

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

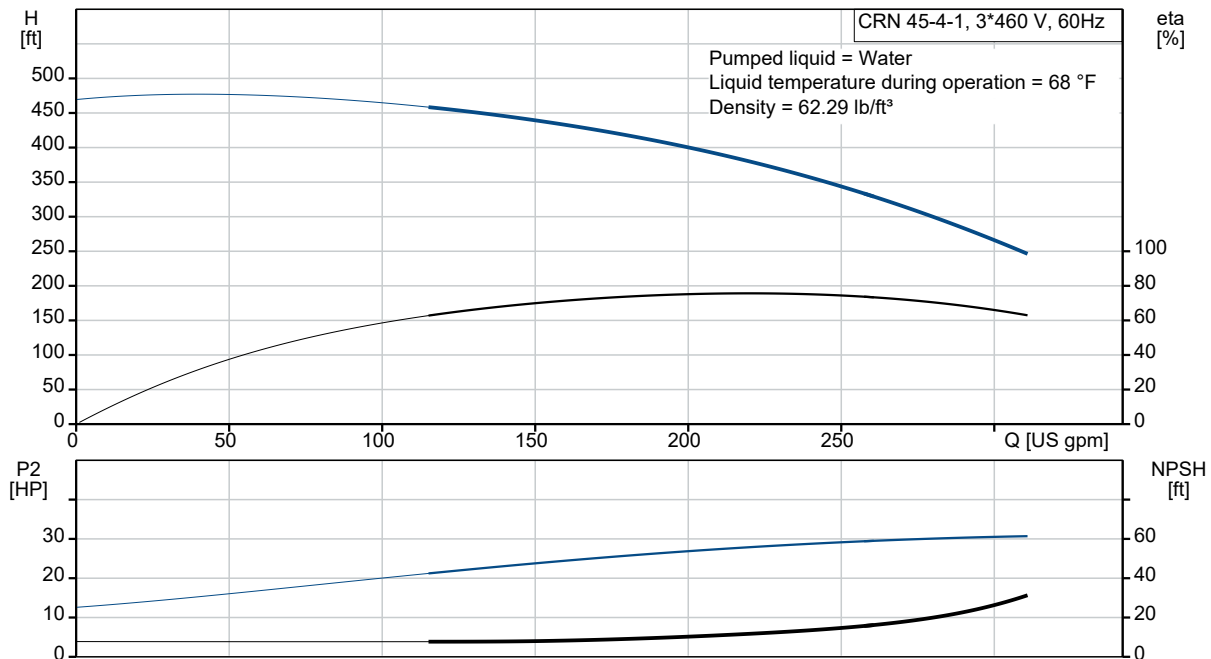


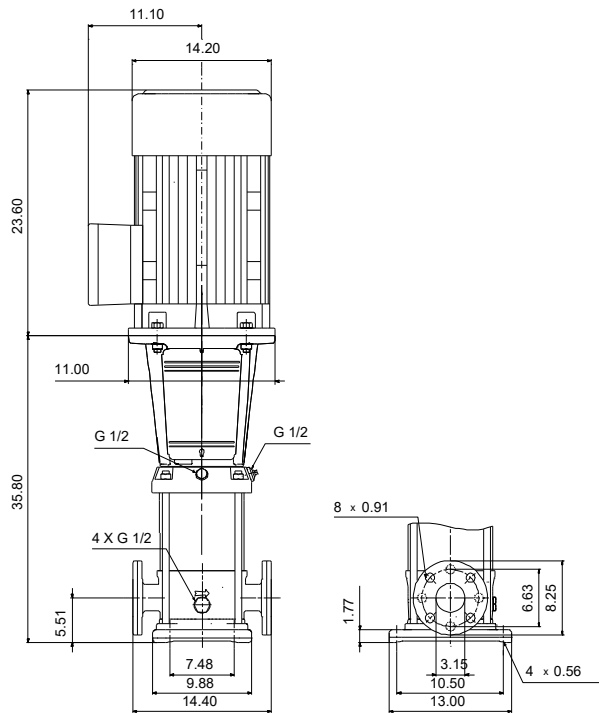
CRN 45-4-1 A-G-A-V-HQQV

Vertical, multistage centrifugal pump with suction and discharge ports on same the level. Pump materials in contact with the liquid are in high-grade stainless steel (EN 1.4401) (AISI 316)

