DCV-AD

Adiabatic cooling




Key benefits

- High thermal performance
- Saving water
- Top hygiene control

TrilliumSeries Condenser

DCV-AD, 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.
- DCV-AD condenser consumes **less energy**.
- DCV-AD 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 TrilliumSeries condenser for your refrigeration project? Contact your local BAC representative for more information.

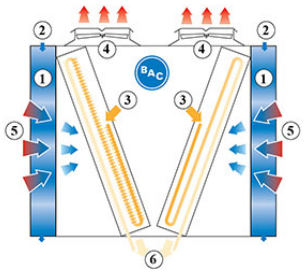
Downloads

- DCV-AD condenser
- Operating and Maintenance DCV-AD

Principle of operation

Adiabatic cooling

Principle of operation



The DCV-AD 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.

View the animated operation of the TrilliumSeries.

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

Construction details

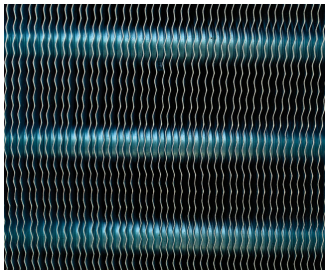
Adiabatic cooling

Construction details

1. Material options

- Heavy-gauge hot-dip **galvanized steel** is used for unit steel panels and structural elements featuring **a zinc aluminium coating.** Outside casing featuring **Baltiplus corrosion protection**.

2. Heat transfer media



- The V-shaped finned coil is constructed of **staggered or parallel tubes in:**
  - seamless copper (15,9 diameter tubes, 0,4 mm thickness) with aluminium, rippled and corrugated fins (0,17 mm thick and 2,12 mm fin spacing).
  - or **stainless steel 304L (12,7 diameter tubes, 0,7 mm thickness)** with aluminium, rippled and corrugated fins (0,14 mm thick and 2,54 mm fin spacing).
- Thick and seamless copper or stainless steel headers and threaded steel connections
- Designed for maximum 21 bar operating pressure according to PED. Pneumatically tested for 30 bar.
- **Try our option for aggressive environments**: special pre-coated anti-corrosion aluminium fin.

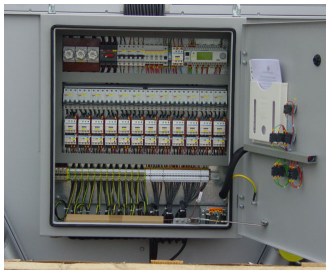
3. Air movement system

- **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**, allowing frequent starting and -40° to 60°C air temperature.
- **Bearings seals and motor encapsulation** for long service life.

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 (option)



- Factory-installed electrical panel and **step controller or variable frequency** drive with integrated adiabatic controls.

Like to know more about the DCV-AD TrilliumSeries condenser construction details? Contact your local BAC representative.

DCV-AD S9122-S416

Adiabatic cooling

Engineering data

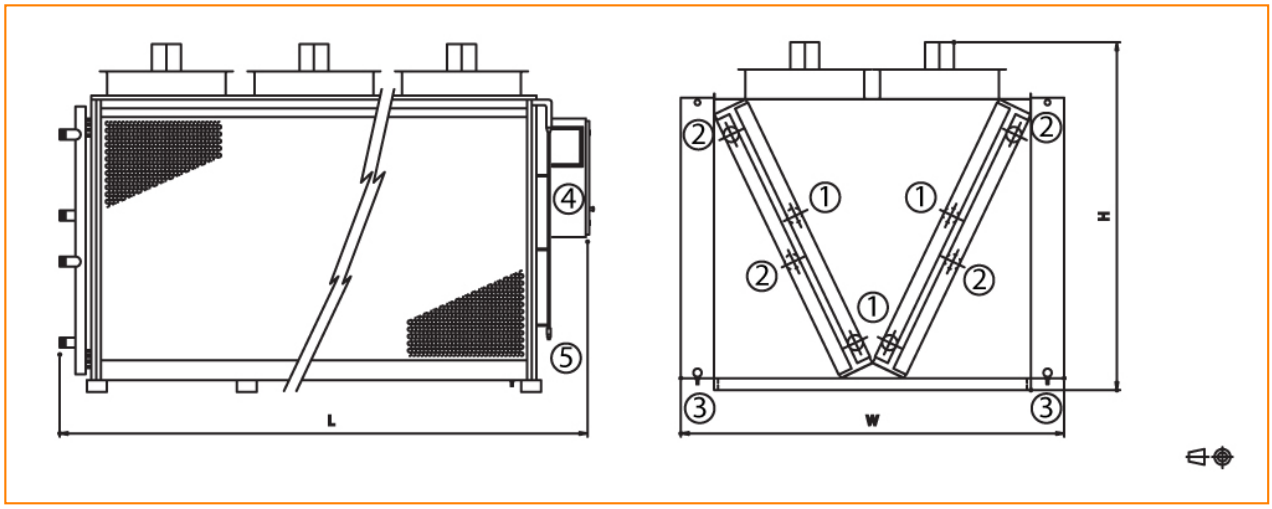
REMARK: Do not use for construction. Refer to factory certified dimensions & weights. This page includes data current at time of publication, which should be reconfirmed at the time of purchase. In the interest of product improvement, specifications, weights and dimensions are subject to change without 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: 01/07/2021

DCV-AD S9122-S416



1. Refrigerant inlet connections; 2. Refrigerant outlet connections; 3 . Pre-cooler water drain and overflow; 4. Electrical panel; 5. Pre-cooler city water connection.

