

## NBE100-200/219 A-F2-A-GQQE

Grundfos pump 96744084



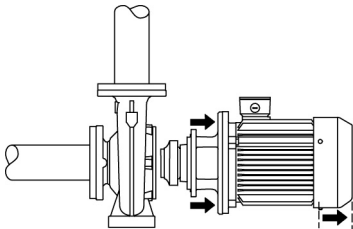
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<https://www.lenntech.com/grundfos/NBE00/96744084/NBE-100-200-219-A-F2-A-GQQE.html>

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| Position | Qty. | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|----------|------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|          | 1    | <p><b>NBE 100-200/219 A-F2-A-GQQE</b></p>  <p>Product No.: On request</p> <p>Non-self-priming, single-stage, centrifugal volute pump designed according to ISO 5199 with dimensions and rated performance according to EN 733 (10 bar). Flanges are PN 16 with dimensions according to EN 1092-2. The pump has an axial suction port, radial discharge port, horizontal shaft and a back pull-out design enabling removal of the motor, motor stool, cover and impeller without disturbing the pump housing or pipework.</p> <p>The unbalanced rubber bellows shaft seal with reduced seal face is according to DIN EN 12756. The pump is close-coupled to a fan-cooled asynchronous motor. The motor includes a frequency converter and PI controller in the motor terminal box. This enables continuously variable control of the motor speed, which again enables adaptation of the performance to a given requirement.</p> <p><b>Further product details</b></p> <p>An external sensor can be connected if controlled pump operation is required for flow, differential pressure or temperature control.</p> <p>An operating panel on the motor terminal box enables setting of required setpoint as well as setting of pump to "Min." or "Max." operation or to "Stop". The operating panel has indicator lights for "Operation" and "Fault".</p> <p>Communication with the pump is possible by means of Grundfos GO Remote (accessory). The remote control enables further settings as well as reading out of a number of parameters such as "Actual value", "Speed", "Power input" and total "Power consumption".</p> <p>The back pull-out design means that the pump can be serviced by a single person without disturbing the pump housing or pipe work.</p>  <p>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:</p> <ol style="list-style-type: none"> <li>1) Alkaline-based cleaning.</li> <li>2) Zinc phosphating.</li> <li>3) Cathodic electro-deposition.</li> <li>4) Curing to a dry film thickness 18-22 my m.</li> </ol> <p>The colour code for the finished product is NCS 9000/RAL 9005.</p> <p><b>Pump</b></p> <p>The pump housing has both a priming and a drain hole closed by plugs.</p> <p>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.</p> <p>Wear rings used in pump housing and for impeller are made of bronze/brass or cast iron.</p> <p>Motor stool and pump cover are made of cast iron (EN-GJL-250). Coupling guards are fitted to the motor stool. The pump cover is provided with a manual air vent screw for venting of the pump housing and the shaft seal chamber.</p> |

The shaft seal is an unbalanced rubber bellows seal with reduced seal face. Due to the bellows, the seal does not wear the shaft, and the axial movement is not prevented by deposits on the shaft. The narrow seal face makes the seal perform well in high-viscosity and anti-freezing liquids.

Primary seal:

- Rotating seal ring material: silicon carbide (SiC)
- Stationary seat material: silicon carbide (SiC)

This material pairing is used where higher corrosion resistance is required. The high hardness of this material pairing offers good resistance against abrasive particles.

Secondary seal material: EPDM (ethylene-propylene rubber)

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

## Motor

The motor is a totally enclosed, fan-cooled motor with principal dimensions to IEC and DIN standards. Electrical tolerances comply with IEC 60034.

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

The motor requires no external motor protection. The motor control unit incorporates protection against slow- and quick-rising temperatures, e.g. constant overload and stalled conditions.

The terminal box holds terminals for these connections:

- pump start/stop input (potential-free contact)
- remote setpoint setting via analog signal, 0-10 V, 0(4)-20 mA
- 10 V voltage supply for setpoint potentiometer, I<sub>max</sub> = 5 mA
- one analog sensor input, 0-10 V, 0(4)-20 mA
- 24 V voltage supply for sensor, I<sub>max</sub> = 40 mA
- one digital input
- two potential-free fault signal relays with changeover contact, reporting "Fault", "Operation" or "Ready"
- RS-485 GENibus connection
- interface for Grundfos CIM fieldbus module.

