

NK50-250/221A2F2AE-SBAQE

Grundfos pump 97831673



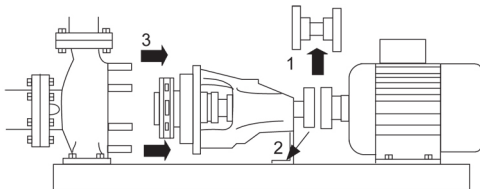
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<https://www.lenntech.com/grundfos/NKBASIS/97831673/NK-50-250-221-A2-F-A-E-BAQE.html>

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Position	Qty.	Description
	1	NK 50-250/221 A2-F-A-E-BAQE  Product No.: On request Non-self-priming, single-stage, centrifugal volute pump designed according to ISO 5199 with dimensions and rated performance according to EN 733. Flanges are PN 16 with dimensions according to EN 1092-2. The pump has an axial suction port, a radial discharge port and horizontal shaft. It is of the back pull-out design enabling removal of the coupling, bearing bracket and impeller without disturbing the motor, pump housing or pipework. The unbalanced rubber bellows seal is according to DIN EN 12756. The pump is fitted with a foot-mounted, fan-cooled asynchronous motor. Pump and motor are mounted on a common base frame. Further product details The product's minimum efficiency index (MEI) is greater or equal to 0.70. This is by the Commission Regulation (EU) considered as an indicative benchmark for best-performing water pump available on the market as from 1 January 2013. Pump and motor are mounted on a common steel base frame in accordance with ISO 3661. The back pull-out design together with a spacer coupling makes it possible to make service on the pump without dismantling the pump housing and motor from the base frame. This saves realignment of pump and motor after service. 1) Remove coupling. 2) Remove the bolts in the bearing bracket support foot. 3) Remove the bearing bracket from the pump housing.  Cast-iron parts have an epoxy-based coating made in a cathodic electro-deposition (CED) process. CED is a high-quality dip-painting process where an electrical field around the products ensures deposition of paint particles as a thin, well-controlled layer on the surface. An integral part of the process is a pretreatment. The entire process consists of these elements: 1) Alkaline-based cleaning. 2) Zinc phosphating. 3) Cathodic electro-deposition. 4) Curing to a dry film thickness 18-22 my m. The colour code for the finished product is NCS 9000/RAL 9005. Pump The pump housing has both a priming and a drain hole closed by plugs. The impeller is a closed impeller with double-curved blades with smooth surfaces. The impeller is statically balanced according to ISO 1940-1 class G6.3 and hydraulically balanced to compensate for axial thrust. Wear rings used in pump housing and for impeller are made of bronze/brass or cast iron. The pump is fitted with an unbalanced rubber bellows seal with torque transmission across the spring and around the bellows. Due to the bellows, the seal does not wear the shaft, and the axial movement is not prevented by deposits on the shaft. Primary seal: • Rotating seal ring material: carbon graphite, metal-impregnated • Stationary seat material: silicon carbide (SiC)

This material pairing has a very good corrosion resistance and is especially suitable for water up to 120 °C. However, seal life will be reduced at temperatures above 90 °C. The material pairing is not recommended for liquids containing particles as this will result in heavy wear on the SiC face.

Secondary seal material: EPDM (ethylene-propylene rubber)

EPDM has excellent resistance to hot water. EPDM is not suitable for mineral oils.

The shaft is made of stainless steel and has a diameter of 24 mm where the coupling is mounted.

The pump uses a spacer coupling between the pump and motor shaft.



Motor

The motor is a totally enclosed, fan-cooled motor with principal dimensions to IEC and DIN standards and mounting designation B3 (IM 1001). Electrical tolerances comply with IEC 60034.

The motor efficiency is classified as IE3 in accordance with IEC 60034-30-1.

The motor does not incorporate motor protection and must be connected to a motor-protective circuit breaker which can be manually reset. The motor-protective circuit breaker must be set according to the rated current of the motor (I1/1).

The motor can be connected to a variable speed drive for adjustment of pump performance to any duty point. Grundfos CUE offers a range of variable speed drives. Please find more information in Grundfos Product Center.

