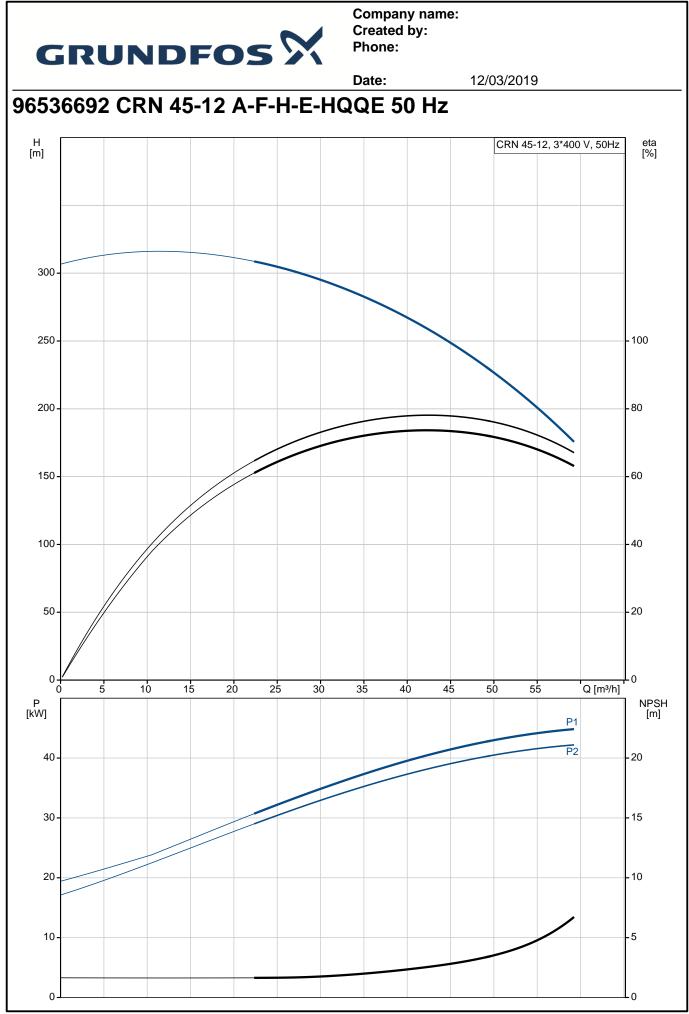
| | GRUNDFOS | | Company name: Created by: Phone: | | | |
|------|---|-------------------------|--|------------|--|--|
| | | | Date: | 12/03/2019 | | |
| lty. | Description | | | | | |
| 1 | CRN 45-12 A-F-H-E-HQQE | | | | | |
| | | | | | | |
| | Product No.: 96536692 | | | | | |
| | Vertical, multistage 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 DIN flanges. | | | | | |
| | The pump is fitted with a 3-phase | e, fan-cooled asynch | nronous motor. | | | |
| | Controls: | | | | | |
| | Frequency converter: | NONE | | | | |
| | Liquid: | | | | | |
| | Pumped liquid: | Water | | | | |
| | Liquid temperature range: | -40 120 °C | | | | |
| | Liquid temperature during operation | ion: 20 °C | | | | |
| | Density: | 998.2 kg/m ³ | | | | |
| | Technical: | | | | | |
| | | a ara basad: 2060 | mm | | | |
| | Pump speed on which pump dat | | rpm | | | |
| | Rated flow: | 45 m³/h | | | | |
| | Rated head: | 250 m | | | | |
| | Pump orientation: | Vertical | | | | |
| | Shaft seal arrangement: | Single | | | | |
| | Code for shaft seal: | HQQE | | | | |
| | Approvals on nameplate: | CE, EAC,ACS | | | | |
| | Curve tolerance: | ISO9906:2012 3B | | | | |
| | Materials: | | | | | |
| | Base: | Stainless steel | | | | |
| | | EN 1.4408 | | | | |
| | | AISI 316 | | | | |
| | Impeller: | Stainless steel | | | | |
| | | EN 1.4401 | | | | |
| | | AISI 316 | | | | |
| | Depringu | SIC | | | | |
| | Bearing: | | | | | |
| | Support bearing: | Graflon | | | | |
| | Installation: | | | | | |
| | Maximum ambient temperature: | | | | | |
| | Maximum operating pressure: | 33 bar | | | | |
| | Max pressure at stated temp: | 33 bar / 120 °C | | | | |
| | T | 33 bar / -40 °C | | | | |
| | Type of connection: | DIN | | | | |
| | Size of inlet connection: | DN 80 | | | | |
| | Size of outlet connection: | DN 80 | | | | |
| | Pressure rating for pipe connecti | | | | | |
| | Flange size for motor: | FF400 | | | | |
| | | | | | | |



