## **GRUNDFOS**

#### Submittal Data

PROJECT:	Hurley Engineering-TPE3 READY TO SHIP	UNIT TAG:		QUANTITY:	1
		TYPE OF SERVICE:			
REPRESENTATIVE:	Hurley Engineering	SUBMITTED BY:	Devin Carle	DATE:	2/10/2020
ENGINEER:		APPROVED BY:		DATE:	
CONTRACTOR:	To Be Determined	ORDER NO.:		DATE:	

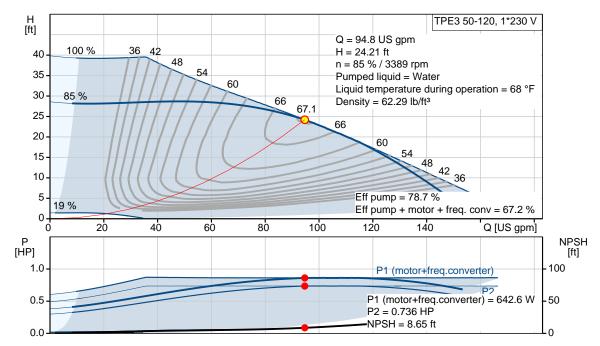


#### TPE3 50-120 S-A-G-I-BQQE-EAB

Single-stage stainless steel in-line pumps with frequency converters

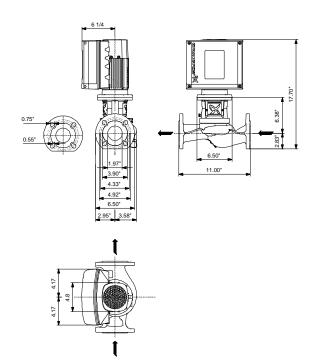
Product photo could vary from the actual product

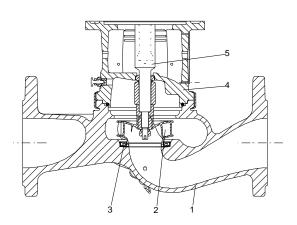
Conditions of Service		Pump Data	Motor Data		
Flow:	94.8 US gpm	Liquid temperature range:	-13 248 °F	Rated power - P2:	0.75 HP
Head:	24.21 ft	Maximum ambient temperature:	122 °F	Rated voltage:	200-240 V
Efficiency:	67.2 %	Shaft seal:	BQQE	Main frequency:	60 Hz
Liquid:	Water	Pipe connection:	DN 50	Number of poles:	0
Temperature:	68 °F	Product number:	98819611	Enclosure class:	IP55
NPSH required:	8.65 ft			Insulation class:	F
Viscosity:				Motor protection:	YES
Specific Gravity:	1.000			Motor type:	71A
				Motor_efficiency:	85.3 %





### Submittal Data





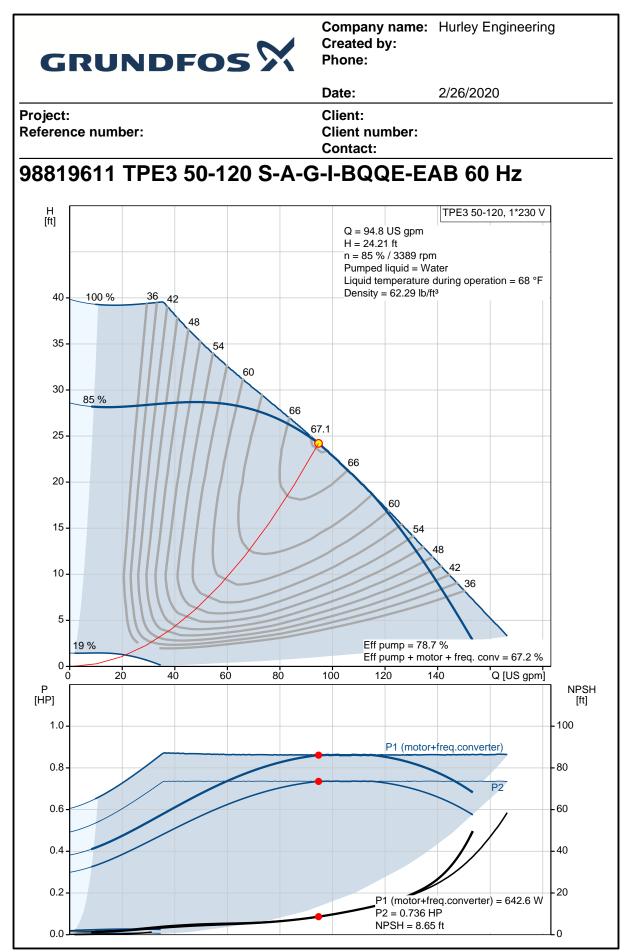
#### Materials:

Pump housing:	Stainless steel ASTM CF8
Impeller:	Composite PES/PP 30% GF
Material code:	I

G	RUNDFOS	Created by	Hurley Engineering
		Date:	2/26/2020
Projec Refere	t: nce number:	Client: Client number: Contact:	
Count	Description		
1	TPE3 50-120 S-A-G-I-BQQE-E	AB	
	Product No.: 98819611		
	be removed for maintenance or	design, i.e. the power head (motor, service while the pump housing re	mains in the pipework.
	Pipework connection is via PN 1 The pump is fitted with a fan-coo is classified as IE5 in accordance The motor includes a frequency	oled, permanent-magnet synchrono e with IEC 60034-30-2. converter and PI controller in the r the motor speed, which again enab	bus motor. The motor efficiency notor terminal box. This enables
	Controls:		
	Frequency converter:	Built-in	
	Frequency converter:	Built-in	
	Liquid:		
	<b>Liquid:</b> Pumped liquid: Liquid temperature range:	Water -13 248 °F	
	<b>Liquid:</b> Pumped liquid: Liquid temperature range: Selected liquid temperature:	Water -13 248 °F 68 °F	
	<b>Liquid:</b> Pumped liquid: Liquid temperature range:	Water -13 248 °F	
	Liquid: Pumped liquid: Liquid temperature range: Selected liquid temperature: Density: Technical:	Water -13 248 °F 68 °F 62.29 lb/ft³	
	Liquid: Pumped liquid: Liquid temperature range: Selected liquid temperature: Density: Technical: Pump speed on which pump dat	Water -13 248 °F 68 °F 62.29 lb/ft <sup>3</sup> ta is based: 3430 rpm	
	Liquid: Pumped liquid: Liquid temperature range: Selected liquid temperature: Density: Technical: Pump speed on which pump dat Actual calculated flow: Resulting head of the pump:	Water -13 248 °F 68 °F 62.29 lb/ft <sup>3</sup> ta is based: 3430 rpm 94.8 US gpm 24.21 ft	
	Liquid: Pumped liquid: Liquid temperature range: Selected liquid temperature: Density: Technical: Pump speed on which pump dat Actual calculated flow: Resulting head of the pump: Actual impeller diameter:	Water -13 248 °F 68 °F 62.29 lb/ft <sup>3</sup> ta is based: 3430 rpm 94.8 US gpm 24.21 ft 2.91 in	
	Liquid: Pumped liquid: Liquid temperature range: Selected liquid temperature: Density: Technical: Pump speed on which pump dat Actual calculated flow: Resulting head of the pump:	Water -13 248 °F 68 °F 62.29 lb/ft <sup>3</sup> ta is based: 3430 rpm 94.8 US gpm 24.21 ft	
	Liquid: Pumped liquid: Liquid temperature range: Selected liquid temperature: Density: Technical: Pump speed on which pump da Actual calculated flow: Resulting head of the pump: Actual impeller diameter: Code for shaft seal: Curve tolerance:	Water -13 248 °F 68 °F 62.29 lb/ft <sup>3</sup> ta is based: 3430 rpm 94.8 US gpm 24.21 ft 2.91 in BQQE	
	Liquid: Pumped liquid: Liquid temperature range: Selected liquid temperature: Density: Technical: Pump speed on which pump dat Actual calculated flow: Resulting head of the pump: Actual impeller diameter: Code for shaft seal:	Water -13 248 °F 68 °F 62.29 lb/ft <sup>3</sup> ta is based: 3430 rpm 94.8 US gpm 24.21 ft 2.91 in BQQE	
	Liquid: Pumped liquid: Liquid temperature range: Selected liquid temperature: Density: Technical: Pump speed on which pump dat Actual calculated flow: Resulting head of the pump: Actual impeller diameter: Code for shaft seal: Curve tolerance: Materials:	Water -13 248 °F 68 °F 62.29 lb/ft <sup>3</sup> ta is based: 3430 rpm 94.8 US gpm 24.21 ft 2.91 in BQQE ISO9906:2012 3B2 Stainless steel ASTM CF8	
	Liquid: Pumped liquid: Liquid temperature range: Selected liquid temperature: Density: Technical: Pump speed on which pump dat Actual calculated flow: Resulting head of the pump: Actual impeller diameter: Code for shaft seal: Curve tolerance: Materials: Pump housing:	Water -13 248 °F 68 °F 62.29 lb/ft <sup>3</sup> ta is based: 3430 rpm 94.8 US gpm 24.21 ft 2.91 in BQQE ISO9906:2012 3B2 Stainless steel ASTM CF8 EN 1.4308	
	Liquid: Pumped liquid: Liquid temperature range: Selected liquid temperature: Density: Technical: Pump speed on which pump dat Actual calculated flow: Resulting head of the pump: Actual impeller diameter: Code for shaft seal: Curve tolerance: Materials: Pump housing: Impeller:	Water -13 248 °F 68 °F 62.29 lb/ft <sup>3</sup> ta is based: 3430 rpm 94.8 US gpm 24.21 ft 2.91 in BQQE ISO9906:2012 3B2 Stainless steel ASTM CF8 EN 1.4308 Composite PES/PP 30% GF	

