

#### **Pump Performance Datasheet** Tag Number Project name / location : 001 Consulting engineer Service Customer Model : 25709 VL Customer ref. / PO Quantity : 4 : alan deal 8/3/16 Quoted By (Sales Office) : HS Buy Van Associates Inc. Quote number Date last saved : 08/03/2016 11:22 AM Quoted By (Sales Engineer) : Randy Walker **Operating Conditions** Liauid Liquid type Flow, rated : 144.0 USgpm : Cold Water Differential head / pressure, rated (requested) : 35.00 ft Additional liquid description Differential head / pressure, rated (actual) : 34.98 ft Solids diameter, max : 0.00 in Suction pressure, rated / max : 0.00 / 0.00 psi.g Solids concentration, by volume : 0.00 % NPSH available, rated : Ample Temperature, max : 68.00 deg F Frequency : 60 Hz Fluid density, rated / max : 1.000 / 1.000 SG Viscosity, rated : 1.00 cP Performance Vapor pressure, rated : 0.34 psi.a Speed, rated : 1765 rpm Impeller diameter, rated : 6.34 in Impeller diameter, maximum : 7.10 in Material selected : Cast iron Impeller diameter, minimum : 5.00 in Pressure Data Maximum working pressure Efficiency : 71.32 % : 19.23 psi.g : 5.33 / 0.00 ft NPSH required / margin required Maximum allowable working pressure : 175.0 psi.g : 23 / 109 Metric units nq (imp. eye flow) / S (imp. eye flow) Maximum allowable suction pressure : 175.0 psi.g MCSF : 40.00 USgpm Hydrostatic test pressure : 263.0 psi.g Head, maximum, rated diameter : 44.42 ft **Driver & Power Data** Head rise to shutoff : 26.82 % Motor sizing specification : Max power (non-overloading) Flow, best eff. point : 124.6 USgpm Margin over specification : 0.00 % Flow ratio, rated / BEP : 115.56 % Service factor : 1.00 Diameter ratio (rated / max) : 89.30 % Power, hydraulic : 1.27 hp Head ratio (rated dia / max dia) : 71.07 % Rated power (based on duty point) : 1.79 hp : 1.00 / 1.00 / 1.00 / 1.00 Cq/Ch/Ce/Cn [ANSI/HI 9.6.7-2010] Max power (non-overloading) : 1.88 hp Selection status : Acceptable Nameplate motor rating : 2.00 hp / 1.49 kW 80 72 64 7.10 in 56 48 Head -40 32 24 5.00 in 16 8 7<sub>1.0 hp</sub> 0 16 NPSHr NPSHr - ft 8 0 260

Flow - USgpm





### PACO Series VL In Line Centrifugal Pump, Close Coupled

PROJECT: alan deal 8/3/16 UNIT TAG: 001 QUANTITY: 4

SERVICE:

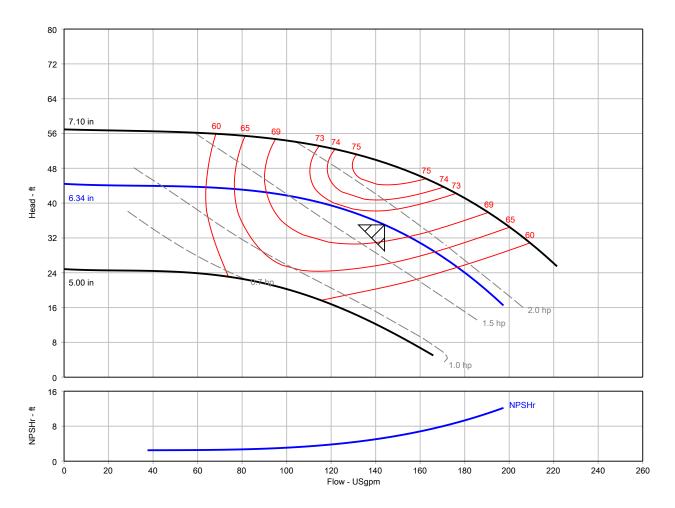
REPRESENTATIVE: SUBMITTED BY: DATE: ENGINEER: APPROVED BY: DATE: CONTRACTOR: ORDER #: DATE:



