

Outstanding Performance; Application Flexibility

EP2 Series Portable Chillers are available in capacities from 4 to 43 tons with air-cooled, water-cooled, or remote condensers models in a wide range of sizes to satisfy a wide-range of applications and process fluid cooling requirements.

Using quality components such as scroll compressors, micro-channel condensers, low-noise fans, stainless steel brazed plate evaporators, PLC controls, and color touch screen user interfaces, these chillers provide the best available technologies for unmatched performance and reliability in a chiller package.



Model EP2A-10
(air-cooled, 10 ton capacity)

Dependable, Easy-to-Use, Wide Size Range

The Conair EP2 Series Portable Chillers offer superior performance with the combination of advance technologies, innovative design, and proven dependability to make this chiller the right choice for your process cooling needs.

Designed to perform and built to last, the EP2 controls are designed to be easy to understand and operate. These EP2 Series portable chillers provide a premium level of components for reliable, and simple operation.

In addition, our high-efficiency components and advanced options such as variable-speed compressors and fans provide energy savings options to meet the growing demands of increased efficiency and suitability in manufacturing.

► Simple operation and advanced monitoring from a new control

The EP2 Series Portable Chillers feature a 7-inch full color touchscreen HMI, with a sloped-stop enclosure, making viewing and operation quick and easy. Advanced monitoring, such as pump and compressor running hours, trending charts, and a digital pump pressure display, provide a wide range of useful information.

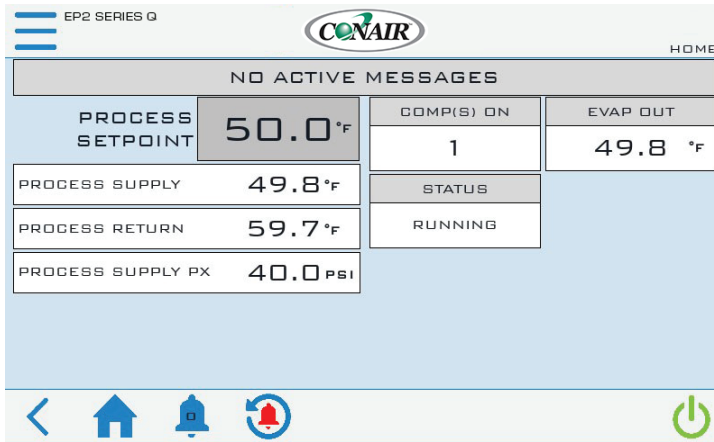
► Ready for severe-duty industrial cooling

The EP2 models are designed to meet severe-duty industrial cooling needs and provide additional resistance to harsh fluid conditions and operating environments. All EP2 chillers feature stainless steel pumps, stainless steel evaporators, and a process fluid circuit with corrosion-resistant materials to prevent rust and ensure clean, dependable operation for many years.

► Energy savings every day

From the standard high-efficiency scroll compressors, premium microchannel air-cooled condensers, and compact stainless steel evaporators to premium-efficiency EC condenser fan and variable-speed compressor options, Conair's EP2 Series Chillers offer the best available energy-savings through new technology and available options.

Control Features



Description of Functions	Standard Controls	Premium Controls
Display Parameters		
Process Fluid Supply and Return Temperatures	●	●
Evaporator Fluid Leaving Temperature	●	●
Process Fluid Supply Pressure	●	●
Compressor Running Hours	●	●
Pump Running Hours	●	●
Condenser Fan Running Hours	●	●
Refrigerant Suction Pressure	●	●
Refrigerant Suction Temperature & Superheat	-	●
Refrigerant Liquid Temperature & Superheat	-	●
Refrigerant Discharge Pressure	-	●
Refrigerant Discharge Temperature	-	●
Alarms & Warnings		
High Process Fluid Temperature	●	●
Low Process Fluid Temperature	●	●
Evaporator Fluid Freeze	●	●
Evaporator Fluid Low Flow	●	●
Evaporator High Pressure	●	●
Evaporator Low Pressure	●	●
Compressor Overload	●	●
Pump Overload	●	●
Condenser Fan Overload	●	●
Reservoir Low Level	●	●
Water-cooled aftercooler	●	●
Communications & Remote Interfaces		
Process Fluid Supply Temperature (0-10 VDC)	●	●
Remote Start/Stop	●	●
Alarm Contact	●	●
Modbus RTU	●	●
Modbus TCP/IP	-	●
BACnet MS/TP	-	○
BACnet/IP	-	○
OPC/UA	-	○

- = not available, ● = standard, ○ = optional

Compressor Protection Technology

Our compressor protection technology uses start-to-start anti-recycle control logic to limit cycling under low-load operating conditions to extend compressor life.

Compressor and Pump Run Hour Displays

The ability to monitor compressor and pump running hours is an important tool to assist with scheduling maintenance.

Power Monitor

The main power monitoring system protects the chiller from extensive damage to the compressor and pump due to loss of phase or phase reversal in the main supply.

Reservoir Low Level Alarm

Indicates a low process fluid condition and protects the process pump and chiller from expensive damage caused by a critically low operating level in the reservoir.

Temperature Warnings and Alarms

A warning alerts the operator of a potential problem before a fault occurs and if the condition gets worse, an alarm stops the chiller to prevent damage.

Adjustable Alarm Time Delays

Allows for programing a start-up alarm time delay to deactivate the alarms long enough for the process loop to stabilize before activating the alarms.

