

Etabloc 100-080-160 CC

ETB 100-080-160-CCSBV10 WSECM4HHB

Operating point 1

Dimensioning operating point

Operating conditions (purchaser requirements)

Fluid	Water, surface water
Fluid variant	River water
Specified fluid temperature	20 °C
Density Fluid handled	998 kg/m³
Kinematic viscosity Fluid handled	1 mm²/s

Vapour pressure determined	-0.9766 bar.r
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	116.51 m³/h
Minimum permissible flow rate	17.48 m³/h
Maximum permissible flow rate	144.83 m³/h
Pump unit	
Head	7.864 m
Shut-off head	10.4 m
Efficiency Pump	83.18 %
NPSH required	2.05 m

Maximum power input at duty point	2.995 kW
Maximum power input / curve	3.147 kW
Pump speed	1,500 1/min
Discharge pressure-max.	1.018 bar.r

Design data pump

Scope of supply Pump supplied by KSB	Pump + motor	Mains voltage	400 V
Pump standard	EN 733	Mains frequency	50 Hz
Shaft axis position	Horizontal	Minimum efficiency index MEI	0.6
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
Impeller diameter D2	174 mm	Casing wear ring design discharge-side	Flat
Impeller type	Radial, closed, multi-channel	Installation chamber Casing cover	Conical (A-type cover)
Free passage	15.1 mm	Bearing bracket size / shaft unit	25
Support foot	No	Pump directive	CE

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Nozzle connections pump

Nominal diameter Suction nozzle	DN 100	Nominal diameter Discharge nozzle	DN 80
Nominal pressure Suction nozzle	PN 16	Nominal pressure Discharge nozzle	PN 16
Suction nozzle position	Axial	Discharge nozzle position	0 deg
Suction nozzle design acc.to	EN1092-1	Discharge nozzle design acc.to	EN1092-1
Suction flange bolt hole pattern as per standard	EN1092-1	Discharge flange bolt hole pattern as per standard	EN1092-1
Flange facing type Inlet	Raised face (B,RF)		
Flange facing type Outlet	Raised face (B,RF)		

Auxiliary connections pump

6B Fluid Drain	G 3/8 Drilled and plugged	1M Pressure gauge Discharge nozzle	Without Without
6D Fluid Filling and venting	G 3/8 Drilled and plugged	1M Pressure gauge Suction nozzle	Without Without
5B Venting and drain	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 10
		Shaft seal manufacturer inboard	KSB's choice
Operating mode of mechanical seal (function)	API plan 03	Mechanical seal type inboard	KSB's choice
Determined pressure Seal chamber	-0.15 bar.r	Material Shaft seal inboard	QQXGG

Materials

Material Volute casing (102)	1.4408/A743CF8M	Material Bolts/Screws Volute casing (902.01)	A4-70/A193 GR B8M CL2
Material Casing cover (161)	1.4408/A743CF8M	Material Nut Impeller fastening (920.95)	(CRNIMO ST INT)
Material Shaft	1.4571		
Material Impeller (230)	1.4408/A743CF8M		
Material Casing wear ring suction-side (502.01)	(CRNIMO ST INT)		
Material Casing wear ring discharge-side (502.02)	(CRNIMO ST INT)		
Material Shaft protecting sleeve (523)	(CRNIMO ST INT)		
Material Static seal Discharge cover	DPAF DW001		
Material Drive lantern	EN-GJL-250/A48 CL 35B		

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Power Drive System

Drive concept	Electric actuator	Rated speed Motor	1,500 1/min
Drive standard, mechanical	IEC	Number of motor poles	4
Drive standard electric	IEC	Rated power Motor	4 kW
Motor manufacturer	KSB	Motor power reserve determined	37.4 %
Motor construction type	IM V1 (IM3011) IEC 60034-7	Rated voltage Motor	400 V
Motor size	112M	Motor winding	- / 400 V
Efficiency class	IE5 (Ultra Premium)	Rated frequency Motor	50Hz
Material motor housing	AL	Motor switching type	Star
Enclosure Motor	IP55 (TEFC)	Maximum current Unit	0 A
Thermal class	155 (F) nach IEC 60085	Rated current Motor	9.6 A
Temperature sensor motor	3 PTC thermistors	Cos phi at 4/4 load	0.73
Terminal box position of motor (looking at the motor shaft)	360 °	Motor efficiency at 4/4 load	91.2 %
Operation on a frequency inverter permitted	Required by design	Marking according to directive CE Drive	
Sound pressure level Motor	61 dBa		
Type series Motor manufacturer	SuPremE C2		

