

# CXV-D

## Refrigerant condensers



### Key benefits

- Star in energy efficiency
- Low maintenance and easy inspection
- Optimal performance guaranteed

#### CXV-D characteristics

- Combined flow, axial fan, induced draft
- PED 2014/68/EU coil design

#### Capacity range

2760 - 4035 kW  
(for single cell models, nominal R717 kW's)

#### Typical applications

- Very large industrial refrigeration and process projects
- Low energy requirements
- Low sound requirements



## Star in energy efficiency

- [Evaporative cooling](#) PLUS unique [combined heat transfer system](#) for minimized system-wide energy consumption.
- **Axial fan** – half the consumption of rivals and huge single cell capacity: saving you more!
- [BACross II fill](#) factory-configured for unrivalled water/air contact and minimal air pressure drop. Guarantees **optimal condenser efficiency** with cooling system energy well under control.
- **High efficiency fan motors.**

## Low maintenance and easy inspection

- Inspect and maintain towers with **unrivalled comfort and safely: while standing** inside.
- The CXV-D has a **spacious plenum** (internal area) and **easy inspection/maintenance access**.
- Inspect internal fill and coil easily via removable drift eliminator modules.
- The [BACross II fill](#) is telescopically-supported for easy sheet by sheet inspection/cleaning and **no dismantling**.
- **Fans** are easily accessible from the in- and outside
- Self-cleaning cold water basin and fill above **sloped basin** to flush out dirt and debris.

## Optimal performance guaranteed

- Unique and patented heat transfer system: **featuring [combined flow](#)** via heat exchange coil and fill pack, for fine temperature applications and thermal challenges.
- **Huge industry-best single cell capacity!**
- [BACross II fill](#) - patented sheet and **maximum air/water contact** for optimal heat transfer performance.
- Encased in **corrosion-resistant fibreglass** polyester for long service life.

## Reduced refrigerant charge

- **Less coil surface** (because of the patented combined heat transfer system) means less refrigerant charge and reduced overall system costs.

## Ultra silent design

- CXV-D units include **low noise axial fans** for minimal surrounding noise. To reduce noise even further, choose for [Whisper Quiet fans](#).
- Factory designed, tested and rated [sound attenuation](#) is available on air inlet to cut operation noise even further.
- [BACross II fill](#) guides smoothly the water all the way into the basin **without water splash noise**.

## Unmatched hygiene control



- Easy-clean and easy-inspect CXV-D condensers **reduce hygiene risks** from bacteria or biofilm inside.
- **Combined inlet shields** block sunlight to prevent biological growth in the tower, filter the air and stop water splashing outside.
- The **drift eliminators** to prevent droplets escaping into the air, are tested and certified by Eurovent .

## Cheap to install

- CXV-D condensers are factory-built and shipped in sections for larger models to reduce the overall size and weight, allowing **easy on-site section assembly** with smaller crane.
- **Fewer coil connections**, reduce costs of pipe, valves, purges and labour.

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

## Downloads

- [CXV-D refrigerant condenser](#)
- [BAC condenser overview](#)
- [Operating and Maintenance CXV-D](#)
- [Rigging and Installation CXV-D](#)
- [Aviko - The Netherlands - CXVE](#)
- [Spare Parts for CXV-D](#)
- [Retrofit Opportunities for CXV-D](#)
- [Combined Flow Technology](#)

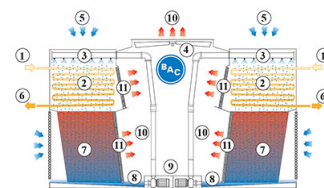
# Principle of operation

## Refrigerant condensers

### Principle of operation

The CXV-D combines the use of evaporative condensing coil with integrated fill packs for cooling down the recirculating spray water.

The **vapour (1)** circulates on both sides of the unit through a **condensing coil (2)**, which is wetted by a **spray system (3)**. In parallel with the water spray flow, **axial fans (4)** draw **air (5)** over the coils. The evaporation process condenses the vapour into **liquid (6)**. The spray water falls onto **fill packs (7)** where it is cooled before falling into the sloping **water basins (8)** or sumps. The **spray pumps (9)** recirculate the cooled water to the top of the unit. The **warm saturated air (10)** leaves the tower through the **drift eliminators (11)**.



