

Job/Project: ST2500 / Boiler Selection Guide		Representative: R.D. Bitzer Company	
ESP-Systemwize: WIZE-9E3CD4	Created On: 07/09/2020	Phone: (215) 604-6600	
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Engineer:		Submitted By:	Date:
Contractor:		Approved By:	Date:

## High Efficiency Large Wet Rotor Circulator with ECM Motor

### Series: ecocirc® XL

Model: 40-275

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.



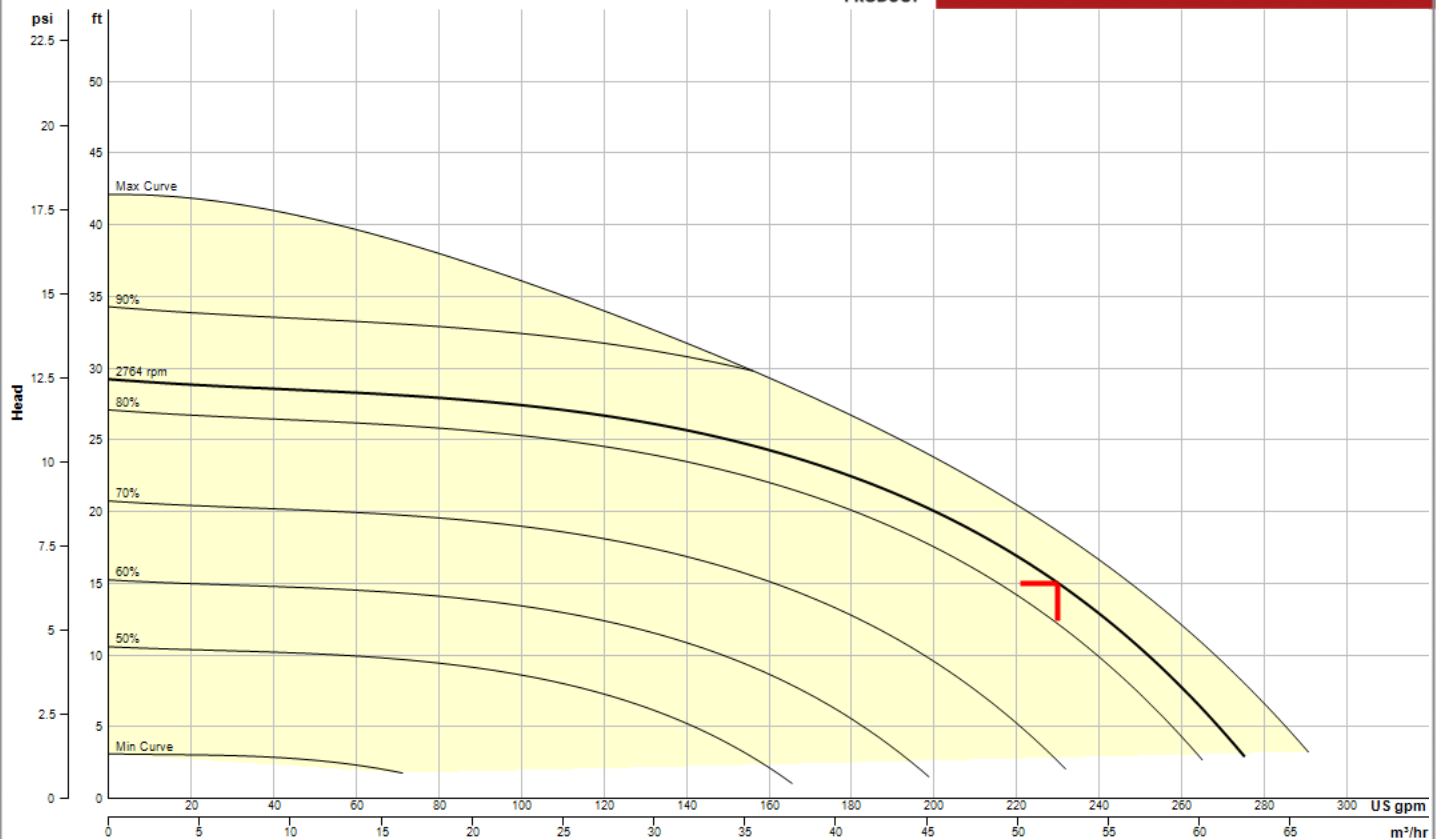
### Selection Summary

Duty Point Flow	230 US gpm
Duty Point Head	15 ft
Control Head	4.5 ft
WTW Efficiency at Duty Point	51 %
WTW PLEV Efficiency	0.0 %
Motor Power	2.0
Electrical Input Power	1.68 hp
RPM @ Duty Point	2764 rpm
NPSHr	---
Minimum Shutoff Head	29.2 ft
Fluid Temperature	140 °F
Fluid Type	Water
Phase	1
Voltage	208-230
Weight (approx. - consult rep for exact)	49 lbs

