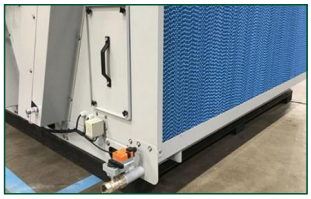
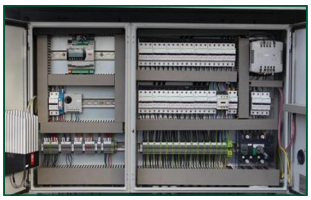
TVC

Refrigerant condensers







Key benefits

- High thermal performance
- Saving water
- Top hygiene control

TrilliumSeries Condenser

TVC, TrilliumSeries characteristics

Counter flow, adiabatic pre-cooling, axial fan, induced draft

Capacity range

340 - 1030 kW

Typical applications

- Small to medium industrial refrigeration applications
- Locations with limited water and space availability

Boosting high thermal performance

- **Pads** in front of the finned coil pre-cool air to virtual **wet bulb temperature**.
- Up to **40% improved capacity** compared to dry cooling.
- TVC condenser consumes **less energy**.
- TVC condenser achieves **low process temperatures**.

Saving water

- TrilliumSeries condensers **achieve annual water savings exceeding 80%** water compared to normal water cooled condensers by limited adiabatic operation.

Top hygiene control

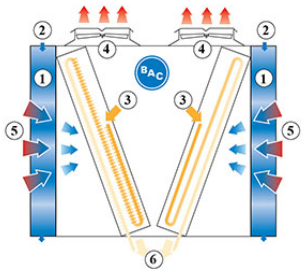
- Featuring a **once-through system**: recirculation and stagnation of water eliminated.
- **No stagnant water**: pre-cooler water conveyed from pads to sewer via a gutter.
- **No aerosol formation:** TrilliumSeries condensers minimize the Legionella risk.
- TrilliumSeries condensers cool incoming air **without transferring water** to the dry coil

Interested in the TVC TrilliumSeries condenser for your refrigeration project? Contact your local BAC representative for more information.

Principle of Operation

Refrigerant condensers

Principle of Operation



The TVC is a V-shaped condenser with **adiabatic pre-coolers (1)**. **Water flows (2)** evenly over the pads located in front of the **dry finned coil (3)**. At the same time **axial fans (4)** draw **air (5)** through the pads where a portion of the water evaporates and cools down the saturated air. This increases the cooling capacity of the incoming air and condenses efficiently the **vapour (6) into liquid** inside the coil.

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Construction details

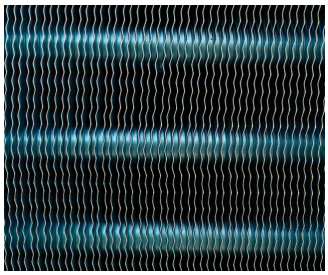
Refrigerant condensers

Construction details

1. Material options

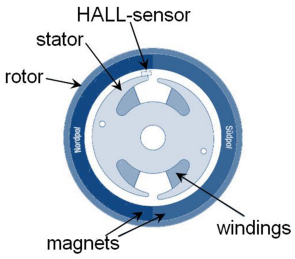
- Heavy-gauge hot-dip **galvanized steel** is used for unit steel panels and structural elements featuring Baltibond Hybrid Coating**.**

2. Heat transfer media



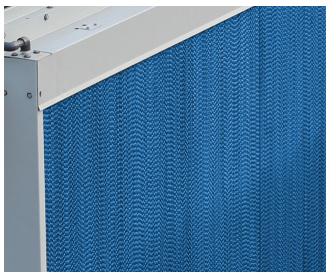
- The V-shaped finned coil is constructed of **staggered and seamless tubes** with aluminium, rippled and corrugated fins.
- **The fins are spread** for optimal air turbulence.
- Thick and seamless copper headers and threaded steel connections.
- Pressure tested at 34 bar.
- **Try our option for aggressive environments**: special pre-coated anti-corrosion aluminium fins.

