

# DFCV-AD

Dry and adiabatic cooling



## Key benefits

- Boosting thermal performance
- Saving water
- Top hygiene control



### DFCV-AD, TrilliumSeries characteristics

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

### Capacity range

220 - 1620 kW

### Maximum entering fluid temperature

60°C

### Typical applications

- Small to medium HVAC and industrial applications
- Locations with limited water and space availability
- High temperature industrial applications



## Boosting 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.
- TrilliumSeries coolers consume less energy.
- TrilliumSeries coolers achieve low process temperatures.

## Saving water

- TrilliumSeries coolers **achieve annual water savings exceeding 80%** water compared to normal cooling towers 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 Coolers minimize the Legionella risk.
- TrilliumSeries Coolers cool incoming air **without transferring water** to the dry coil

Interested in the TrilliumSeries cooler to cool your process fluid? Contact your local [BAC representative](#) for more information.

## Downloads

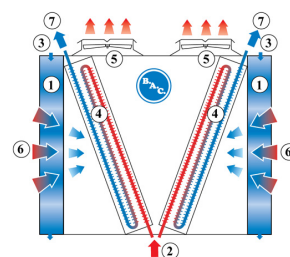
- [DFCV-AD cooler](#)
- [TrilliumSeries Cooler](#)
- [Operating and Maintenance DFCV - DFCV-AD](#)
- [Rigging and Installation DFCV - DFCV-AD](#)
- [Operating and Maintenance DFCV-AD-EC](#)
- [Rigging and Installation DFCV-AD-EC](#)

# DFCV-AD

## Dry and adiabatic cooling

### Principle of operation

The DFCV-AD is a V-shaped dry cooler equipped with **adiabatic pre-coolers (1)** that cool the warm **process fluid (2)** by sensible heat transfer. **Water flows (3)** evenly over evaporative cooling pads located in front of the **dry finned coil (4)**. At the same time **axial (5) fans** draw **air (6)** 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 for cooling the process **fluid (7)** inside the coil.



View the [animated operation of the TrilliumSeries](#).

**Want to use the DFCV-AD TrilliumSeries cooler to cool your process fluid?** Contact your local [BAC representative](#) for more information.

# DFCV-AD

Dry and adiabatic cooling

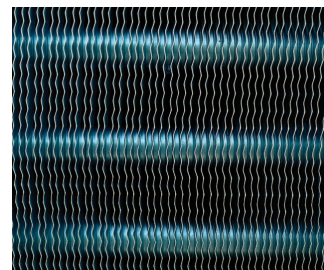
## Construction details

### 1. Material options

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

### 2. Heat transfer media

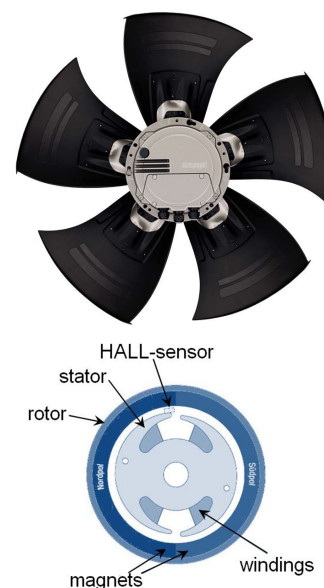
- The V-shaped finned coil is constructed of **staggered and seamless copper tubes** (15,9 or 12,7 diameter) with aluminium, rippled and corrugated fins.
- **2,5 mm fin spacing** for optimal air turbulence
- Thick and seamless copper headers and threaded steel connections
- Pressure tested at 15 bar
- **Try our option for aggressive environments:** special pre-coated anti-corrosion aluminium fins.



### 3. Air movement system

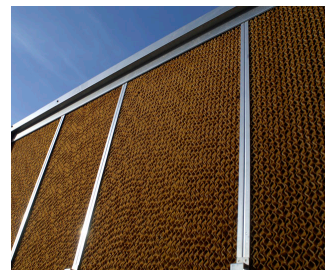
- **Axial fan** with exceptionally **compact direct drive** short integrated motor and fan guard.
- The **low profile fan** with fan guard features an **impeller and motor** and is balanced as a complete unit using dynamic single plane balancing. Balance grade is G6.3.
- Fan and motor totally **maintenance 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

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



Like to know more about the DFCV-AD TrilliumSeries cooler construction details? Contact your [local BAC representative](#).

