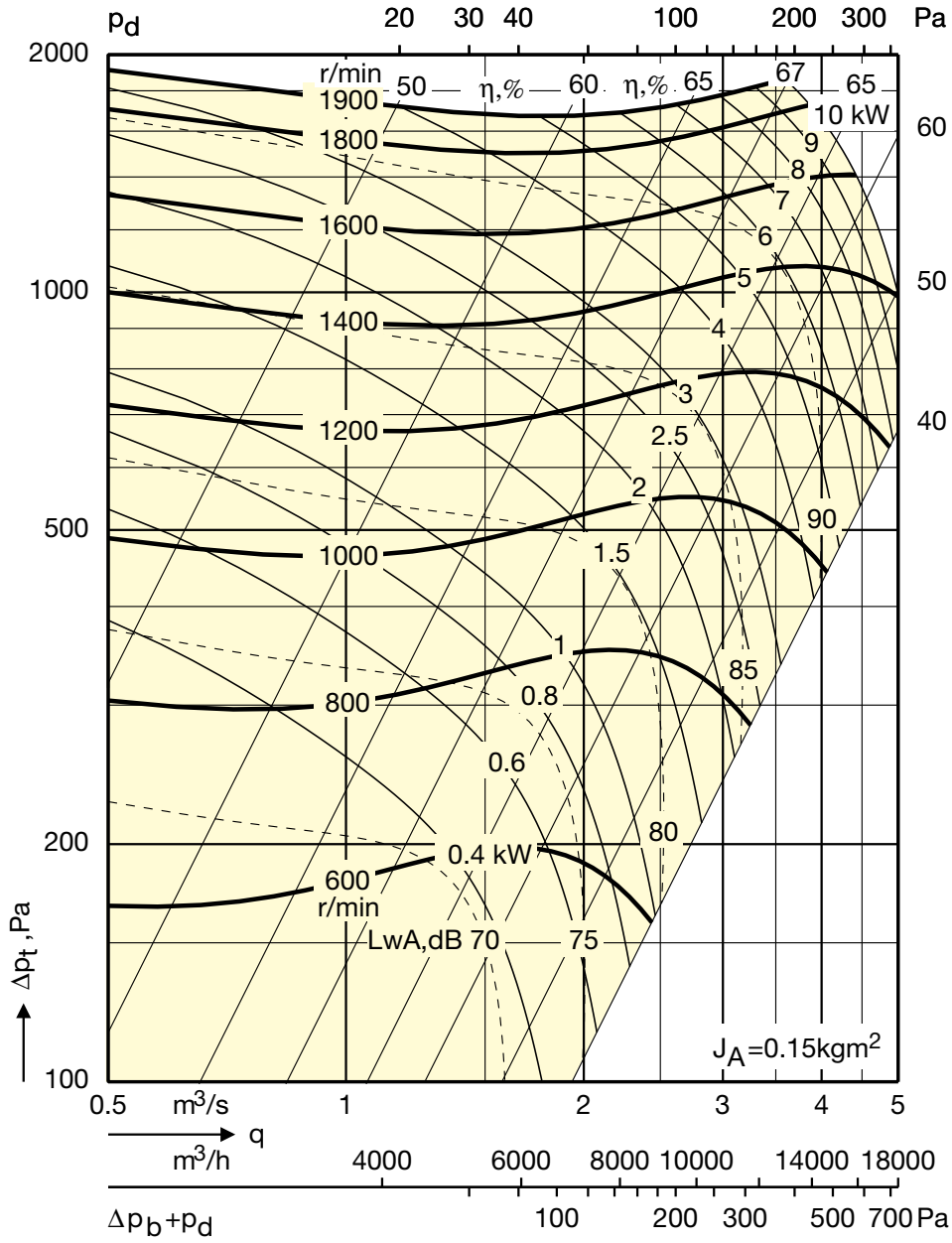
where Kok can be read from the table below:

Sound path	Speed range r/min	Correction K_{ok}, dB, Octave band, mit-frequency, Hz 63	125	250	500	1000	2000	4000	8000	$L_{Wt} - L_{WA}$
To the outlet duct	0 – 800	4	-2	-3	-5	-4	-8	-10	-15	6.7
	801 – 1800	3	-3	-3	-4	-5	-7	-10	-15	6.1
	1801 – 2400	2	-3	-4	-5	-6	-6	-9	-14	5.4
To the surroundings	0 – 800	-1	0	-1	-2	-2	-6	-9	-15	4.3
from a free-inlet fan	801 – 1800	-3	-2	-1	-1	-2	-6	-8	-15	3.5
	1801 – 2400	-5	-3	-2	-3	-2	-4	-8	-12	2.7

Fan charts – acoustic data – GXLF-5-035

Belt-driven, double-inlet, forward-curved blades

Impeller diameter: 350 mm



Acoustic Data

The total A-weighted sound power level to the outlet duct, L_{WA}, can be read from the fan diagram. Use the following formula to determine the sound power level in different octave bands:

$$L_{wokt} = L_{WA} + K_{ok}$$

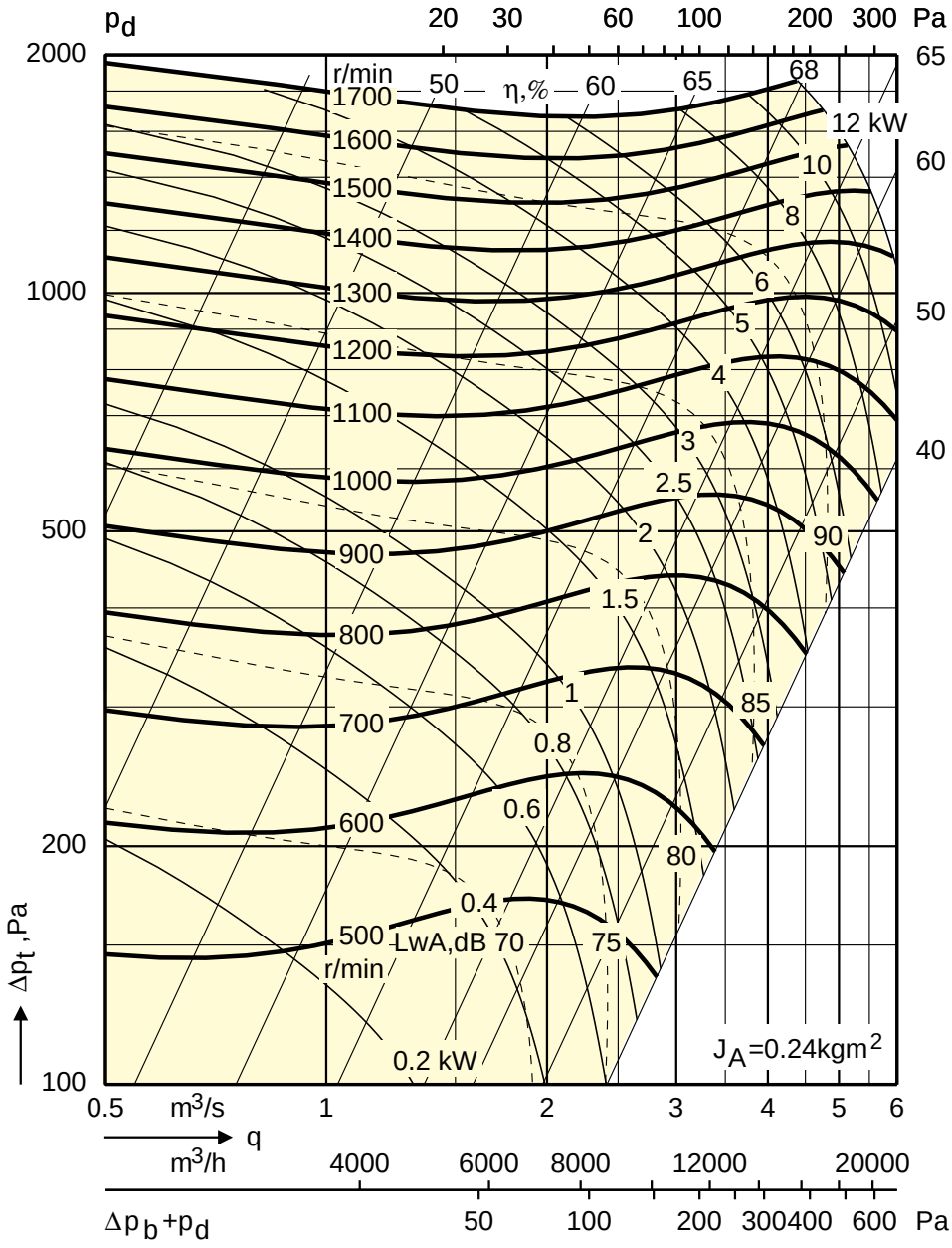
where Kok can be read from the table below:

Sound path	Speed range r/min	Correction K_{ok}, dB Octave band, mit-frequency, Hz 63	125	250	500	1000	2000	4000	8000	$L_{Wt} - L_{WA}$
To the outlet duct	0 – 800	4	-2	-3	-5	-4	-8	-10	-15	6.7
	801 – 1800	3	-3	-3	-4	-5	-7	-10	-15	6.1
	1801 – 1900	2	-3	-4	-5	-6	-6	-9	-14	5.4
To the surroundings	0 – 800	-1	0	-1	-2	-2	-6	-9	-15	4.3
from a free-inlet fan	801 – 1800	-3	-2	-1	-1	-2	-6	-8	-15	3.5
	1801 – 1900	-5	-3	-2	-3	-2	-4	-8	-12	2.7

Fan charts – acoustic data – GXLF-5-040

Belt-driven, double-inlet, forward-curved blades

Impeller diameter: 400 mm



Acoustic Data

The total A-weighted sound power level to the outlet duct, L_{WA}, can be read from the fan diagram. Use the following formula to determine the sound power level in different octave bands:

$$L_{wokt} = L_{WA} + K_{ok}$$

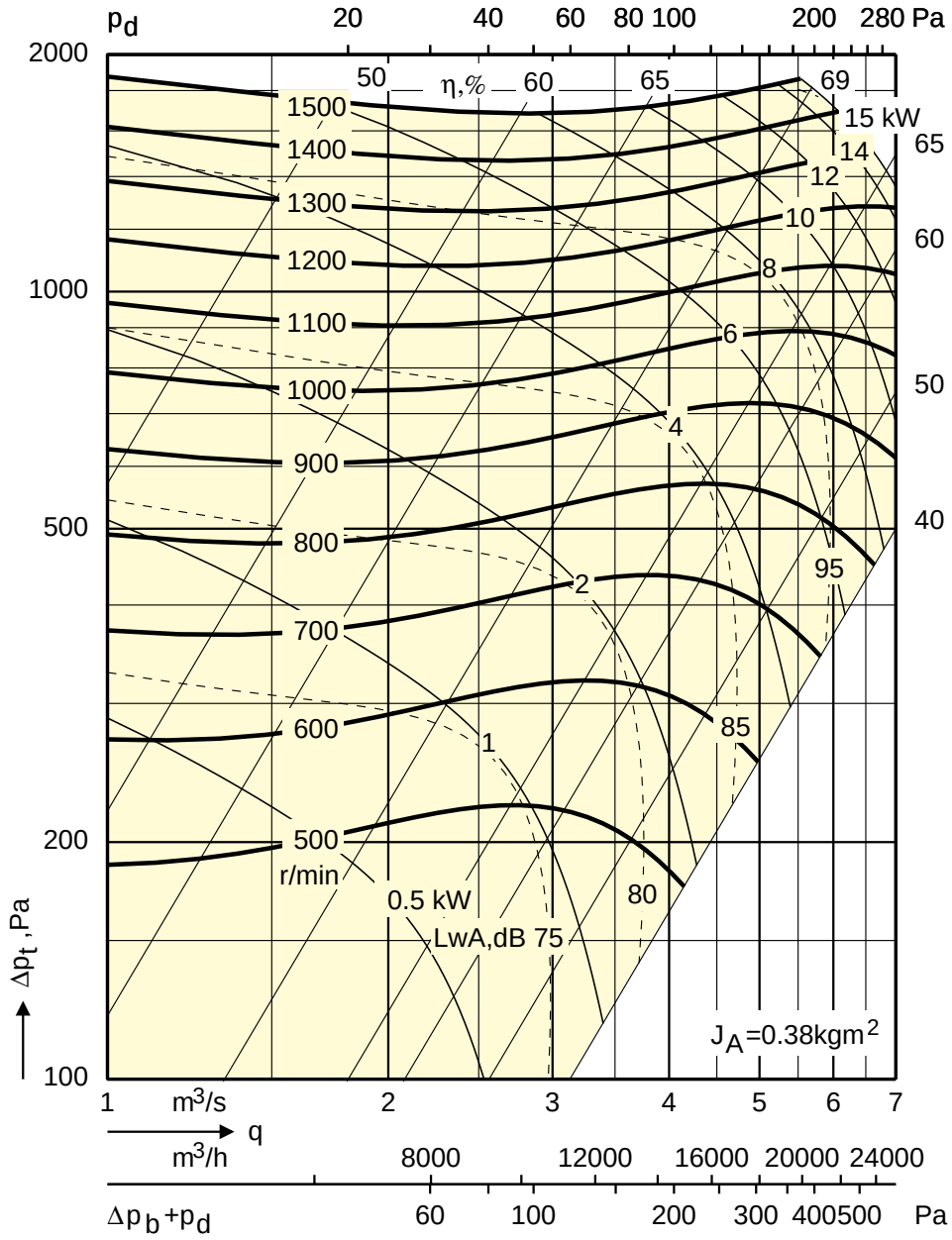
where Kok can be read from the table below:

Sound path	Speed range r/min	Correction K_{ok}, dB Octave band, mit-frequency, Hz 63	125	250	500	1000	2000	4000	8000	$L_{Wt} - L_{WA}$
To the outlet duct	0 – 800	4	-2	-3	-5	-4	-8	-10	-15	6.7
	801 – 1700	3	-3	-3	-4	-5	-7	-10	-15	6.1
To the surroundings from a free-inlet fan	0 – 800	-1	0	-1	-2	-2	-6	-9	-15	4.3
	801 – 1700	-3	-2	-1	-1	-2	-6	-8	-15	3.5

Fan charts – acoustic data – GXLF-5-045

Belt-driven, double-inlet, forward-curved blades

Impeller diameter: 450 mm



Acoustic Data

The total A-weighted sound power level to the outlet duct, L_{WA}, can be read from the fan diagram. Use the following formula to determine the sound power level in different octave bands:

$$L_{wokt} = L_{WA} + K_{ok}$$

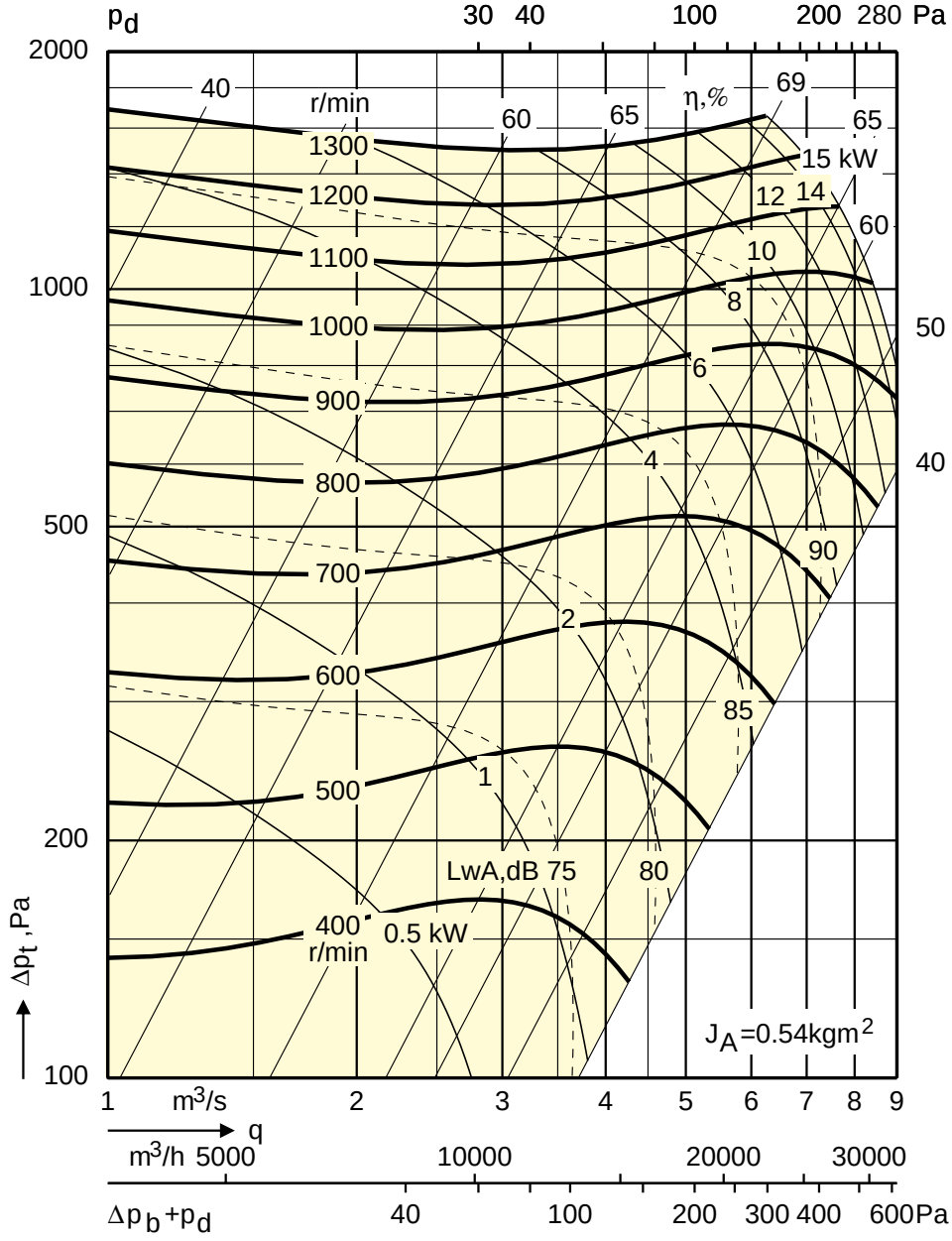
where Kok can be read from the table below:

Sound path	Speed range r/min	Correction K_{ok}, dB, Octave band, mit-frequency, Hz 63	125	250	500	1000	2000	4000	8000	$L_{Wt} - L_{WA}$
To the outlet duct	0 – 800	4	-2	-3	-5	-4	-8	-10	-15	6.7
	801 – 1500	3	-3	-3	-4	-5	-7	-10	-15	6.1
To the surroundings from a free-inlet fan	0 – 800	-1	0	-1	-2	-2	-6	-9	-15	4.3
	801 – 1500	-3	-2	-1	-1	-2	-6	-8	-15	3.5

