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

## CRI 3-19 A-P-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)

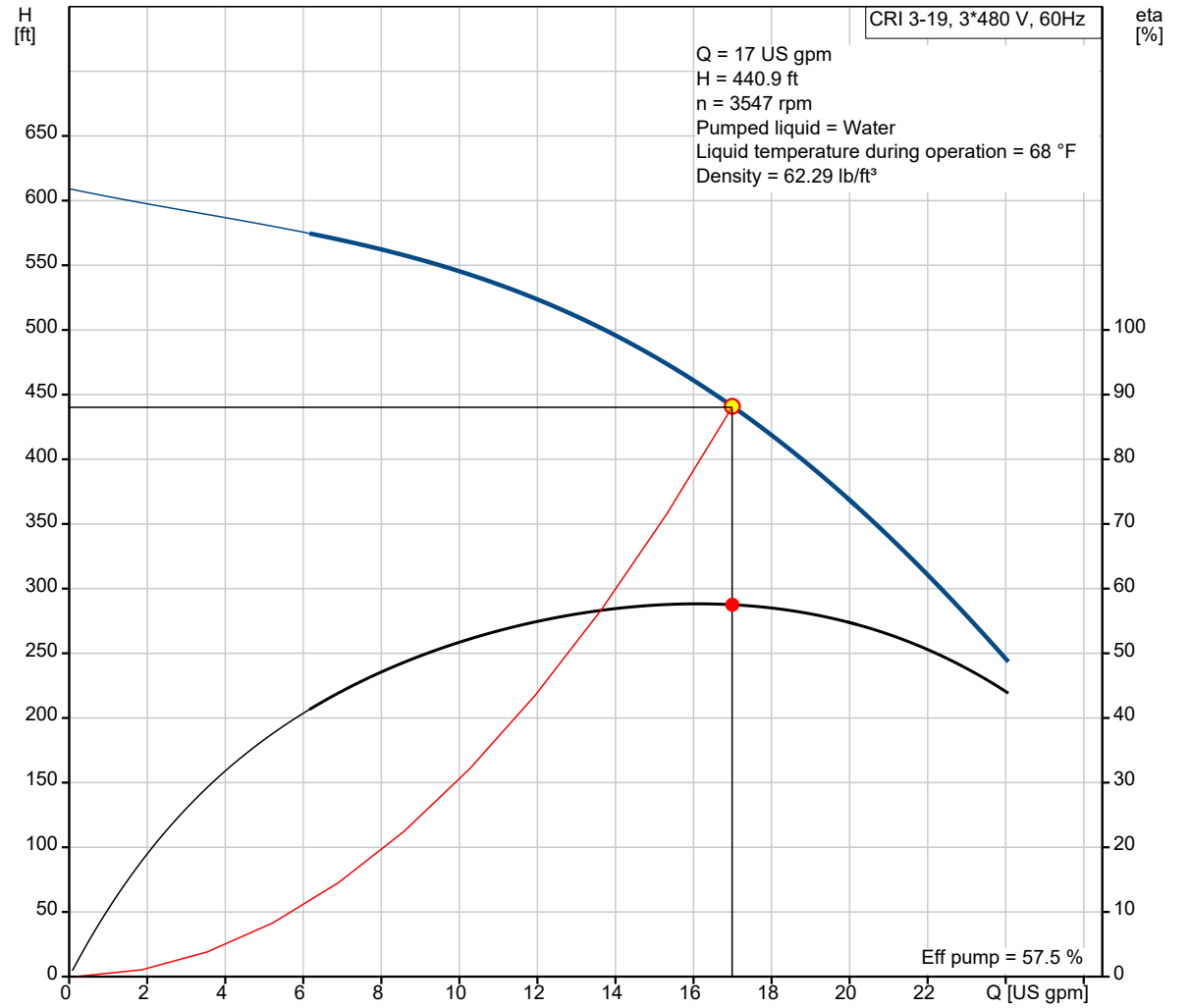
| Conditions of Service | |
|---|---|
| Flow: | 17 US gpm |
| Head: | 440.9 ft |
| Efficiency: | 50.6 % |
| Liquid: | Water |
| Temperature: | 68 °F |

