

Etanorm 065-050-125 GG

ETN 065-050-125-GGSAA10 GSECM2AHB

Operating point 1 Dimensioning operating point

Operating conditions (purchaser requirements)

Target flow rate		Vapour pressure determined	-0.9766 bar.r
Fluid	Water	Minimum inlet pressure required	-0.3 bar.r
Fluid variant	Clean water	Specified ambient temperature	20 °C
Specified fluid temperature	20 °C	Installation altitude above sea level	1,000 m
Density Fluid handled	998 kg/m³		
Kinematic viscosity Fluid handled	1 mm²/s		

Operating conditions (performance)

Flow rate	50 m³/h	Maximum power input at duty point	3.008 kW
Minimum permissible flow rate	11.03 m³/h	Maximum power input / curve	3.689 kW
Maximum permissible flow rate Pump set	91.16 m³/h	Pump speed	2,930 1/min
Head	16.53 m	Shut-off discharge pressure	1.878 bar.r
Maximum head of characteristic curve	19.19 m		
Shut-off head	19.19 m		
Efficiency Pump	74.75 %		
NPSH required	2.49 m		

Design data pump

Scope of supply Pump supplied by KSB	Bare-shaft pump	Mains frequency	50 Hz
Pump standard	EN 733	Minimum efficiency index MEI	0.7
Shaft axis position	Horizontal	Minimum permissible fluid temperature	0 °C
Pump design	Long-coupled (baseplate-mounted)	Maximum permissible fluid temperature	60 °C
Pump system design	Single-pump system	Quantity Stages, single-entry	1
Pump direction of rotation, viewed from casing side	Counterclockwise	Casing wear ring design suction-side	Flat
Hydraulic impeller diameter	120 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	Yes	Bearing bracket design	Medium
		Lubrication type	Grease lubrication
		Bearing seal Pump	V-ring
		Pump directive	CE

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Nozzle connections pump

Nominal diameter Suction nozzle	DN 65	Nominal diameter Discharge nozzle	DN 50
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	EN1092-2	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

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
8B Leakage Drain	G 1/2 Drilled		

Shaft sealing

Shaft seal type	Single mechanical seal (A-type cover) - A	Shaft seal code	Code 10
Operating mode of mechanical seal (function)	API plan 03	Shaft seal manufacturer inboard	KSB's choice
Determined pressure Seal chamber	-0.19 bar.r	Mechanical seal type inboard	KSB's choice
		Material Shaft seal inboard	QQXGG

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Materials

Material Volute casing	EN-GJL-250/A48 CL 35B	Material Bolts/Screws Volute casing	8.8
Material Casing cover	EN-GJL-250/A48 CL 35B	Material Nut Impeller fastening (CRNIMO ST INT)	
Material Shaft	C45+N		
Material Impeller	EN-GJL-250/A48 CL 35B		
Material Casing wear ring suction-side	JL/LAMELLAR GRAPHITE CAST IRON		
Material Casing wear ring discharge-side	JL/LAMELLAR GRAPHITE CAST IRON		
Material Shaft protecting sleeve	(CRNIMO ST INT)		
Material Bearing bracket	EN-GJL-250/A48 CL 35B		
Material Static seal Discharge cover	DPAF DW001		

Driver

Asynchronous motors	No	Rated speed Motor	2,900 1/min
Drive concept	Electric actuator	Number of motor poles	2
Drive standard, mechanical	IEC	Rated power Motor	4 kW
Drive standard electric	IEC		
Motor construction type	IM B3 (IM1001) IEC 60034-7		
Motor size	112M		

Coating

Surface preparation	Aggregate
Properties Primer coat	Free from dirt, grease, rust
Thickness Primer coat	Hydro dip primer, water-dilutable
Properties Top coat	60 µm
Thickness Top coat	Acrylate dispersion water-thinned
Colour Top coat	40 µm
	RAL5002 Ultramarine Blue

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Energy cost and Environmental Impact

Result

Estimated Product Carbon Footprint (cradle-to-gate) (CO₂eq) 140 kg

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This PCF indication is based on the product mass assuming the typical share of materials in use. The conversion rate between product mass and CO₂ emissions is based on several life cycle assessments acc. to ISO14040 / 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).

