

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

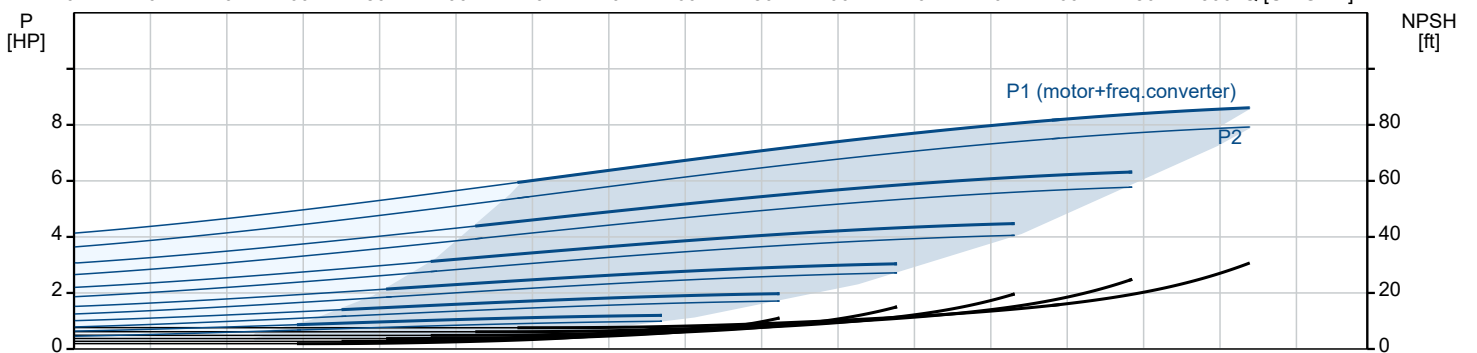
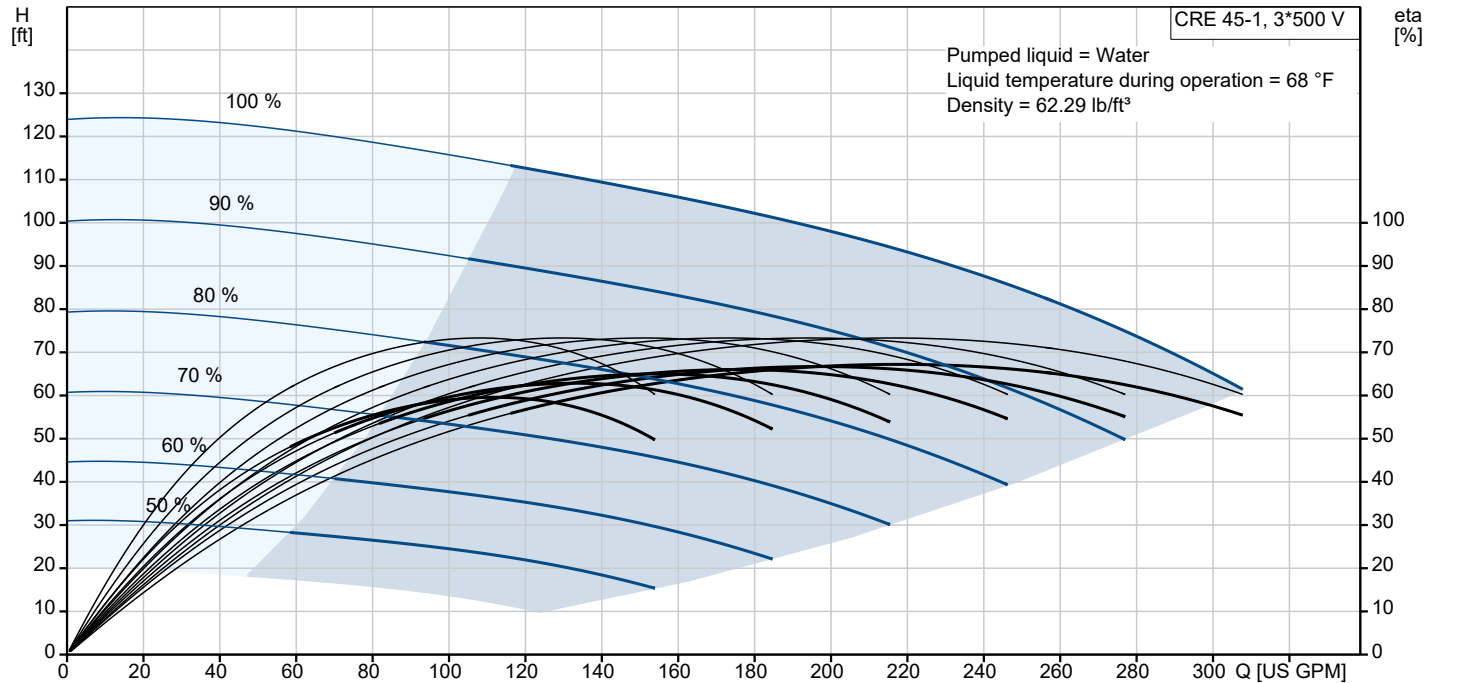


