

Submittal Data

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

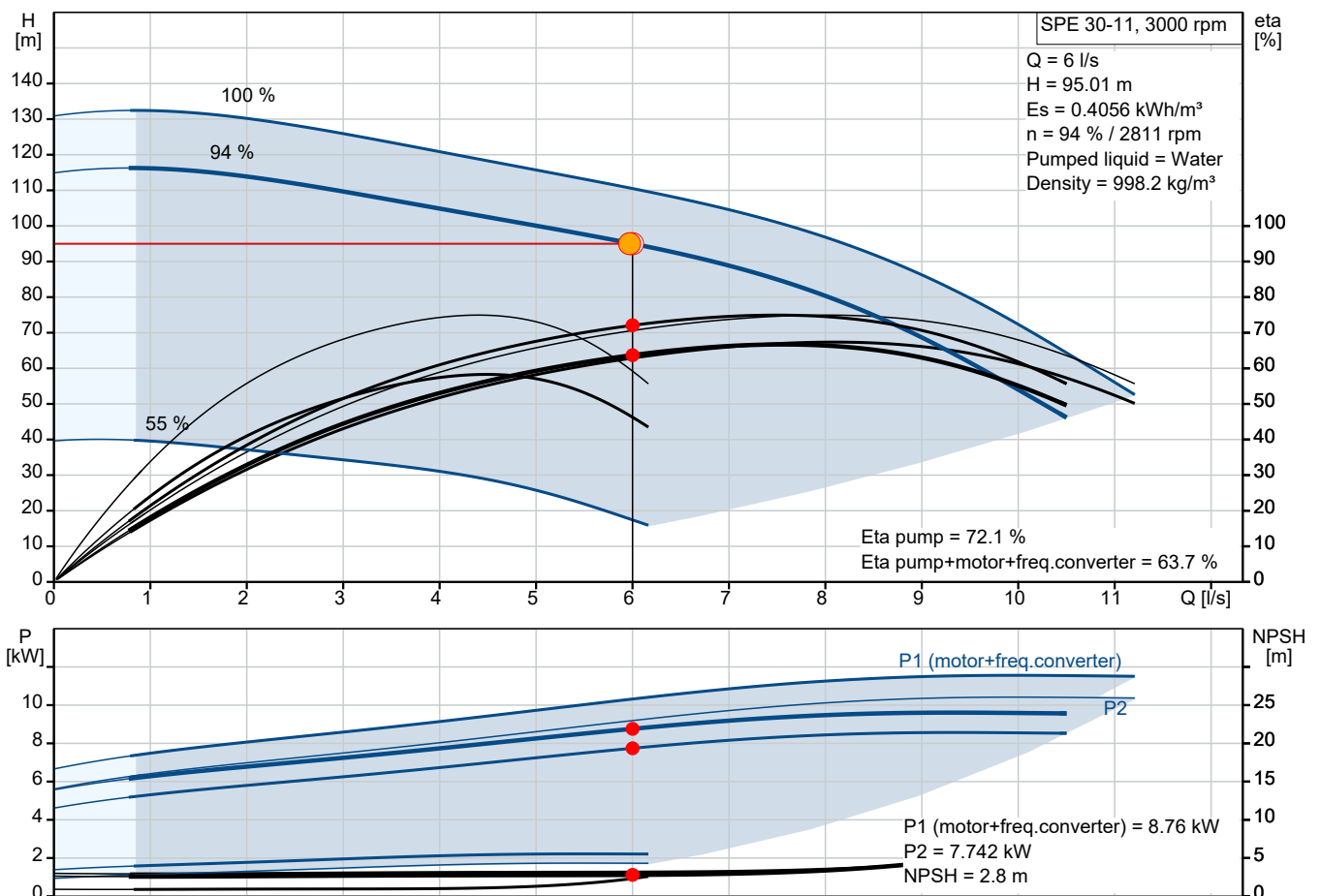


SPE 30-11

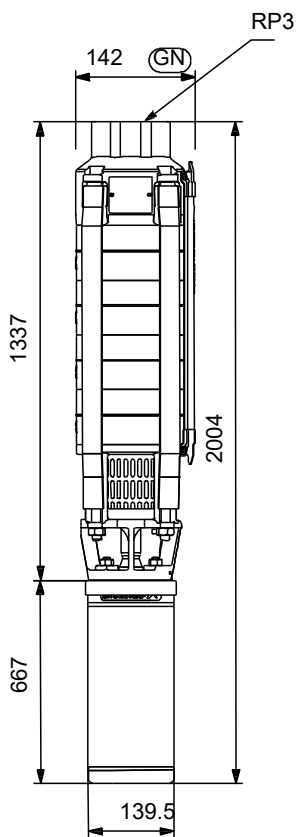
Grundfos SPE is a range of frequency regulated submersible pumps for Groundwater. The pumps are all stainless-steel and available in 3 material grades (sizes: 6", 8" and 10"). The 6" motor (4 to 45 kW) is a permanent magnet type with high energy efficiency and needs a frequency drive to operate.

