

# Wide Operating Conditions Compact Footprint

ECO Series industrial outdoor air-cooled chillers feature a compact, all-in-one package specifically designed to maximize usable space, while decreasing installation costs and electric bills. Perfect for harsh outdoor environments, the ECO Series require nothing special to operate in ambient conditions of -20° F to 125° F {-29° C to 52° C}. Standard process fluid temperatures of 20° F to 80° F {-7° C to 27° C} are ideal for industrial applications.

Up to 12 total refrigeration circuits can be combined into a single system, for up to 720 tons of cooling capacity. Thanks to the modular design, system sizing and expansion is easily accomplished.



**Model ECO-120**

## Capacities From 40 to 720 Tons; Outdoor Air-Cooled Chillers

The Conair ECO Series Chillers are designed to use Conair's Green Cool technology - which continuously calculates the lowest allowable refrigerant pressure for any combination of operating conditions, for maximum chiller energy savings and stable process fluid temperatures of +/- 1°F.

Available with or without integrated pumping packages, these chillers can be equipped with high and low pressure pumping with dedicated stand-by and built-in pressurized and non-pressurized tanks.

With more standard features than you can shake a stick at, the ECO series has energy savings, ease-of-operation, and industrial application written all over it. Things like direct-drive scroll compressors, built-in redundancy, stainless steel evaporators and pumps, evaporator inlet strainers and variable speed motors all sound like great marketing terms. But they're less about marketing, and more about giving you the quality you expect from Conair.



- ▶ **Resilient construction - Industry best ambient temperature range**  
ECO Chillers are built in an ISO 9001-certified facility using the highest quality materials available, including stainless steel evaporators to resist corrosion. Scroll compressors are direct-drive and hermetic to minimize the need for maintenance. These ECO outdoor air-cooled chillers operate in -20°F to 125°F ambient temperatures, which allows installation in many climates previously not suited for an outdoor air-cooled chiller.
- ▶ **Simple installation and maintenance**  
The compact chiller is factory wired and piped, ready to be connected and activated upon arrival.
- ▶ **Robust PLC control system**  
The ECO enables quick monitoring and control, using a clear, simple-to-understand 7-inch color touchscreen display. Compressor protection technology, run hour displays, power monitor, temperature deviation alerts, and a flexible setpoint range are key features of the control. There are also functions available for automating run time and low-load cycling limits to extend compressor life.
- ▶ **NEMA-12 standard control panel**  
The ECO's NEMA-12 control panel can be ordered with UL-508A safety certification. The control circuit is isolated from static interference, to ensure stability and precision as you manage your cooling processes.
- ▶ **Green Cool technology**  
Instantaneous, continuous calculations are performed to save energy with increased efficiency at partial load with automatic refrigeration pressure control. The results - energy savings, increased temperature stability under varying load and condenser inlet temperatures, dynamic control of fans and valves, and increased machine lifespan. We call this Green Cool technology.

# Features

- **Wide ambient temperature range - industry best**

Outdoor air-cooled chillers operate in -20°F to up to 125°F {-29°C to 52°C}, allowing installations in a wide variety of climates.

- **Variable speed fan motors**

EC (Electronically Commutated) motors ensure energy efficient operation as well as low noise levels. Coupled with electronic expansion valves, Conair's Green Cool Technology uses the fans to maximize energy efficiency for all ambient conditions and machine loads.

- **Direct drive scroll compressors**

Direct drive hermetically sealed scroll compressors are used in all ECO Chillers. These compressors have proven performance in industrial cooling for reliable, low maintenance, and efficient operation.

- **Dual circuit built-in redundancy**

All ECO Series chillers include dual refrigeration circuits with multiple compressors. The 80 through 120 ton units also incorporate independent process fluid circuits as well. Automatic compressor lead/lag sequencing is standard. The PLC control integrates up to 12 circuits across multiple chillers.

- **Stainless steel components**

Stainless steel evaporators, with stainless steel plates and copper brazing provide long life, enhanced protection, and maximum performance. Stainless steel pumps are used for corrosion protection and peak performance. Each pump uses TEFC motors for protection from the environment.

