

CRNE45-2-1 A-F-G-E-HQQE 3x380-500 60 HZ

Grundfos pump 99072032



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<https://www.lenntech.com/grundfos/CRNE45/99072032/CRNE-45-2-1-A-F-G-E-HQQE.html>

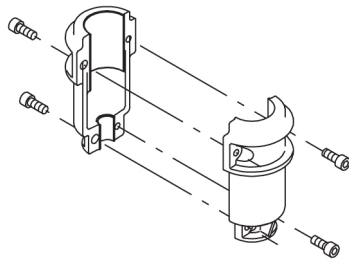
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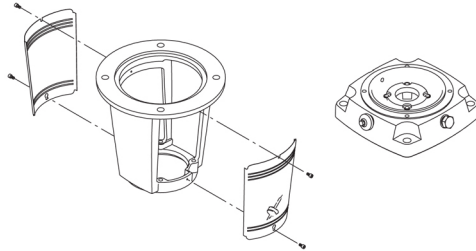
fax. +31 152 616 289

Position	Qty.	Description
	1	CRNE 45-2-1 A-F-A-E-HQQE  Product No.: On request Vertical, multistage centrifugal pump with inlet and outlet ports on same the level (inline). Pump materials in contact with the liquid are in high-grade stainless steel. A cartridge shaft seal ensures high reliability, safe handling, and easy access and service. Power transmission is via a rigid split coupling. Pipe connection is via DIN flanges. The pump is fitted with a 3-phase, fan-cooled, permanent-magnet, synchronous motor. The motor efficiency is classified as IE5 in accordance with IEC 60034-30-2. 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. 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 Grundfos Eye indicator on the operating panel provides visual indication of pump status: • "Power on": Motor is running (rotating green indicator lights) or not running (permanently green indicator lights) • "Warning": Motor is still running (rotating yellow indicator lights) or has stopped (permanently yellow indicator lights) • "Alarm": Motor has stopped (flashing red indicator lights). 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". Further product details An external sensor can be connected if controlled pump operation based on for example flow, differential pressure or temperature is required. 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 Grundfos Eye indicator on the operating panel provides visual indication of pump status: • "Power on": Motor is running (rotating green indicator lights) or not running (permanently green indicator lights) • "Warning": Motor is still running (rotating yellow indicator lights) or has stopped (permanently yellow indicator lights) • "Alarm": Motor has stopped (flashing red indicator lights). 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". Steel, cast iron and aluminium components 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

A long split coupling connects the pump and motor shaft. It is enclosed in the motor stool by means of two coupling guards. The long coupling makes it possible to replace the shaft seal without removing the motor from the pump.



The motor stool connects the pump head and motor. The pump head has a combined 1/2" priming plug and vent screw.



The pump is fitted with a balanced O-ring seal unit with a rigid torque-transmission system. This seal type is assembled in a cartridge unit which makes replacement safe and easy. Due to the balancing, this seal type is suitable for high-pressure applications. The cartridge construction also protects the pump shaft from possible wear from a dynamic O-ring between pump shaft and shaft seal.

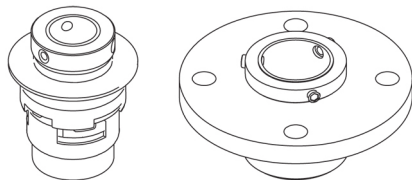
Primary seal:

- 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)

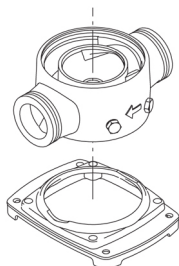
EPDM has excellent resistance to hot water. EPDM is not suitable for mineral oils.



The shaft seal is retained in the pump head by a cover and screws. It can be replaced without removing the motor.

The chambers and impellers are made of stainless-steel sheet. The chambers are provided with a PTFE neck ring offering improved sealing and high efficiency. The impellers have smooth surfaces, and the shape of the blades ensure a high efficiency.