# DFCV-AD

## Dry and adiabatic cooling

### Engineering data

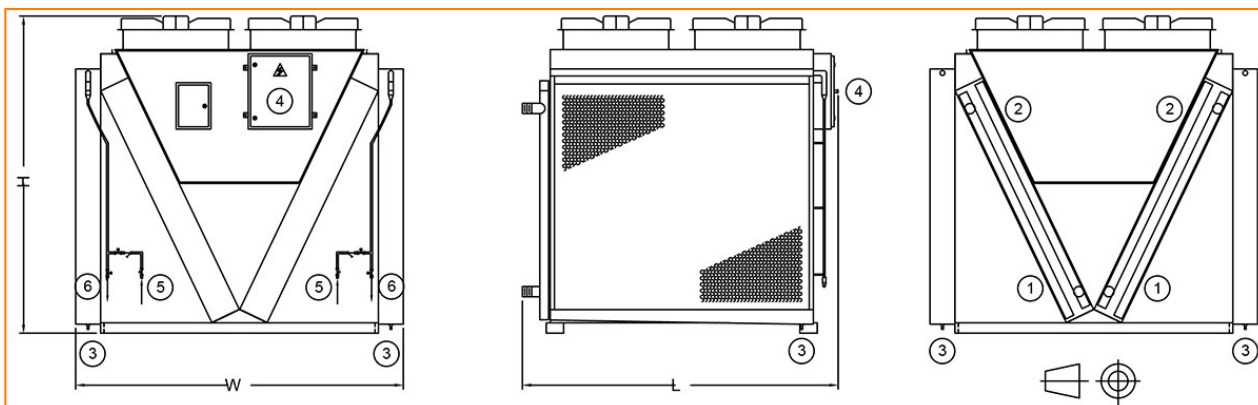
**REMARK:** Do not use for construction. Refer to factory certified dimensions & weights. This page includes data current at time of publication, which should be reconfirmed at the time of purchase. In the interest of product improvement, specifications, weights and dimensions are subject to change without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

### General notes

1. Adiabatic cooler capacities are tested according to EN 1048 for dry coolers.
2. TrilliumSeries Coolers of models with D6xx coil configuration have inlet and outlet connections at opposite ends.
3. Adiabatic pre-cooling sections are shipped separately and need to be installed on site.

**Last update:** 30/06/2019

### DFCV-AD EC 9122



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

Model	Nr. of Fans	Weights (kg)			Dimensions (mm)			Air Flow (m³/s)		Tube Internal Volume (dm³)	Surface (m²)	Connections
		Oper. Weight (kg)	Ship. Weight(kg)	Heaviest Section (kg)	L	W	H	Δ	Y			
DFCV EC912 2-D61 3-E-AD	4	1820	1520	1520	2752	2820	2735	23.3	23.3	182.0	1488.0	2
DFCV EC912 2-D61 6-E-AD	4	2040	1630	1630	2752	2820	2735	24.0	24.0	288.0	1336.0	2
DFCV EC912 2-H61 3-E-AD	4	1820	1520	1520	2752	2820	2735	23.3	23.3	182.0	1488.0	2
DFCV EC912 2-H61 6-E-AD	4	2040	1630	1630	2752	2820	2735	24.0	24.0	288.0	1336.0	2
DFCV EC912 2-L61 3-E-AD	4	1820	1520	1520	2752	2820	2735	23.3	23.3	182.0	1488.0	2
DFCV EC912 2-L61 6-E-AD	4	2040	1630	1630	2752	2820	2735	24.0	24.0	288.0	1336.0	2
DFCV EC912 2-M61 3-E-AD	4	1820	1520	1520	2752	2820	2735	23.3	23.3	182.0	1488.0	2
DFCV EC912 2-M61 6-E-AD	4	2040	1630	1630	2752	2820	2735	24.0	24.0	288.0	1336.0	2
DFCV EC912 2-S61 3-E-AD	4	1820	1520	1520	2752	2820	2735	23.3	23.3	182.0	1488.0	2
DFCV EC912 2-S61 6-E-AD	4	2040	1630	1630	2752	2820	2735	24.0	24.0	288.0	1336.0	2