Model	Nr. of Fans	Air Flow (m^3/s)	Surface (m^2)	Tube Internal Volume (dm^3)	Lp_A dB(A)	Ship. Weight(kg)	Dimensions (mm)		
		Δ /Y			Δ /Y		L	W	H
S9122-S 416D-AD	4 (2+2)	24/18	1850	191	59/52	1557	2931	2730	2810
S9123-S 416D-AD	6 (3+3)	36/27	2775	287	61/54	2190	4081	2730	2810
S9124-S 416D-AD	8 (4+4)	48/35,9	3700	382	61/54	2871	5181	2730	2810
S9125-S 416D-AD	10 (5+5)	60/44,9	4625	478	62/55	3564	6313	2730	2810
S9126-S 416D-AD	12 (6+6)	72/53,9	5550	574	63/56	4218	7413	2730	2810

DCV-AD S9122-S613

Adiabatic cooling

Engineering data

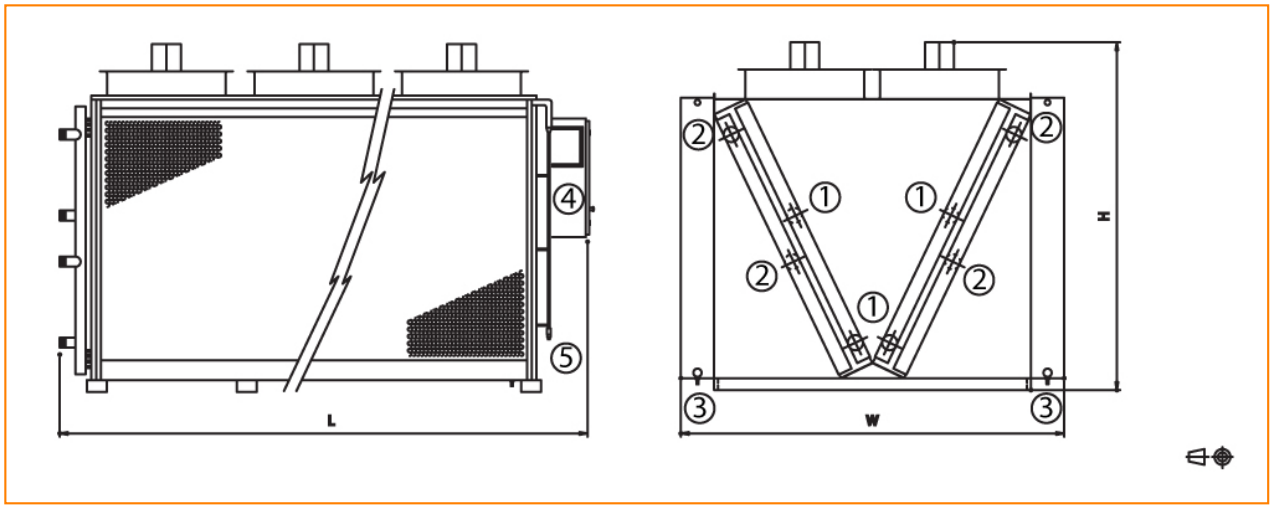
REMARK: Do not use for construction. Refer to factory certified dimensions & weights. This page includes data current at time of publication, which should be reconfirmed at the time of purchase. In the interest of product improvement, specifications, weights and dimensions are subject to change without 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: 01/07/2021

DCV-AD S9122-S613



1. Refrigerant inlet connections; 2. Refrigerant outlet connections; 3 . Pre-cooler water drain and overflow; 4. Electrical panel; 5. Pre-cooler city water connection.

Model	Nr. of Fans	Air Flow (m^3/s)	Surface (m^2)	Tube Internal Volume (dm^3)	Lp_A dB(A)	Ship. Weight(kg)	Dimensions (mm)		
		Δ /Y			Δ /Y		L	W	H
S9122-S 613B-AD	4 (2+2)	23,6/18,5	1487	182	59/52	1359	2931	2730	2810
S9123-S 613B-AD	6 (3+3)	35,4/27,7	2231	273	61/54	1910	4081	2730	2810
S9124-S 613B-AD	8 (4+4)	47,2/37	2975	364	61/54	2530	5181	2730	2810
S9125-S 613B-AD	10 (5+5)	59/46,2	3718	455	62/55	3119	6313	2730	2810
S9126-S 613B-AD	12 (6+6)	70,8/55,4	4462	546	63/56	3685	7413	2730	2810