Fan charts – acoustic data – GXLF-5-050

Belt-driven, double-inlet, forward-curved blades

Impeller diameter: 500 mm



Acoustic Data

The total A-weighted sound power level to the outlet duct, L_{WA}, can be read from the fan diagram. Use the following formula to determine the sound power level in different octave bands:

$$L_{wokt} = L_{WA} + K_{ok}$$

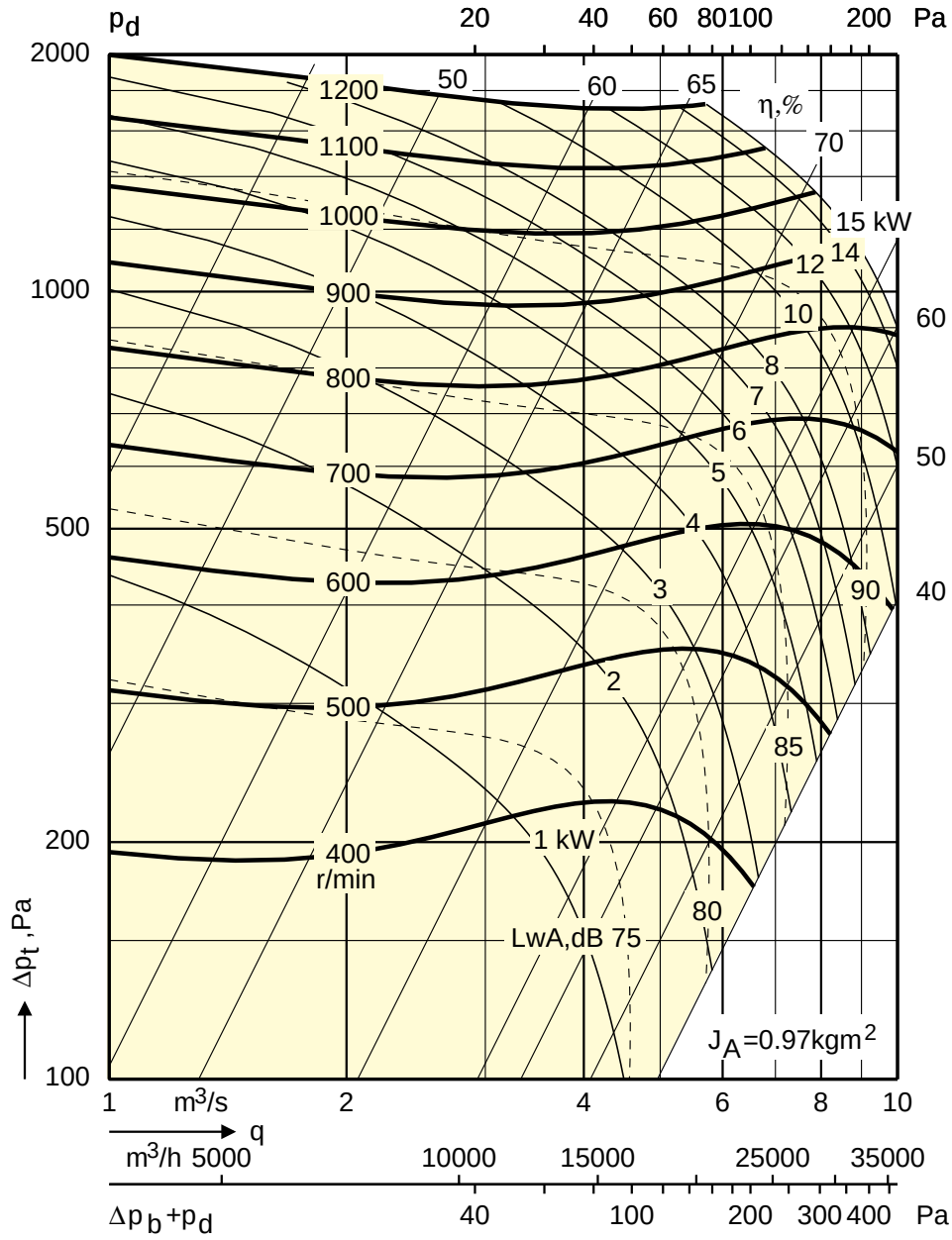
where Kok can be read from the table below:

Sound path	Speed range r/min	Correction K_{ok}, dB Octave band, mit-frequency, Hz 63	125	250	500	1000	2000	4000	8000	$L_{Wt} - L_{WA}$
To the outlet duct	0 – 800	4	-2	-3	-5	-4	-8	-10	-15	6.7
	801 – 1300	3	-3	-3	-4	-5	-7	-10	-15	6.1
To the surroundings from a free-inlet fan	0 – 800	-1	0	-1	-2	-2	-6	-9	-15	4.3
	801 – 1300	-3	-2	-1	-1	-2	-6	-8	-15	3.5

Fan charts – acoustic data – GXLF-5-056

Belt-driven, double-inlet, forward-curved blades

Impeller diameter: 560 mm



Acoustic Data

The total A-weighted sound power level to the outlet duct, L_{WA}, can be read from the fan diagram. Use the following formula to determine the sound power level in different octave bands:

$$L_{wokt} = L_{WA} + K_{ok}$$

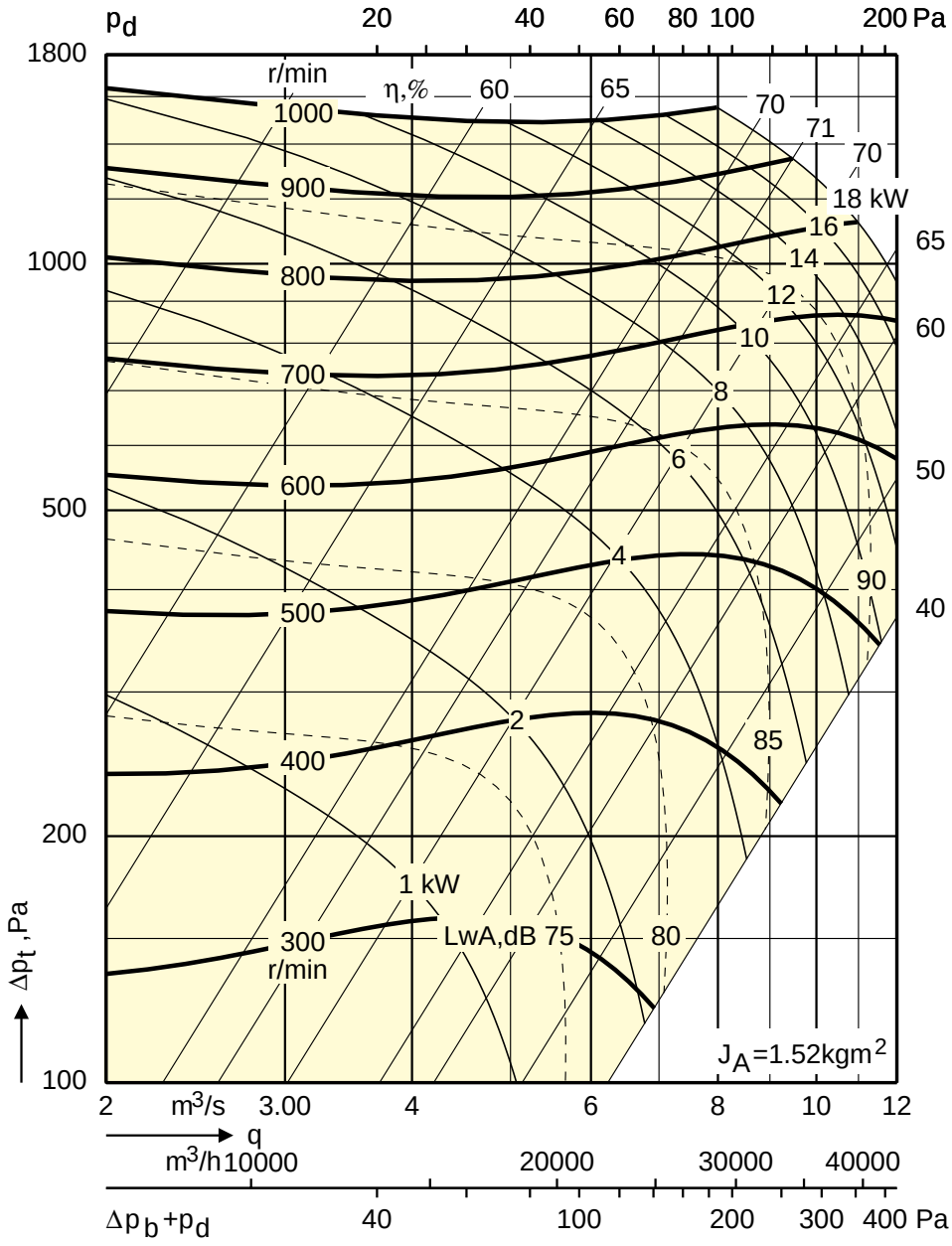
where Kok can be read from the table below:

Sound path	Speed range r/min	Correction K_{ok}, dB, Octave band, mit-frequency, Hz 63	125	250	500	1000	2000	4000	8000	$L_{Wt} - L_{WA}$
To the outlet duct	0 – 800	4	-2	-3	-5	-4	-8	-10	-15	6.7
	801 – 1200	3	-3	-3	-4	-5	-7	-10	-15	6.1
To the surroundings from a free-inlet fan	0 – 800	-1	0	-1	-2	-2	-6	-9	-15	4.3
	801 – 1200	-3	-2	-1	-1	-2	-6	-8	-15	3.5

Fan charts – acoustic data – GXLF-5-063

Belt-driven, double-inlet, forward-curved blades

Impeller diameter: 630 mm



Acoustic Data

The total A-weighted sound power level to the outlet duct, L_{WA}, can be read from the fan diagram. Use the following formula to determine the sound power level in different octave bands:

$$L_{wokt} = L_{WA} + K_{ok}$$

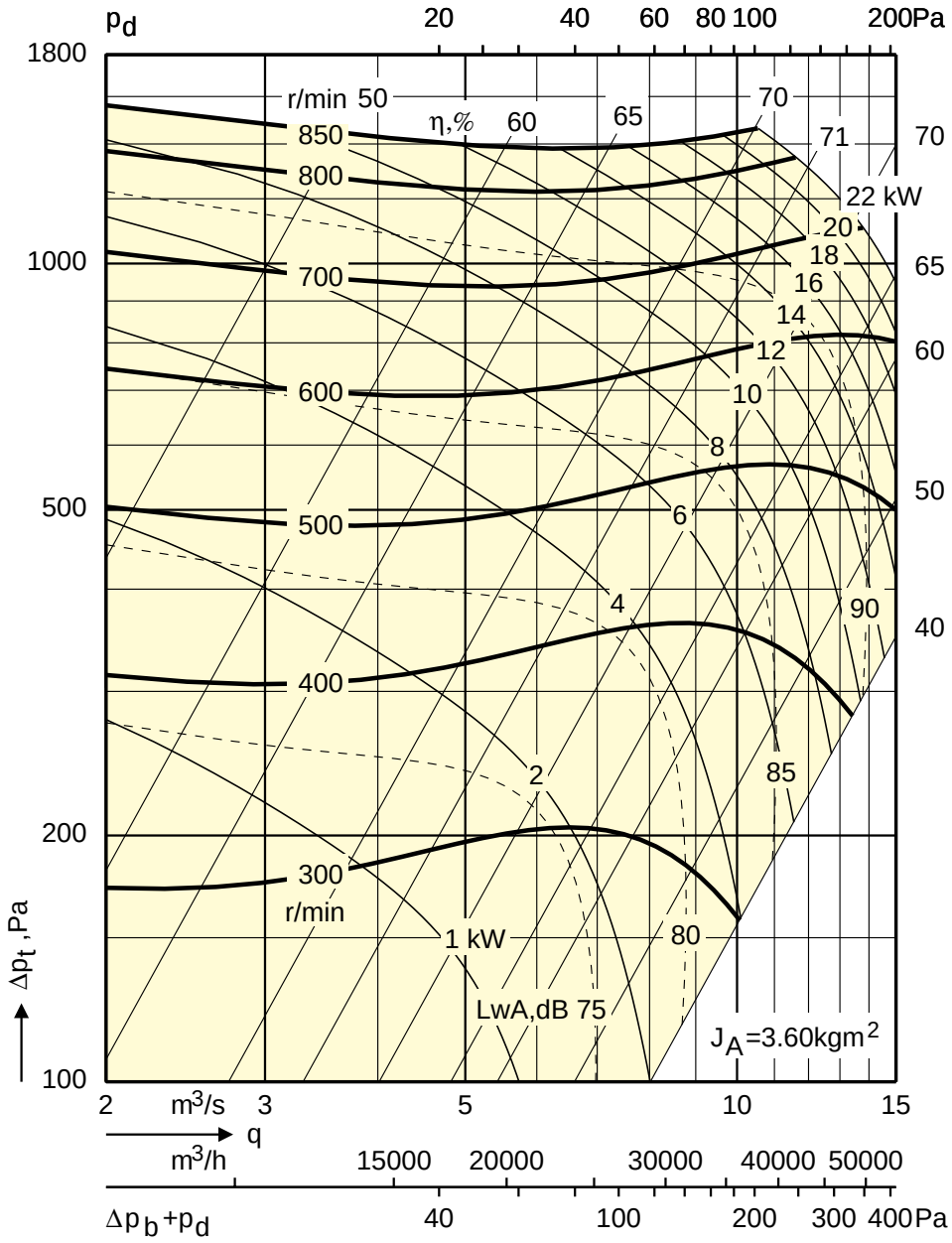
where Kok can be read from the table below:

Sound path	Speed range r/min	Correction K_{ok}, dB, Octave band, mit-frequency, Hz 63	125	250	500	1000	2000	4000	8000	$L_{Wt} - L_{WA}$
To the outlet duct	0 – 800	4	-2	-3	-5	-4	-8	-10	-15	6.7
	801 – 1000	3	-3	-3	-4	-5	-7	-10	-15	6.1
To the surroundings from a free-inlet fan	0 – 800	-1	0	-1	-2	-2	-6	-9	-15	4.3
	801 – 1000	-3	-2	-1	-1	-2	-6	-8	-15	3.5

Fan charts – acoustic data – GXLF-5-071

Belt-driven, double-inlet, forward-curved blades

Impeller diameter: 710 mm



Acoustic Data

The total A-weighted sound power level to the outlet duct, L_{WA}, can be read from the fan diagram. Use the following formula to determine the sound power level in different octave bands:

$$L_{wokt} = L_{WA} + K_{ok}$$

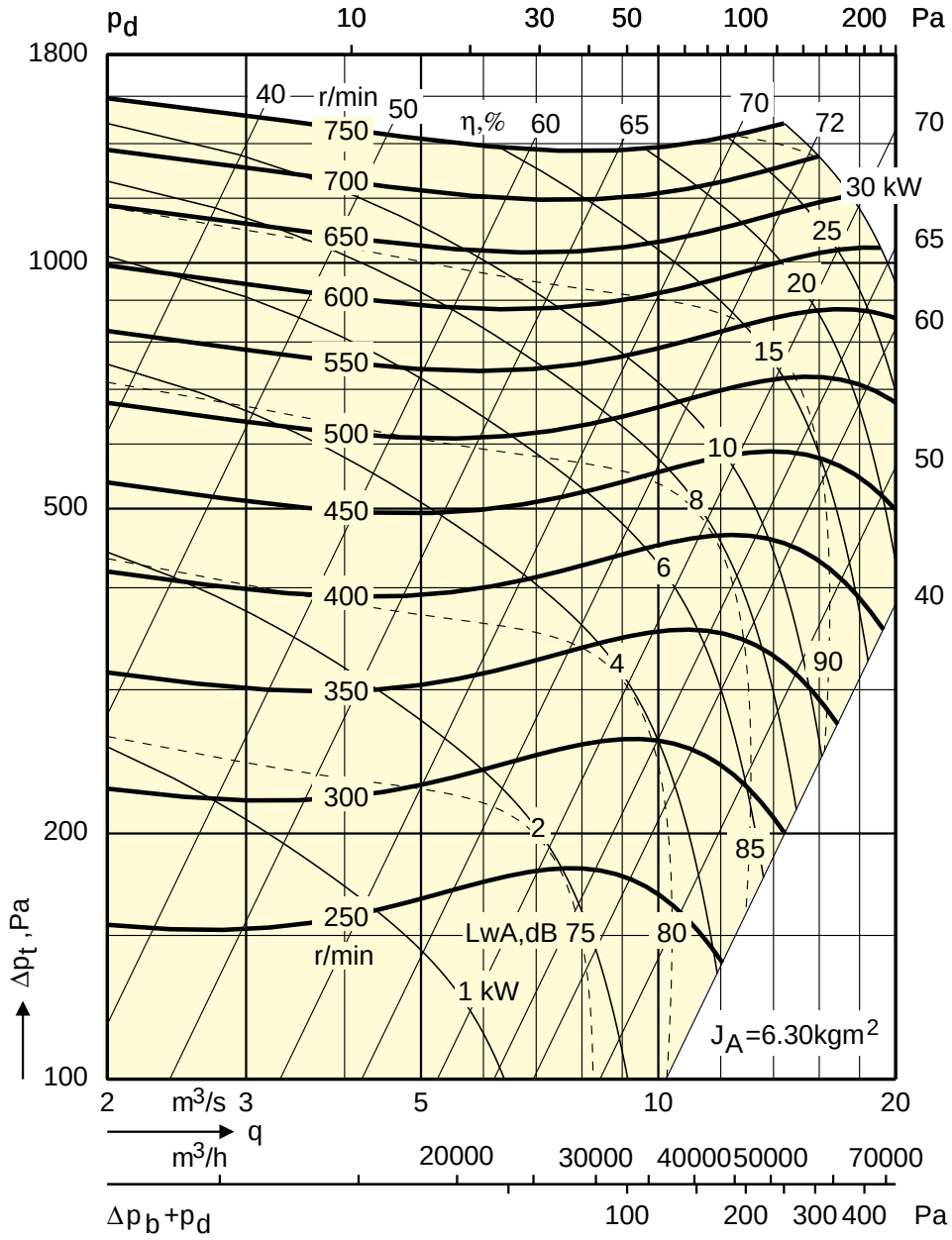
where Kok can be read from the table below:

Sound path	Speed range r/min	Correction K_{ok}, dB, Octave band, mit-frequency, Hz 63	125	250	500	1000	2000	4000	8000	$L_{Wt} - L_{WA}$
To the outlet duct	0 – 800	4	-2	-3	-5	-4	-8	-10	-15	6.7
	801 – 850	3	-3	-3	-4	-5	-7	-10	-15	6.1
To the surroundings from a free-inlet fan	0 – 800	-1	0	-1	-2	-2	-6	-9	-15	4.3
	801 – 850	-3	-2	-1	-1	-2	-6	-8	-15	3.5