Technical data

Liquid:

Pumped liquid:	Water
Liquid temperature range:	0 .. 120 °C
Liquid temperature during operation:	20 °C
Density:	998.2 kg/m ³

Technical:

Rated flow:	35.4 m ³ /h
Rated head:	13.9 m
Actual impeller diameter:	221 mm
Impeller nom:	250 mm
Primary shaft seal:	BAQE
Secondary shaft seal:	NONE
Curve tolerance:	ISO9906:2012 3B

Materials:

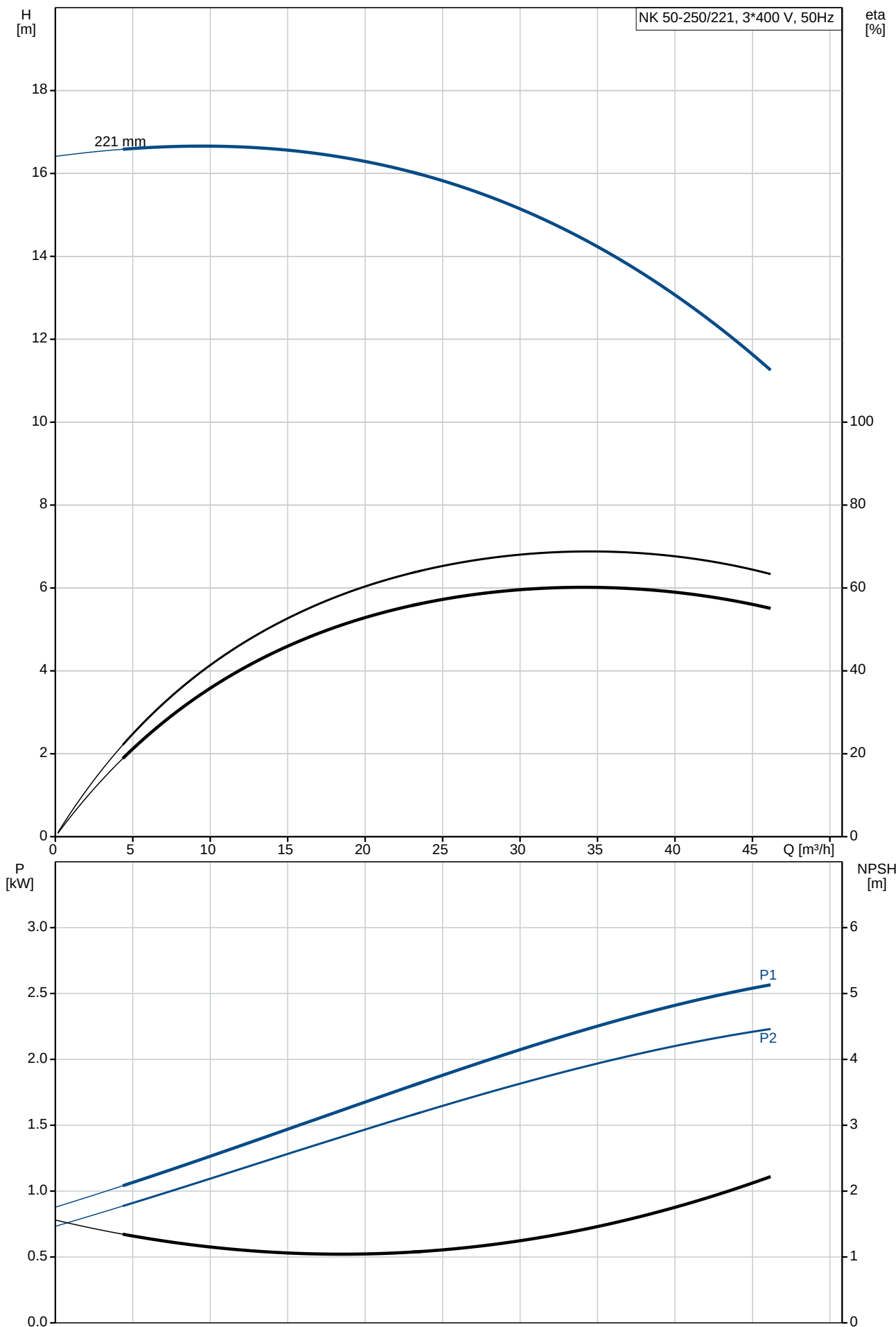
Pump housing:	Cast iron EN-GJL-250 ASTM A48-40 B
Impeller:	Cast iron EN-GJL-200 ASTM A48-30 B
Rubber:	EPDM
Wear ring mat.:	High alloy brass(CuZn34Mn3Al2

Installation:

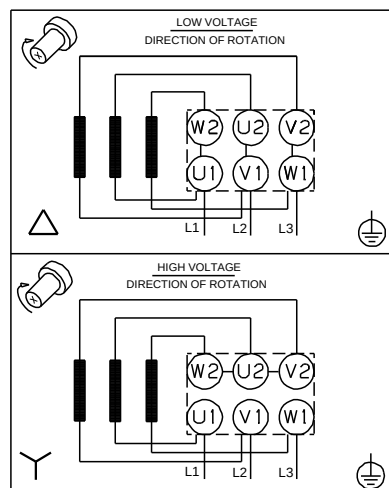
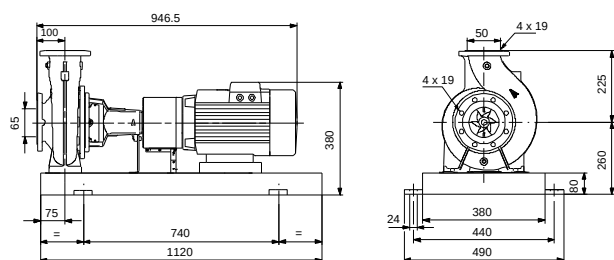
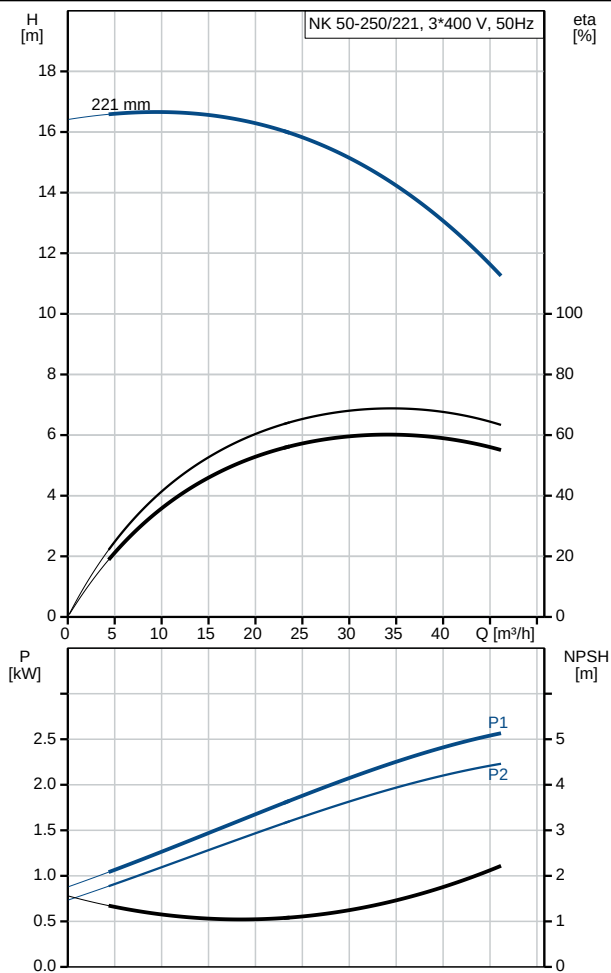
Maximum ambient temperature:	60 °C
Maximum operating pressure:	16 bar
Flange standard:	EN 1092-2
Pump inlet:	DN 65
Pump outlet:	DN 50
Pressure rating:	PN 16
Coupling type:	Spacer
Base frame:	EN / ISO

Position	Qty.	Description
		Electrical data: Motor type: 100LB IE Efficiency class: IE3 Rated power - P2: 2.2 kW Mains frequency: 50 Hz Rated voltage: 3 x 220-240D/380-415Y V Rated current: 8.50/4.90 A Starting current: 600-660 % Cos phi - power factor: 0.79-0.73 Rated speed: 1450 rpm Efficiency: IE3 86,7% Motor efficiency at full load: 86.7-87.0 % Motor efficiency at 3/4 load: 87.7 % Motor efficiency at 1/2 load: 87.6 % Number of poles: 4 Enclosure class (IEC 34-5): 55 Dust/Jetting Insulation class (IEC 85): F Lubricant type: Grease Others: Minimum efficiency index, MEI $\geq$: 0.70 ErP status: EuP Standalone/Prod. Net weight: 155 kg Gross weight: 175 kg Shipping volume: 0.44 m³