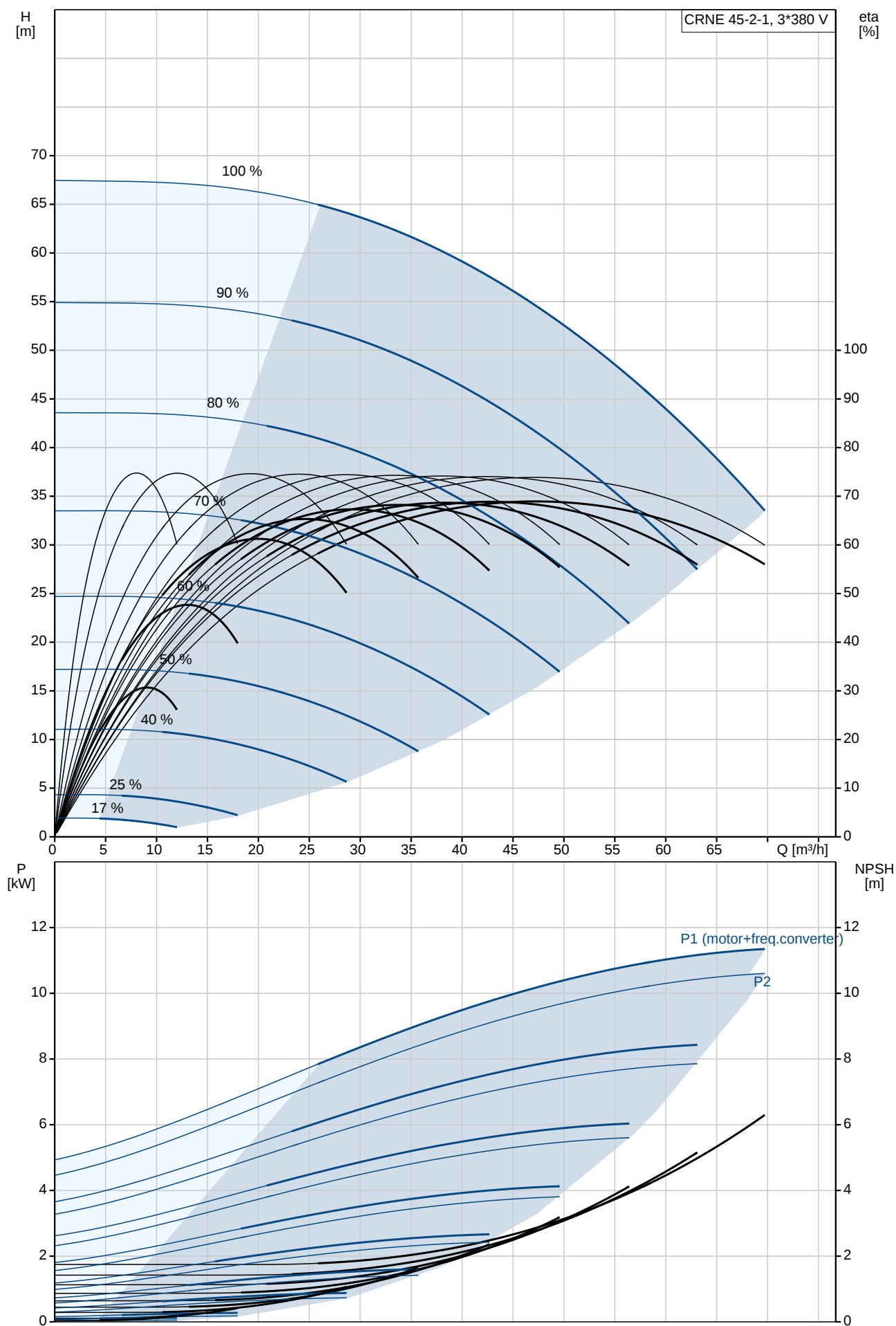
The pump has a stainless-steel base mounted on a separate base plate. The base and base plate are kept in position by the tension of the staybolts which hold the pump together. Both the inlet and the outlet side of the base have two pressure gauge tappings. The pump is secured to the foundation by four bolts through the base plate. The flanges are fastened to the base by means of locking rings.



