

Job/Project: ST1250 / Boiler Selection Guide		Representative: R.D. Bitzer Company	
ESP-Systemwise: WIZE-BDB88E	Created On: 07/09/2020	Phone: (215) 604-6600	
Location/Tag: Variable Speed 20FdT		Email: sales@rdbitzer.com	
Engineer:		Submitted By:	Date:
Contractor:		Approved By:	Date:

High Efficiency Large Wet Rotor Circulator with ECM Motor

Series: ecocirc® XL

Model: 40-200

The ecocirc® XL circulator is designed with a highly efficient electronically commutated permanent magnet motor (ECM/PM Technology). Cast Iron model designed for closed loop hydronic heating and cooling systems pumping water or water/glycol mix. Stainless Steel body pump designed for plumbing systems or open loop heating and cooling systems.



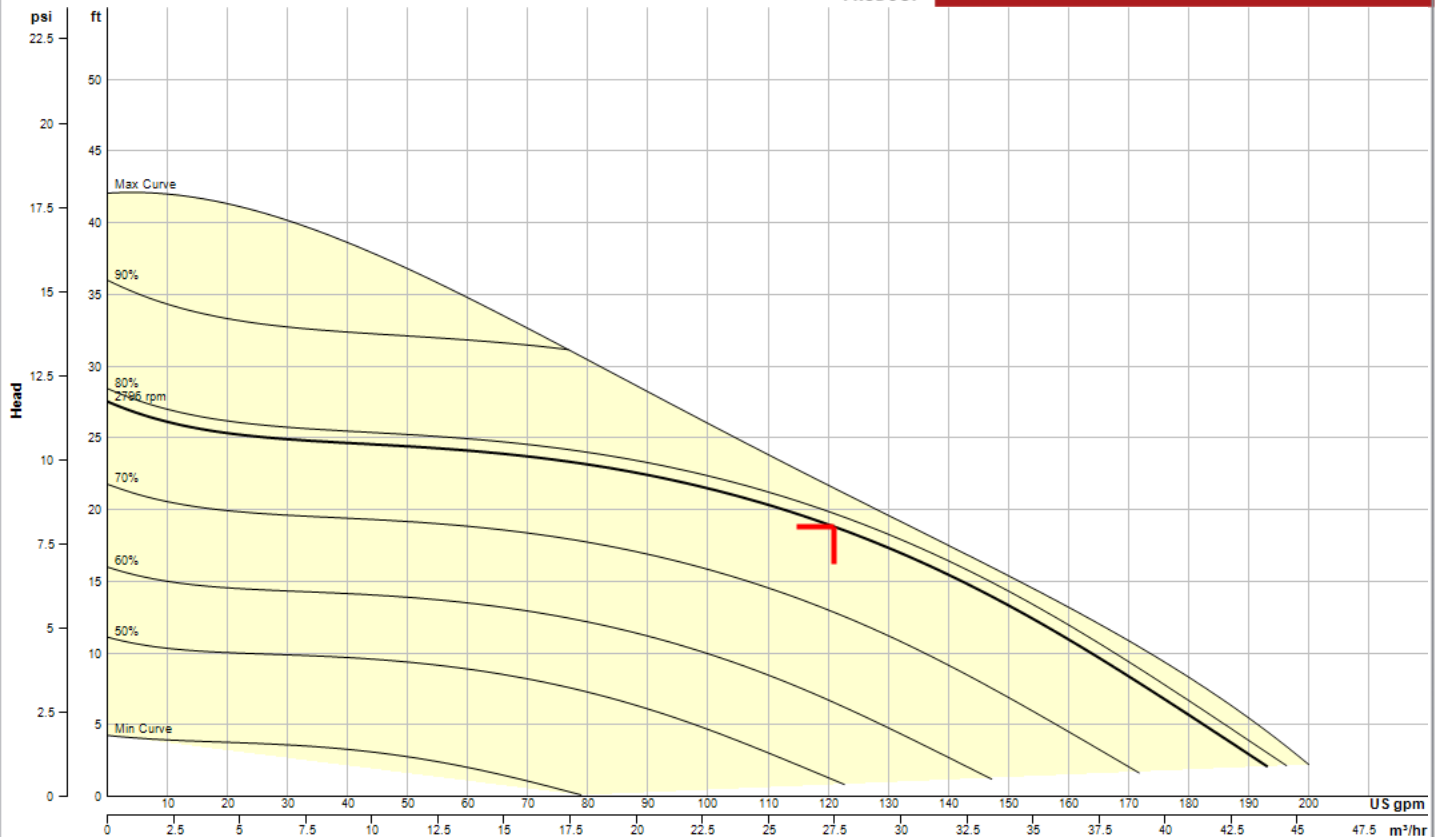
Selection Summary

Duty Point Flow	121 US gpm
Duty Point Head	18.8 ft
Control Head	5.64 ft
WTW Efficiency at Duty Point	55.3 %
WTW PLEV Efficiency	0.0 %
Motor Power	1.0
Electrical Input Power	1.02 hp
RPM @ Duty Point	2796 rpm
NPSHr	---
Minimum Shutoff Head	27.5 ft
Fluid Temperature	140 °F
Fluid Type	Water
Phase	1
Voltage	208-230
Weight (approx. - consult rep for exact)	37 lbs