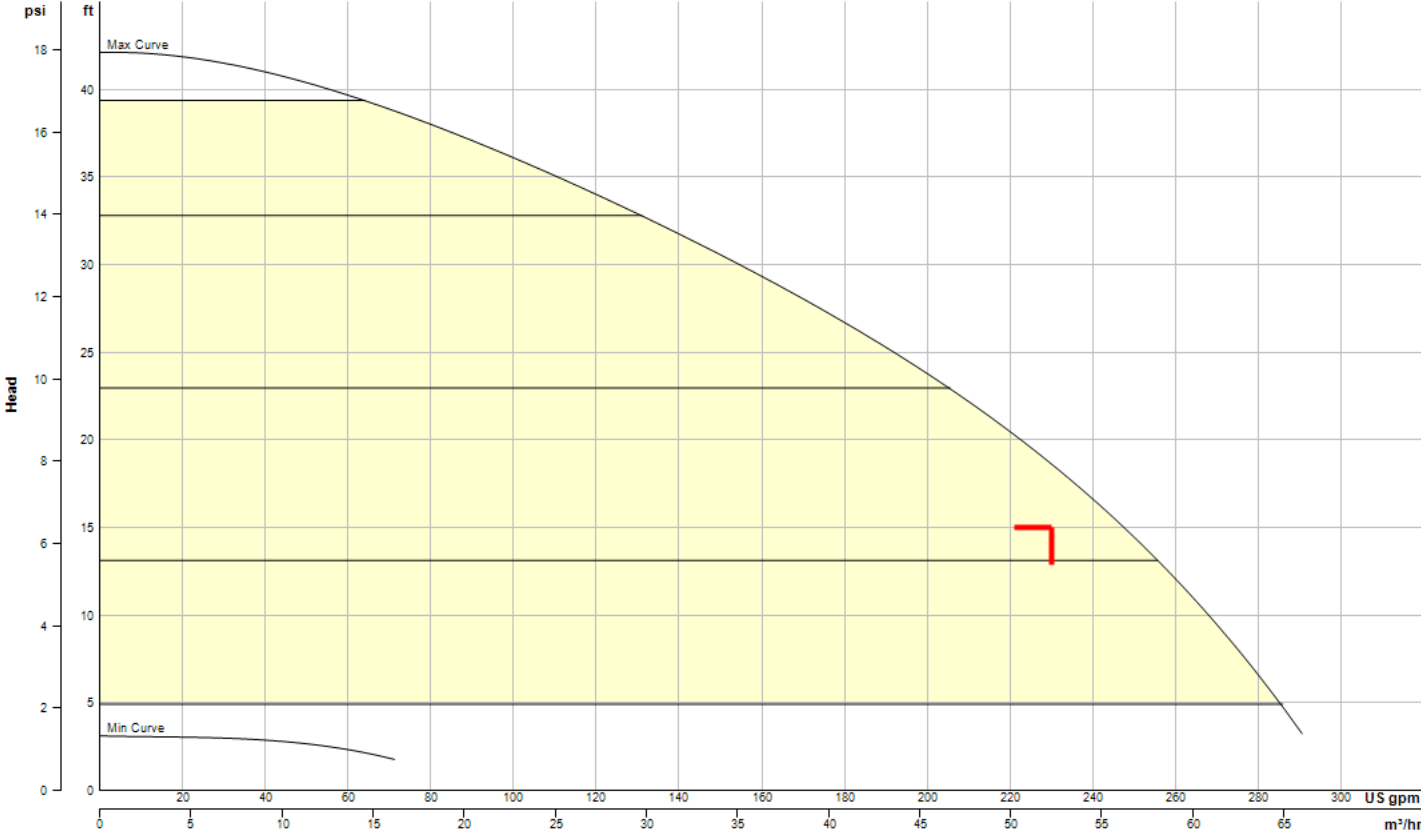
## Performance Curve



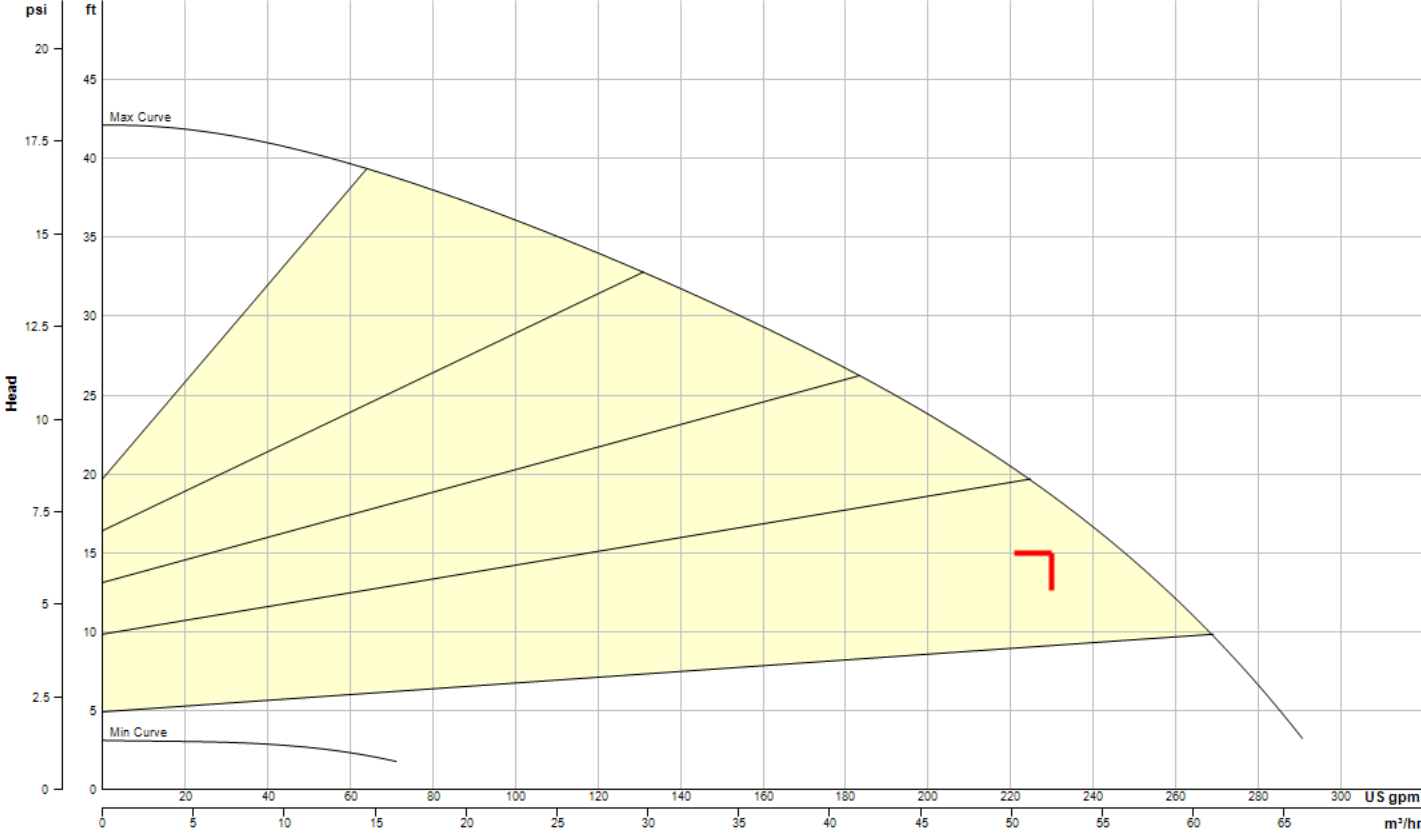
