



Etaline 065-065-160 GG

ETL 065-065-160-GGSCV11 WSEAV4HHB

Operating point 1

Dimensioning operating point

Operating conditions (purchaser requirements)

Target flow rate	28.96 m³/h
Target head	4.56 m
Fluid	Water, heating water
Fluid variant	Heating water up to 100°C (max.), acc. to VDI 2035
Specified fluid temperature	80 °C
Density Fluid handled	972 kg/m³
Kinematic viscosity Fluid handled	0.37 mm²/s

Vapour pressure determined	0.4736 bar.a
Minimum inlet pressure required	-0.3 bar.r
Specified ambient temperature	20 °C
Installation altitude above sea level	1,000 m

Operating conditions (performance)

Flow rate	28.91 m³/h
Minimum permissible flow rate	5.999 m³/h
Maximum permissible flow rate	53.64 m³/h
Pump set	
Maximum permissible flow rate	53.64 m³/h
Head	4.545 m
Maximum pressure determined at duty point	0.433274 bar.r
Shut-off head	5.784 m
Efficiency Pump	70.85 %
NPSH required	0.97 m

Maximum power input at duty point	0.4902 kW
Maximum power input / curve	0.6042 kW
Pump speed	1,442 1/min
Shut-off pressure	0.551354 bar.r

Design data pump

Scope of supply Pump supplied by KSB	Pump + motor	Input voltage and frequency	Without
Pump standard	EN 733	Mains voltage	400 V
Shaft axis position	Vertical	Mains frequency	50 Hz
Pump design	Close-coupled	Minimum efficiency index MEI	0.7
Pump system design	Single-pump system	Minimum permissible fluid temperature	0 °C
Specification of wetted parts	Manufactured without paint wetting impairment substances	Maximum permissible fluid temperature	110 °C
Pump direction of rotation, viewed from casing side	Counterclockwise	Quantity Stages, single-entry	1
Hydraulic impeller diameter	125.7 mm	Installation chamber Casing cover	Conical (A-type cover)
Impeller type	Radial, closed, multi-channel	Bearing bracket size / shaft unit	25
Free passage	11.6 mm	Pump directive	CE
Hydraulic casing foot	Yes		



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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)		
Flange facing type Outlet	Raised face (B,RF)		

Auxiliary connections pump

1M Pressure gauge	G 1/4	5B Venting and drain	G 1/4
Discharge nozzle	Drilled and plugged		Manual globe valve, fitted
1M Pressure gauge Suction nozzle	G 1/4		
	Drilled and plugged		
6B Fluid Drain	G 1/4		
	Drilled and plugged		
6D Fluid Filling and venting	G 1/4		
	Drilled and plugged		

Shaft sealing

Shaft seal type	Single mechanical seal; seal chamber can be vented (A-type casing cover) - AV	Shaft seal code	Code 11
		Shaft seal manufacturer inboard	KSB's choice
Determined pressure Seal chamber	-0.27 bar.r	Mechanical seal type inboard	KSB's choice
		Material Shaft seal inboard	BQEGG DW001



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Materials

Material Volute casing (102)	EN-GJL-250/A48 CL 35B	Material Bolts/Screws Volute casing (902.01)	8.8
Material Casing cover (161)	EN-GJL-250/A48 CL 35B	Material Nut Impeller fastening (920.95)	(ST)
Material Shaft	C45+N		
Material Impeller (230)	EN-GJL-250/A48 CL 35B		
Material Static seal Volute casing (400.10)	DPAF DW001		
Material Casing wear ring suction-side (502.01)	JL/LAMELLAR GRAPHITE CAST IRON		
Material Casing wear ring discharge-side (502.02)	JL/LAMELLAR GRAPHITE CAST IRON		
Material Shaft protecting sleeve (523)	(CRNIMO ST INT)		
Material Static seal Discharge cover	DPAF DW001		
Material Drive lantern	EN-GJL-250/A48 CL 35B		
Material Volute casing foot	ST+PAINTED		