# DFCV-AD

## Dry and adiabatic cooling

### Engineering data

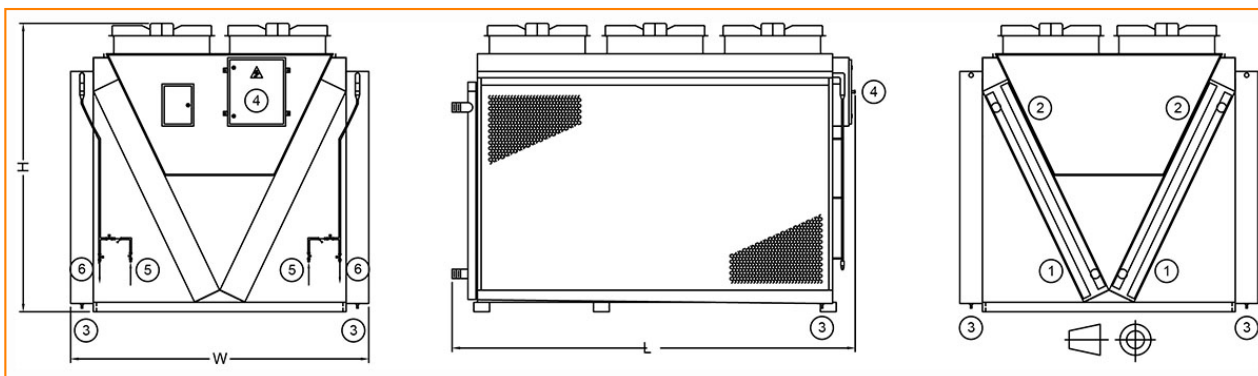
**REMARK:** Do not use for construction. Refer to factory certified dimensions & weights. This page includes data current at time of publication, which should be reconfirmed at the time of purchase. In the interest of product improvement, specifications, weights and dimensions are subject to change without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

### General notes

1. Adiabatic cooler capacities are tested according to EN 1048 for dry coolers.
2. TrilliumSeries Coolers of models with D6xx coil configuration have inlet and outlet connections at opposite ends.
3. Adiabatic pre-cooling sections are shipped separately and need to be installed on site.

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

### DFCV-AD EC 9123



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



Model	Nr. of Fans	Weights (kg)			Dimensions (mm)			Air Flow (m³/s)		Tube Internal Volume (dm³)	Surface (m²)	Connections
		Oper. Weight (kg)	Ship. Weight(kg)	Heaviest Section (kg)	L	W	H	Δ	Y			
DFCV EC912 3-D61 3-E-AD	6	2410	1980	1980	3852	2820	2735	34.8	34.8	272.0	2230.0	2
DFCV EC912 3-D61 6-E-AD	6	2740	2150	2150	3852	2820	2735	36.0	36.0	432.0	2002.0	2
DFCV EC912 3-L61 3-E-AD	6	2410	1980	1980	3852	2820	2735	34.8	34.8	272.0	2230.0	2
DFCV EC912 3-L61 6-E-AD	6	2740	2150	2150	3852	2820	2735	36.0	36.0	432.0	2002.0	2
DFCV EC912 3-M61 3-E-AD	6	2410	1980	1980	3852	2820	2735	34.8	34.8	272.0	2230.0	2
DFCV EC912 3-M61 6-E-AD	6	2740	2150	2150	3852	2820	2735	36.0	36.0	432.0	2002.0	2
DFCV EC912 3-S61 3-E-AD	6	2410	1980	1980	3852	2820	2735	34.8	34.8	272.0	2230.0	2
DFCV EC912 3-S61 6-E-AD	6	2740	2150	2150	3852	2820	2735	36.0	36.0	432.0	2002.0	2