On request NK 50-250/221 A2-F-A-E-BAQE 50 Hz

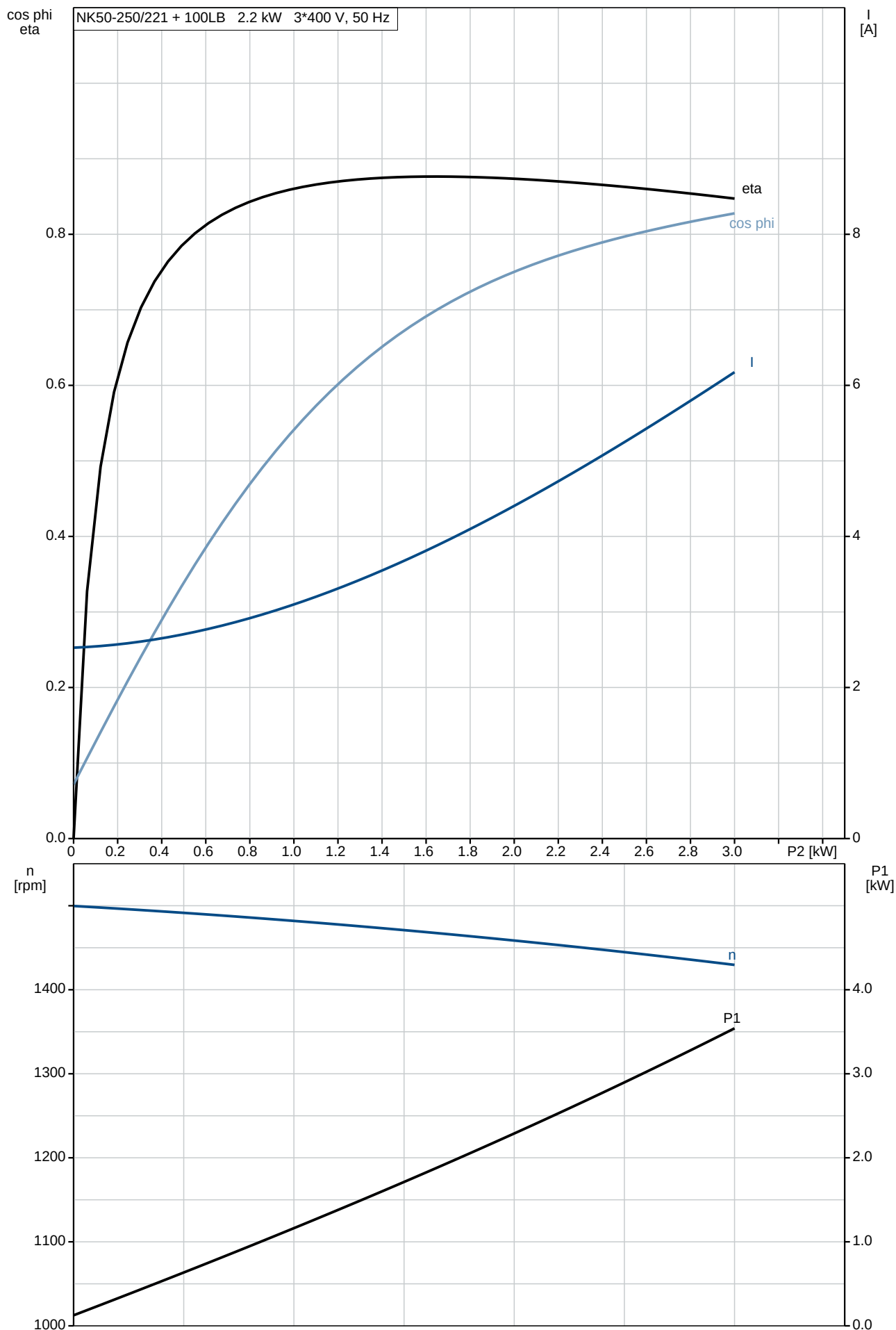


Description	Value
General information:	
Product name:	NK 50-250/221
Product No:	A2-F-A-E-BAQE
EAN number:	On request
Technical:	
Rated flow:	35.4 m³/h
Rated head:	13.9 m
Actual impeller diameter:	221 mm
Impeller nom:	250 mm
Primary shaft seal:	BAQE
Secondary shaft seal:	NONE
Shaft diameter:	24 mm
Curve tolerance:	ISO9906:2012 3B
Pump version:	A2
Materials:	
Pump housing:	Cast iron
	EN-GJL-250
	ASTM A48-40 B
Impeller:	Cast iron
	EN-GJL-200
	ASTM A48-30 B
Material code:	A
Rubber:	EPDM
Code for rubber:	E
Wear ring mat.:	High alloy brass(CuZn34Mn3Al2
Installation:	
Maximum ambient temperature:	60 °C
Maximum operating pressure:	16 bar
Flange standard:	EN 1092-2
Pump inlet:	DN 65
Pump outlet:	DN 50
Pressure rating:	PN 16
Coupling type:	Spacer
