GRUNDFOS

Submittal Data

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

Note! Product picture may differ from actual product

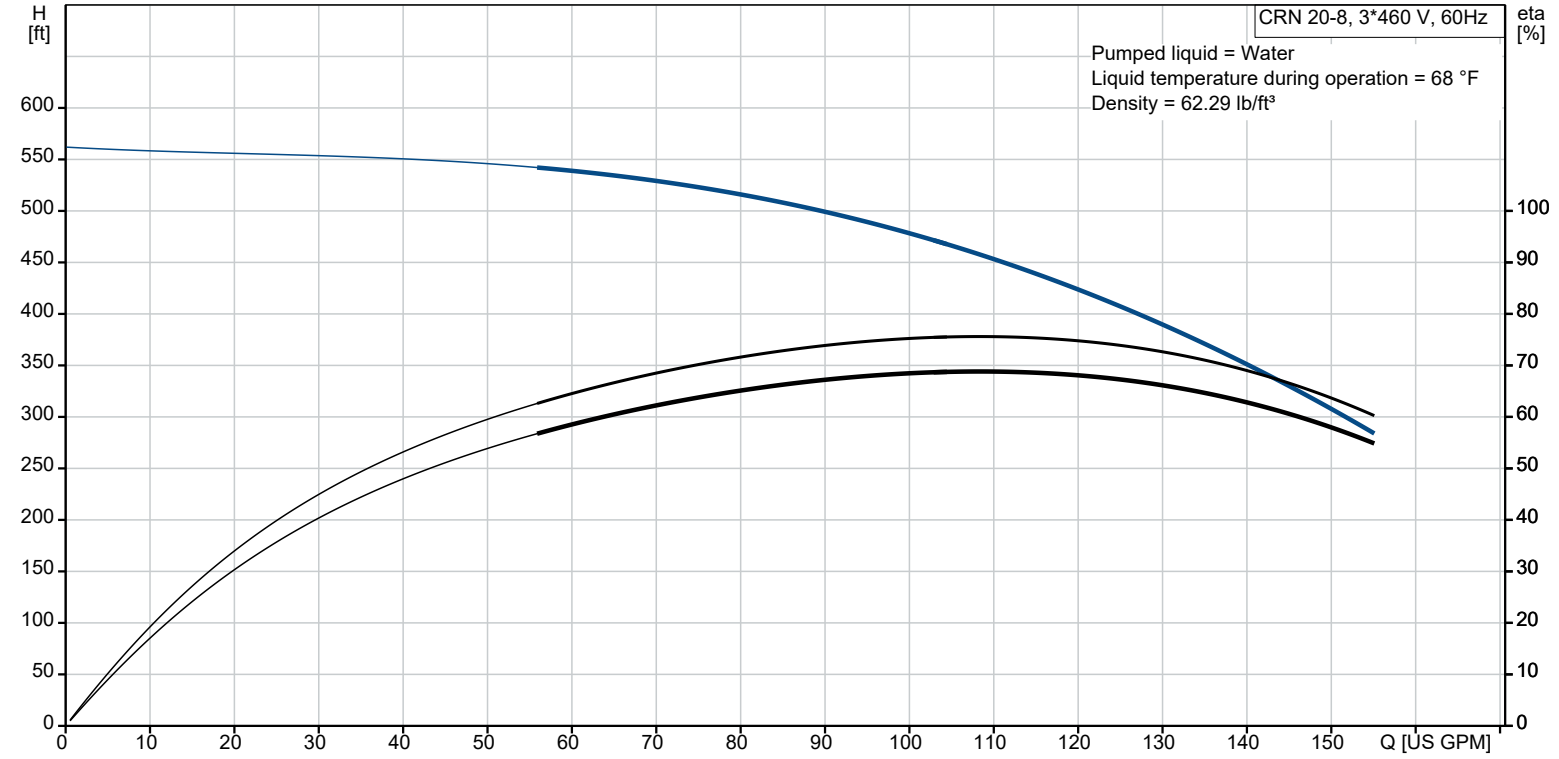
CRN 20-8 A-P-A-E-HQQE

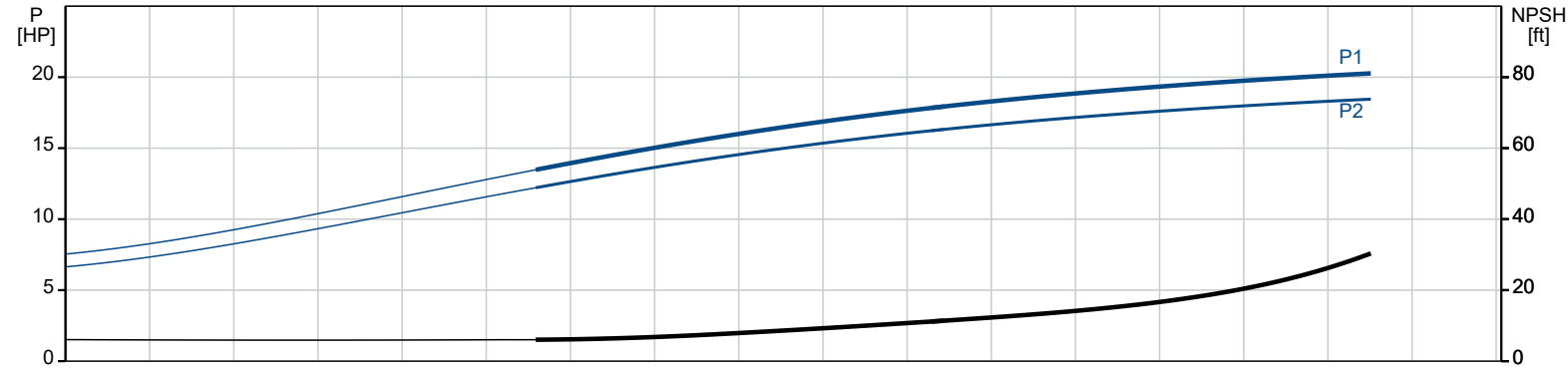