Fan charts – acoustic data – GXLF-5-080

Belt-driven, double-inlet, forward-curved blades

Impeller diameter: 800 mm



Acoustic Data

The total A-weighted sound power level to the outlet duct, L_{WA}, can be read from the fan diagram. Use the following formula to determine the sound power level in different octave bands:

$$L_{wokt} = L_{WA} + K_{ok}$$

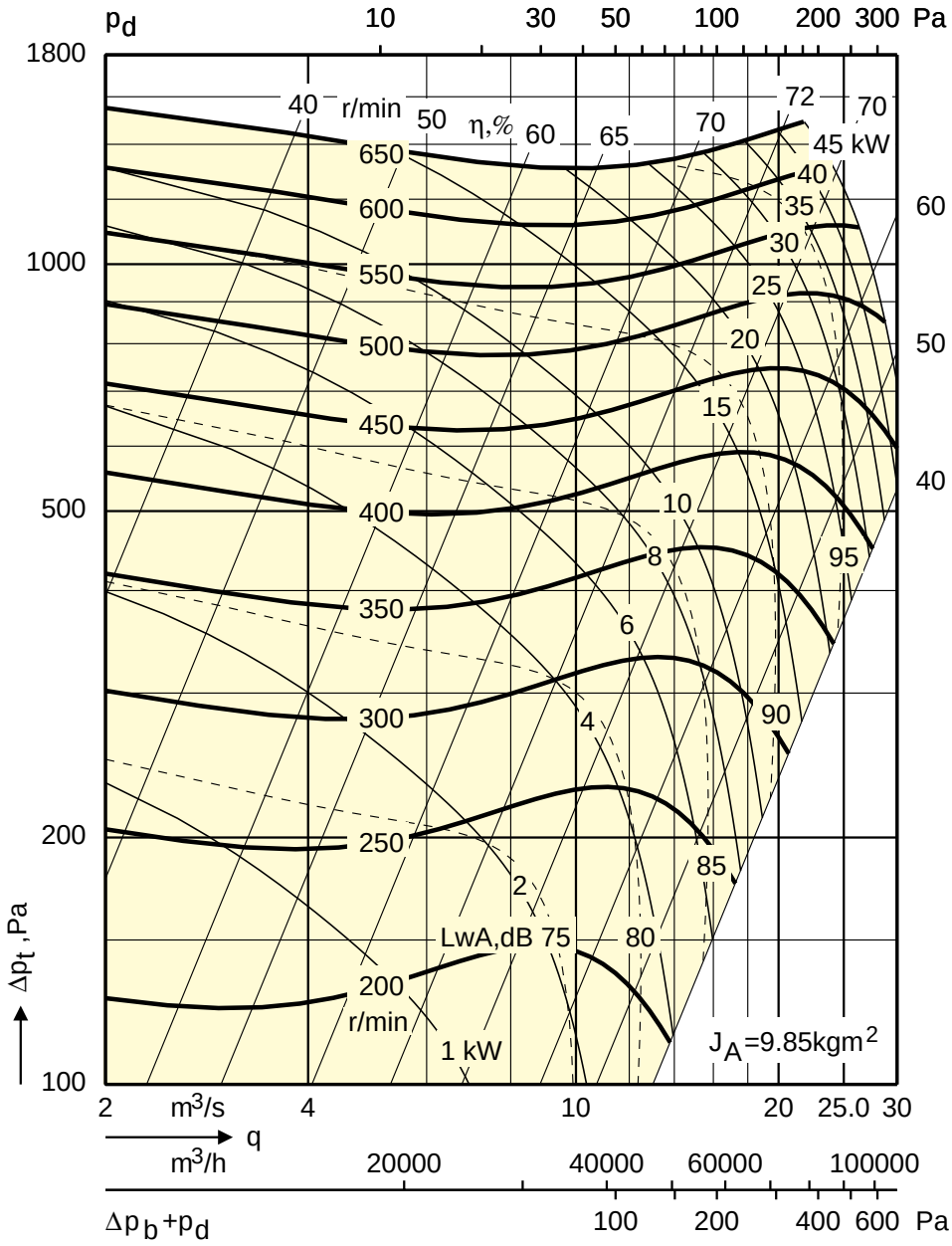
where Kok can be read from the table below:

Sound path	Speed range r/min	Correction K_{ok}, dB, Octave band, mit-frequency, Hz 63	125	250	500	1000	2000	4000	8000	$L_{Wt} - L_{WA}$
To the outlet duct	0 – 750	4	-2	-3	-5	-4	-8	-10	-15	6.7
To the surroundings from a free-inlet fan	0 – 750	-1	0	-1	-2	-2	-6	-9	-15	4.3

Fan charts – acoustic data – GXLF-5-090

Belt-driven, double-inlet, forward-curved blades

Impeller diameter: 900 mm



Acoustic Data

The total A-weighted sound power level to the outlet duct, L_{WA}, can be read from the fan diagram. Use the following formula to determine the sound power level in different octave bands:

$$L_{wokt} = L_{WA} + K_{ok}$$

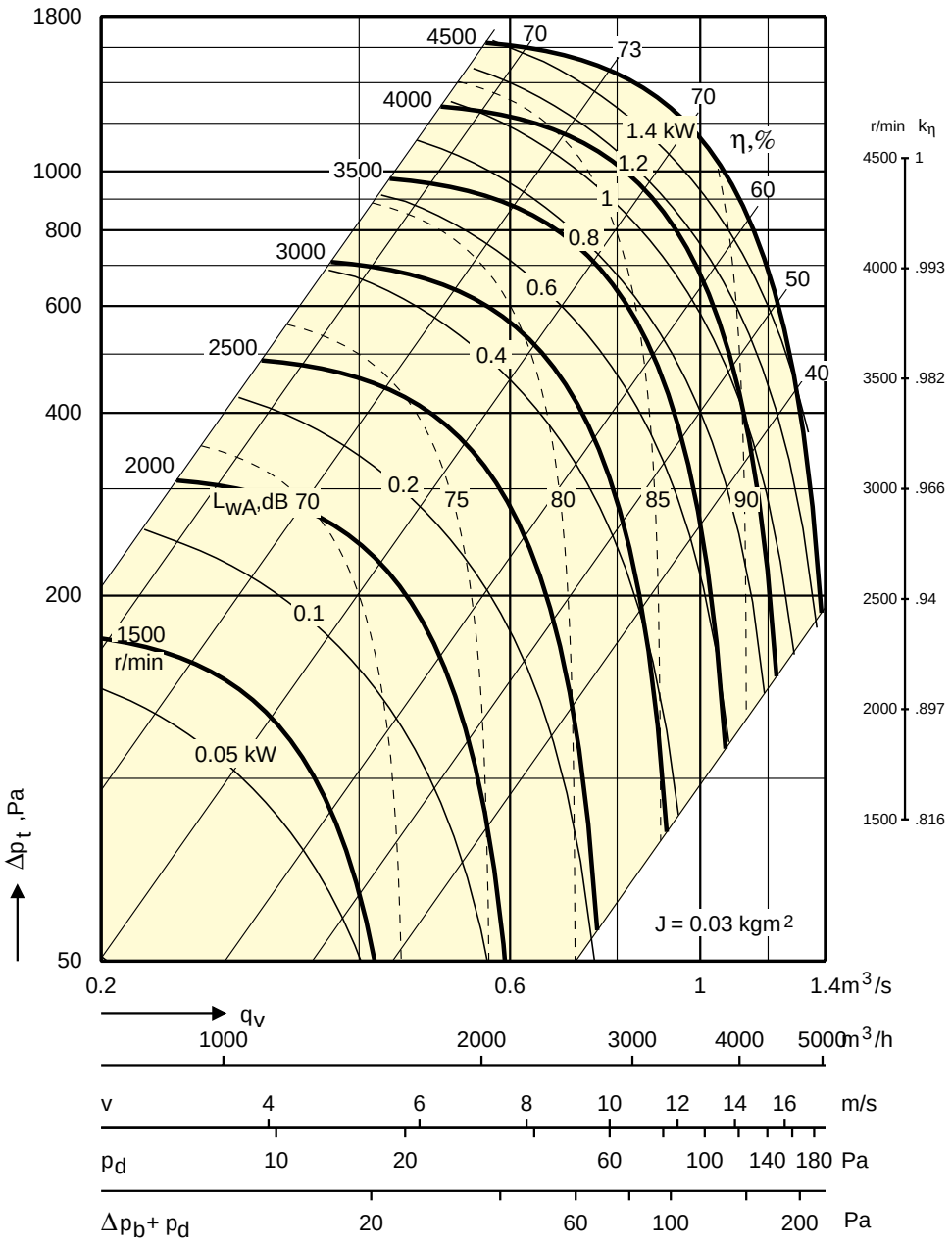
where Kok can be read from the table below:

Sound path	Speed range r/min	Correction K_{ok}, dB Octave band, mit-frequency, Hz 63	125	250	500	1000	2000	4000	8000	$L_{Wt} - L_{WA}$
To the outlet duct	0 – 650	4	-2	-3	-5	-4	-8	-10	-15	6.7
To the surroundings from a free-inlet fan	0 – 650	-1	0	-1	-2	-2	-6	-9	-15	4.3

Fan charts – acoustic data – GXLB-5-022

Belt-driven, double-inlet, backward-curved blades

Impeller diameter: 220 mm



Acoustic Data

The total A-weighted sound power level to the outlet duct, L_{WA}, can be read from the fan diagram. Use the following formula to determine the sound power level in different octave bands:

$$L_{wokt} = L_{WA} + K_{ok}$$

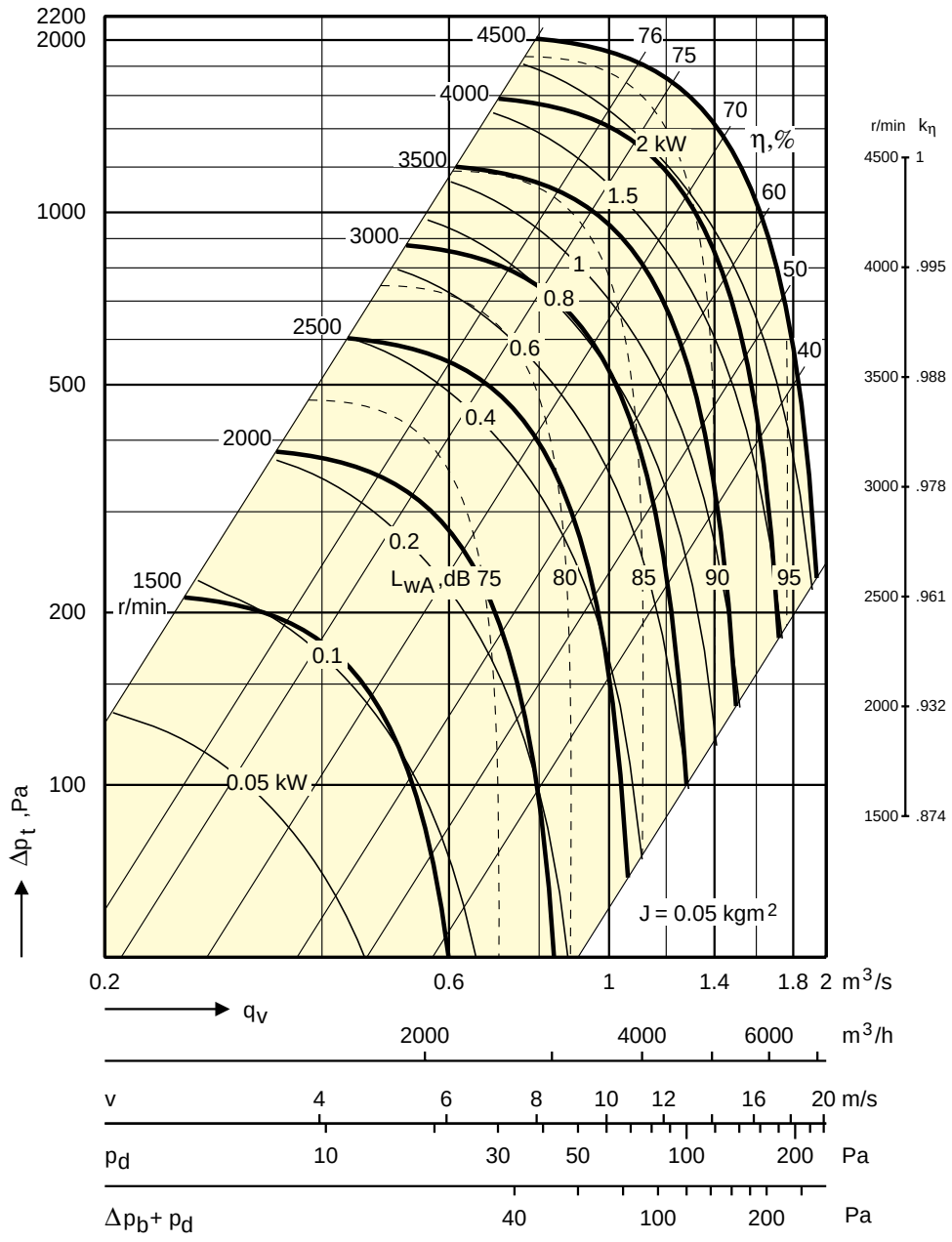
where Kok can be read from the table below:

Sound path	Speed range r/min	Correction K_{ok}, dB Octave band, mit-frequency, Hz 63	125	250	500	1000	2000	4000	8000	$L_{Wt} - L_{WA}$
To the outlet duct	0 – 1928	6	4	5	–5	–7	–9	–12	–17	10.2
	1929 – 3857	4	–1	–4	0	–8	–8	–12	–18	7.1
	3858 – 4500	–1	–3	–2	–9	–2	–8	–12	–18	4.7
To the surroundings	0 – 1928	–0	4	7	1	–3	–7	–13	–19	6.9
from a free-inlet fan	1929 – 3857	–5	–2	–2	4	–2	–7	–12	–20	3.3
	3858 – 4500	–9	–10	–6	–4	2	–5	–11	–21	0.9

Fan charts – acoustic data – GXLB-5-025

Belt-driven, double-inlet, backward-curved blades

Impeller diameter: 250 mm



Acoustic Data

The total A-weighted sound power level to the outlet duct, L_{WA}, can be read from the fan diagram. Use the following formula to determine the sound power level in different octave bands:

$$L_{wokt} = L_{WA} + K_{ok}$$

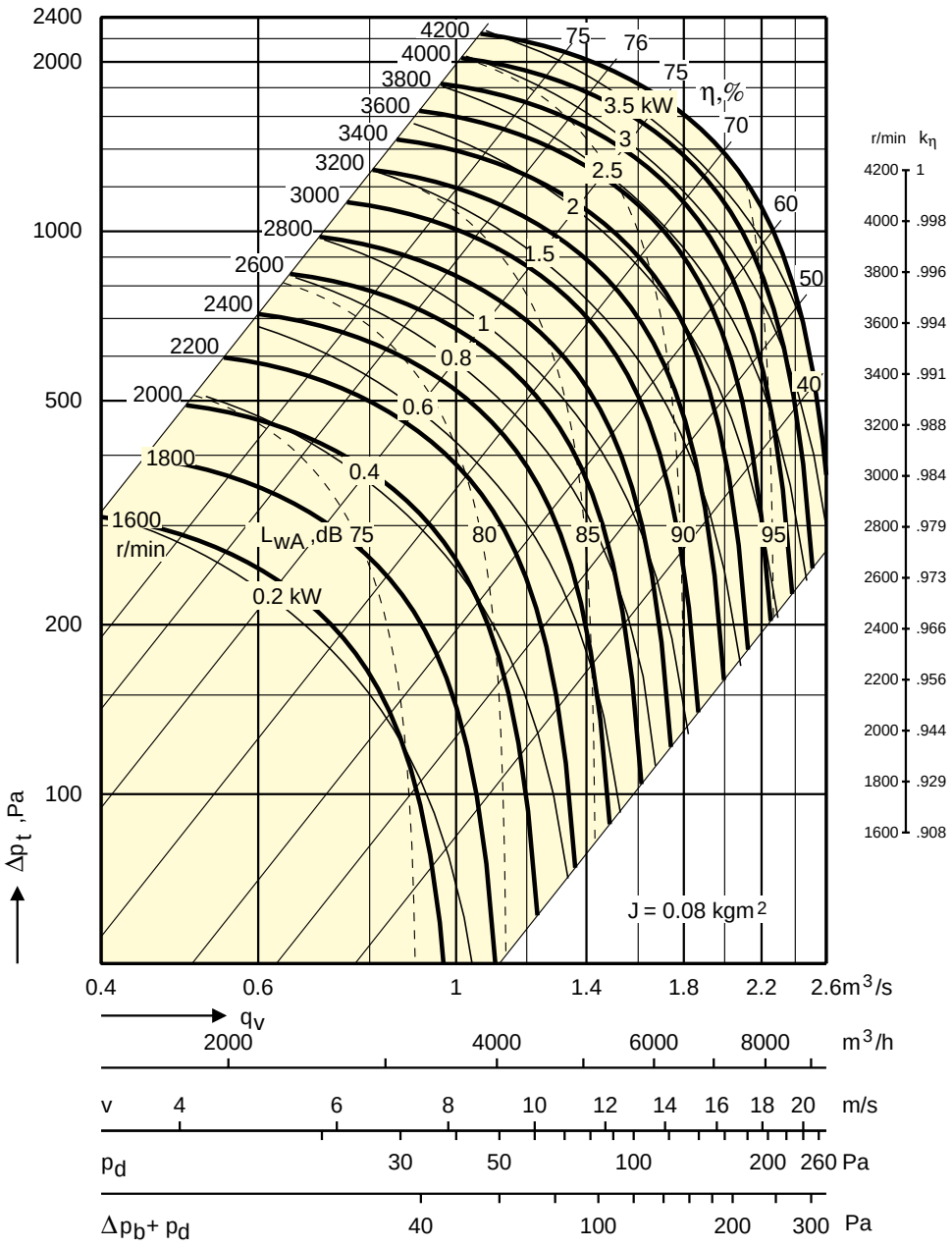
where Kok can be read from the table below:

Sound path	Speed range r/min	Correction K_{ok}, dB Octave band, mit-frequency, Hz 63	125	250	500	1000	2000	4000	8000	$L_{Wt} - L_{WA}$
To the outlet duct	0 – 1928	2	2	4	–4	–7	–8	–11	–18	8.2
	1929 – 3857	0	0	–5	–1	–7	–7	–11	–18	5.6
	3858 – 4500	–3	–3	–2	–8	–3	–8	–10	–15	4.1
To the surroundings	0 – 1928	–5	0	5	1	–2	–6	–13	–21	5.0
from a free-inlet fan	1929 – 3857	–9	–6	–4	3	–2	–7	–12	–22	2.5
	3858 – 4500	–12	–10	–9	–4	2	–6	–10	–21	0.7

