

Submittal Data

PROJECT:	UNIT TAG:	QUANTITY:
REPRESENTATIVE: _____	TYPE OF SERVICE:	DATE: _____
ENGINEER:	SUBMITTED BY:	DATE:
CONTRACTOR:	APPROVED BY:	DATE:
	ORDER NO.:	DATE:

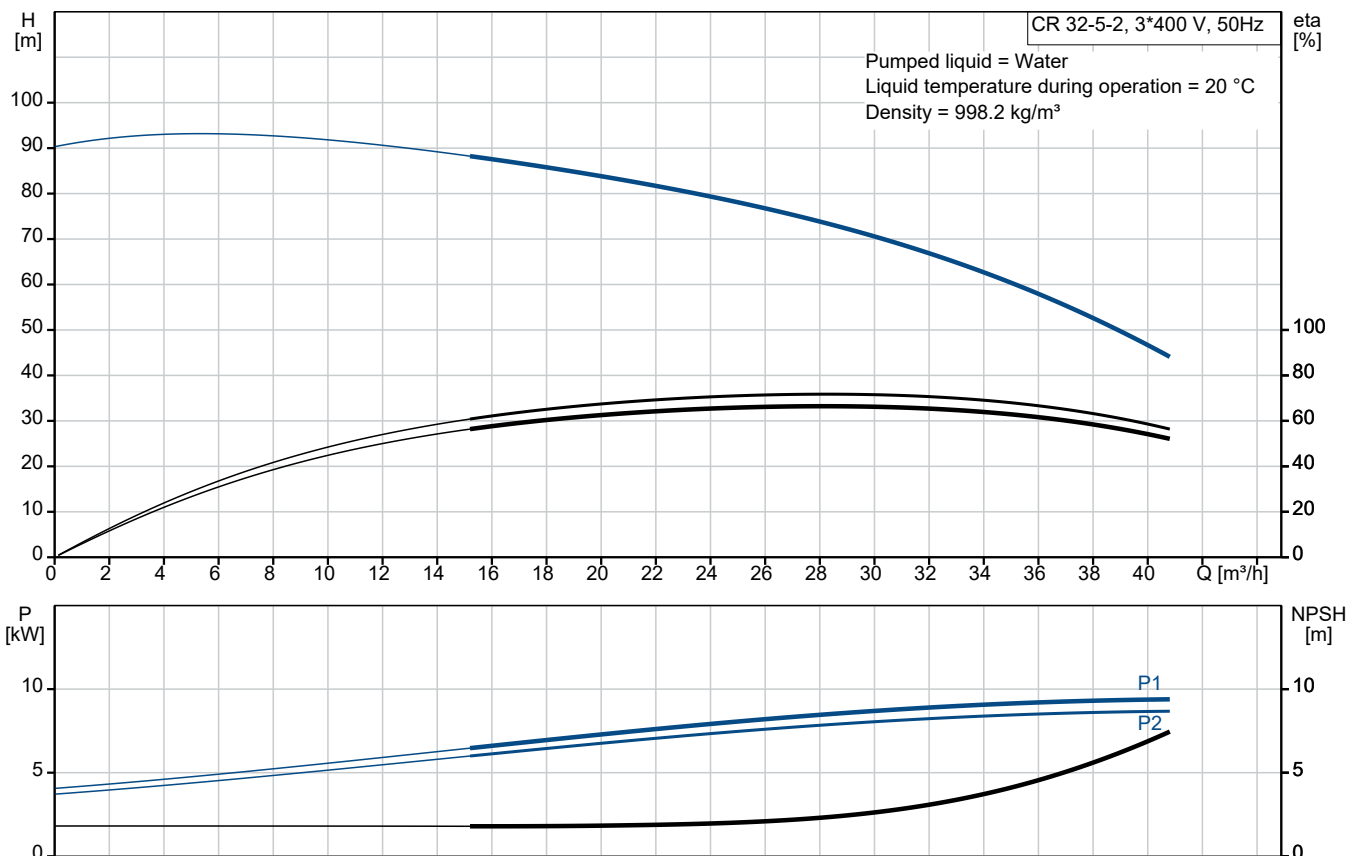


CR 32-5-2 A-F-A-E-HQQE

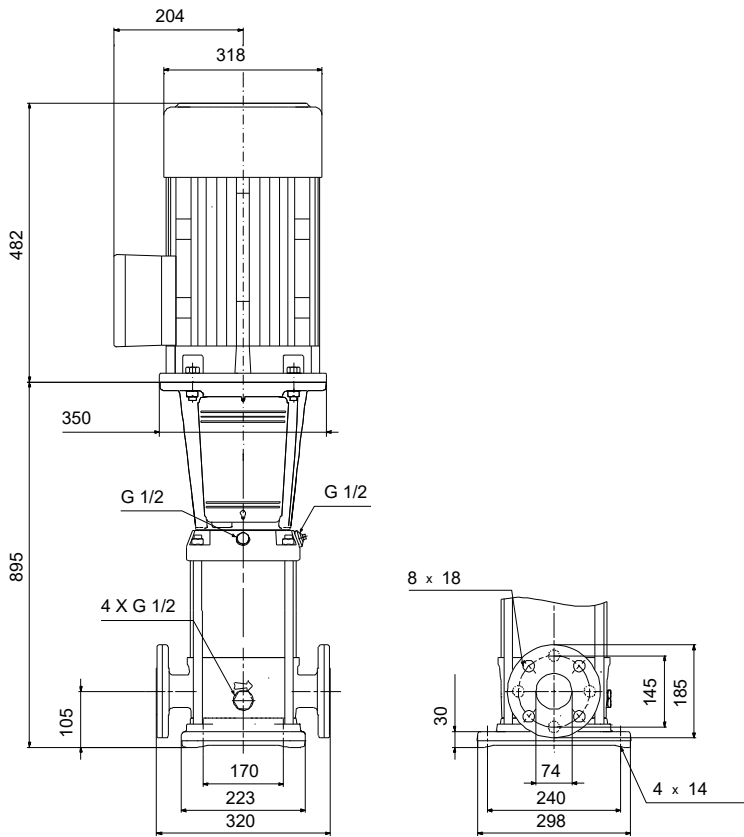
Vertical, multistage centrifugal pump with suction and discharge ports on the same level. The pump head and base are in cast iron - all other wetted parts are in stainless steel (EN 1.4301)

Note! Product picture may differ from actual product

Conditions of Service	Pump Data	Motor Data
	Max pressure at stated temp: 16 bar / 120 °C Liquid temperature range: -30 .. 120 °C Maximum ambient temperature: 60 °C Shaft seal: HQQE Product number: On request	Rated power - P2: 11 kW Rated voltage: 380-415D/660-690Y V Mains frequency: 50 Hz Enclosure class: 55 Dust/Jetting Insulation class: F Motor protection: PTC Motor type: 160MB Eta 1/1: 91.2-91.2 %



Submittal Data



Materials:

Base:	Cast iron
Base:	EN 1563 EN-GJS-500-7
Base:	ASTM A536 80-55-06
Impeller:	Stainless steel
Impeller:	AISI 304
Impeller:	EN 1.4301
Material code:	A
Code for rubber:	E

Qty. Description

1 CR 32-5-2 A-F-A-E-HQQE



Note! Product picture may differ from actual product

Product No.: On request

Vertical, multistage centrifugal pump with inlet and outlet ports on same the level (inline). The pump head and base are in cast iron – all other wetted parts are in 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 asynchronous motor.

Further product details

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.

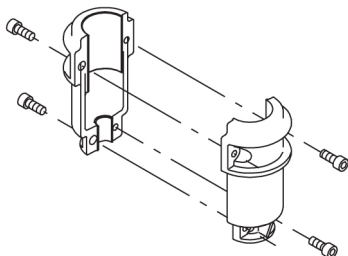
The entire process consists of these elements:

- 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.