## Technical data

### Liquid:

Pumped liquid: Water  
Liquid temperature range: -25 .. 60 °C  
Liquid temperature during operation: 20 °C  
Density: 998.2 kg/m<sup>3</sup>

### Technical:

Rated flow: 172 m<sup>3</sup>/h  
Rated head: 13.7 m  
Actual impeller diameter: 219 mm  
Impeller nom: 200 mm  
Primary shaft seal: GQQE  
Secondary shaft seal: NONE  
Curve tolerance: ISO9906:2012 3B

### Materials:

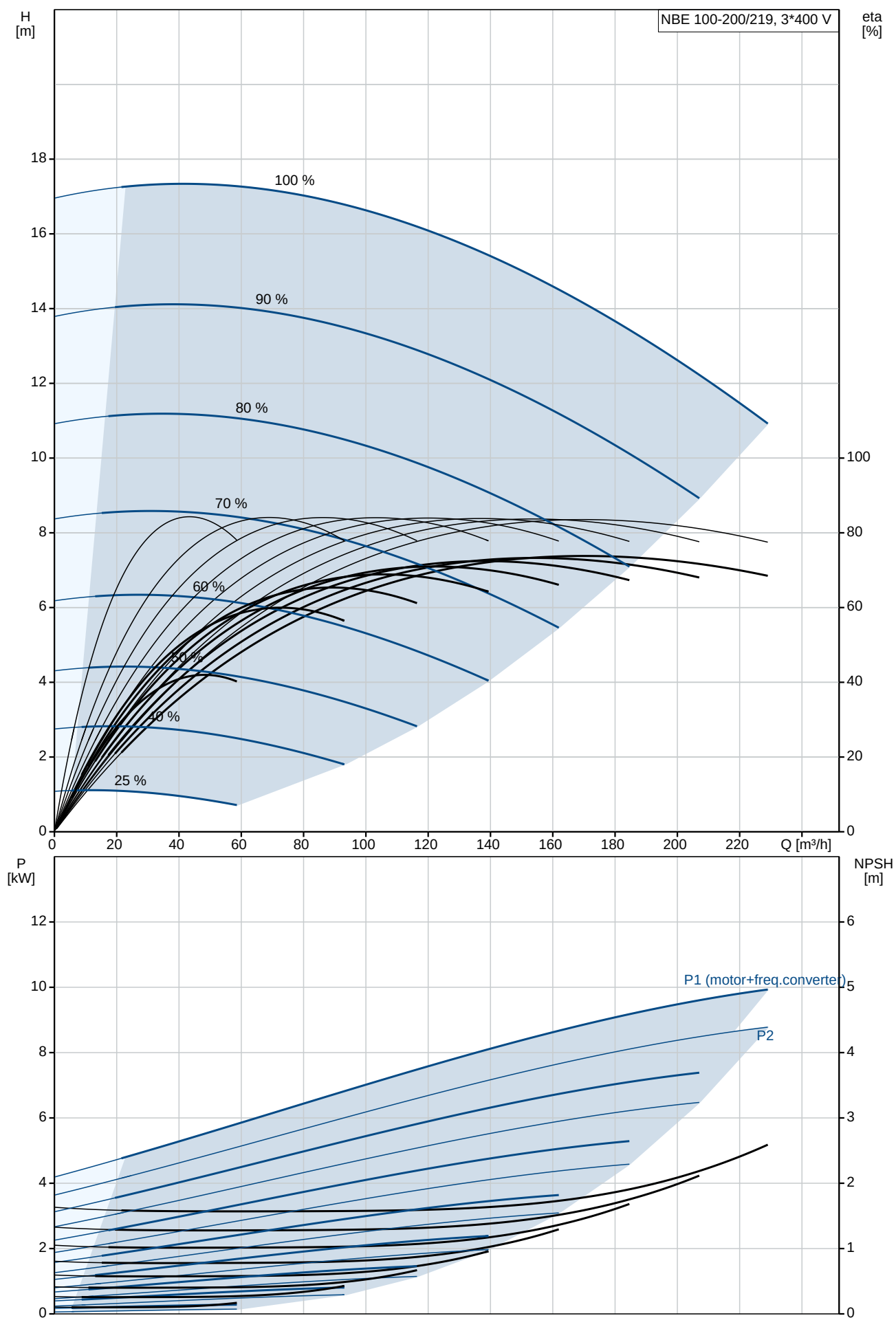
Pump housing: Cast iron  
EN-GJL-250  
ASTM A48-40 B  
Impeller: Cast iron  
EN-GJL-200  
ASTM A48-30 B  
Shaft: Stainless steel  
1.4301  
304  
Wear ring mat.: High alloy brass(CuZn34Mn3Al2