**ecocirc XL**  
Ecocirc XL 40-275

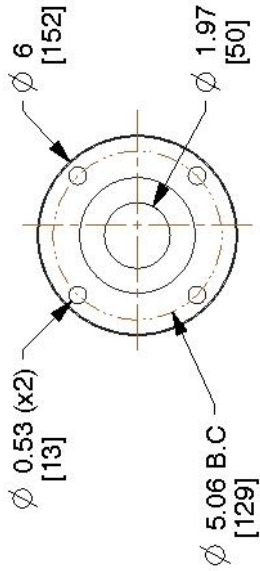


# Constant Pressure Curve

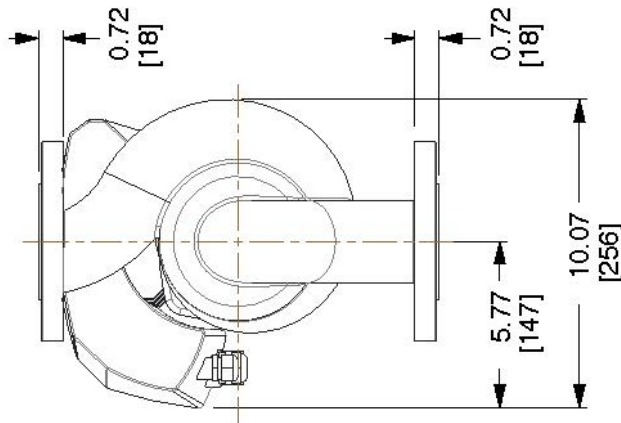
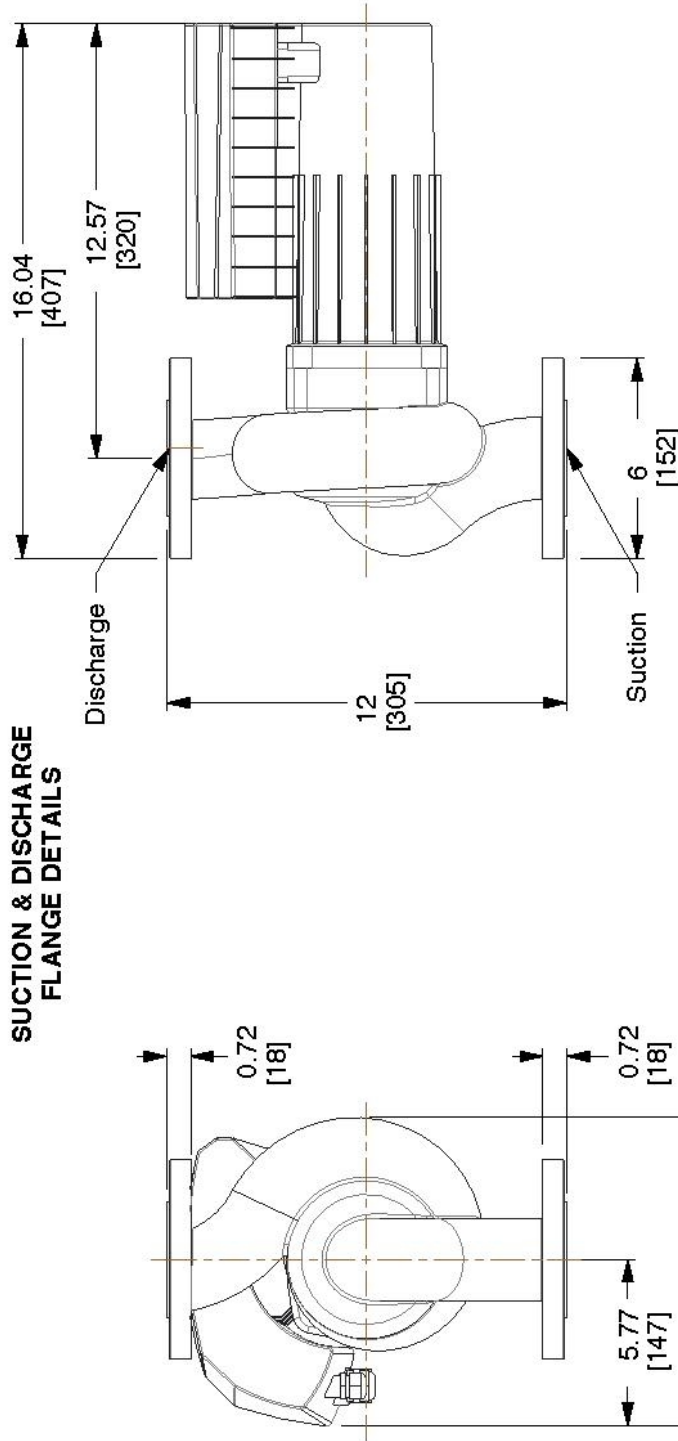