- **Industrial construction, for heavy-duty applications**

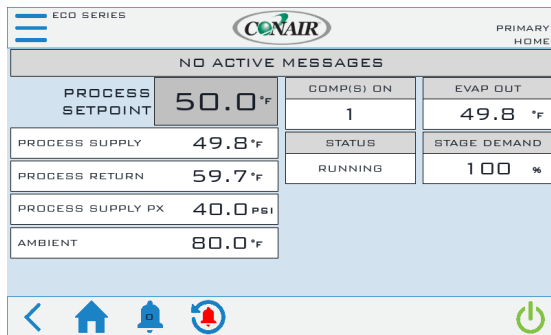
Industrial grade security screens protect components, while still allowing correct airflow and access for operation and maintenance while protecting from hail, inclement weather, and varmints.

- **Full-function color touch screen control**

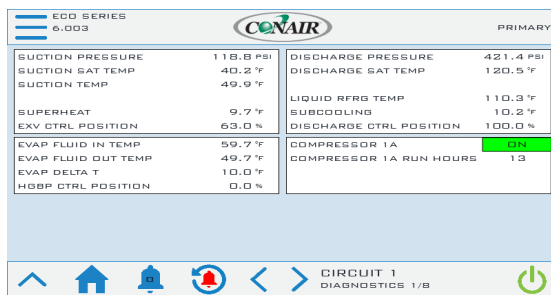
A 7-inch color touch screen offers full control of the ECO Chiller. With flexible set point range, compressor protection technology and run-hour displays, power monitor, temperature deviation warnings and many more features and options, the ECO chiller is intelligent, and easy for operators to manage.

# Control

The Conair ECO Series Chillers feature a 7-inch color touch screen. Simple navigation and operation, and loaded with standard features.



The Home screen offers quick and simple setpoint adjustments, as well as real-time data displays.



A diagnostics screen is perfect for monitoring and troubleshooting settings and operation parameters.

- Process Fluid Supply and Return Temperatures
- Evaporator Fluid Leaving Temperature
- Process Fluid Supply Pressure
- Refrigerant Suction Pressure
- Refrigerant Suction Temperature & Superheat
- Refrigerant Liquid Temperature & Sub-cooling
- Refrigerant Discharge Pressure
- Refrigerant Discharge Temperature
- High Process Fluid Temperature
- Low Process Fluid Temperature
- Evaporator Fluid Freeze
- Evaporator Fluid Flow Switch
- Refrigerant High Pressure
- Ambient Temperature Tracking
- Phase Monitor
- Compressor Overload
- Condenser Fan Overload
- Remote Setpoint (0-10 VDC)
- Remote Start/Stop
- Alarm Horn
- Alarm Contact
- C-UL508A industrial control panel
- SmartServices™ Ready
- Modbus RTU
- Modbus TCP/IP
- BACnet MS/TP
- BACnet/IP
- LonWorks
- OPC/UA

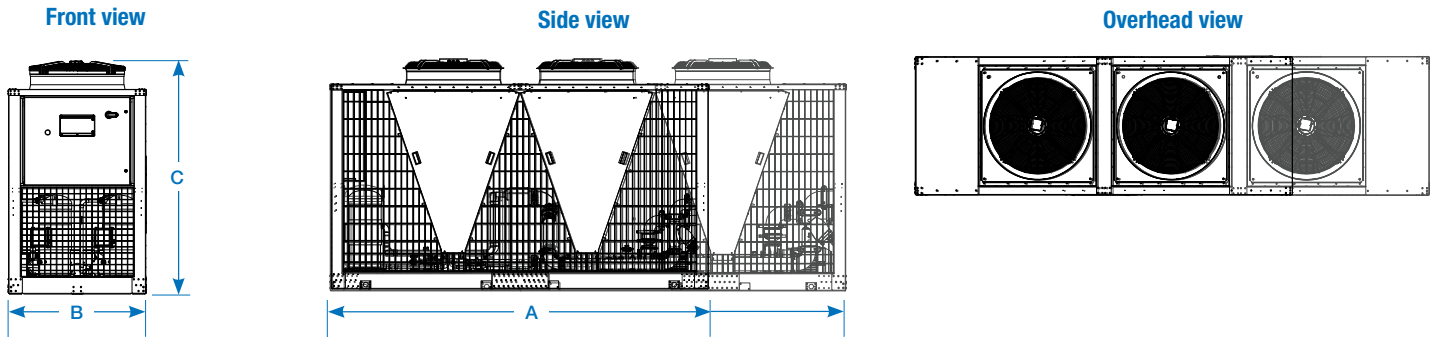
Need more? Available options include:

- High or low pressure pump packages
- Rotary non-fused disconnect switch
- Air-cooled condenser coating for coastal regions
- Emergency stop button
- Remote HMI with operator interface

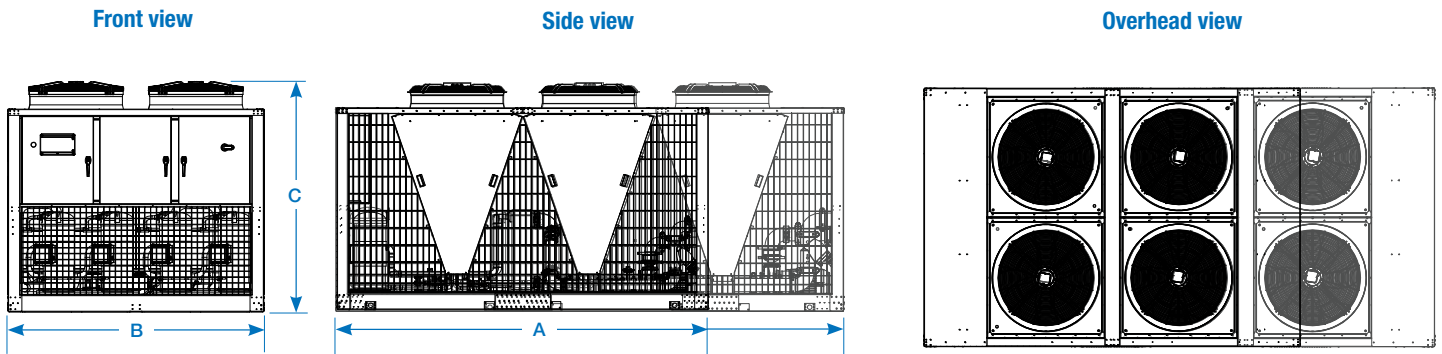


# Specifications

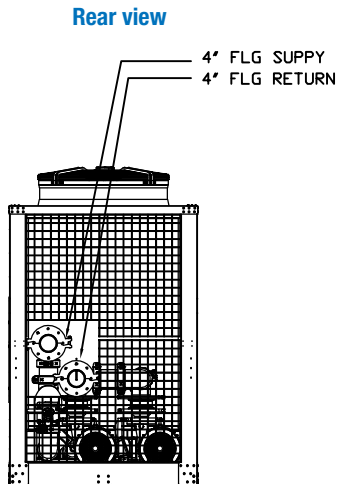
## ECO-040, ECO-050 and ECO-060 model chillers



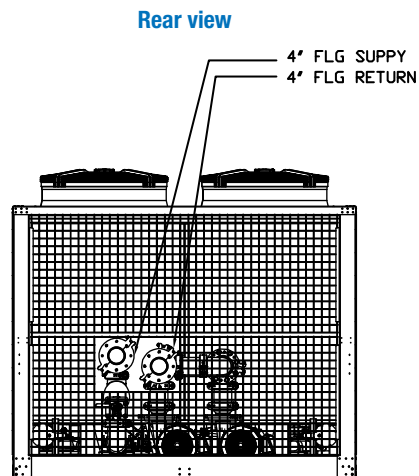
## ECO-080, ECO-100 and ECO-120 model chillers