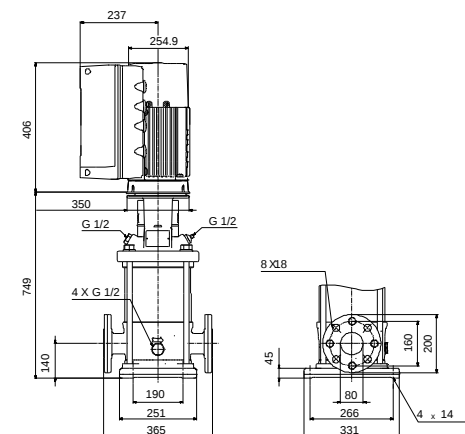
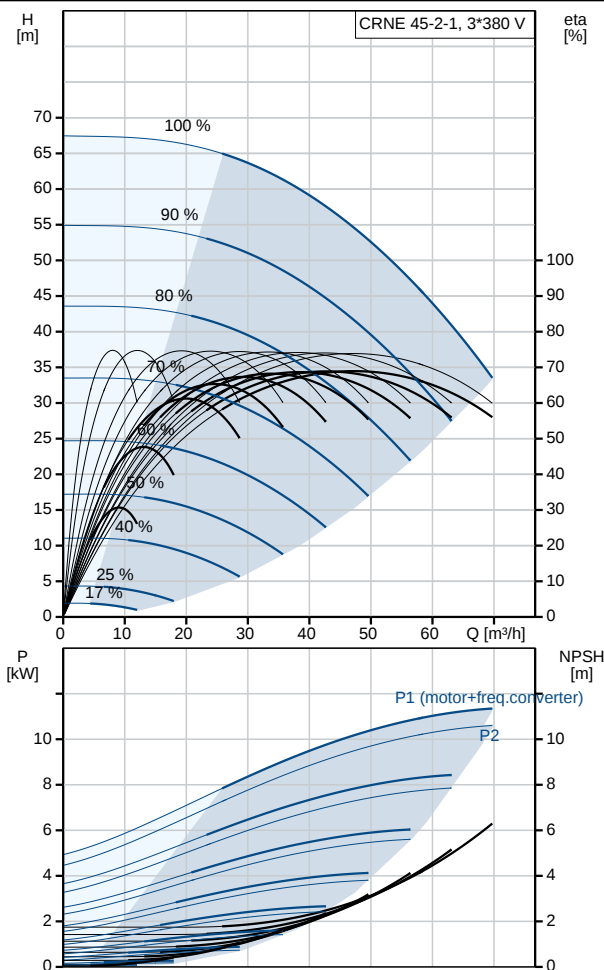
Position	Qty.	Description																																																																														
		Motor The motor is a totally enclosed, fan-cooled motor with principal dimensions to IEC and DIN standards. The motor is flange-mounted with free-hole flange (FF). Motor-mounting designation in accordance with IEC 60034-7: IM B 5 (Code I) / IM 3001 (Code II). Electrical tolerances comply with IEC 60034. The motor efficiency is classified as IE5 in accordance with IEC 60034-30-2. 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. Technical data Controls: <table><tr><td>Frequency converter:</td><td>Built-in</td></tr><tr><td>Pressure sensor:</td><td>N</td></tr></table> Liquid: <table><tr><td>Pumped liquid:</td><td>Water</td></tr><tr><td>Liquid temperature range:</td><td>-40 .. 120 °C</td></tr><tr><td>Liquid temperature during operation:</td><td>20 °C</td></tr><tr><td>Density:</td><td>998.2 kg/m³</td></tr></table> Technical: <table><tr><td>Rated flow:</td><td>54 m³/h</td></tr><tr><td>Rated head:</td><td>51.7 m</td></tr><tr><td>Pump orientation:</td><td>Vertical</td></tr><tr><td>Shaft seal arrangement:</td><td>Single</td></tr><tr><td>Code for shaft seal:</td><td>HQQE</td></tr><tr><td>Approvals on nameplate:</td><td>CE, EAC,ACS</td></tr><tr><td>Curve tolerance:</td><td>ISO9906:2012 3B</td></tr></table> Materials: <table><tr><td>Base:</td><td>Stainless steel EN 1.4408 AISI 316</td></tr><tr><td>Impeller:</td><td>Stainless steel EN 1.4401 AISI 316</td></tr><tr><td>Bearing:</td><td>SIC</td></tr><tr><td>Support bearing:</td><td>Graflon</td></tr></table> Installation: <table><tr><td>Maximum ambient temperature:</td><td>50 °C</td></tr><tr><td>Maximum operating pressure:</td><td>16 bar</td></tr><tr><td>Max pressure at stated temp:</td><td>16 bar / 120 °C 16 bar / -40 °C</td></tr><tr><td>Type of connection:</td><td>DIN</td></tr><tr><td>Size of inlet connection:</td><td>DN 80</td></tr><tr><td>Size of outlet connection:</td><td>DN 80</td></tr><tr><td>Pressure rating for pipe connection:</td><td>PN 40</td></tr><tr><td>Flange size for