VL 25709 1765 rpm

Part Number: N/A

Conditions of Service		Pump Data		Motor Data	
Flow:	144.0 USgpm	Impeller Diameter:	6.34 in	Motor HP:	2.00 hp
Head:	35.00 ft	Max. Imp. Dia.:	7.10 in	BHP:	1.79 hp
Liquid:	Cold Water	Min. Imp. Dia.:	5.00 in	Enclosure:	TEFC
Temperature:	68.00 deg F	Efficiency:	71.32 %	Voltage:	208-230/460 V
NPSHr:	5.33 ft	Suction:		Phase:	3 Phase
Viscosity:	1.00 cP	Discharge:		Cycle:	60 Hz
Specific Gravity:	1.000 SG	Configuration:	Vertical	Frame Size:	145JM







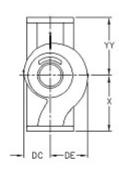
PROJECT: alan deal 8/3/16 UNIT TAG: 001 : VL 25709

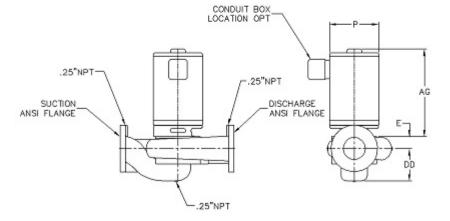
### PACO Series VL In Line Centrifugal Pump, Close Coupled

Do not install pump larger than 215JM in vertical piping.

Pressure and drain tap locations are approximate.

Suction and discharge flanges, are cast per 250# ANSI thickness and diameter. All flanges are flat face. Some holes may be threaded because of nut clearances.





#### NOT FOR CONSTRUCTION, unless certified and referenced on order

Units	Frame	SxD	AG (Max)	DC	DD	DE	E	P (Max)	Х	YY	Weight
inches	145JM	2.5 X 2.5	18.00	4.75	6.00	5.62	1.63	8.00	8.50	8.50	TBD



### PACO Series VL In Line Centrifugal Pump, Close Coupled

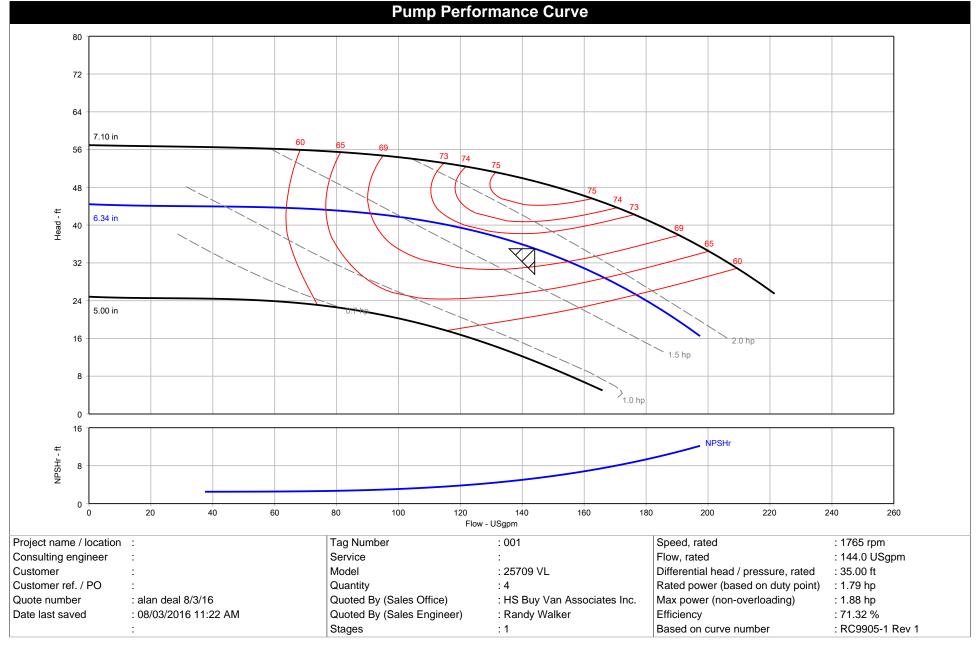
	MATERIALS OF CONSTRUCTION							
PART	MATERIAL	PART	MATERIAL					
Rotation Options	Clockwise	Impeller Washer	S.S., AISI-303					
Base/Stand Type	No Stand Provided	Impeller Key	Steel, AISI 1045					
Connections	125# ANSI	Sleeve Material	Bronze, III932, C89835 or No Sleeves					
Wear Ring Material	NiAl-Bronze, ASTM- B148, C95500	Wear Ring Type	Case Wear Ring					
Pump Coatings	Standard Paint	Packing Gland	Not Applicable					
NSF-50 Certification	Not Required	Lantern Ring	None					
NSF-61 Certification	Not Required	Seal Type	Type 21					
Motor Drip Canopy	Provided	Casing	Cast Iron, ASTM-A48, CL 30					
Seal Material	Ceramic/Carbon/Buna	O-Rings	Buna N					
Motor Shaft	Steel, AISI 1045 or S.S	Seal Flush Options	External Flush, plastic tubing					
Backplate/Seal Plate	Cast Iron, ASTM-A48, CL 30	Motor Bracket	Cast Iron, ASTM-A48, CL 30					
Gaskets	Vegetable Fiber	Impeller	Silicon Bronze, ASTM-B584, C87600					
Casing Bolts	Steel, Grade 5	Impeller Cap Screw	S.S., AISI-303					
Comments								