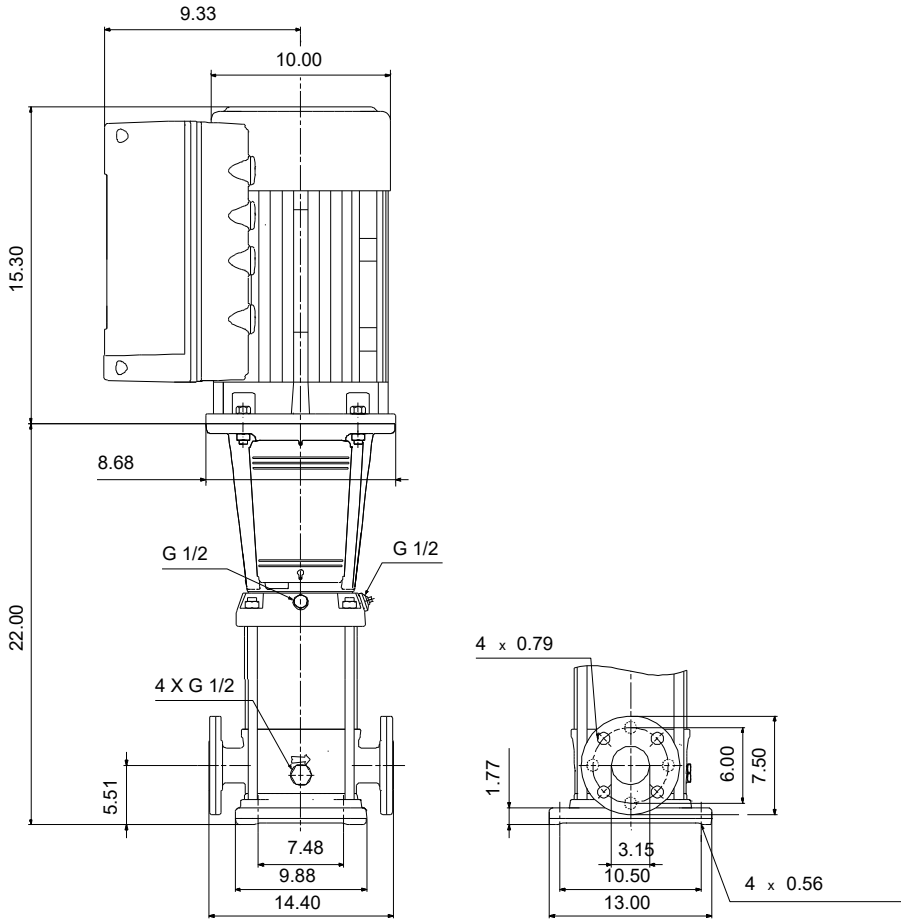
## CRE 45-1 N-G-A-E-HQQE

Vertical, multistage centrifugal pump with integrated frequency converter. The pump head and base are in cast iron - all other wetted parts are in stainless steel (EN 1.4301)

