GRUNDFOS

Submittal Data

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

Product photo could vary from the actual product

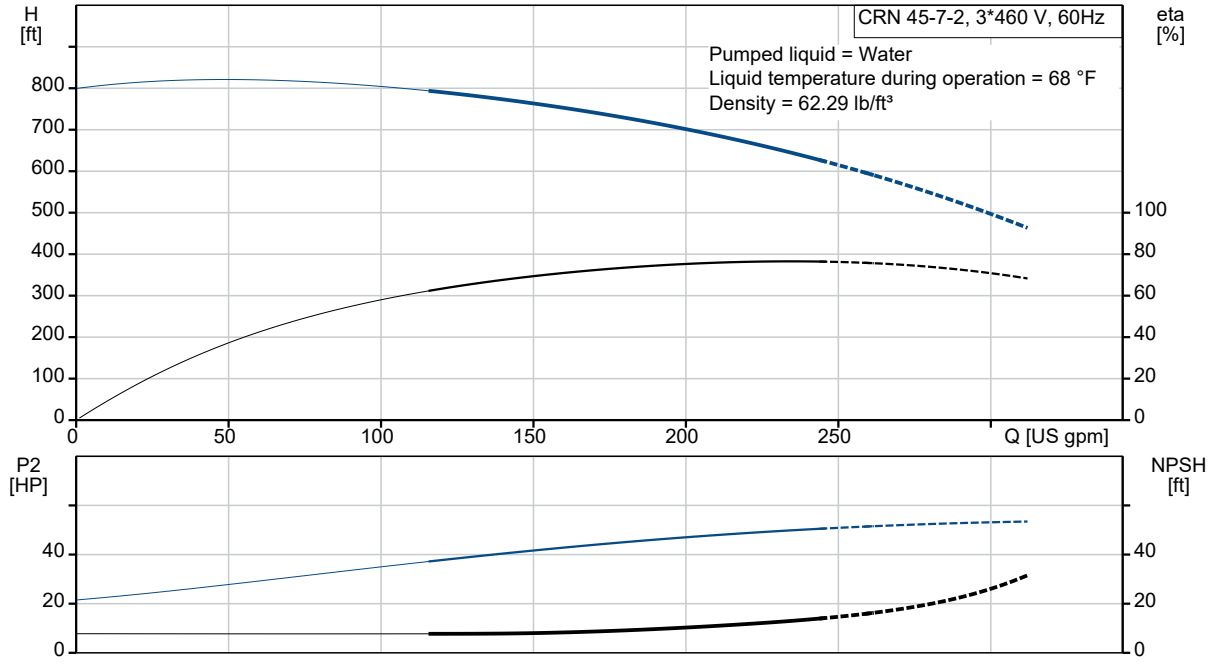
CRN 45-7-2 A-G-A-V-HQQV

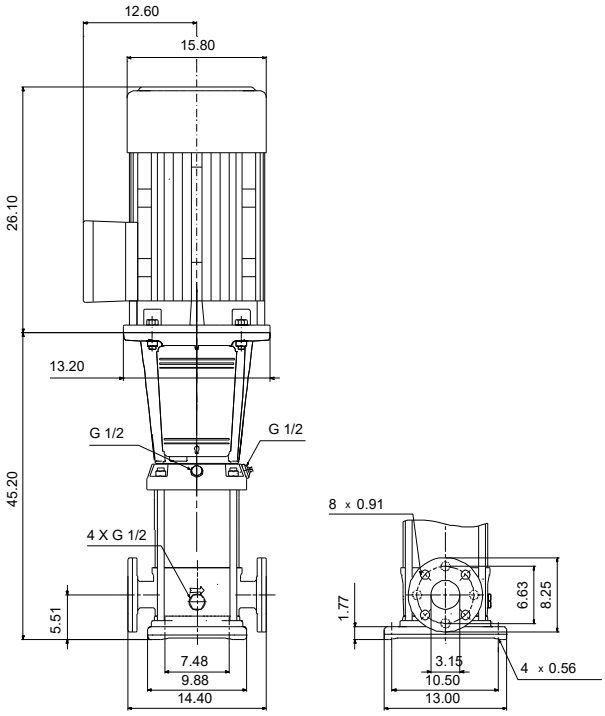
Vertical, multistage centrifugal pump with suction and discharge ports on same the level. Pump materials in contact with the liquid are in high-grade stainless steel (EN 1.4401) (AISI 316)