Wear ring(s):	neckring(s)
Base frame:	EN / ISO
Connect code:	F
Liquid:	
Pumped liquid:	Water
Liquid temperature range:	0 .. 120 °C
Liquid temperature during operation:	20 °C
Density:	998.2 kg/m³
Electrical data:	
Motor type:	100LB
IE Efficiency class:	IE3
Rated power - P2:	2.2 kW
Mains frequency:	50 Hz
Rated voltage:	3 x 220-240D/380-415Y V
Rated current:	8.50/4.90 A
Starting current:	600-660 %
Cos phi - power factor:	0.79-0.73
Rated speed:	1450 rpm
Efficiency:	IE3 86,7%
Motor efficiency at full load:	86.7-87.0 %
Motor efficiency at 3/4 load:	87.7 %
Motor efficiency at 1/2 load:	87.6 %
Number of poles:	4
Enclosure class (IEC 34-5):	55 Dust/Jetting
Insulation class (IEC 85):	F
Motor protec:	NONE
Motor No:	87270396
Lubricant type:	Grease
Others:	

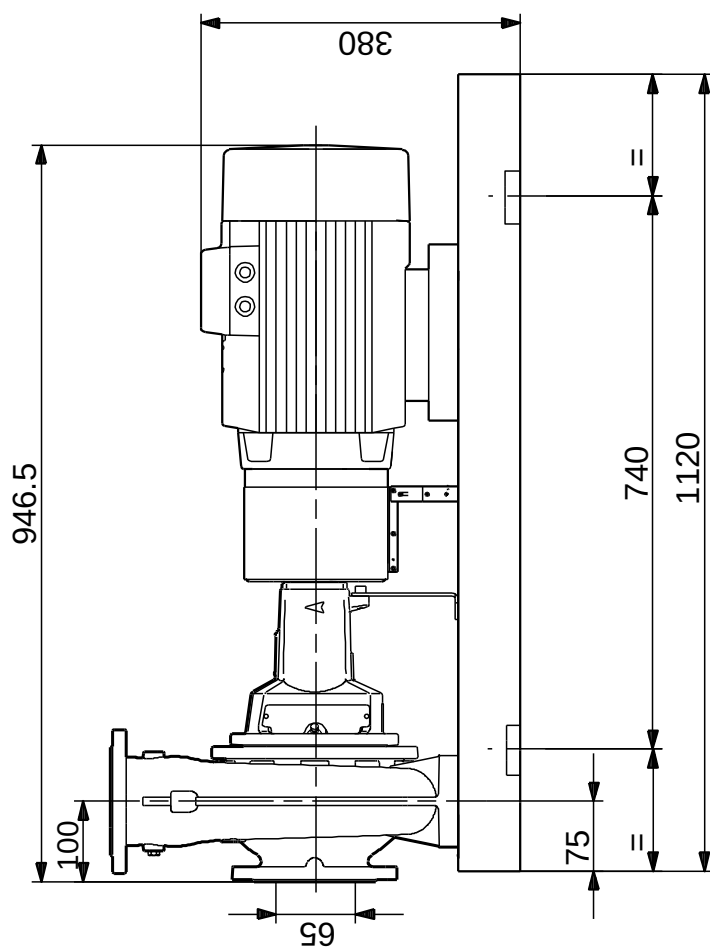
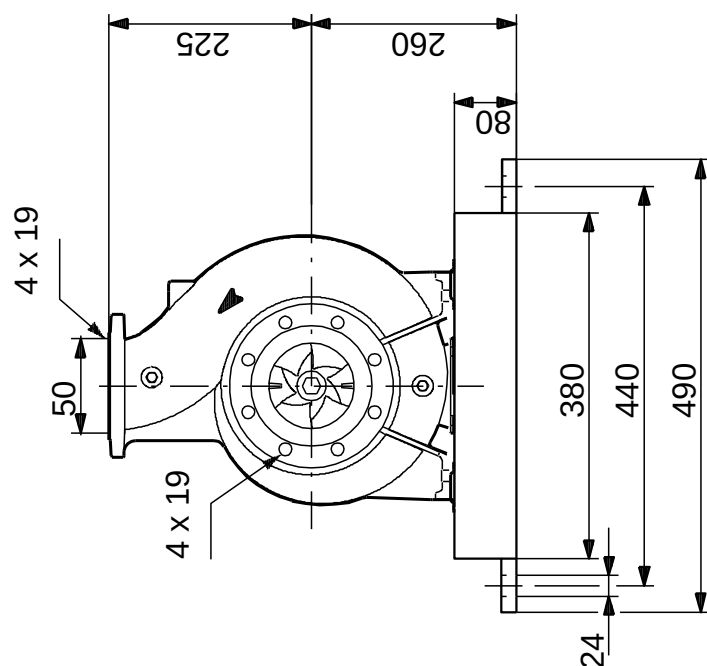