motor:</td><td>FF300</td></tr></table> Electrical data: <table><tr><td>Motor standard:</td><td>IEC</td></tr><tr><td>Motor type:</td><td>160MH</td></tr><tr><td>IE Efficiency class:</td><td>IE5</td></tr><tr><td>Rated power - P2:</td><td>11 kW</td></tr><tr><td>Power (P2) required by pump:</td><td>11 kW</td></tr><tr><td>Mains frequency:</td><td>50 Hz</td></tr><tr><td>Rated voltage:</td><td>3 x 380-500 V</td></tr><tr><td>Rated current:</td><td>20.3-16.0 A</td></tr><tr><td>Cos phi - power factor:</td><td>0.93-0.90</td></tr><tr><td>Rated speed:</td><td>360-4000 rpm</td></tr><tr><td>Efficiency:</td><td>93.1%</td></tr><tr><td>Motor efficiency at full load:</td><td>93.1 %</td></tr><tr><td>Enclosure class (IEC 34-5):</td><td>IP55</td></tr><tr><td>Insulation class (IEC 85):</td><td>F</td></tr></table>	Frequency converter:	Built-in	Pressure sensor:	N	Pumped liquid:	Water	Liquid temperature range:	-40 .. 120 °C	Liquid temperature during operation:	20 °C	Density:	998.2 kg/m³	Rated flow:	54 m³/h	Rated head:	51.7 m	Pump orientation:	Vertical	Shaft seal arrangement:	Single	Code for shaft seal:	HQQE	Approvals on nameplate:	CE, EAC,ACS	Curve tolerance:	ISO9906:2012 3B	Base:	Stainless steel EN 1.4408 AISI 316	Impeller:	Stainless steel EN 1.4401 AISI 316	Bearing:	SIC	Support bearing:	Graflon	Maximum ambient temperature:	50 °C	Maximum operating pressure:	16 bar	Max pressure at stated temp:	16 bar / 120 °C 16 bar / -40 °C	Type of connection:	DIN	Size of inlet connection:	DN 80	Size of outlet connection:	DN 80	Pressure rating for pipe connection:	PN 40	Flange size for motor:	FF300	Motor standard:	IEC	Motor type:	160MH	IE Efficiency class:	IE5	Rated power - P2:	11 kW	Power (P2) required by pump:	11 kW	Mains frequency:	50 Hz	Rated voltage:	3 x 380-500 V	Rated current:	20.3-16.0 A	Cos phi - power factor:	0.93-0.90	Rated speed:	360-4000 rpm	Efficiency:	93.1%	Motor efficiency at full load:	93.1 %	Enclosure class (IEC 34-5):	IP55	Insulation class (IEC 85):	F
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Position	Qty.	Description
		Others: Minimum efficiency index, MEI $\geq$ 0.7 Net weight: 136 kg Gross weight: 169 kg Shipping volume: 0.495 m ³ Danish VVS No.: 386021071

