

# ECI

## Refrigerant condensers



### Key benefits

- Long and reliable service life
- Low energy consumption
- Easy maintenance

#### ECI Characteristics

- Counterflow configuration
- Axial fan, induced draft

#### Capacity Range

- 129-2929kW (for single cell model, nominal R717 kW's)

#### Typical applications

- Industrial refrigeration applications

### Long and reliable service life



- Standard [Baltiplus 800™](#) construction with **corrosion resistant** [fibreglass](#) side panels will provide a long service life.
- **Direct drive fans** for most models, reducing regularity of service and component replacement.

## Low energy consumption

- [Evaporative cooling](#) for system-wide energy saving at lower operating temperatures.
- **Axial fan** uses **half the energy** of similar centrifugal fan units.
- Factory tested **high efficiency coil**.
- **High efficiency/VFD duty fan motors**

## Easy maintenance

- **Full cold water basin access** when removing the combined inlet shields.
- Easy no-tool **removal of casing side panels** gives access to heat transfer coil for easy inspection and cleaning.
- **Easy removable** spray branch arms, eliminators and combined inlet shields.
- Easy **access to motor and drives** from above the cooling tower.
- Upgrade the unit with **motor removal davit arm** for quick and safe service of motors and fans.
- Removable suction **strainer** with anti-vortex hood.

## Low installation cost

- Reduce rigging time with the **fan plenum section self-aligning** with the coil casing section. Motors and drives are factory installed and aligned.
- All models can **mount directly** on parallel I-beams.
- **Use smaller, less costly** cranes by shipping in multiple sections to minimize the size and weight of the heaviest lift.

## Operational safety

- Closed loop, no airborne contaminants enter and foul the system.
- Easy-clean and easy-inspect ECI towers reduce hygiene risks from bacteria (e.g. Legionella) or biofilm inside.
- Combined inlet shields block sunlight to prevent biological growth in the tower, filter the air and stop water splashing outside.

**Interested in the ECI evaporative condenser for cooling your industrial refrigeration application?** Contact your local [BAC representative](#) for more information.



## Downloads

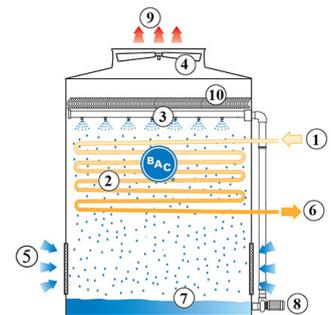
- [ECI refrigerant condenser](#)
- [Operating and maintenance ECI-FCI](#)
- [Rigging and Installation ECI - FCI](#)

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## Refrigerant condensers

### ECI (WIP)

The **vapour (1)** circulates through a **condensing coil (2)**, which is wetted by a **spray system (3)**. An **axial fan (4)** draws **air (5)** over the coil. The evaporation process condenses the vapour into **liquid (6)**. The spray water falls into the sloping **water basin (7)** or sump. The **spray pump (8)** recirculates the water to the top of the unit. The **warm saturated air (9)** leaves the condenser through the **drift eliminators (10)** which remove water droplets from the air.



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## Refrigerant condensers

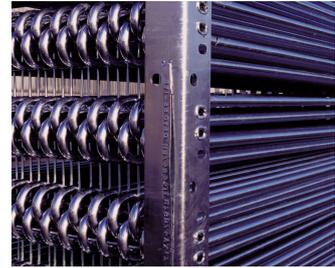
### Construction details

#### 1. Material options

- Heavy guage steel is used for the external steel panels and structural elements, featuring the [Baltiplus 800™ material option](#).
- The casing sides panels are made of [FRP \(Fibreglass Reinforced Polyester\)](#) are light and can be easily slid upwards to access the heat exchange coil.
- **Optional stainless steel** panels and structural elements with type 304L or 316L construction is available for additional corrosion resistance.
- Or the economical alternative: a **water-contact [stainless steel](#) cold water basin**. Its key components and the basin itself are stainless steel.

## 2. Heat transfer media

- Our heat transfer media is a [cooling coil](#). In comprehensive [lab thermal performance tests](#), it showed proved thermal cooler performance and offers you unrivalled system efficiency.
- The coil is constructed of continuous length of prime surface steel, hot-dip galvanized after fabrication. Designed for maximum 18 bar operating pressure according to PER. Pneumatically tested at 26.5 bar.
- **Sloped tubes** for free drainage of the coil.
- **Optional stainless steel coils** are in type 304L or 316L.