### Installation:

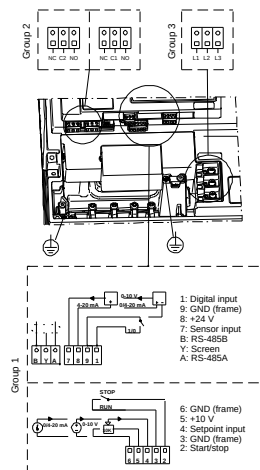
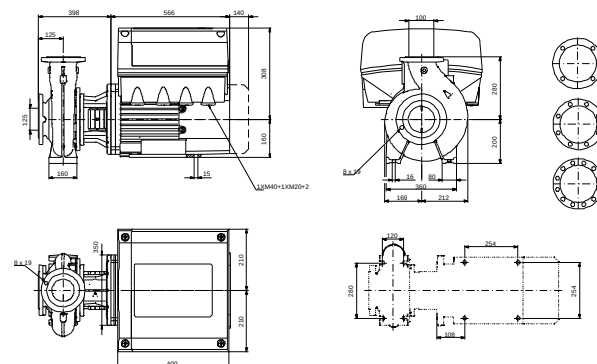
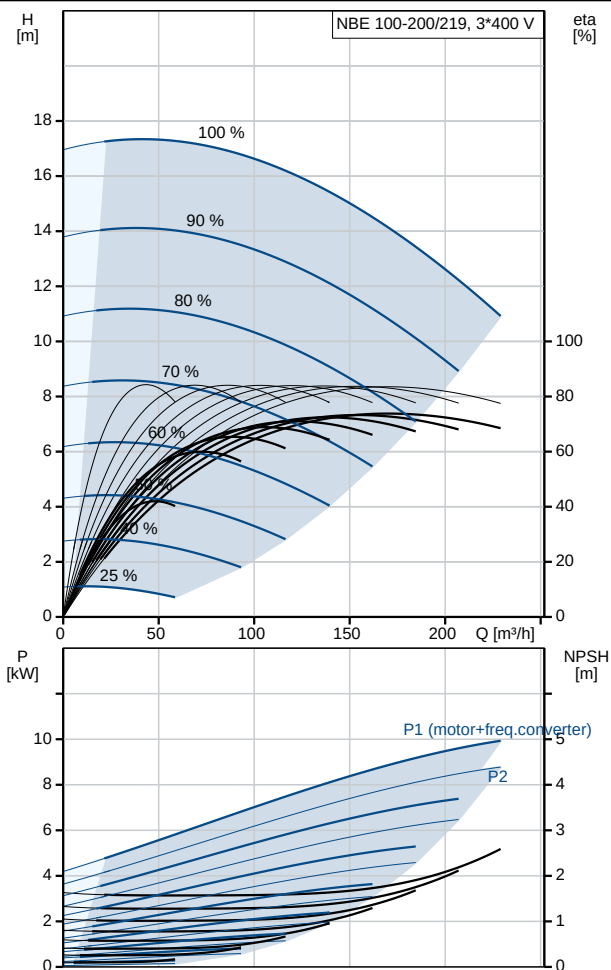
Maximum ambient temperature: 40 °C  
Maximum operating pressure: 16 bar  
Flange standard: EN 1092-2

| Position | Qty. | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|----------|------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|          |      | Pump inlet: DN 125<br>Pump outlet: DN 100<br>Pressure rating: PN 16<br><br><b>Electrical data:</b><br>Motor type: 160LB<br>IE Efficiency class: IE3<br>Rated power - P2: 11 kW<br>Mains frequency: 50 Hz<br>Rated voltage: 3 x 380-480 V<br>Rated current: 22.0-17.8 A<br>Cos phi - power factor: 0.91-0.90<br>Rated speed: 240-1750 rpm<br>Efficiency: IE3 91,4%<br>Number of poles: 4<br>Enclosure class (IEC 34-5): IP55<br>Insulation class (IEC 85): F<br>Lubricant type: Grease<br><br><b>Others:</b><br>Minimum efficiency index, MEI $\geq$ : 0.65<br>ErP status: EuP Standalone/Prod.<br>Net weight: 204 kg<br>Gross weight: 226 kg<br>Shipping volume: 0.444 m <sup>3</sup> |