Packaging

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

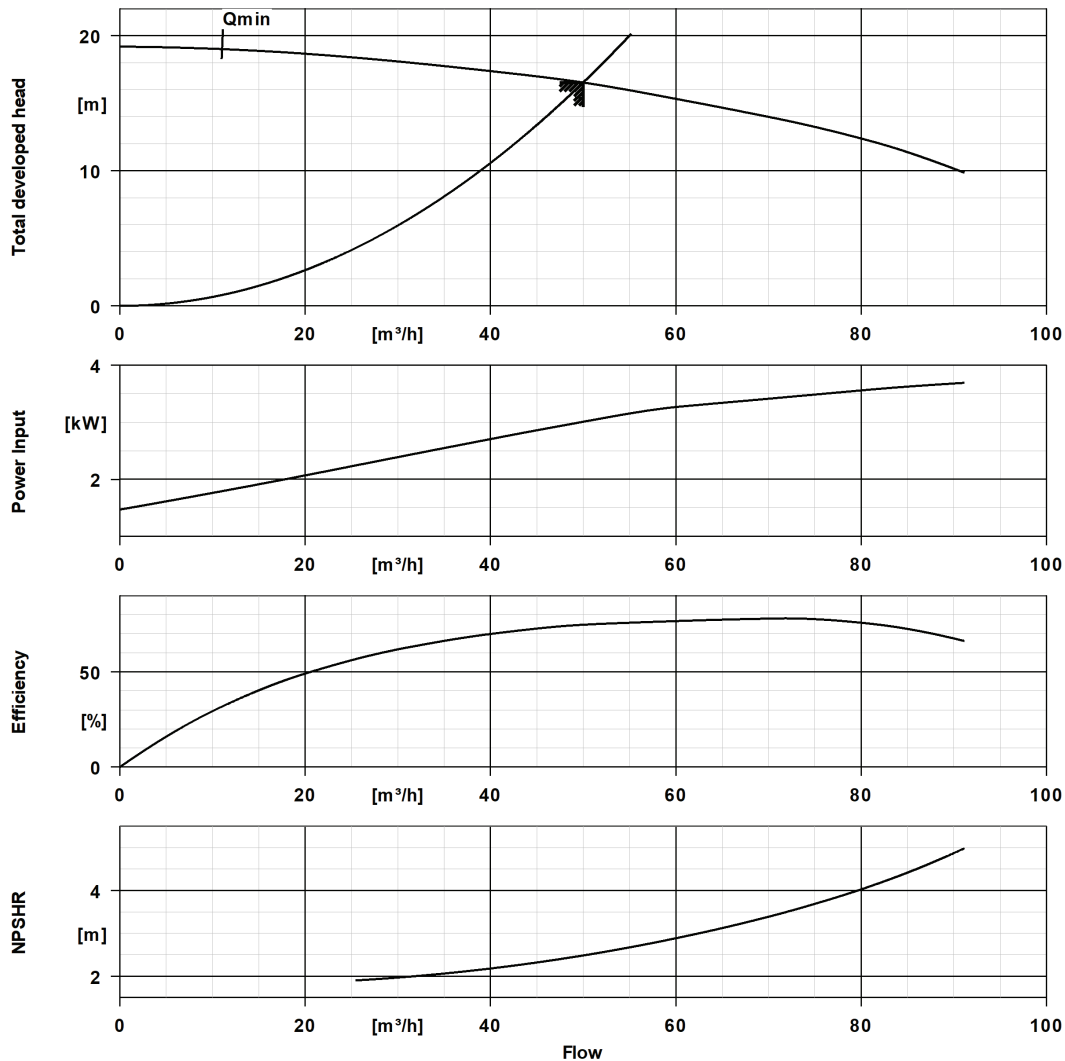
Performance Curve (Pump)



