Technical Datasheet

Etanorm 150-125-250 GG
ETN 150-125-250-GGSL11A GSFEV4EHB

Operating point 1 Dimensioning operating point

Operating conditions (purchaser requirements)

Target flow rate	240 m³/h	Vapour pressure determined	-0.9766 bar.r
Target head	21 m	Minimum inlet pressure required	0 bar.r
Fluid	Water		
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	239.98 m³/h	Maximum power input at duty point	15.95 kW
Minimum permissible flow rate	44.74 m³/h	Maximum power input / curve	17.46 kW
Maximum permissible flow rate Pump unit	0 m³/h	Pump speed	1,476 1/min
Head	21 m	Discharge pressure-max.	2.428 bar.r
Shut-off head	24.81 m		
Efficiency Pump	85.86 %		
NPSH required	1.78 m		

Design data pump

Scope of supply Pump supplied by KSB	Pump + coupling + coupling guard + baseplate + 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	Long-coupled (basepl-mounted)	Minimum permissible fluid temperature	0 °C
Pump system design	Single-pump system	Maximum permissible fluid temperature	60 °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	267 mm	Casing wear ring design discharge-side	Flat
Impeller type	Radial, closed, multi-channel	Installation chamber Casing cover	Cylindrical (C-type cover)
Free passage	22.4 mm	Bearing bracket size / shaft unit	35
		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 150	Nominal diameter Discharge nozzle	DN 125
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 1/2 Drilled and plugged	1M Pressure gauge Discharge nozzle	Without Without
6D Fluid Filling and venting	G 1/2 Drilled and plugged	1M Pressure gauge Suction nozzle	Without Without
8B Leakage Drain	G 1/2 Drilled		

Shaft sealing

Shaft seal type	Gland packing, internal barrier fluid (Na) - P1	Shaft seal code	Code 1A
Determined pressure Seal chamber	0.14 bar.r	Shaft seal manufacturer inboard	KSB's choice
		Material Shaft seal inboard	RT-P

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	(ST)
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	1.4122+QT750		
Material Bearing bracket	EN-GJL-250/A48 CL 35B		
Material Static seal Discharge cover	DPAF DW001		

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Driver

Electric motor	Yes	Rated speed Motor	1,470 1/min
Drive concept	Electric actuator	Number of motor poles	4
Drive standard, mechanical	IEC	Rated power Motor	22 kW
Drive standard electric	IEC	Motor power reserve determined	37.9 %
Motor bearing, insulated	No		
Motor manufacturer	KSB's choice	Rated voltage Motor	400 V
Customer supply Drive	No	Motor winding	400 / 690 V
Motor construction type	IM B3 (IM1001) IEC 60034-7	Rated frequency Motor	50Hz
Motor alignment	No	Motor switching type	Delta
Motor size	180L	Rated current Motor	43.1 A
Efficiency class	IE3 (Premium)	Starting current ratio Ia/In	9
Material motor housing	AL	Cos phi at 4/4 load	0.83
Enclosure Motor	IP55 (TEFC)	Motor efficiency at 4/4 load	93 %
Thermal class	155 (F) nach IEC 60085	Motor service factor	1.13
Temperature sensor motor	3 PTC thermistors	Marking according to directive Drive	CE
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	71 dBa		
Type series Motor manufacturer	Acc. to motor manufacturer		

Installation parts / Accessories

Coupling

Coupling type	ROFLEX N
Coupling manufacturer	KTR
Nominal size Coupling	110

Coupling guard

Coupling guard type	Light (ZN79)
Nominal coupling guard size	A148
Material Coupling guard	ST+Z

Baseplate

Baseplate type	Folded plate/U-section
Material Installation part Pump	(ST)
Baseplate size	7A
Drill baseplate at motor end	Yes
Connection element type Foundation	Foundation bolts
Material Connecting element Foundation	3.6+A2A
Foundation bolt set	4xM16x250

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

Energy cost and Environmental Impact

Result

Product Carbon Footprint indication (cradle-to-gate) (CO_2eq) 1,986 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 CO_2 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 has covered 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)

Product properties

Specification of wetted parts	Manufactured without paint wetting impairment substances
Standard Test of specification of wetted parts	KSB documentation
Certificate Check of specification of wetted parts	Without

Performance Curve (Pump)