Vertical, multistage centrifugal pump with suction and discharge ports on the same level. Pump materials in contact with the liquid are in high-grade stainless steel (EN 1.4401)

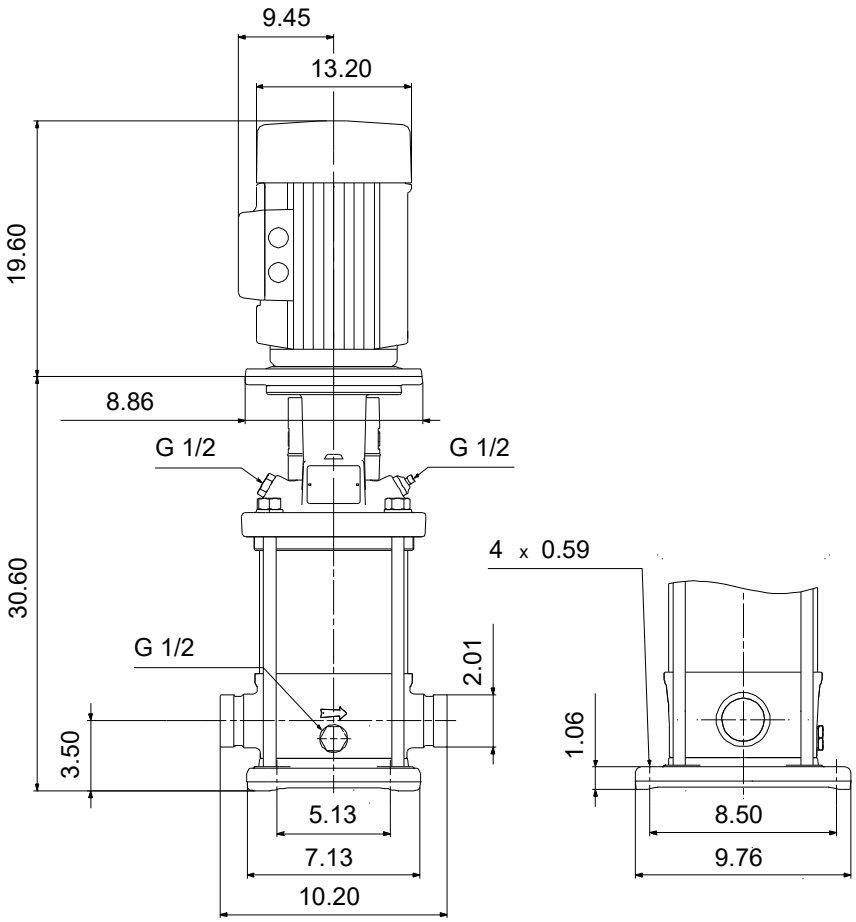
Conditions of Service	
Liquid:	Water
Temperature:	68 °F
Specific Gravity:	1.000

