VCL

Refrigerant condensers






Key benefits

- Low height
- Easy installation
- Quiet

VCL characteristics

- Counter flow, centrifugal fan, forced draft
- PED 97/23/EC coil design

Capacity range

180 - 1380 kW
(for single cell models, nominal R22 kW's)

Typical applications

- Low height requirements
- Tight enclosures and installations requiring a single air inlet
- Indoor installations
- Sound critical installations
- Dry operation in winter time

Low height

- **Very low height**: fits perfectly on **roof tops** or tight enclosures.

Easy installation

- VCL condensers are factory-assembled. We ship in **one piece** for **easy on-site lifting and installation**.
- VCL offers high capacity and minimum operating weight. **Save on steel supports**, both underneath the equipment and in the building itself for rooftop installations.
- Single-side air inlet lets you install **next to solid walls**.
- Units housable **indoors** thanks to centrifugal fans allowing intake or discharge ductwork.

Ideal for a quiet operation

- VCL units include **quiet internal centrifugal fans** for minimal surrounding noise.
- Single-side air inlet, and a **quieter condenser rear** for more noise-sensitive areas.
- Cut operation noise still further with factory-designed and tested **sound attenuators** or silencers.

Year-round reliable operation

- Various corrosion-resistant materials, including the unique **Baltibond hybrid coating** for guaranteed long service life.
- **Optional Baltiguard Drive System** for energy savings and less noise during low load (night). A perfect stand-by system in case of motor failure
- **Optional extended surface coil** with steel fins for **dry operation.**

Interested in the VCL evaporative condenser for your industrial refrigeration application? Contact your local BAC representative for more information.

Downloads

- VCL compilation pdf (EN)
- S - CON (EN)
- M - VCL (EN)
- R - VCL (EN)

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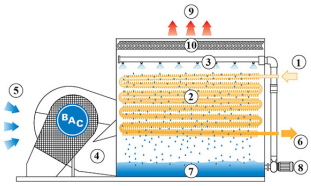
Principle of operation



Vapor (1) enters through a **evaporative condensing coil (2)** and gets water sprayed on by the **spray system (3)** at the top of the condenser. At the same time the **centrifugal fan (4)** blows ambient **air** upwards **(5)** through the condenser. During operation, heat is transferred from the internal circuit coil to the water, and then to the atmosphere as a portion of the water that evaporates. The **condensed vapor (6)** then exits the unit. The tower **sump (7)** or basin collects the water. The spray water **pump (8)** recirculates the water up to the water spray system. The warm saturated **air (9)** leaves the tower through the **drift eliminators (10)**, which remove water droplets from the air.

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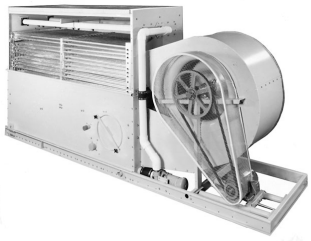
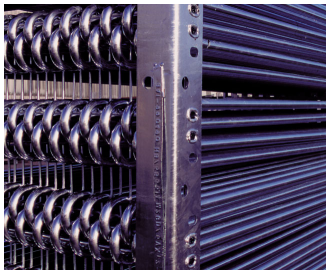
Construction details

1. Material options



- Heavy-gauge hot-dip galvanized steel is used for external unit steel panels and structural elements featuring Baltiplus Corrosion Protection.
- 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 304 or 316 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



- Our heat transfer media is a **condensing 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 23 bar operating pressure according to PED. Pneumatically tested at 34 bar.

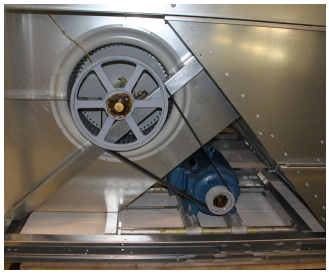
- All hot dip galvanized and stainless steel coils are delivered with BAC's **Internal Coil Corrosion Protection**, to ensure an optimal internal corrosion protection and guaranteed quality.

Try our VCL coil options:

- **Extended surface coils** with selected rows, finned at 3 to 5 fins per inch and hot-dip galvanized after fabrication, for dry operation during winter time.
- **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.

3. Air movement system



- With motor-driven centrifugal fan and a **V-belt drive**. You can easily remove the entire motor base for proper belt tensioning to ensure constantly correct belt alignment. Together with the **heavy duty fan shaft bearings** this guarantees optimal operational efficiency. Single- and multispeed **motors** available.

- **Centrifugal fan(s)** are forward-curved and nearly noiseless. Overcome external static pressure! Use sound attenuators and ductwork etc. for air intake/discharge with no loss of thermal performance!
- **Our drift eliminators** 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 internal access.
- Steel eliminators, protected with the unique **Baltibond hybrid coating** for optimal corrosion protection, are also available for specific applications.

4. Water distribution system

These consist of:

- A **header** and **spray branches** with wide non-clog plastic **nozzles,** secured by rubber **grommets**. You can easily remove, clean and flush both nozzles and spray branches.
- A cold water basin with:
  - strainers which are easy to lift out and the anti-vortexing device also helps stop trapped air
  - mechanical **make up**
  - circular **access door**
- 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.