3. Air movement system



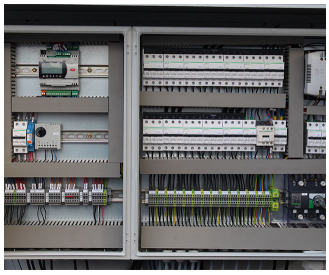
- **Axial fan** with exceptionally **compact direct drive** short integrated motor and fan guard.
- The **low profile fan** with fan guard features an **impeller and motor** and is balanced as a complete unit using dynamic single plane balancing. Balance grade is G6.3.
- Fan and motor totally **maintenance free**, and allow frequent starting.
- **Bearings seals and motor encapsulation** for long service life.
- The adiabatic units fitted with **EC motors** (EC in model number) provide an immense **reduction in power consumption**. The fans are piloted over an RS485 bus system by the controller supplied together with the electrical panel.
  Principle of operation: the magnetic field of the permanent magnets in the outside rotor is used by the consecutively powered windings in the inside stator to let the fan run. The Hall-sensor detects where the magnetic field is strongest, which determines which set of windings will be activated.

4. Adiabatic pre-cooler



- Evaporative cooling pad of **impregnated cellulose** with different flute angles encased in bolted heavy gauge **stainless steel**.
- **Distribution pad on top** for complete pad wetting.
- **Once-through** water distribution system, no need for pumps, water drained to sewage.

5. Electrical panel and adiabatic controls



- Fully equipped **factory-installed electrical panel** with integrated motor controls and adiabatic controls as well as all the required circuit breakers and other auxiliary components.
- **Intelligent controls** featuring the possibility for:
  - An additional pre-programmed free cooling set-point
  - Day/night operation to limit the maximum fan speed to lower the sound levels
  - BMS communication with all common protocols
  - Possibility for a master/slave arrangement to further optimize multi-unit installations
  - Automatic cleaning cycle rinsing the pads in taxing environments
  - Possibility to force unit in dry operation in case water usage is prohibited

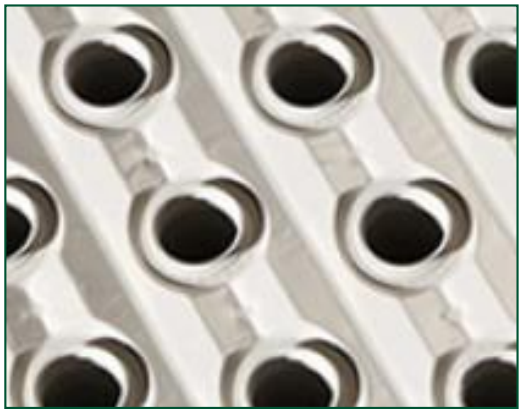
Like to know more about the TVC TrilliumSeries cooler construction details? Contact your local BAC representative.

Options and Accessories

Refrigerant condensers

Options and Accessories

Below is a listing of the main TVC options and accessories. If your required option or accessory is not listed, look no further than your local BAC representative.



Epoxy coating

Increase the coil's resistance against a harsh atmosphere.

Sound reduction

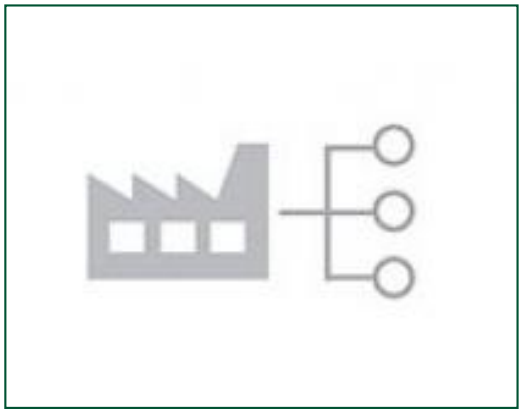
Reducing noise at air **intake and discharge points** brings us closed to silent cooling equipment.

Partitioning panels TVC

Increase the degree of redundancy, providing a higher backup capacity for your installation.

Recirculation pump

The recirculation pump helps to further cut down on water consumption.



BMS supervision

This option integrates the adiabatic cooler's control system in your BMS system.

Safety switch

Cuts power to motor with **safety in mind** during inspection or maintenance.

Electrical panel heater

Protects electronic components in the electrical panel during extremely cold temperatures.