Try our ECI coil options:

- **Multiple circuit coils (split coils)** for your halocarbon refrigerants, maintaining individual compressor systems. Or use it for compressor jacket water or glycol cooling.
- **High pressure coils** are designed for 28 bar operating pressure and pneumatically tested for 40 bar. Hot-dip galvanized after fabrication.

All coils are designed for low pressure drop with sloping tubes for free drainage of fluid.

## 3. Air movement system

- **ECI fan system** features **low kW and noise axial fan(s)** in corrosion resistant aluminum, with polypropylene blades encased within the fan cylinder with removable fan guard.
- All ECI models use **multiple independently driven fans**, providing the user with additional capacity control.
- **Our drift eliminators** come in UV-resistant plastic, which will not rot, decay or decompose. They are assembled in **easily handled and removable sections**, for optimal internal access.
- Easy removable UV-resistant plastic **combined inlet shields** at air inlet, block sunlight block to prevent biological growth in tower, filter air and stop water splashing outside.



## 4. Water distribution system

These consist of:

- **Spray branches** with non-clog plastic **nozzles** secured by rubber grommets.
- Easy accessible **sloped cold water basin**, including anti-vortexing steel strainer, make up and overflow connection.
- Close coupled, bronze fitted centrifugal **spray pump** with totally enclosed fan cooled (TEFC) motor.
- Bleed line with metering valve is installed from pump discharge to overflow.

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# ECI

## Refrigerant condensers

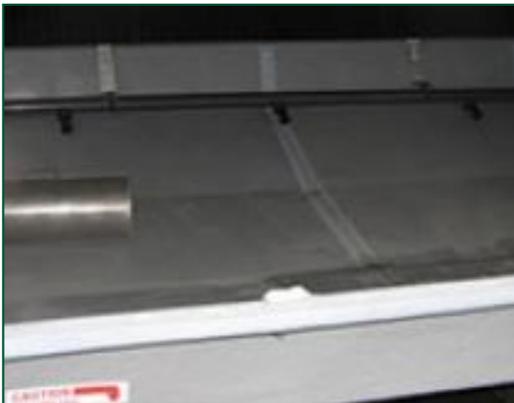
### Options and accessories

Below is a listing of the main ECI options and accessories. If your required option or accessory is not listed, look no further than your [local BAC representative](#).



#### Platforms, ladders, safety cage and handrail

To inspect and maintain from the top of the unit more **easily and safely**, platforms, a ladder, safety cage and handrails can be installed.



#### Sump sweeper piping

Sump sweeper piping **prevents sediment collecting in the cold water basin** of the unit. A complete piping system, including nozzles, is installed in the basin of the condenser **for connection to side stream filtration** equipment.



## Standby pump

Install a standby **reserve spray pump** as failure backup!



## Electric water level control package

For perfectly precise water level control, replace the standard mechanical valve with our electrical water level controller.



## Basin heater package

Thanks to our factory-installed heaters, the water stays at 4°C and **never freezes**, even during equipments downtime and however cold it gets outside.



## Nitrogen filling of coil

Charge the cooling coil with nitrogen for **anti-corrosion protection** during long shipment periods (ocean freight) or on-site storage.



## Filter

Separators and media filters efficiently **remove suspended solids** in the recirculating water, reducing system cleaning costs and optimizing water treatment results. Filtration helps you keep the recirculating water clean.



## Water treatment equipment

Devices to control water treatment are needed to ensure proper **cooling tower water care**. Not only does this help protect the components and fill pack, controlling corrosion, scaling and fouling, it also avoids the proliferation of harmful bacteria, including **legionella**, in the recirculating water.



# ECI

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### Engineering data

**REMARK:** Do not use for construction. Refer to factory certified dimensions & weights. This page includes data current at time of publication, which should be reconfirmed at the time of purchase. In the interest of product improvement, specifications, weights and dimensions are subject to change without notice.