High-Quality 24 VDC Power Supply

The 24-volt DC power supply ensures dependable control circuit power and isolates the control circuit from static interference to ensure stable and precise operation.

Trending Charts

All control systems include the ability to chart key operating parameters, such as process fluid supply and return temperatures, for a quick display of operating trends.

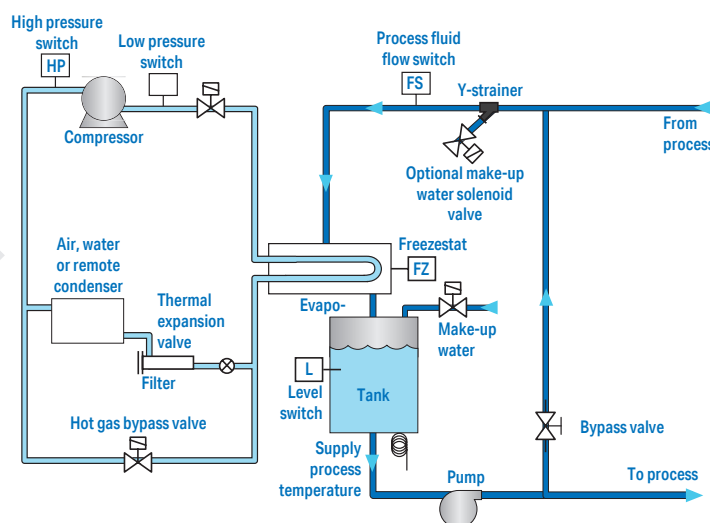
How it Works

Process circulation:

Process fluid enters through the "From process" and enters the evaporator. The process fluid is cooled in the evaporator and is returned to the tank. The pump draws water from the tank and delivers it to the "To Process" connection where it is distributed to the process load(s) and returned to the chiller.

Refrigerant circulation:

The evaporator extracts heat from the process fluid. Vaporized refrigerant travels from the evaporator to the compressor, where it is compressed. The high-pressure vapor travels to the condenser. Air or water removes heat from the vapor, condensing it to liquid. This liquid is metered back to the evaporator by the expansion valve (TXV).



Mechanical Features

- Stepper motor driven hot gas bypass
- Air-cooled units with generously sized air-cooled condensers designed for industrial environments
- Water-cooled units use cleanable shell-and-tube water cooled condensers for industrial environments. Units are equipped with condenser water regulating valve to provide constant head pressure
- Remote condenser units are designed with divided fan sections which prevent "wind-milling" during fan cycling. Direct drive multi-blade propeller fans with venture orifices to optimize efficiency
- External sight glass / fill connection / drain connection
- Encapsulated high and low refrigerant pressure safeties
- RTD temperature sensors yield higher precision and repeatability than thermocouples
- Nonferrous water circuit construction
- Stainless steel process pump with pressure gauge
- Fail safe flow switch interlocked with compressor
- Internal valved bypass line to protect pump and evaporator
- Internal insulated large polyethylene reservoir with removable top
- Smaller footprint takes up less floor space
- Easily removable panel allows for access to internal components

Options

- Oversized pumps for increased process fluid flows and/or pressures
- High flow unit design for reduced internal pressure loss at higher processes fluid flows
- Alarm horn
- Alarm relay
- C-UL508A industrial control panel construction
- Extended condenser air range (0°F to 110°F) (-18°C to 43°C)
- High temperature condenser air range (60°F to 122°F) (16°C to 50°)
- Low temperature condenser air range (-20°F to 110°F) (-29°C to 43°C)
- Wide temperature condenser air range (0°F to 122°F) (-18°C to 50°C)
- Remote air-cooled condenser coil coating for installations near coastal regions
- Pump and tank deduct for applications that do not require the standard internal pump and tank
- Oversized reservoirs
- Water circuit designed for use with deionized water
- Stainless steel cabinetry for special applications such as food processing plants
- Automatic electric water make-up valve for applications requiring automatic fluid make-up
- High pressure variable-speed fans for air-cooled condenser chillers for ducting of discharge air
- Modbus TCP/IP, BACnet MS/TP, BACnet/IP, or OPC/UA communications ports
- Emergency stop button to provide a quick means of stopping the chiller
- Remote HMI with 50 foot wire to duplicate unit mounted controls
- Special color paint for applications requiring the chiller match the color of other equipment

Options

Variable-Speed Scroll Compressors (5, 10, 15, 20, and 30-ton Water-Cooled and Air-Cooled chillers)

Industrial portable chillers operate in a variety of applications with process heat loads frequently less than 100% of available capacity. With increasing emphasis on energy efficiency and reduced operating costs, we developed a variable-speed scroll compressor option to help improve the efficiency of our industrial portable chillers.