Fan charts – acoustic data – GXLB-5-028

Belt-driven, double-inlet, backward-curved blades

Impeller diameter: 280 mm



Acoustic Data

The total A-weighted sound power level to the outlet duct, L_{WA}, can be read from the fan diagram. Use the following formula to determine the sound power level in different octave bands:

$$L_{wokt} = L_{WA} + K_{ok}$$

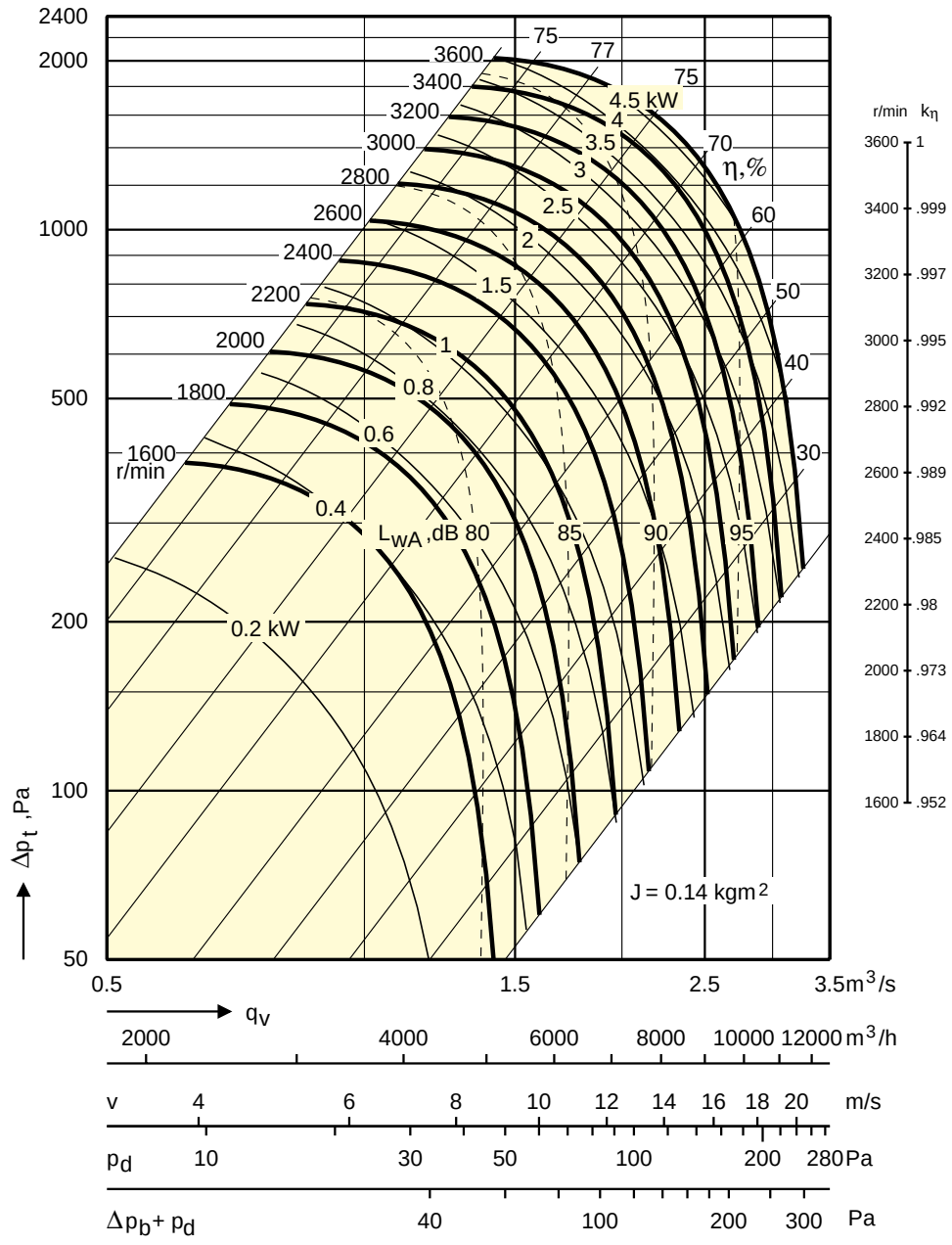
where Kok can be read from the table below:

Sound path	Speed range r/min	Correction K_{ok}, dB Octave band, mit-frequency, Hz 63	125	250	500	1000	2000	4000	8000	$L_{Wt} - L_{WA}$
To the outlet duct	0 – 1928	1	3	4	–5	–6	–8	–12	–17	8.2
	1929 – 3857	–3	0	–5	–2	–6	–7	–12	–17	4.7
	3858 – 4200	–5	–3	–2	–7	–4	–6	–10	–14	3.9
To the surroundings	0 – 1928	–6	2	4	1	–2	–6	–14	–21	5.2
from a free-inlet fan	1929 – 3857	–11	–6	–4	1	–2	–7	–13	–21	2.5
	3858 – 4200	–14	–10	–9	–4	1	–4	–10	–19	0.6

Fan charts – acoustic data – GXLB-5-031

Belt-driven, double-inlet, backward-curved blades

Impeller diameter: 310 mm



Acoustic Data

The total A-weighted sound power level to the outlet duct, L_{WA}, can be read from the fan diagram. Use the following formula to determine the sound power level in different octave bands:

$$L_{wokt} = L_{WA} + K_{ok}$$

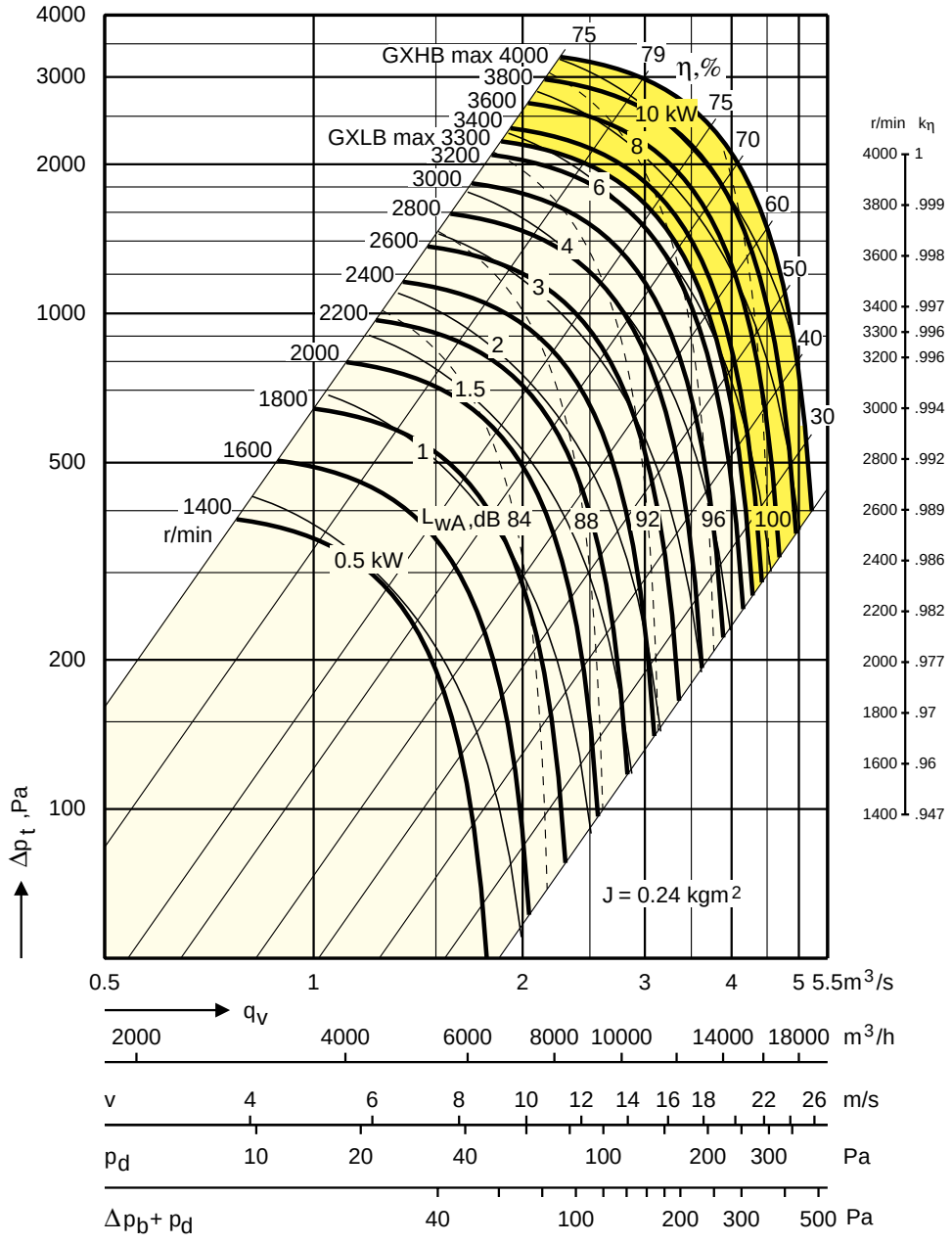
where Kok can be read from the table below:

Sound path	Speed range r/min	Correction K_{ok}, dB Octave band, mit-frequency, Hz 63	125	250	500	1000	2000	4000	8000	$L_{Wt} - L_{WA}$
To the outlet duct	0 – 1928	–6	0	5	–5	–6	–8	–15	–20	7.1
	1929 – 3600	–8	–3	–7	–2	–6	–6	–12	–20	3.2
To the surroundings from a free-inlet fan	0 – 1928	–7	–2	4	0	–2	–6	–16	–21	4.6
	1929 – 3600	–13	–9	–6	–1	–3	–6	–13	–23	1.9

Fan charts – acoustic data – GXHB/GXLB-5-035

Belt-driven, double-inlet, backward-curved blades

Impeller diameter: 350 mm



Acoustic Data

The total A-weighted sound power level to the outlet duct, L_{WA}, can be read from the fan diagram. Use the following formula to determine the sound power level in different octave bands:

$$L_{wokt} = L_{WA} + K_{ok}$$

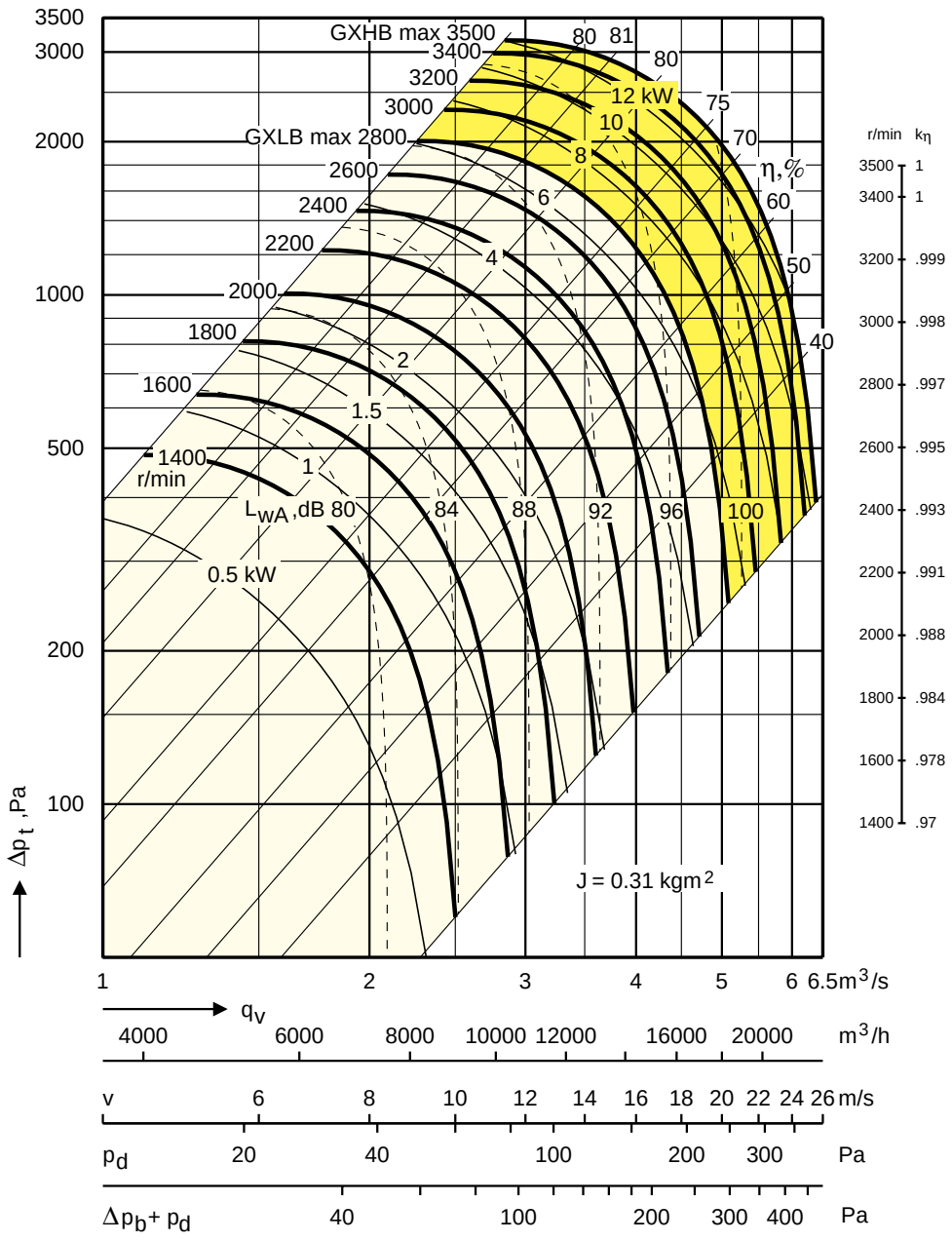
where Kok can be read from the table below:

Sound path	Speed range r/min	Correction K_{ok}, dB Octave band, mit-frequency, Hz 63	125	250	500	1000	2000	4000	8000	$L_{Wt} - L_{WA}$
To the outlet duct	0 – 1928	–4	0	5	–5	–6	–8	–15	–21	7.3
	1929 – 3857	–9	–3	–6	–3	–6	–5	–12	–19	3.1
	3858 – 4000	–11	–6	–3	–8	–4	–5	–11	–15	2.6
To the surroundings	0 – 1928	–5	1	3	0	–3	–7	–10	–21	5.1
from a free-inlet fan	1929 – 3857	–12	–6	–5	–1	–5	–7	–12	–21	2.6
	3858 – 4000	–14	–10	–8	–6	–1	–5	–8	–16	0.8

Fan charts – acoustic data – GXHB/GXLB-5-040

Belt-driven, double-inlet, backward-curved blades

Impeller diameter: 400 mm



Acoustic Data

The total A-weighted sound power level to the outlet duct, L_{WA}, can be read from the fan diagram. Use the following formula to determine the sound power level in different octave bands:

$$L_{wokt} = L_{WA} + K_{ok}$$

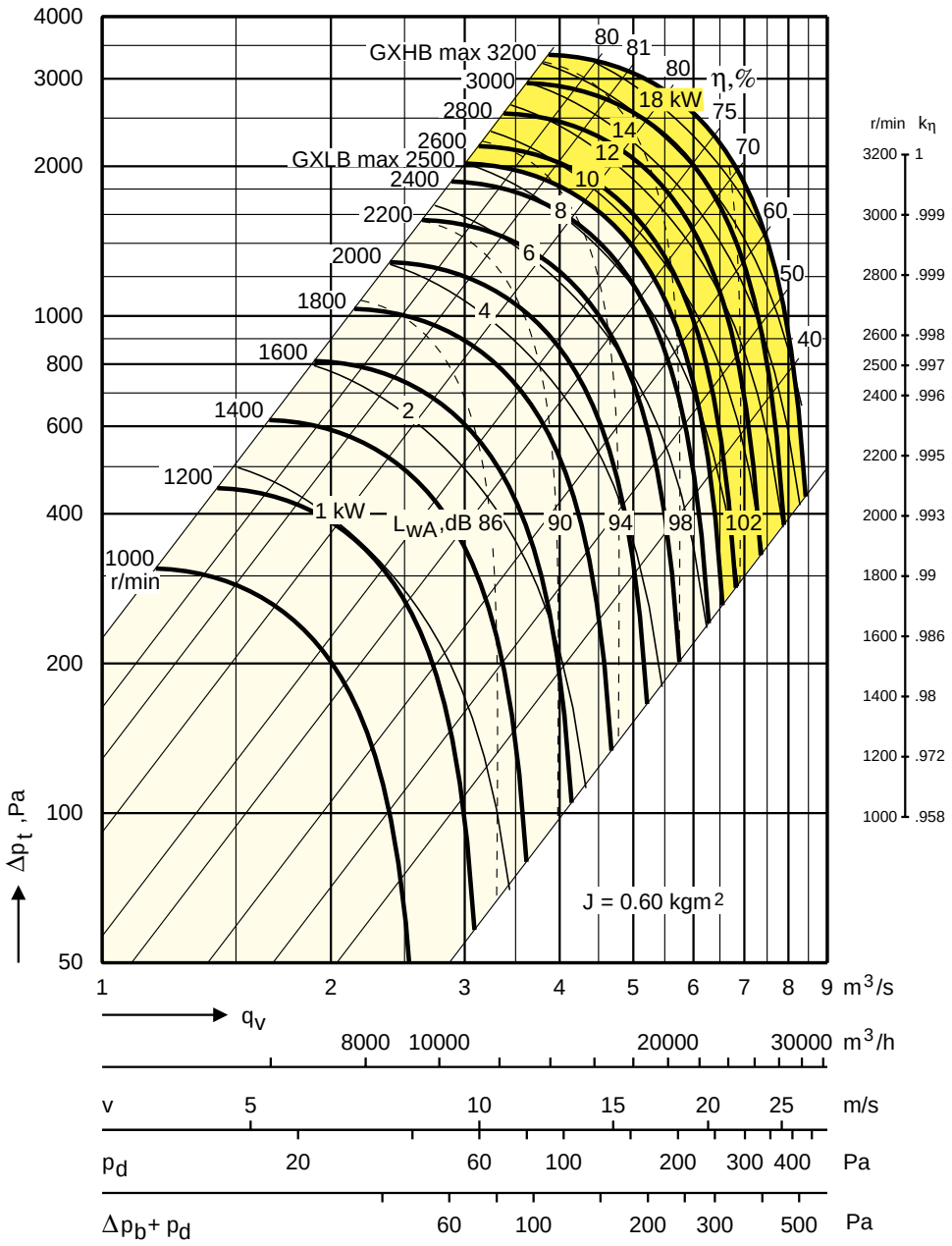
where Kok can be read from the table below:

Sound path	Speed range r/min	Correction K_{ok}, dB Octave band, mit-frequency, Hz 63	125	250	500	1000	2000	4000	8000	$L_{Wt} - L_{WA}$
To the outlet duct	0 – 1928	–7	–3	4	–5	–5	–8	–15	–20	6.1
	1929 – 3500	–11	–5	–9	–4	–5	–5	–12	–18	2.1
To the surroundings from a free-inlet fan	0 – 1928	–6	–3	2	0	–3	–8	–10	–20	4.2
	1929 – 3500	–15	–8	–9	–2	–4	–7	–13	–20	1.9