Product photo could vary from the actual product


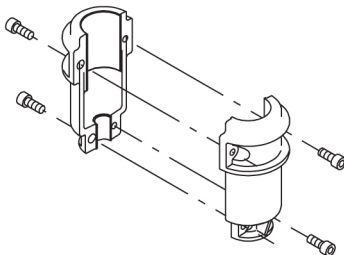
Conditions of Service	Pump Data	Motor Data
Efficiency: _____	Max pressure at stated temperature: 435 psi / 194 °F	Rated power - P2: 30 HP
Liquid: Water	Liquid temperature range: -4 .. 194 °F	Rated voltage: 208-230/460 V
Temperature: 68 °F	Maximum ambient temperature: 104 °F	Main frequency: 60 Hz
NPSH required: ft	Shaft seal: HQQV	Enclosure class: IP55
Specific Gravity: 1.000	Product number: 99918231	Insulation class: F
		Motor protection: NONE
		Motor type: WEG
		Eff. 1/1: 91.7 %

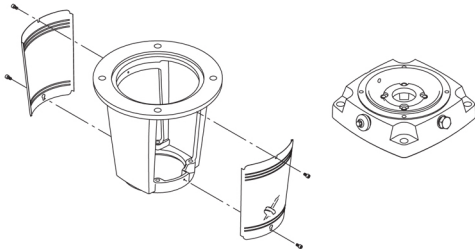




Materials:

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: V

Count	Description
1	<p>CRN 45-4-1 A-G-A-V-HQQV</p>  <p>Product No.: 99918231</p> <p>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 ANSI flanges.</p> <p>The pump is fitted with a 3-phase, fan-cooled asynchronous motor.</p> <p>Further product details</p> <p>Steel, cast iron and aluminium components have an epoxy-based coating made in a cathodic electro-deposition (CED) process.</p> <p>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.</p> <p>An integral part of the process is a pretreatment.</p> <p>The entire process consists of these elements:</p> <ol style="list-style-type: none"> 1) Alkaline-based cleaning. 2) Zinc phosphating. 3) Cathodic electro-deposition. 4) Curing to a dry film thickness 18-22 my m. <p>The colour code for the finished product is NCS 9000/RAL 9005.</p> <p>Pump</p> <p>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.</p>  <p>The motor stool connects the pump head and motor. The pump head has a combined 1/2" priming plug and vent screw.</p>



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.

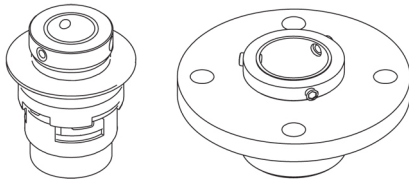
Primary seal:

- 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: FKM (fluorocarbon rubber)

FKM has excellent resistance to oils and chemicals. Above 90 °C, FKM should only be used in media without water.



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.

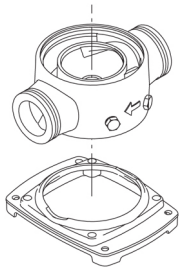
The pump has a stainless-steel base mounted on a separate base plate.

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 tapings.

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.