On request CRNE 45-2-1 A-F-A-E-HQQE 50 Hz

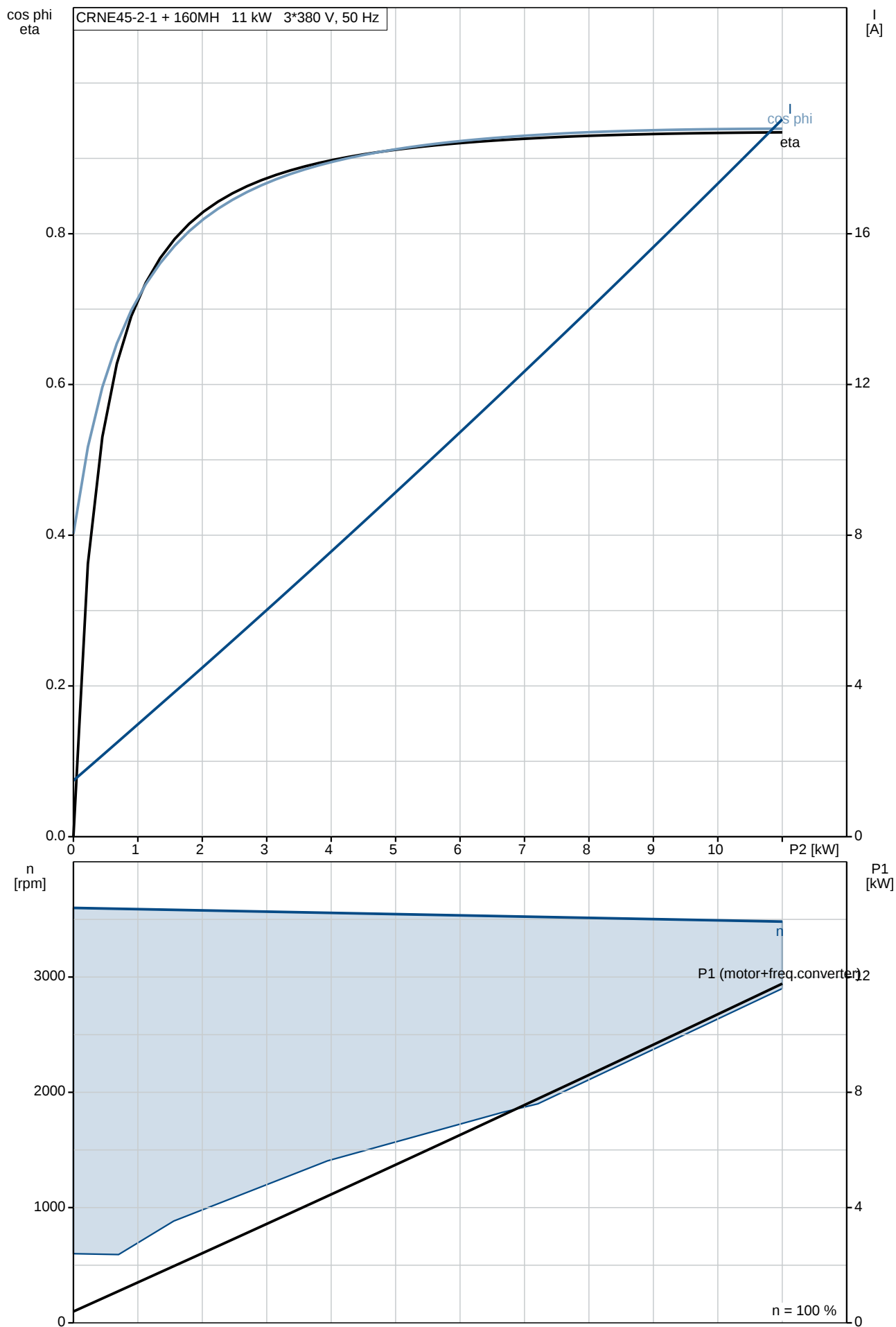


Description	Value
General information:	
Product name:	CRNE 45-2-1 A-F-A-E-HQQE
Product No:	On request
EAN number:	On request
Technical:	
Rated flow:	54 m³/h
Rated head:	51.7 m
Stages:	2
Impellers:	2
Number of reduced-diameter impellers:	1
Low NPSH:	N
Pump orientation:	Vertical
Shaft seal arrangement:	Single
Code for shaft seal:	HQQE
Approvals on nameplate:	CE, EAC, ACS
Curve tolerance:	ISO9906:2012 3B
Pump version:	A
Model:	B
Materials:	
Base:	Stainless steel
	EN 1.4408
	AISI 316
Impeller:	Stainless steel
	EN 1.4401
	AISI 316
Material code:	A
Code for rubber:	E
Bearing:	SIC
Support bearing:	Graflon
Installation:	
Maximum ambient temperature:	50 °C
Maximum operating pressure:	16 bar
Max pressure at stated temp:	16 bar / 120 °C
	16 bar / -40 °C
Type of connection:	DIN
Size of inlet connection:	DN 80
Size of outlet connection:	DN 80
Pressure rating for pipe connection:	PN 40
Flange size for motor:	FF300
Connect code:	F
Liquid:	
Pumped liquid:	Water
Liquid temperature range:	-40 .. 120 °C
Liquid temperature during operation:	20 °C
Density:	998.2 kg/m³
Electrical data:	
Motor standard:	IEC
Motor type:	160MH
IE Efficiency class:	IE5
Rated power - P2:	11 kW
Power (P2) required by pump:	11 kW
Mains frequency:	50 Hz
Rated voltage:	3 x 380-500 V
Rated current:	20.3-16.0 A
Cos phi - power factor:	0.93-0.90
Rated speed:	360-4000 rpm
Efficiency:	93.1%
Motor efficiency at full load:	93.1 %
Enclosure class (IEC 34-5):	IP55
Insulation class (IEC 85):	F
Motor protec:	YES
Motor No:	98971053