Qty.	Description
1	<div data-bbox="209 459 687 707" data-label="Image"> </div> <p data-bbox="204 741 1414 882">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.</p> <p data-bbox="204 891 320 920">Seal faces:</p> <ul data-bbox="240 920 788 976" style="list-style-type: none"> • Rotating seal ring material: silicon carbide (SiC) • Stationary seat material: silicon carbide (SiC) <p data-bbox="204 981 1449 1032">This material pairing is used where higher corrosion resistance is required. The high hardness of this material pairing offers good resistance against abrasive particles.</p> <p data-bbox="204 1037 850 1066">Secondary seal material: EPDM (ethylene-propylene rubber)</p> <p data-bbox="204 1070 1075 1099">EPDM has excellent resistance to hot water. EPDM is not suitable for mineral oils.</p> <div data-bbox="204 1106 614 1279" data-label="Image"> </div> <p data-bbox="204 1317 1422 1346">The shaft seal is retained in the pump head by a cover and screws. It can be replaced without removing the motor.</p> <p data-bbox="204 1375 1422 1451">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.</p> <p data-bbox="204 1487 1437 1570">The base is made of cast iron. 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.</p> <div data-bbox="204 1576 395 1765" data-label="Image"> </div> <p data-bbox="204 1823 284 1852">Motor</p> <p data-bbox="204 1861 1430 1912">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).</p> <p data-bbox="204 1917 1241 1946">Motor-mounting designation in accordance with IEC 60034-7: IM B 5 (Code I) / IM 3001 (Code II).</p> <p data-bbox="204 1951 679 1980">Electrical tolerances comply with IEC 60034.</p> <p data-bbox="204 1984 1015 2013">The motor efficiency is classified as IE3 in accordance with IEC 60034-30-1.</p> <p data-bbox="204 2018 1430 2069">The motor has thermistors (PTC sensors) in the windings in accordance with DIN 44081/DIN 44082. The protection reacts to both slow- and quick-rising temperatures, e.g. constant overload and stalled conditions.</p>



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Qty.	Description
1	<p>Thermal switches must be connected to an external control circuit in a way which ensures that the automatic reset cannot cause accidents. The motors must be connected to a motor-protective circuit breaker according to local regulations.</p> <p>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.</p> <p>Technical data</p> <p>Liquid: Liquid temperature range: -30 .. 120 °C</p> <p>Technical: Pump speed on which pump data are based: 2924 rpm Rated flow: 30 m³/h Rated head: 69.7 m Pump orientation: Vertical Shaft seal arrangement: Single Code for shaft seal: HQQE Approvals: CE,EAC,UKCA,SEPRO Approvals for drinking water: WRAS,ACS Curve tolerance: ISO9906:2012 3B</p> <p>Materials: Base: Cast iron EN 1563 EN-GJS-500-7 ASTM A536 80-55-06</p> <p>Impeller: Stainless steel EN 1.4301 AISI 304</p> <p>Bearing: SIC Support bearing: Graflon</p> <p>Installation: Maximum ambient temperature: 60 °C Maximum operating pressure: 16 bar Max pressure at stated temp: 16 bar / 120 °C 16 bar / -30 °C</p> <p>Type of connection: DIN Size of inlet connection: DN 65 Size of outlet connection: DN 65 Pressure rating for connection: PN 40 Flange size for motor: FF300</p> <p>Electrical data: Motor standard: IEC Motor type: 160MB Rated power - P2: 11 kW Power (P2) required by pump: 11 kW Mains frequency: 50 Hz Rated voltage: 3 x 380-415D/660-690Y V Rated current: 20,8-19,8/12,0-11,8 A Starting current: 660-780 % Cos phi - power factor: 0.88-0.84 Rated speed: 2940-2950 rpm</p>



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1	IE Efficiency class: IE3 Motor efficiency at full load: 91.2-91.2 % Motor efficiency at 3/4 load: 91.8-91.8 % Motor efficiency at 1/2 load: 91.3-91.2 % Number of poles: 2 Enclosure class (IEC 34-5): 55 Dust/Jetting Insulation class (IEC 85): F Motor No: 85U17524 Controls: Frequency converter: None Others: Terminal box position: 6 Minimum efficiency index, MEI ≥: 0.70 Net weight: 158 kg Gross weight: 191 kg Shipping volume: 0.495 m ³ Danish VVS No.: 385906052 Swedish RSK No.: 5824876 Finnish LVI No.: 4925463 Country of origin: DK Custom tariff no.: 84137075