Pump Data	
Max pressure at stated temp:	363 psi / 250 °F
Liquid temperature range:	-4 .. 248 °F
Maximum ambient temperature:	104 °F
Shaft seal:	HQQE
Product number:	99917876

Motor Data	
Rated power - P2:	20 HP
Rated voltage:	230/460 V
Mains frequency:	60 Hz
Enclosure class:	IP55
Insulation class:	F
Motor protection:	NONE
Motor type:	WEG
Eta 1/1:	91 %







Materials:

Base:	Stainless steel
Base:	EN 1.4408
Base:	AISI 316
Impeller:	Stainless steel
Impeller:	AISI 316
Impeller:	EN 1.4401
Material code:	A
Code for rubber:	E

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Company name:
Created by:
Phone:

Date: 01/02/2023

Qty.	Description
1	**CRN 20-8 A-P-A-E-HQQE**

Product No.: 99917876

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 PJE (Victaulic®) couplings.

The pump is fitted with a 3-phase, fan-cooled asynchronous motor.

Further product details

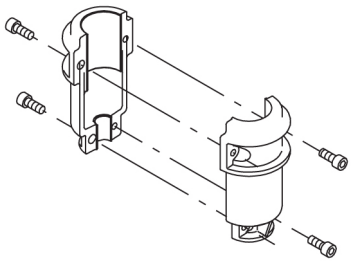
Steel, cast iron and aluminium components have an epoxy-based coating made in a cathodic electro-deposition (CED) process.
CED is a high-quality dip-painting process where an electrical field around the products ensures deposition of paint particles as a thin, well-controlled layer on the surface.
An 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.

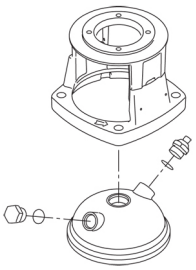
The colour code for the finished product is NCS 9000/RAL 9005.

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 pump head and flange for motor mounting is made in one piece (cast iron). The pump head cover is a separate component (stainless steel). 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.

Seal faces:

- 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)

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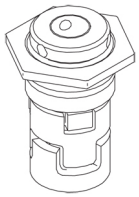
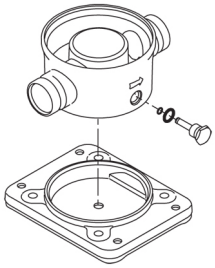
Qty.	Description
1	EPDM has excellent resistance to hot water. EPDM is not suitable for mineral oils.



The shaft seal is screwed into the pump head.
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.
The outlet side of the base has a drain plug.
The pump is secured to the foundation by four bolts through the base plate.
The base is prepared for connection by means of PJE (Victualic®) couplings.