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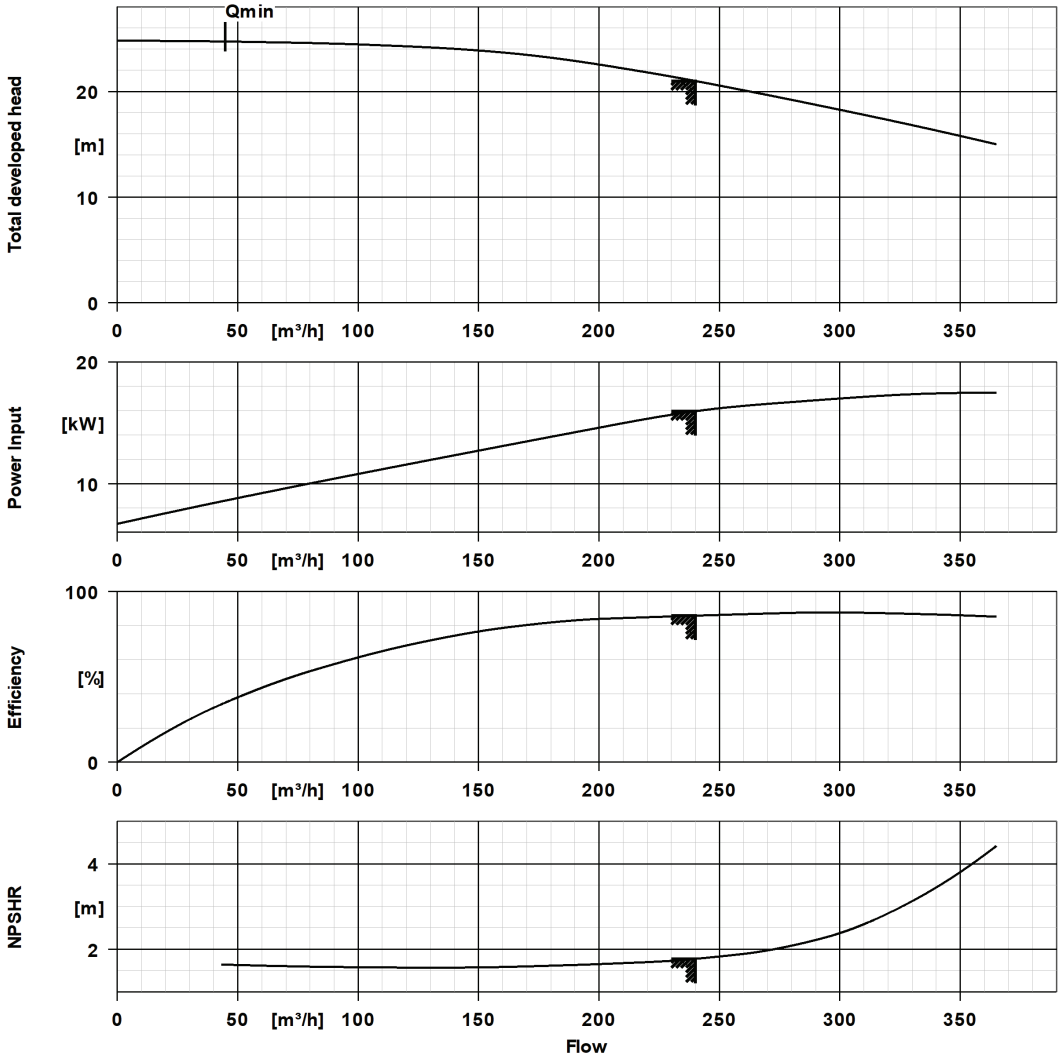

Curve Data

Pump speed	1,476 1/min	Efficiency Pump	85.9 %
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	16 kW
Flow rate	240 m³/h	NPSH required	1.78 m
Head	21 m	Hydraulic impeller diameter	267 mm
		Hydraulic calculation according to standard/class	EN ISO 9906 Class 3B