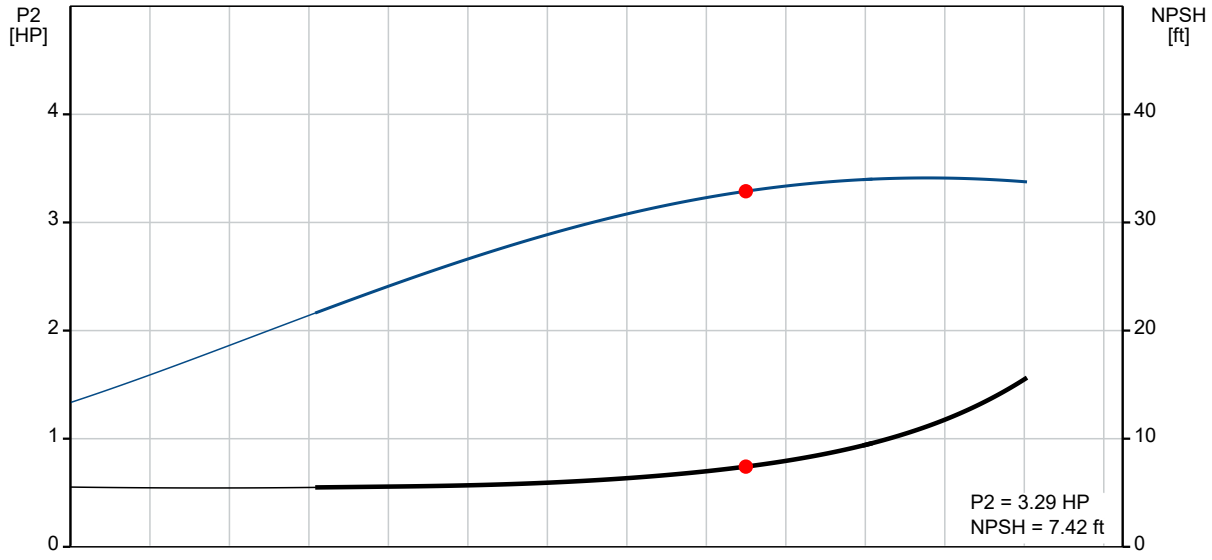
| Pump Data | |
|---|---|
| Max pressure at stated temperature: | 363 psi / 250 °F |
| Liquid temperature range: | -4 .. 248 °F |
| Maximum ambient temperature: | 140 °F |
| Shaft seal: | HQQE |
| Product number: | On request |

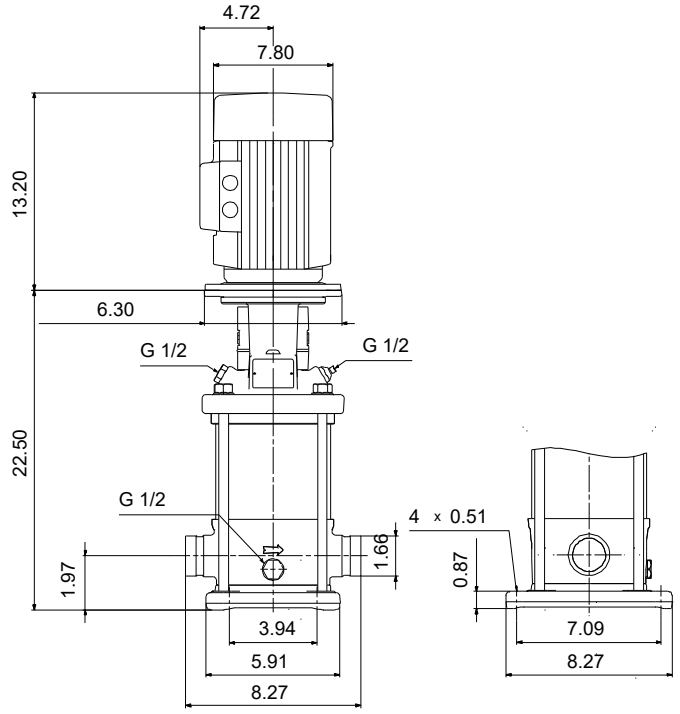
| Motor Data | |
|---|---|
| Rated power - P2: | 4 HP |
| Rated voltage: | 230-277D/400-480Y V |
| Main frequency: | 60 Hz |
| Enclosure class: | 55 Dust/Jetting |
| Insulation class: | F |

GRUNDFOS

# Submittal Data






**Materials:**

| | |
|---|---|
| Base: | Stainless steel |
| Base: | EN 1.4408 |
| Base: | AISI 316 |
| Impeller: | Stainless steel |
| Impeller: | AISI 304 |
| Impeller: | EN 1.4301 |
| Material code: | A |
| Code for rubber: | E |

**Company name:**
**Created by:**
**Phone:**

**Date:** 12/13/2021

| Count | Description |
|---|---|
| 1 | **CRI 3-19 A-P-A-E-HQQE** |

**Product photo could vary from the actual product**

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 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.

| Count | Description |
|---|---|

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.