# On request NBE 100-200/219 A-F2-A-GQQE 50 Hz

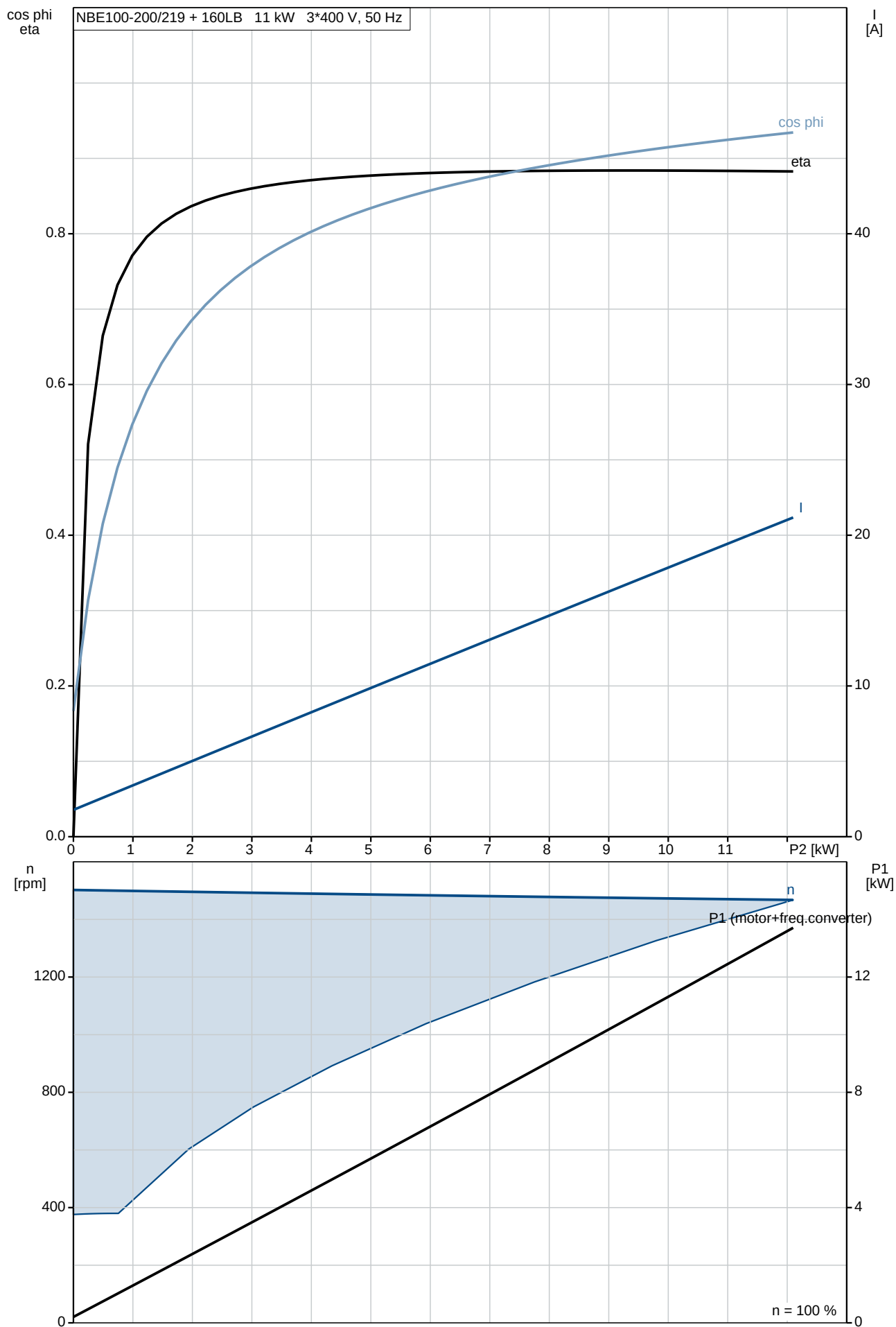


| Description                          | Value                         |
|--------------------------------------|-------------------------------|
| <b>General information:</b>          |                               |
| Product name:                        | NBE 100-200/219               |
| Product No:                          | A-F2-A-GQQE                   |
| EAN number:                          | On request                    |
| <b>Technical:</b>                    |                               |
| Rated flow:                          | 172 m³/h                      |
| Rated head:                          | 13.7 m                        |
| Actual impeller diameter:            | 219 mm                        |
| Impeller nom:                        | 200 mm                        |
| Primary shaft seal:                  | GQQE                          |
| Secondary shaft seal:                | NONE                          |
| Shaft diameter:                      | 32 mm                         |
| Curve tolerance:                     | ISO9906:2012 3B               |
| Pump version:                        | A                             |
| <b>Materials:</b>                    |                               |
| Pump housing:                        | Cast iron                     |
|                                      | EN-GJL-250                    |
|                                      | ASTM A48-40 B                 |
| Impeller:                            | Cast iron                     |
|                                      | EN-GJL-200                    |
|                                      | ASTM A48-30 B                 |
| Shaft:                               | Stainless steel               |
|                                      | 1.4301                        |
|                                      | 304                           |
| Material code:                       | A                             |
| Wear ring mat.:                      | High alloy brass(CuZn34Mn3Al2 |
| <b>Installation:</b>                 |                               |
| Maximum ambient temperature:         | 40 °C                         |
| Maximum operating pressure:          | 16 bar                        |