Note! Product picture may differ from actual product


Conditions of Service		Pump Data		Motor Data	
Liquid:	Water	Max pressure at stated temp:	232 psi / 250 °F	Rated power - P2:	10 HP
Temperature:	68 °F	Liquid temperature range:	-22 .. 248 °F	Rated voltage:	440-480 V
Specific Gravity:	1.000	Maximum ambient temperature:	122 °F	Mains frequency:	60 Hz
		Shaft seal:	HQQE	Enclosure class:	IP55
		Product number:	On request	Insulation class:	F
				Motor protection:	ELEC
				Motor type:	132F
				Eta 1/1:	92.5 %





**Materials:**

- Base: Cast iron
- Base: EN 1563 EN-GJS-500-7
- Base: ASTM A536 80-55-06
- Impeller: Stainless steel
- Impeller: AISI 304
- Impeller: EN 1.4301
- Material code: A
- Code for rubber: E

Qty.	Description
1	<p data-bbox="124 85 414 116"><b>CRE 45-1 N-G-A-E-HQQE</b></p>  <p data-bbox="518 436 989 459"><b>Note! Product picture may differ from actual product</b></p> <p data-bbox="124 465 406 497">Product No.: On request</p> <p data-bbox="124 526 1524 600">Vertical, multistage centrifugal pump with inlet and outlet ports on same the level (inline). The pump head and base are in cast iron – all other wetted parts 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 ANSI flanges.</p> <p data-bbox="124 609 1053 640">The pump is fitted with a 3-phase, fan-cooled, permanent-magnet, synchronous motor.</p> <p data-bbox="124 640 941 672">The motor efficiency is classified as IE5 in accordance with IEC 60034-30-2.</p> <p data-bbox="124 672 1524 723">The motor includes a frequency converter and PI controller in the motor terminal box. This enables continuously variable control of the motor speed, which again enables adaptation of the performance to a given requirement.</p> <p data-bbox="124 723 1476 754">The operating panel on the motor terminal box features a four-inch TFT display, push-buttons and the Grundfos Eye indicator.</p> <p data-bbox="124 784 893 815">The display gives an intuitive and user-friendly interface to all functions.</p> <p data-bbox="124 815 1460 866">The push-buttons are used to navigate through the menu structure to access pump and performance data on site and enable setting of required setpoint as well as setting of pump to "Min." or "Max." operation or to "Stop".</p> <p data-bbox="124 929 1524 1003">Communication with the pump is also possible by means of Grundfos GO Remote (accessory). The remote control enables further settings as well as reading out of a number of parameters such as "Actual value", "Speed", "Power input" and total "Power consumption".</p> <p data-bbox="124 1048 1117 1079">The Grundfos Eye indicator on the operating panel provides visual indication of pump status:</p> <ul data-bbox="159 1079 1436 1164" style="list-style-type: none"> <li>• "Power on": Motor is running (rotating green indicator lights) or not running (permanently green indicator lights)</li> <li>• "Warning": Motor is still running (rotating yellow indicator lights) or has stopped (permanently yellow indicator lights)</li> <li>• "Alarm": Motor has stopped (flashing red indicator lights).</li> </ul> <p data-bbox="124 1164 1500 1216">The terminal box has a number of inputs and outputs enabling the motor to be used in advanced applications where many inputs and outputs are required:</p> <ul data-bbox="159 1216 1500 1608" style="list-style-type: none"> <li>• two dedicated digital inputs</li> <li>• three analog inputs, 0(4)-20 mA, 0-5 V, 0-10 V, 0.5 - 3.5 V; the factory-fitted pressure sensor is connected to one of these inputs</li> <li>• 5 V voltage supply to potentiometer and sensor</li> <li>• one analog output, 0-10 V, 0(4)-20 mA</li> <li>• two configurable digital inputs or open-collector outputs</li> <li>• two Pt100/Pt1000 inputs</li> <li>• LiqTec, dry-running protection sensor input</li> <li>• Grundfos Digital Sensor input and output</li> <li>• 24 V voltage supply for sensors</li> <li>• two signal-relay outputs (potential-free contacts)</li> <li>• GENIbus connection</li> <li>• interface for Grundfos CIM fieldbus module.</li> </ul> <p data-bbox="124 1639 199 1671">Liquid:</p> <p data-bbox="124 1671 558 1702">Pumped liquid: Water</p> <p data-bbox="124 1702 622 1733">Liquid temperature range: -22 .. 248 °F</p> <p data-bbox="124 1733 550 1765">Selected liquid temperature: 68 °F</p> <p data-bbox="124 1765 606 1796">Density: 62.29 lb/ft<sup>3</sup></p> <p data-bbox="124 1818 239 1850">Technical:</p> <p data-bbox="124 1850 742 1881">Pump speed on which pump data are based: 3467 rpm</p> <p data-bbox="124 1881 630 1912">Rated flow: 238 US GPM</p> <p data-bbox="124 1912 558 1944">Rated head: 92.2 ft</p> <p data-bbox="124 1944 566 1975">Actual impeller diameter: 5.37 in</p> <p data-bbox="124 1975 574 2007">Pump orientation: Vertical</p> <p data-bbox="124 2007 542 2038">Shaft seal arrangement: Single</p> <p data-bbox="124 2038 566 2069">Code for shaft seal: HQQE</p> <p data-bbox="124 2069 582 2101">Approvals: CURUS</p> <p data-bbox="124 2101 638 2132">Approvals for drinking water: NSF/ANSI 61</p> <p data-bbox="124 2132 686 2163">Curve tolerance: ISO9906:2012 3B</p>