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	Acrylate dispersion water-thinned
Thickness Top coat	40 µm
Colour Top coat	RAL5002 Ultramarine Blue

Energy cost and Environmental Impact

Result

Product Carbon Footprint indication (cradle-to-gate) (CO₂eq) 468 kg

* This PCF indication is based on the product mass assuming the typical shares of materials in use. The conversion rate between product mass and CO₂ emissions is based on several life cycle assessments acc. ISO 14040/ 14044 of sample products of the same type series. Objective and scope of these LCAs was defined as being limited to the manufacturing phase (cradle-to-gate). With regard to inputs, all materials, energy and auxiliary materials were accounted for, and with regard to outputs, emissions, scrap and waste were accounted for. The impact of outbound logistics is not covered. The assessments' input variables cover at least 95 % of the total product mass. The analysis focuses exclusively on the Global Warming Potential (EF3.0 Climate Change – total).



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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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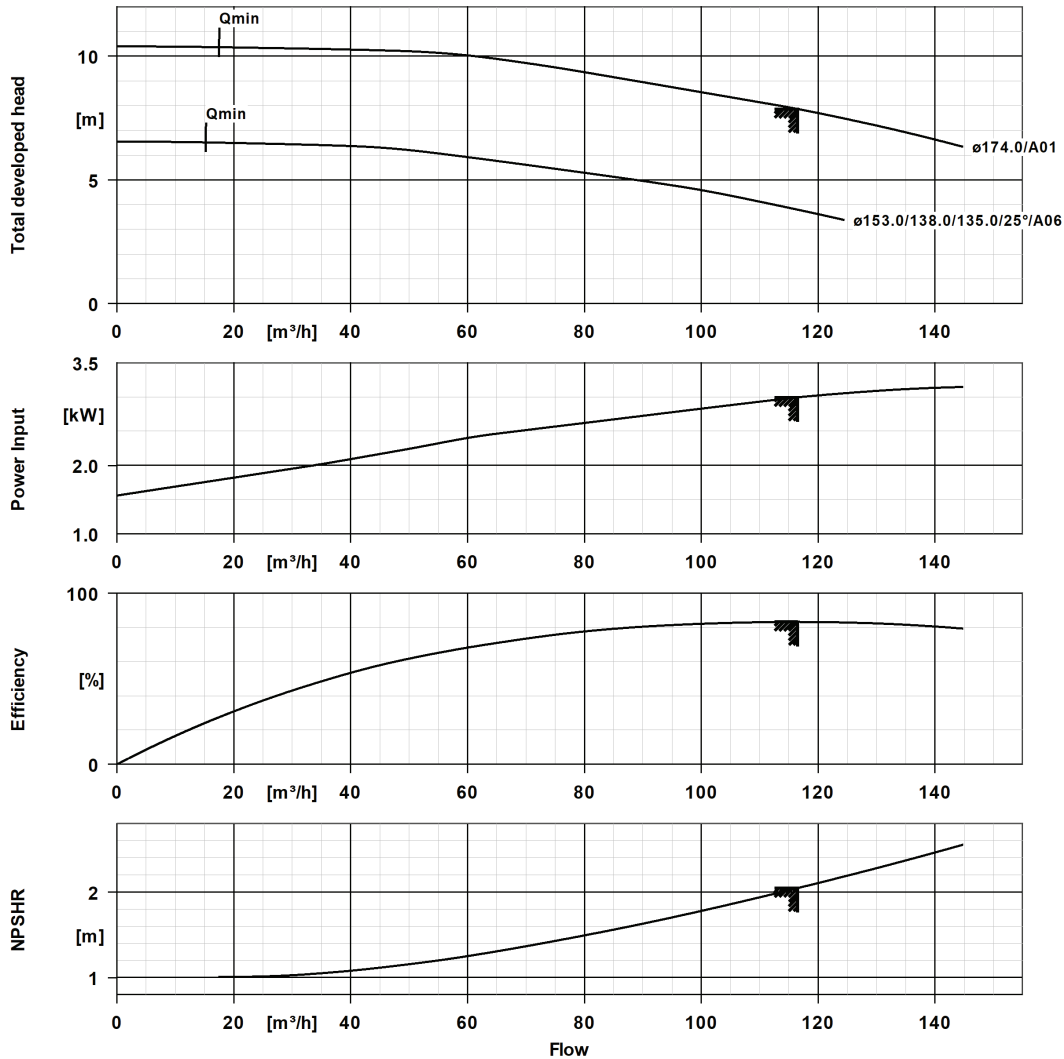
Performance Curve (Pump)