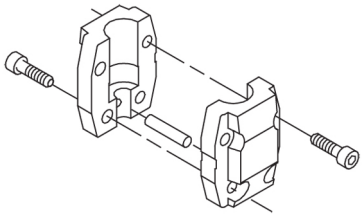
The entire process consists of these elements:

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

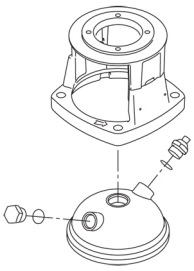
The colour code for the finished product is NCS 9000/RAL 9005.

## Pump

A standard split coupling connects the pump and motor shaft. It is enclosed in the pump head/motor stool by means of two coupling guards.



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.

Primary seal:

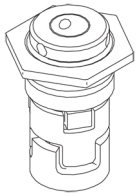
- Rotating seal ring material: silicon carbide (SiC)
- Stationary seat material: silicon carbide (SiC)

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)

| Count | Description |
|---|---|

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.

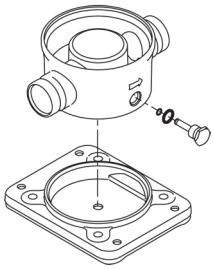
The pump has a stainless-steel base mounted on a separate base plate.

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 combined drain plug and bypass valve.

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 tapped-hole flange (FT).

Motor-mounting designation in accordance with IEC 60034-7: IM B 14 (Code I) / IM 3601 (Code II).

Electrical tolerances comply with IEC 60034.

The motor efficiency is classified as premium efficiency in accordance with EISA2007.

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.

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.

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

GRUNDFOS

**Company name:**
**Created by:**
**Phone:**

**Date:** 12/13/2021

| Count | Description | |
|---|---|---|
| | Liquid temperature range: | -4 .. 248 °F |
| | Selected liquid temperature: | 68 °F |
| | Density: | 62.29 lb/ft³ |
| | | |
| | Technical: | |
| | Rated pump speed: | 3514 rpm |
| | Actual calculated flow: | 17 US gpm |
| | Resulting head of the pump: | 440.9 ft |
| | Pump orientation: | Vertical |
| | Shaft seal arrangement: | Single |
| | Code for shaft seal: | HQQE |
| | Approvals: | CE,EAC,UKCA |
| | Approvals for drinking water: | WRAS,ACS |
| | Curve tolerance: | ISO9906:2012 3B |
| | | |
| | Materials: | |
| | Base: | Stainless steel<br>EN 1.4408<br>AISI 316 |
| | Impeller: | Stainless steel<br>EN 1.4301<br>AISI 304 |
| | Bearing: | SIC |
| | | |
| | Installation: | |
| | t max amb: | 140 °F |
| | Maximum operating pressure: | 362.59 psi |
| | Max pressure at stated temperature: | 363 psi / 250 °F<br>363 psi / -4 °F |
| | Type of connection: | PJE |
| | Size of inlet connection: | DN 32 |
| | Size of outlet connection: | DN 32 |
| | Pressure rating for connection: | PN 50 |
| | Flange size for motor: | FT130 |
| | | |
| | Electrical data: | |
| | Motor standard: | IEC |
| | Motor type: | 100LC |
| | IE Efficiency class: | NEMA Premium / IE3 60Hz |
| | Rated power - P2: | 4 HP |
| | Power (P2) required by pump: | 4 HP |
| | Main frequency: | 60 Hz |
| | Rated voltage: | 3 x 230-277D/400-480Y V |
| | Rated current: | 10,5-9,35/6,00-5,40 A |
| | Starting current: | 910-1100 % |
| | Cos phi - power factor: | 0.90-0.84 |
| | Rated speed: | 3490-3530 rpm |
| | IE efficiency: | IE3 88,5% - IE3 88,5% |
| | Motor efficiency at full load: | 88.5 % |
| | Motor efficiency at 3/4 load: | 88.0 % |