Like to know more about the VCL construction details? Contact your local BAC representative.

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Refrigerant condensers

Options and accessories

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

Sound attenuation

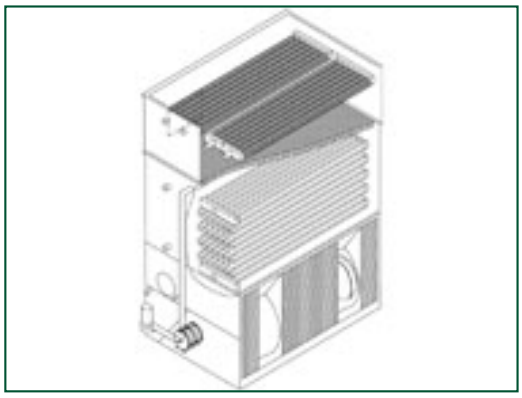
Reducing noise at air intake and discharge points brings us closer to silent cooling equipment.

- The sound reductions obtained by HS sound attenuation are perfect for **residential** sound requirements.
- Heavy noise reductions can be achieved with HD sound attenuation, making it ideal for **rural** requirements.

Read more

Pump relocation

Move the pump to the connection side and make it **more accessible** when using sound attenuation at the fan side. Read more

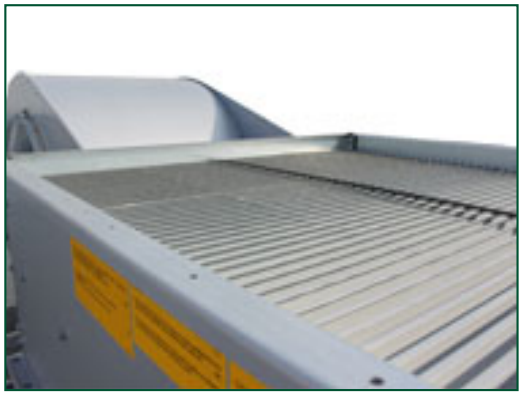


Desuperheater

Boost capacity and reduce plume of ammonia reciprocating compressor systems with a desuperheater. Read more

Baltiguard drive system

With this, operate your system like a dual-speed motor, but with standby reserve capacity **to cope with any failure**. Read more



Steel drift eliminators

Steel drift eliminators are more **robust** than plastic alternatives. Read more

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. Read more

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. Read more

Electric water level control package

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

Discharge hood

Discharge hoods **reduce the risk of re-circulation** in tight enclosures by increasing discharge air velocity, and can be used to elevate the unit discharge above adjacent walls to comply with layout guidelines. Read more

Safety switch

Cuts power to motors **with safety in mind** during inspection or maintenance. Read more

Standby pump

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

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. Read more

Filter

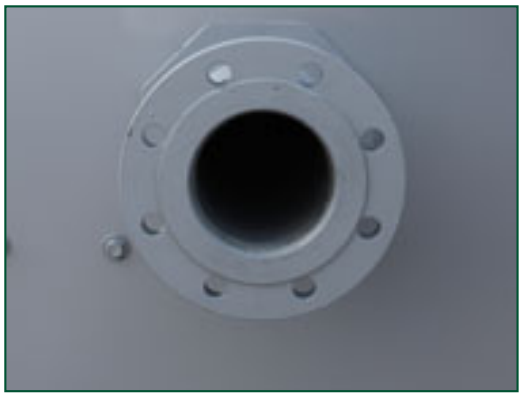
Separators and media filters efficiently **remove suspended solids** in the recirculating water, reducing system cleaning costs and optimizing water treatment results. Filtration helps you keep the recirculating water clean. Read more

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. Read more

Clean out port

Clean out port **makes it easy to eliminate silt and sludge** from the condenser basin when cleaning and flushing the sump. Read more



Flanges

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

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Engineering data

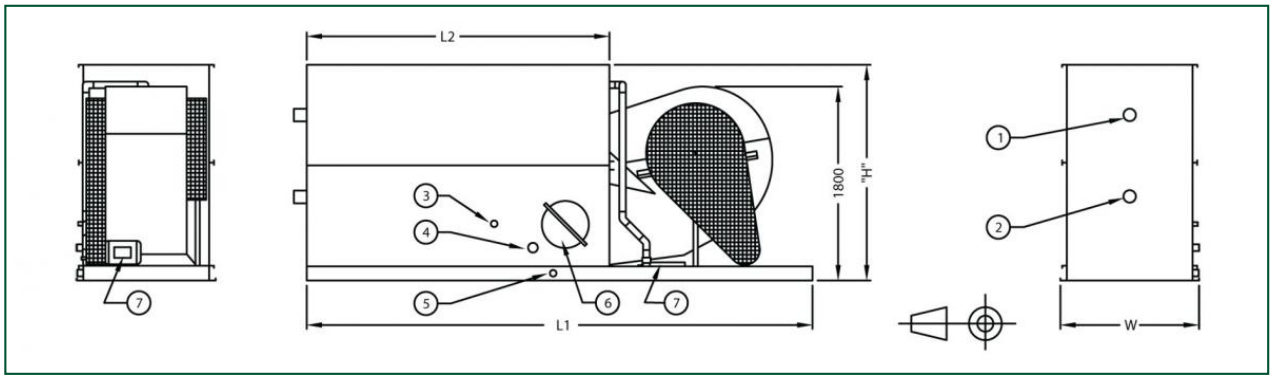
REMARK: Do not use for construction. Refer to factory certified dimensions & weights. This page includes data current at time of publication, which should be reconfirmed at the time of purchase. In the interest of product improvement, specifications, weights and dimensions are subject to change without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