Conditions of Service	
Efficiency:	
Liquid:	Water
Temperature:	68 °F
NPSH required:	ft
Specific Gravity:	1.000

Pump Data	
Max pressure at stated temperature:	435 psi / 194 °F
Liquid temperature range:	-4 .. 194 °F
Maximum ambient temperature:	104 °F
Shaft seal:	HQQV
Product number:	99918238

Motor Data	
Rated power - P2:	50 HP
Rated voltage:	208-230/460 V
Main frequency:	60 Hz
Enclosure class:	IP55
Insulation class:	F
Motor protection:	NONE
Motor type:	WEG
Eff. 1/1:	93 %





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

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Company name:
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Count	Description
1	**CRN 45-7-2 A-G-A-V-HQQV**

Product No.: 99918238

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.

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.

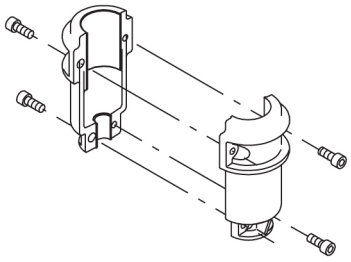
The entire process consists of these elements:

1) Alkaline-based cleaning.
2) Zinc phosphating.
3) Cathodic electro-deposition.
4) Curing to a dry film thickness 18-22 my m.

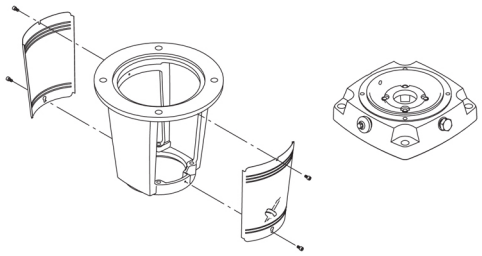
The colour code for the finished product is NCS 9000/RAL 9005.

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.



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.

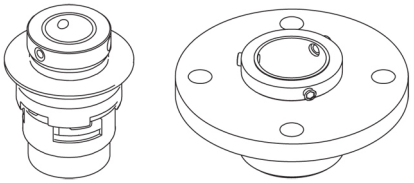
Primary seal:

- 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 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.

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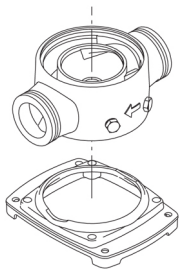

Motor

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:	3550 rpm
Rated flow:	238 US gpm
Rated head:	649.6 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

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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:	324TC
	Electrical data:	
	Motor standard:	NEMA
	Motor type:	WEG
	IE Efficiency class:	IE3 / NEMA Premium
	Rated power - P2:	50 HP
	Power (P2) required by pump:	50 HP
	Main frequency:	60 Hz
	Rated voltage:	3 x 208-230/460 V
	Service factor:	1.25
	Rated current:	124-112/56,1 A
	Starting current:	620-620 %
	Cos phi - power factor:	0.89
	Rated speed:	3550 rpm
	IE efficiency:	IE3 93%
	Motor efficiency at full load:	93 %
	Motor efficiency at 3/4 load:	93 %
	Motor efficiency at 1/2 load:	93 %
	Number of poles:	2
	Enclosure class (IEC 34-5):	IP55
	Insulation class (IEC 85):	F
	Motor Number:	99883252
	Controls:	
	Frequency converter:	NONE
	Others:	
	DOE Pump Energy Index CL:	0.89
	Net weight:	791 lb
	Gross weight:	809 lb
	Shipping volume:	39.9 ft³
	Country of origin:	US
	Custom tariff no.:	8413.70.2040