Most portable chillers use fixed-speed scroll compressors with hot gas bypass to provide capacity and temperature control. This valve bypasses a portion of the hot discharge refrigerant gas back into the compressor to give the compressor a simulated 100% load situation. This works well

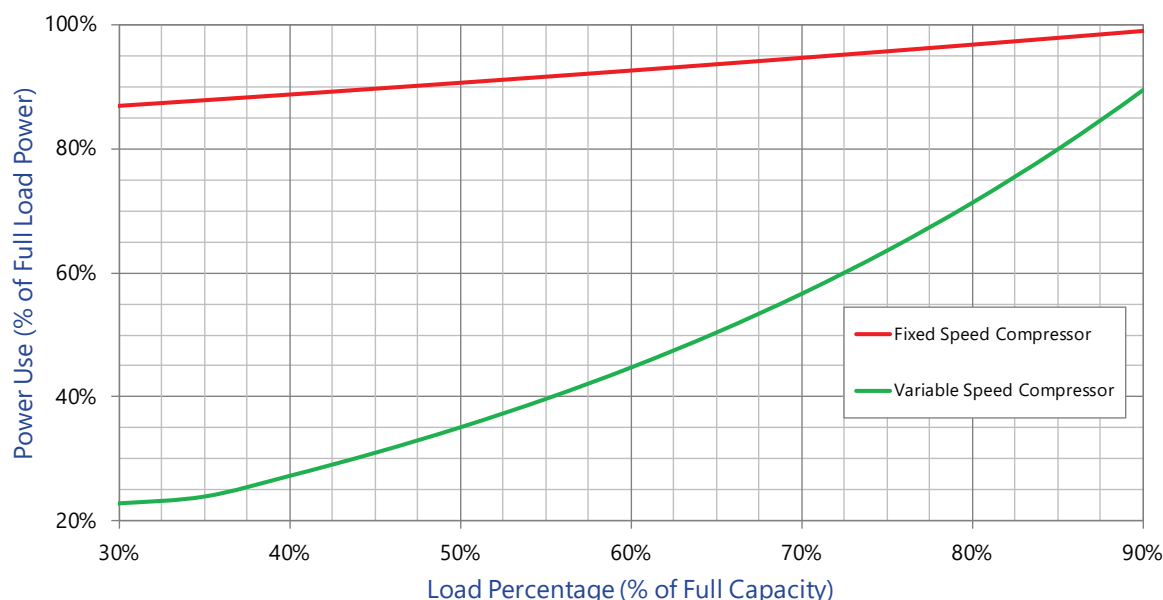
to keep the compressor running and ready for any fluctuations in the actual process load; however, it runs the compressor at full speed all the time.

Our variable-speed scroll compressor technology varies the compressor speed to match the process load. By automatically adjusting the compressor speed, the chiller works only as hard as necessary to provide optimum performance with significantly reduced power use.

Payback

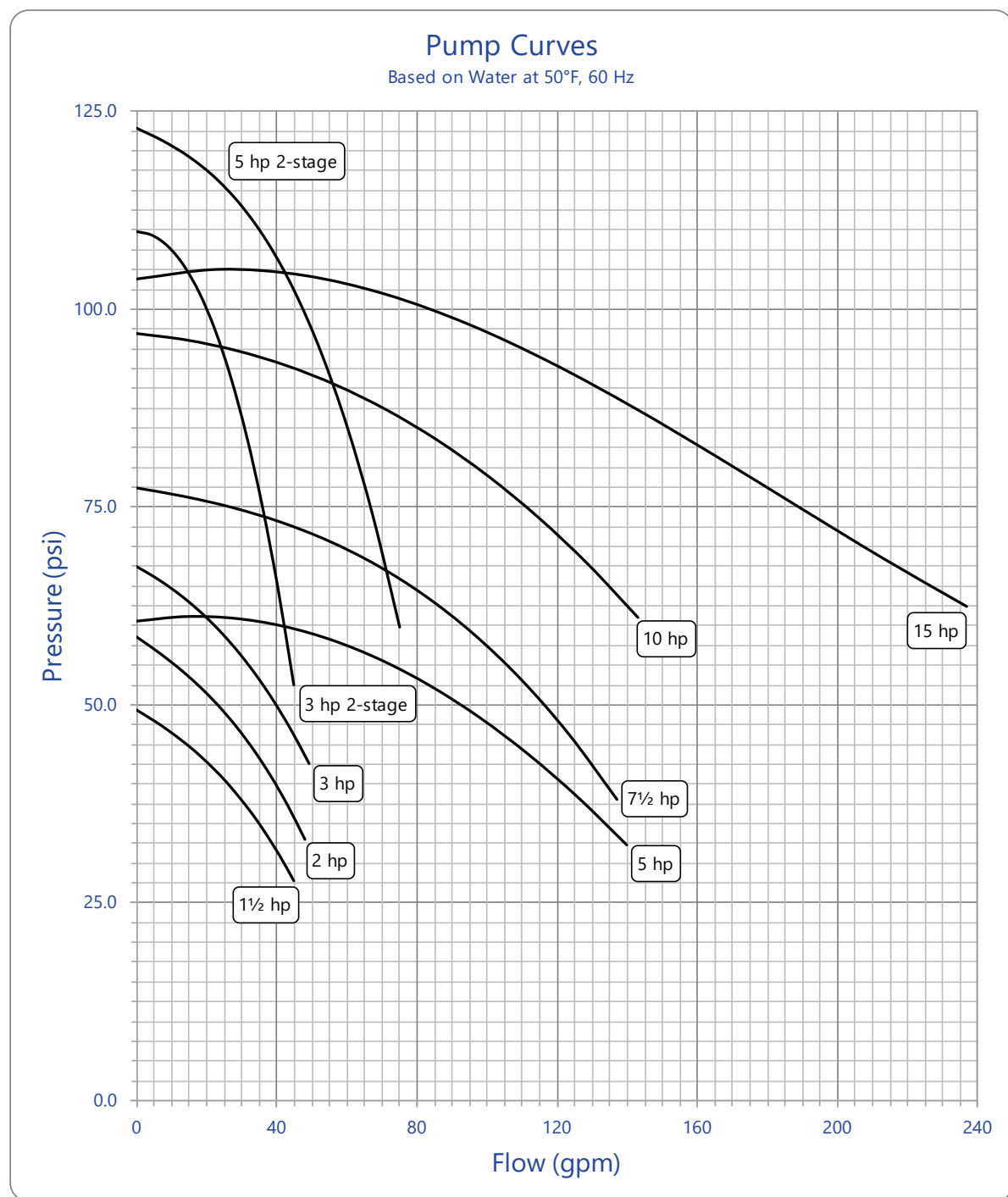
Payback Period in Years (based on \$0.10/kWhr power cost)									
Nominal Capacity	Operating Hours/Year	Process Load as Percent of Available Chiller Capacity							
		50%	55%	60%	65%	70%	75%	80%	85%
5-ton	4,000	3.4	3.6	3.9	4.3	4.8	5.5	6.7	8.8
	6,000	2.3	2.4	2.6	2.8	3.2	3.7	4.5	5.9
	8,400	1.6	1.7	1.9	2.0	2.3	2.6	3.2	4.2
10-ton	4,000	1.2	1.3	1.4	1.5	1.7	2.0	2.4	3.5
	6,000	0.8	0.9	0.9	1.0	1.1	1.3	1.6	2.1
	8,400	0.6	0.6	0.7	0.7	0.8	0.9	1.1	1.5
15-ton	4,000	1.1	1.2	1.3	1.4	1.6	1.9	2.4	3.5
	6,000	0.7	0.8	0.8	0.9	1.1	1.3	1.6	2.3
	8,400	0.5	0.6	0.6	0.7	0.8	0.9	1.2	1.7
20-ton	4,000	1.1	1.2	1.3	1.4	1.6	1.9	2.4	3.3
	6,000	0.7	0.8	0.9	1.0	1.1	1.3	1.6	2.2
	8,400	0.5	0.6	0.6	0.7	0.8	0.9	1.2	1.6
30-ton	4,000	0.8	0.8	0.9	1.0	1.1	1.3	1.6	2.1
	6,000	0.5	0.6	0.6	0.7	0.8	0.9	1.1	1.4
	8,400	0.4	0.4	0.4	0.5	0.5	0.6	0.8	1.0