Performance Curve



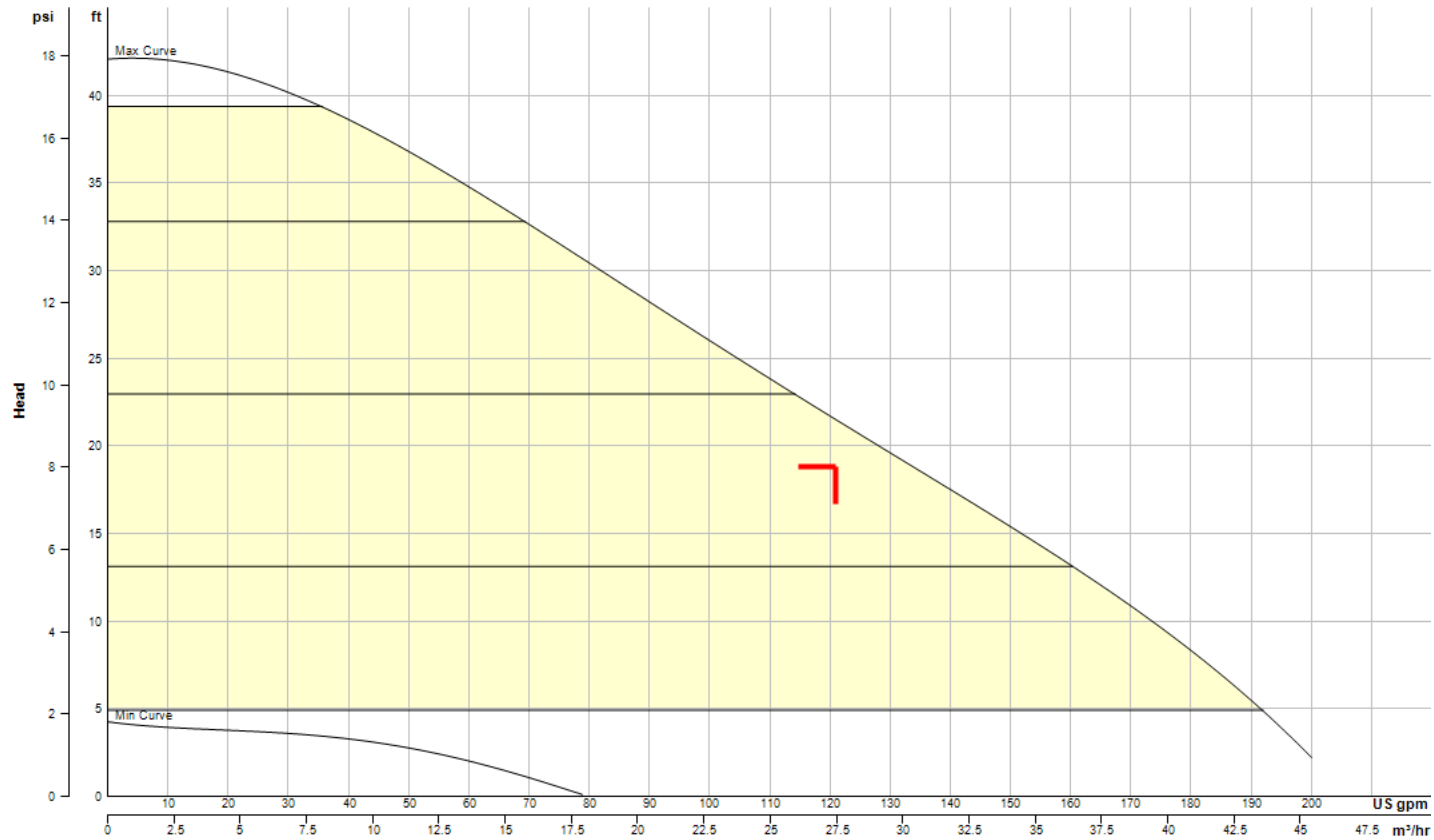
ecocirc XL
Ecocirc XL 40-200