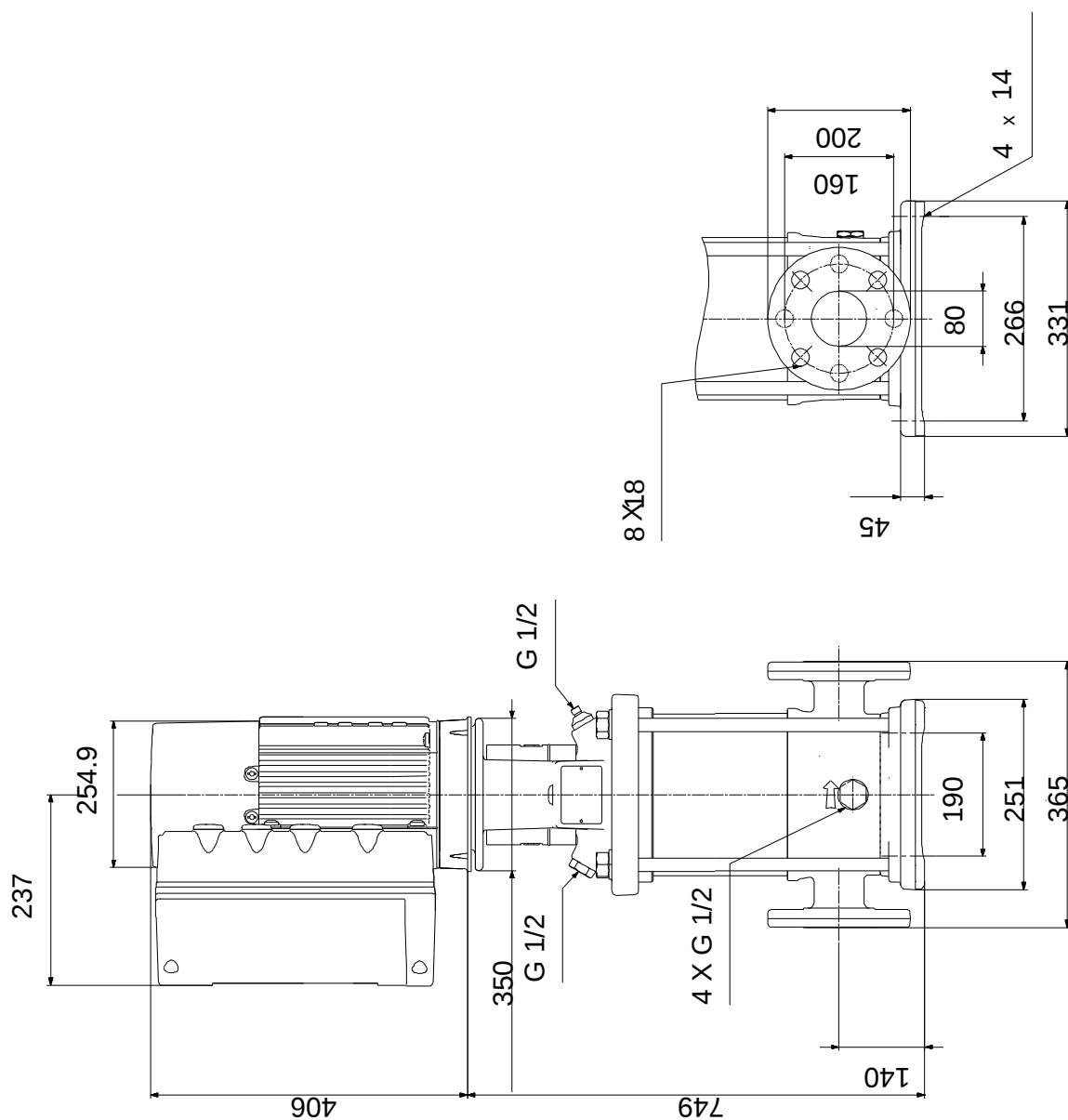


Description	Value
Controls:	
Control panel:	Standard
Function Module:	300
Frequency converter:	Built-in
Pressure sensor:	N
Others:	
Minimum efficiency index, MEI ≥:	0.7
Net weight:	136 kg
Gross weight:	169 kg
Shipping volume:	0.495 m ³
Danish VVS No.:	386021071

On request CRNE 45-2-1 A-F-A-E-HQQE 50 Hz



On request CRNE 45-2-1 A-F-A-E-HQQE 50 Hz



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)



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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