**Last update:** 23/07/2019

### ECI 30-680



Model	Weights (kg)			Dimensions (mm)			Air Flow (m³/s)	Fan Motor (kW)	Water Flow (l/s)	Pump Motor (kW)	R717 charge (kg)
	Oper. Weight (kg)	Ship. Weight(kg)	Heaviest Section (kg)	L	W	H					
ECI 30	1270	720	540	1890	1090	2470	3.9	(2x) 0.75	4.7	(1x) 0.37	16.0
ECI 38	1450	900	720	1890	1090	2715	4.2	(2x) 0.75	4.7	(1x) 0.37	20.0
ECI 46	1600	1080	900	1890	1090	2855	4.0	(2x) 0.75	4.7	(1x) 0.37	29.0
ECI 52	1600	1080	900	1890	1090	2855	4.8	(2x) 1.1	4.7	(1x) 0.37	29.0
ECI 58	1670	1190	1040	1890	1090	3075	4.6	(2x) 1.1	4.7	(1x) 0.37	36.0
ECI 65	1700	1220	1040	1890	1090	3075	5.5	(2x) 2.2	4.7	(1x) 0.37	36.0
ECI 72	2380	1600	1385	2880	1090	3035	5.8	(2x) 1.5	7.1	(1x) 0.55	41.0
ECI 80	2400	1620	1385	2880	1090	3035	6.8	(2x) 2.2	7.1	(1x) 0.55	41.0
ECI 90	2630	1840	1605	2880	1090	3280	6.6	(2x) 2.2	7.1	(1x) 0.55	50.0
ECI 100	2365	1585	1350	3800	1090	3035	9.3	(3x) 1.5	9.6	(1x) 0.75	59.0
ECI 110	2400	1620	1385	3800	1090	3035	10.4	(3x) 2.2	9.6	(1x) 0.75	59.0
ECI 125	2630	1840	1605	3800	1090	3280	9.9	(3x) 2.2	9.6	(1x) 0.75	73.0
ECI 135	2630	1840	1605	3800	1090	3280	10.9	(3x) 3.0	9.6	(1x) 0.75	73.0
ECI 150	4880	2810	2450	3800	1474	3330	13.3	(3x) 2.2	13.9	(1x) 1.5	77.0
ECI 165	5270	3180	2790	3800	1474	3575	12.8	(3x) 2.2	13.9	(1x) 1.5	104.0
ECI 185	5270	3180	2790	3800	1474	3575	15.7	(3x) 3.0	13.9	(1x) 1.5	104.0
ECI 205	5280	3190	2800	3800	1474	3815	17.4	(3x) 4.0	13.9	(1x) 1.5	111.0
ECI N205	6350	4150	3440	3800	2020	3400	19.8	(3x) 3.0	19.2	(1x) 2.2	118.0
ECI N230	6950	4750	4040	3800	2020	3640	19.1	(3x) 2.2	19.2	(1x) 2.2	146.0
ECI N250	6950	4750	4040	3800	2020	3640	21.2	(3x) 3.0	19.2	(1x) 2.2	146.0
ECI N270	7550	5350	4640	3800	2020	3880	22.2	(3x) 4.0	19.2	(1x) 2.2	154.0
ECI N300	9450	6150	5270	5640	2020	3565	29.3	(4x) 3.0	29.0	(1x) 4.0	156.0
ECI N325	9500	6200	5270	5640	2020	3565	31.5	(4x) 4.0	29.0	(1x) 4.0	156.0
ECI N370	10460	7160	6100	5640	2020	3745	32.1	(4x) 4.0	29.0	(1x) 4.0	196.0
ECI N400	11420	8120	6930	5640	2020	3990	32.6	(4x) 4.0	29.0	(1x) 4.0	234.0
ECI S300	9000	5840	4750	3800	2470	4080	24.2	(2x) 7.5	25.2	(1x) 2.2	164.0
ECI S328	9000	5840	4750	3800	2470	4080	26.7	(2x) 11.0	25.2	(1x) 2.2	164.0
ECI	9670	6510	5420	3800	2470	4315	26.2	(2x)	25.2	(1x)	196.0