Company name:
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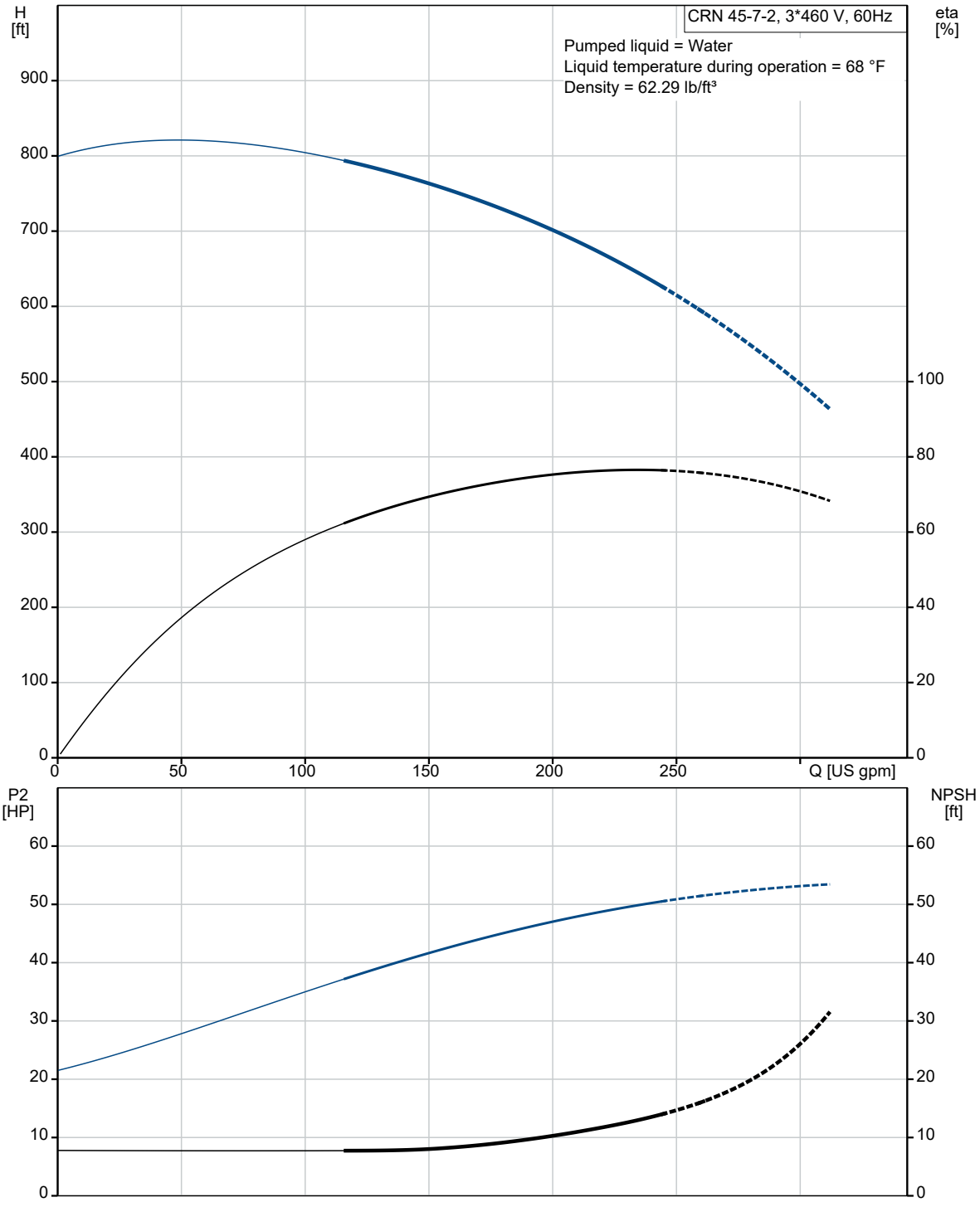
99918238 CRN 45-7-2 A-G-A-V-HQQV 60 Hz