<b>GRUNDFOS</b>
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			Date:	2/26/2020
Project: Reference number:		Client: Client number:		
			Contact:	
Count	Description			
	Pipe connection: Pressure rating for pipe conne Flange size for motor:	DN 50 ction: PN 16 56C		
	Electrical data:			
	Motor type:	71A		
	IE Efficiency class:	IE5		
	Rated power - P2:	0.75 HP		
	Main frequency:	60 Hz		
	Rated voltage:	1 x 200-240	V	
	Rated current:	3.45-2.90 A		
	Cos phi - power factor:	0.98		
	Rated speed:	360-4000 rpr	n	
	IE efficiency:	85.3%		
	Motor efficiency at full load:	85.3 %		
	Number of poles:	0		
	Enclosure class (IEC 34-5):	IP55		
	Insulation class (IEC 85):	F		
	Motor Number:	99630320		
	Others:			
	Net weight:	57.1 lb		
	Gross weight:	57.1 lb		
	Country of origin:	HU		
	Custom tariff no.:	8413.70.202	2	



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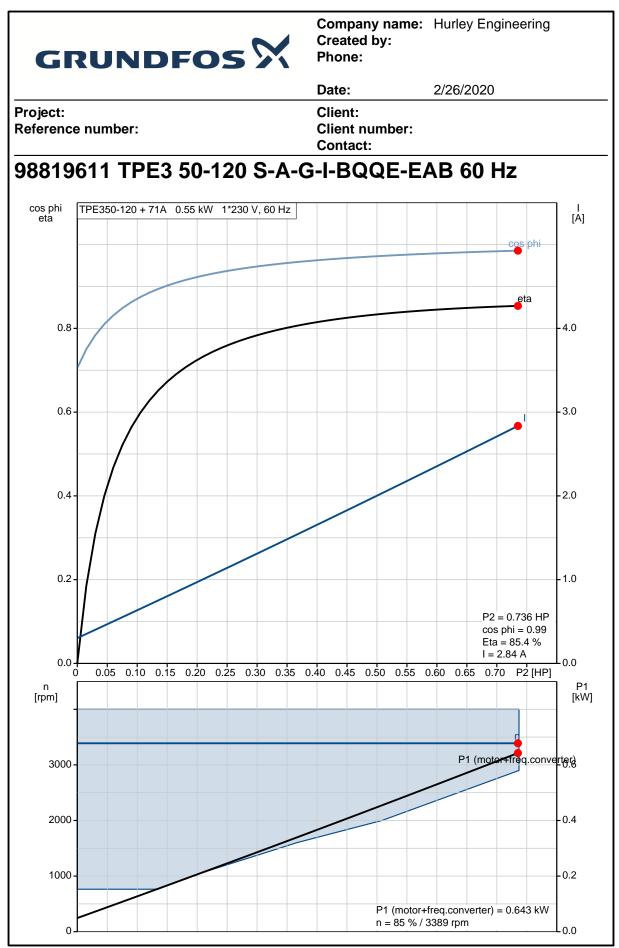