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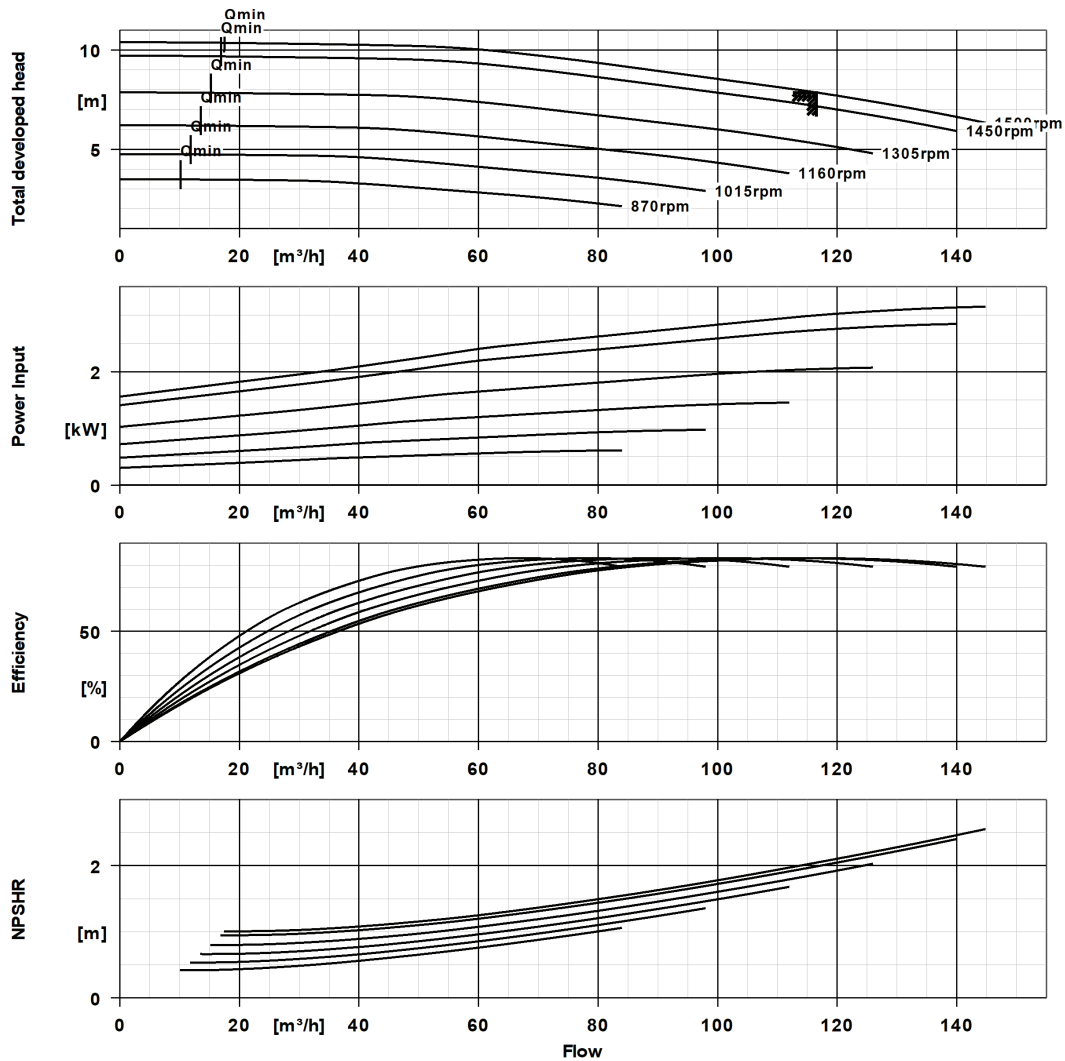
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Curve Data

Pump speed	1,500 1/min	Efficiency Pump	83.2 %
Density Fluid handled	998 kg/m³	Minimum efficiency index MEI	0.6
Kinematic viscosity Fluid handled	1 mm²/s	Maximum power input at duty point	2.99 kW
Flow rate	117 m³/h	NPSH required	2.05 m
Head	7.86 m	Hydraulic impeller diameter	174 mm
		Hydraulic calculation according to standard/class	EN ISO 9906 Class 3B