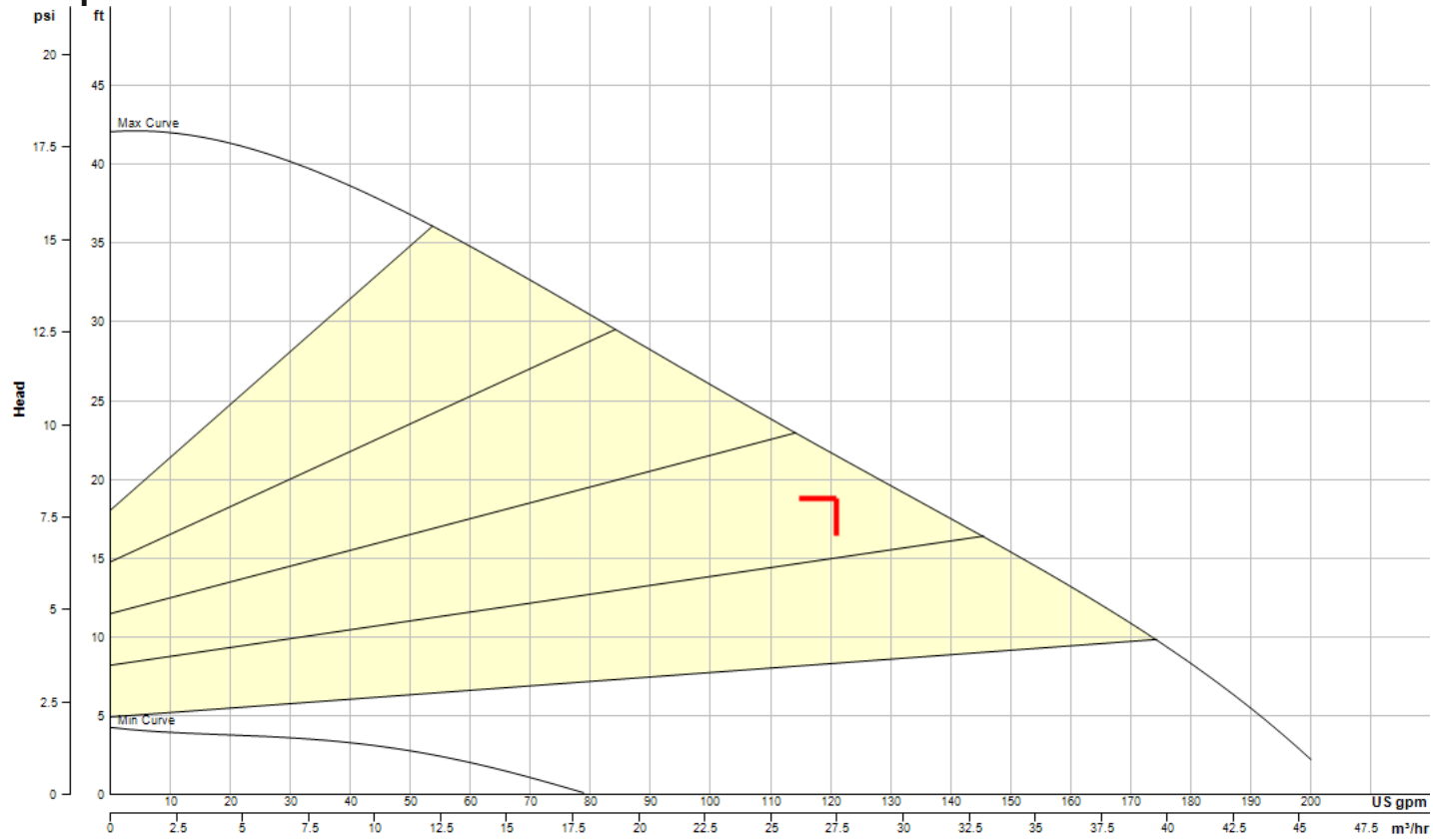
Performance curve meets 14.6 / ISO 9906 acceptance criteria