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Driver

Electric motor, asynchronous	Yes	Rated speed Motor	1,410 1/min
Drive concept	Electric actuator	Number of motor poles	4
Drive standard, mechanical	IEC	Rated power Motor	0.75 kW
Drive standard electric	IEC	Motor power reserve determined	53 %
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	80M	Rated current Motor	1.75 A
Efficiency class	IE3 (Premium)	Starting current ratio Ia/In	7.1
Material motor housing	AL	Cos phi at 4/4 load	0.75
Enclosure Motor	IP55 (TEFC)	Motor efficiency at 4/4 load	82.5 %
Thermal class	155 (F) according to IEC 60085	Limit value Maximum humidity Motor	30 g/m³
Temperature sensor motor	1 PTC thermistors	Marking according to directive CE Drive	
Terminal box position of motor (looking at the motor shaft)	360 °	The values indicated are regarded as guaranteed values. They are applied to motors with a sinusoidal power supply within the permissible tolerances specified by IEC 60034-1. The values given on the name plate may be different.	
Operation on a frequency inverter permitted	Yes (acc to motor manufact)		
Earth connector motor housing	No		
Sound pressure level Motor	56 dBa		
Type series Motor manufacturer	Acc. to motor manufacturer (IEC, IE3)		

Coating

Aggregate

Primary coating code	A1 to AN1897
Surface preparation	Free from dirt, grease, rust
Properties Primer coat	Hydro dip primer, water-dilutable
Thickness Primer coat	60 µm
Properties Top coat	Acrylate dispersion water-thinned
Thickness Top coat	40 µm
Colour Top coat	RAL5002 Ultramarine Blue
Colour Top coat Drive	RAL5002 Ultramarine Blue



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Energy cost and Environmental Impact

Result

Estimated Product Carbon Footprint (cradle-to-gate) (CO₂eq) 217 kg

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* based on product weight and assuming typical material proportions. The conversion rate between product weight and CO₂ emissions is based on several life cycle analyses in acc. with ISO 14040 / 44 of sample products from the same series. The objective and scope of these LCAs was limited to the manufacturing phase (cradle-to-gate). With regard to inputs, all materials, energy and auxiliary materials were taken into account; with regard to outputs, emissions, scrap and waste were considered. The influence of outgoing logistics is not covered. The input variables of the analyses cover at least 95% of the total weight. The analysis focuses on the global warming potential (EF3.0 ClimateChange – total).

Packaging

Suitable for transport	Truck transport
Suitable for storage	Indoor storage
Packaging category	KSB's choice (A0)

Product properties

Specification of wetted parts	Manufactured without paint wetting impairment substances
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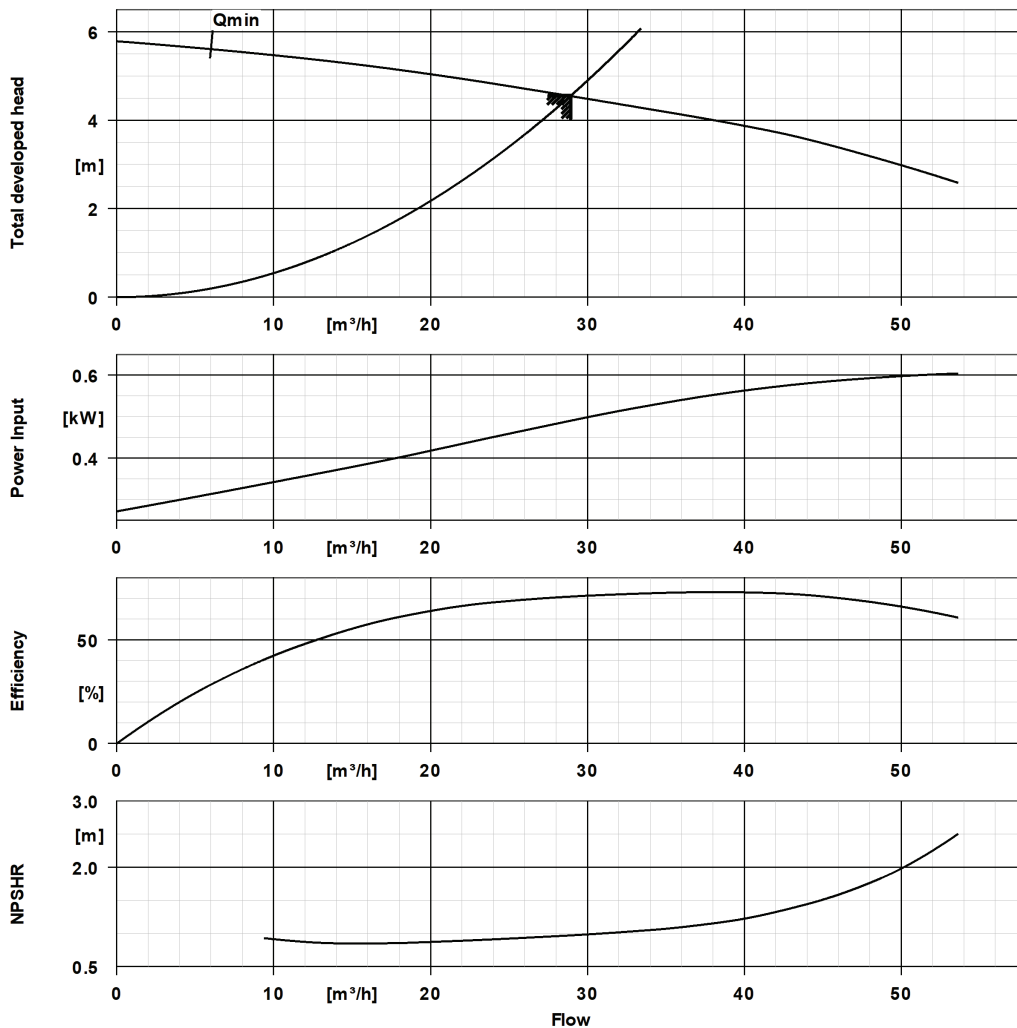
Performance Curve (Pump)