TVC_EC8022-D810_EC8022-S612

Refrigerant condensers

Engineering data

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General notes

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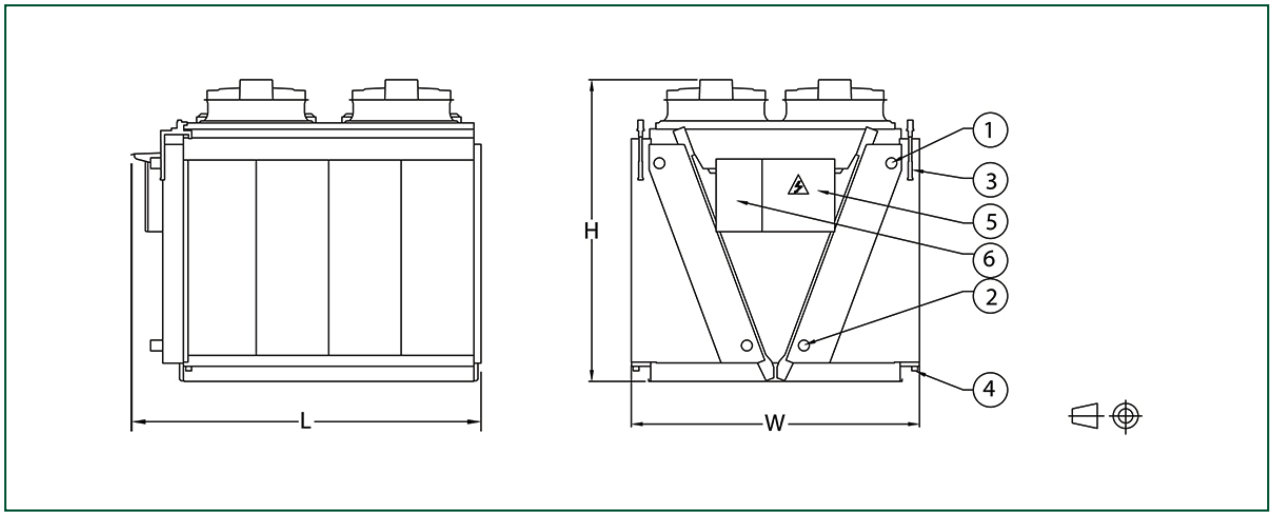
Last update: 03/06/2020

TVC_EC8022-D810_EC8022-S612



1. Fluid outlet connection; 2. Fluid inlet connection; 3. Pre-cooler city water connection; 4. Pre-cooler water drain; 5. Electrical power panel; 6. Control panel.

Model	Nr. of Fans	Weights (kg)			Dimensions (mm)			Air Flow (m^3/s)	Tube Internal Volume (dm^3)	Surface (m^2)	Connections
		Oper. Weight (kg)	Ship. Weight(kg)	Heaviest Section (kg)	L	W	H				
TVC E C8022-D810	4	1948	1598	1598	3097	2382	2490	24.8	240.0	1108.0	2
TVC E C8022-D810	4	1948	1598	1598	3097	2382	2490	24.8	240.0	1108.0	2
TVC E C8022-H612	4	1948	1598	1598	3097	2382	2490	25.0	168.0	1580.0	2
TVC E C8022-H810	4	1948	1598	1598	3097	2382	2490	24.8	240.0	1108.0	2
TVC E C8022-H810	4	1948	1598	1598	3097	2382	2490	24.8	240.0	1108.0	2
TVC E C8022-L612	4	1948	1598	1598	3097	2382	2490	25.0	168.0	1580.0	2
TVC E C8022-L810	4	1948	1598	1598	3097	2382	2490	24.8	240.0	1108.0	2
TVC E C8022-L810	4	1948	1598	1598	3097	2382	2490	24.8	240.0	1108.0	2
TVC E C8022-M612	4	1948	1598	1598	3097	2382	2490	25.0	168.0	1580.0	2
TVC E C8022-M810	4	1948	1598	1598	3097	2382	2490	24.8	240.0	1108.0	2
TVC E C8022-M810	4	1948	1598	1598	3097	2382	2490	24.8	240.0	1108.0	2
TVC E C8022-Q810	4	1948	1598	1598	3097	2382	2490	24.8	240.0	1108.0	2
TVC E C8022-Q810	4	1948	1598	1598	3097	2382	2490	24.8	240.0	1108.0	2
TVC E C8022-S612	4	1948	1598	1598	3097	2382	2490	25.0	168.0	1580.0	2