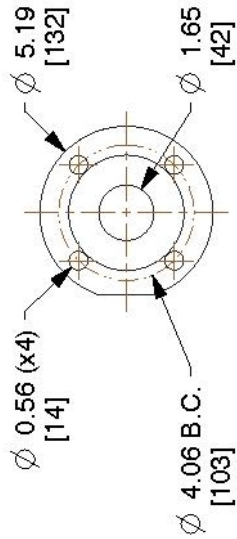
WIZE-BDB88E

Constant Pressure Curve

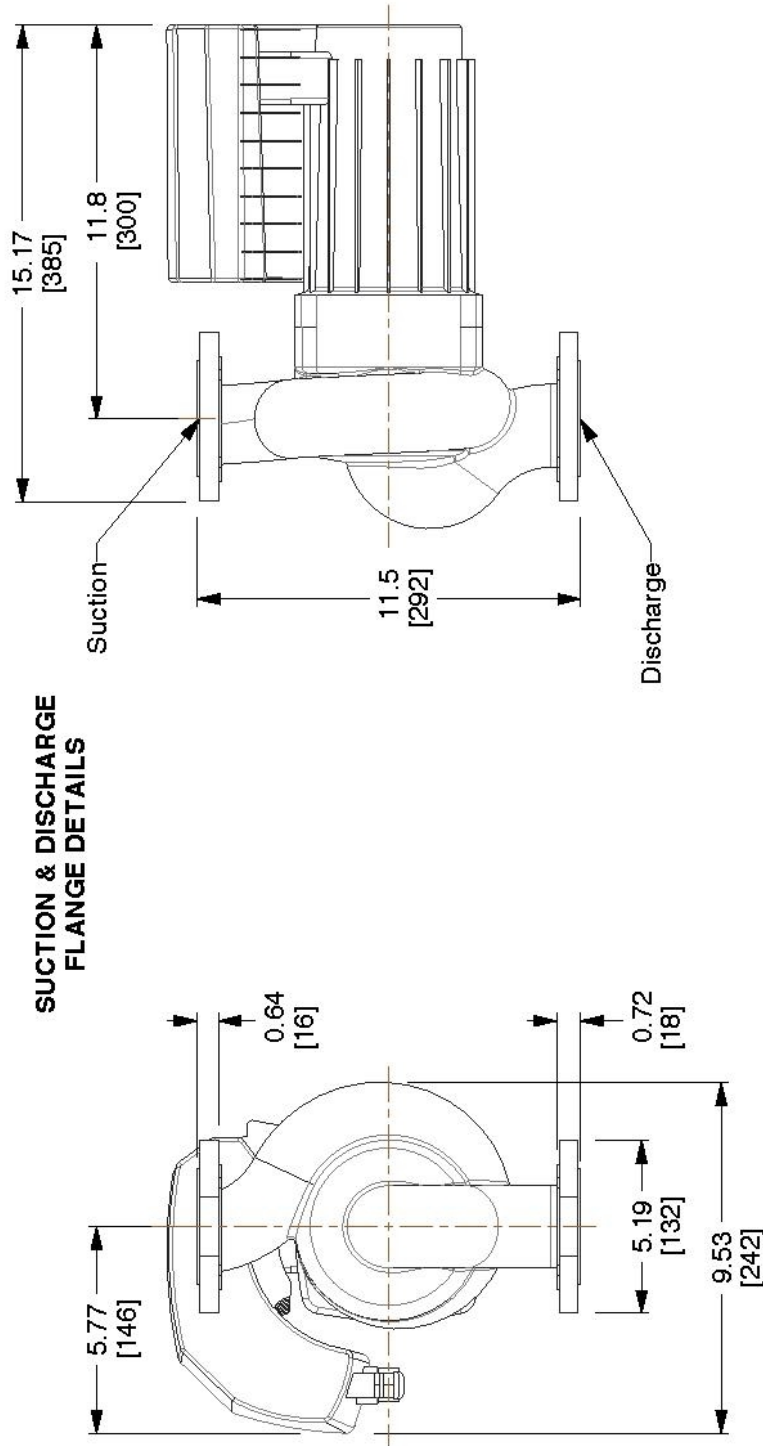


Proportional Pressure Curve





SUCTION & DISCHARGE FLANGE DETAILS



8200 N. Austin Ave.
Morton Grove, IL 60053, USA

This drawing and the information depicted therein is the property of Xylem. Copies are issued in strict confidence and shall not be reproduced or copied, or used as the basis for the manufacture or sale of products without prior written permission of Xylem.