## ECO-040, ECO-050 and ECO-060 model chillers



## ECO-080, ECO-100 and ECO-120 model chillers



# Specifications ECO Air-Cooled Chiller 60 Hz

Model	ECO-040	ECO-050	ECO-060	ECO-080	ECO-100	ECO-120
<b>Performance characteristics</b>						
Cooling capacity** tons	40	50	60	80	100	120
Setpoint range °F {°C}	20 to 80 {-2.6 to 26}					
Compressors (qty)	2	2	2	4	4	4
Process fluid in/out - Standard	3 inch			4 inch		
Process fluid in/out - High Flow	4 inch				6 inch	
Minimum Unloaded Capacity tons	20	25	30	20	25	30
Minimum Unloaded Capacity with HGBP Option tons	10	13	15	10	13	15
<b>Dimensions, weights, amps (chiller only)</b>						
A - Length inches {mm}	128 {3251}	173 {4394}	173 {4394}	128 {3251}	173 {4394}	173 {4394}
B - Width inches {mm}	47 {1194}			88 {2235}		
C - Height inches {mm}	79 {2007}					
Shipping weight lbs {kg}	2876 {1305}	3976 {1804}	3976 {1804}	4654 {2111}	5954 {2701}	5954 {2701}
Operating weight lbs {kg}	2976 {1350}	4251 {1928}	4251 {1928}	4754 {2156}	6164 {2796}	6229 {2825}
<b>Dimensions, weights, amps (chiller with standard pressure pump)</b>						
Pump models (process/chiller)	7.5	7.5	10	15	15	15
Nominal flow rate gpm	96	120	144	192	240	288
Nominal discharge pressure psi	41	39	50	54	50	45
Shipping Weight lbs {kg}	3009 {1365}	4109 {18647}	4176 {1894}	4858 {2204}	6158 {2793}	6223 {2822}
Operating Weight lbs {kg}	3109 {1410}	4384 {1991}	4451 {2019}	4958 {2249}	6368 {2889}	6498 {2947}
<b>Dimensions, weights, amps (chiller with standard pressure pump with dedicated standby pump)</b>						
Pump models (process/chiller)	7.5	7.5	10	15	15	15
Nominal flow rate gpm	96	120	144	192	240	288
Nominal discharge pressure psi	41	39	50	54	50	45
Shipping Weight lbs {kg}	3142 {1425}	4242 {1924}	4376 {1985}	5062 {2296}	6362 {2886}	6492 {2945}
Operating Weight lbs {kg}	3242 {1471}	4517 {2049}	4651 {2110}	5162 {2341}	6637 {3011}	6767 {3070}
<b>Dimensions, weights, amps (chiller with high pressure pump)</b>						
Pump models (process/chiller)	15	15	15	20	20	25
Nominal flow rate gpm	96	120	144	192	240	288
Nominal discharge pressure psi	86	82	80	88	83	76
Shipping Weight lbs {kg}	3088 {1401}	4188 {1900}	4188 {1900}	4977 {2258}	6277 {2847}	6277 {2847}
Operating Weight lbs {kg}	3188 {1446}	4463 {2024}	4463 {2024}	5077 {2303}	6552 {2972}	6552 {2972}
<b>Dimensions, weights, amps (chiller with high pressure pump with dedicated standby pump)</b>						
Pump models (process/chiller)	15	15	15	20	20	25
Nominal flow rate gpm	96	120	144	192	240	288
Nominal discharge pressure psi	86	82	80	88	83	76
Shipping Weight lbs {kg}	3300 {1497}	4400 {1996}	4400 {1996}	5300 {2404}	6600 {2994}	6600 {2994}
Operating Weight lbs {kg}	3400 {1542}	4675 {2121}	4675 {2121}	5400 {2449}	6875 {3119}	6875 {3119}

## Specification Notes

\*\* Cooling tons based on 12,000 BTU/Hr/ton with 50°F leaving coolant and 95°F ambient air, R410A refrigerant.  
 Operating weight varies based on system refrigerant charge and operating conditions.  
 Specifications may change without notice. Check with a Conair representative for the most current information.