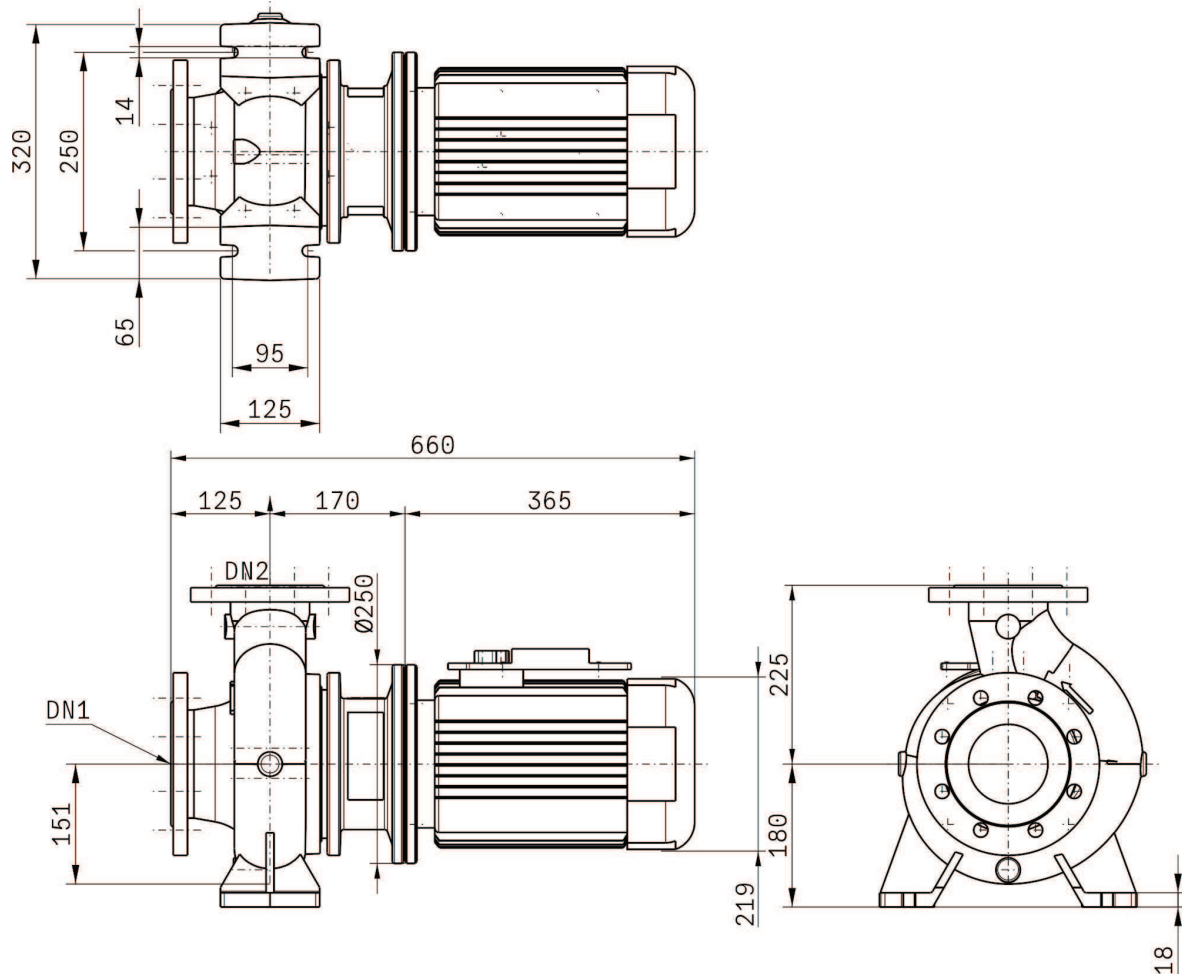
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Curve Data

Density Fluid handled	998 kg/m^3	Minimum efficiency index MEI	0.6
Kinematic viscosity Fluid handled	1 mm^2/s	Hydraulic impeller diameter	174 mm
Flow rate	116.51 m^3/h	Head	7.864 m

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Drawing is not to scale.

Dimensions are given in mm

Motor

Electric motor	No
Rated power Motor	4 kW
Rated speed Motor	1,500 1/min
Material Installation part Pump	WITHOUT

Connections

Nominal diameter Suction nozzle	DN 100
Suction flange bolt hole pattern as per standard	EN1092-1
Nominal diameter Discharge nozzle	DN 80
Discharge flange bolt hole pattern as per standard	EN1092-1
Nominal pressure Suction nozzle	PN 16
Nominal pressure Discharge nozzle	PN 16

Net weight

Total weight Pump	44.89 kg
Total weight Drive	33 kg
Total weight Pump set	77.89 kg



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Connect pipelines stress-free

Plan for additional connections see extra drawing

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