Project:		Client:
Reference number:		Client number:
Reference number:		Client number: Contact:
Description	Value	H [ft]
General information:		Q = 94.8 US gpm H = 24.21 ft
Product name:	TPE3 50-120	$100^{\circ}$ n = 85 % / 3389 rpm
Floudet flame.	S-A-G-I-BQQE-EAB	40 – Pumped liquid = Water Liquid temperature during operation = 68 °F
Product No.:	98819611	35 - Density = 62.29 lb/ft <sup>3</sup>
EAN:	5712601843577	60
	5712601843577	30 85 % 66
Price:	\$ 8,365.00	25 - 67.1
Technical:		66
Pump speed on which pump data is based:	3430 rpm	20-60
Actual calculated flow:	94.8 US gpm	15-54
Resulting head of the pump:	24.21 ft	10-42
Head max:	39.37 ft	
Actual impeller diameter:	2.91 in	5 - Eff pump = 78.7 %
Code for shaft seal:	BQQE	Eff pump + motor + freq. conv = $67.2 \%$
Curve tolerance:	ISO9906:2012 3B2	0 50 100 Q [ÚS gpm]
Pump version:	A	P NPSH [HP]
Materials:		_
Pump housing:	Stainless steel	1.0 - P1 (motor+freq.converter) - 100
	ASTM CF8	
	EN 1.4308	P2
Impeller:	Composite PES/PP 30% GF	0.5 P1 (motor+freq.converter) = 642.6 W
Material code:		P2 = 0.736 HP NPSH = 8.65 ft
Installation:		
Range of ambient temperature:	-4 122 °F	
Maximum operating pressure:	PN 16 bar	
Type of connection:	ANSI	
Pipe connection:	DN 50	
Pressure rating for pipe connection:	PN 16	
Flange size for motor:	56C	
Connect code:	G	<b>I</b>
Liquid:		
Pumped liquid:	Water	
Liquid temperature range:	-13 248 °F	
Selected liquid temperature:	68 °F	_
Density:	62.29 lb/ft <sup>3</sup>	—
Electrical data:	74.4	
Motor type:	71A	
IE Efficiency class:	IE5	
Rated power - P2:	0.75 HP	
Main frequency:	60 Hz	
Rated voltage:	1 x 200-240 V	
Rated current:	3.45-2.90 A	
Cos phi - power factor:	0.98	
Rated speed:	360-4000 rpm	
IE efficiency: Motor officionay at full load:	85.3%	
Motor efficiency at full load:	85.3 %	

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		Date:	2/26/2020
Project: Reference number:		Client: Client number: Contact:	
Description	Value		
Number of poles:	0		
Enclosure class (IEC 34-5):	IP55		
Insulation class (IEC 85):	F		
Motor protection:	YES		
Motor Number:	99630320		
Controls:			
Control panel:	HMI300 - Graphical		
Function Module:	FM300 - Advanced		
Frequency converter:	Built-in		
Others:			
Net weight:	57.1 lb		
Gross weight:	57.1 lb		
Config. file no:	98481398		
Country of origin:	HU		
Custom tariff no .:	8413.70.2022		



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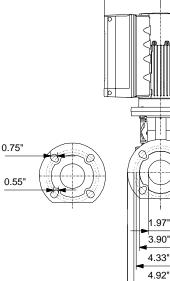
2/26/2020

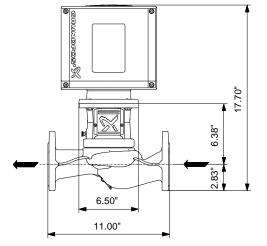
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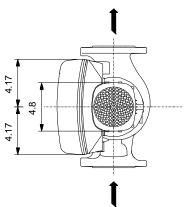
Client: Client number: Contact:

# 98819611 TPE3 50-120 S-A-G-I-BQQE-EAB 60 Hz

6 1/4







6.50" 2.95" 3.58"

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

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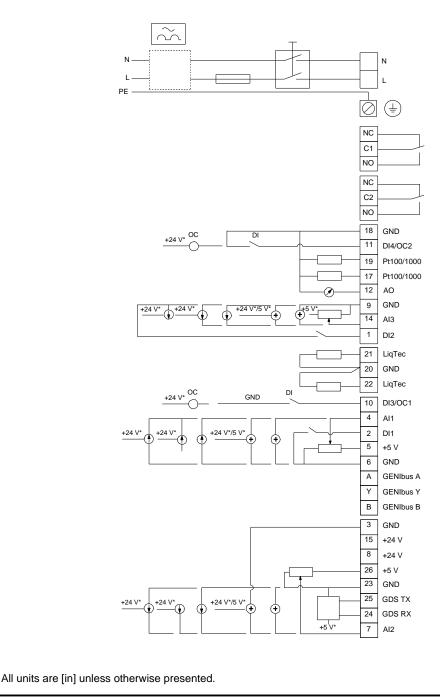


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Project: Reference number: Date:

Client: Client number: Contact:

### 98819611 TPE3 50-120 S-A-G-I-BQQE-EAB 60 Hz



GRUNI	DFOSX	Company name: Created by: Phone:	Hurley Engineering
		Date:	2/26/2020
Project: Reference number:		Client: Client number: Contact:	
Order Data:			
Product name: Amount: Product No.: Price:	TPE3 50-120 S-A-G-I-BC 1 98819611 \$ 8,365.00	QQE-EAB	
<u>Total: \$ 8,365.0</u>	5		