Note! Product picture may differ from actual product

Conditions of Service	Pump Data	Motor Data
	Liquid temperature range: -15 .. 60 °C Product number: On request	Rated voltage: 350-440 V Mains frequency: 50 Hz Enclosure class: IP68 Thermal protection: External Motor type: PM Eta 1/1: 92.2 %



Submittal Data



Materials:

Impeller: Stainless steel

Impeller: AISI 304

Impeller: EN 1.4301

Qty.	Description
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1	SPE 30-11
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Note! Product picture may differ from actual product

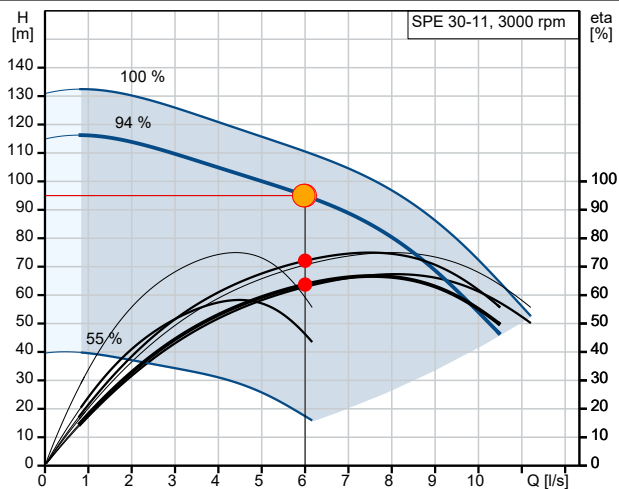
Product No.: On request

Multi-stage speed regulated submersible pump for raw water supply, groundwater lowering and pressure boosting. The pump is suitable for pumping clean, thin, non-aggressive liquids without solid particles or fibers.

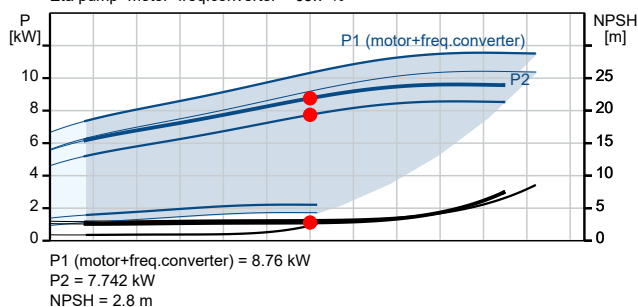
The pump is made entirely of Stainless steel DIN W.-Nr. EN 1.4301 and suitable for horizontal and vertical installation. The pump is fitted with a built-in non-return valve.

The motor is a 3-phase synchronous high efficiency permanent magnet submersible motor of canned type. All surfaces in contact with pump media are made of stainless steel. Motor type is IPM with embedded magnets in the metal cladded rotor – needs frequency drive to start and speed regulate.