Company name: Created by: Phone:

| Description Electrical data: Motor standard: Motor type: IE Efficiency class: Rated power - P2: Power (P2) required by pump: Mains frequency: Rated voltage: Rated voltage: Rated current: Starting current: Cos phi - power factor: Rated speed: Efficiency: Motor efficiency at full load: Motor efficiency at 3/4 load: Motor efficiency at 1/2 load: | IEC SIEMENS IE3 45 kW 45 kW 50 Hz 3 x 380-420D/660-725 81,0-74,0/47,0-43,0 A 690-690 % 0.89 2960 rpm IE3 94,0% 94.0-94.0 % 94.5-94.5 % 94.4-94.4 % 2 | | | | |
|---|---|--|--|--|--|
| Motor standard: Motor type: IE Efficiency class: Rated power - P2: Power (P2) required by pump: Mains frequency: Rated voltage: Rated voltage: Rated current: Starting current: Cos phi - power factor: Rated speed: Efficiency: Motor efficiency at full load: Motor efficiency at 3/4 load: Motor efficiency at 1/2 load: | SIEMENS IE3 45 kW 50 Hz 3 x 380-420D/660-725 81,0-74,0/47,0-43,0 A 690-690 % 0.89 2960 rpm IE3 94,0% 94.0-94.0 % 94.5-94.5 % 94.4-94.4 % 2 | | | | |
| Motor type: IE Efficiency class: Rated power - P2: Power (P2) required by pump: Mains frequency: Rated voltage: Rated voltage: Rated current: Starting current: Cos phi - power factor: Rated speed: Efficiency: Motor efficiency at full load: Motor efficiency at 3/4 load: Motor efficiency at 1/2 load: | SIEMENS IE3 45 kW 50 Hz 3 x 380-420D/660-725 81,0-74,0/47,0-43,0 A 690-690 % 0.89 2960 rpm IE3 94,0% 94.0-94.0 % 94.5-94.5 % 94.4-94.4 % 2 | | | | |
| IE Efficiency class: Rated power - P2: Power (P2) required by pump: Mains frequency: Rated voltage: Rated current: Starting current: Cos phi - power factor: Rated speed: Efficiency: Motor efficiency at full load: Motor efficiency at 3/4 load: Motor efficiency at 1/2 load: | IE3 45 kW 45 kW 50 Hz 3 x 380-420D/660-725 81,0-74,0/47,0-43,0 A 690-690 % 0.89 2960 rpm IE3 94,0% 94.0-94.0 % 94.5-94.5 % 94.4-94.4 % 2 | | | | |
| IE Efficiency class: Rated power - P2: Power (P2) required by pump: Mains frequency: Rated voltage: Rated current: Starting current: Cos phi - power factor: Rated speed: Efficiency: Motor efficiency at full load: Motor efficiency at 3/4 load: Motor efficiency at 1/2 load: | IE3 45 kW 45 kW 50 Hz 3 x 380-420D/660-725 81,0-74,0/47,0-43,0 A 690-690 % 0.89 2960 rpm IE3 94,0% 94.0-94.0 % 94.5-94.5 % 94.4-94.4 % 2 | | | | |
| Rated power - P2: Power (P2) required by pump: Mains frequency: Rated voltage: Rated current: Starting current: Cos phi - power factor: Rated speed: Efficiency: Motor efficiency at full load: Motor efficiency at 3/4 load: Motor efficiency at 1/2 load: | 45 kW 45 kW 50 Hz 3 x 380-420D/660-725 81,0-74,0/47,0-43,0 A 690-690 % 0.89 2960 rpm IE3 94,0% 94.0-94.0 % 94.5-94.5 % 94.4-94.4 % 2 | | | | |
| Power (P2) required by pump: Mains frequency: Rated voltage: Rated current: Starting current: Cos phi - power factor: Rated speed: Efficiency: Motor efficiency at full load: Motor efficiency at 3/4 load: Motor efficiency at 1/2 load: | 45 kW 50 Hz 3 x 380-420D/660-725 81,0-74,0/47,0-43,0 A 690-690 % 0.89 2960 rpm IE3 94,0% 94.0-94.0 % 94.5-94.5 % 94.4-94.4 % 2 | | | | |