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 .. 194 °F
Selected liquid temperature:	68 °F
Density:	62.29 lb/ft³

Technical:

Rated pump speed:	3541 rpm
Rated flow:	238 US gpm
Rated head:	367.8 ft
Actual impeller diameter:	5.34 in
Pump orientation:	Vertical
Shaft seal arrangement:	Single
Code for shaft seal:	HQQV
Approvals:	CURUS
Curve tolerance:	ISO9906:2012 3B

Materials:

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



Company name:

Created by:

Phone:

Date:

1/24/2022

Count	Description
	Bearing: SIC Support bearing: Graflon Installation: t max amb: 104 °F Maximum operating pressure: 435.11 psi Max pressure at stated temperature: 435 psi / 194 °F 435 psi / -4 °F Type of connection: ANSI Size of suction port: 3 inch Size of outlet port: 3 inch Pressure rating for connection: PN 40 Flange rating inlet: 300 lb Flange size for motor: 284TC Electrical data: Motor standard: NEMA Motor type: WEG IE Efficiency class: IE3 / NEMA Premium Rated power - P2: 30 HP Power (P2) required by pump: 30 HP Main frequency: 60 Hz Rated voltage: 3 x 208-230/460 V Service factor: 1.25 Rated current: 73,8-67,6/33,8 A Starting current: 630-630 % Cos phi - power factor: 0.89 Rated speed: 3540 rpm IE efficiency: IE3 91,7% Motor efficiency at full load: 91.7 % Motor efficiency at 3/4 load: 91.7 % Motor efficiency at 1/2 load: 91.7 % Number of poles: 2 Enclosure class (IEC 34-5): IP55 Insulation class (IEC 85): F Motor Number: 99882384 Controls: Frequency converter: NONE Others: DOE Pump Energy Index CL: 0.89 Net weight: 581 lb Gross weight: 598 lb Shipping volume: 29 ft³ Country of origin: US Custom tariff no.: 8413.70.2040



Company name:

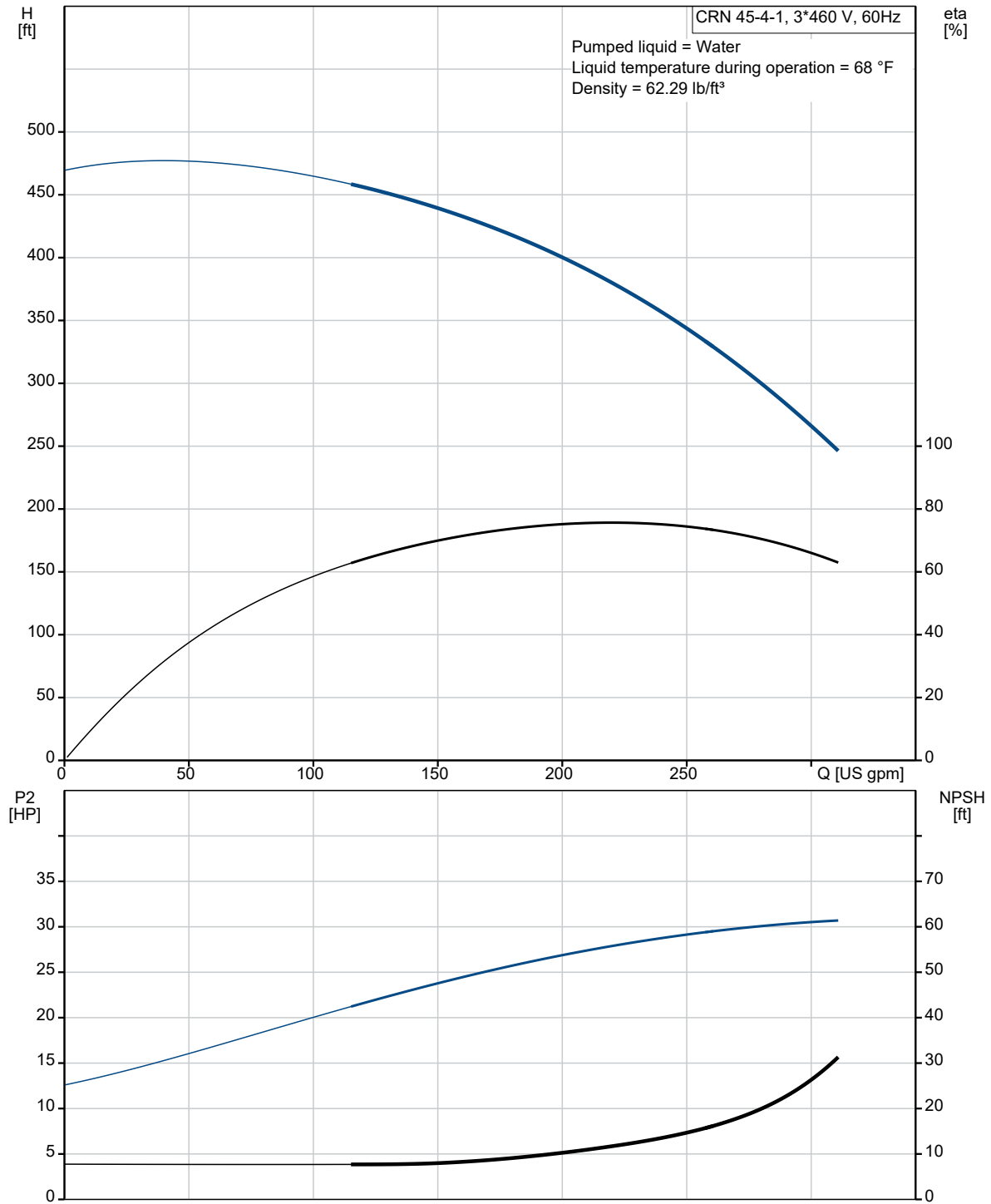
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1/24/2022