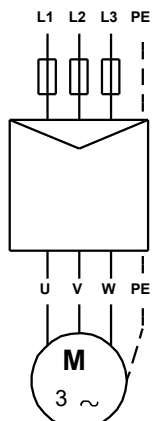
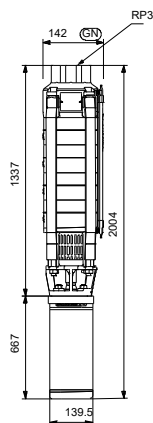
Description	Value
General information:	
Product name:	SPE 30-11
Product No:	On request
EAN number:	On request
Technical:	
Pump speed on which pump data are based:	2811 rpm
Actual calculated flow:	6 l/s
Rated flow:	8.333 l/s
Resulting head of the pump:	95.01 m
Rated head:	98 m
Stages:	11
Number of reduced-diameter impellers:	NONE
Shaft seal for motor:	SiC/SiC NBR
Approvals:	CE,EAC,UKCA,SEPRO,MOR OCCO
Approvals for drinking water:	ACS,DM174
Curve tolerance:	ISO9906:2012 3B
Model:	B
Motor version:	T60
Return valve:	YES
Materials:	
Pump:	Stainless steel
Pump:	EN 1.4301
Pump:	AISI 304
Impeller:	Stainless steel
Impeller:	EN 1.4301
Impeller:	AISI 304
Motor:	Stainless steel
Motor:	EN 1.4301
Motor:	AISI 304
Installation:	
Maximum operating pressure:	60 bar
Maximum outlet pressure:	13.3 bar
Type of connection:	Rp
Size of connection:	3 inch
Motor diameter:	6 inch
Minimum borehole diameter:	145 mm
Liquid:	
Pumped liquid:	Water
Liquid temperature range:	-15 .. 60 °C
Electrical data:	
Motor type:	PM
Motor flange design:	Grundfos
Rated power - P2:	11 kW
Mains frequency:	50 Hz
Rated voltage:	3 x 350-440 V
Motor frequency:	100 Hz
Rated current:	25 A
Rated speed:	1650-3000 rpm
Motor efficiency at full load:	92.2 %
Number of poles:	4
Method of start:	Direct-on-line (DOL)
Enclosure class (IEC 34-5):	IP68
Insulation class (IEC 85):	F
Built-in motor protection:	NONE
Thermal protec:	External
Built-in temp. transmitter:	N



Q = 6 l/s
 Es = 0.4056 kWh/m³
 Pumped liquid = Water
 Eta pump = 72.1 %
 Eta pump+motor+freq.converter = 63.7 %



P1 (motor+freq.converter) = 8.76 kW
 P2 = 7.742 kW
 NPSH = 2.8 m





Company name:

Created by:

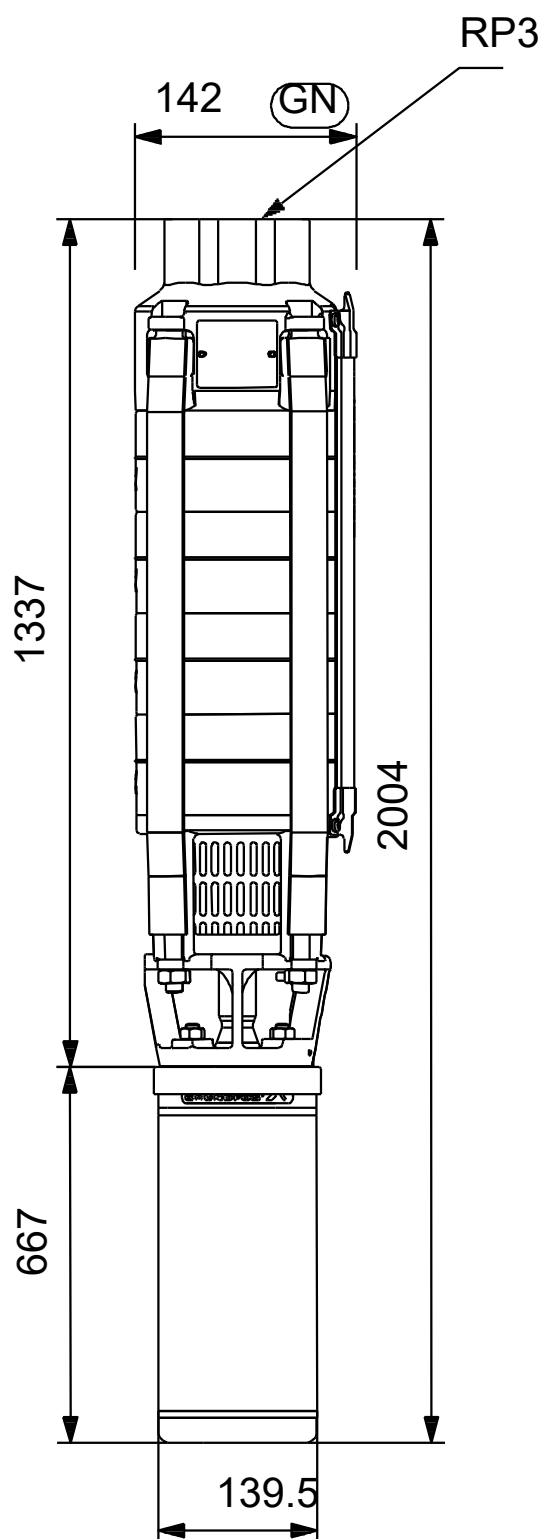
Phone:

Date:

26/05/2024

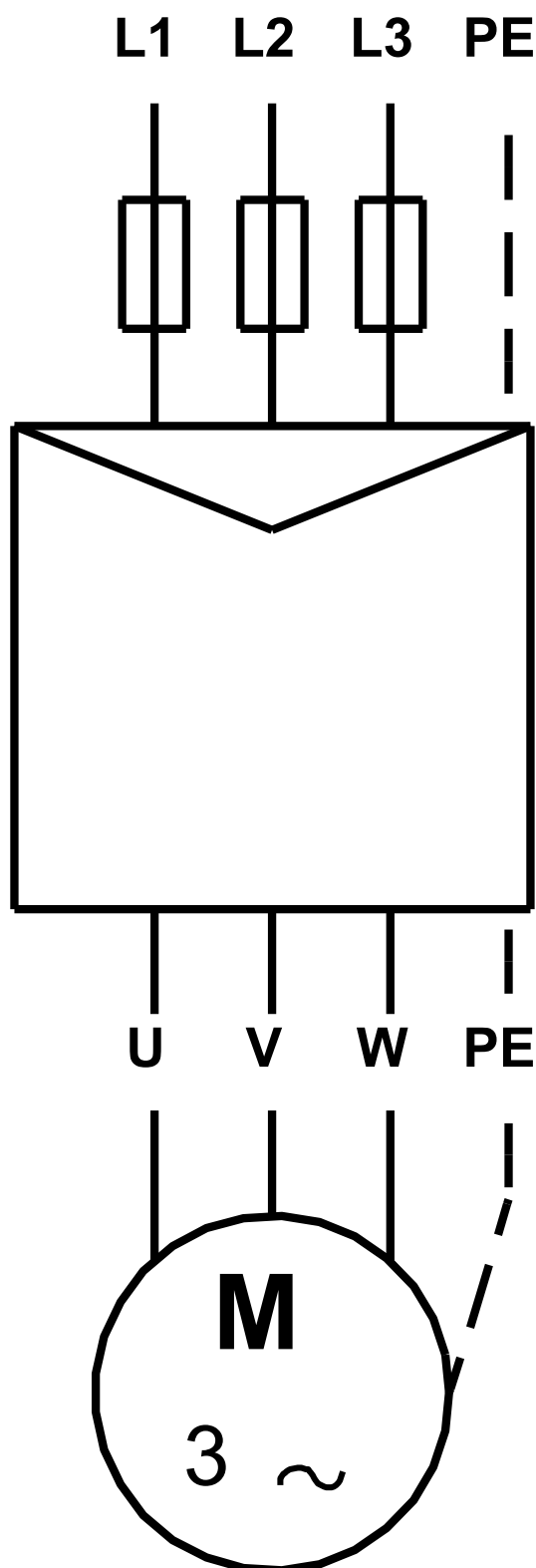
Description	Value
Length of cable:	5 m
Cable type:	FLAT
Number of cables:	1
Motor No:	76207717
Windings:	Enamelled
Rpm related to frequency:	3000 rpm at 100 Hz
Controls:	
Frequency converter:	VFD IPM type required
Others:	
Minimum efficiency index, MEI ≥:	0.50
Net weight:	74.1 kg
Gross weight:	108 kg
Shipping volume:	0.253 m ³
Recommended CUE (IP20):	99616717
Recommended Sine wave filter (IP20):	96754978
Environmental approvals:	WEEE