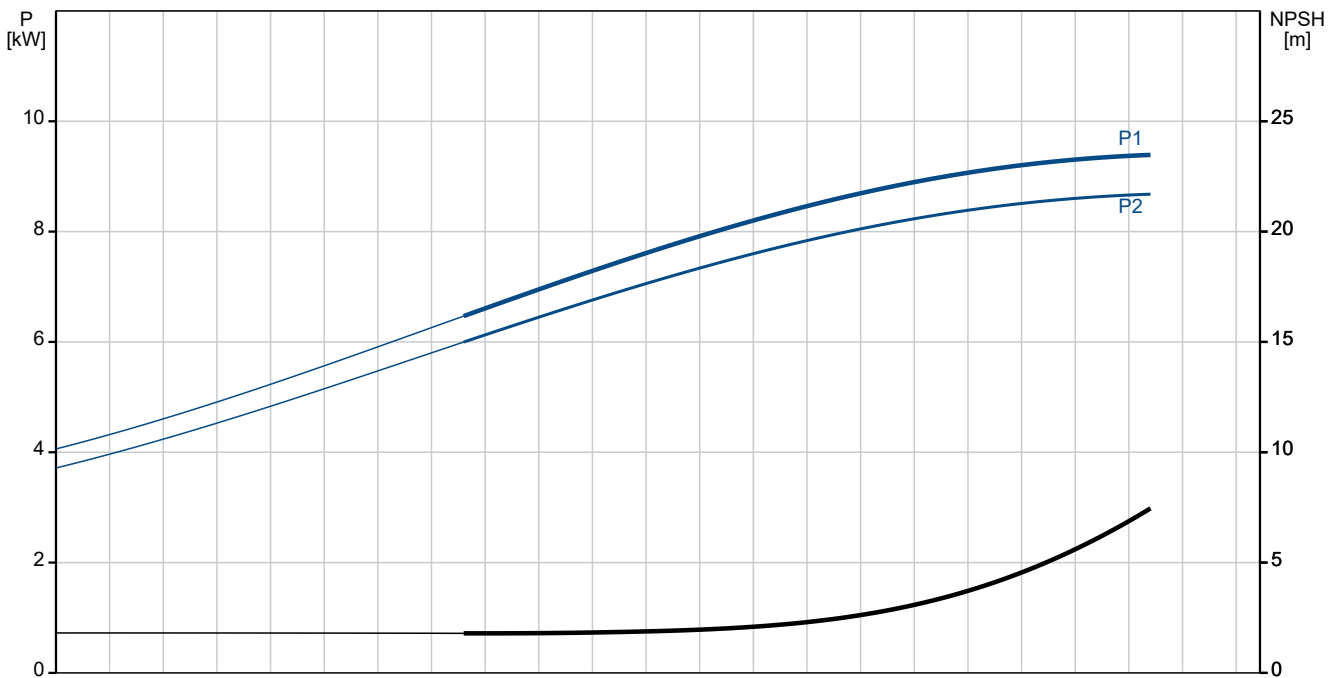
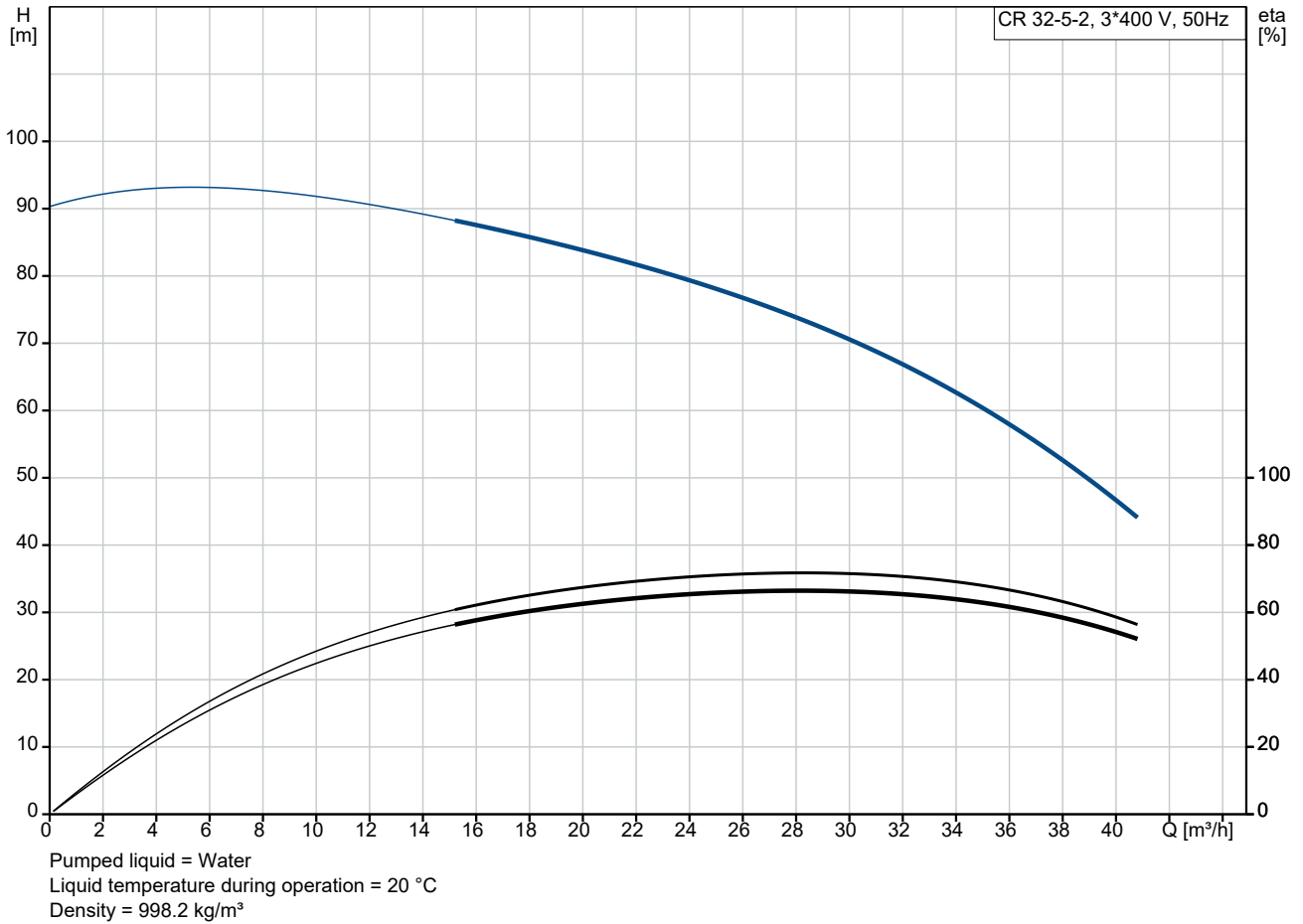
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On request CR 32-5-2 A-F-A-E-HQQE 50 Hz