# DFCV-AD

## Dry and adiabatic cooling

### Engineering data

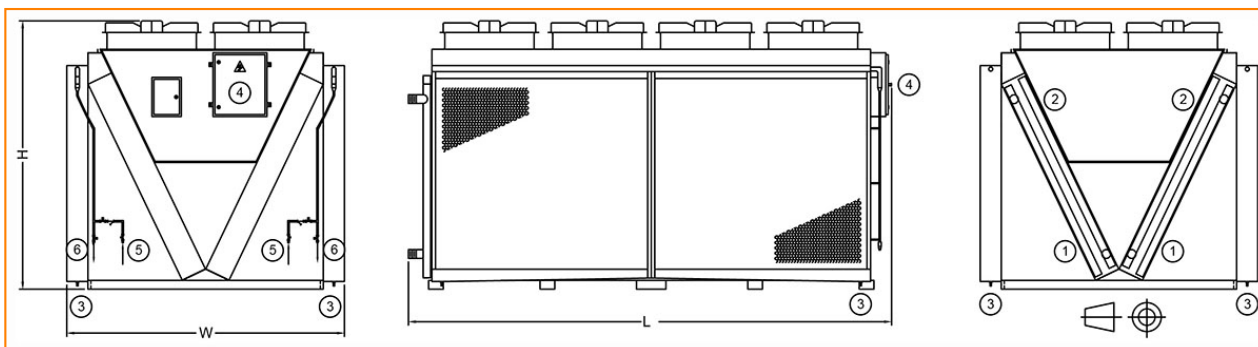
**REMARK:** Do not use for construction. Refer to factory certified dimensions & weights. This page includes data current at time of publication, which should be reconfirmed at the time of purchase. In the interest of product improvement, specifications, weights and dimensions are subject to change without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

### General notes

1. Adiabatic cooler capacities are tested according to EN 1048 for dry coolers.
2. TrilliumSeries Coolers of models with D6xx coil configuration have inlet and outlet connections at opposite ends.
3. Adiabatic pre-cooling sections are shipped separately and need to be installed on site.

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

### DFCV-AD EC 9124



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

Model	Nr. of Fans	Weights (kg)			Dimensions (mm)			Air Flow (m³/s)		Tube Internal Volume (dm³)	Surface (m²)	Connections
		Oper. Weight (kg)	Ship. Weight(kg)	Heaviest Section (kg)	L	W	H	Δ	Y			
DFCV EC912 4-D61 3-E- AD	8	3390	2830	2830	4952	2820	2735	46.4	46.4	364.0	2976.0	2
DFCV EC912 4-D61 6-E- AD	8	3840	3060	3060	4952	2820	2735	48.0	48.0	576.0	2668.0	2
DFCV EC912 4-L61 3-E- AD	8	3390	2830	2830	4952	2820	2735	46.4	46.4	364.0	2976.0	2
DFCV EC912 4-L61 6-E- AD	8	3840	3060	3060	4952	2820	2735	48.0	48.0	576.0	2668.0	2
DFCV EC912 4-M61 3-E- AD	8	3390	2830	2830	4952	2820	2735	46.4	46.4	364.0	2976.0	2
DFCV EC912 4-M61 6-E- AD	8	3840	3060	3060	4952	2820	2735	48.0	48.0	576.0	2668.0	2
DFCV EC912 4-S61 3-E- AD	8	3390	2830	2830	4952	2820	2735	46.4	46.4	364.0	2976.0	2
DFCV EC912 4-S61 6-E- AD	8	3840	3060	3060	4952	2820	2735	48.0	48.0	576.0	2668.0	2

# DFCV-AD

Dry and adiabatic cooling

## Engineering data

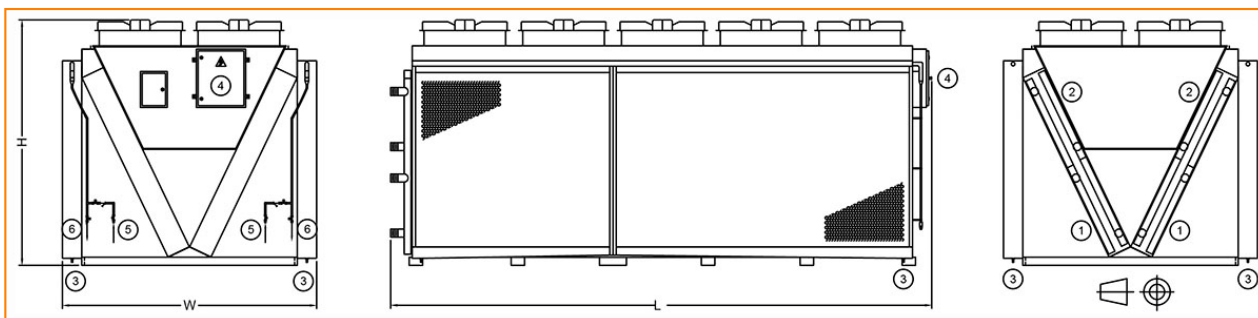
**REMARK:** Do not use for construction. Refer to factory certified dimensions & weights. This page includes data current at time of publication, which should be reconfirmed at the time of purchase. In the interest of product improvement, specifications, weights and dimensions are subject to change without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