Fan charts – acoustic data – GXHB/GXLB-5-045

Belt-driven, double-inlet, backward-curved blades

Impeller diameter: 450 mm



Acoustic Data

The total A-weighted sound power level to the outlet duct, L_{WA}, can be read from the fan diagram. Use the following formula to determine the sound power level in different octave bands:

$$L_{wokt} = L_{WA} + K_{ok}$$

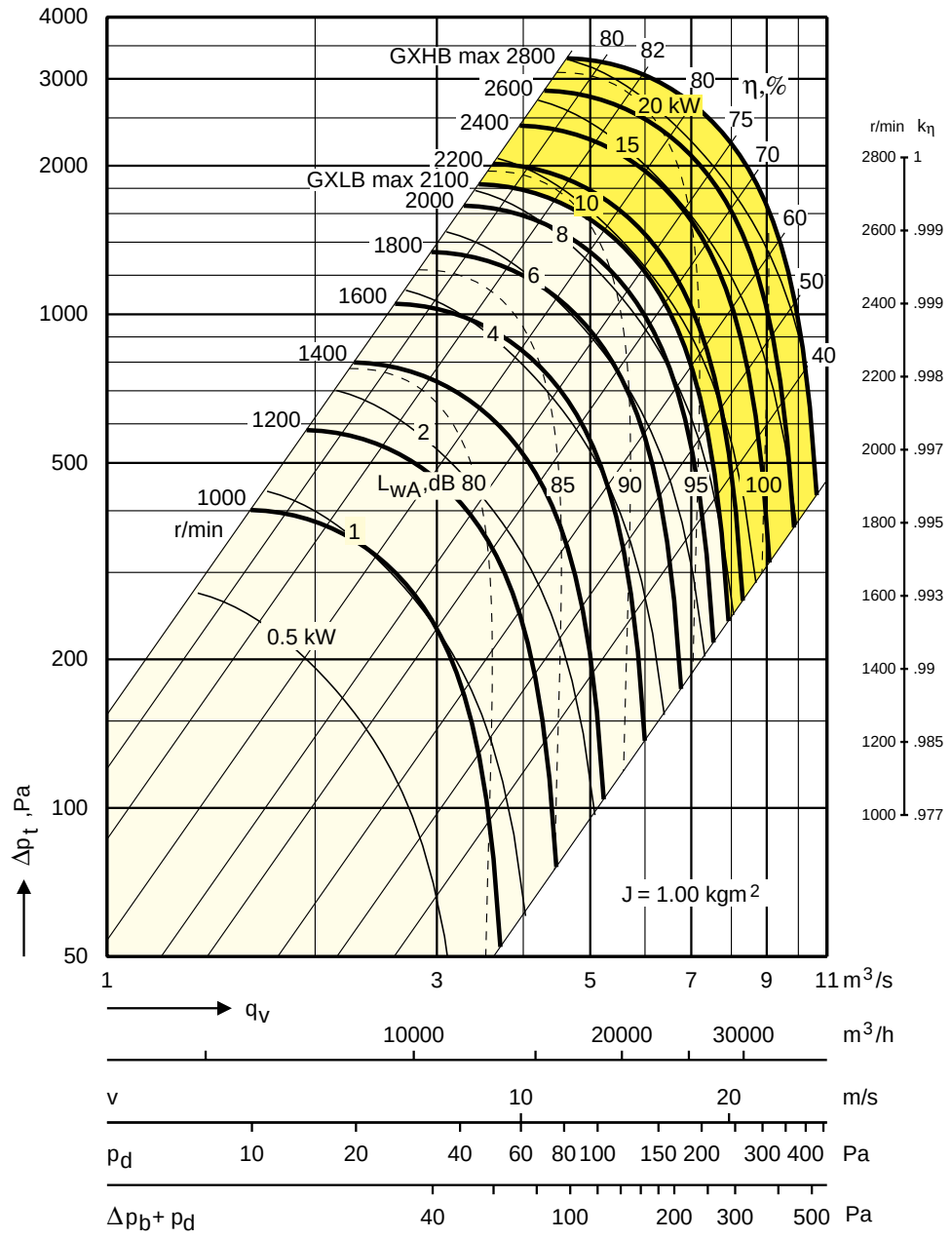
where Kok can be read from the table below:

Sound path	Speed range r/min	Correction K_{ok}, dB, Octave band, mit-frequency, Hz 63	125	250	500	1000	2000	4000	8000	$L_{Wt} - L_{WA}$
To the outlet duct	0 – 964	–4	4	3	–5	–5	–8	–13	–17	7.6
	965 – 1928	–8	–3	1	–7	–3	–8	–14	–18	4.5
	1929 – 3200	–13	–5	–9	–7	–4	–5	–11	–17	1.8
To the surroundings	0 – 964	–3	3	1	–2	0	–6	–11	–16	4.7
from a free-inlet fan	965 – 1928	–8	–3	–1	–4	–2	–7	–11	–19	3.2
	1929 – 3200	–13	–8	–9	–4	–3	–7	–12	–19	1.5

Fan charts – acoustic data – GXHB/GXLB-5-050

Belt-driven, double-inlet, backward-curved blades

Impeller diameter: 500 mm



Acoustic Data

The total A-weighted sound power level to the outlet duct, L_{WA}, can be read from the fan diagram. Use the following formula to determine the sound power level in different octave bands:

$$L_{wokt} = L_{WA} + K_{ok}$$

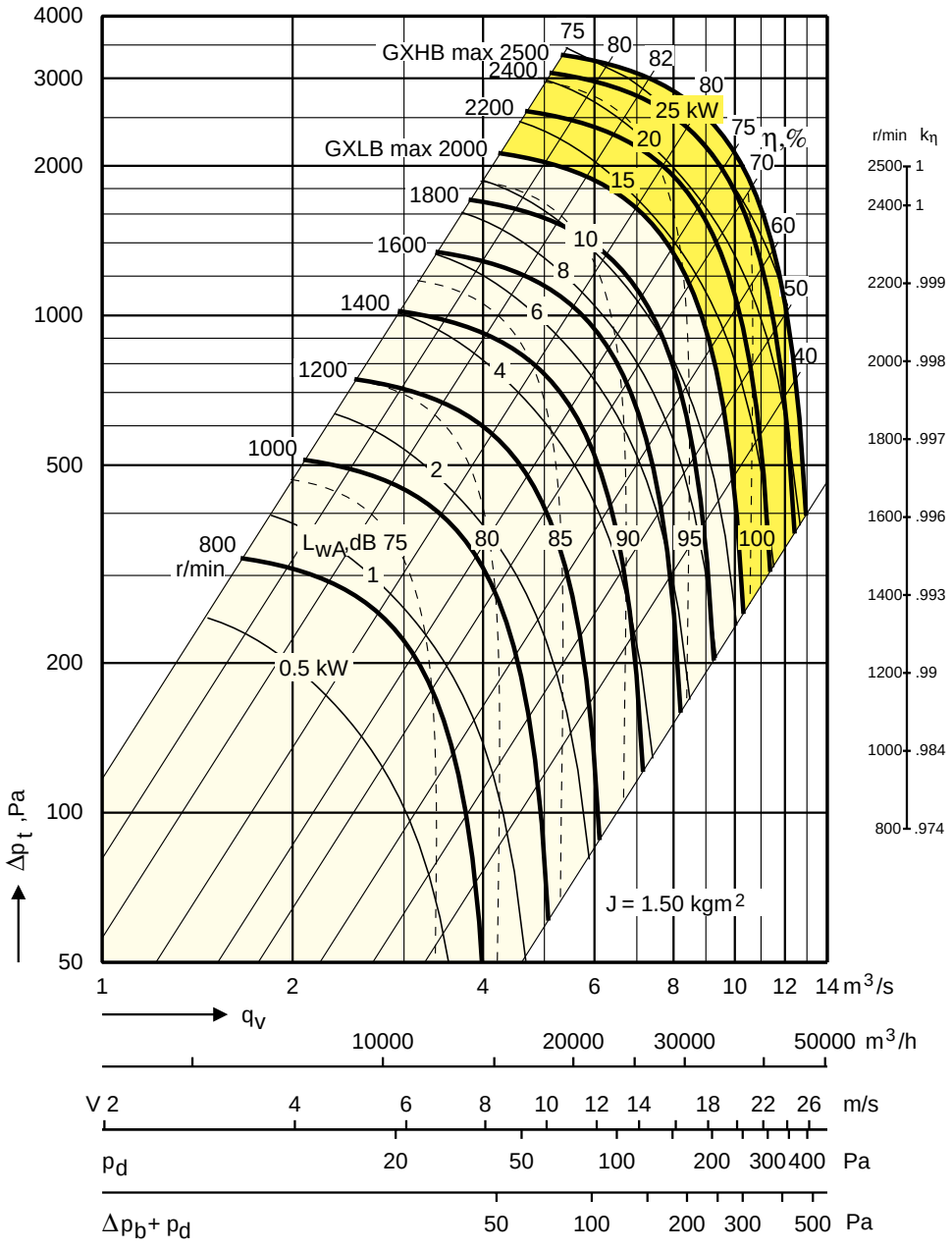
where Kok can be read from the table below:

Sound path	Speed range r/min	Correction K_{ok}, dB, Octave band, mit-frequency, Hz 63	125	250	500	1000	2000	4000	8000	$L_{Wt} - L_{WA}$
To the outlet duct	0 – 964	1	6	2	–6	–5	–8	–12	–16	8.8
	965 – 1928	–4	–2	2	–6	–4	–8	–13	–17	5.4
	1929 – 2800	–8	–3	–4	–2	–7	–6	–11	–15	3.5
To the surroundings	0 – 964	–1	5	3	–1	–2	–5	–10	–15	6.1
from a free-inlet fan	965 – 1928	–7	–3	1	–2	–3	–7	–11	–17	4.0
	1929 – 2800	–11	–7	–4	0	–6	–7	–11	–16	2.8

Fan charts – acoustic data – GXHB/GXLB-5-056

Belt-driven, double-inlet, backward-curved blades

Impeller diameter: 560 mm



Acoustic Data

The total A-weighted sound power level to the outlet duct, L_{WA}, can be read from the fan diagram. Use the following formula to determine the sound power level in different octave bands:

$$L_{wokt} = L_{WA} + K_{ok}$$

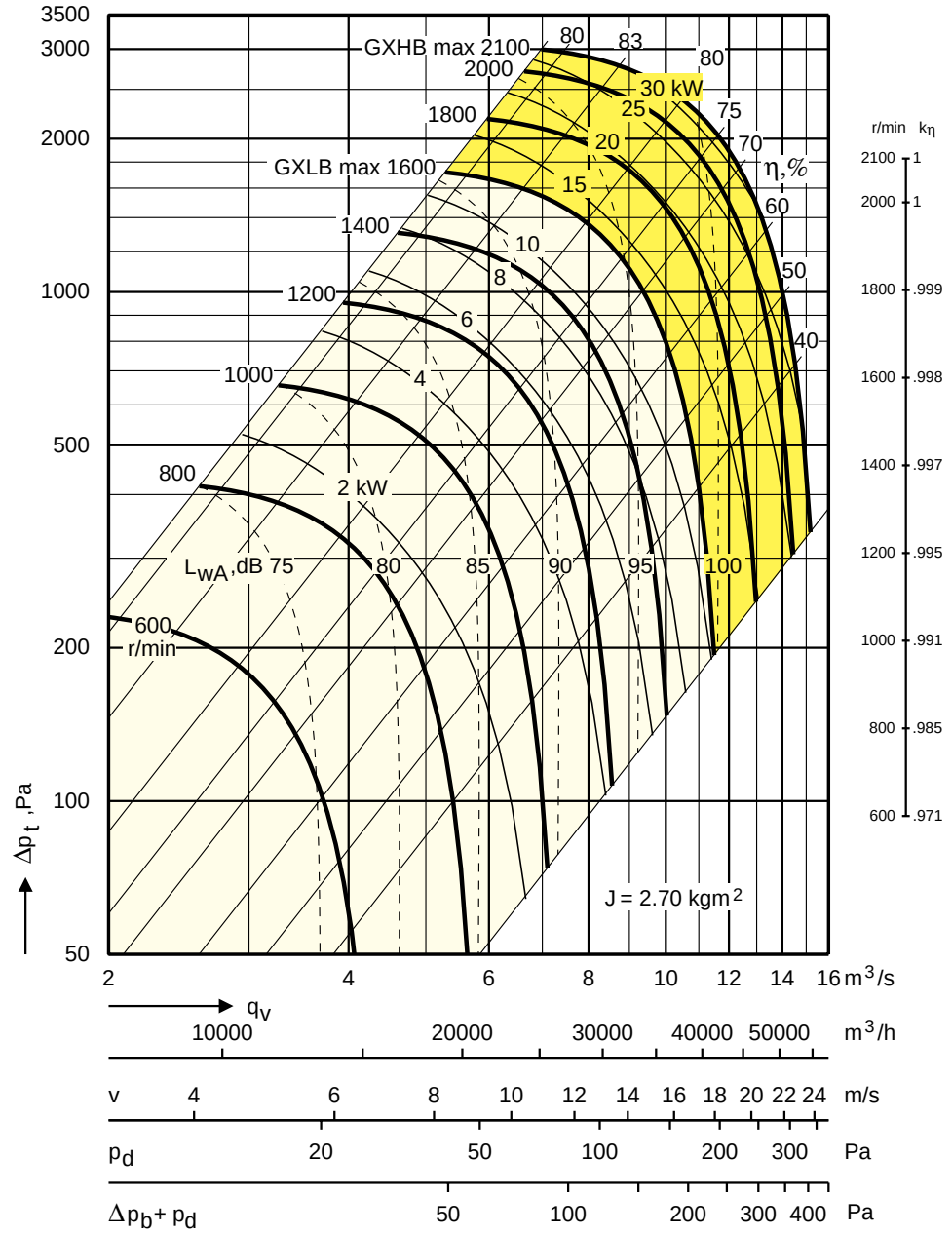
where Kok can be read from the table below:

Sound path	Speed range r/min	Correction K_{ok}, dB, Octave band, mit-frequency, Hz								$L_{Wt} - L_{WA}$
		63	125	250	500	1000	2000	4000	8000	
To the outlet duct	0 – 964	0	6	3	–5	–5	–9	–12	–17	8.9
	965 – 1928	–6	–1	2	–6	–3	–9	–13	–18	5.5
	1929 – 2500	–9	–3	–4	–3	–7	–6	–11	–14	3.2
To the surroundings	0 – 964	–2	5	3	0	–1	–6	–10	–15	5.8
from a free-inlet fan	965 – 1928	–8	–2	1	–2	–3	–7	–11	–17	4.1
	1929 – 2500	–13	–6	–4	0	–7	–8	–11	–16	3.0

Fan charts – acoustic data – GXHB/GXLB-5-063

Belt-driven, double-inlet, backward-curved blades

Impeller diameter: 630 mm



Acoustic Data

The total A-weighted sound power level to the outlet duct, L_{WA}, can be read from the fan diagram. Use the following formula to determine the sound power level in different octave bands:

$$L_{wokt} = L_{WA} + K_{ok}$$

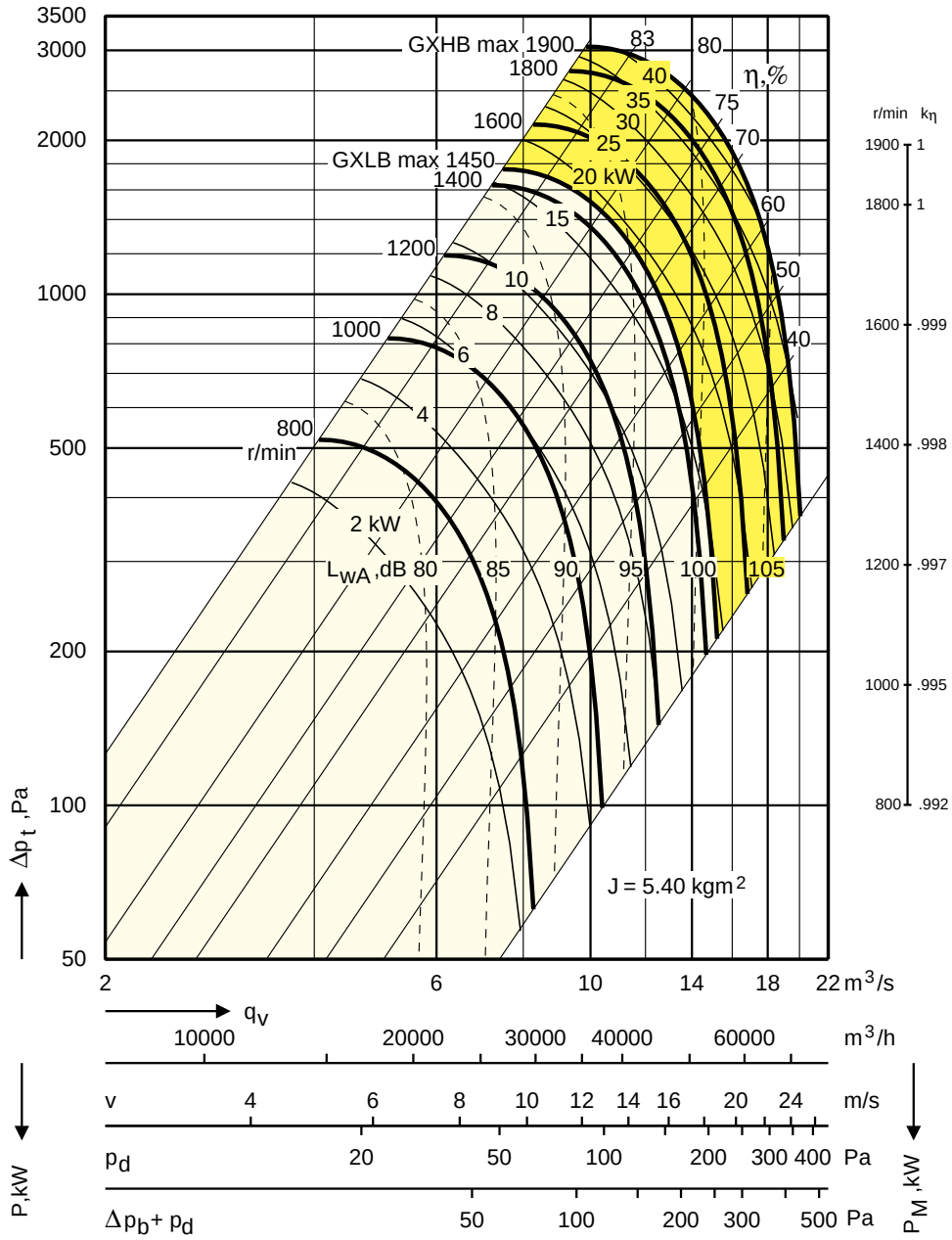
where Kok can be read from the table below:

Sound path	Speed range r/min	Correction K_{ok}, dB Octave band, mit-frequency, Hz 63	125	250	500	1000	2000	4000	8000	$L_{Wt} - L_{WA}$
To the outlet duct	0 – 815	–6	4	2	–6	–5	–8	–11	–15	7.1
	816 – 1631	–10	–6	0	–7	–3	–8	–12	–15	3.6
	1632 – 2100	–12	–3	–5	–4	–7	–5	–10	–14	2.9
To the surroundings	0 – 815	–4	4	1	–3	–5	–8	–15	–20	6.9
from a free-inlet fan	816 – 1631	–9	–6	0	–4	–6	–8	–16	–21	4.4
	1632 – 2100	–12	–5	–6	–2	–4	–7	–14	–19	2.5

Fan charts – acoustic data – GXHB/GXLB-5-071

Belt-driven, double-inlet, backward-curved blades

Impeller diameter: 710 mm



Acoustic Data

The total A-weighted sound power level to the outlet duct, L_{WA}, can be read from the fan diagram. Use the following formula to determine the sound power level in different octave bands:

$$L_{wokt} = L_{WA} + K_{ok}$$

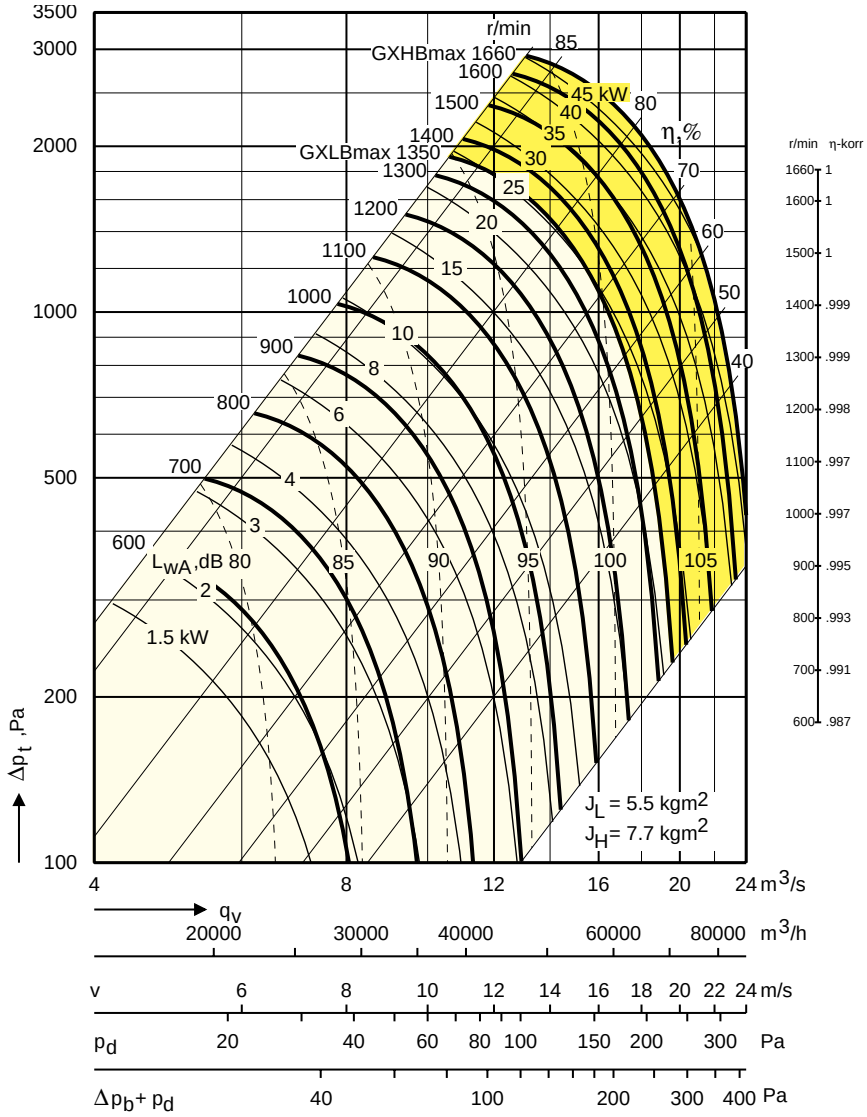
where Kok can be read from the table below:

Sound path	Speed range r/min	Correction K_{ok}, dB, Octave band, mit-frequency, Hz 63	125	250	500	1000	2000	4000	8000	$L_{Wt} - L_{WA}$
To the outlet duct	0 – 815	–6	2	0	–5	–3	–9	–14	–17	5.8
	816 – 1631	–11	–6	–2	–6	–3	–8	–13	–18	2.9
	1632 – 1900	–12	–3	–4	–4	–8	–5	–11	–15	2.9
To the surroundings	0 – 815	–4	1	0	–3	–4	–9	–18	–23	5.7
from a free-inlet fan	816 – 1631	–10	–7	–2	–2	–6	–9	–17	–24	3.7
	1632 – 1900	–12	–4	–5	–2	–5	–7	–15	–20	3.0

Fan charts – acoustic data – GXHB/GXLB-5-080

Belt-driven, double-inlet, backward-curved blades

Impeller diameter: 800 mm



Acoustic Data

The total A-weighted sound power level to the outlet duct, L_{WA}, can be read from the fan diagram. Use the following formula to determine the sound power level in different octave bands:

$$L_{wokt} = L_{WA} + K_{ok}$$

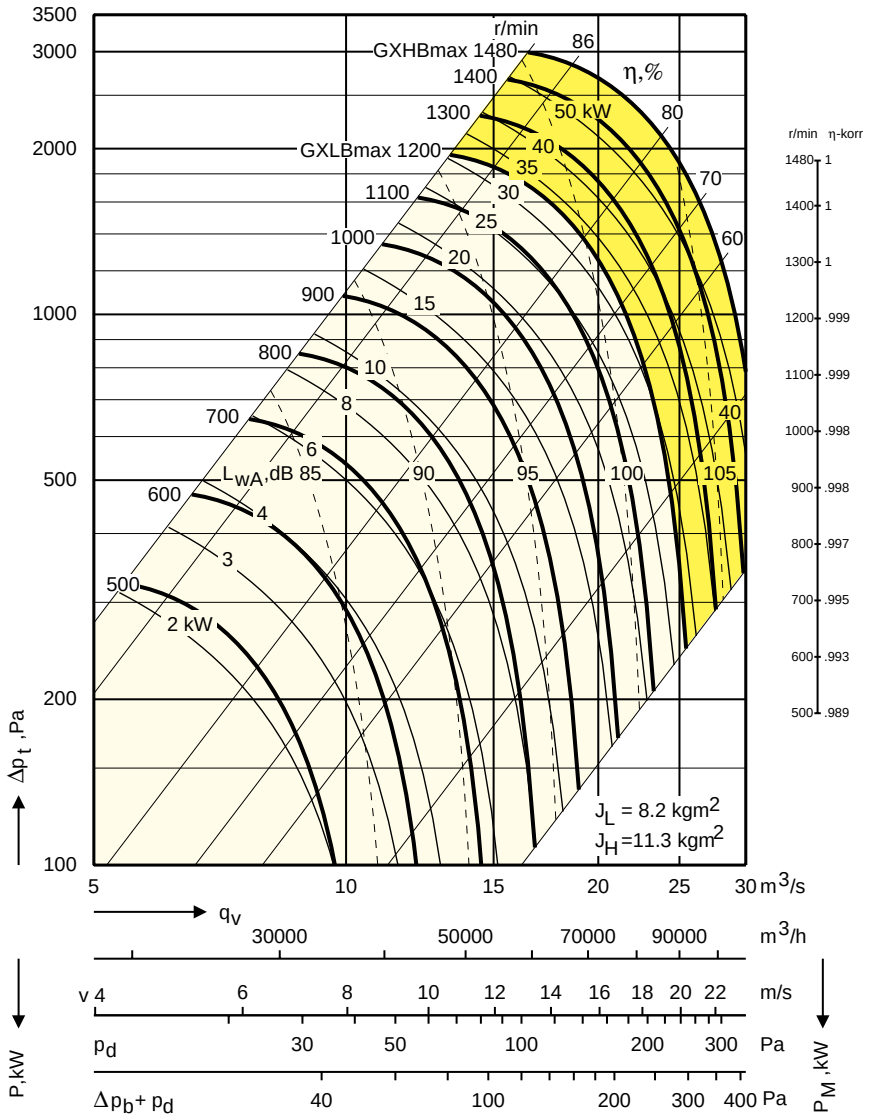
where Kok can be read from the table below:

Sound path	Speed range r/min	Correction K_{ok}, dB Octave band, mit-frequency, Hz 63	125	250	500	1000	2000	4000	8000	$L_{Wt} - L_{WA}$
To the outlet duct	0 – 409	2	-1	-3	-3	-2	-14	-22	-28	6.1
	410 – 815	-6	0	-3	-2	-3	-13	-20	-26	4.7
	816 – 1631	-10	-7	-2	-2	-3	-11	-18	-24	3.3
	1632 – 1660	-12	-8	-4	-2	-4	-8	-16	-21	2.6
To the surroundings from a free-inlet fan	0 – 409	4	0	-6	-8	-12	-17	-24	-29	12.3
	410 – 815	-3	2	-3	-8	-10	-17	-24	-28	9.6
	816 – 1631	-8	-8	2	-7	-10	-15	-23	-27	7
	1632 – 1660	-12	-8	-7	1	-9	-13	-19	-25	3.3

Fan charts – acoustic data – GXHB/GXLB-5-090

Belt-driven, double-inlet, backward-curved blades

Impeller diameter: 900 mm



Acoustic Data

The total A-weighted sound power level to the outlet duct, L_{WA}, can be read from the fan diagram. Use the following formula to determine the sound power level in different octave bands:

$$L_{wokt} = L_{WA} + K_{ok}$$

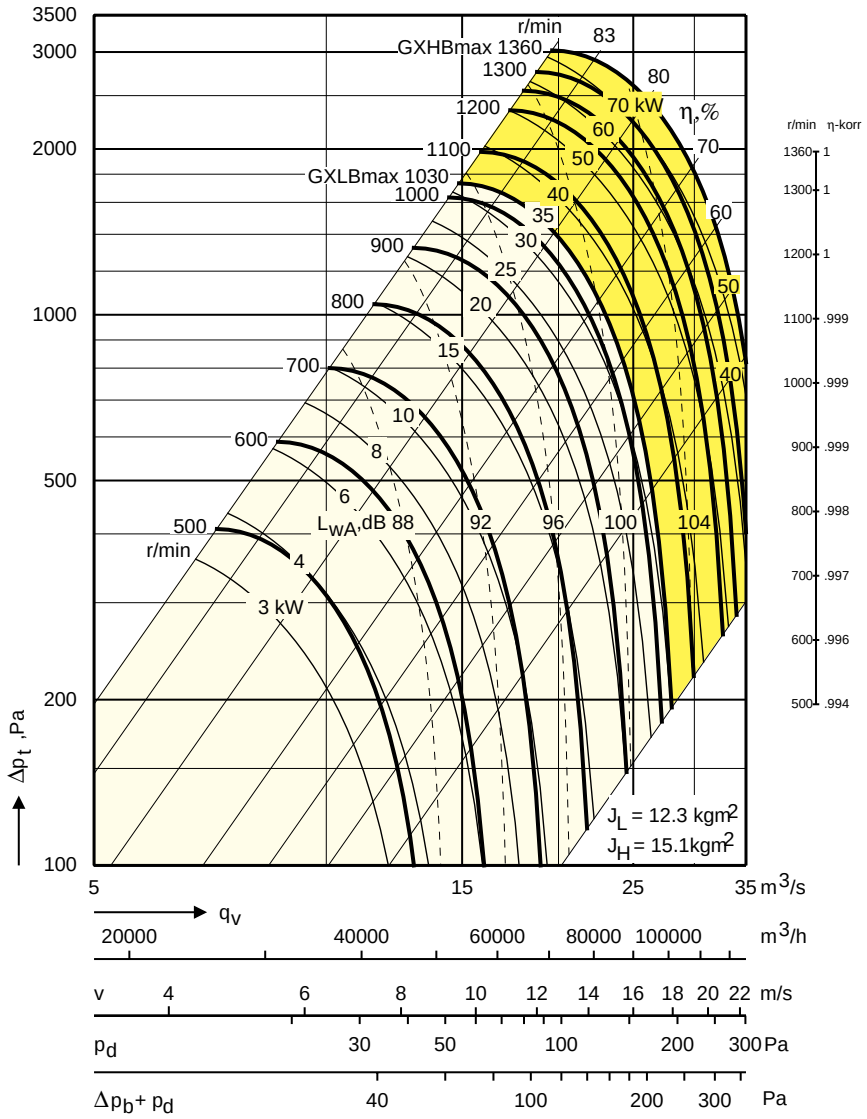
where Kok can be read from the table below:

Sound path	Speed range r/min	Correction K_{ok}, dB Octave band, mit-frequency, Hz 63	125	250	500	1000	2000	4000	8000	$L_{Wt} - L_{WA}$
To the outlet duct	0 – 409	1	-2	-4	-3	-2	-14	-22	-29	5.4
	410 – 815	-7	0	-3	-3	-3	-10	-20	-27	4.5
	816 – 1480	-11	-8	-2	-1	-4	-11	-19	-25	3.3
To the surroundings	0 – 409	4	-2	-7	-10	-15	-20	-26	-33	13.8
from a free-inlet fan	410 – 815	-4	3	-5	-10	-13	-16	-25	-31	11
	816 – 1480	-8	-9	2	-9	-10	-15	-23	-29	7.1

Fan charts – acoustic data – GXHB/GXLB-5-100

Belt-driven, double-inlet, backward-curved blades

Impeller diameter: 1000 mm



Acoustic Data

The total A-weighted sound power level to the outlet duct, L_{WA}, can be read from the fan diagram. Use the following formula to determine the sound power level in different octave bands:

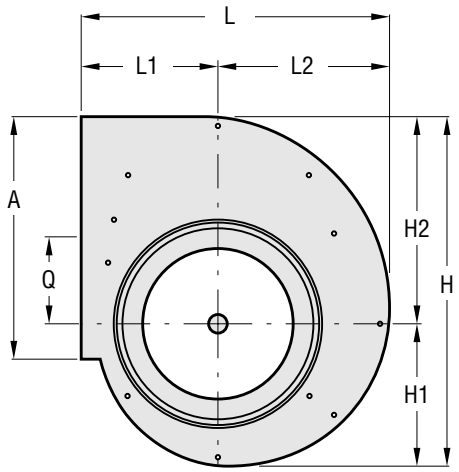
$$L_{wokt} = L_{WA} + K_{ok}$$

where Kok can be read from the table below:

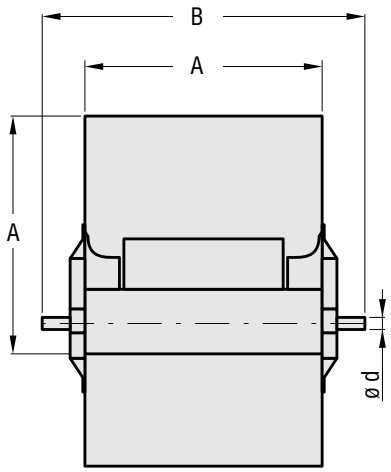
Sound path	Speed range r/min	Correction K_{ok}, dB, Octave band, mit-frequency, Hz 63	125	250	500	1000	2000	4000	8000	$L_{Wt} - L_{WA}$
To the outlet duct	0 – 409	4	1	-2	-1	-4	-14	-21	-27	7.5
	410 – 815	-2	2	-2	-1	-4	-13	-20	-26	6.1
	816 – 1360	-8	-7	-1	0	-5	-13	-19	-26	4
To the surroundings	0 – 409	5	2	-3	-4	-8	-16	-23	-26	10.6
from a free-inlet fan	410 – 815	-2	4	-3	-5	-8	-13	-21	-25	9
	816 – 1360	-5	-6	2	-6	-7	-14	-20	-25	6.4

Dimensions and Weights

Without discharge flange and frame



Fan size	A	L	L1	L2	H	H2	H1	Q
014	182	253	127	126	257	152	105	61
016	205	283	140	143	293	174	119	71
018	229	314	153	161	329	195	134	81
020	256	344	164	180	366	217	149	89
022	288	382	180	202	411	244	167	100
025	322	419	195	224	456	271	185	110
028	361	466	215	251	511	303	208	123
031	404	518	236	282	574	341	233	139
035	453	579	261	318	648	385	263	159
040	507	648	290	358	729	433	296	180
045	569	725	322	403	820	487	333	202
050	638	800	352	448	911	541	370	222
056	715	891	390	501	1020	606	414	250
063	801	998	434	564	1148	682	466	282
071	898	1120	485	635	1293	768	525	319

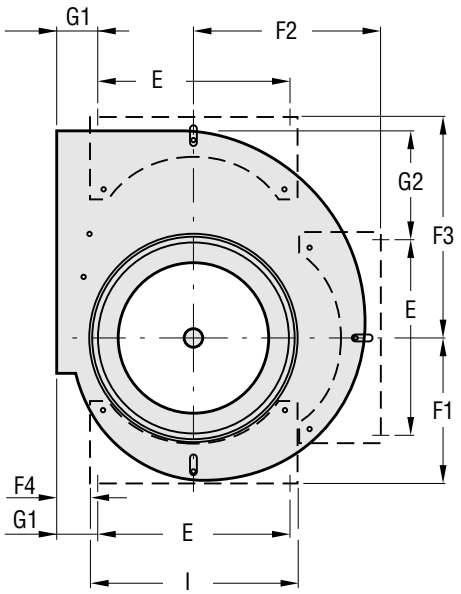


Fan size	A	B	d shaft
014	182	304	14
016	205	329	14
018	229	354	14
020	256	429	20
022	288	464	20
025	322	499	20
028	361	549*)	25
031	404	594*)	25
035	453	654*)	30
040	507	709*)	30
045	569	794	35
050	638	864	35
056	715	1034	40
063	801	1144	45
071	898	1244	45

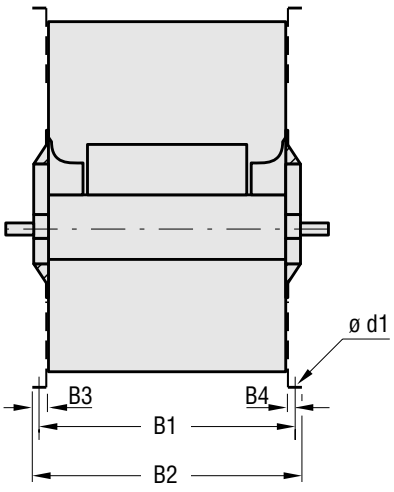
*) If the fan is with plummer block bearings type GTLZ-06, 07, 08, 09, 16 or 17 the shaft is 20 mm longer. See also page 60.