**Interested in the CXV-D condenser?** Contact your local [BAC representative](#) for more information.

## Downloads

- [Combined Flow Technology](#)

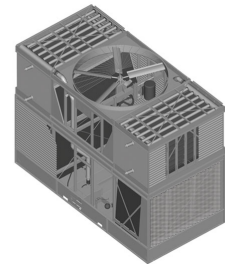
# Construction details

## Refrigerant condensers

### Construction details

#### 1. Material options

- Heavy-gauge hot-dip galvanized steel is used for external unit steel panels and structural elements featuring [Baltiplus Corrosion Protection](#). For casing panels we use UV resistant **fiberglass** reinforced polyester.
- The unique [Baltibond hybrid coating](#) is an optional extra. A hybrid polymer coating for longer service life, applied pre-assembly to all hot-dip galvanized steel components of the unit.
- [Optional stainless steel](#) panels and structural elements of type 304L or 316L for extreme applications.
- Or the economical alternative: a **water-contact stainless steel cold water basin**. Its key components and the basin itself are stainless steel. The rest is protected with the Baltibond hybrid coating.



## 2. Heat transfer media

Unique and patented heat transfer system: featuring [combined flow](#) via heat exchange coil and fill pack.

### Coil

- The coil is constructed of continuous length of prime surface steel, hot-dip galvanized after fabrication.
- Designed for maximum 23 bar operating pressure according to PED. Pneumatically tested at 34 bar.
- All hot dip galvanized and stainless steel coils are delivered with BAC's **Internal Coil Corrosion Protection**, to ensure an optimal internal corrosion protection and guaranteed quality.

Try our CXV-D coil options:

- **Multiple circuit coils (split coils)** for your halo carbon refrigerants, maintaining individual compressor systems. Or use it for compressor jacket water or glycol cooling.
- **Stainless steel coils** are in type 304L or 316L.
- **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.

### Fill

- Patented [BACross II fill](#) with integrated **drift eliminators**. Its thermal performance is proven during comprehensive [lab thermal performance tests](#), and it offers you unrivalled system efficiency. The fill pack includes individual **sheets and a telescopic fill support**. Sheets are easy to inspect and clean inside the unit without dismantling, eliminating the need for frequent fill replacement.
- In self-extinguishing **plastic**, which will not rot, decay or decompose.
- For operation above 50°C, try our **optional high temperature fill**, usable with spray water up to 55°C.



### 3. Air movement system

- **CXV-D fan system** features two corrosion resistant sheaves, belt and motor. Together with the heavy duty fan shaft bearings and the BAC **Impervix** motor, this guarantees optimal and year-round operational efficiency.
- **Low kW and noise axial fan(s)** in corrosion resistant aluminum, encased in fan cylinder with removable fan guard. To reduce noise even further, choose for a [Whisper Quiet fan](#) with minimal impact on thermal performance.
- Our **drift eliminators** in the coil section come in UV-resistant plastic, which will not rot, decay or decompose and their performance is tested and **certified by Eurovent**. They are assembled in **easily handled and removable sections**, for optimal coil access.
- Easy removable UV-resistant plastic **combined inlet shields** at air inlet. Sunlight block to prevent biological growth in tower, air filter and water splash-out stop.



### 4. Water distribution system

These consist of:

- **Spray branches** with wide non-clog, plastic, 360° distribution nozzles secured in grommets. Overlapping spray pattern for complete coil wetting. A **sloped cold water basin** with:
  - large hinged and inward swinging **access door**
  - anti-vortexing **strainers** and **make up** both easily accessible from inside the unit.
- Close coupled, bronze fitted centrifugal **spray pump** with totally enclosed fan cooled (TEFC) motor. Bleed line with metering valve installed from pump discharge to overflow.



**Need more information?** Contact your local [BAC representative](#).

# Options and accessories

## Refrigerant condensers

### Options and accessories

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



#### Sound attenuation

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



#### Whisper Quiet fan

Reduce fan noise even more with **very low sound factory-tested fans**.