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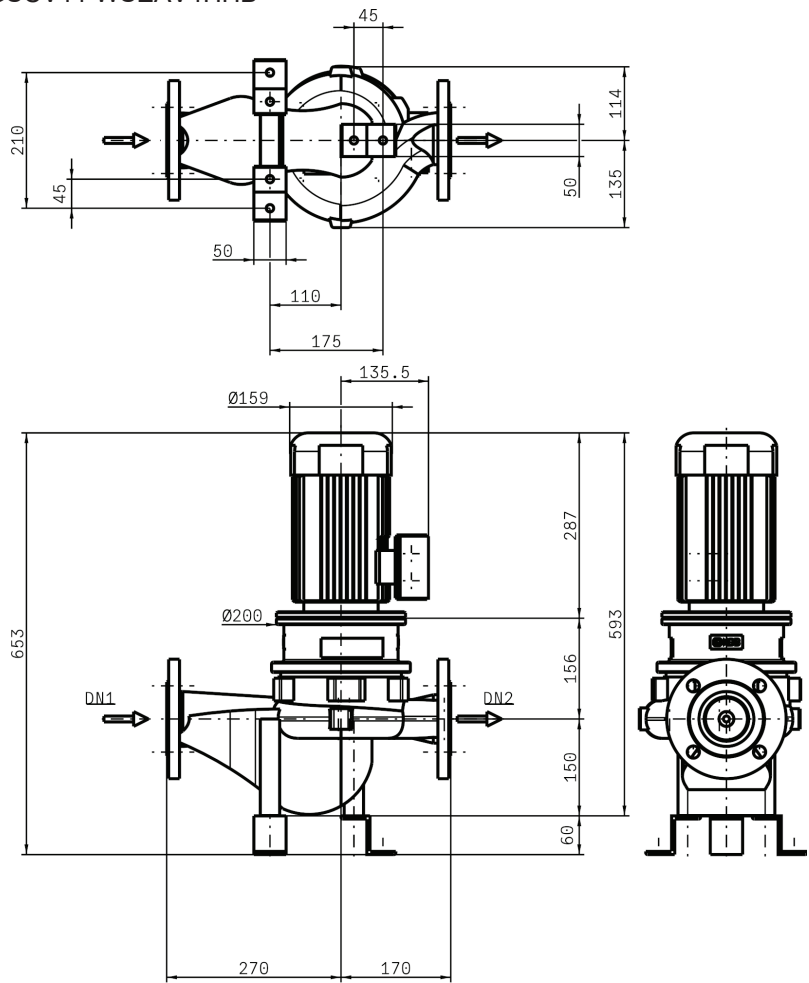


Curve Data

Pump speed	1,442 1/min	Maximum permissible flow rate	53.6 m³/h
Density Fluid handled	972 kg/m³	Efficiency Pump	70.9 %
Kinematic viscosity Fluid handled	0.37 mm²/s	Minimum efficiency index MEI	0.7
Flow rate	28.9 m³/h	Maximum power input at duty point	0.49 kW
Head	4.55 m	NPSH required	0.97 m
Maximum pressure determined at duty point	0.43 bar.r	Hydraulic impeller diameter	125.7 mm
		Hydraulic values according to	EN ISO 9906
			Class 3B



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Drawing is not to scale.

Dimensions are given in mm

Motor

Motor manufacturer	KSB's choice
Motor size	80M
Rated power Motor	0.75 kW
Number of motor poles	4
Rated speed Motor	1,410 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	33.38 kg
Total weight Drive	13.94 kg
Total weight Pump set	47.32 kg
Total weight Assembly/transport aids	4.26 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