TVC_EC8023-D810_EC8023-S810

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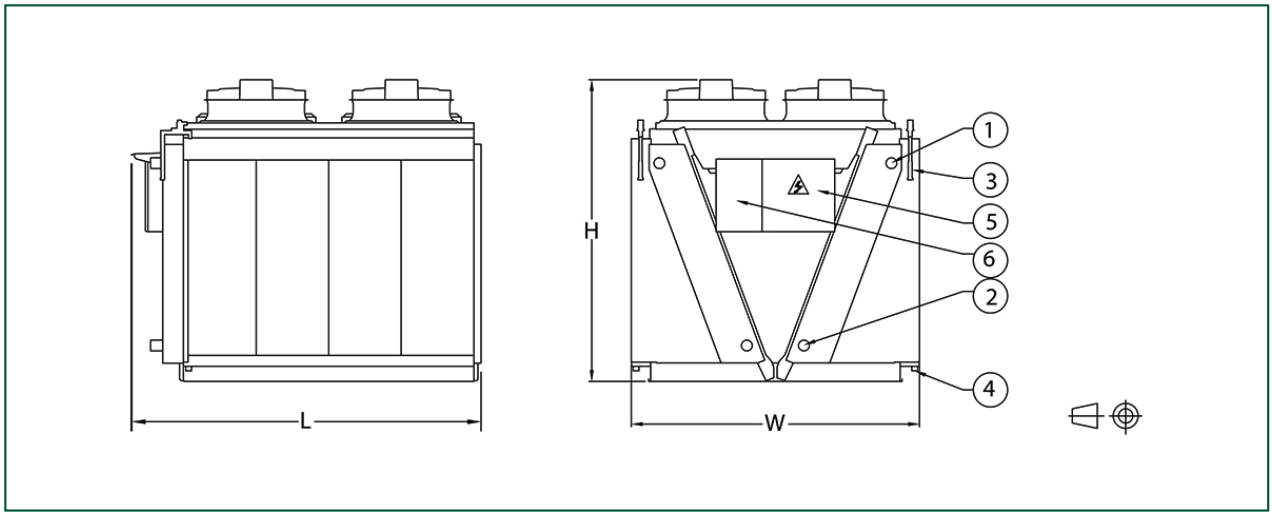
TVC_EC8023-D810_EC8023-S810



1. Fluid outlet connection; 2. Fluid inlet connection; 3. Pre-cooler city water connection; 4. Pre-cooler water drain; 5. Electrical power panel; 6. Control panel.

Model	Nr. of Fans	Weights (kg)			Dimensions (mm)			Air Flow (m^3/s)	Tube Internal Volume (dm^3)	Surface (m^2)	Connections
		Oper. Weight (kg)	Ship. Weight(kg)	Heaviest Section (kg)	L	W	H				
TVC E C8023-D810	6	2719	2218	2218	4297	2382	2490	37.2	338.0	1662.0	2
TVC E C8023-D810	6	2719	2218	2218	4297	2382	2490	37.2	338.0	1662.0	2
TVC E C8023-H612	6	2719	2218	2218	4297	2382	2490	27.0	252.0	2360.0	2
TVC E C8023-H810	6	2719	2218	2218	4297	2382	2490	37.2	338.0	1662.0	2
TVC E C8023-H810	6	2719	2218	2218	4297	2382	2490	37.2	338.0	1662.0	2
TVC E C8023-L612	6	2719	2218	2218	4297	2382	2490	27.0	252.0	2360.0	2
TVC E C8023-L810	6	2719	2218	2218	4297	2382	2490	37.2	338.0	1662.0	2
TVC E C8023-L810	6	2719	2218	2218	4297	2382	2490	37.2	338.0	1662.0	2
TVC E C8023-M612	6	2719	2218	2218	4297	2382	2490	27.0	252.0	2360.0	2
TVC E C8023-M810	6	2719	2218	2218	4297	2382	2490	37.2	338.0	1662.0	2
TVC E C8023-M810	6	2719	2218	2218	4297	2382	2490	37.2	338.0	1662.0	2
TVC E C8023-Q810	6	2719	2218	2218	4297	2382	2490	37.2	338.0	1662.0	2
TVC E C8023-Q810	6	2719	2218	2218	4297	2382	2490	37.2	338.0	1662.0	2
TVC E C8023-S612	6	2719	2218	2218	4297	2382	2490	27.0	252.0	2360.0	2
TVC E C8023-S810	6	2719	2218	2218	4297	2382	2490	37.2	338.0	1662.0	2
TVC E C8023-S810	6	2719	2218	2218	4297	2382	2490	37.2	338.0	1662.0	2