GRUNDFOS

**Company name:**
**Created by:**
**Phone:**

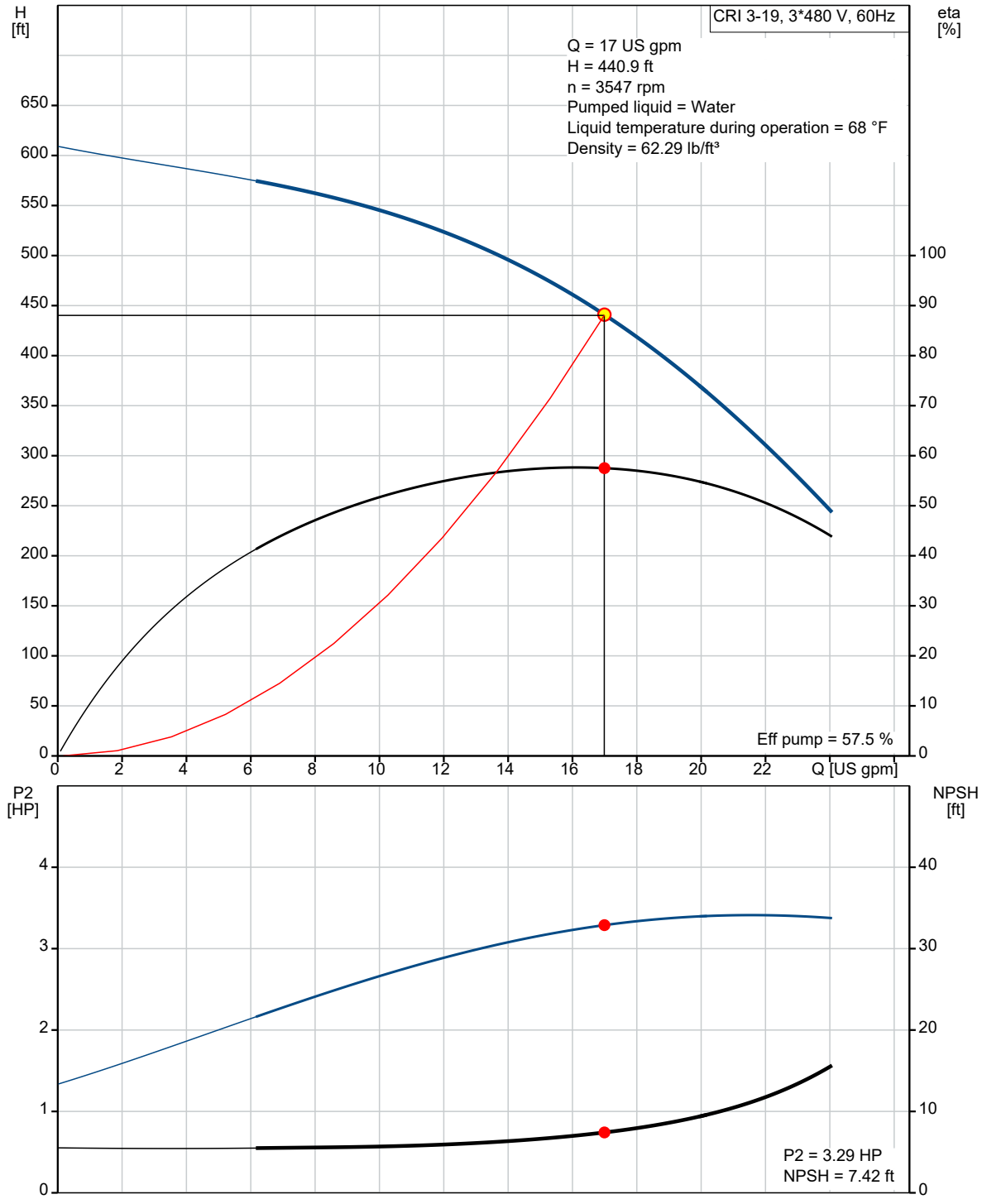
**Date:** 12/13/2021

| Count | Description | |
|---|---|---|
| | Motor efficiency at 1/2 load: | 87.7 % |
| | Number of poles: | 2 |
| | Enclosure class (IEC 34-5): | 55 Dust/Jetting |
| | Insulation class (IEC 85): | F |
| | Motor Number: | 85U05510 |
| | | |
| | Controls: | |
| | Frequency converter: | NONE |
| | | |
| | Others: | |
| | Minimum efficiency index, MEI ≥: | 0.70 |
| | Net weight: | 95.6 lb |
| | Gross weight: | 105 lb |
| | Shipping volume: | 3.25 ft³ |