Dimensions are subject to change

Not to be used for construction unless certified

BG-104312 ECOCIRC XL 40-200

Series ecocirc XL High Efficiency Large Wet Rotor Circulator with (ECM)

Motor Hp:1 | Voltage:208-230 | Phase:1 | Watts Range:50-825 | Amp Range:0.5-3.5

Dimensions : IN (mm)

Scale : N.T.S.

Submittal # : A-429C

Standard Materials of Construction

Pump Body Construction:	Cast Iron or Stainless Steel
Impeller	Poly-phenylene Sulfide or Stainless Steel
Shaft	AISI 420 Stainless Steel
Rotor	Permanent Magnet
Bearing	Carbon Sleeve
Gasket/O-Ring	EPDM
All Other Wetted Parts	AISI 304 Stainless Steel
Motor Type	Electronically Commutated Motor/Permanent Magnet
Motor Insulation Class	F

Operating Data

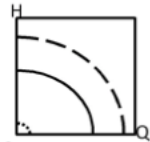
Max Working Pressure	175 psi (12 bar)
Minimum Working Temperature	14°F (-10°C)
Maximum Working Temperature	230°F (110°C)
Ambient Temperature Range	32°F - 104°F (0°C - 40°C)



STANDARD OPERATING MODES



CONSTANT SPEED



The pump maintains a constant speed at any flow rate. The desired speed is set on the interface panel of the pump.



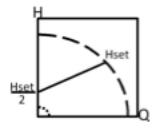
CONSTANT PRESSURE (Δp -c)



The pump maintains a constant differential pressure at any flow demand until the maximum speed is reached. The desired head of the pump can be set via user interface. Recommended for use in systems with small or constant pressure losses.



PROPORTIONAL PRESSURE (Δp -v)



The differential pressure continuously increases or decreases based on the flow demand. The set point head can be set on the pump user interface. Use for systems with large pressure losses.

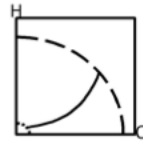


NIGHT MODE

The pump will automatically reduce speed when there is an abrupt change in fluid temperature. The change in fluid temperature is from a boiler operating in night time setback mode. The built-in temperature sensor is used. (Fixed Speed, Constant Pressure, Proportional Pressure)

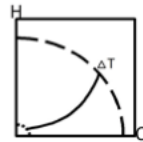
TEMPERATURE DEPENDENT OPERATING MODES

SET POINT TEMPERATURE (Δp -T)



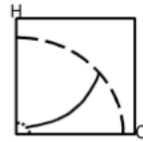
The nominal differential pressure set point is modified based on the fluid temperature. Uses the built-in temperature sensor.

SET POINT TEMPERATURE (T)



The pump maintains a constant temperature in a system, such as domestic hot water system or a single temperature heating system. Uses the built-in temperature sensor.

DIFFERENTIAL TEMPERATURE (ΔT)



The pump maintains a constant differential temperature between the built-in and external temperature sensors.

INPUT SIGNALS

- One 0-10V (Analog): Speed Control by external controller
- One 4-20mA (Analog): Connection with an external differential pressure sensor for pressure control mode (two differential pressure sensor ranges: 0-15 and 0-30 PSIG) on single phase models.
- Two absolute pressure sensors 4-20mA (Analog) input for three phase models.
- One external temperature sensor input for Differential Temp operating mode. Sensor Type: KYT38, P/N: 104502
- One built-in temperature sensor for Set Point Temp and Differential-Temp operating mode.