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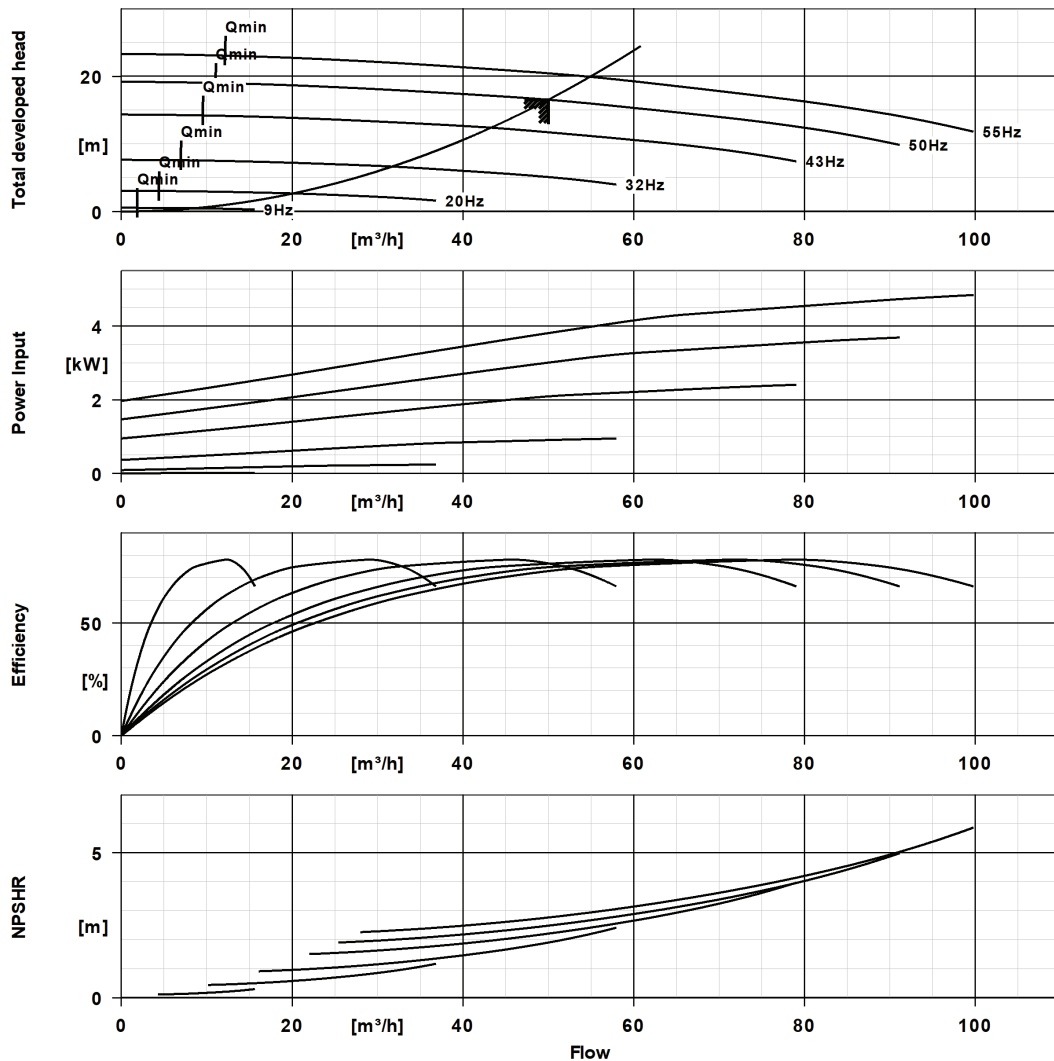
Curve Data

Pump speed	2,930 1/min	Efficiency Pump	74.8 %
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	3.01 kW
Flow rate	50 m^3/h	NPSH required	2.49 m
Head	16.5 m	Hydraulic impeller diameter	120 mm
		Hydraulic calculation according to standard/EN ISO 9906 class	Class 3B

According to EN ISO 9906, §4.4.2 (pump input power below 10 kW)