**Company name:**
**Created by:**
**Phone:**

**Date:** 12/13/2021

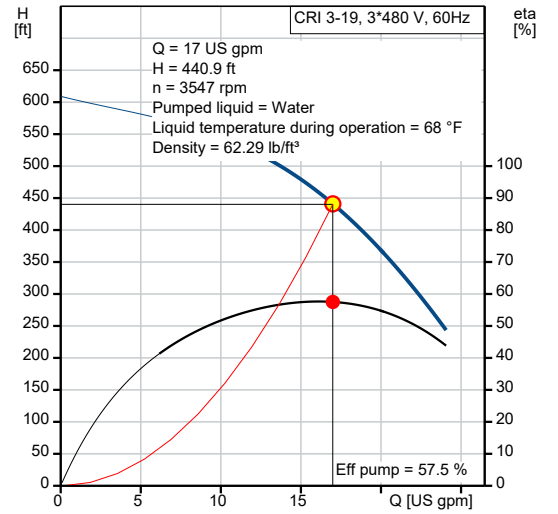
# On request CRI 3-19 A-P-A-E-HQQE 60 Hz

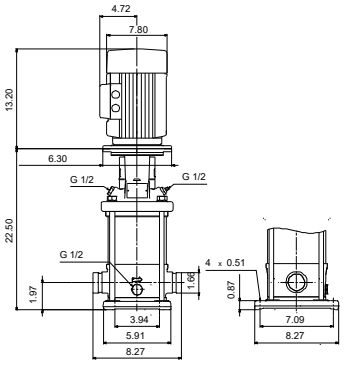


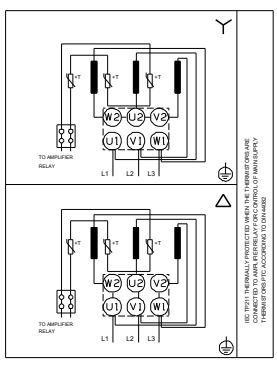
**Company name:**
**Created by:**
**Phone:**

**Date:** 12/13/2021

| Description | Value |
|---|---|
| **General information:** | |
| Product name: | CRI 3-19<br>A-P-A-E-HQQE |
| Product No.: | On request |
| EAN: | On request |
| **Technical:** | |
| Rated pump speed: | 3514 rpm |
| Actual calculated flow: | 17 US gpm |
| Resulting head of the pump: | 440.9 ft |
| Maximum head: | 599.8 ft |
| Stages: | 19 |
| Impellers: | 19 |
| Number of reduced-diameter impellers: | 0 |
| Low NPSH: | N |
| Pump orientation: | Vertical |
| Shaft seal arrangement: | Single |
| Code for shaft seal: | HQQE |
| Approvals: | CE,EAC,UKCA |
| Approvals for drinking water: | WRAS,ACS |
| Curve tolerance: | ISO9906:2012 3B |
| Pump version: | A |
| Model: | A |
| **Materials:** | |
| Base: | Stainless steel |
| Base: | EN 1.4408 |
| Base: | AISI 316 |
| Impeller: | Stainless steel |
| Impeller: | EN 1.4301 |
| Impeller: | AISI 304 |
| Material code: | A |
| Code for rubber: | E |
| Bearing: | SIC |
| **Installation:** | |
| t max amb: | 140 °F |
| Maximum operating pressure: | 362.59 psi |
| Max pressure at stated temperature: | 363 psi / 250 °F |
| Max pressure at stated temperature: | 363 psi / -4 °F |
| Type of connection: | PJE |
| Size of inlet connection: | DN 32 |
| Size of outlet connection: | DN 32 |
| Pressure rating for connection: | PN 50 |
| Flange size for motor: | FT130 |
| Connect code: | P |
| **Liquid:** | |
| Pumped liquid: | Water |
| Liquid temperature range: | -4 .. 248 °F |