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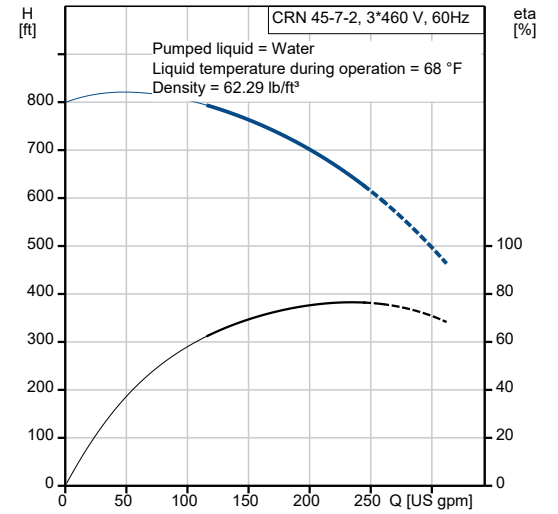
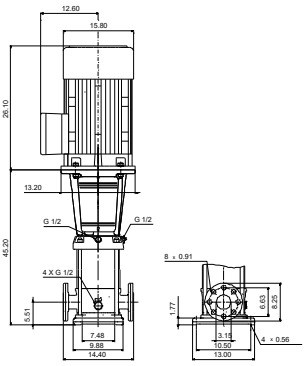
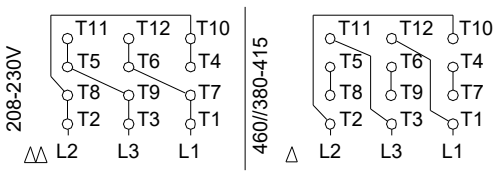
Description	Value
General information:	
Product name:	CRN 45-7-2 A-G-A-V-HQQV
Product No.:	99918238
EAN:	5715114131001
Technical:	
Rated pump speed:	3550 rpm
Rated flow:	238 US gpm
Rated head:	649.6 ft
Maximum head:	797 ft
Actual impeller diameter:	5.34 in
Stages:	7
Impellers:	7
Number of reduced-diameter impellers:	2
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:	Graflon
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:	324TC
Connect code:	G