99918231 CRN 45-4-1 A-G-A-V-HQQV 60 Hz





Company name:

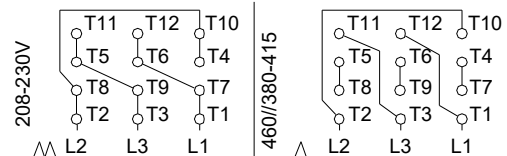
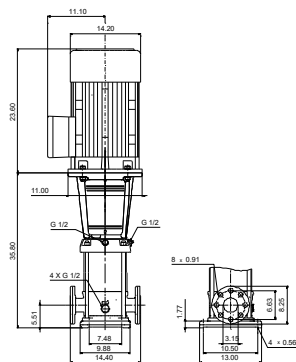
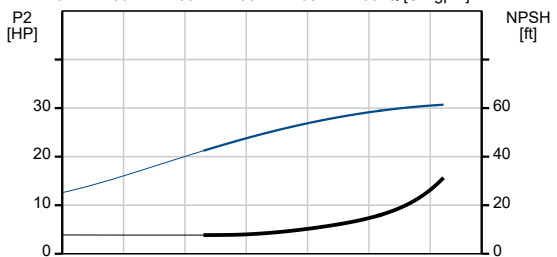
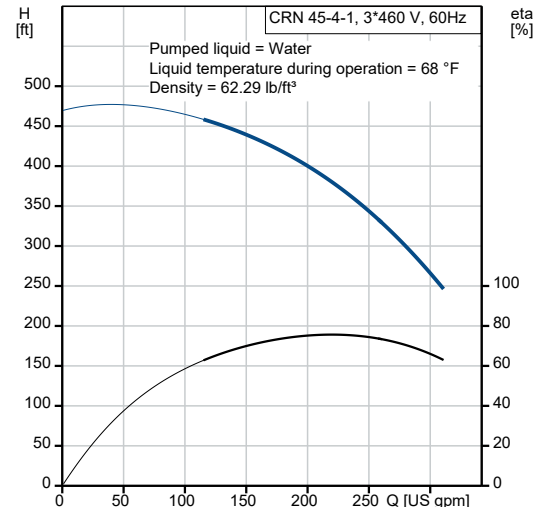
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1/24/2022

