

Etaline 065-065-160 GB
 ETL 065-065-160-GBSCV10 WS2BA4KFB

Operating point 1 Dimensioning operating point

Operating conditions (purchaser requirements)

Target flow rate	37 m ³ /h	Vapour pressure determined	0.02337 bar.a
Target head	6 m		
Fluid	Water, swimming-pool and bathing water	Specified ambient temperature	20 °C
Fluid variant	Fresh water	Installation altitude above sea level	1,000 m
Specified fluid temperature	20 °C		
Density Fluid handled	998 kg/m ³		
Kinematic viscosity Fluid handled	1 mm ² /s		

Operating conditions (performance)

Flow rate	36.98 m ³ /h	Maximum power input at duty point	0.7855 kW
Minimum permissible flow rate	6.354 m ³ /h	Maximum power input / curve	0.9383 kW
Head	5.994 m	Pump speed	1,457 1/min
Shut-off head	7.697 m	Discharge pressure-max.	0.7533 bar
Efficiency Pump	76.63 %		
NPSH required	1.6 m		

Design data pump

Scope of supply Pump supplied by KSB	Pump	Mains voltage	400 V
Pump standard	EN 733	Mains frequency	50 Hz
Shaft axis position	Vertical	Minimum efficiency index MEI	0.7
Pump design	Close-coupled	Minimum permissible fluid temperature	0 °C
Pump system design	Single-pump system	Maximum permissible fluid temperature	110 °C
Specification of wetted parts	Manufactured without paint wetting impairment substances	Quantity Stages, single-entry	1
Pump direction of rotation, viewed from casing side	Counterclockwise	Casing wear ring design suction-side	Flat
Hydraulic impeller diameter	143.4 mm	Casing wear ring design discharge-side	Flat
Impeller type	Radial, closed, multi-channel	Installation chamber Casing cover	Conical (A-type cover)
Free passage	11.6 mm	Bearing bracket size / shaft unit	25
Nut lock for Impeller	No	Pump directive	CE
Swirl break	No		
Support foot	No		

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Nozzle connections pump

Nominal diameter Suction nozzle	DN 65	Nominal diameter Discharge nozzle	DN 65
Nominal pressure Suction nozzle	PN 16	Nominal pressure Discharge nozzle	PN 16
Suction nozzle position	Opposite of discharge nozzle	Discharge nozzle position	0 deg
Suction nozzle design acc.to	EN1092-2	Discharge nozzle design acc.to	EN1092-2
Suction flange bolt hole pattern as per standard	EN1092-2	Discharge flange bolt hole pattern as per standard	EN1092-2
Flange facing type Inlet	Raised face (B,RF,C)		
Flange facing type Outlet	Raised face (B,RF,C)		

Auxiliary connections pump

6B Fluid Drain	G 1/4 Drilled and plugged	1M Pressure gauge Discharge nozzle	Without Without
6D Fluid Filling and venting	G 1/4 Drilled and plugged	1M Pressure gauge Suction nozzle	Without Without
Connection type 24E Quench liquid inlet	Without Without		
Connection type 5B Venting and drain	G 1/4 Manual globe valve, fitted		

Shaft sealing

Shaft seal type	SMS A-type cover, vented	Shaft seal code	Code 10
Determined pressure Seal chamber	-0.26 bar	Shaft seal manufacturer inboard	KSB's choice
		Mechanical seal type inboard	1
		Material Shaft seal inboard	Q1Q1X4GG

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Materials

Material Volute casing (102)	EN-GJL-250/A48 CL 35B	Material Bolts/Screws	8.8
Material Casing cover (161)	EN-GJL-250/A48 CL 35B	Hydraulic casing (902.01)	
Material Shaft	C45+N	Material Screw plug Hydraulic casing (903.01)	ST
Material Impeller (230)	CC480K DW	Material Static seal Screw plug Volute casing	A4/AISI 316
Material Static seal Hydraulic casing (400.10)	DPAF DW001	Material Nut Impeller fastening (920.95)	(CRNIMO ST INT)
Material Casing wear ring suction-side	JL/LAMELLAR GRAPHITE CAST IRON	Material Key	1.4571+C/A276 TP 316 COND B
Material Casing wear ring discharge-side (502.02)	JL/LAMELLAR GRAPHITE CAST IRON		
Material Shaft protecting sleeve (523)	(CRNIMO ST INT)		
Material Bearing bracket	WITHOUT		
Material Static seal Discharge cover	DPAF DW001		
Material Drive lantern	EN-GJL-250/A48 CL 35B		
Material Support foot	WITHOUT		