**Company name:**
**Created by:**
**Phone:**

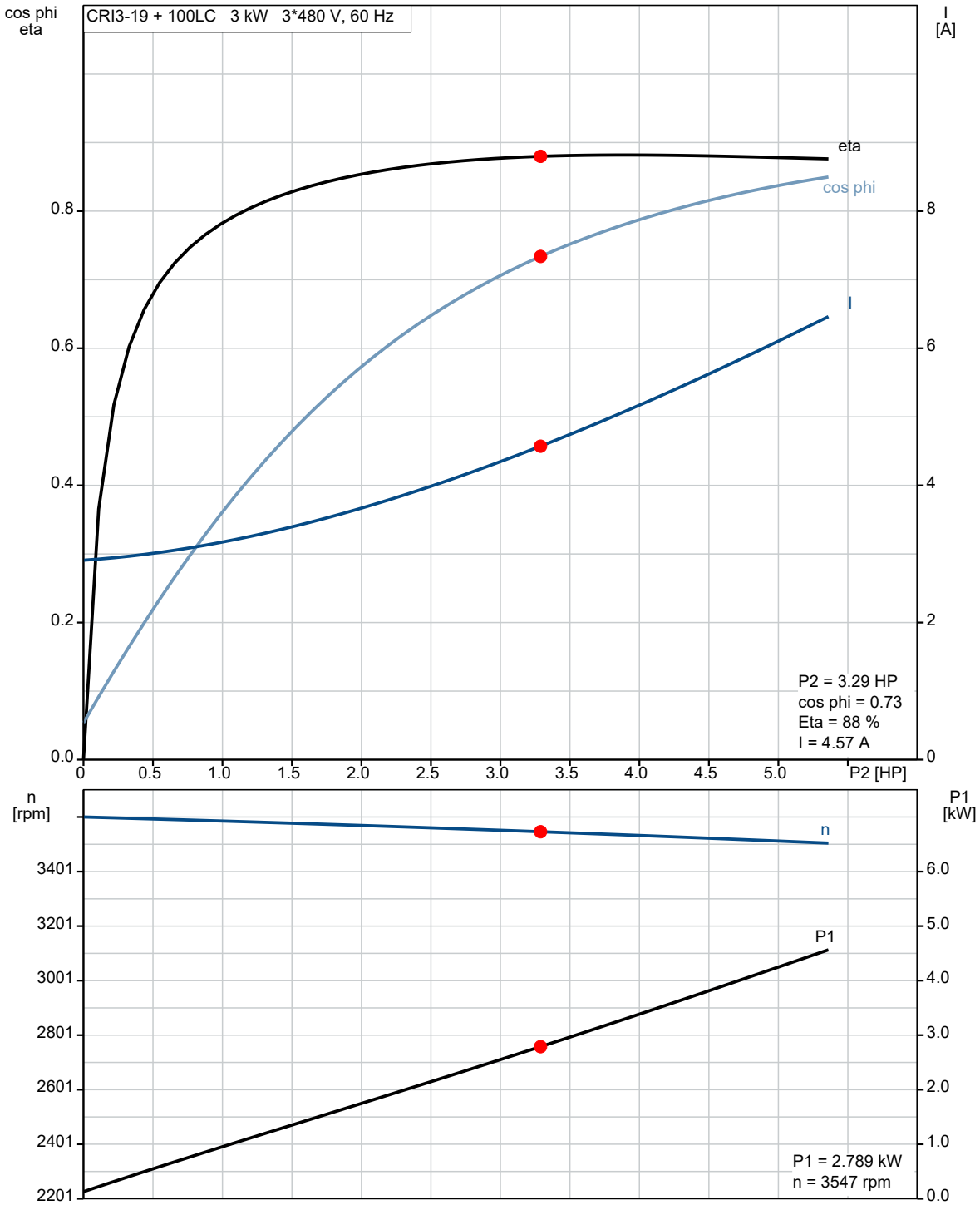
**Date:** 12/13/2021

| Description | Value |
|---|---|
| Selected liquid temperature: | 68 °F |
| Density: | 62.29 lb/ft³ |
| **Electrical data:** | |
| Motor standard: | IEC |
| Motor type: | 100LC |
| IE Efficiency class: | NEMA Premium / IE3 60Hz |
| Rated power - P2: | 4 HP |
| Power (P2) required by pump: | 4 HP |
| Main frequency: | 60 Hz |
| Rated voltage: | 3 x 230-277D/400-480Y V |
| Rated current: | 10,5-9,35/6,00-5,40 A |
| Starting current: | 910-1100 % |
| Cos phi - power factor: | 0.90-0.84 |
| Rated speed: | 3490-3530 rpm |
| IE efficiency: | IE3 88,5% - IE3 88,5% |
| Motor efficiency at full load: | 88.5 % |
| Motor efficiency at 3/4 load: | 88.0 % |
| Motor efficiency at 1/2 load: | 87.7 % |
| Number of poles: | 2 |
| Enclosure class (IEC 34-5): | 55 Dust/Jetting |
| Insulation class (IEC 85): | F |
| Built-in motor protection: | PTC |
| Motor Number: | 85U05510 |
| **Controls:** | |
| Frequency converter: | NONE |
| **Others:** | |
| Minimum efficiency index, MEI ≥: | 0.70 |
| Net weight: | 95.6 lb |
| Gross weight: | 105 lb |
| Shipping volume: | 3.25 ft³ |