Description	Value
General information:	
Product name:	CRN 45-4-1 A-G-A-V-HQQV
Product No.:	99918231
EAN:	5715114130936
Technical:	
Rated pump speed:	3541 rpm
Rated flow:	238 US gpm
Rated head:	367.8 ft
Maximum head:	463.9 ft
Actual impeller diameter:	5.34 in
Stages:	4
Impellers:	4
Number of reduced-diameter impellers:	1
Low NPSH:	N
Pump orientation:	Vertical
Shaft seal arrangement:	Single
Code for shaft seal:	HQQV
Approvals:	CURUS
Curve tolerance:	ISO9906:2012 3B
Pump version:	A
Model:	B
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:	V
Bearing:	SIC
Support bearing:	Graffon
Installation:	
t max amb:	104 °F
Maximum operating pressure:	435.11 psi
Max pressure at stated temperature:	435 psi / 194 °F
Max pressure at stated temperature:	435 psi / -4 °F
Type of connection:	ANSI
Size of suction port:	3 inch
Size of outlet port:	3 inch
Pressure rating for connection:	PN 40
Flange rating inlet:	300 lb
Flange size for motor:	284TC
Connect code:	G





Company name:

Created by:

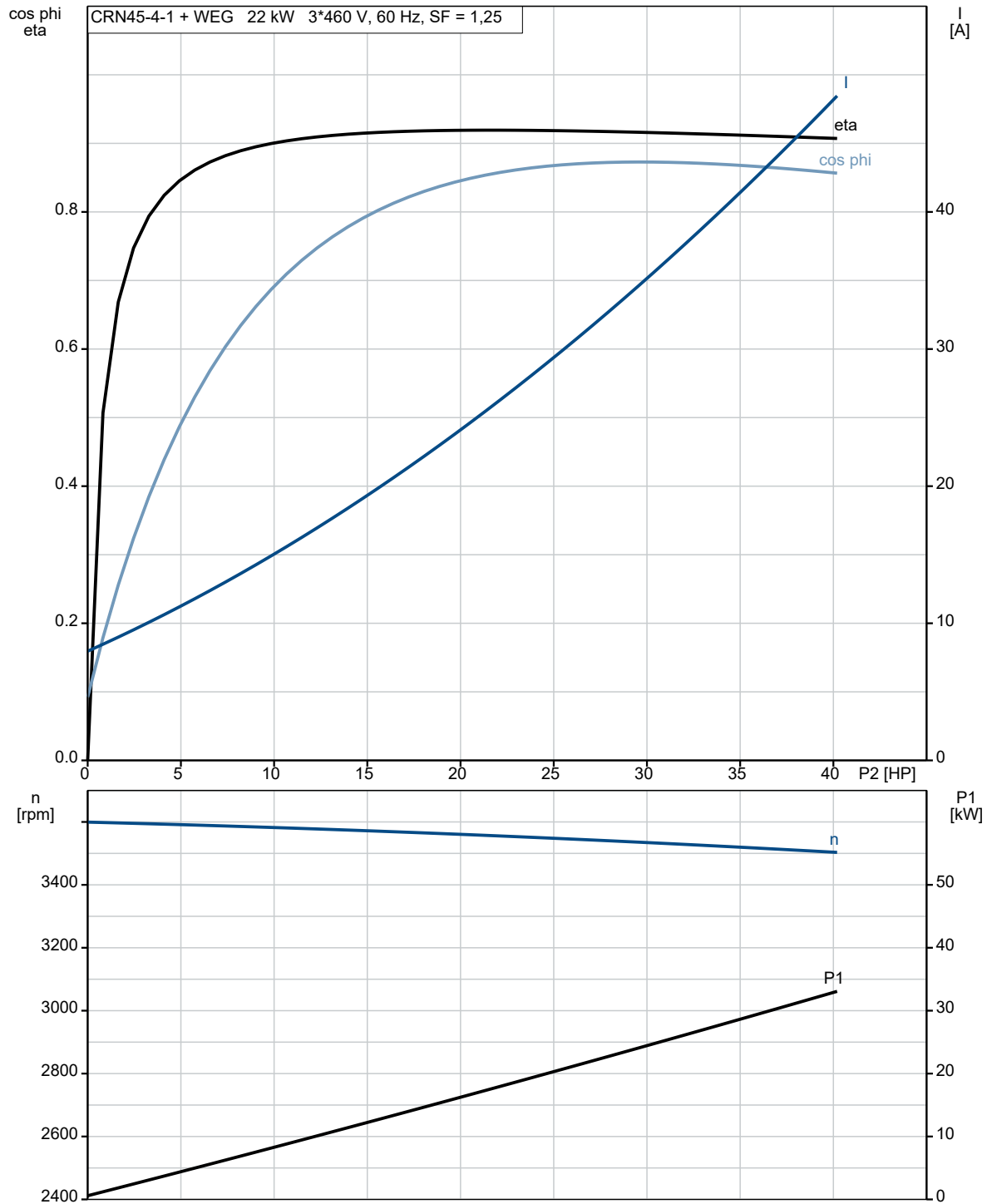
Phone:

Date:

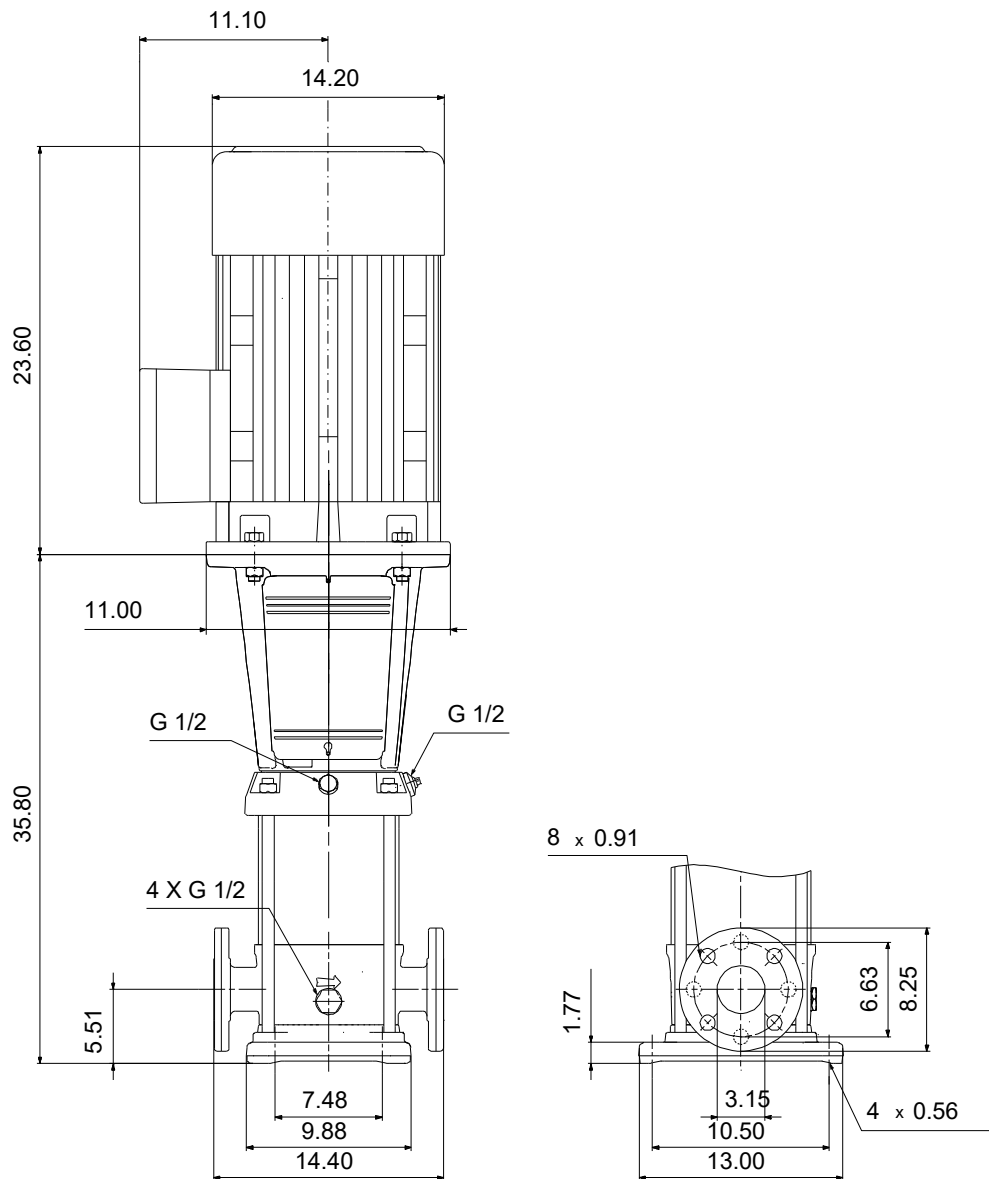
1/24/2022

Description	Value
Liquid:	
Pumped liquid:	Water
Liquid temperature range:	-4 .. 194 °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:	30 HP
Power (P2) required by pump:	30 HP
Main frequency:	60 Hz
Rated voltage:	3 x 208-230/460 V
Service factor:	1.25
Rated current:	73,8-67,6/33,8 A
Starting current:	630-630 %
Full load SF current:	84.5/42.3 A
Cos phi - power factor:	0.89
Rated speed:	3540 rpm
IE efficiency:	IE3 91,7%
Motor efficiency at full load:	91.7 %
Motor efficiency at 3/4 load:	91.7 %
Motor efficiency at 1/2 load:	91.7 %
Number of poles:	2
Enclosure class (IEC 34-5):	IP55
Insulation class (IEC 85):	F