Driver

Electric motor	Yes	Rated speed Motor	1,440 1/min
Drive concept	With electric actuator	Number of motor poles	4
Drive standard, mechanical	IEC	Rated power Motor	1.1 kW
Drive standard electric	IEC	Motor power reserve determined	40 %
Motor bearing, insulated	No	Rated voltage Motor	400 V
Motor manufacturer	KSB's choice	Motor winding	230 / 400 V
Customer supply Drive	No	Rated frequency Motor	50Hz
Motor construction type	IM V1 (IM3011) IEC 60034-7	Motor switching type	Star
Motor size	90S	Rated current Motor	2.64 A
Efficiency class	IE3 (Premium)	Starting current ratio Ia/In	8
Material motor housing	AL	Motor cos phi at nominal speed	0.83
Enclosure Motor	IP55 (TEFC)	Rated efficiency Motor	84.1 %
Thermal class	155 (F) nach IEC 60085	Directive Drive	CE
Temperature sensor motor	1 PTC thermistors		
Terminal box position of motor (looking at the motor shaft)	360 °		
Operation on a frequency inverter permitted	Yes (acc to motor manufact)		
Sound pressure level Motor	59 dBa		
Type series Motor manufacturer	Acc. to motor manufacturer		

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Coating

Aggregate

Surface preparation

Free from dirt, grease, rust

Properties Primer coat

Hydro dip primer, water-dilutable

Thickness Primer coat

60 µm

Properties Top coat

Polyco/acrylate polym w-based

Thickness Top coat

50 µm

Colour Top coat

RAL2002 Pastel Orange

Packaging

Suitable for transport

Truck transport

Suitable for storage

Indoor storage

Packaging category

KSB's choice (A0)

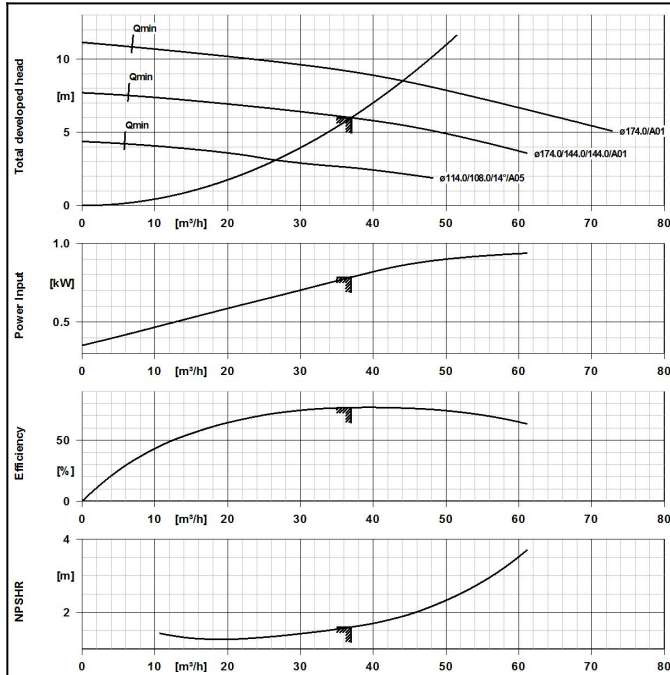
Nameplates

Duplicate name plate

No

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Design data pump

Pump standard	EN 733
Pump design	Close-coupled
Nominal diameter Suction nozzle	DN 65
Suction flange bolt hole pattern as per standard	EN1092-2
Nominal diameter Discharge nozzle	DN 65
Nominal pressure Discharge nozzle	PN 16
Discharge flange bolt hole pattern as per standard	EN1092-2
Material Shaft seal inboard	Q1Q1X4GG
Shaft seal code	Code 10
Impeller diameter D2	144 mm
Free passage	11.6 mm
Specification of wetted parts	Manufactured without paint wetting impairment substances