**Company name:**
**Created by:**
**Phone:**

**Date:** 12/13/2021

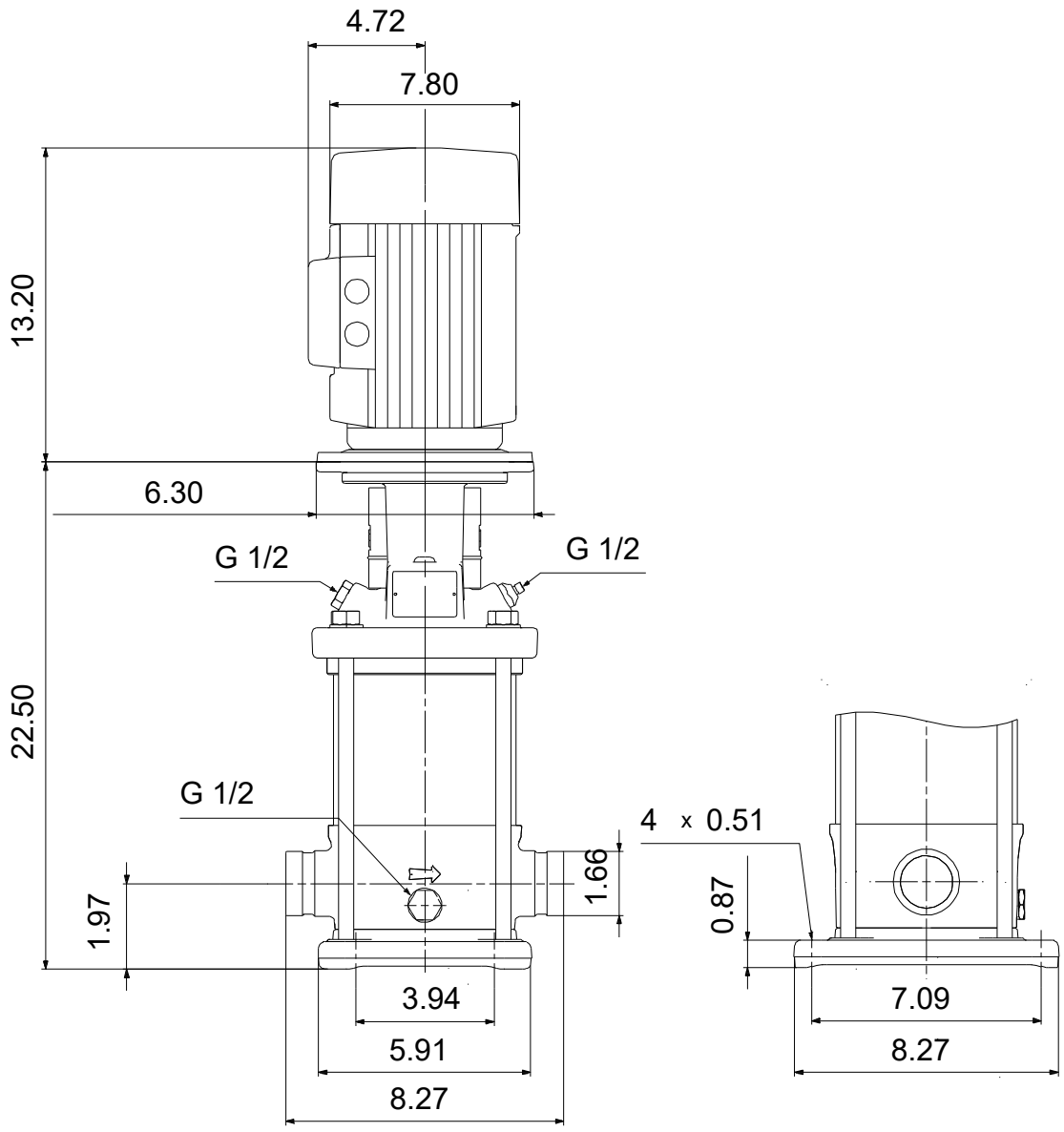
# On request CRI 3-19 A-P-A-E-HQQE 60 Hz