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Company name:
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Description	Value
Liquid:	
Pumped liquid:	Water
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Density:	62.29 lb/ft³
Electrical data:	
Motor standard:	NEMA
Motor type:	WEG
IE Efficiency class:	IE3 / NEMA Premium
Rated power - P2:	50 HP
Power (P2) required by pump:	50 HP
Main frequency:	60 Hz
Rated voltage:	3 x 208-230/460 V
Service factor:	1.25
Rated current:	124-112/56,1 A
Starting current:	620-620 %
Full load SF current:	140/70.1 A
Cos phi - power factor:	0.89
Rated speed:	3550 rpm
IE efficiency:	IE3 93%
Motor efficiency at full load:	93 %
Motor efficiency at 3/4 load:	93 %
Motor efficiency at 1/2 load:	93 %
Number of poles:	2
Enclosure class (IEC 34-5):	IP55
Insulation class (IEC 85):	F
Built-in motor protection:	NONE
Motor Number:	99883252
Controls:	
Frequency converter:	NONE
Others:	
DOE Pump Energy Index CL:	0.89
Net weight:	791 lb
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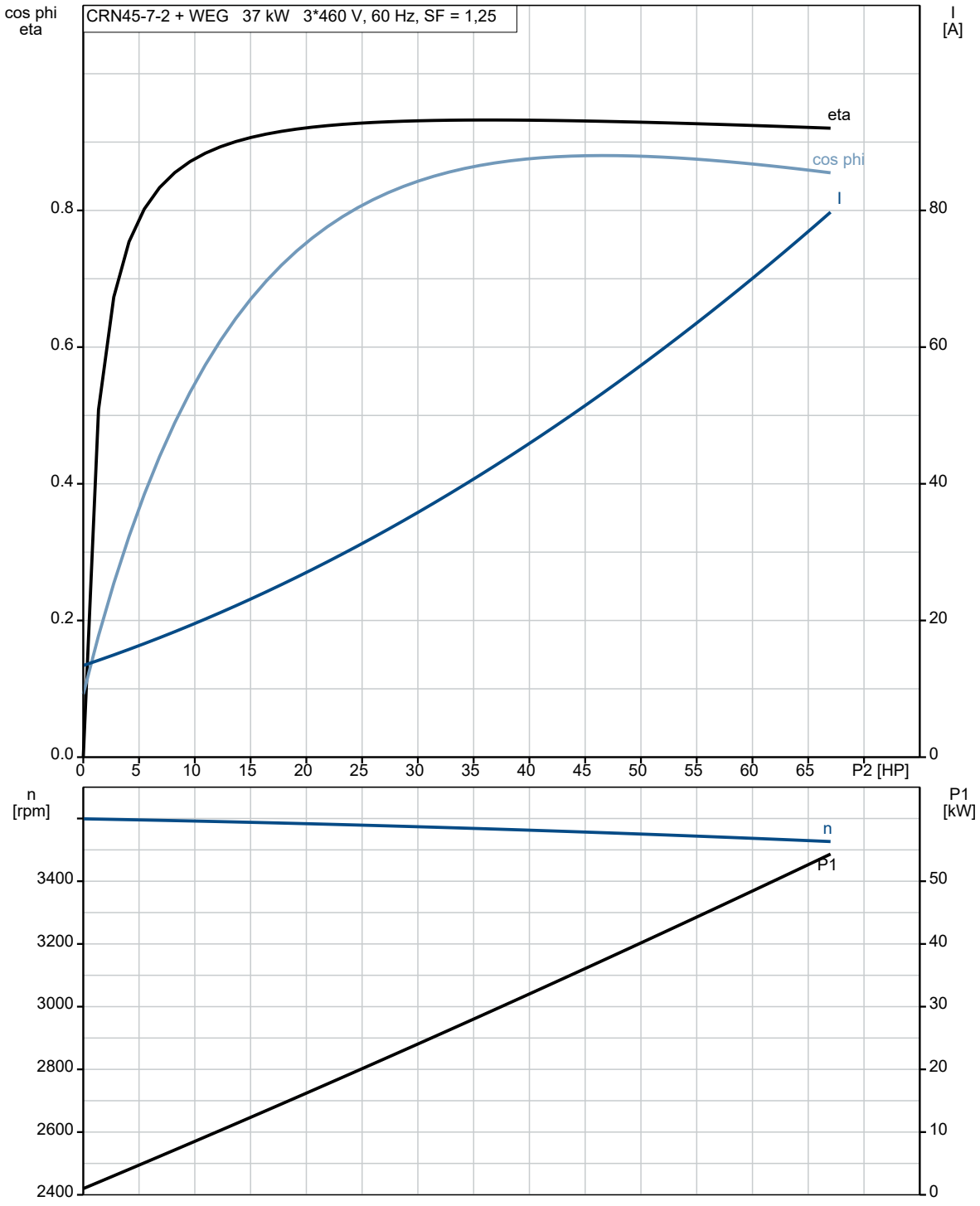
99918238 CRN 45-7-2 A-G-A-V-HQQV 60 Hz