| Mains frequency: Rated voltage: Rated current: Starting current: Cos phi - power factor: Rated speed: Efficiency: Motor efficiency at full load: Motor efficiency at 3/4 load: Motor efficiency at 1/2 load: | 50 Hz 3 x 380-420D/660-725 81,0-74,0/47,0-43,0 A 690-690 % 0.89 2960 rpm IE3 94,0% 94.0-94.0 % 94.5-94.5 % 94.4-94.4 % 2 | | | | |
| Rated voltage: Rated current: Starting current: Cos phi - power factor: Rated speed: Efficiency: Motor efficiency at full load: Motor efficiency at 3/4 load: Motor efficiency at 1/2 load: | 3 x 380-420D/660-725 81,0-74,0/47,0-43,0 A 690-690 % 0.89 2960 rpm IE3 94,0% 94.0-94.0 % 94.5-94.5 % 94.4-94.4 % 2 | | | | |
| Rated current: Starting current: Cos phi - power factor: Rated speed: Efficiency: Motor efficiency at full load: Motor efficiency at 3/4 load: Motor efficiency at 1/2 load: | 81,0-74,0/47,0-43,0 A 690-690 % 0.89 2960 rpm IE3 94,0% 94.0-94.0 % 94.5-94.5 % 94.4-94.4 % 2 | | | | |
| Starting current: Cos phi - power factor: Rated speed: Efficiency: Motor efficiency at full load: Motor efficiency at 3/4 load: Motor efficiency at 1/2 load: | 690-690 % 0.89 2960 rpm IE3 94,0% 94.0-94.0 % 94.5-94.5 % 94.4-94.4 % 2 | | | | |
| Cos phi - power factor: Rated speed: Efficiency: Motor efficiency at full load: Motor efficiency at 3/4 load: Motor efficiency at 1/2 load: | 0.89 2960 rpm IE3 94,0% 94.0-94.0 % 94.5-94.5 % 94.4-94.4 % 2 | | | | |
| Rated speed: Efficiency: Motor efficiency at full load: Motor efficiency at 3/4 load: Motor efficiency at 1/2 load: | 2960 rpm IE3 94,0% 94.0-94.0 % 94.5-94.5 % 94.4-94.4 % 2 | | | | |
| Rated speed: Efficiency: Motor efficiency at full load: Motor efficiency at 3/4 load: Motor efficiency at 1/2 load: | 2960 rpm IE3 94,0% 94.0-94.0 % 94.5-94.5 % 94.4-94.4 % 2 | | | | |
| Efficiency: Motor efficiency at full load: Motor efficiency at 3/4 load: Motor efficiency at 1/2 load: | IE3 94,0% 94.0-94.0 % 94.5-94.5 % 94.4-94.4 % 2 | | | | |
| Motor efficiency at full load: Motor efficiency at 3/4 load: Motor efficiency at 1/2 load: | 94.0-94.0 % 94.5-94.5 % 94.4-94.4 % 2 | | | | |
| Motor efficiency at 3/4 load: Motor efficiency at 1/2 load: | 94.5-94.5 % 94.4-94.4 % 2 | | | | |
| Motor efficiency at 1/2 load: | 94.4-94.4 % 2 | | | | |
| | 2 | | | | |
| | | | | | |
| Number of poles: | EE Duct/latting | | | | |
| Enclosure class (IEC 34-5): | 55 Dust/Jetting | | | | |
| Insulation class (IEC 85): | F | | | | |
| Others: | | | | | |
| Minimum efficiency index, MEI ≥: 0.70 | | | | | |
| Net weight: | 459 kg | | | | |
| Gross weight: | 561 kg | | | | |
| Shipping volume: | 1.24 m ³ | | | | |
| Country of origin: | GB | | | | |
| Custom tariff no.: | 84137075 | | | | |
| Custom tariff no.: | 84137075 | | | | |
| | 64137075 | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |