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 premium efficiency in accordance with EISA2007.
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:	-4 .. 248 °F
Selected liquid temperature:	68 °F
Density:	62.29 lb/ft³

Technical:

Pump speed on which pump data are based:	3497 rpm
Rated flow:	111 US GPM
Rated head:	442.9 ft
Actual impeller diameter:	4.13 in
Pump orientation:	Vertical
Shaft seal arrangement:	Single
Code for shaft seal:	HQQE
Approvals:	CURUS
Approvals for drinking water:	NSF/ANSI 61
Curve tolerance:	ISO9906:2012 3B

Materials:

Base:	Stainless steel EN 1.4408 AISI 316
Impeller:	Stainless steel EN 1.4401 AISI 316

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Company name:
Created by:
Phone:

Date: 01/02/2023

Qty.	Description	
1	Bearing:	SIC
	Installation:	
	t max amb:	104 °F
	Maximum operating pressure:	362.59 psi
	Max pressure at stated temp:	363 psi / 250 °F
		363 psi / -4 °F
	Type of connection:	PJE
	Size of inlet connection:	DN 50
	Size of outlet connection:	DN 50
	Pressure rating for connection:	PN 50
	Flange size for motor:	254TC
	Electrical data:	
	Motor standard:	NEMA
	Motor type:	WEG
	IE Efficiency class:	IE3 / NEMA Premium
	Rated power - P2:	20 HP
	Power (P2) required by pump:	20 HP
	Mains frequency:	60 Hz
	Rated voltage:	3 x 230/460 V
	Service factor:	1.15
	Rated current:	45.4/22.7 A
	Starting current:	660 %
	Cos phi - power factor:	0.91
	Rated speed:	3515 rpm
	IE efficiency:	IE3 91%
	Motor efficiency at full load:	91 %
	Motor efficiency at 3/4 load:	91 %
	Motor efficiency at 1/2 load:	90 %
	Number of poles:	2
	Enclosure class (IEC 34-5):	IP55
	Insulation class (IEC 85):	F
	Motor No:	99883248
	Controls:	
	Frequency converter:	NONE
	Others:	
	DOE Pump Energy Index CL:	0.91
	Net weight:	333 lb
	Gross weight:	448 lb
	Shipping volume:	17.2 ft³