Dimensions and Weights

Without discharge flange and frame, including feet



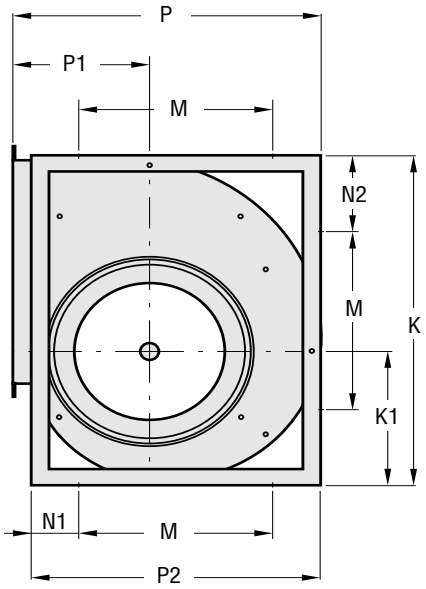
Fan size	E	G1	G2	F1	F2	F3	F4	I
014	100	77	55	120	143	177	65	124
016	180	50	84	150	150	204	38	204
018	180	63	105	164	164	224	51	204
020	224	52	105	181	184	245	40	248
022	224	68	132	197	204	274	48	264
025	224	83	159	210	227	299	63	264
028	280	75	163	233	252	328	55	320
031	280	96	201	260	282	369	76	320
035	355	84	208	274	320	411	64	395
040	355	113	256	302	359	462	93	395
045	450	97	262	336	407	518	77	490
050	450	127	316	375	450	568	107	490
056	500	140	356	417	503	635	120	540
063	560	154	402	467	570	707	134	600
071	630	170	453	531	636	797	150	670



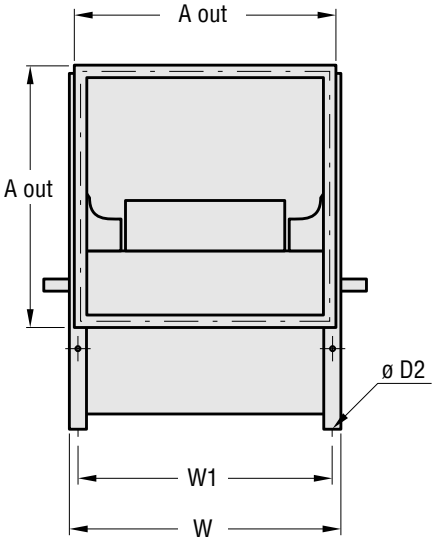
Fan size	B1	B2	d1	B3	B4
014	207	232	7.5	25	12.5
016	230	254	7.5	25	12.5
018	254	279	7.5	25	12.5
020	281	306	7.5	25	12.5
022	314	338	7.5	25	13
025	348	372	7.5	25	13
028	392	421	10	30	15.5
031	436	464	10	30	16
035	494	533	10	40	20.5
040	549	585	10	39	21
045	611	647	12	39	21
050	681	716	12	50	26.5
056	768	815	15	50	26.5
063	854	901	15	50	26.5
071	961	1018	18	60	31.5

Dimensions and Weights

With discharge flange and flame



Fan size	K	K1	M	N1	N2	P	P1	P2
014	-	-	-	-	-	-	-	-
016	-	-	-	-	-	-	-	-
018	-	-	-	-	-	-	-	-
020	381	157	224	49	78.5	351	164	322
022	416	170	224	68	96	384	180	359
025	462	189	224	84	119	422	195	392
028	517	212.5	280	78	118.5	467	215	435
031	578	235	280	103	149	518	236	485
035	650	264	355	95	147.5	581	263	545
040	736	300	355	130	190.5	651	292	615
045	827	336	450	116.5	188.5	726	322	683
050	928	379	450	155	239	805	352	760
056	1030	419	500	168.5	265	892	392	837
063	1157	472	560	193	298.5	1006	435	946
071	1311	535	630	223.5	340.5	1128	486	1077



Fan size	A out	W	W1	ø D2
014	242	-	-	-
016	265	-	-	-
018	289	-	-	-
020	316	307	282	9
022	348	339	314	9
025	382	373	348	9
028	421	422	392	10
031	464	466	436	10
035	513	512	494	10
040	567	588	548	10
045	629	650	611	10
050	698	720	681	10
056	775	818	768	14
063	861	904	854	14
071	958	1021	961	14

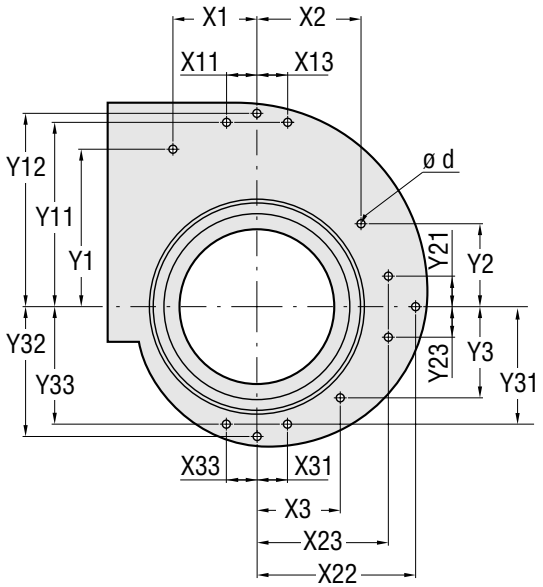
Weights (kg)

Fan size	LB	HB	LF	Feet (2 st)	Frame (2 st)	Discharge flange
014	-	-	4.3	0.3	-	0.4
016	-	-	4.3	0.3	-	0.4
018	-	-	5.6	0.5	-	0.6
020	-	-	7.8	0.7	1.8	0.7
022	10.8	-	9.7	1.0	2.4	0.7
025	13.1	-	11.5	1.0	2.4	0.9
028	15.8	-	16.3	1.2	2.6	0.9
031	22.6	-	20.6	1.3	3.0	1.1
035	29.2	29.2	26.2	2.0	3.4	1.8

Fan size	LB	HB	LF	Feet (2 st)	Frame (2 st)	Discharge flange
040	39.0	40.0	34.0	2.0	9.0	2.0
045	45.6	47.6	40.6	2.8	9.0	2.3
050	58.8	60.8	51.8	2.8	9.8	2.4
056	89.9	105.9	79.9	4.4	11.8	2.7
063	119.6	134.6	98.6	5.4	14.0	3.0
071	143.8	144.8	132.8	5.8	24.6	3.4

Dimensions and Weights

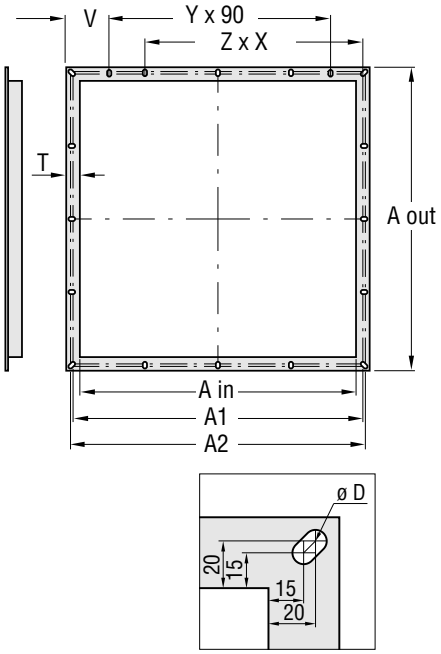
Casing side plate



Fan size	X1	Y1	X11	Y11	Y12	X13	X2	Y2	Y21	X22	X23	Y23	X3	Y3	X31	Y32	X33	Y33	ø d
014	90	126	-	-	-	63	81	84.2	70.2	-	92	30	-	-	69	-	50	69	-
016	92	121	30	155	-	30	67	92	30	-	101	30	92	67	30	-	30	101	B5.4*
018	92	141	30	175	-	30	81	92	30	-	115	30	92	81	30	-	30	115	B5.4*
020	110	155	40	190	202	40	94	110	40	163	129	40	110	91	40	134	40	126	B5.4*
022	110	184	40	219	229	40	114	110	40	185	149	40	110	107	40	152	40	142	B5.4*
025	110	209	40	244	256	40	137	110	40	208	170	40	110	120	40	171	40	155	B5.4*
028	-	-	113	245	287	113	-	-	113	233	169	113	-	-	113	191	71	170	B5.4*
031	-	-	113	284	323	113	-	-	113	263	197	113	-	-	113	215	71	195	B5.4*
035	198	198	156	295	364	156	-	-	156	295	204	156	-	-	156	241	156	158	M8
040	220	220	156	346	411	156	-	-	156	336	243	156	-	-	156	275	156	186	M8
045	245	245	213	350	466	213	-	-	213	379	271	213	-	-	213	311	168	168	M8
050	270	270	213	400	519	213	-	-	213	423	280	213	-	-	213	349	213	207	M8
056	305	305	235	494	581	235	-	-	235	472	362	235	-	-	235	389	235	276	M8
063	340	340	235	567	656	235	-	-	235	535	431	235	-	-	235	441	235	328	M8
071	378	378	265	637	737	265	-	-	265	601	476	265	-	-	265	496	265	371	M8

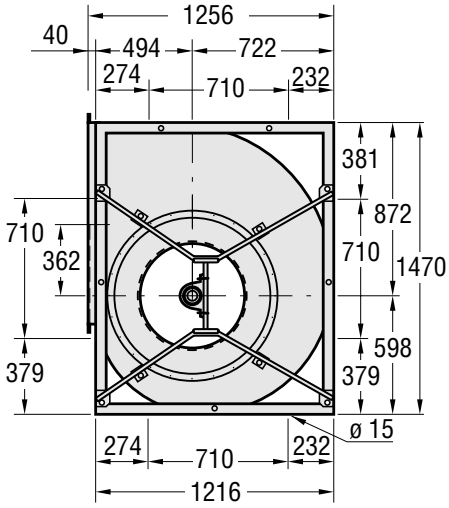
Dimensions and Weights

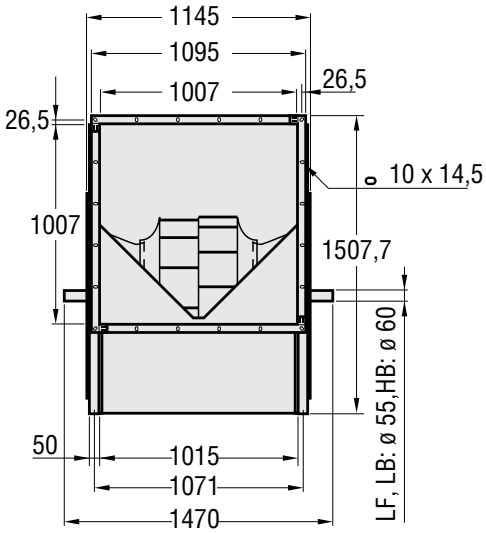
Discharge flange



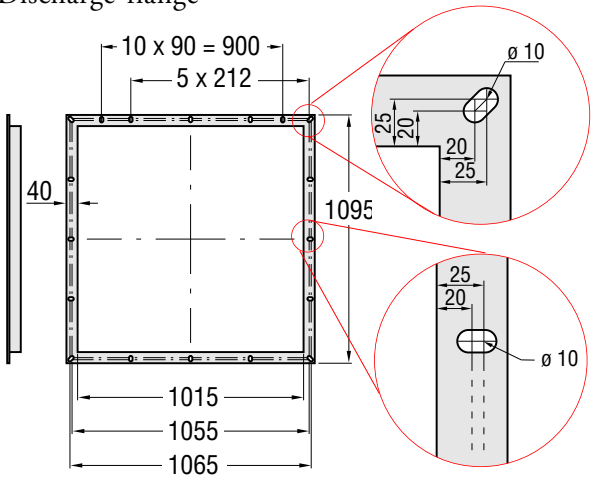
Fan size	A in	A1	A2	A out	T	V	Y	Z	X	n	ø D	Weights (kg)
014	182	212	222	236	27	-	-	1	212	4	8	0.43
016	205	235	245	259	27	39	2	1	235	4	8	0.51
018	229	259	269	283	27	51	2	1	259	4	8	0.57
020	256	286	296	310	27	65	2	2	143	8	8	0.65
022	288	318	328	348	30	39	3	2	159	8	9	0.69
025	322	352	362	382	30	56	3	2	176	8	9	0.86
028	361	391	401	421	30	75.5	3	2	196	8	9	1.0
031	404	434	444	464	30	52	4	2	217	8	9	1.1
035	453	483	493	513	30	76.5	4	2	242	8	9	1.8
040	507	537	547	567	30	58.5	4	4	134	16	9	2.0
045	569	599	609	629	30	44.5	5	4	150	16	9	2.3
050	638	668	678	698	30	79	6	4	167	16	9	2.4
056	715	745	755	775	30	72.5	7	4	186	16	9	2.7
063	801	831	841	861	30	70.5	8	4	208	16	9	3.0
071	898	928	938	958	30	74	9	4	232	16	9	3.4

GXLF/GXLB/GXHB-50-080





Discharge flange

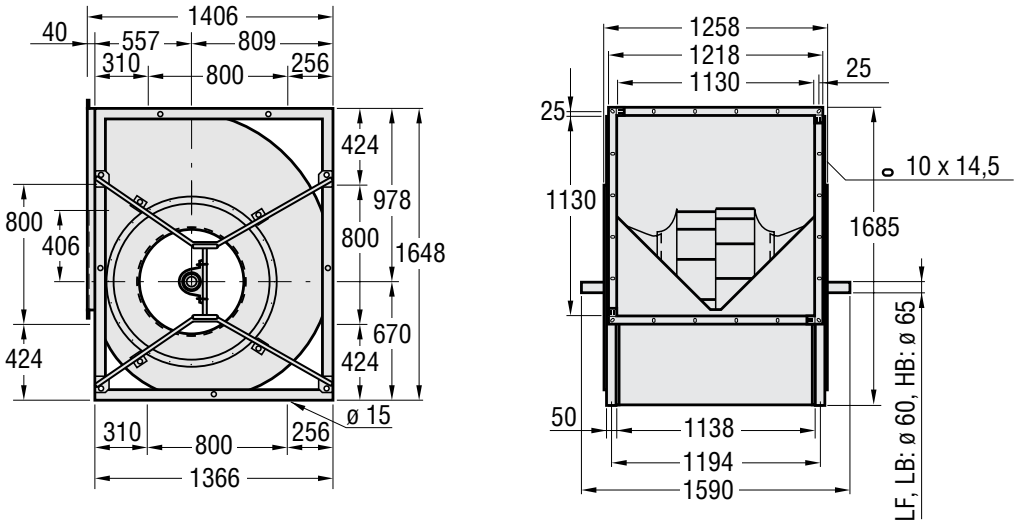


Weights (kg)

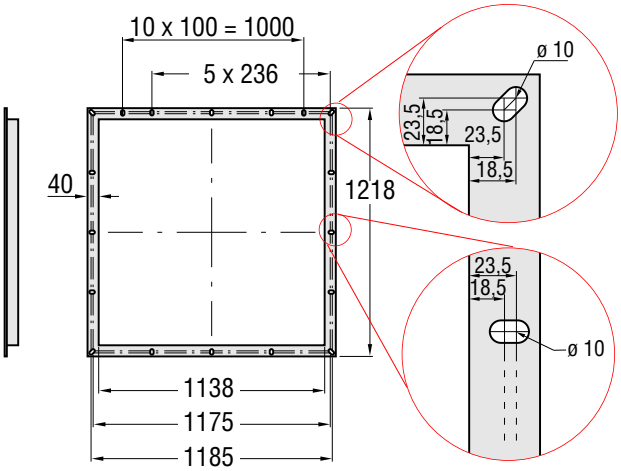
Fan (LB):	267.0
Fan (HB):	287.0
Fan (LF):	260.0

Dimensions and Weights

GXLF/GXLB/GXHB-50-090



Discharge flange

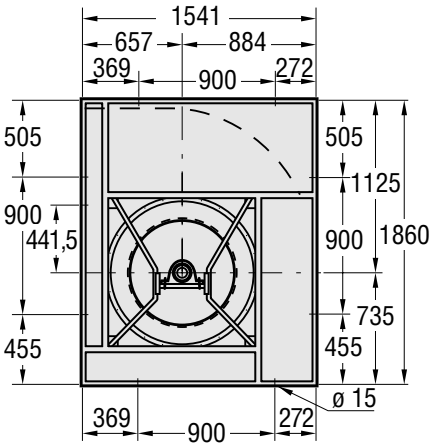


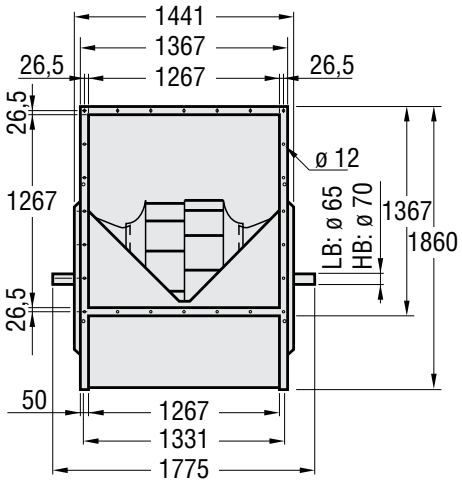
Weights (kg)

Fan (LB):	343.0
Fan (HB):	363.0
Fan (LF):	320.0

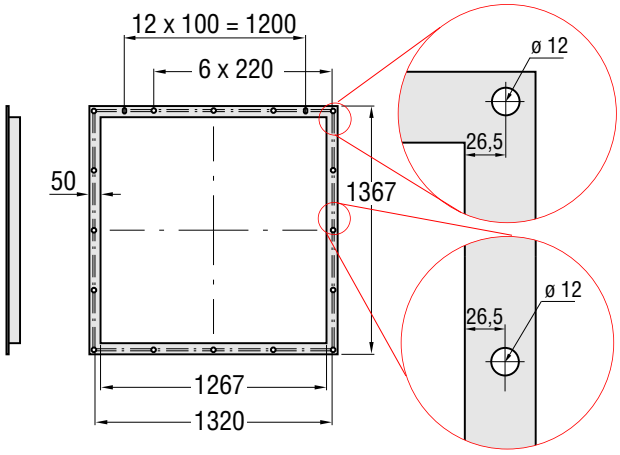
Dimensions and Weights

GXLF/GXLB/GXHB-50-100





Discharge flange



Weights (kg)

Fan (LB): 429.0
Fan (HB): 453.0

Ordering key

Centrifugal fan **GXLB-a-bbb-c-d-e-1**
GXHB-a-bbb-c-d-e-1
GXLF -a-bbb-c-d-e-1

LB = centrifugal fan, impeller with backward-curved blades (Sizes 022–100)
HB= centrifugal fan, impeller with backward-curved blades, reinforced version (Sizes 035–100)
LF = centrifugal fan, impeller with forward blades (Sizes 014–090)

Fan type **(a)**
5 = double-inlet belt-drive fan

Size **(bbb)**
014, 016, 018, 020, 025, 031,040, 045, 050, 056, 063, 071, 080, 090, 100, (112,125, 140)

Version **(c)**
1 = normal version
8 = spark-proof version

Construction **(d)**
0 = without discharge flange and frame
1 = with discharge flange, without frame
2 = without discharge flange, with frame
3 = with discharge flange and frame (standard for sizes 080–100)

Discharge direction **(e)**
1=0°
3=90°
5=180°
7=270°

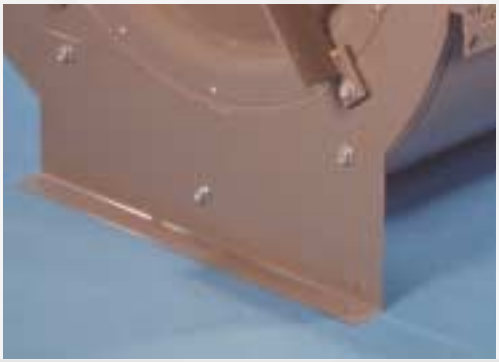
Accessories **GTLZ-aa-b-ccc-d-e**

(aa) type of accessory
(b) 5 = for double-inlet centrifugal fan
(ccc) fan size
(d) 0 = supplied separately
1 = mounted to the fan
See also ordering key for special meaning
(e) CENTRIMASTER – Generation

Accessories

Feet

GTLZ-01-5-ccc-0-0 Feet
2 pc. made of galvanized
For sizes 014–071



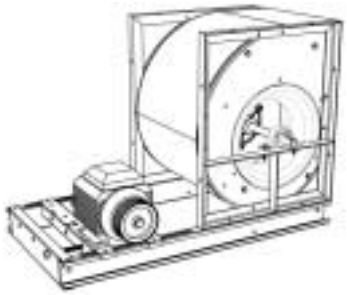
Plummer blocks with grease nipples

GTLZ-07-5-CCC-1-0 Full size welded frame with plummer block bearings for GXHB (Sizes 035–071)

GTLZ-08-5-CCC-1-0 Full size welded frame with plummer block bearings for GXLB und GXLF (Sizes 022–071)

GTLZ-10-5-CCC-D-0 Extended lubricaters to fan side plate

Plummer blocks with grease nipples of type GTLZ-07 and –08 are mounted on a welded frame with bearing bracket. The GTLZ-07 and –08 in sizes 022 - 050 are supplied with single-row deep-groove ball bearings secured to the shaft by means of a taper mounting sleeve.