On request SPE 30-11 50 Hz



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

On request SPE 30-11 50 Hz



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

On request SPE 30-11 50 Hz

Input		Sizing result	
Size by	Pump design	Type	SPE 30-11
Journey	Sizing	Tank	540 l
Pump design	Submersible groundwater pumps	Quantity * Motor	1 * 11 kW ,
General			
Select application	Groundwater supply	Flow	6 l/s
Installation type	Borehole	H total	95.01 m
Installation	Borehole installation, closed tank	Power P1	8.76 kW
Flow	6 l/s	Power P2 required in the duty point	7.742 kW
Head	95 m	Current (rated)	25 A
Evaluation criterion	Preference index	Current (actual)	18.1 A
Prefer fast delivery	Yes	Cos phi (actual)	0.70
Your requirements		Eta pump	72.1 %
Variable speed	Yes	Eta motor	88.4 %
Enclosure class	IP20	Eta total	63.7 % =Eta pump * Eta motor
Control mode	Prop. pressure, ext.	Speed	94 %
Decrease at low flow	10 %	Speed	2811 rpm
Allow fixed speed	Yes	Flow total	78446 m³/year
Max. water temperature	15 °C	Spec. energy consumption	0.4041 kWh/m³
Allowed flow oversize	30 %		4.25 Wh/m³/m
Allowed flow undersize	5 %	Energy consumption	31863 kWh/Year
No of duty points	1	CO2 emission:	18200 kg/Year
Edit load profile		Price	On request
Load profile	Full load	Life cycle cost	66573 EUR /10Years
Operating days per year	365 d		
Operation hours per day (low tariff)	10 h		
Configuration			
Pump material	GG 0.6025 or 1.4301 (AISI 304)		
Motor selection	Grundfos standard motor		
Operational conditions			
Frequency	50 Hz		
Phase	1 or 3		
Voltage	1 x 230 or 3 x 400 V		
Starting method 3 phase	Direct on line		
Energy price (high tariff)	0.32 EUR/kWh		
Energy price (medium tariff)	0.21 EUR/kWh		
Energy price (low tariff)	0.11 EUR/kWh		
Increase of energy price	6 %		
CO2 emission intensity	0.57 kg/kWh		
Calculation period	10 years		
Life cycle cost			
Do you want to make a comparison?	No comparison		
How detailed do you want your life cycle cost analysis?	Simple LCC analysis		
	Pump A		
Hit list settings			
Include cheapest solution	Yes		
Max. hits per product group	5		
Max. hits total	20		
Load Profile			
	1		
Flow (%)	100		
Flow (l/s)	5.969		
Head (%)	100		
Head (m)	95.01		
P1 (kW)	8.729		
Eta total (%)	63.6		
Time (h/a)	3650		
Energy consumption (kWh/Year)	31863		
Quantity	1		

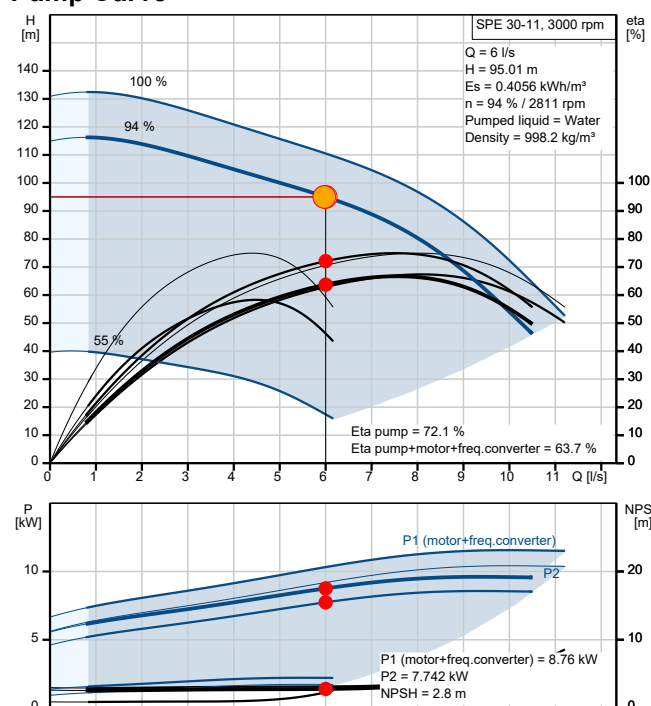
Cable losses are not included !

Installation and Input

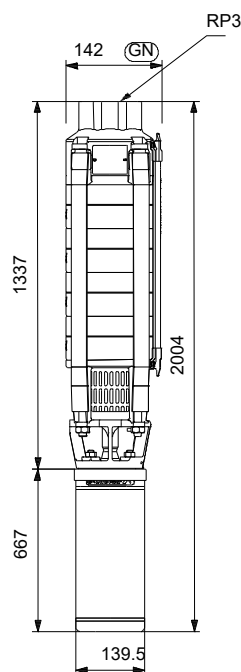
Sizing Results

Product number:	On request
Type:	SPE 30-11
Flow:	6 l/s (78446)
H total:	95.01 m
Power P1:	8.76 kW
Power P2 required in the duty point:	7.742 kW
Eta pump:	72.1 %
Eta motor:	88.4 %
Eta total:	63.7 %
Energy consumption:	31863 kWh/Year
Spec. energy consumption:	0.4041 kWh/m ³ (4.25 Wh/m ³ /m)
Motor type:	PM
Phase:	3
Voltage:	400
Frequency:	50 Hz
Current (rated):	25 A
Current (actual):	18.1 A
Cos phi (actual):	0.70
Liquid max. temperature:	60 °C
Load profile	1
Flow (%)	100
Flow (l/s)	5.969
Head (%)	100
Head (m)	95.01
P1 (kW)	8.729
Eta total (%)	63.6
Time (h/a)	3650
Energy consumption (kWh/Year)	31863
Quantity	1