Project:

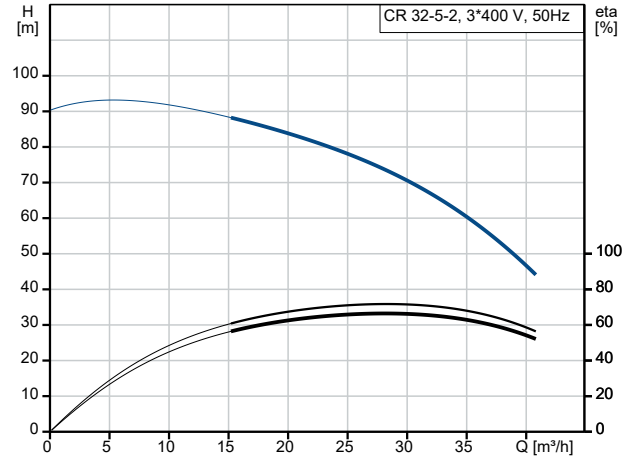
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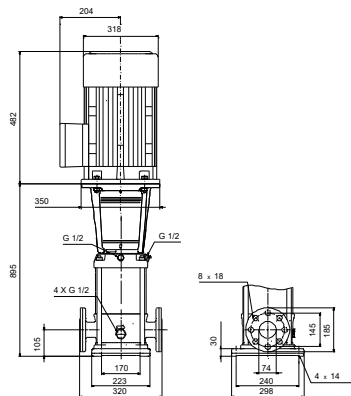
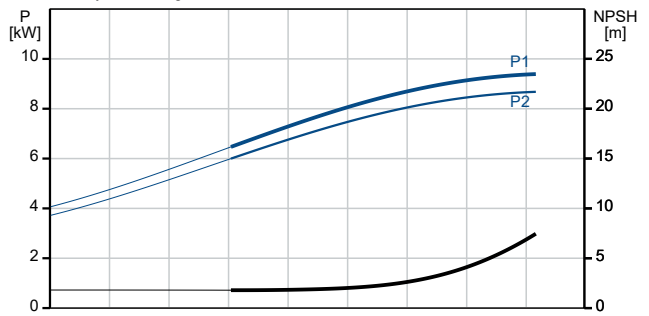
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Description	Value
General information:	
Product name:	CR 32-5-2 A-F-A-E-HQQE
Product No:	On request
EAN number:	On request
Technical:	
Pump speed on which pump data are based:	2924 rpm
Rated flow:	30 m ³ /h
Rated head:	69.7 m
Maximum head:	90.2 m
Stages:	5
Impellers:	5
Number of reduced-diameter impellers:	2
Low NPSH:	N
Pump orientation:	Vertical
Shaft seal arrangement:	Single
Code for shaft seal:	HQQE
Approvals:	CE,EAC,UKCA,SEPRO
Approvals for drinking water:	WRAS,ACS
Curve tolerance:	ISO9906:2012 3B
Pump version:	A
Model:	B
Materials:	
Base:	Cast iron
Base:	EN 1563 EN-GJS-500-7
Base:	ASTM A536 80-55-06
Impeller:	Stainless steel
Impeller:	EN 1.4301
Impeller:	AISI 304
Material code:	A
Code for rubber:	E
Bearing:	SIC
Support bearing:	Graflon
Installation:	
Maximum ambient temperature:	60 °C
Maximum operating pressure:	16 bar
Max pressure at stated temp:	16 bar / 120 °C
Max pressure at stated temp:	16 bar / -30 °C
Type of connection:	DIN
Size of inlet connection:	DN 65
Size of outlet connection:	DN 65
Pressure rating for connection:	PN 40
Flange size for motor:	FF300
Connect code:	F
Liquid:	
Liquid temperature range:	-30 .. 120 °C
Electrical data:	
Motor standard:	IEC
Motor type:	160MB
Rated power - P1:	11 kW
Power (P2) required by pump:	11 kW
Mains frequency:	50 Hz



Pumped liquid = Water
Liquid temperature during operation = 20 °C
Density = 998.2 kg/m³





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Description	Value
Rated voltage:	3 x 380-415D/660-690Y V
Rated current:	20,8-19,8/12,0-11,8 A
Starting current:	660-780 %
Cos phi - power factor:	0.88-0.84
Rated speed:	2940-2950 rpm
IE Efficiency class:	IE3
Motor efficiency at full load:	91.2-91.2 %
Motor efficiency at 3/4 load:	91.8-91.8 %
Motor efficiency at 1/2 load:	91.3-91.2 %
Number of poles:	2
Enclosure class (IEC 34-5):	55 Dust/Jetting
Insulation class (IEC 85):	F
Built-in motor protection:	PTC
Motor No:	85U17524
Controls:	
Frequency converter:	None
Others:	
Terminal box position:	6
Minimum efficiency index, MEI \geq :	0.70
Net weight:	158 kg
Gross weight:	191 kg
Shipping volume:	0.495 m ³
Danish VVS No.:	385906052
Swedish RSK No.:	5824876
Finnish LVI No.:	4925463
Country of origin:	DK
Custom tariff no.:	84137075