Company name: Created by: Phone:

| | | Date: | 12/03/2019 |
|--|----------------------------|--|---|
| Description | Value | H [m] | CRN 45-12, 3*400 V, 50Hz [%] |
| General information: | | | |
| Product name: | CRN 45-12 A-F-H-E-HQQE | | |
| Product No: | 96536692 | 300 - | |
| EAN number: | 5700397578513 | - | |
| Technical: | | | |
| Pump speed on which pump data are based: | 2960 rpm | 250 - | 100 |
| Rated flow: | 45 m³/h | 200 - | - 80 |
| Rated head: | 250 m | | |
| Head max: | 306.2 m | 150 - | |
| Stages: | 12 | 130 | |
| Impellers: | 12 | | |
| Number of reduced-diameter impellers: | 0 | 100 - | - 40 |
| Low NPSH: | N | | |
| Pump orientation: | Vertical | 50 - | - 20 |
| Shaft seal arrangement: | | ~~]/ | |
| Code for shaft seal: | Single | . / | |
| | HQQE | 0 / 1 0 | 20 30 40 50 Q [m³/h] |
| Approvals on nameplate: | CE, EAC,ACS | | |
| Curve tolerance: | ISO9906:2012 3B | P [kW] | P1 [m] |
| Pump version: | A | 40 - | P2 20 |
| Model: | В | | |
| Materials: | | 30 - | - 15 |
| Base: | Stainless steel | | |
| | EN 1.4408 | 20 - | - 10 |
| | AISI 316 | | |
| Impeller: | Stainless steel | 10 - | |
| | EN 1.4401 | | |
| | AISI 316 | 0 | |
| Material code: | Н | . 338 | |
| Code for rubber: | E | 449 | |
| Bearing: | SIC | | _ |
| Support bearing: | Graflon | | тт |
| Installation: | | 8 | |
| Maximum ambient temperature: | 55 °C | | |
| Maximum operating pressure: | 33 bar | | |
| Max pressure at stated temp: | 33 bar / 120 °C | 450 | in the second |
| | 33 bar / -40 °C | | |
| Type of connection: | DIN | <u>G 1/2</u> | <u>G 1/2</u> |
| Size of inlet connection: | DN 80 | 4X G 12 | 8 x 18 |
| Size of outlet connection: | DN 80 | 4 X G 1/2 | |
| Pressure rating for pipe connection: | PN 40 | | |
| Flange size for motor: | FF400 | | |
| Connect code: | F | 251 365 | 266 331 |
| Liquid: | | | |
| Pumped liquid: | Water | | \mathbf{Y} |
| Liquid temperature range: | -40 120 °C | | '│ |
| Liquid temperature during operation: | 20 °C | | |
| Density: | 998.2 kg/m ³ | - Υ [*] ' ↓ Υ ^{**} | |
| Electrical data: | - 31 | | |
| Motor standard: | IEC | | |
| Motor type: | SIEMENS | TO AMPLIFIER RELAY | |
| IE Efficiency class: | IE3 | | |
| - | | | |
| Rated power - P2: | 45 kW | Құзт Құзт | |
| Power (P2) required by pump: | 45 kW | | |
| Mains frequency: | 50 Hz | | |
| Rated voltage: | 3 x 380-420D/660-725Y V | TO AMPLIFIER | |
| Rated current: | 81,0-74,0/47,0-43,0 A | TO AMPLIFIER RELAY | |
| | 51,017,017,0170,0A | L | |

Printed from Grundfos Product Centre [2019.01.000]



Company name: Created by: Phone:

| | | Date: | 12/03/2019 |
|----------------------------------|-----------------|-------|------------|
| Description | Value | | |
| Starting current: | 690-690 % | | |
| Cos phi - power factor: | 0.89 | | |
| Rated speed: | 2960 rpm | | |
| Efficiency: | IE3 94,0% | | |
| Motor efficiency at full load: | 94.0-94.0 % | | |
| Motor efficiency at 3/4 load: | 94.5-94.5 % | | |
| Motor efficiency at 1/2 load: | 94.4-94.4 % | | |
| Number of poles: | 2 | | |
| Enclosure class (IEC 34-5): | 55 Dust/Jetting | | |
| Insulation class (IEC 85): | F | | |
| Motor protec: | PTC | | |
| Motor No: | 81U15336 | | |
| Controls: | | | |
| Frequency converter: | NONE | | |
| Others: | | | |
| Minimum efficiency index, MEI ≥: | 0.70 | | |
| Net weight: | 459 kg | | |
| Gross weight: | 561 kg | | |
| Shipping volume: | 1.24 m³ | | |
| Sales region: | Great Britain | | |
| Country of origin: | GB | | |
| Custom tariff no.: | 84137075 | | |