Description	Value
Minimum efficiency index, MEI ≥:	0.70
ErP status:	EuP Standalone/Prod.
Net weight:	155 kg
Gross weight:	175 kg
Shipping volume:	0.44 m ³

On request NK 50-250/221 A2-F-A-E-BAQE 50 Hz



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Note! All units are in [mm] unless others are stated.
Disclaimer: This simplified dimensional drawing does not show all details.

Exploded view



Sectional drawing (TM058200 for TPE2,TPE3)



TM058200

Exploded view (TM057026 for MGE model H/I)



Parts list NK 50-250/221, Product No. On request
Valid from 1.3.2011 (1109)

Pos	Description	Annotation	Données de classification	Référence	Quantité	Unité
+	Motor				1	pcs
-	Coupling cpl.				1	pcs
89.b	Socket set screw		Length (mm): 8 Thread: M6		1	
89.d	Hex socket head cap screw		Length (mm): 16 Thread: M6		6	
89.p	Coupling female				1	
89o	Coupling part spacer side				6	
89o	Coupling part spacer side				1	
89r	Spacer sleeve				1	
89s	Spacer ring				1	
-	Nut				1	pcs
66	Washer				1	
66a	Spring lock washer				1	
67	Nut		Thread: M14		1	
-	Pump housing cpl.				1	pcs
6	Pump housing				1	
36	Nut		Thread: M10		10	
- 7	Coupling guard cpl.				1	pcs
- 7	Coupling guard cpl.				1	
7c	Spacer f/coupling guard				4	
7e	Hex socket head cap screw				3	
94	Lock nut		Thread: M6		2	
7b	Retainer for coupling guard				1	
7k	Hex socket head cap screw		Length (mm): 10 Thread: M6		4	
- 7.d	Foot for coupling guard				1	pcs
7d	Foot for coupling guard				1	
7h	Hex socket head cap screw				2	
7l	Support f/coupling guard foot				1	
49	Impeller				1	pcs
72a	O-ring		Diameter: 253,6 Material type: EPDM Thickness: 3,53		1	pcs
- 77	Cover				1	pcs
36	Nut		Thread: M10		6	
77	Cover				1	
- 86	Bearing bracket				1	pcs
28a	Hex head screw		Length (mm): 25 Thread: M12		1	
53.b	Spacer ring				1	
54	Ball bearing				2	
54a	O-ring		Diameter: 71,5 Material type: EPDM Thickness: 3		2	
77a	Pan head screw				4	
86	Bearing bracket				1	
156a	Bearing cover				2	
159a	V-ring				2	
187	Retaining ring				2	
- 90	Base plate				1	pcs
	Washer				4	
	Washer				4	
	Base plate				1	
	Support rail				2	
	Support block				2	
	Hex head bolt				4	
7h	Hex head screw		Length (mm): 16 Thread: M8		2	

Pos	Description	Annotation	Données de classification	Référence	Quantité	Unité
28	Hex head screw		Length (mm): 30		4	
			Thread: M12			
28	Hex head screw		Length (mm): 30		2	
			Thread: M12			
66	Washer				2	
66	Washer				2	
105	Shaft seal		Material type: BAQE		1	pcs

Disclaimer: The information about the Grundfos pump in this document may be outdated.

Data may be subject to alterations without further notice.

Please contact us to verify the data above is still accurate/up-to-date.

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