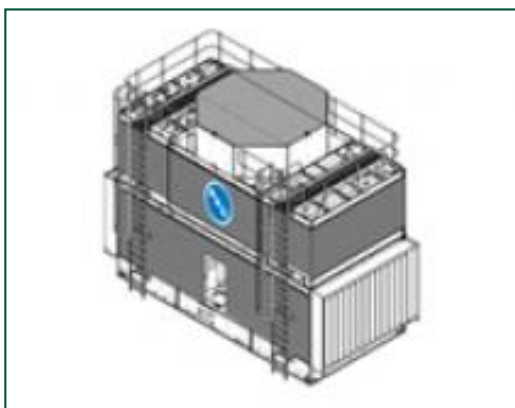
## Remote sump connection

The best way to **prevent a sump freezing** is to use the auxiliary remote variety within a heated area. Shutting off the circulating pump allows all the water in the water distribution, as well as that in suspension and the sump to drain freely to the auxiliary sump.



## Extended lubrication lines

Extended lubrication lines with easily accessible grease fittings can be used **to lubricate** fan shaft bearings.



## Platforms

To inspect and maintain from the top of the unit more **easily** and **safely**, platforms can be installed.



## Internal service platform

An internal platform helping you **access the unit top inside** and safely inspect your condenser.



### Internal walkway

An internal walkway for **easy access to the unit water basin**.



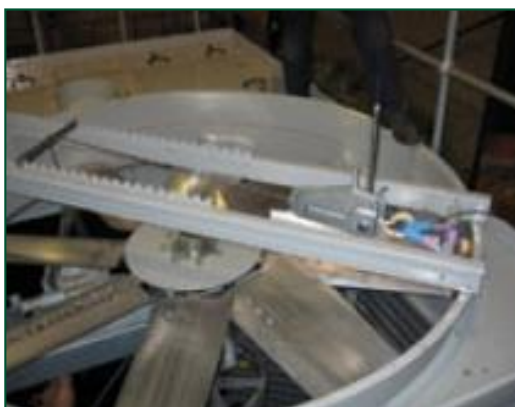
### Gear drive system with close coupled motor

A close-coupled gear box for **more efficiency** and **less maintenance**.



### Gear drive system with externally mounted motor

A gear box with an external motor outside the air stream helps **improve efficiency** and **ease of maintenance**.



## Mechanical equipment removal system

This **helps** you **remove or install** fan motors or gearboxes.



## Vibration cut out switch

When excessive vibration occurs, this switch shuts down the fan, ensuring your cooling equipment **operates safely**.



## Electric water level control package

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



## Water treatment equipment

Devices to control water treatment are needed to ensure proper **condenser 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.



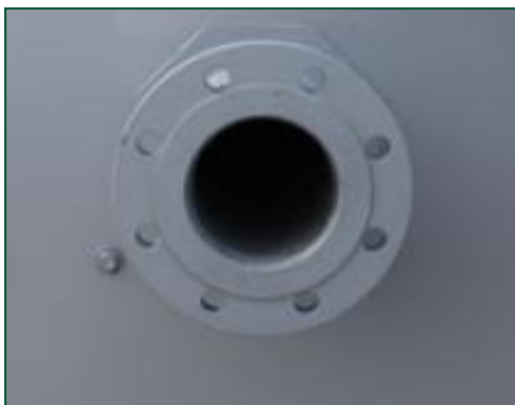
## Filter

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.



## 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.



## Flanges

Flanges facilitate **piping connections** on-site.



# Special needs?

## Refrigerant condensers

### Special needs?

Our ongoing [R&D](#) investment helps BAC offer you a complete set of solutions **for CXV-D evaporative condensers that meet your needs**. Plus, we also cater for extra requirements such as:

#### Sound control

CXV-D uses a low noise axial fan.

Helping keep it near noiseless:

- [Sound attenuators](#)
- [Whisper Quiet fan](#)

#### Water savings

You need water for evaporative cooling. At BAC, however, we offer acclaimed and advanced water saving technologies. Helping in this aim are:

- [Electric water level control package](#)
- [Water treatment equipment](#)
- [Sump sweeper piping](#)
- [Filters](#)

#### Energy saving

CXV-D uses evaporative cooling technology for lower operating temperatures than other cooling methods. With the following options, reduce energy costs still further:

- Thermostat



## Enhanced hygiene and water care

Water circulates in evaporative condensers and it is important to avoid excessive accumulation of dissolved solids. The following options help keep your condenser clean:

- [Remote sump connection](#)
- [Water treatment equipment](#)
- [Sump sweeper piping](#)
- [Filters](#)

To control biological growth and scale formation, the water quality of the circulated water should be checked regularly. [Water quality guidelines](#) can be found in the [Knowledge center](#) of the website.

