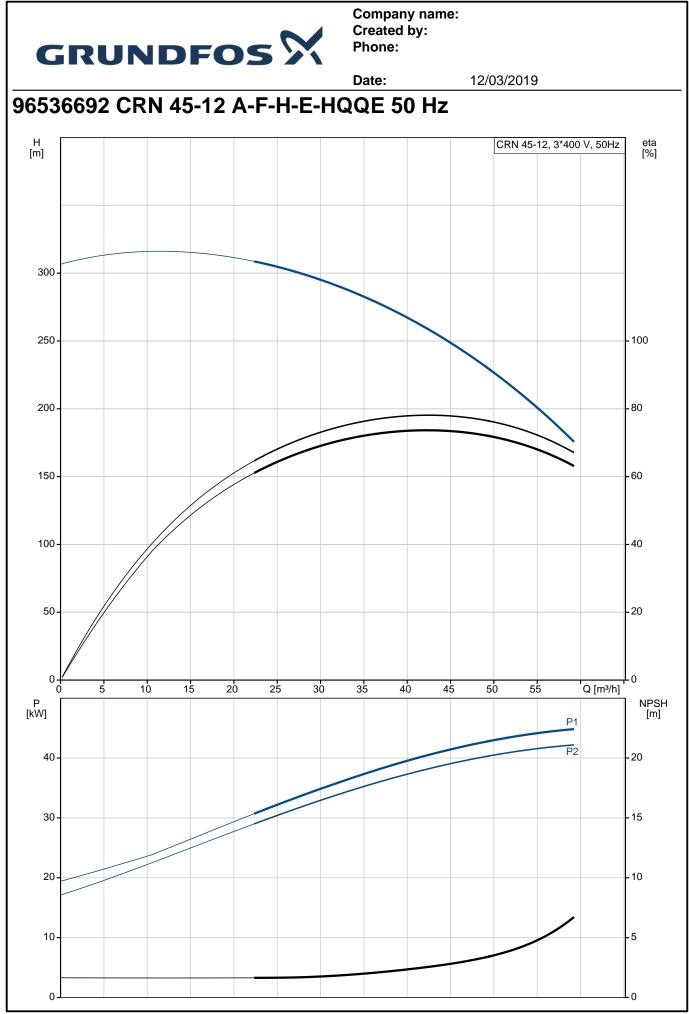
	GRUNDFOS		Company name: Created by: Phone:			
			Date:	12/03/2019		
lty.	Description					
1	CRN 45-12 A-F-H-E-HQQE					
	Product No.: 96536692					
	Vertical, multistage centrifugal pump with inlet and outlet ports on same the level (inline). Pump materials in contact with the liquid are in high-grade 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	

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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		