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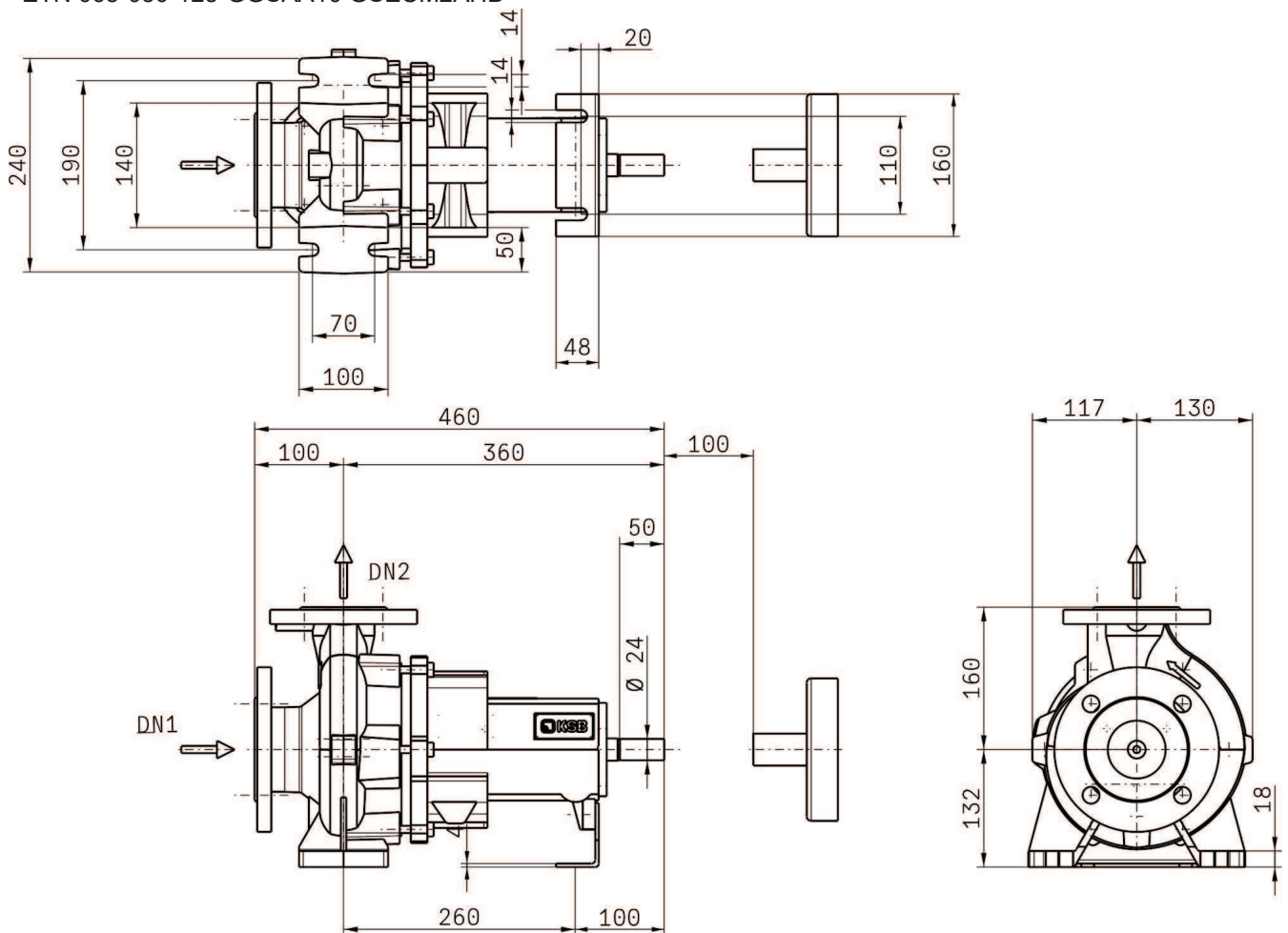


Curve Data

Density Fluid handled	998 kg/m^3	Minimum efficiency index MEI	0.7
Kinematic viscosity Fluid handled	1 mm^2/s	Hydraulic impeller diameter	120 mm
Flow rate	50 m^3/h	Head	16.53 m

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Drawing is not to scale.

Dimensions are given in mm

Motor

Motor size	112M
Rated power Motor	4 kW
Number of motor poles	2

Connections

Nominal diameter Suction nozzle	DN 65
Suction flange bolt hole pattern as per standard	EN1092-2
Nominal diameter Discharge nozzle	DN 50
Discharge flange bolt hole pattern as per standard	EN1092-2
Nominal pressure Suction nozzle	PN 16
Nominal pressure Discharge nozzle	PN 16



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Net weight

Total weight Pump	36.76 kg
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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