<sup>\*</sup> All materials based on STANDARD configuration



Construction Datasheet							
Project name / location		:		Tag Number	: 001		
Consulting engineer		:		Service	:		
Customer		:		Model	: 25709 VL		
Customer ref. / PO		:		Quantity	: 4		
Quote number		: alan deal 8/3/16		Quoted By (Sales Office)	: HS Buy Van Associates Inc.		
Date last saved		: 08/03/2016 11:22 AM		Quoted By (Sales Engineer)	: Randy Walker		
Dato last savea	Cons	struction		, , ,	Information		
Nozzle S	Size (in.)	Nozzle Configuration	Pos'n	Manufacturer	: Baldor		
Suction	2.5	125# ANSI	Side	Frame Size	: 145JM		
Discharge	2.5	125# ANSI	Side	Power	: 2.00 hp		
Orientation / Configuration		: Vertical	0.00	RPM	: 1800 rpm		
Rotation	511	: Clockwise		Enclosure	: TEFC		
Wear Ring Configuration		: Single - Case		Operating Power Supply	: 230/460/3/60		
Discharge Elbow Size	1	: -		Efficiency	: Premium		
_				Service factor			
Supplate		: <del>-</del>			: 1.15		
Sump Depth (feet)		:-		Motor Application	: General Purpose		
Bearing Frame				Motor Options/Accessories	: <del>-</del>		
3				Cord Length (feet)	:-		
,		: In motor			aterials		
Bearing Lubrication		: Regreasable		Case	: Cast Iron, ASTM A48 - Class 30		
Thrust Bearing				Motor Bracket	: Cast Iron, ASTM-A48, CL 30		
Intermediate Bearing		:-		Impeller	Silicon Bronze, ASTM B584 C87600 (B21)		
Lower Bearing		:-		Impeller Cap Screw and Washer	: Stainless Steel, AISI-303		
Bearing Housing Access	ories	:-		Impeller Key	: Steel, Cold Drawn C1018		
PACO Construction code	Э	: 16-25709-130101-2562P		Case wear ring	Tin Bronze, ASTM B584-90500		
Base	eplate, Co	upling and Guard		Impeller wear ring	· (B18)		
Baseplate		: Not Applicable		,			
Drip Pan		:-		Pump Shaft	: Steel, AISI-1040		
Coupling		:-		Sleeve	: Bronze, III932, C89835		
Guard		: OSHA Approved		Line Shaft	: <del>-</del>		
	al & Packi	ng Construction		Column	: <del>-</del>		
Sealing Method		: Single Seal, Type 21S		Discharge Pipe	: <del>-</del>		
Seal Material		Buna Carbon Ceramic	SS-Spring	Discharge Elbow	: <del>-</del>		
Packing Gland		and Hardware		Suction Elbow	; -		
Lantern Ring		:-		Subplate	; <del>-</del>		
Recirculation Lines		: Nylon Tubing with Bras	e Fittinge	Hardware	: Steel, Grade 5		
Neoneulanon Lines	Waight	, ,	o i iuiiyo	O Rings	: Buna N		
Dumn	weight	s (Approx.) : 91.00 lb		Pump Coatings	: Standard Manufacturers Paint		
Pump							
Baseplate		: -					
Driver		: 53.00 lb					
Estimated Shipping gross	s weight	: 144.0 lb					