<b>S350</b>								<b>11.0</b>		<b>2.2</b>	
<b>ECI S403</b>	<b>12530</b>	<b>7780</b>	<b>6130</b>	<b>5640</b>	<b>2470</b>	<b>3845</b>	<b>36.6</b>	<b>(3x) 7.5</b>	<b>38.5</b>	<b>(1x) 4.0</b>	<b>198.0</b>
<b>ECI S429</b>	<b>12530</b>	<b>7780</b>	<b>6130</b>	<b>5640</b>	<b>2470</b>	<b>3845</b>	<b>38.9</b>	<b>(3x) 11.0</b>	<b>38.5</b>	<b>(1x) 4.0</b>	<b>198.0</b>
<b>ECI S455</b>	<b>13600</b>	<b>8780</b>	<b>7130</b>	<b>5640</b>	<b>2470</b>	<b>4080</b>	<b>34.9</b>	<b>(3x) 7.5</b>	<b>38.5</b>	<b>(1x) 4.0</b>	<b>246.0</b>
<b>ECI S482</b>	<b>13600</b>	<b>8780</b>	<b>7130</b>	<b>5640</b>	<b>2470</b>	<b>4080</b>	<b>37.5</b>	<b>(3x) 11.0</b>	<b>38.5</b>	<b>(1x) 4.0</b>	<b>246.0</b>
<b>ECI S504</b>	<b>14600</b>	<b>9730</b>	<b>8130</b>	<b>5640</b>	<b>2470</b>	<b>4315</b>	<b>36.6</b>	<b>(3x) 11.0</b>	<b>38.5</b>	<b>(1x) 4.0</b>	<b>294.0</b>
<b>ECI 320</b>	<b>11630</b>	<b>6430</b>	<b>5080</b>	<b>3800</b>	<b>3040</b>	<b>3820</b>	<b>30.1</b>	<b>(2x) 5.5</b>	<b>30.8</b>	<b>(1x) 4.0</b>	<b>180.0</b>
<b>ECI 340</b>	<b>11650</b>	<b>6450</b>	<b>5100</b>	<b>3800</b>	<b>3040</b>	<b>3820</b>	<b>32.4</b>	<b>(2x) 7.5</b>	<b>30.8</b>	<b>(1x) 4.0</b>	<b>180.0</b>
<b>ECI 360</b>	<b>12530</b>	<b>7320</b>	<b>5985</b>	<b>3800</b>	<b>3040</b>	<b>4080</b>	<b>27.7</b>	<b>(2x) 5.5</b>	<b>30.8</b>	<b>(1x) 4.0</b>	<b>218.0</b>
<b>ECI 380</b>	<b>12550</b>	<b>7350</b>	<b>6000</b>	<b>3800</b>	<b>3040</b>	<b>4080</b>	<b>29.8</b>	<b>(2x) 7.5</b>	<b>30.8</b>	<b>(1x) 4.0</b>	<b>218.0</b>
<b>ECI 420</b>	<b>13450</b>	<b>8200</b>	<b>6850</b>	<b>3800</b>	<b>3040</b>	<b>4430</b>	<b>31.0</b>	<b>(2x) 7.5</b>	<b>30.8</b>	<b>(1x) 4.0</b>	<b>250.0</b>
<b>ECI 450</b>	<b>17370</b>	<b>9570</b>	<b>7650</b>	<b>5640</b>	<b>3040</b>	<b>3820</b>	<b>39.9</b>	<b>(3x) 4.0</b>	<b>30.8</b>	<b>(1x) 4.0</b>	<b>250.0</b>
<b>ECI 490</b>	<b>17450</b>	<b>9650</b>	<b>7650</b>	<b>5640</b>	<b>3040</b>	<b>3820</b>	<b>44.1</b>	<b>(3x) 5.5</b>	<b>30.8</b>	<b>(1x) 4.0</b>	<b>250.0</b>
<b>ECI 530</b>	<b>17450</b>	<b>9650</b>	<b>7650</b>	<b>5640</b>	<b>3040</b>	<b>3820</b>	<b>47.7</b>	<b>(3x) 7.5</b>	<b>30.8</b>	<b>(1x) 4.0</b>	<b>250.0</b>
<b>ECI 550</b>	<b>18750</b>	<b>10850</b>	<b>9000</b>	<b>5640</b>	<b>3040</b>	<b>4080</b>	<b>44.4</b>	<b>(3x) 5.5</b>	<b>30.8</b>	<b>(1x) 4.0</b>	<b>350.0</b>
<b>ECI 620</b>	<b>18750</b>	<b>10850</b>	<b>9000</b>	<b>5640</b>	<b>3040</b>	<b>4080</b>	<b>50.0</b>	<b>(3x) 7.5</b>	<b>30.8</b>	<b>(1x) 4.0</b>	<b>350.0</b>
<b>ECI 650</b>	<b>20050</b>	<b>12150</b>	<b>10300</b>	<b>5640</b>	<b>3040</b>	<b>4340</b>	<b>49.1</b>	<b>(3x) 7.5</b>	<b>30.8</b>	<b>(1x) 4.0</b>	<b>390.0</b>
<b>ECI 680</b>	<b>20200</b>	<b>12300</b>	<b>10300</b>	<b>5640</b>	<b>3040</b>	<b>4340</b>	<b>52.0</b>	<b>(3x) 11.0</b>	<b>30.8</b>	<b>(1x) 4.0</b>	<b>390.0</b>