# Proportional Pressure Curve





### SUCTION & DISCHARGE FLANGE DETAILS



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

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Dimensions are subject to change

Not to be used for construction unless certified

## BG-104318 ECOCIRC XL 40-275

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

Motor Hp:2 | Voltage:208-230 | Phase:1 | Watts Range:50-1400 | Amp Range:0.5-6.0

Dimensions : IN (mm)

Scale : N.T.S.

Submittal # : A-429C

## Standard Materials of Construction

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

## Operating Data

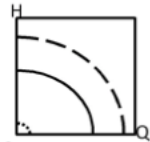
Max Working Pressure	175 psi (12 bar)
Minimum Working Temperature	14°F (-10°C)
Maximum Working Temperature	230°F (110°C)
Ambient Temperature Range	32°F - 104°F (0°C - 40°C)



## 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.



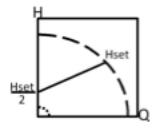
### CONSTANT PRESSURE ( $\Delta p$ -c)



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 ( $\Delta p$ -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.

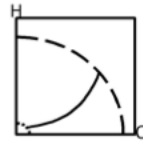


### NIGHT MODE

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)

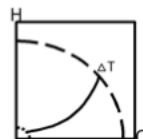
## TEMPERATURE DEPENDENT OPERATING MODES

### SET POINT TEMPERATURE ( $\Delta p$ -T)



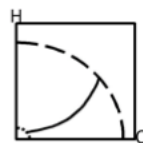
The nominal differential pressure set point is modified based on the fluid temperature. Uses the built-in temperature sensor.

### 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 ( $\Delta T$ )



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

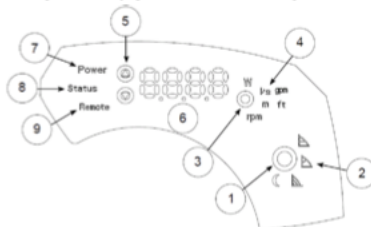
- The pump can be monitored or controlled by a signal from BMS (Building Management System). Built-in protocols are BACnet and Modbus. Direct connection to a PC is available.
- An optional wireless module can be added to create a short range wireless field for remote connection to the pump. An internet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