### General notes

1. Adiabatic cooler capacities are tested according to EN 1048 for dry coolers.
2. TrilliumSeries Coolers of models with D6xx coil configuration have inlet and outlet connections at opposite ends.
3. Adiabatic pre-cooling sections are shipped separately and need to be installed on site.

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

### DFCV-AD EC 9125



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

Model	Nr. of Fans	Weights (kg)			Dimensions (mm)			Air Flow (m³/s)		Tube Internal Volume (dm³)	Surface (m²)	Connections
		Oper. Weight (kg)	Ship. Weight(kg)	Heaviest Section (kg)	L	W	H	Δ	Y			
DFCV EC912 5-D61 3-E-AD	10	4200	3470	3470	6052	2820	2735	58.0	58.0	456.0	3720.0	4
DFCV EC912 5-D61 6-E-AD	10	4750	3750	3750	6052	2820	2735	60.0	60.0	716.0	3336.0	4
DFCV EC912 5-M61 3-E-AD	10	4200	3470	3470	6052	2820	2735	58.0	58.0	456.0	3720.0	4
DFCV EC912 5-M61 6-E-AD	10	4750	3750	3750	6052	2820	2735	60.0	60.0	716.0	3336.0	4
DFCV EC912 5-S61 3-E-AD	10	4200	3470	3470	6052	2820	2735	58.0	58.0	456.0	3720.0	4
DFCV EC912 5-S61 6-E-AD	10	4750	3750	3750	6052	2820	2735	60.0	60.0	716.0	3336.0	4
DFCV EC912 5-T61 3-E-AD	10	4200	3470	3470	6052	2820	2735	58.0	58.0	456.0	3720.0	4

# DFCV-AD

Dry and adiabatic cooling

## Engineering data

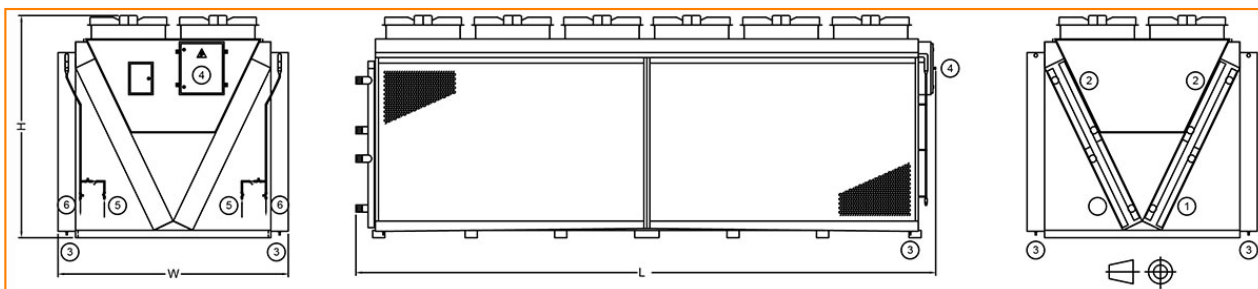
**REMARK:** Do not use for construction. Refer to factory certified dimensions & weights. This page includes data current at time of publication, which should be reconfirmed at the time of purchase. In the interest of product improvement, specifications, weights and dimensions are subject to change without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

### General notes

1. Adiabatic cooler capacities are tested according to EN 1048 for dry coolers.
2. TrilliumSeries Coolers of models with D6xx coil configuration have inlet and outlet connections at opposite ends.
3. Adiabatic pre-cooling sections are shipped separately and need to be installed on site.