Chiller Energy Use



Pump Curves

Water temperature at 50° F {10° C}



Specification Notes

Pump availability: 1-1/2 Hp {1.12 kW} pump standard for 4, 5, 8; 2 Hp {1.49 kW} pump standard for 10 and 13 ton units; 3 Hp {2.24 kW} pump standard for 15 ton units and optional for 4, 5, 8, 10 and 13 ton units; 3 Hp {2.24 kW} 2-stage pump optional for 4 and 5 ton units; 5 Hp {3.73 kW} pump standard for 20, 25, 30, 35 and 40 ton units and optional for 8, 10, 13, 15 and 20 ton units; 5 Hp {3.73 kW} 2-stage pump optional for 4 and 5 ton units; 7-1/2 Hp {5.60 kW} pump optional for 8, 10, 13, 15, 20, 25, 30, 35 and 40 ton units; 10 Hp {7.46} pump optional for 15, 20, 25, 30, 35 and 40 ton units.

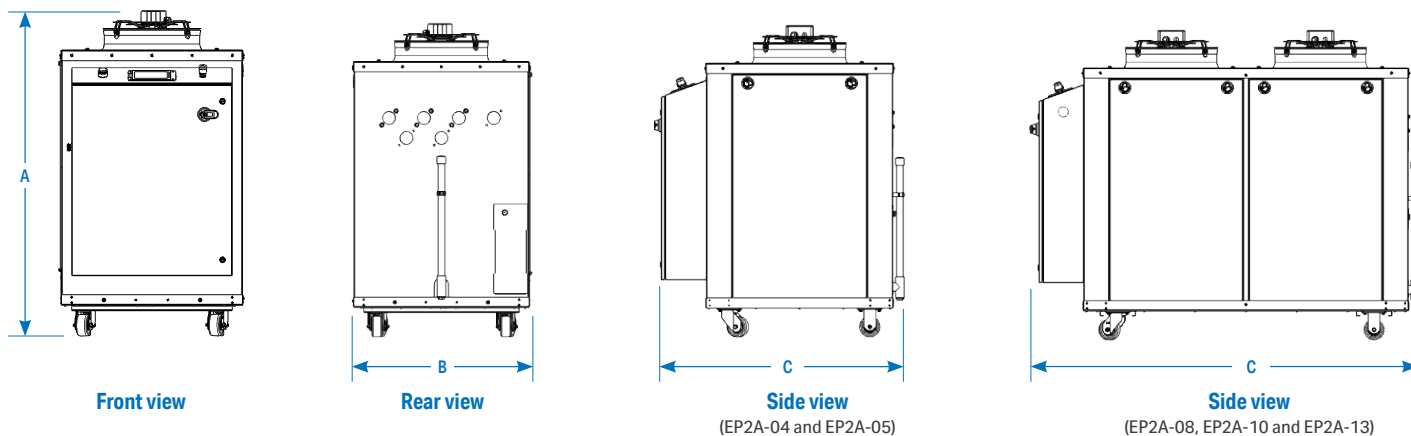
Pump curves do not reflect pressure drops due to internal piping.