Materials

Material Volute casing	EN-GJL-250/A48 CL 35B
Material Casing cover	EN-GJL-250/A48 CL 35B
Material Support foot	WITHOUT
Material Shaft	C45+N
Material Impeller	CC480K DW

Dimensioning operating point

Fluid	Eau, eau de piscine et eau de baignade
Fluid variant	Fresh water
Specified ambient temperature	20 °C
Specified fluid temperature	20 °C
Specified fluid temperature	20 °C
Flow rate	36.98 m³/h
Head	5.994 m
Efficiency Pump	76.63 %
Minimum efficiency index MEI	0.7
Maximum power input at duty point	0.7855 kW
Pump speed	1,457 1/min
Pump system design	Single-pump system
NPSH required	1.6 m

Driver

Drive concept	With electric actuator
Drive standard, mechanical	IEC
Drive standard electric	IEC
Efficiency class	IE3 (Premium)
Rated speed Motor	1,440 1/min
Rated frequency Motor	50Hz
Rated voltage Motor	400 V
Rated power Motor	1.1 kW
Motor power reserve determined	40 %

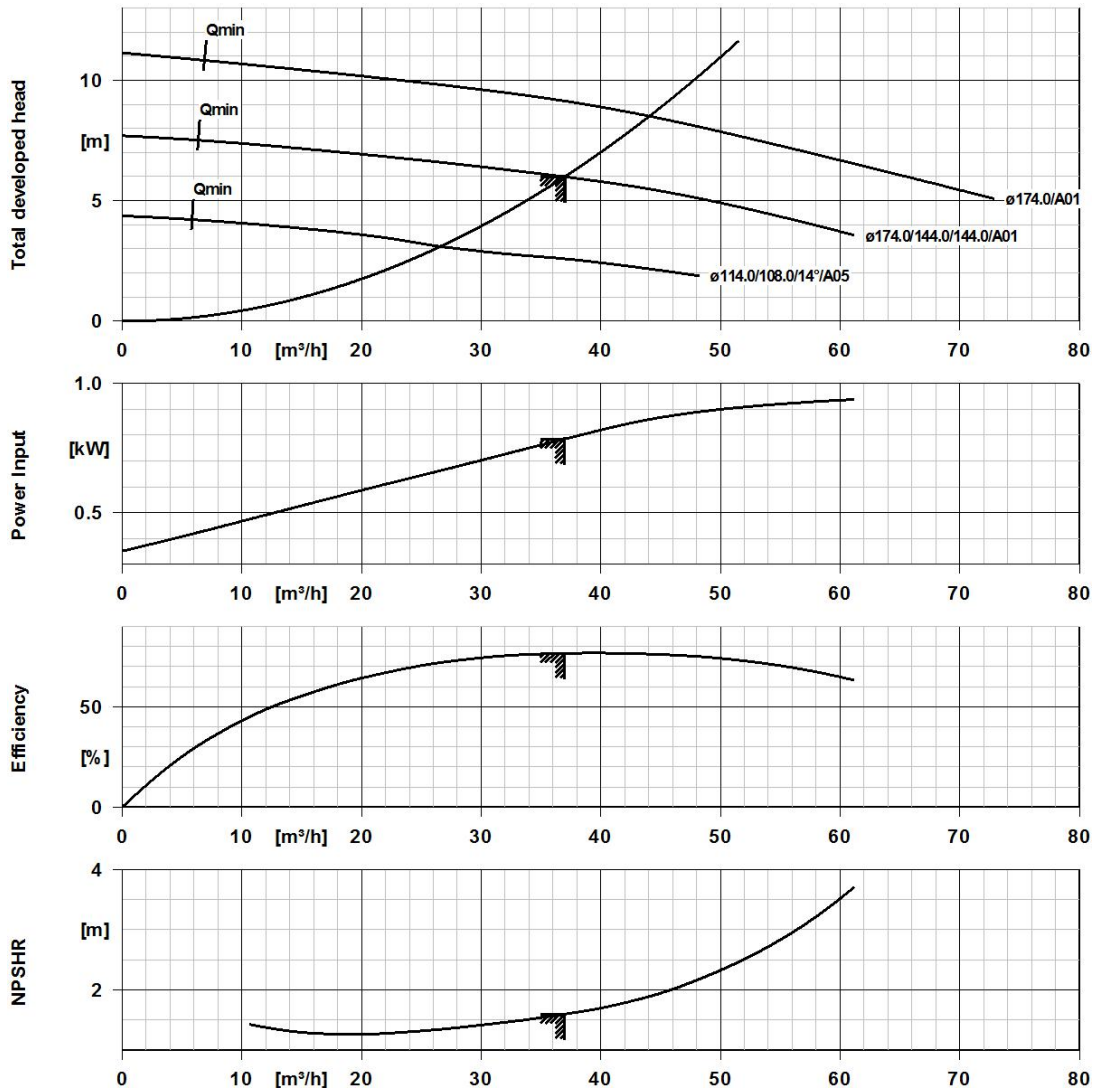
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	Rated current Motor	2.64 A
	Starting current ratio I_a/I_n	8
	Thermal class	155 (F) nach IEC 60085
	Enclosure Motor	IP55 (TEFC)
	Temperature sensor motor	1 PTC thermistors
	Mains voltage	400 V
	Motor switching type	Star
	Operation on a frequency inverter permitted	Yes (acc to motor manufact)
	Sound pressure level Motor	59 dBa
	Terminal box position of motor (looking at the motor shaft)	360 °