Qty.	Description
	<p><b>Materials:</b></p> <p>Base: Cast iron EN 1563 EN-GJS-500-7 ASTM A536 80-55-06</p> <p>Impeller: Stainless steel EN 1.4301 AISI 304</p> <p>Bearing: SIC</p> <p>Support bearing: Graflon</p> <p>Installation:</p> <p>t max amb: 122 °F</p> <p>Maximum operating pressure: 232.06 psi</p> <p>Max pressure at stated temp: 232 psi / 250 °F 232 psi / -22 °F</p> <p>Type of connection: ANSI</p> <p>Size of inlet connection: 3 inch</p> <p>Size of outlet connection: 3 inch</p> <p>Pressure rating for connection: PN 16</p> <p>Flange rating inlet: 150 lb</p> <p>Flange size for motor: 213TC</p> <p>Electrical data:</p> <p>Motor standard: NEMA</p> <p>Motor type: 132F</p> <p>IE Efficiency class: IE5</p> <p>Rated power - P2: 10 HP</p> <p>Power (P2) required by pump: 10 HP</p> <p>Mains frequency: 60 Hz</p> <p>Rated voltage: 3 x 440-480 V</p> <p>Service factor: 1.15</p> <p>Rated current: 12.4-11.5 A</p> <p>Cos phi - power factor: 0.91-0.90</p> <p>Rated speed: 360-4000 rpm</p> <p>Efficiency: 92.5%</p> <p>Motor efficiency at full load: 92.5 %</p> <p>Enclosure class (IEC 34-5): IP55</p> <p>Insulation class (IEC 85): F</p> <p>Motor No: 99256776</p> <p>Controls:</p> <p>Frequency converter: Built-in</p> <p>Pressure sensor: Y</p> <p>Others:</p> <p>DOE Pump Energy Index VL: 0.40</p> <p>Net weight: 227 lb</p> <p>Gross weight: 245 lb</p> <p>Shipping volume: 17.5 ft³</p>

# On request CRE 45-1 N-G-A-E-HQQE 60 Hz



Note! All units are in [in] unless others are stated.