TVC_EC8024-D810_EC8024-S810

Refrigerant condensers

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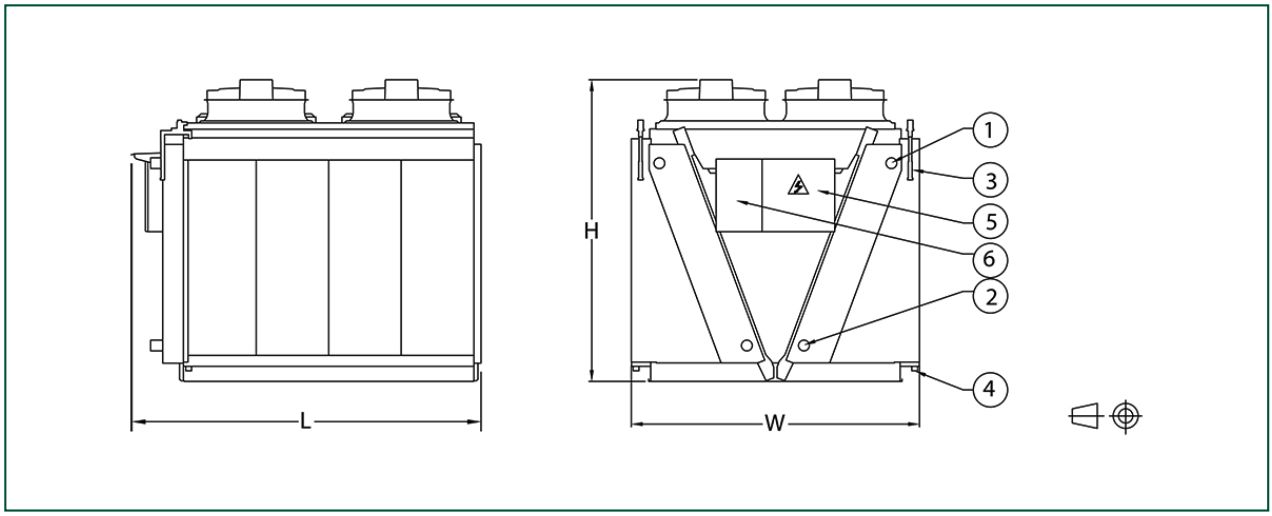
TVC_EC8024-D810_EC8024-S810



1. Fluid outlet connection; 2. Fluid inlet connection; 3. Pre-cooler city water connection; 4. Pre-cooler water drain; 5. Electrical power panel; 6. Control panel.

Model	Nr. of Fans	Weights (kg)			Dimensions (mm)			Air Flow (m^3/s)	Tube Internal Volume (dm^3)	Surface (m^2)	Connections
		Oper. Weight (kg)	Ship. Weight(kg)	Heaviest Section (kg)	L	W	H				
TVC E C8024-D810	8	3527	2874	2874	5497	2382	2490	49.5	434.0	2216.0	2
TVC E C8024-D810	8	3527	2874	2874	5497	2382	2490	49.5	434.0	2216.0	2
TVC E C8024-H612	8	3527	2874	2874	5497	2382	2490	50.0	332.0	3160.0	2
TVC E C8024-H810	8	3527	2874	2874	5497	2382	2490	49.5	434.0	2216.0	2
TVC E C8024-H810	8	3527	2874	2874	5497	2382	2490	49.5	434.0	2216.0	2
TVC E C8024-L612	8	3527	2874	2874	5497	2382	2490	50.0	332.0	3160.0	2
TVC E C8024-L810	8	3527	2874	2874	5497	2382	2490	49.5	434.0	2216.0	2
TVC E C8024-L810	8	3527	2874	2874	5497	2382	2490	49.5	434.0	2216.0	2
TVC E C8024-M612	8	3527	2874	2874	5497	2382	2490	50.0	332.0	3160.0	2
TVC E C8024-M810	8	3527	2874	2874	5497	2382	2490	49.5	434.0	2216.0	2
TVC E C8024-M810	8	3527	2874	2874	5497	2382	2490	49.5	434.0	2216.0	2
TVC E C8024-Q810	8	3527	2874	2874	5497	2382	2490	49.5	434.0	2216.0	2
TVC E C8024-Q810	8	3527	2874	2874	5497	2382	2490	49.5	434.0	2216.0	2
TVC E C8024-S612	8	3527	2874	2874	5497	2382	2490	50.0	332.0	3160.0	2
TVC E C8024-S810	8	3527	2874	2874	5497	2382	2490	49.5	434.0	2216.0	2
TVC E C8024-S810	8	3527	2874	2874	5497	2382	2490	49.5	434.0	2216.0	2