## Year-round reliable operation

Inspect and maintain your condenser and protect it against extreme weather for year-round reliability. The options below help keep your condenser running smoothly and reliably and facilitate maintenance.

- [Remote sump connection](#)
- [Water treatment equipment](#)
- [Sump sweeper piping](#)
- [Filters](#)
- [Internal service platform](#)
- [External service platform](#)
- [Vibration cut out switch](#)
- [Electric water level control package](#)
- [Extended lubrication lines](#)
- [Baltibond hybrid coating](#)

**Do you too want to benefit from the above solutions?** Contact your [local BAC representative](#) for more information.





# CXV-D 645L-792L

## Refrigerant condensers

### Engineering data

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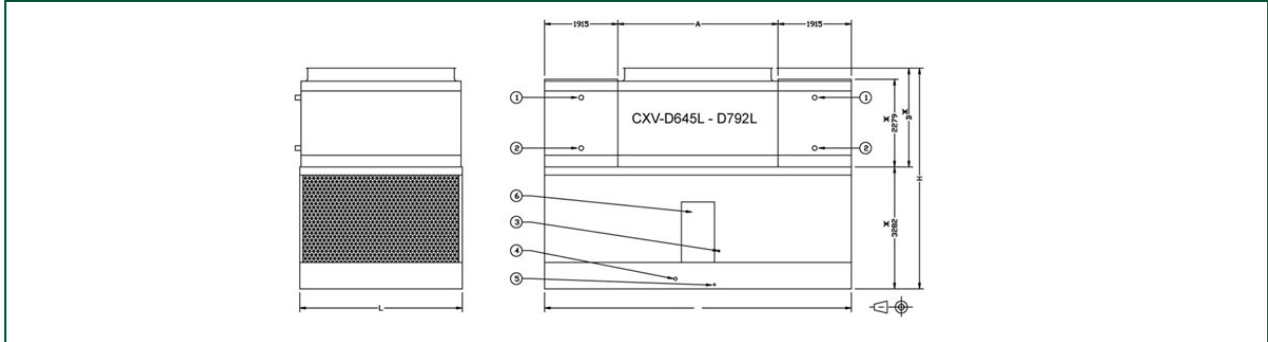
### General notes

1. Standard refrigerant in- and outlet connection sizes are ND100. Consult your local BAC Balticare representative for size and location. Other connection sizes are available on special order. Refrigerant connections are standard bevelled for welding.
2. Unit height is indicative, for precise value refer to certified print.
3. Shippings/operating weights indicated are for units without accessories such as sound attenuators, discharge hoods, etc. Consult factory certified prints to obtain weight additions and the heaviest section to be lifted. Operating weights shown in the tables is based on total unit weight, weight of refrigerant operating charge and basin filled to overflow level.
4. Refrigerant charge listed is R 717 operating charge. To determine operating charge of R22 refrigerants, multiply by: 1,93. For R134A, multiply by: 1,98.
5. Models with fan motor up to 22 kW have belt drive only; models between 22 kW and 45 kW have standard belt drive but gear drive as an option; models with 55 kW have gear drive only. Motorsize for a specific model is indicated by a letter (x) at the end of the model name. Fan type is indicated by a letter (y) at the end of the model name.
6. Models supplied with an optional gear drive may have heights up to 130 mm greater than shown.
7. All CVX-D models will be shipped in three sections.
8. The letter "L" at the end of the model number refers to the standard Low Noise fan. "W" refers to the Whisper Quiet fan.

**Last update:** 01/06/2023

### CXV-D 645L-792L





1. Refrigerant in ND100; 2. Refrigerant out ND100; 3. Make up ND40; 4. Overflow ND80; 5. Drain ND50; 6. Access at both ends.