Accessories

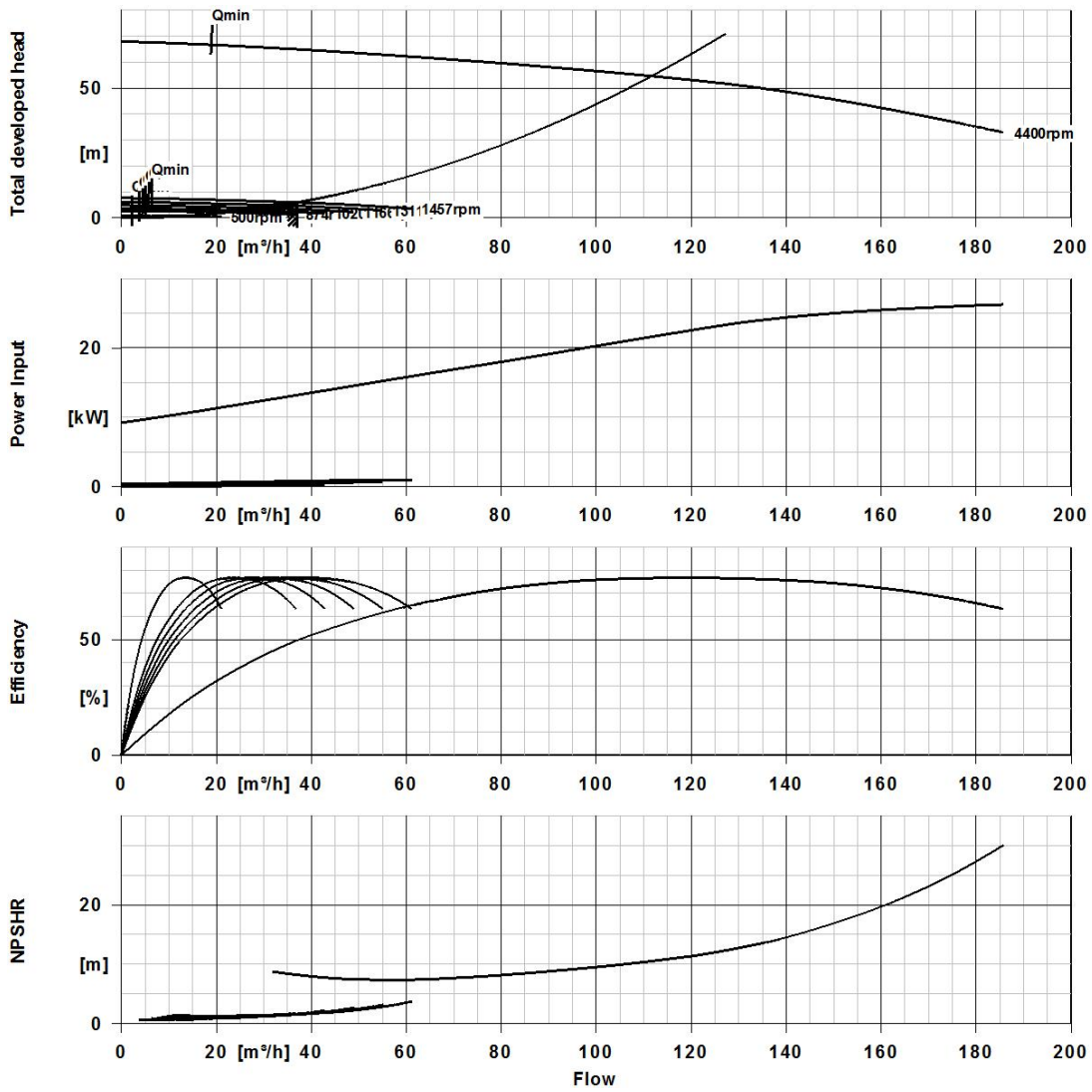
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Curve Data