These pump curves are non-overloading using the service factor of the motors.

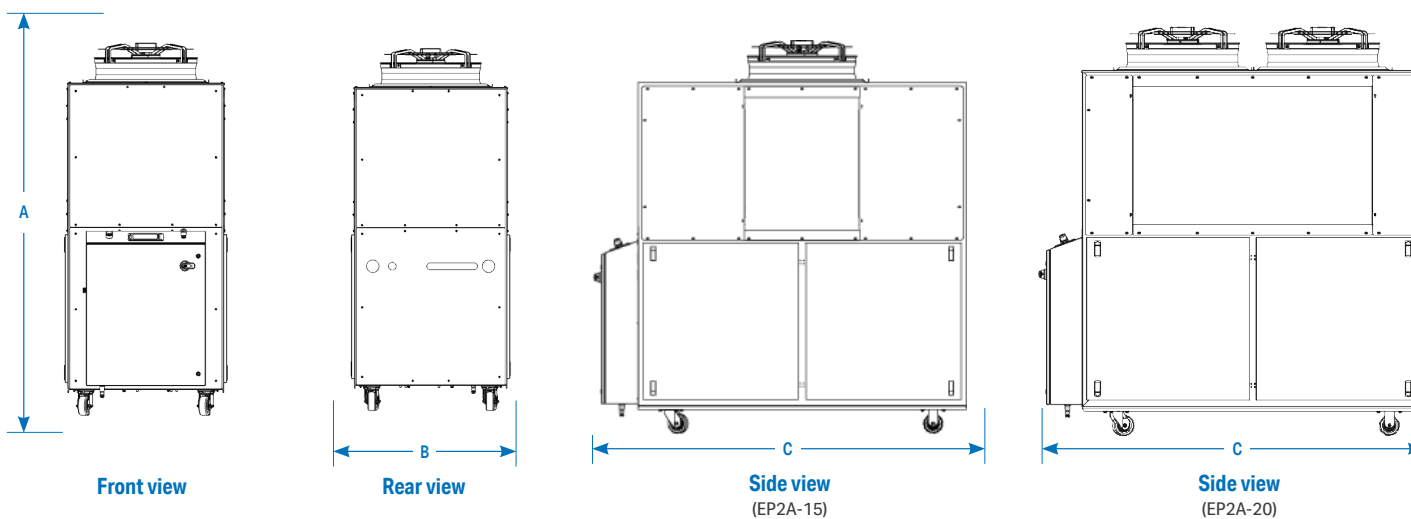
Specifications may change without notice. Check with your Conair representative for the most current information.

Specifications

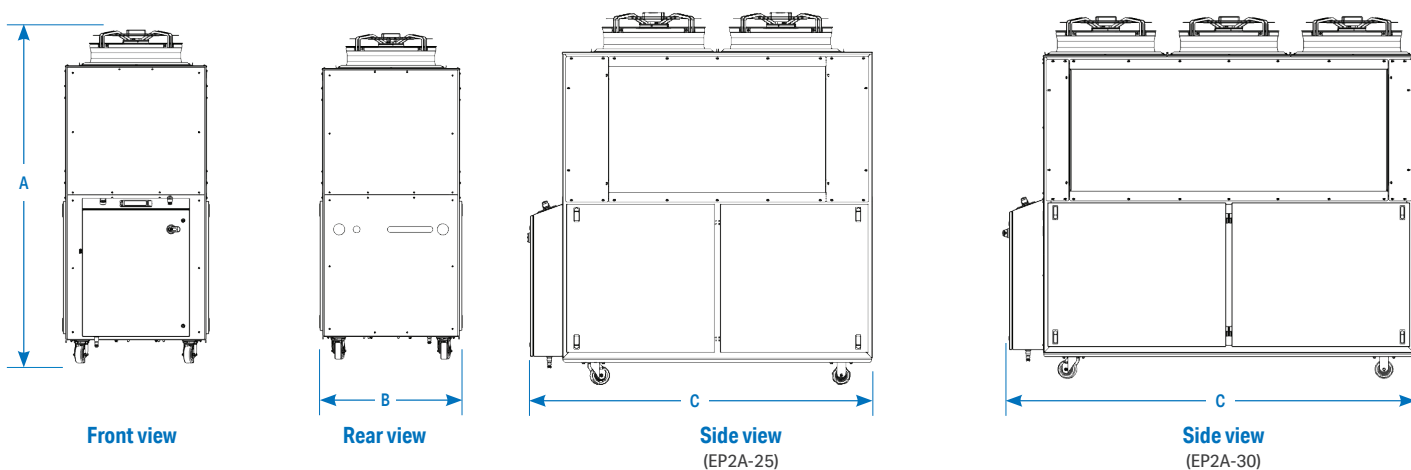
Air cooled: EP2A-04, EP2A-05, EP2A-08, EP2A-10 and EP2A-13