GTLZ-07 and –08 in sizes 056 - 071 are supplied with self-aligning roller bearings. For dimensions see Dimensions and weights, “with flange and frame”. GXHB-5-056 – 071 have plummer blocks with grease nipples as standard. GTLZ-07-5-056 – 071 consists of a welded frame with bearing bracket compared to standard version.

Accessories

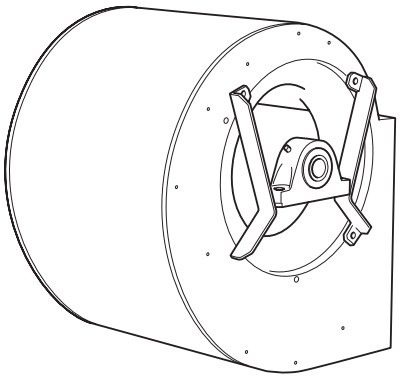
Plummer blocks with grease nipples

GTLZ-17-5-CCC-1-0 Multiple position welded bearing bracket with plummer block bearings for GXHB (Sizes 035–071)

GTLZ-16-5-CCC-1-0 Multiple position welded bearing bracket with plummer block bearings for GXLB and GXLF (Sizes 022–071)

GTLZ-10-5-CCC-D-0 Extended lubricaters to fan side plate

Plummer blocks with grease nipples of type GTLZ–16 and –17 are mounted on a compact welded frame with bearing bracket. Fan with GTLZ-16 or –17 is mounted between the beams of the base frame and thereby the overall height of the fan unit can be reduced. The GTLZ–16 and –17 in sizes 022 – 050 are supplied with single-row deep-groove ball bearings secured to the shaft by means of a taper mounting sleeve. GTLZ–16 and –17 in sizes 056 – 071 are supplied with self-aligning roller bearings.
GXHB–5–056 – 071 have plummer blocks with grease nipples and welded bearing bracket of type GTLZ–17 as standard.



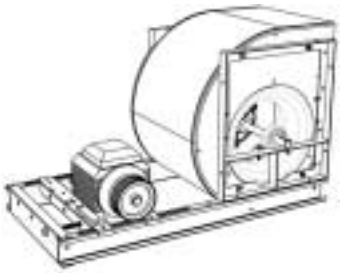
Plummer blocks with grease nipples

GTLZ-06-5-CCC-1-0 Compact welded frame with plummer block bearings for GXHB (Sizes 035–071)

GTLZ-09-5-CCC-1-0 Compact welded frame with plummer block bearings for GXLB and GXLF (Sizes 022–071)

GTLZ-10-5-CCC-D-0 Extended lubricaters to fan side plate

Plummer blocks with grease nipples of type GTLZ–06 and –09 are mounted on a compact welded frame with bearing bracket. Fan with GTLZ–06 or –09 is mounted between the beams of the base frame and thereby the overall height of the fan unit can be reduced. The GTLZ–06 and –09 in sizes 022 – 050 are supplied with single-row deep-groove ball bearings secured to the shaft by means of a taper mounting sleeve. GTLZ–06 and –09 in sizes 056 – 071 are supplied with self-aligning roller bearings.

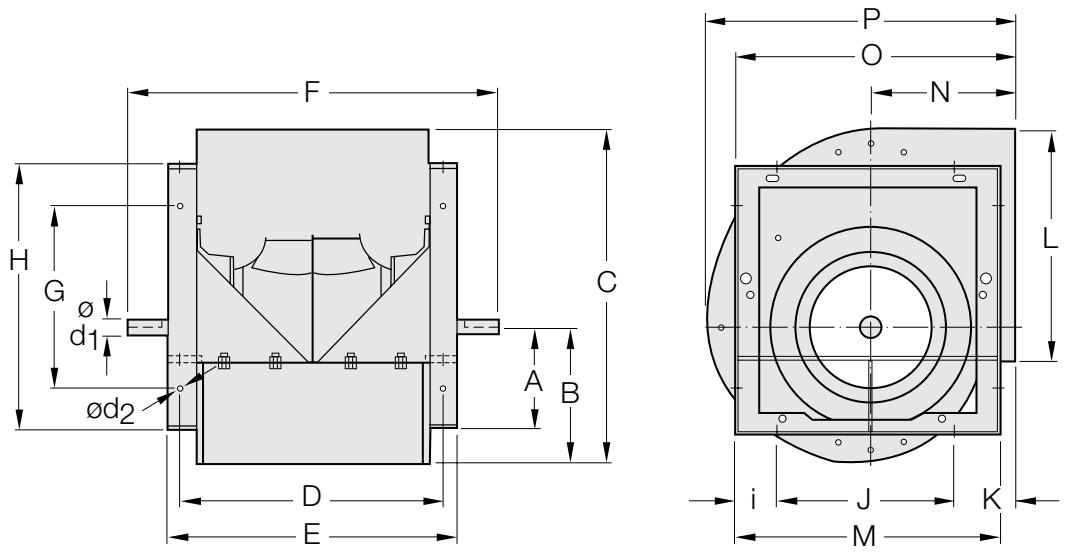


GXHB–5–056 – 071 have plummer blocks with grease nipples as standard. GTLZ–06-5–056 – 071 consists of a compact welded frame with bearing bracket compared to standard version.

Accessories

Plummer blocks with grease nipples

GTLZ-06 and -09:

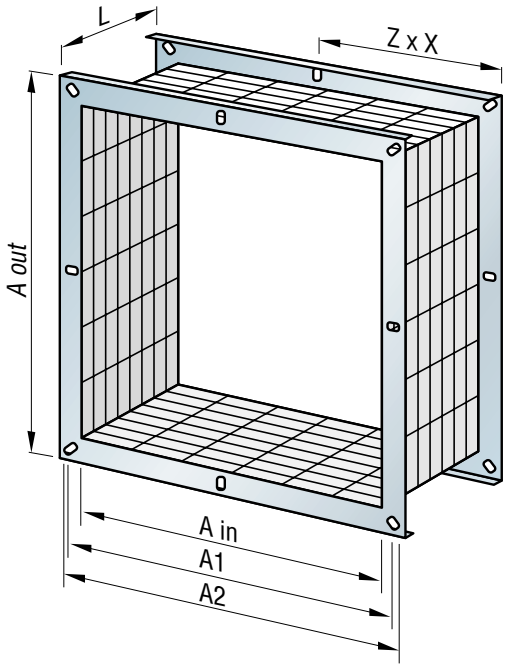


Size	A	B	C	D	E	F	G	H	i	J	K	L	M	N	O	P	d_1	d_2
022	129	167	411	322	358	464	224	333	47	224	75	288	318	180	346	382	20	7
025	141	185	456	348	392	499	224	361	65	224	93	322	353	195	382	419	20	7
028	161	208	511	389	431	569	280	417	46	280	78	361	372	215	404	466	25	10
031	176	233	574	436	474	614	280	479	70	280	103	404	420	236	453	518	25	10
035	183	263	648	494	523	674	355	499	40	355	85	453	435	261	480	579	30	10
040	212	296	729	548	588	729	355	583	79	355	119	507	512	290	553	648	30	10
045	238	333	820	610	650	794	450	663	65	450	105	569	580	322	620	725	35	12
050	272	370	911	681	738	864	450	752	102	450	148	638	653	352	699	800	35	12
056	303	416	1024	768	815	1034	500	828	114	500	168	715	727	390	782	893	40	15
063	348	466	1146	854	901	1144	560	950	131	560	189	801	821	434	890	997	45	15
071	409	525	1293	961	1018	1244	630	1095	158	630	216	898	946	485	1004	1120	45	15

Accessories

Flexible connection, outlet, with two flanges

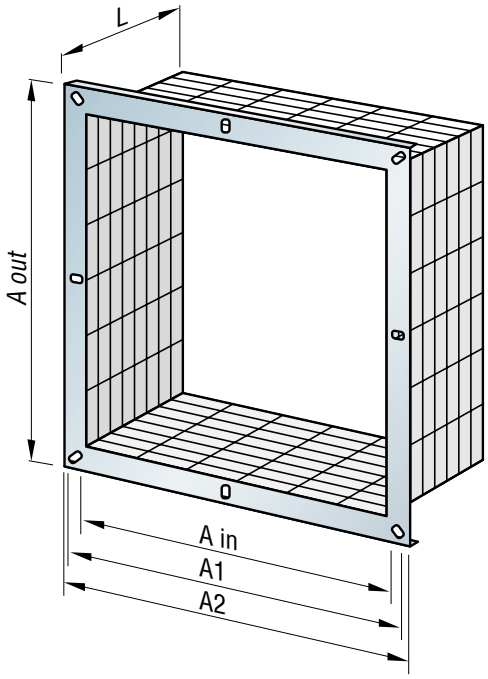
GTLZ-21-5-ccc-0-0 Flexible connection, outlet, with two flanges



Size	A in	A1	A2	A out	Z	X	L
014	182	212	221	235	1	212	78
016	205	235	245	258	1	235	78
018	229	259	269	282	1	259	78
020	256	286	296	310	2	143	78
022	288	318	328	348	2	159	118
025	322	352	362	382	2	176	118
028	361	391	401	421	2	196	118
031	404	434	444	464	2	217	118
035	453	483	493	513	2	242	118
040	507	537	547	567	4	134	118
045	569	599	609	629	4	150	147
050	638	668	677	698	4	167	149
056	715	745	754	775	4	186	149
063	801	831	840	861	4	208	149
071	898	928	937	958	4	232	149
080	1015	1055	1065	1095	5	212	145
090	1138	1175	1185	1218	5	236	145
100	1267	1320	–	1367	6	220	150

Flexible connection, outlet, with one flange

GTLZ-25-5-ccc-0-0 Flexible connection, outlet, with one flange

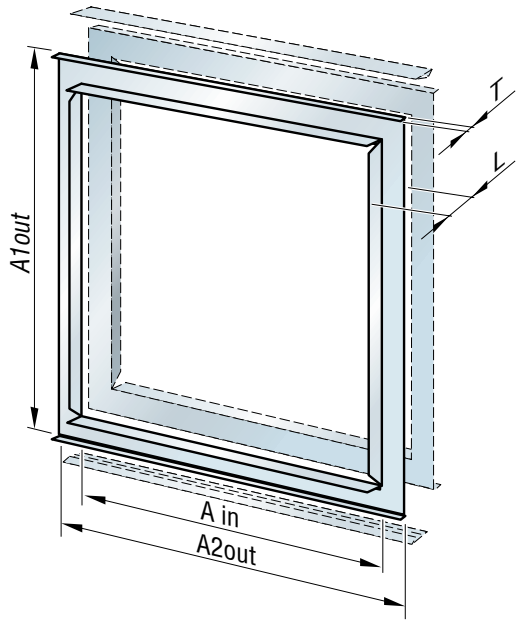


Size	A in	A1	A2	A out	L
014	182	212	221	235	152
016	205	235	245	258	152
018	229	259	269	282	152
020	256	286	296	310	152
022	288	318	328	348	187
025	322	352	362	382	187
028	361	391	401	421	187
031	404	434	444	464	187
035	453	483	493	513	187
040	507	537	547	567	187
045	569	599	609	629	217
050	638	668	677	698	217
056	715	745	754	775	217
063	801	831	840	861	277
071	898	928	937	958	277

Accessories

Discharge flange for PG-joint

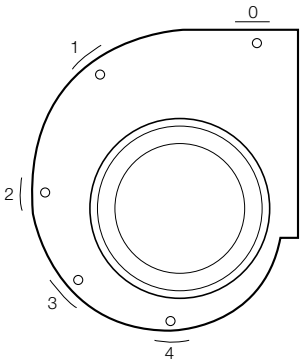
GTLZ-27-5-ccc-0-0 Discharge flange for PG-joint
For sizes 014–040
PG-joint is always delivered mounted on the discharge.
(Counterflange is not included in the delivery).



Size	A in	A1out	A2out	T	L
014	183	224	221	9	24
016	205	246	243	9	24
018	229	270	267	9	24
020	256	296	293	9	24
022	288	329	326	9	24
025	322	363	360	9	24
028	361	402	399	9	24
031	404	445	442	9	24
035	453	494	491	9	24
040	507	548	545	9	24

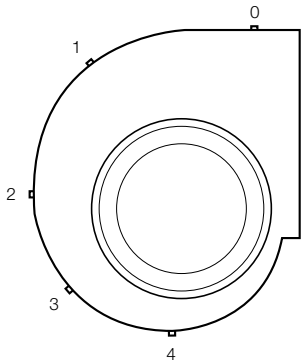
Inspection cover

GTLZ-32-5-ccc-d-0 Mounted on the scroll plate of the fan
Made of galvanized steel
d = placement of the inspection cover, see the illustration below



Drain

GTLZ-34-5-ccc-d-0 Mounted on the middle of scroll plate
d = placement of the drain, see the illustration below



Accessories

Air flow sensor

GTLZ-50-5-ccc-d-1 Air flow sensor for GXLF
GTLZ-51-5-ccc-d-1 Air flow sensor for GXLB
GTLZ-52-5-ccc-d-1 Air flow sensor for GXHB

Delivery (d)
d = 0, Air flow sensor, loose
d = 1, Air flow sensor, factory fitted, for right hand version fan
d = 2, Air flow sensor, factory fitted, for left hand version fan

Air flow sensor GTLZ-50, 51, 52
Air flow sensor is used for the measurement of the air flow in double-inlet GX-fans. The method is based on the pressure difference in the air flow sensor. The air flow can be calculated as a function of factor k and the measurement pressure difference Dpm as follows:

$$q = \frac{1}{k} \times \sqrt{\Delta p_m}$$

where q= air flow(m^3/s)
Δp_m = measurement pressure difference (Pa)
k = factor according to the fan

The corresponding air flow related to the measurement pressure difference can easily be read with a manometer, the scale of which has been made according to the above mentioned formula for a specified fan. A detailed diagram can be supplied upon request. The accuracy is ±10%. If the sensor is calibrated in the final operating conditions of the fan (for example in an air handling unit) an accuracy of ±5% can be achieved.

Air flow sensor is supplied with an attach fitting.

Air flow sensor with manometer

GTLZ-53-5-ccc-d-0 Air flow sensor with manometer for GXLF
GTLZ-54-5-ccc-d-0 Air flow sensor with manometer for GXLB
GTLZ-55-5-ccc-d-0 Air flow sensor with manometer for GXHB

Delivery (d)
d = 0, Air flow sensor, loose
d = 1, Air flow sensor, factory fitted, for right hand version fan
d = 2, Air flow sensor, factory fitted, for left hand version fan

Air flow sensor with manometer GTLZ-53, 54, 55
Air flow sensor can also be supplied with manometer. The delivery includes air flow sensor, manometer with scale, attach fitting and plastic tubing.
For the technical specification, please refer to previous page GTLZ-50, 51, 52.

Accessories

Painting

GTLZ-60-5-ccc-d-0 Painting, external and internal

Delivery (d)
d = 1 Epoxy-powder painting, 60 µm, color tone AM 8043, dark grey, M2
d = 2 Epoxy-powder painting, 100 µm, color tone AM8043, dark grey, M3
d = 3 Wet painting in 3 layers, 250 µm, color tone SSG28, light grey

d = 1 Painting 60 µm
Fan casing, impeller and bearing brackets as well as accessories are painted with epoxy-powder, 60 µm. Color tone is AM 8043, dark grey. Screws in stainless steel.

Painting process:
– alkaline grease removal
– iron phosphatizing
– hot water flushing, water temperature 40° C
– drying in 150° C
– powder painting 60 µm, in one layer
– drying in 215° C

d =2 Painting 100 µm
Fan casing, impeller and bearing brackets as well as accessories are painted with epoxy-powder, 100 µm. Color tone is AM 8043, dark grey. Screws in stainless steel. Painting process is the same as in version d = 1, layer thickness is 100 µm in one layer

d = 3 Wet painting 250µm in 3 layers
Fan casing and bearing brackets as well as accessories are painted with 250 µm epoxy paint in 3 layers. Color tone is JM 8043, dark grey. Impeller is painted with epoxy-powder, 100 µm, color tone AM 8043, dark grey. Screws in stainless steel.

Painting

Epoxy powder suits for objects exposed to mechanical and chemical attacks. It has good anticorrosive properties and it withstands action by acids, alkalis, greases and solvents.

Stainless steel shaft

GTLZ-61-5-ccc-1-0 Stainless steel shaft for GXLF
GTLZ-61-5-ccc-2-0 Stainless steel shaft for GXLB
GTLZ-61-5-ccc-3-0 Stainless steel shaft for GXHB

Fan is supplied with a stainless steel shaft.

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