Model	Weights (kg)			Dimensions (mm)			Air Flow (m <sup>3</sup> /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					
CXV-D 645 L	18555	12710	3650	3632	7328	5665	79.4	(1x) 22.0	100.0	(2x) 5.5	298.0
CXV-D 686 L	18625	12785	3650	3632	7328	5665	87.6	(1x) 30.0	100.0	(2x) 5.5	298.0
CXV-D 717 L	18630	12790	3650	3632	7328	5665	94.6	(1x) 37.0	100.0	(2x) 5.5	298.0
CXV-D 729 L	19990	14045	4280	3632	7328	5665	86.6	(1x) 30.0	100.0	(2x) 5.5	354.0
CXV-D 763 L	19990	14050	4280	3632	7328	5665	93.5	(1x) 37.0	100.0	(2x) 5.5	354.0
CXV-D 792 L	20090	14150	4280	3632	7328	5665	99.5	(1x) 45.0	100.0	(2x) 5.5	354.0



# CXV-D 791L-944L

## Refrigerant condensers

### Engineering data

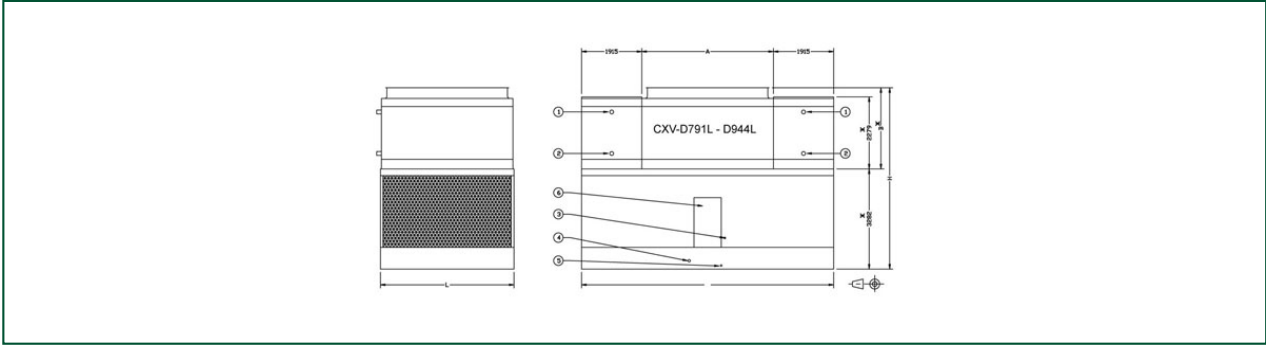
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### General notes

1. Standard refrigerant in- and outlet connection sizes are ND100. Consult your local BAC Balticare representative for size and location. Other connection sizes are available on special order. Refrigerant connections are standard bevelled for welding.
2. Unit height is indicative, for precise value refer to certified print.
3. Shippings/operating weights indicated are for units without accessories such as sound attenuators, discharge hoods, etc. Consult factory certified prints to obtain weight additions and the heaviest section to be lifted. Operating weights shown in the tables is based on total unit weight, weight of refrigerant operating charge and basin filled to overflow level.
4. Refrigerant charge listed is R 717 operating charge. To determine operating charge of R22 refrigerants, multiply by: 1,93. For R134A, multiply by: 1,98.
5. Models with fan motor up to 22 kW have belt drive only; models between 22 kW and 45 kW have standard belt drive but gear drive as an option; models with 55 kW have gear drive only. Motorsize for a specific model is indicated by a letter (x) at the end of the model name. Fan type is indicated by a letter (y) at the end of the model name.
6. Models supplied with an optional gear drive may have heights up to 130 mm greater than shown.
7. All CVX-D models will be shipped in three sections.
8. The letter "L" at the end of the model number refers to the standard Low Noise fan. "W" refers to the Whisper Quiet fan.

**Last update:** 01/06/2023

### CXV-D 791L-944L



1. Refrigerant in ND100; 2. Refrigerant out ND100; 3. Make up ND40; 4. Overflow ND80; 5. Drain ND50; 6. Access at both ends.