Company name: Wm E Walter, Inc.

Created by: Phone:

Performance Engineering Group

for Park Forest-Jackson, MI

**Date:** 22/09/2016

Position | Qty. | Description

1 ALPHA 15-55SF



Note! Product picture may differ from actual product

Product No.: 59896879

**GRUNDFOS ALPHA** 

The next generation of energy efficient circulators.

ALPHA is the latest and most innovative member of the Grundfos family of high-quality circulators. By incorporating a permanent magnet motor design, power consumption is now reduced by 50%. ALPHA adapts to the seasonal demands of your system without sacrificing comfort.

With ALPHA, you can stop worrying about complicated pump settings. Simply install the pump and leave it in the factory setting, AUTOADAPTTM. ALPHA will automatically analyze the heating system, find the optimum setting and continue to adjust its operation to changes in demand. The result is optimum comfort and minimum energy consumption.

#### **AUTOADAPT**

The factory setting, AUTOADAPT, analyses the heating system and automatically adjusts the pump setting to meet changes in heating demand.

Ensuring lowest possible energy consumption, while maintaining maximum comfort levels.

#### Compact design

The innovative design makes ALPHA the most compact Grundfos circulator available. With the electronics integrated into the motor housing and

standard 2-Bolt flange connection, confined spaces and challenging applications are now possible.

Two options for power connections

Option 1: 6-foot line cord with three prong plug

Option 2: Conduit terminal box with push pin wire connection

#### One-touch operation

Intuitive one-touch operation for selecting seven different hydraulic settings.

3 Fixed Speeds

3 Constant Pressure settings

AUTOADAPT

### LED Display

The easy-to-read LED display indicating power (Watts) consumption and flow (GPM) estimation.

### Liquid:

Pumped liquid: Water
Liquid temperature range: 35.6 .. 230 °F
Liquid temp: 140 °F
Density: 61.35 lb/ft³

Technical:



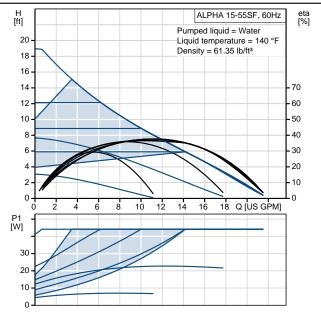
**Date:** 22/09/2016

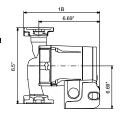
Position Description Qty. TF class: 110 ETL, FCC Approvals on nameplate: Materials: Stainless steel Pump housing: DIN W.-Nr. 14308 **ASTM CF8** Impeller: Composite, PES Installation: Range of ambient temperature: 32 .. 104 °F Maximum operating pressure: 145 psi Pipe connection: G 1 1/2 Pressure stage: PN 10 Port-to-port length: 6 1/2 in **Electrical data:** Power input - P1: 5 .. 45 W Mains frequency: 60 Hz Rated voltage: 1 x 115 V Maximum current consumption: 0.1 .. 0.65 A Enclosure class (IEC 34-5): IP42 Insulation class (IEC 85): F Others: Gross weight: 7.5 lb