TVC_EC8025-D810_EC8025-S810

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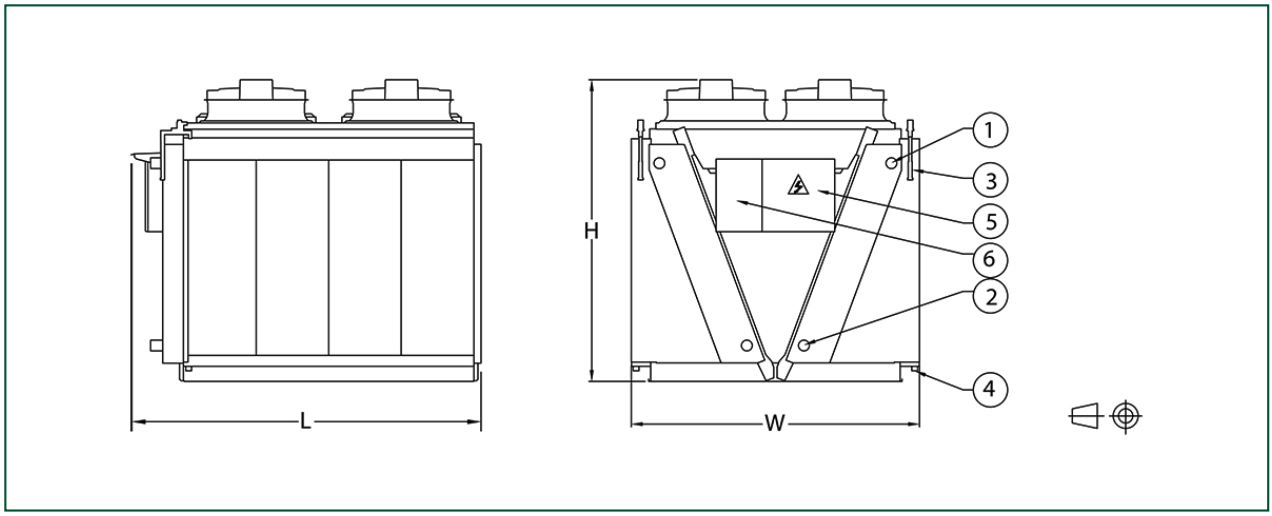

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Model	Nr. of Fans	Weights (kg)			Dimensions (mm)			Air Flow (m^3/s)	Tube Internal Volume (dm^3)	Surface (m^2)	Connections
		Oper. Weight (kg)	Ship. Weight(kg)	Heaviest Section (kg)	L	W	H				
TVC E C8025-D810	10	4479	3652	3652	6697	2382	2490	61.9	554.0	2768.0	2
TVC E C8025-D810	10	4479	3652	3652	6697	2382	2490	61.9	554.0	2768.0	2
TVC E C8025-H612	10	4479	3652	3652	6697	2382	2490	62.0	412.0	3940.0	2
TVC E C8025-H810	10	4479	3652	3652	6697	2382	2490	61.9	554.0	2768.0	2
TVC E C8025-H810	10	4479	3652	3652	6697	2382	2490	61.9	554.0	2768.0	2
TVC E C8025-L612	10	4479	3652	3652	6697	2382	2490	62.0	412.0	3940.0	2
TVC E C8025-L810	10	4479	3652	3652	6697	2382	2490	61.9	554.0	2768.0	2
TVC E C8025-L810	10	4479	3652	3652	6697	2382	2490	61.9	554.0	2768.0	2
TVC E C8025-M612	10	4479	3652	3652	6697	2382	2490	62.0	412.0	3940.0	2
TVC E C8025-M810	10	4479	3652	3652	6697	2382	2490	61.9	554.0	2768.0	2
TVC E C8025-M810	10	4479	3652	3652	6697	2382	2490	61.9	554.0	2768.0	2
TVC E C8025-Q810	10	4479	3652	3652	6697	2382	2490	61.9	554.0	2768.0	2
TVC E C8025-Q810	10	4479	3652	3652	6697	2382	2490	61.9	554.0	2768.0	2
TVC E C8025-S612	10	4479	3652	3652	6697	2382	2490	62.0	412.0	3940.0	2
TVC E C8025-S810	10	4479	3652	3652	6697	2382	2490	61.9	554.0	2768.0	2
TVC E C8025-S810	10	4479	3652	3652	6697	2382	2490	61.9	554.0	2768.0	2