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Company name:
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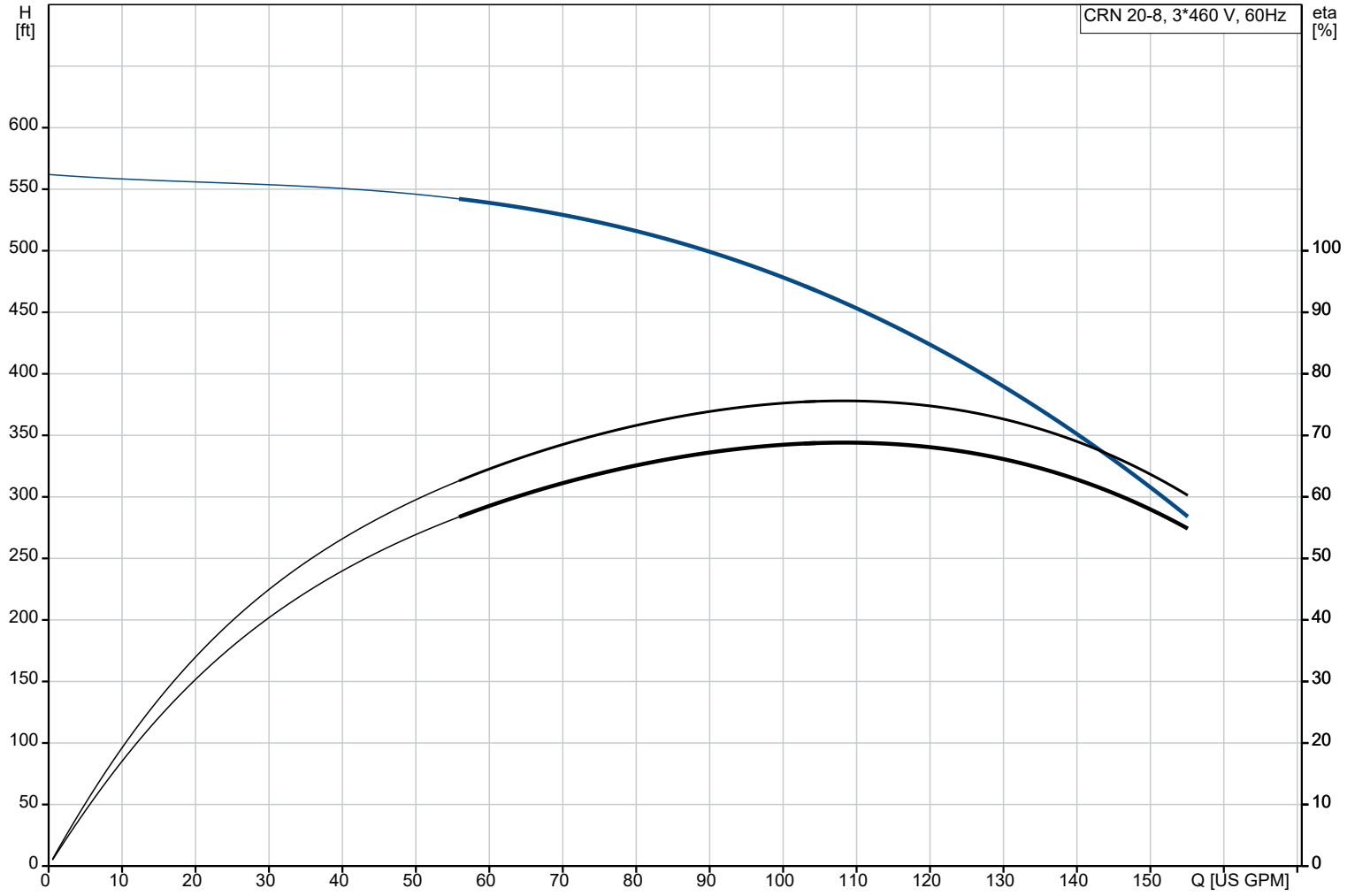
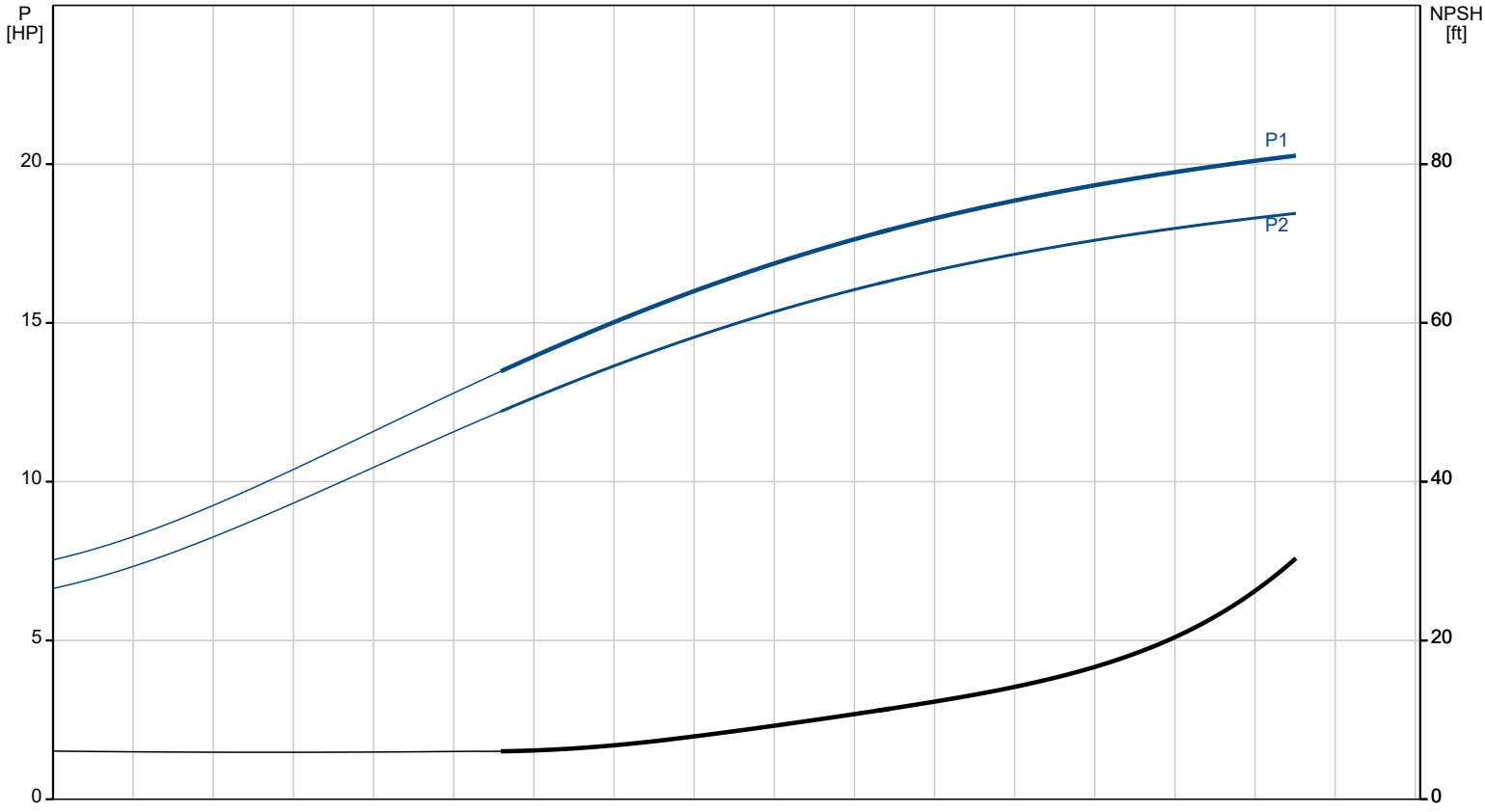
Phone:

Date: 01/02/2023

99917876 CRN 20-8 A-P-A-E-HQQE 60 Hz



Pumped liquid = Water
Liquid temperature during operation = 68 °F
Density = 62.29 lb/ft³



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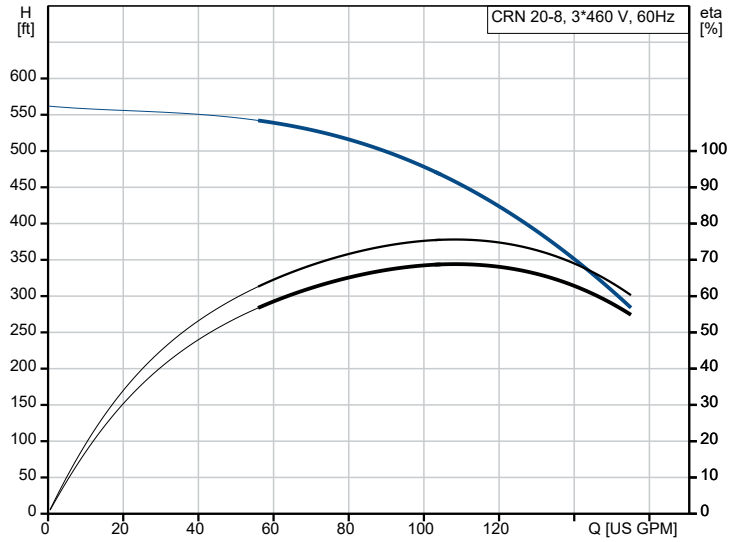
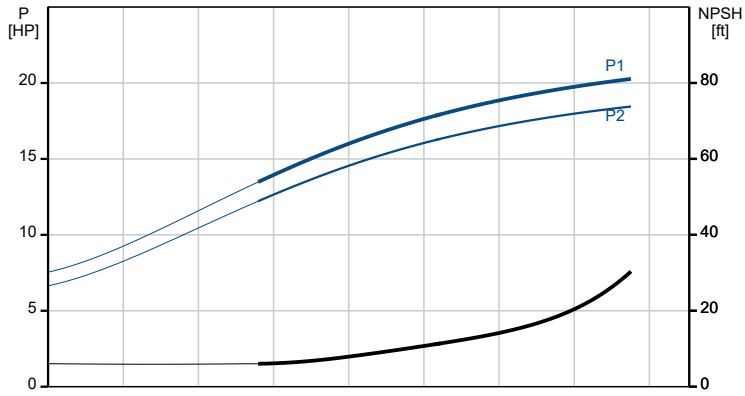
Company name:
Created by:
Phone:

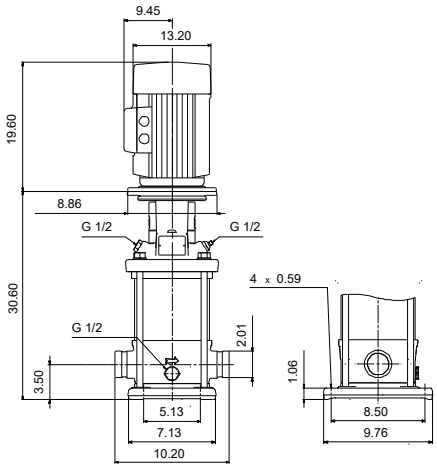
Date: 01/02/2023

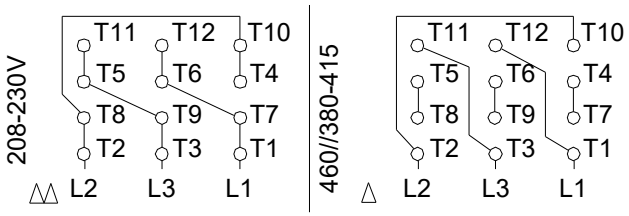
Description	Value
General information:	
Product name:	CRN 20-8 A-P-A-E-HQQE
Product No:	99917876
EAN number:	5715114127042
Technical:	
Pump speed on which pump data are based:	3497 rpm
Rated flow:	111 US GPM
Rated head:	442.9 ft
Maximum head:	557.8 ft
Actual impeller diameter:	4.13 in
Stages:	8
Impellers:	8
Number of reduced-diameter impellers:	0
Low NPSH:	N
Pump orientation:	Vertical
Shaft seal arrangement:	Single
Code for shaft seal:	HQQE
Approvals:	CURUS
Approvals for drinking water:	NSF/ANSI 61
Curve tolerance:	ISO9906:2012 3B
Pump version:	A
Model:	A
Cooling:	IC 411
Materials:	
Base:	Stainless steel
Base:	EN 1.4408
Base:	AISI 316
Impeller:	Stainless steel
Impeller:	EN 1.4401
Impeller:	AISI 316
Material code:	A
Code for rubber:	E
Bearing:	SIC
Installation:	
t max amb:	104 °F
Maximum operating pressure:	362.59 psi
Max pressure at stated temp:	363 psi / 250 °F
Max pressure at stated temp:	363 psi / -4 °F
Type of connection:	PJE
Size of inlet connection:	DN 50
Size of outlet connection:	DN 50
Pressure rating for connection:	PN 50
Flange size for motor:	254TC
Connect code:	P
Liquid:	
Pumped liquid:	Water
Liquid temperature range:	-4 .. 248 °F
Selected liquid temperature:	68 °F
Density:	62.29 lb/ft³
Electrical data:	
Motor standard:	NEMA
Motor type:	WEG
IE Efficiency class:	IE3 / NEMA Premium
Rated power - P2:	20 HP
Power (P2) required by pump:	20 HP
Mains frequency:	60 Hz
Rated voltage:	3 x 230/460 V
Service factor:	1.15
Rated current:	45.4/22.7 A
Starting current:	660 %
Full load SF current:	52.2/26.1 A
Cos phi - power factor:	0.91
Rated speed:	3515 rpm
IE efficiency:	IE3 91%
Motor efficiency at full load:	91 %



Pumped liquid = Water
Liquid temperature during operation = 68 °F
Density = 62.29 lb/ft³







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Company name:
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Description	Value
Motor efficiency at 3/4 load:	91 %
Motor efficiency at 1/2 load:	90 %
Number of poles:	2
Enclosure class (IEC 34-5):	IP55
Insulation class (IEC 85):	F
Built-in motor protection:	NONE
Motor No:	99883248
Controls:	
Frequency converter:	NONE
Others:	
DOE Pump Energy Index CL:	0.91
Net weight:	333 lb
Gross weight:	448 lb
Shipping volume:	17.2 ft^3