## Specifications Electrical Data 60 Hz

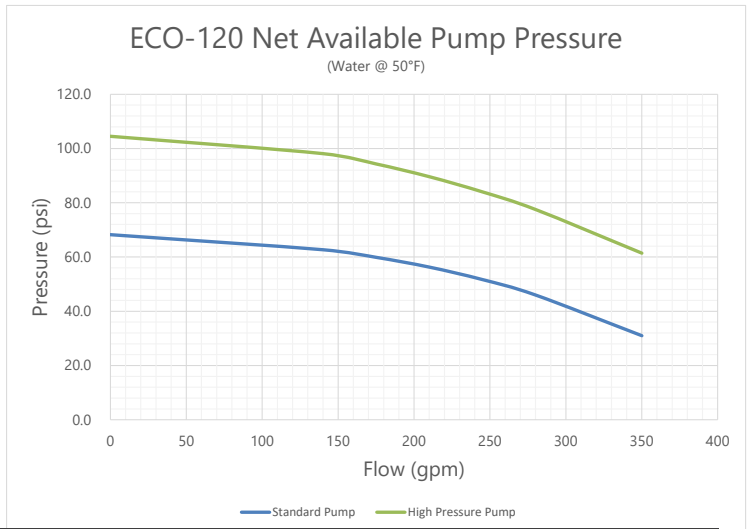
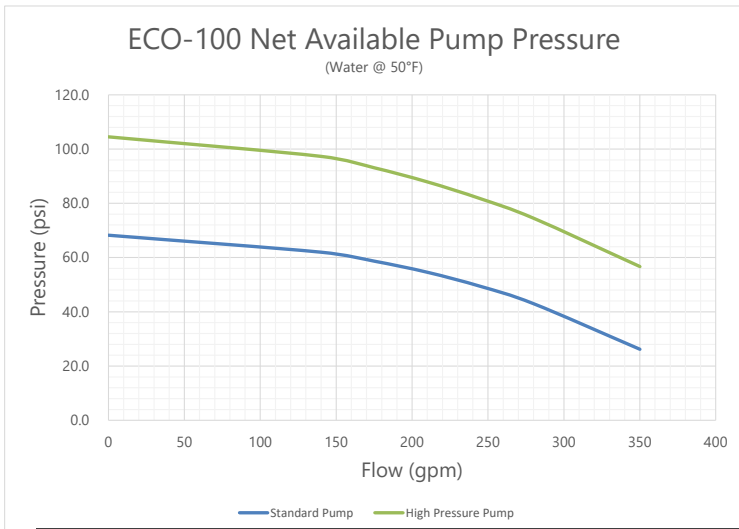
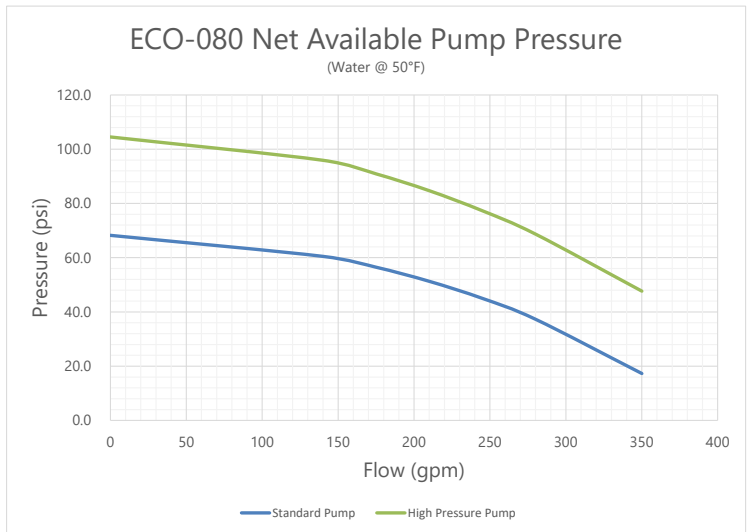
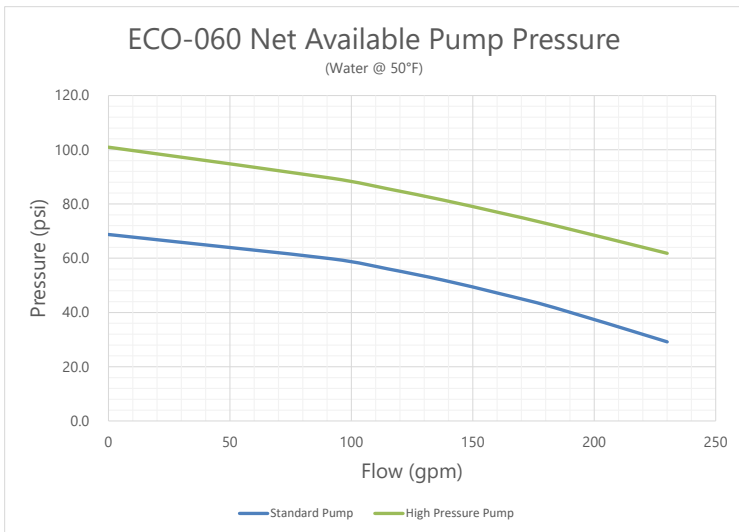
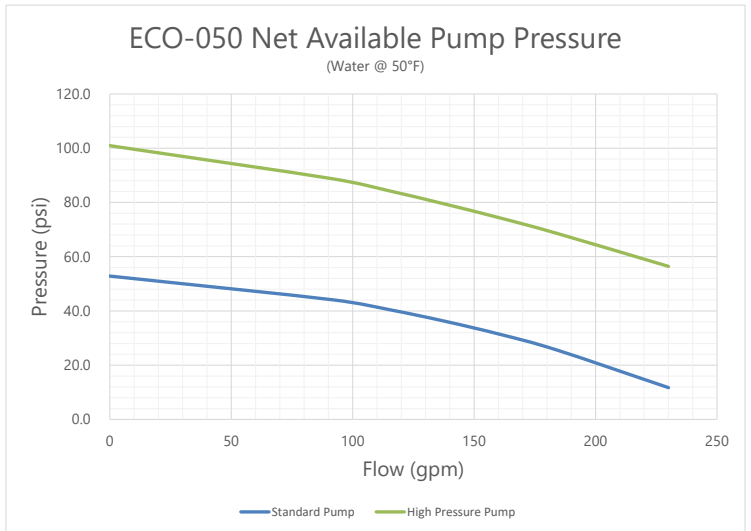
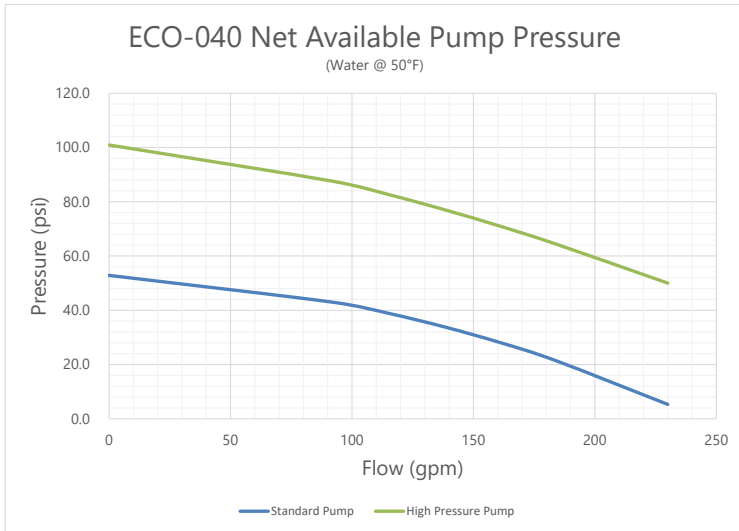
Model	Rated Voltage	Chiller Only		Chiller with Standard Pressure Pump(s)		Chiller with High Pressure Pump(s)	
		MCA <sup>†</sup> amps	MOP <sup>†</sup> amps	MCA <sup>†</sup> amps	MOP <sup>†</sup> amps	MCA <sup>†</sup> amps	MOP <sup>†</sup> amps
ECO-040	208	179	250	204	250	226	250
	230	179	250	202	250	222	250
	460	77	100	89	110	99	125
	575	63	80	72	90	80	100
ECO-050	208	215	300	241	300	263	300
	230	215	300	239	300	259	300
	460	97	125	109	125	119	150
	575	87	110	97	125	105	125
ECO-060	208	270	350	302	400	317	400
	230	270	350	299	400	313	400
	460	135	175	149	200	156	200
	575	121	150	132	175	138	175
ECO-080	208	339	400	386	450	415	450
	230	339	400	382	450	408	450
	460	147	175	168	175	182	200
	575	119	125	136	150	147	150
ECO-100	208	409	450	456	500	485	500
	230	409	450	452	500	478	500
	460	184	200	206	225	219	250
	575	166	200	183	200	193	225
ECO-120	208	512	600	573	600	588	600
	230	512	600	567	600	581	600
	460	255	300	283	300	290	300
	575	228	250	251	300	256	300

### Specification Notes

<sup>†</sup> MCA is minimum circuit ampacity (for wire sizing). MOP is maximum overcurrent protection, used for sizing main power protection device. Specifications may change without notice. Check with a Conair representative for the most current information.



# ECO Series Chiller Pump Curves - Chiller Specific



**Pump Curve Notes**

Pump curves, equipment capabilities and specifications may change without notice. Check with a Conair representative for the most current information.