| Flange standard:                     | EN 1092-2                     |
| Pump inlet:                          | DN 125                        |
| Pump outlet:                         | DN 100                        |
| Pressure rating:                     | PN 16                         |
| Wear ring(s):                        | neckring(s)                   |
| Connect code:                        | F2                            |
| <b>Liquid:</b>                       |                               |
| Pumped liquid:                       | Water                         |
| Liquid temperature range:            | -25 .. 60 °C                  |
| Liquid temperature during operation: | 20 °C                         |
| Density:                             | 998.2 kg/m³                   |
| <b>Electrical data:</b>              |                               |
| Motor type:                          | 160LB                         |
| IE Efficiency class:                 | IE3                           |
| Rated power - P2:                    | 11 kW                         |
| Mains frequency:                     | 50 Hz                         |
| Rated voltage:                       | 3 x 380-480 V                 |
| Rated current:                       | 22.0-17.8 A                   |
| Cos phi - power factor:              | 0.91-0.90                     |
| Rated speed:                         | 240-1750 rpm                  |
| Efficiency:                          | IE3 91,4%                     |
| Number of poles:                     | 4                             |
| Enclosure class (IEC 34-5):          | IP55                          |
| Insulation class (IEC 85):           | F                             |
| Motor protec:                        | YES                           |
| Motor No:                            | 86906207                      |
| Mount. design. acc. IEC 34-7:        | IM B35                        |
| Lubricant type:                      | Grease                        |
| <b>Controls:</b>                     |                               |
| Control panel:                       | Standard                      |
| Function Module:                     | PUMP I/O                      |
| <b>Others:</b>                       |                               |
| Minimum efficiency index, MEI ≥:     | 0.65                          |