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

Installation plan

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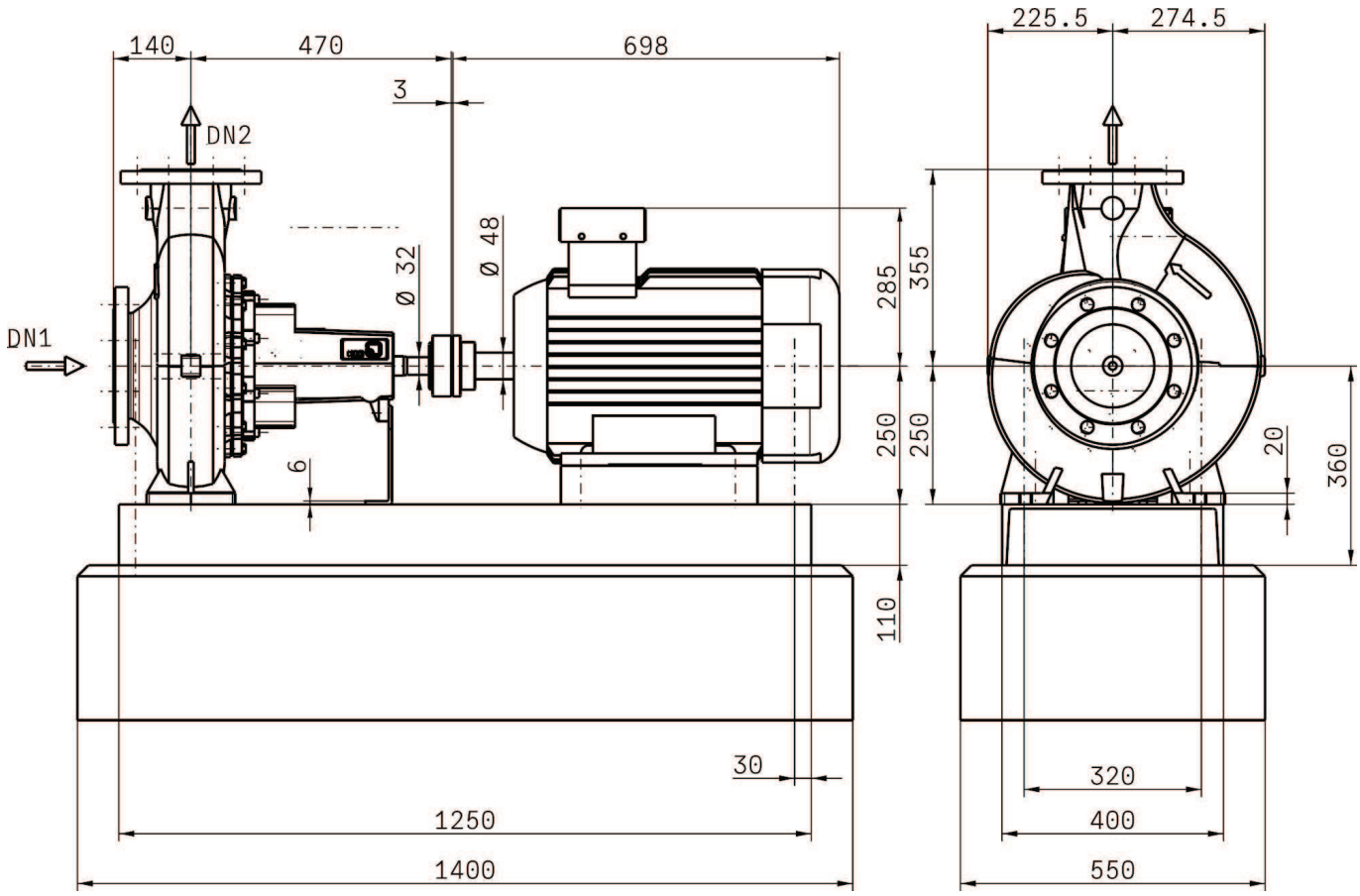

Drawing is not to scale.

Dimensions are given in mm

Motor

Electric motor	Yes
Motor manufacturer	KSB's choice
Motor size	180L
Rated power Motor	22 kW
Number of motor poles	4
Rated speed Motor	1,470 1/min
Terminal box position of motor (looking at the motor shaft)	360 °

Connections

Nominal diameter Suction nozzle	DN 150
Suction flange bolt hole pattern as per standard	EN1092-2
Nominal diameter Discharge nozzle	DN 125
Discharge flange bolt hole pattern as per standard	EN1092-2
Nominal pressure Suction nozzle	PN 16
Nominal pressure Discharge nozzle	PN 16

Installation plan

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Baseplate

Baseplate type	Folded plate/U-section
Material Installation part Pump	(ST)
Baseplate size	7A
Connection element type Foundation	Foundation bolts
Material Connecting element Foundation	3.6+A2A
Foundation bolt set	4xM16x250

Coupling

Coupling manufacturer	KTR
Coupling type	ROFLEX N
Nominal size Coupling	110

Net weight

Total weight Pump	126.4 kg
Total weight Installation parts	88.62 kg
Total weight Coupling	3.42 kg
Total weight Contact guard	0.8 kg
Total weight Drive	179 kg
Total weight Pump set	398.3 kg

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