Built-in motor protection:	NONE
Motor Number:	99882384
Controls:	
Frequency converter:	NONE
Others:	
DOE Pump Energy Index CL:	0.89
Net weight:	581 lb
Gross weight:	598 lb
Shipping volume:	29 ft³
Country of origin:	US
Custom tariff no.:	8413.70.2040

99918231 CRN 45-4-1 A-G-A-V-HQQV 60 Hz

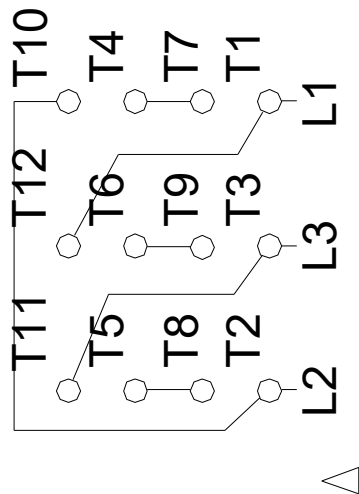


99918231 CRN 45-4-1 A-G-A-V-HQQV 60 Hz

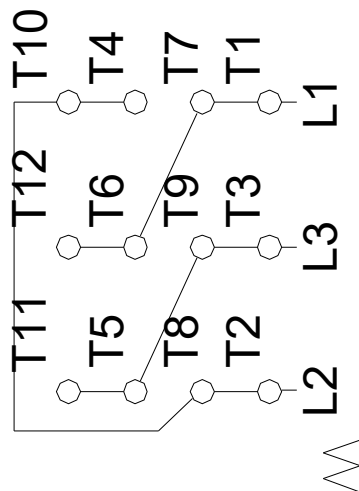


Note! All units are in [in] unless otherwise stated.
Disclaimer: This simplified dimensional drawing does not show all details.

99918231 CRN 45-4-1 A-G-A-V-HQQV 60 Hz



460//380-415



208-230V

All units are [in] unless otherwise presented.