TVC_EC8026-D810_EC8026-S810

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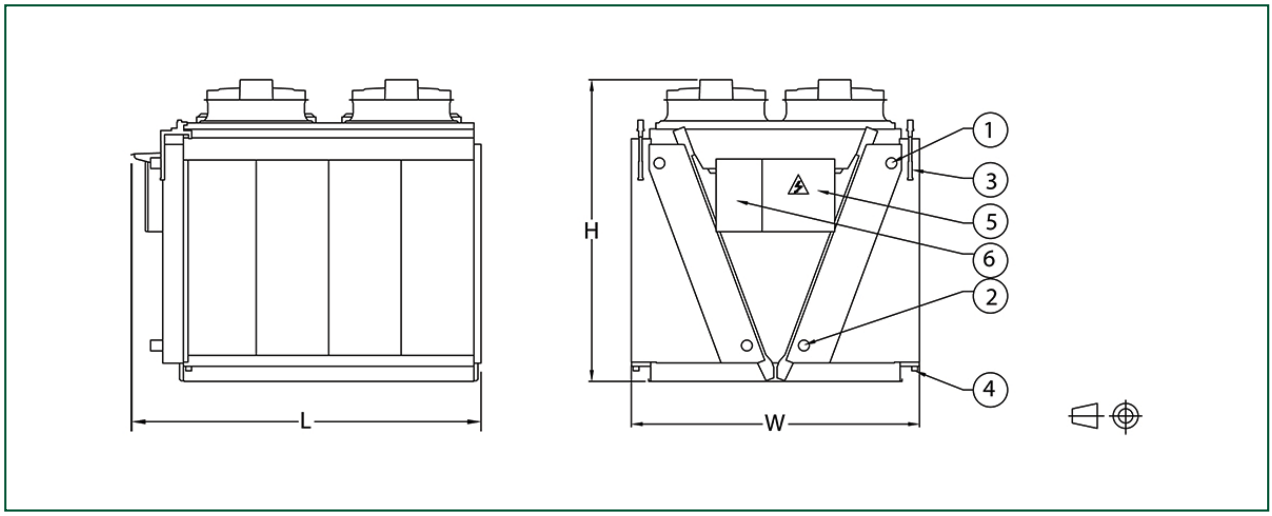

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Model	Nr. of Fans	Weights (kg)			Dimensions (mm)			Air Flow (m^3/s)	Tube Internal Volume (dm^3)	Surface (m^2)	Connections
		Oper. Weight (kg)	Ship. Weight(kg)	Heaviest Section (kg)	L	W	H				
TVC E C8026-D810	12	5332	4355	4355	7897	2382	2490	74.3	650.0	3322.0	2
TVC E C8026-D810	12	5332	4355	4355	7897	2382	2490	74.3	650.0	3322.0	2
TVC E C8026-H612	12	5332	4355	4355	7897	2382	2490	74.0	486.0	4740.0	2
TVC E C8026-H810	12	5332	4355	4355	7897	2382	2490	74.3	650.0	3322.0	2
TVC E C8026-H810	12	5332	4355	4355	7897	2382	2490	74.3	650.0	3322.0	2
TVC E C8026-L612	12	5332	4355	4355	7897	2382	2490	74.0	486.0	4740.0	2
TVC E C8026-L810	12	5332	4355	4355	7897	2382	2490	74.3	650.0	3322.0	2
TVC E C8026-L810	12	5332	4355	4355	7897	2382	2490	74.3	650.0	3322.0	2
TVC E C8026-M612	12	5332	4355	4355	7897	2382	2490	74.0	486.0	4740.0	2
TVC E C8026-M810	12	5332	4355	4355	7897	2382	2490	74.3	650.0	3322.0	2
TVC E C8026-M810	12	5332	4355	4355	7897	2382	2490	74.3	650.0	3322.0	2
TVC E C8026-Q810	12	5332	4355	4355	7897	2382	2490	74.3	650.0	3322.0	2
TVC E C8026-Q810	12	5332	4355	4355	7897	2382	2490	74.3	650.0	3322.0	2
TVC E C8026-S612	12	5332	4355	4355	7897	2382	2490	74.0	486.0	4740.0	2
TVC E C8026-S810	12	5332	4355	4355	7897	2382	2490	74.3	650.0	3322.0	2
TVC E C8026-S810	12	5332	4355	4355	7897	2382	2490	74.3	650.0	3322.0	2