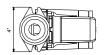
**Date:** 22/09/2016

Description	Value
General information:	
Product name:	ALPHA 15-55SF
Product No:	59896879
EAN number:	5710620164390
Price:	On request
Technical:	
Head max:	18.05 ft
TF class:	110
Approvals on nameplate:	ETL, FCC
Materials:	
Pump housing:	Stainless steel
Tump nodoling.	DIN WNr. 14308
	ASTM CF8
Impeller:	Composite, PES
Installation:	
Range of ambient temperature:	32 104 °F
Maximum operating pressure:	145 psi
Pipe connection:	G 1 1/2
Pressure stage:	PN 10
Port-to-port length:	6 1/2 in
Liquid:	
Pumped liquid:	Water
Liquid temperature range:	35.6 230 °F
Liquid temp:	140 °F
Density:	61.35 lb/ft <sup>3</sup>
Electrical data:	
Power input - P1:	5 45 W
Mains frequency:	60 Hz
Rated voltage:	1 x 115 V
Maximum current consumption:	0.1 0.65 A
Enclosure class (IEC 34-5):	IP42
Insulation class (IEC 85):	F
Motor protec:	NONE
Thermal protec:	ELEC
Controls:	
Pos term box:	6H
Others:	
Gross weight:	7.5 lb
Sales region:	USA
Caico Togioni.	00/1







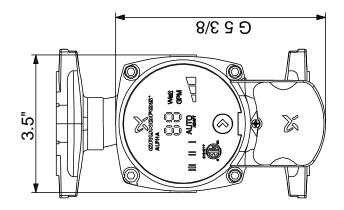


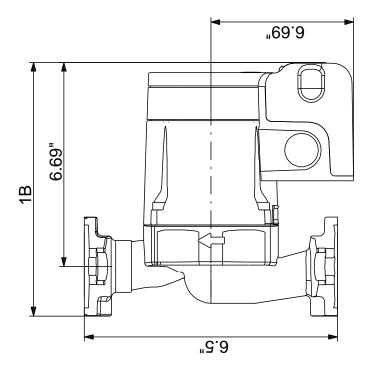


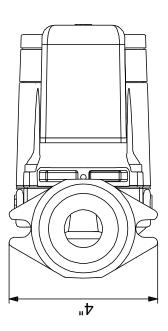


**Date:** 22/09/2016

# 59896879 ALPHA 15-55SF 60 Hz







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

#### Position **Description** Qty.

1 **UPS 43-100 F** 



Note! Product picture may differ from actual product

Product No.: 95906636

The pump is of the canned rotor type, i.e. pump and motor form an integral unit without shaft seal and with only two gaskets for sealing. The bearings are lubricatd by the pumped liquid.

The pump has 3-step speed selector.

The pump is characterized by:

- Ceramic shaft and radial bearings.
- Carbon axial bearing.
- Stainless steel rotor can and bearing plate.
- Corrosion-resistant impeller, Composite, PES.
- Cast iron pump housing.

The motor is a 1-phase motor.

No additional motor protection is required.

Liquid:

Pumped liquid: Water Liquid temperature range: 0 .. 110 °C Liquid temp: 60 °C Density: 983.2 kg/m3

Technical:

Approvals on nameplate: ETL, CSA

Materials:

Pump housing: Cast iron

EN-GJL-200

Impeller: Composite, PES

Installation:

Maximum ambient temperature: 40 °C Amb. max at 80 dgr C liquid: 80 °C Maximum operating pressure: 10 bar Flange standard: **USA Oval** Type of connection: C.I. Flange Pipe connection: 2 - Bolt Flange

Pressure stage: 10 215 mm Port-to-port length:

**Electrical data:** 

40 µF C run: Power input in speed 1: 265 W Power input in speed 2: 335 W Max. power input: 370 W Rated power - P2: 0.25 kW Mains frequency: 60 Hz Rated voltage: 1 x 115 V Current in speed 1: 2.5 A 3.1 A Current in speed 2:

Position	Qty.	Description	
		Current in speed 3:	3.5 A
		Capacitor size - run: Number of poles: Insulation class (IEC 85):	40 μF/180 V 2
		Insulation class (IEC 85):	Н
		Others:	
		Gross weight:	8.38 kg
			·
I			