Air cooled: EP2A-15 and EP2A-20



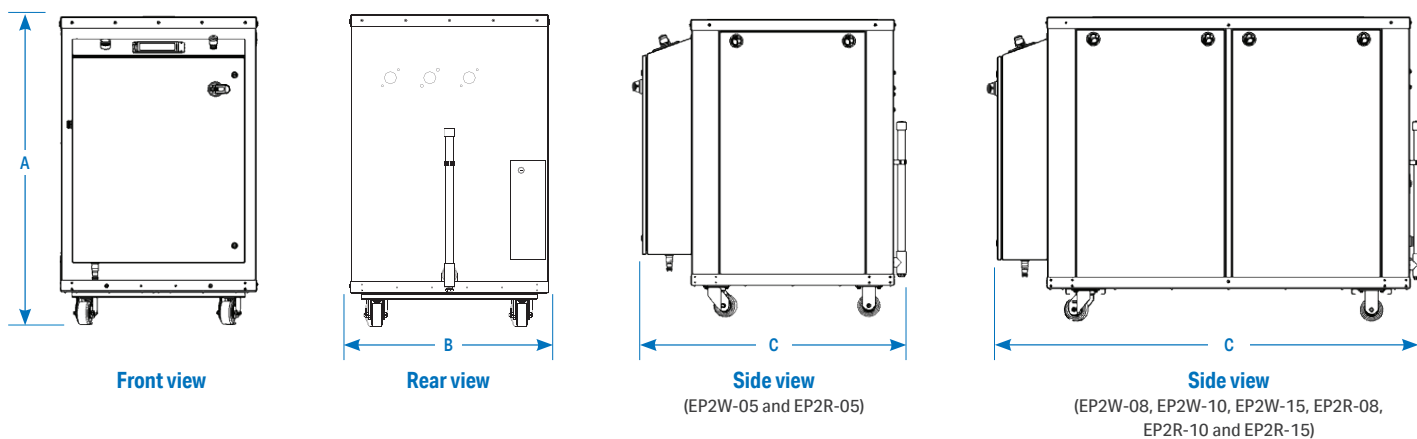
Air cooled: EP2A-25 and EP2A-30



Specifications

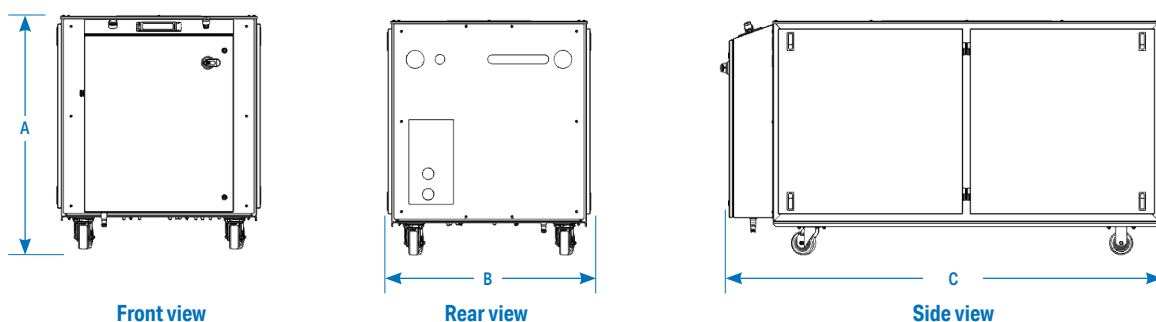
Water cooled: EP2W-05, EP2W-08, EP2W-10 and EP2W-15

Remote condenser (indoor unit): EP2R-05, EP2R-08, EP2R-10 and EP2R-15

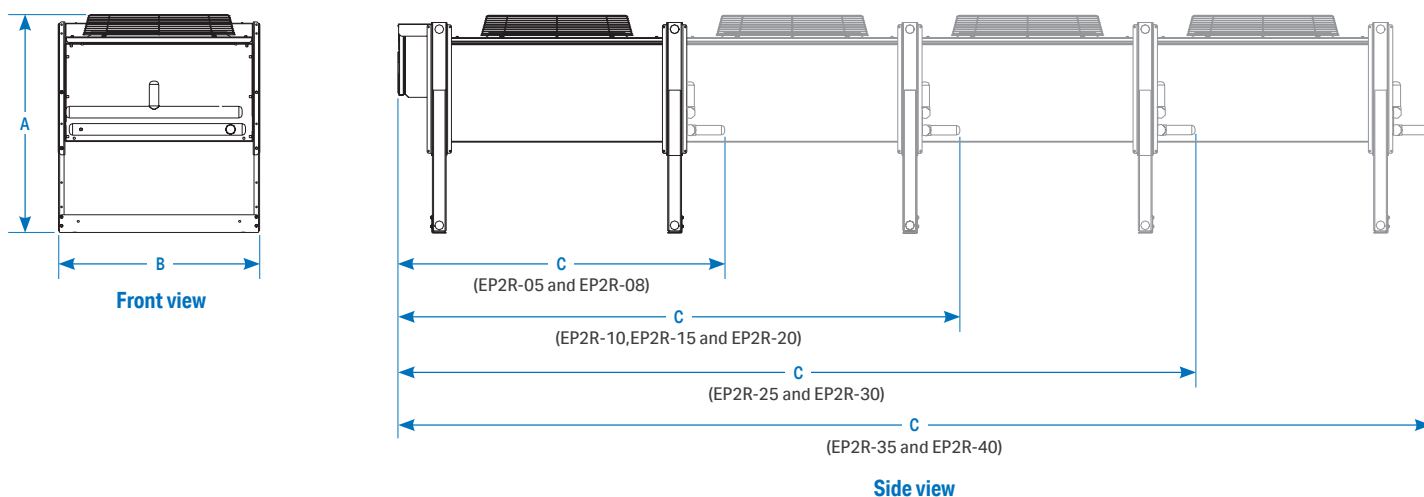


Water cooled: EP2W-20, EP2W-25, EP2W-30, EP2W-35 and EP2W-40

Remote condenser (indoor unit): EP2R-20, EP2R-25, EP2R-30, EP2R-35 and EP2R-40



Remote condenser (outdoor unit): Used with models EP2R-05, EP2R-08, EP2R-10, EP2R-15, EP2R-20, EP2R-25, EP2R-30, EP2R-35 and EP2R-40



Specifications

All specifications listed here reflect the standard product as configured with standard pump, evaporator, and hardware, and operating at environmental levels as noted below. For a more detailed list of specifications for unique circumstances or including EP2 options, refer to the Conair EP2 Product Data booklet, available on the Conair website or from your Conair representative.