Model	Weights (kg)			Dimensions (mm)			Air Flow (m <sup>3</sup> /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					
CXV-D 791 L	21780	14560	4259	4245	8014	5685	101.1	(1x) 30.0	100.0	(2x) 5.5	342.0
CXV-D 827 L	21785	14570	4259	4245	8014	5685	109.9	(1x) 37.0	100.0	(2x) 5.5	342.0
CXV-D 857 L	21885	14670	4259	4245	8014	5685	117.0	(1x) 45.0	100.0	(2x) 5.5	342.0
CXV-D 876 L	23395	16055	5003	4245	8014	5685	107.6	(1x) 37.0	100.0	(2x) 5.5	410.0
CXV-D 906 L	23495	16155	5003	4245	8014	5685	114.6	(1x) 45.0	100.0	(2x) 5.5	410.0
CXV-D 944 L	23540	16200	5003	4245	8014	5685	124.7	(1x) 55.0	100.0	(2x) 5.5	410.0



# Sound attenuation

## Refrigerant condensers

### Engineering data

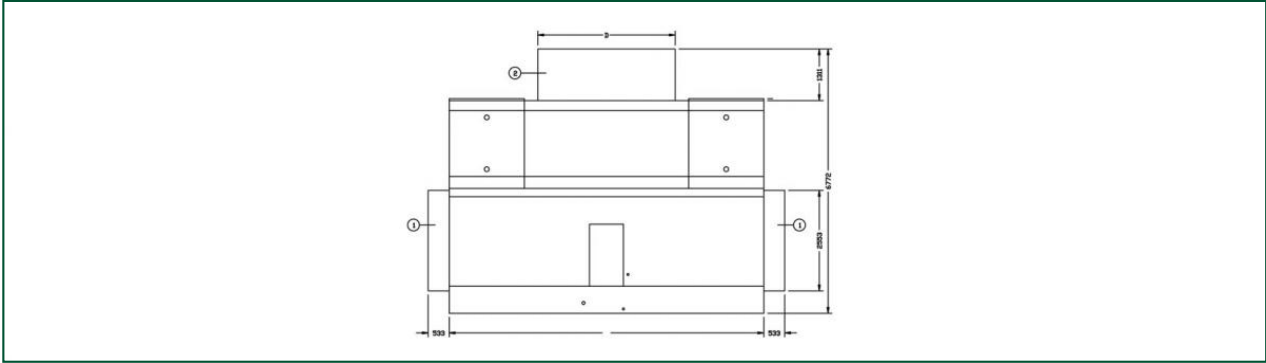
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2. Unit height is indicative, for precise value refer to certified print.
3. Shippings/operating weights indicated are for units without accessories such as sound attenuators, discharge hoods, etc. Consult factory certified prints to obtain weight additions and the heaviest section to be lifted. Operating weights shown in the tables is based on total unit weight, weight of refrigerant operating charge and basin filled to overflow level.
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5. Models with fan motor up to 22 kW have belt drive only; models between 22 kW and 45 kW have standard belt drive but gear drive as an option; models with 55 kW have gear drive only. Motorsize for a specific model is indicated by a letter (x) at the end of the model name. Fan type is indicated by a letter (y) at the end of the model name.
6. Models supplied with an optional gear drive may have heights up to 130 mm greater than shown.
7. All CVX-D models will be shipped in three sections.
8. The letter "L" at the end of the model number refers to the standard Low Noise fan. "W" refers to the Whisper Quiet fan.

**Last update:** 01/06/2023

### Sound attenuation



1. Intake attenuator; 2. Discharge attenuator; W = Unit width (see Engineering Data).



Model	Dimensions (mm)		Weights (kg)	
	D	Ht	Intake	Discharge
CXV-D 645 L	3500	5665	685	477
CXV-D 686 L	3500	5665	685	477
CXV-D 717 L	3500	5665	685	477
CXV-D 729 L	3500	5665	685	477
CXV-D 763 L	3500	5665	685	477
CXV-D 792 L	3500	5665	685	477
CXV-D 791 L	4185	5685	808	563
CXV-D 827 L	4185	5685	808	563
CXV-D 857 L	4185	5685	808	563
CXV-D 876 L	4185	5685	808	563
CXV-D 906 L	4185	5685	808	563
CXV-D 944 L	4185	5685	808	563