REMOTE BUILDING MANAGEMENT SYSTEM CAPABILITIES

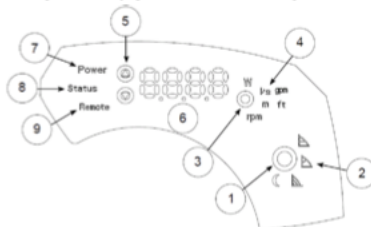
- The pump can be monitored or controlled by a signal from BMS (Building Management System). Built-in protocols are BACnet and Modbus. Direct connection to a PC is available.
- An optional wireless module can be added to create a short range wireless field for remote connection to the pump. An internet browser can be used to program the advanced settings. Module P/N: 104500

START/STOP CONNECTIONS: Connect to external dry contact relay or use with a thermostat.

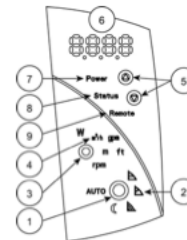
OUTPUT RELAY(single phase): Normally Open Dry Contact Relay for Fault Mode indication.

OUTPUT RELAYS (three phase): Two Normally Open Dry Contact Relays for Fault Mode and Run indication.

ONBOARD USER INTERFACE



- Control mode button
- Control mode indicators
- Parameter button
- Parameter indicators
- Setting buttons
- Numeric display
- Power indicator
- Status / Fault indicator
- Remote control indicator



Job/Project: ST1250 / Boiler Selection Guide	Representative: R.D. Bitzer Company	
ESP-Systemwise: WIZE-BDB88E	Created On: 07/09/2020	Phone: (215) 604-6600
Location/Tag: Single Speed 20FdT	Email: sales@rdbitzer.com	
Engineer:	Submitted By:	Date:
Contractor:	Approved By:	Date:

Small Close Coupled In-Line Centrifugal Pump

Series: e-90 Stock

Model: 2AAB

Features & Design

- Designed to be mounted in the piping
- Installed wither horizontally or vertically
- Bolted Flange Connections
- Internally Self-Flushing Mechanical Seal



*The Bell & Gossett Series e-90 is available in 116 standard pre-configured designs and can be built-to-order in bronze fitted or all bronze construction. The e-90 pump offers proven hydraulic performance which provides an efficiency improvement of 2%-18% at BEP.