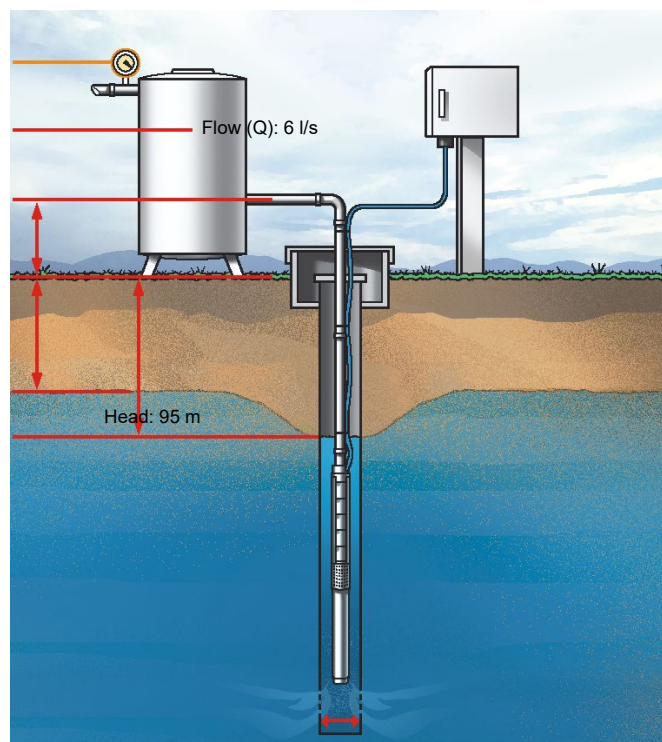
Pump Curve



Dimensional Drawing



Installation and Input



Sizing Results

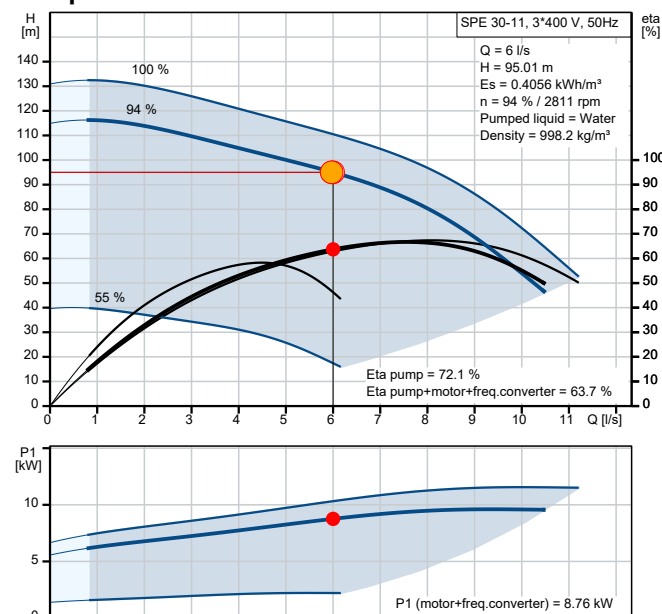
Product number:	On request
Type:	SPE 30-11
Flow:	6 l/s (78446)
H total:	95.01 m
Power P1:	8.76 kW
Power P2 required in the duty point:	7.742 kW
Eta pump:	72.1 %
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Eta total:	63.7 %
Energy consumption:	31863 kWh/Year
Spec. energy consumption:	0.4041 kWh/m ³ (4.25 Wh/m ³ /m)
Motor type:	PM
Phase:	3
Voltage:	400
Frequency:	50 Hz
Current (rated):	25 A
Current (actual):	18.1 A
Cos phi (actual):	0.70
Liquid max. temperature:	60 °C

Cable losses are not included !

Load profile

Flow (%)	1
Flow (l/s)	100
Head (%)	5.969
Head (m)	100
P1 (kW)	95.01
Eta total (%)	8.729
Time (h/a)	63.6
Energy consumption (kWh/Year)	3650
Quantity	31863
	1

Pump Curve



Dimensional Drawing