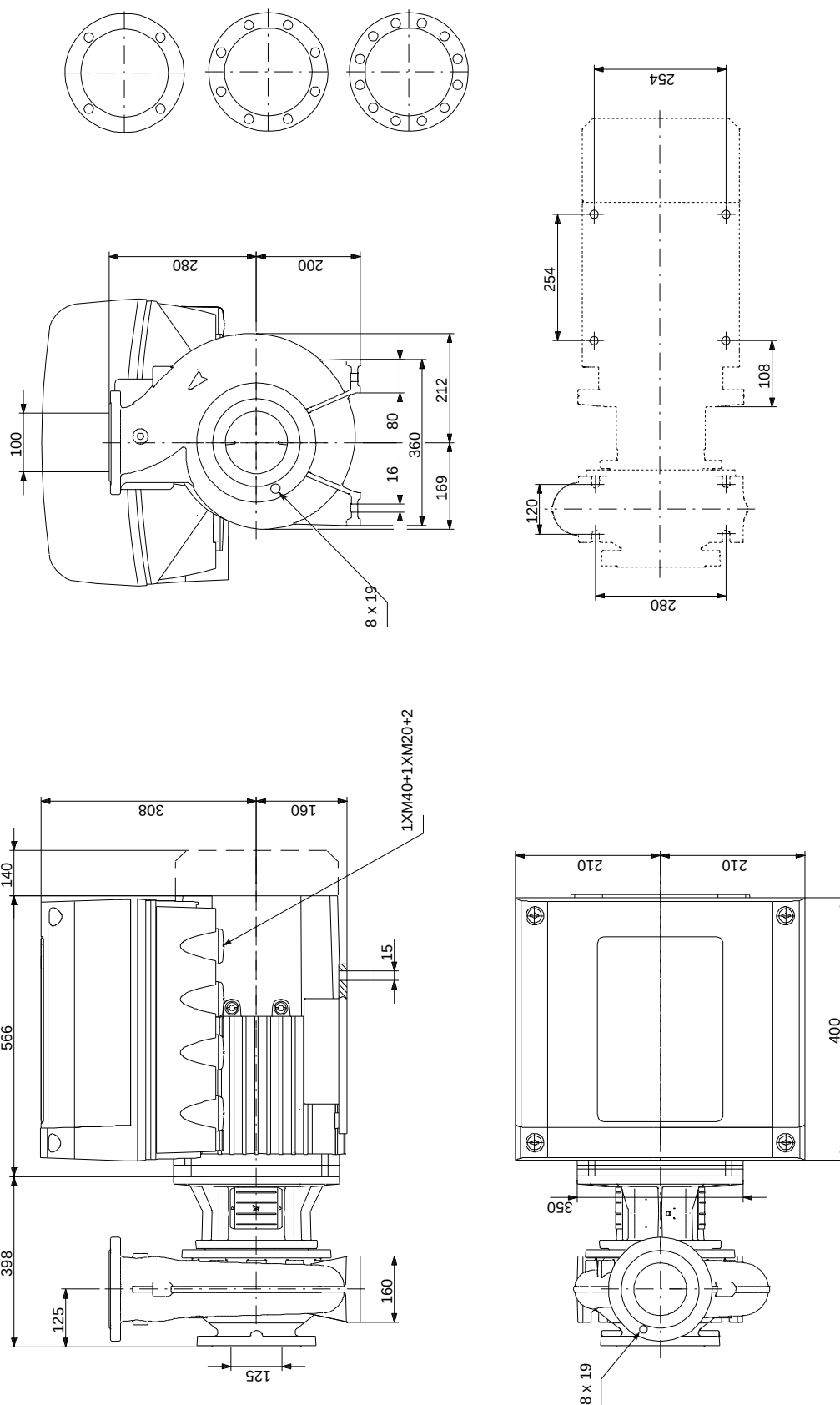
| Description      | Value                |
|------------------|----------------------|
| ErP status:      | EuP Standalone/Prod. |
| Net weight:      | 204 kg               |
| Gross weight:    | 226 kg               |
| Shipping volume: | 0.444 m <sup>3</sup> |
| Config. file no: | 97912868             |

# On request NBE 100-200/219 A-F2-A-GQQE 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 NBE 100-200/219, Product No. On request**  
**Valid from 30.4.2012 (1218)**

| Pos  | Description        | Annotation | Données de classification | Référence | Quantité | Unité |
|------|--------------------|------------|---------------------------|-----------|----------|-------|
| +    | Motor              |            |                           |           | 1        | pcs   |
| -    | Nut                |            |                           |           | 1        | pcs   |
| 66   | Washer             |            | Designation: DIN 125 A2   |           | 1        |       |
|      |                    |            | Internal diameter: 19     |           |          |       |
|      |                    |            | Outer diameter: 34        |           |          |       |
|      |                    |            | Thickness: 3              |           |          |       |
| 66a  | Spring lock washer |            |                           |           | 1        |       |
| 67   | Nut                |            | Thread: M18               |           | 1        |       |
| -    | Motor stool cpl.   |            |                           |           | 1        | pcs   |
| 1a   | Motor stool        |            |                           |           | 1        |       |
| 7    | Coupling guard     |            |                           |           | 2        |       |
| 77a  | Pan head screw     |            |                           |           | 4        |       |
| -    | Cover cpl.         |            |                           |           | 1        | pcs   |
| 77   | Cover              |            |                           |           | 1        |       |
| -    | Pump housing cpl.  |            |                           |           | 1        | pcs   |
| 6    | Pump housing       |            |                           |           | 1        |       |
| 36   | Nut                |            | Thread: M10               |           | 8        |       |
| -    | Stub shaft         |            |                           |           | 1        | pcs   |
| 9    | Socket set screw   |            | Length (mm): 6            |           | 2        |       |
|      |                    |            | Thread: M8                |           |          |       |
| 11   | Parallel key       |            |                           |           | 1        |       |
| 51   | Pump shaft         |            |                           |           | 1        |       |
| 49   | Impeller           |            |                           |           | 1        | pcs   |
| 72.a | O-ring             |            | Diameter: 221,84          |           | 1        | pcs   |
|      |                    |            | Material type: EPDM       |           |          |       |
|      |                    |            | Thickness: 3,53           |           |          |       |
| 105  | Shaft seal         |            | Material type: GQQE       |           | 1        | pcs   |
| 105b | Spacer             |            |                           |           | 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.*

*All information is copyright Grundfos.*



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