TVC_EC8027-D810_EC8027-S810

Refrigerant condensers

Engineering data

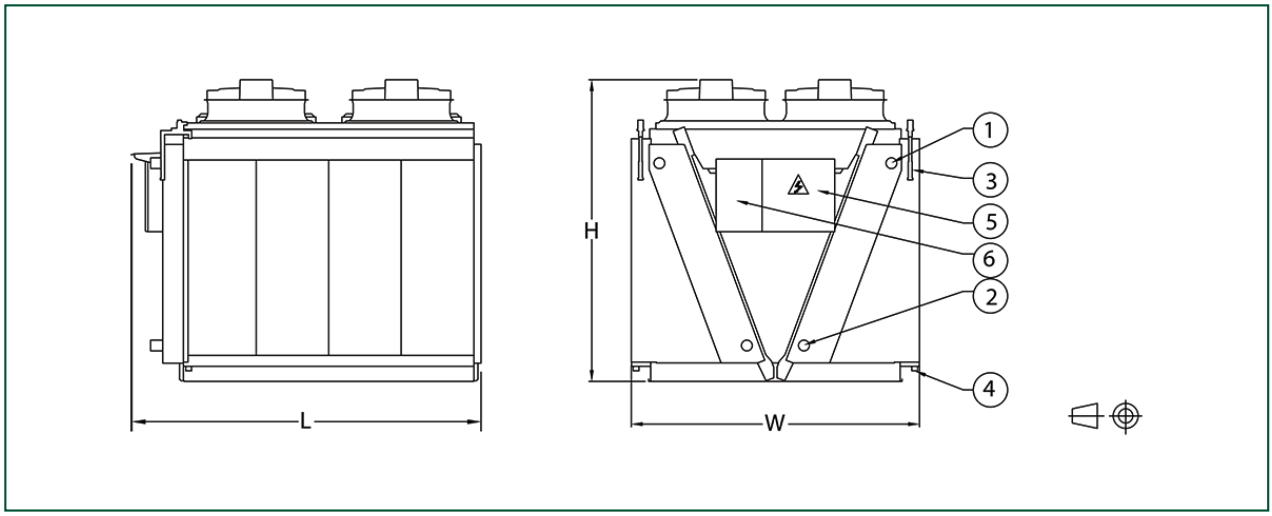
REMARK: Do not use for construction. Refer to factory certified dimensions & weights. This page includes data current at time of publication, which should be reconfirmed at the time of purchase. In the interest of product improvement, specifications, weights and dimensions are subject to change without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

General notes

1. Sound Pressure Levels (Lp_A) are measured in the horizontal plane at a distance of 10 m from the connection end of the unit, under free field conditions.
2. Adiabatic pre-cooling sections are shipped separately and need to be installed on site.

Last update: 03/06/2020

TVC_EC8027-D810_EC8027-S810



1. Fluid outlet connection; 2. Fluid inlet connection; 3. Pre-cooler city water connection; 4. Pre-cooler water drain; 5. Electrical power panel; 6. Control panel.

Model	Nr. of Fans	Weights (kg)			Dimensions (mm)			Air Flow (m^3/s)	Tube Internal Volume (dm^3)	Surface (m^2)	Connections
		Oper. Weight (kg)	Ship. Weight(kg)	Heaviest Section (kg)	L	W	H				
TVC E C8027-D810	14	6144	5016	5016	9098	2382	2490	86.7	746.0	3876.0	2
TVC E C8027-D810	14	6144	5016	5016	9098	2382	2490	86.7	746.0	3876.0	2
TVC E C8027-H612	14	6144	5016	5016	9098	2382	2490	87.0	578.0	5520.0	2
TVC E C8027-H810	14	6144	5016	5016	9098	2382	2490	86.7	746.0	3876.0	2
TVC E C8027-H810	14	6144	5016	5016	9098	2382	2490	86.7	746.0	3876.0	2
TVC E C8027-L612	14	6144	5016	5016	9098	2382	2490	87.0	578.0	5520.0	2
TVC E C8027-L810	14	6144	5016	5016	9098	2382	2490	86.7	746.0	3876.0	2
TVC E C8027-L810	14	6144	5016	5016	9098	2382	2490	86.7	746.0	3876.0	2
TVC E C8027-M612	14	6144	5016	5016	9098	2382	2490	87.0	578.0	5520.0	2
TVC E C8027-M810	14	6144	5016	5016	9098	2382	2490	86.7	746.0	3876.0	2
TVC E C8027-M810	14	6144	5016	5016	9098	2382	2490	86.7	746.0	3876.0	2
TVC E C8027-Q810	14	6144	5016	5016	9098	2382	2490	86.7	746.0	3876.0	2
TVC E C8027-Q810	14	6144	5016	5016	9098	2382	2490	86.7	746.0	3876.0	2
TVC E C8027-S612	14	6144	5016	5016	9098	2382	2490	87.0	578.0	5520.0	2
TVC E C8027-S810	14	6144	5016	5016	9098	2382	2490	86.7	746.0	3876.0	2
TVC E C8027-S810	14	6144	5016	5016	9098	2382	2490	86.7	746.0	3876.0	2