Models	EP2A-04	EP2A-05	EP2A-08	EP2A-10	EP2A-13	EP2A-15	EP2A-20	EP2A-25	EP2A-30
Condenser	Air cooled								
Performance characteristics									
Cooling capacity tons* [kW]	4 {14}	5 {18}	8 {28}	11 {39}	13 {46}	15 {53}	21 {74}	26 {91}	31 {109}
Set point range °F [°C]	20 to 80 {-7 to 27}								
Refrigerant	R410A or R454B (where applicable)								
Condenser Air flow ft³/min	4000		8000			10,450	18,000	20,000	24,000
Sound pressure dBA @ 1 meter†	74	74	76	76		82	84		86
Minimum unloaded capacity tons	1.0	1.2	1.8	2.7	3.1	3.6	4.8	6.0	7.2
Standard pump performance									
Pump motor size Hp [kW]	2 {1.4}			3 {2.2}			5 {3.7}		
Pump flow gpm [lpm]	10 {38}	12 {45}	19 {72}	27 {102}	30 {114}	36 {136}	48 {182}	60 {227}	72 {273}
Net pump pressure psi [bar]‡	43 {3.0}	41 {2.8}	41 {2.8}	48 {3.3}	46 {3.2}	40 {2.8}	45 {3.1}	48 {3.3}	43 {3.0}
Dimensions inches (mm)									
A - Height with standard fans	61 {1549}					94 {2388}			
A - Height with high pressure fans	N/A		63 {1600}			96 {2438}			
B - Width	35 {889}					41 {1041}			
C - Depth	48 {1219}		75 {1905}			87 {2210}		105 {2667}	
Power requirements 460/3 phase/60 Hz									
MCA§ [Variable speed option]	16	19 {22}	28	36 {44}	41	46 {86}	65	74	86 {125}
MOP§ [Variable speed option]	25	30 {40}	45	60 {80}	70	80 {150}	90 {100}	100	125 {200}
Water requirements									
Reservoir holding capacity gal [l]	14 {53}		30 {114}			60 {227}		67 {254}	
Process connections (NPT) inches	1.5					2.0			
Weight lb {kg}									
Shipping	720 {327}		1195 {542}		1215 {551}	3200 {1451}	3300 {1497}	3800 {1724}	4150 {1882}

Models	EP2W-05	EP2W-08	EP2W-10	EP2W-15	EP2W-20	EP2W-25	EP2W-30	EP2W-35	EP2W-40
Condenser	Water cooled								
Performance characteristics									
Cooling capacity tons* {kW}	6 {21}	8 {28}	12 {42}	17 {60}	23 {81}	28 {98}	33 {116}	38 {134}	43 {151}
Set point range °F {°C}	20 to 80 {-7 to 27}								
Refrigerant	R410A or R454B (where applicable)								
Condenser water flow gpm {l/min}	17 {64}	24 {91}	36 {136}	48 {182}	65 {246}	82 {310}	96 {363}	111 {420}	124 {469}
Sound pressure dBA @ 1 meter	69.8	70.3	71.3	73.3	73.7		74.7	76.6	78.1
Minimum unloaded capacity tons	1.3	1.9	2.9	3.9	5.2	6.6	7.8	8.9	9.9
Standard pump performance									
Pump motor size Hp {kW}	2 {1.4}		3 {2.2}		5 {3.7}				
Pump flow gpm {lpm}	13 {49}	20 {76}	29 {110}	39 {148}	54 {204}	67 {254}	79 {299}	92 {348}	102 {386}
Net pump pressure psi {bar}‡	40 {2.8}	40 {2.8}	46 {3.2}	35 {2.4}	41 {2.8}	44 {3.0}	39 {2.7}	38 {2.6}	34 {2.3}
Dimensions inches {mm}									
A - Height	54 {1372}				47 {1194}				
B - Width	35 {889}				41 {1041}				
C - Depth	48 {1219}	75 {1905}			87 {2210}		105 {2667}		
Power requirements 460/3 phase/60 Hz									
MCA§ [Variable speed option]	17 {20}	25	32 {41}	41 {81}	56 {61}	65	72 {111}	74	78
MOP§ [Variable speed option]	30 {35}	45	60 {70}	70 {150}	80 {100}	100	100 {175}	110	150
Water requirements									
Reservoir holding capacity gal {l}	14 {53}	30 {114}			60 {227}		67 {254}		
Process connections (NPT) inch	1.5						2.0	2.5	
Condenser connections (NPT) inch	1.5						2.5		3.0
Weight lb {kg}									
Shipping	720 {327}	1195 {542}		1315 {597}	1900 {862}	2100 {953}	2250 {1021}	3400 {1542}	3900 {1769}

Specification Notes

* Cooling tons based on 12,000 BTUH with 50 °F {10 °C} leaving coolant and 85 °F {29 °C} condenser water, R410A or R454B refrigerant.