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

### DFCV-AD EC 9126



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

Model	Nr. of Fans	Weights (kg)			Dimensions (mm)			Air Flow (m³/s)		Tube Internal Volume (dm³)	Surface (m²)	Connections
		Oper. Weight (kg)	Ship. Weight(kg)	Heaviest Section (kg)	L	W	H	Δ	Y			
DFCV EC912 6-D61 3-E- AD	12	4850	3985	3985	7152	2820	2735	69.6	69.6	548.0	5208.0	4
DFCV EC912 6-D61 6-E- AD	12	5520	4330	4330	7152	2820	2735	72.0	72.0	860.0	4672.0	4
DFCV EC912 6-M61 3-E- AD	12	4850	3985	3985	7152	2820	2735	69.6	69.6	548.0	5208.0	4
DFCV EC912 6-M61 6-E- AD	12	5520	4330	4330	7152	2820	2735	72.0	72.0	860.0	4672.0	4
DFCV EC912 6-S61 3-E- AD	12	4850	3985	3985	7152	2820	2735	69.6	69.6	548.0	5208.0	4
DFCV EC912 6-S61 6-E- AD	12	5520	4330	4330	7152	2820	2735	72.0	72.0	860.0	4672.0	4
DFCV EC912 6-T61 3-E- AD	12	4850	3985	3985	7152	2820	2735	69.6	69.6	548.0	5208.0	4

# DFCV-AD

Dry and adiabatic cooling

## Engineering data

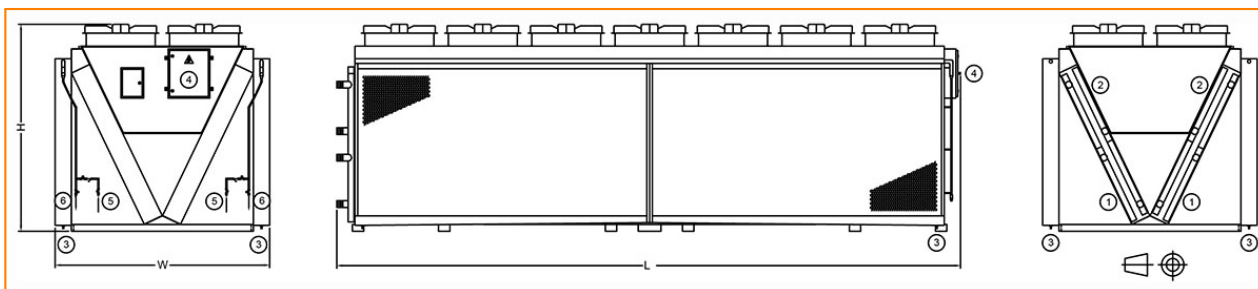
**REMARK:** Do not use for construction. Refer to factory certified dimensions & weights. This page includes data current at time of publication, which should be reconfirmed at the time of purchase. In the interest of product improvement, specifications, weights and dimensions are subject to change without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

### General notes

1. Adiabatic cooler capacities are tested according to EN 1048 for dry coolers.
2. TrilliumSeries Coolers of models with D6xx coil configuration have inlet and outlet connections at opposite ends.
3. Adiabatic pre-cooling sections are shipped separately and need to be installed on site.

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

### DFCV-AD EC 9127



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



Model	Nr. of Fans	Weights (kg)			Dimensions (mm)			Air Flow (m³/s)		Tube Internal Volume (dm³)	Surface (m²)	Connections
		Oper. Weight (kg)	Ship. Weight(kg)	Heaviest Section (kg)	L	W	H	Δ	Y			
DFCV EC912 7-D61 3-E-AD	14	5500	4500	4500	8252	2820	2735	81.2	81.2	640.0	5208.0	4
DFCV EC912 7-D61 6-E-AD	14	6270	4900	4900	8252	2820	2735	84.0	84.0	1012.0	4672.0	4
DFCV EC912 7-M61 3-E-AD	14	5500	4500	4500	8252	2820	2735	81.2	81.2	640.0	5208.0	4
DFCV EC912 7-M61 6-E-AD	14	6270	4900	4900	8252	2820	2735	84.0	84.0	1012.0	4672.0	4
DFCV EC912 7-S61 3-E-AD	14	5500	4500	4500	8252	2820	2735	81.2	81.2	640.0	5208.0	4
DFCV EC912 7-S61 6-E-AD	14	6270	4900	4900	8252	2820	2735	84.0	84.0	1012.0	4672.0	4
DFCV EC912 7-T61 3-E-AD	14	5500	4500	4500	8252	2820	2735	81.2	81.2	640.0	5208.0	4