<http://bellgossett.com/pumps-circulators/in-line-pumps/e-90/>

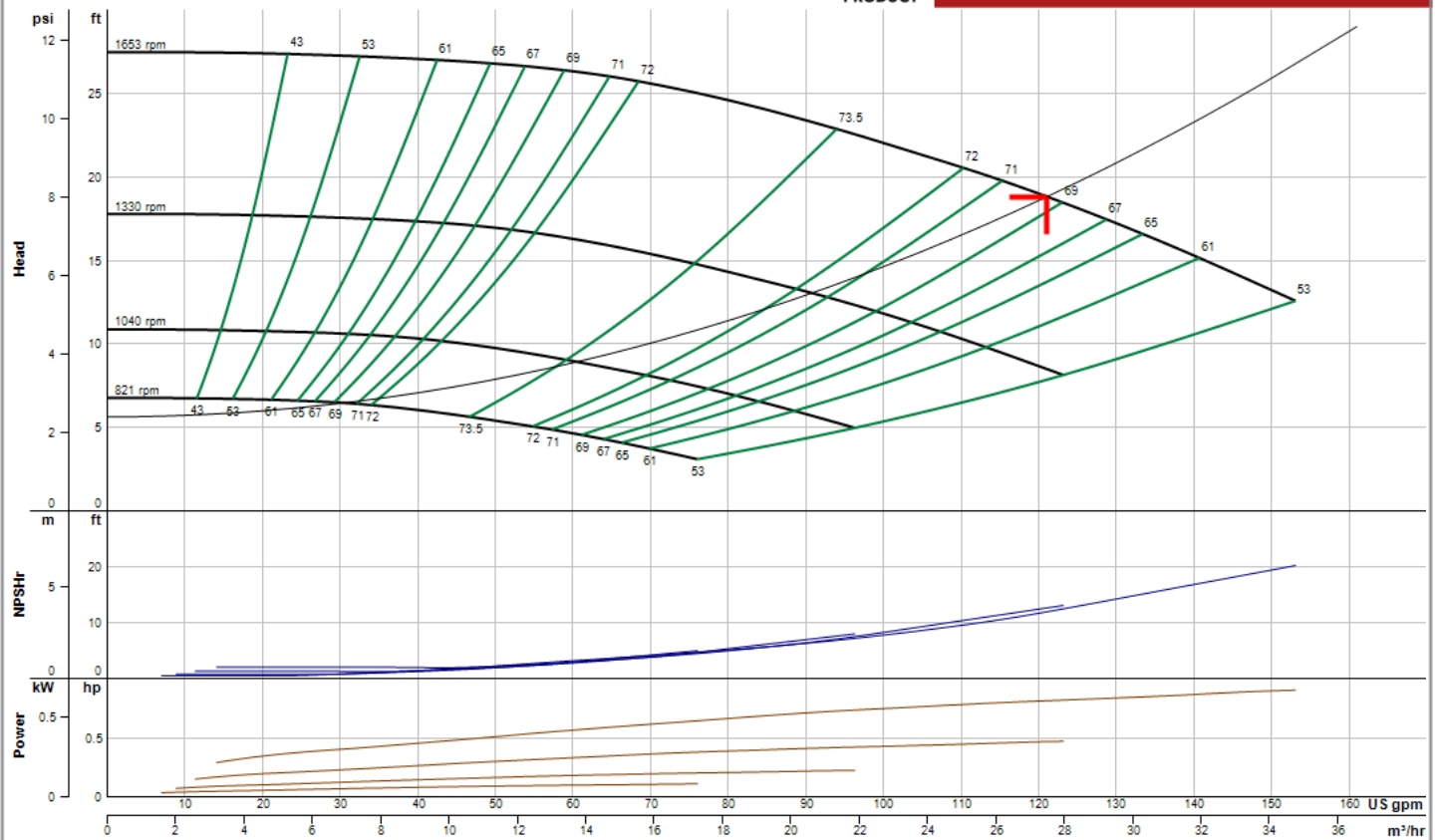
Pump Selection Summary

Duty Point Flow	121 US gpm
Duty Point Head	18.8 ft
Control Head	5.64 ft
Duty Point Pump Efficiency	69.3 %
Part Load Efficiency Value (PLEV)	72.0 %
Impeller Diameter	5.25 in
Motor Power	1 hp
Duty Point Power	0.813 bhp
Motor Speed	--- rpm
RPM @ Duty Point	1653 rpm
NPSHr	12 ft
Minimum Shutoff Head	27.5 ft
Minimum Flow at RPM	14.1 US gpm
Flow @ BEP	94 US gpm
Fluid Temperature	140 °F
Fluid Type	Water
Weight (approx. - consult rep for exact)	70 lbs
Pump Floor Space Calculation	N/A ft²