**Company name:**
**Created by:**
**Phone:**

**Date:** 12/13/2021

# On request CRI 3-19 A-P-A-E-HQQE 60 Hz

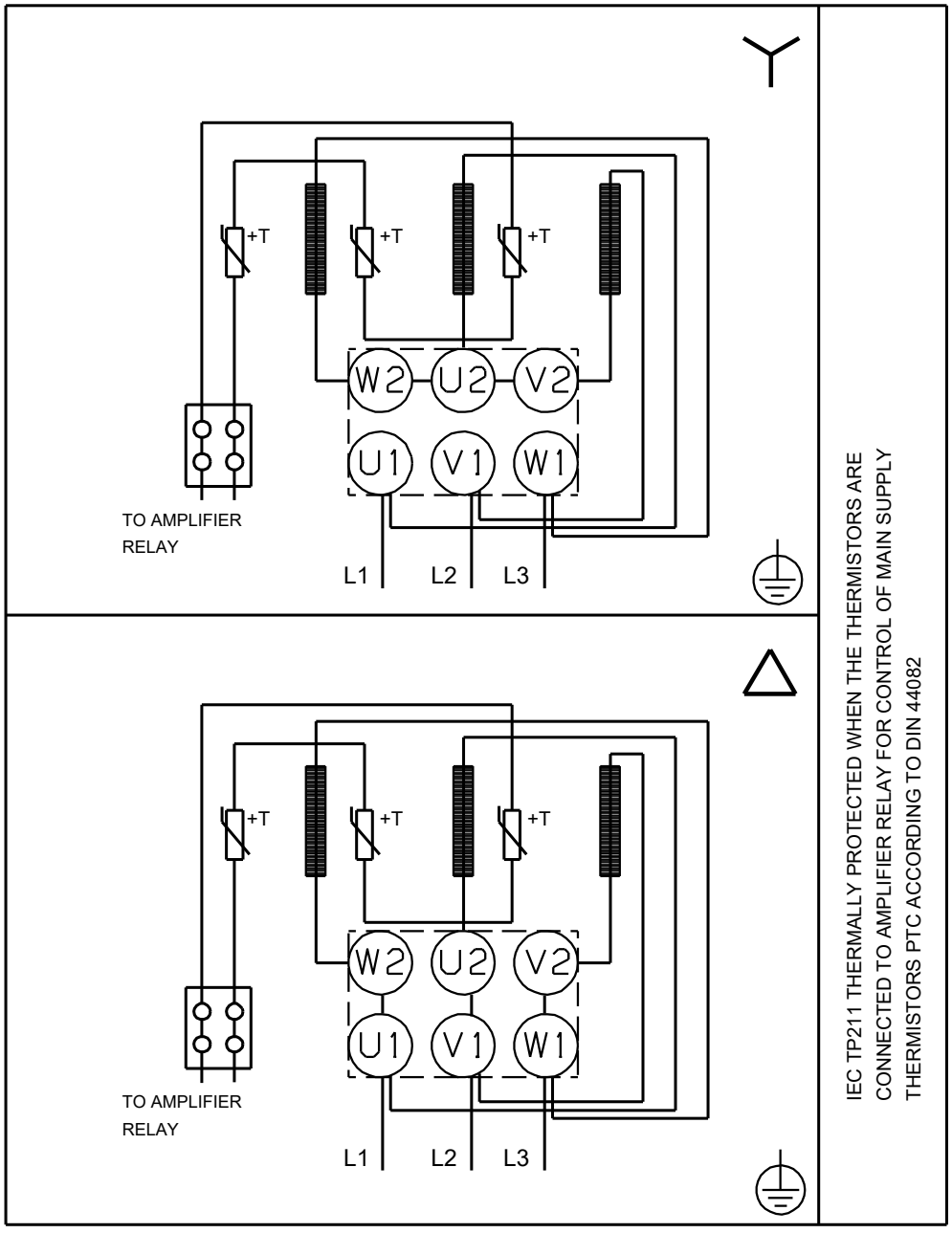



Note! All units are in [in] unless otherwise stated.
Disclaimer: This simplified dimensional drawing does not show all details.

**Company name:**
**Created by:**
**Phone:**

**Date:** 12/13/2021

# On request CRI 3-19 A-P-A-E-HQQE 60 Hz




All units are [in] unless otherwise presented.