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



## UPS 43-100 SF

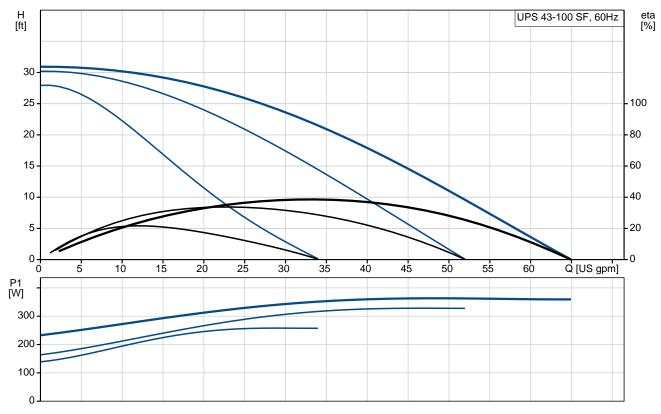
Circulator pumps

Product photo could vary from the actual product

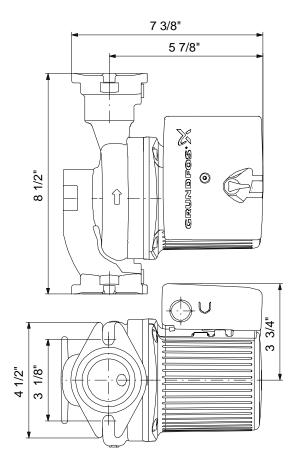
Conditions of Service				
Flow:				
Head:				
Efficiency:				
Liquid:	Water			
Temperature:	140 °F			
NPSH required:	ft			
Viscosity:				
Specific Gravity:	0.985			

Pump Data	
Maximum operating pressure:	145 psi
Liquid temperature range:	32 230 °F
Maximum ambient temperature:	104 °F
Approvals:	ETL, CSA
Type of connection:	S.S. Flange
Flange standard:	USA Oval
Pipe connection:	2 - Bolt Flange
Product number:	95906639

Motor Da	ta
Max. power input:	370 W
Rated power - P2:	0.33 HP
Rated voltage:	230 V
Main frequency:	60 Hz
Insulation class:	Н
Motor protection:	CONTACT
Thermal protection:	internal







### Materials:

Pump housing: Stainless steel

DIN W.-Nr. 1.4301

Impeller: Composite, PES



**Date:** 5/18/2017

Position | Count | Description

1 | UP

UPS 43-100 SF



Product photo could vary from the actual product

Product No.: 95906639

The pump is of the canned rotor type, i.e. pump and motor form an integral unit without shaft seal and with only two gaskets for sealing.

The bearings are lubricated by the pumped liquid.

The pump is characterized by:

- \* Ceramic shaft and radial bearings.
- \* Carbon axial bearing.
- \* Stainless steel rotor can and bearing plate.
- \* Corrosion-resistant impeller, Composite, PES.
- Stainless steel pump housing.

The motor is a 1-phase motor.

No additional motor protection is required.

Liquid:

Pumped liquid: Water
Liquid temperature range: 32 .. 230 °F
Q\_OpFluidTemp: 140 °F
Density: 61.35 lb/ft³

Technical:

Approvals on nameplate: ETL, CSA

Materials:

Pump housing: Stainless steel DIN W.-Nr. 1.4301

Impeller: Composite, PES

Installation:

Maximum ambient temperature: 104 °F
Ambient max at 176°F liquid: 176 °F
Maximum operating pressure: 145 psi
Flange standard: USA Oval
Type of connection: S.S. Flange
Pipe connection: 2 - Bolt Flange

Pressure stage: 10
Port-to-port length: 8 1/2 in

Electrical data:

C run:  $10 \,\mu\text{F}$ Power input in speed 1:  $265 \,\text{W}$ Power input in speed 2:  $335 \,\text{W}$ Max. power input:  $370 \,\text{W}$ 



**Date:** 5/18/2017

			Date:	5/18/2017	
Position	Count	Description			
			0.22 HD		
		Rated power - P2:	0.33 HP		
		Main frequency:	60 Hz		
		Rated voltage:	1 x 230 V		
		Current in speed 1:	1.2 A		
		Current in speed 2:	1.5 A		
		Current in speed 3:	1.7 A		
		Capacitor size - run:	10 μF/400 V		
		Number of poles:	2		
		Insulation class (IEC 85):	Н		
			• •		
		Others:			
		Gross weight:	17.7 lb		
		See a see			
	•	•			