Pump speed	1,457 1/min	Efficiency Pump	76.63 %
Density Fluid handled	998 kg/m^3	Minimum efficiency index MEI	0.7
Kinematic viscosity Fluid handled	1 mm^2/s	Maximum power input at duty point	0.79 kW
Flow rate	36.98 m^3/h	NPSH required	1.6 m
Head	5.994 m	Hydraulic calculation according to standard/class	EN ISO 9906 class 3B

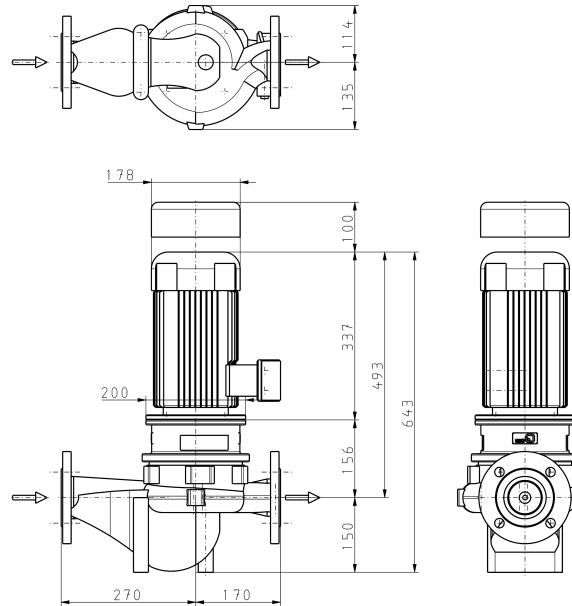
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Curve Data

Density Fluid handled	998 kg/m^3	Minimum efficiency index MEI	0.7
Kinematic viscosity Fluid handled	1 mm^2/s	Hydraulic impeller diameter	143.4 mm
Flow rate	36.98 m^3/h	Head	5.994 m

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Drawing is not to scale.

Dimensions are given in mm

Motor

Motor manufacturer	KSB's choice
Motor size	90S
Rated power Motor	1.1 kW
Number of motor poles	4
Rated speed Motor	1,440 1/min
Terminal box position of motor (looking at the motor shaft)	360 °

Connections

Nominal diameter Suction nozzle	DN 65
Suction flange bolt hole pattern as per standard	EN1092-2
Nominal diameter Discharge nozzle	DN 65
Discharge flange bolt hole pattern as per standard	EN1092-2
Nominal pressure Suction nozzle	PN 16
Nominal pressure Discharge nozzle	PN 16

Net weight

Total weight Pump	33.6 kg
Total weight Drive	23 kg
Total weight Pump set	56.6 kg

Connect pipelines stress-free

Dimensional tolerances for shaft axis height: DIN 747
 Dimensions without tolerances, middle tolerances to: ISO 2768-m
 Connection dimensions for pumps: EN735
 Dimensions without tolerances - welded parts: ISO 13920-B
 Dimensions without tolerances - gray cast iron parts: ISO 8062-CT9

Plan for additional connections see extra drawing