† Sound power shown is for standard high-efficiency constant speed AC fan motors. A high pressure variable speed EC motor fan option is available for EP2A and larger units.

‡ Net available pressure at outlet of chiller is pump discharge pressure less the internal pressure loss through the fluid circuit.

§ MCA is Minimum Circuit Amps with standard condenser fan(s) and pump under full load, used for minimum wire size requirement.

§ MOP is Maximum Overcurrent Protection with standard condenser fans(s) and pump, used for sizing main power protection devices.

Standard units are design for 5K SCCR (short circuit current rating) RMS symmetrical amps.

Specifications may change without notice. Consult a Conair representative for the most current information.



Specifications

All specifications listed here reflect the standard product as configured with standard pump, evaporator, and hardware, and operating at environmental levels as noted below. For a more detailed list of specifications for unique circumstances or including EP2 options, refer to the Conair EP2 Product Data booklet, available on the Conair website or from your Conair representative.

Models* (indoor unit)	EP2R-05	EP2R-08	EP2R-10	EP2R-15	EP2R-20	EP2R-25	EP2R-30	EP2R-35	EP2R-40
Condenser	Remote air cooled								
Performance characteristics									
Cooling capacity tons† [kW]	5 {18}	8 {28}	11 {39}	15 {53}	21 {74}	26 {91}	31 {109}	35 {123}	40 {141}
Setpoint range °F [°C]	20 to 80 [-7 to 27]								
Refrigerant	R410A or R454B (where applicable)								
Sound pressure dBA @ 1 meter	69.8	70.3	71.3	73.3	73.7		74.7	76.6	78.1
Minimum unloaded capacity tons	1.2	1.8	2.7	3.6	4.8	6.0	7.2	8.4	9.6
Standard pump performance									
Pump motor size Hp [kW]	2 {1.4}		3 {2.2}		5 {3.7}				
Pump flow gpm [lpm]	13 {49}	18 {68}	27 {102}	36 {136}	50 {189}	61 {231}	73 {276}	83 {314}	92 {348}
Net pump pressure psi [bar]‡	40 {2.8}	41 {2.8}	48 {3.3}	40 {2.8}	44 {3.0}	47 {3.2}	43 {2.9}	42 {2.9}	40 {2.8}
Dimensions inches [mm]									
A - Height	54 {1372}				47 {1194}				
B - Width	35 {889}				41 {1041}				
C - Depth	48 {1219}	75 {1905}			87 {2210}		105 {2667}		
Power requirements									
MCA§ 460/3 phase/60 Hz	17	25	32	41	56	65	72	74	90
MOP§ 460/3 phase/60 Hz	30	45	60	70	80	100	100	110	150
Water Requirements									
Reservoir holding capacity gal [l]	14 {53}	30 {114}			60 {227}		67 {254}		
Process connections (NPT) inches	1.5					2		2.5	
Refrigerant liquid line size in inch	0.625		0.875			1.125		1.375	
Refrigerant discharge line size in inch	0.625		0.875			1.125		1.375	
Weight lb [kg]									
Shipping	720 {327}	1195 {542}		1315 {596}	1900 {862}	2100 {953}	2250 {1021}	3400 {1542}	3900 {1769}

Models* (outdoor unit)	EP2R-05	EP2R-08	EP2R-10	EP2R-15	EP2R-20	EP2R-25	EP2R-30	EP2R-35	EP2R-40
Condenser	Remote condenser								
Performance characteristics									
Condenser air flow ft³/min	6870	6620	14400	24000	22600	20600	33900	32000	30900
Sound pressure dBA @ 3 meters	60.0		62.0	72.0			73.0		
Dimensions inches {mm}									
A - Height	48.125 {1222}			54 {1372}					
B - Width	43.625 {1108}			45.625 {1159}					
C - Depth	53.625 {1362}		93.625 {2378}	125.750 {3194}			180.750 {4591}		
Power requirements **									
MCA [§] 460/3 phase/60 Hz	1.4		2.6	7			10.1		
MOP [§] 460/3 phase/60 Hz	15								
Water Requirements									
Refrigerant liquid line size in inch	0.875		1.375	2.125			2.625		
Refrigerant discharge line size in inch	1.125			1.375	1.625		2.625		
Weight lb {kg}									
Shipping	245 {111}	265 {120}	415 {188}	680 {308}	720 {327}	1050 {476}	1075 {488}	1175 {533}	1450 {658}

Specification Notes

* Remote condenser operation requires both indoor and outdoor unit.

[†] Cooling tons based on 12,000 BTUH with 50 °F {10 °C} leaving water temp. and 95 °F {32 °C} ambient air temperature.

[‡] Net available pressure at outlet of chiller is pump discharge pressure less internal coolant circuit pressure losses.

[§] MCA is Minimum Circuit Amps with standard pump under full load, used for minimum wire size requirement.

[§] MOP is Maximum Overcurrent Protection with standard pump, used for sizing main power protection devices. Standard units are design for 5K SCCR (short circuit current rating) RMS symmetrical amps.

** Condenser power requirements may require two independent wiring drops for dual refrigerant circuit systems. Check condenser installation manual for specific wiring requirements before installation.

Specifications may change without notice. Consult a Conair representative for the most current information.