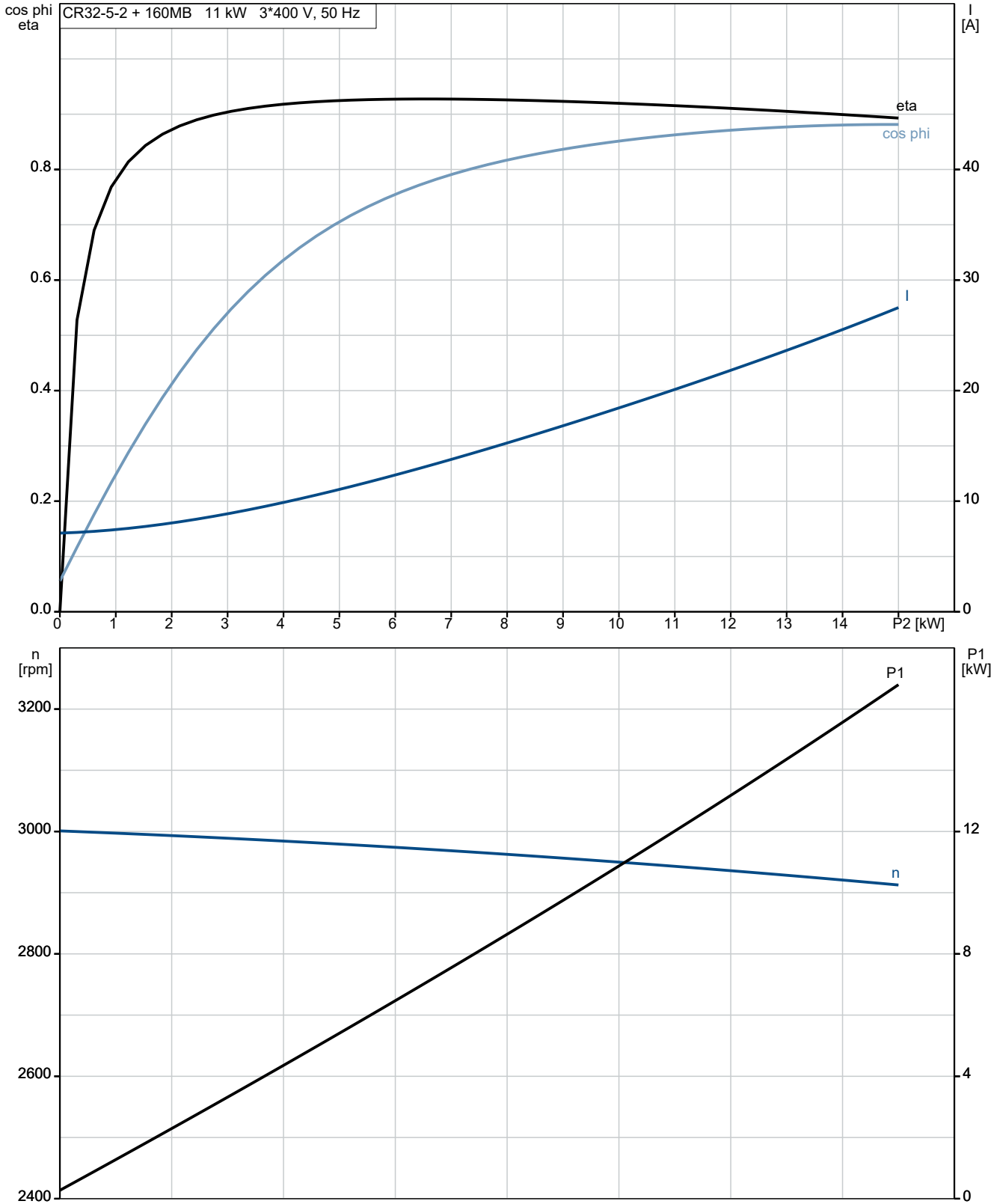
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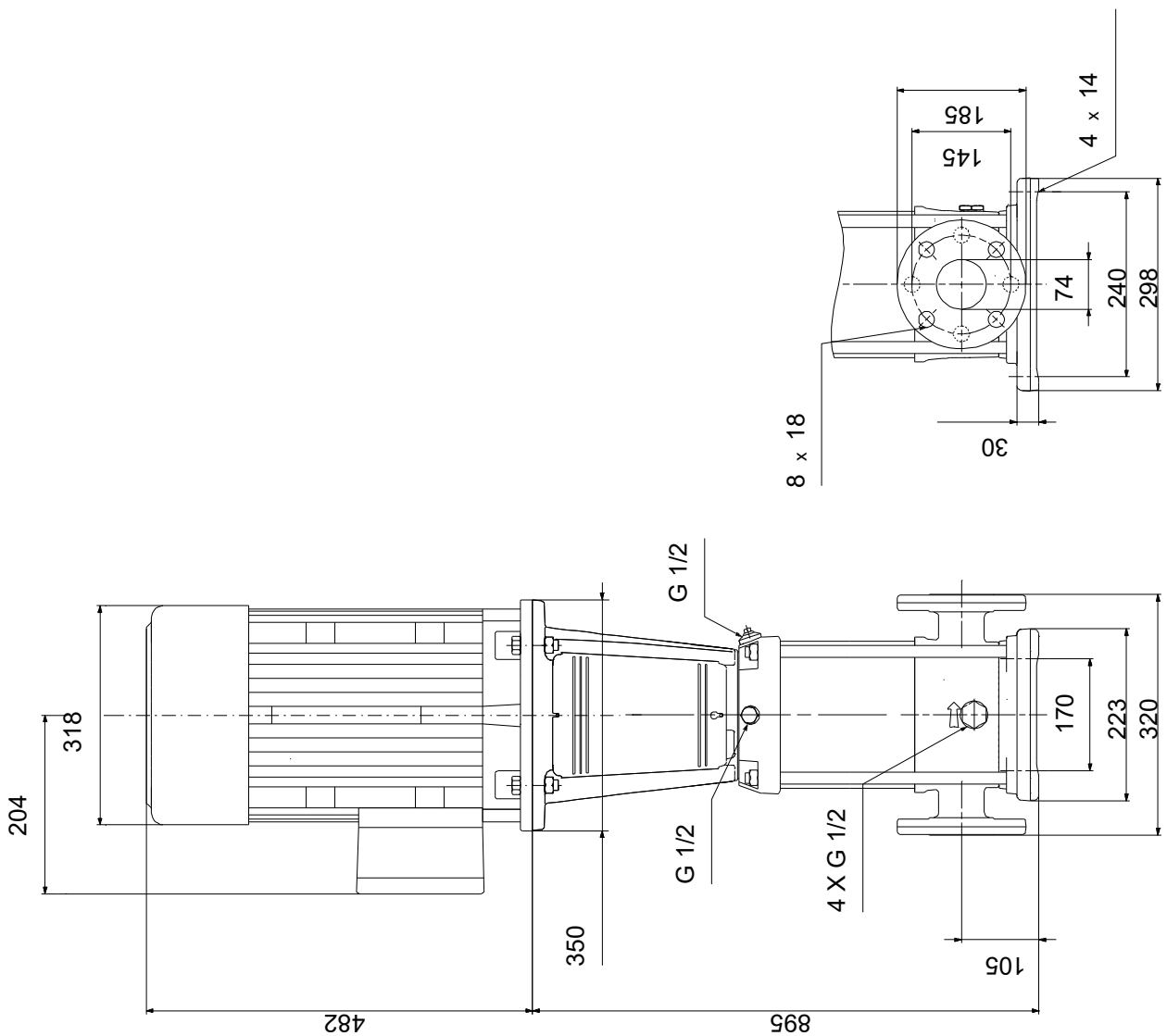
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On request CR 32-5-2 A-F-A-E-HQQE 50 Hz



On request CR 32-5-2 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.

On request CR 32-5-2 A-F-A-E-HQQE 50 Hz



IEC TP211 THERMALLY PROTECTED WHEN THE THERMISTORS ARE CONNECTED TO AMPLIFIER RELAY FOR CONTROL OF MAIN SUPPLY THERMISTORS PTC ACCORDING TO DIN 44082

Note! All units are in [mm] unless others are stated.