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



## UP 26-99 BF

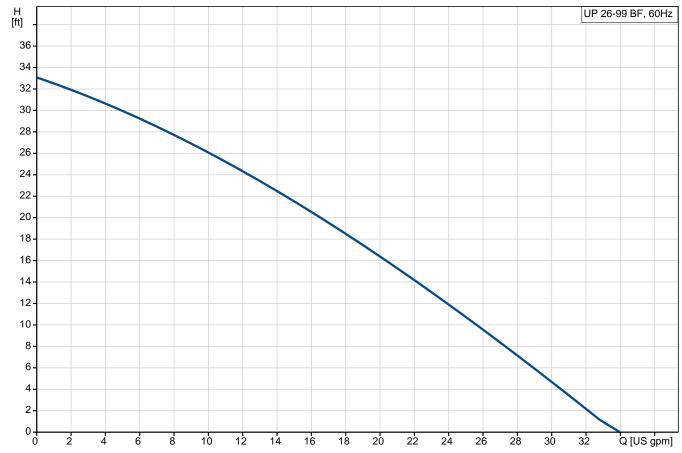
Circulator pumps

Product photo could vary from the actual product

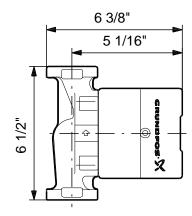
Conditions of Service		
Flow:		
Head:		
Efficiency:		
Liquid:	Water	
Temperature:	140 °F	
NPSH required:	ft	
Viscosity:		
Specific Gravity:	0.985	

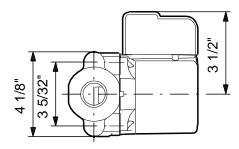
Pump Data	
Maximum operating pressure:	145 psi
Liquid temperature range:	32 230 °F
Maximum ambient temperature:	104 °F
Approvals:	UL, CSA
Type of connection:	Bronze Flange
Flange standard:	USA Oval
Pipe connection:	2 - Bolt Flange
Product number:	52722347

Motor Data		
Max. power input:	245 W	
Rated power - P2:	0.16 HP	
Rated voltage:	115 V	
Main frequency:	60 Hz	
Insulation class:	F	
Motor protection:	CONTACT	
Thermal protection:	internal	









### Materials:

Pump housing: Bronze

DIN W.-Nr. 2.1176.01

Impeller: Composite, PES



**Date:** 5/18/2017

Position | Count | Description

1

**UP 26-99 BF** 



Product photo could vary from the actual product

Product No.: 52722347

The pump is of the canned rotor type, i.e. pump and motor form an integral unit without shaft seal and with only two gaskets for sealing.

The bearings are lubricated by the pumped liquid.

The pump is characterized by:

- Ceramic shaft and radial bearings.
- \* Carbon axial bearing.
- \* Stainless steel rotor can and bearing plate.
- \* Corrosion-resistant impeller, Composite, PES.
- \* Bronze pump housing.

The motor is a 1-phase motor.

No additional motor protection is required.

Liquid:

Pumped liquid: Water
Liquid temperature range: 32 .. 230 °F
Q\_OpFluidTemp: 140 °F
Density: 61.35 lb/ft³

Technical:

Approvals on nameplate: UL, CSA

Materials:

Impeller:

Pump housing: Bronze

DIN W.-Nr. 2.1176.01 Composite, PES

Installation:

Maximum ambient temperature: 104 °F
Ambient max at 176°F liquid: 176 °F
Maximum operating pressure: 145 psi
Flange standard: USA Oval
Type of connection: Bronze Flange
Pipe connection: 2 - Bolt Flange

Pressure stage: 10
Port-to-port length: 6 1/2 in

Electrical data:

C run: 10  $\mu$ F Max. power input: 245 W Rated power - P2: 0.16 HP Main frequency: 60 Hz Rated voltage: 1 x 115 V Current in speed 3: 2.15 A Capacitor size - run: 10  $\mu$ F/180 V



**Date:** 5/18/2017

Position	Count	Description	
		Number of poles: Insulation class (IEC 85):	2 F
		Others: Gross weight:	11.5 lb