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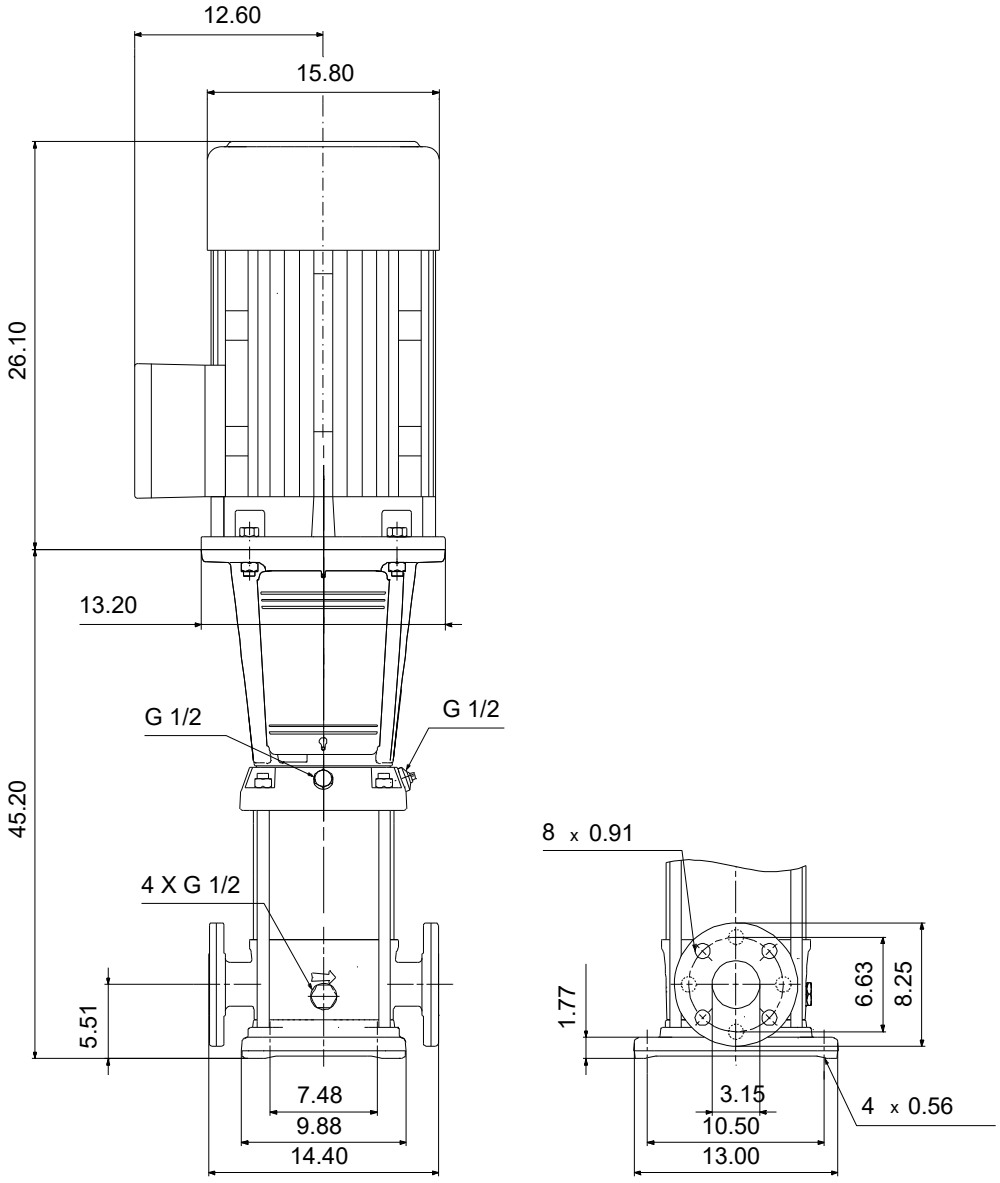
99918238 CRN 45-7-2 A-G-A-V-HQQV 60 Hz



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

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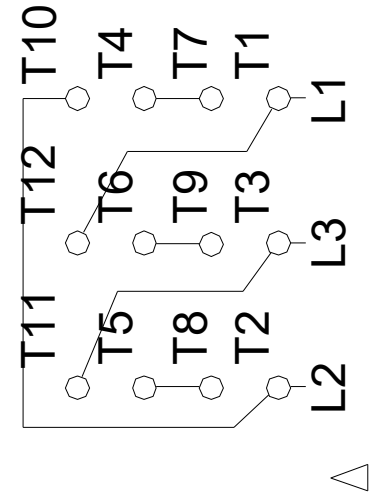
99918238 CRN 45-7-2 A-G-A-V-HQQV 60 Hz



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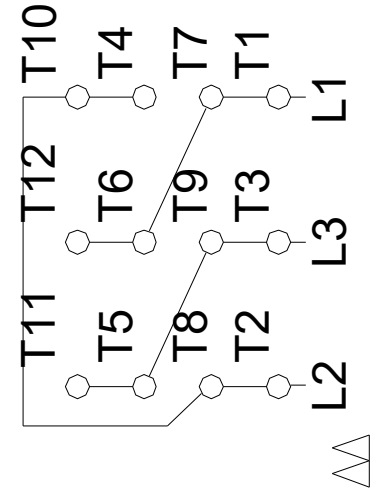

208-230V

All units are [in] unless otherwise presented.