Company name:
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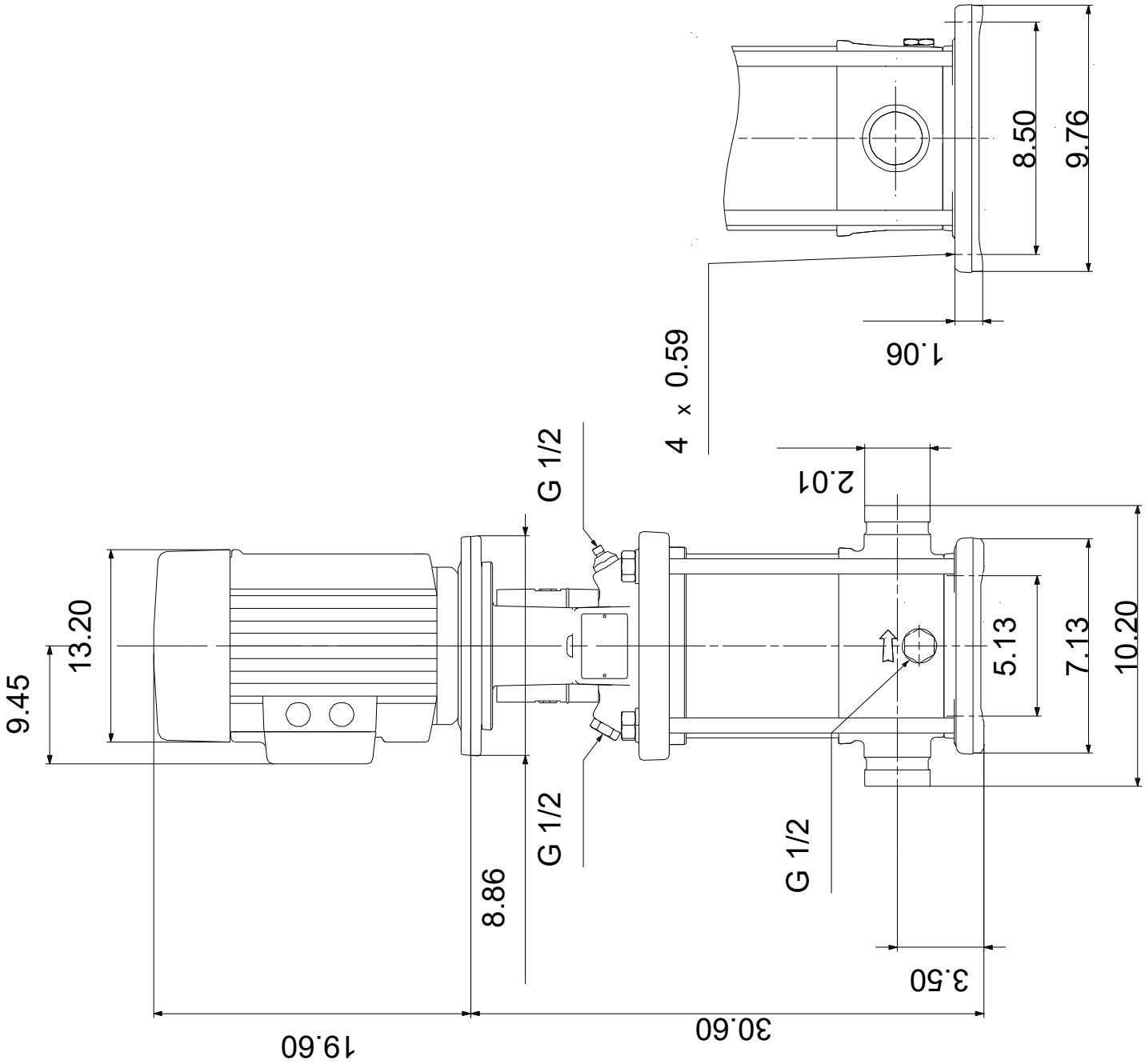
99917876 CRN 20-8 A-P-A-E-HQQE 60 Hz



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