Performance Curve



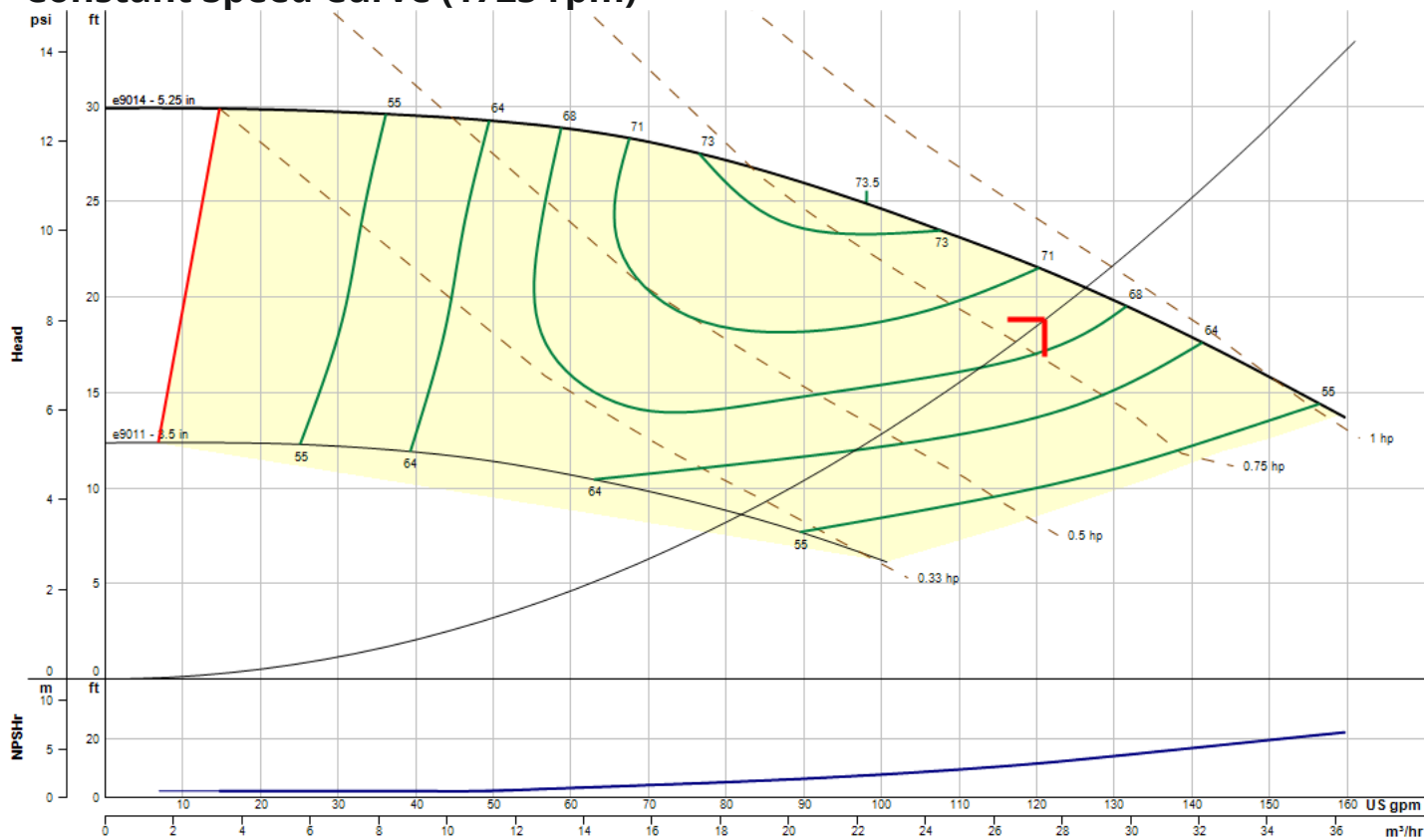
e-90 Stock
2AAB



Performance curve meets 14.6 / ISO 9906 acceptance criteria

WIZE-BDB88E

Constant Speed Curve (1725 rpm)



Operating Point

Flow: 121 US gpm **Head:** 18.8 ft **Speed:** 1653 **Efficiency:** 69.3% **Point BHP:** 0.813 **End Of Curve:** 79%

Maximum Duty Point (at rated motor speed)

Flow: 126 US gpm **Head:** 20.5 ft **Speed:** 1725 **Efficiency:** 69.4% **Point BHP:** 0.924 **NOL Flow:** 160 US gpm **Runout Flow:** 160 US gpm **NOL (BHP):** 1.03



Xylem Inc.
8200 N. Austin Avenue, Morton Grove, IL 60053
Phone: (847)966-3700 Fax: (847)965-8379
www.bellgossett.com
Bell & Gossett is a trademark of Xylem Inc. or one of its subsidiaries.

Standard Materials of Construction *contact your local rep for configuration

Construction:	Bronze Fitted	All Bronze
Volute	Cast Iron ASTM A159	Cast Bronze ASTM B584
Impeller:	ASTM B584	ASTM B584
Shaft	Stainless Steel	Stainless Steel
Bracket	Cast Iron ASTM #A159	CF8 Stainless ASTM #A351
Companion Flange	1", 1 1/4", 1 1/2" - Steel SAE1006 2", 3" - Cast Iron ASTM #A159	1", 1 1/4", 1 1/2" - Bronze ASTM #36 2", 3" - Cast Bronze ASTM #B584

Standard Mechanical Seal Assembly

Elastomer:	EPR
Spring	Stainless Steel
Seat Insert	Silicon-Carbide
Seal Ring	Carbon
Seal Housing	Stainless Steel

Maximum Operating Tolerances

Max Working Pressure (standard)	175 psi (12 bar)
Max fluid Temperature	250°F

Pump Options *contact your local rep to configure

TEFC enclosures for non-ECM motors	Single and Three Phase motors
Available as a Header pump for boiler recirculation	ECM Permanent Magnet Smart Motor Option
FKM and EPR seals	