General notes

1. All models are single coil section units. Fan cycling results only in on-off operation. For additional steps of control, the Baltiguard® Drive System and two-speed fan motors are available. More precise capacity control can be obtained with modulating fan discharge dampers.
2. Make up, overflow, suction, drain connections and access door can be provided on side opposite of that shown; consult your BAC representative.
3. Unit height is indicative, for precise value refer to certified print.
4. Shipping/operating weights indicated are for units without accessories such as sound attenuators, discharge hoods, etc. Consult factory certified prints to obtain weight additons and the heaviest section to be lifted.
5. For indoor applications of evaporative condensers, the room may be used a a plenum with ductwork attached to the discharge only. If inlet ductwork is required, an enclosed fan section must be specified; consult your BAC representative for details.
6. Fan kW is at 0 Pa ESP. To operate against external static pressure up to 125 Pa, increase each fan motor one size.
7. 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.
8. Refrigerant connections are standard bevelled for welding.

Last update: 31 August 2017

VCL 042H-159M



1. Refrigerant in ND100; 2. Refrigerant out ND100; 3. Make up ND25; 4. Overflow ND50 on VCL 042-119 & 133 - ND80 on VCL 131 & 140-159; 5. Drain ND50; 6. Access; 7. Spray pump; 8. Fan motor.

Model	Weights (kg)			Dimensions (mm)				Air Flow (m^3/s)	Fan Motor (kW)	Water Flow (l/s)	Fluid Outlet ND (mm)	R717 charge (kg)
	Oper. Weight (kg)	Ship. Weight(kg)	Heaviest Section (kg)	L1	L2	W	H					
VCL 042-H	1610	1100	1100	3350	1820	1250	1585	7.9	(1x) 4.0	5.9	(1x) 0.55	20.0
VCL 048-G	1800	1270	1270	3350	1820	1250	1855	6.7	(1x) 2.2	5.9	(1x) 0.55	28.0
VCL 054-H	1810	1280	1280	3350	1820	1250	1855	7.6	(1x) 4.0	5.9	(1x) 0.55	28.0
VCL 058-G	1990	1440	1440	3350	1820	1250	2015	6.4	(1x) 2.2	5.9	(1x) 0.55	38.0
VCL 065-H	2005	1460	1460	3350	1820	1250	2015	7.4	(1x) 4.0	5.9	(1x) 0.55	38.0
VCL 071-J	2025	1490	1490	3350	1820	1250	2015	8.1	(1x) 5.5	5.9	(1x) 0.55	38.0
VCL 073-H	2190	1640	1640	3350	1820	1250	2230	7.2	(1x) 4.0	5.9	(1x) 0.55	46.0
VCL 079-J	2220	1670	1670	3350	1820	1250	2230	7.9	(1x) 5.5	5.9	(1x) 0.55	46.0
VCL 084-K	2530	1750	1750	4560	2730	1250	1855	11.4	(1x) 7.5	9.0	(1x) 0.75	42.0
VCL 096-J	2810	2010	2010	4560	2730	1250	2090	10.2	(1x) 5.5	9.0	(1x) 0.75	55.0
VCL 102-K	2820	2020	2020	4560	2730	1250	2090	11.2	(1x) 7.5	9.0	(1x) 0.75	55.0
VCL 111-L	2840	2080	2080	4560	2730	1250	2090	12.3	(1x) 11.0	9.0	(1x) 0.75	55.0
VCL 119-M	2845	2090	2090	4560	2730	1250	2090	12.4	(1x) 15.0	9.0	(1x) 0.75	55.0
VCL 115-K	3090	2280	2280	4560	2730	1250	2350	10.8	(1x) 7.5	9.0	(1x) 0.75	72.0
VCL 133-M	3120	2350	2350	4560	2730	1250	2350	13.0	(1x) 15.0	9.0	(1x) 0.75	72.0
VCL 131-L	3560	2490	2490	5480	3650	1250	2090	13.6	(1x) 11.0	12.1	(1x) 1.1	74.0
VCL 140-M	3570	2500	2500	5480	3650	1250	2090	14.8	(1x) 15.0	12.1	(1x) 1.1	74.0
VCL 148-L	3930	2830	2830	5480	3650	1250	2350	13.4	(1x) 11.0	12.1	(1x) 1.1	92.0
VCL 159-M	3940	2840	2840	5480	3650	1250	2350	14.6	(1x) 15.0	12.1	(1x) 1.1	92.0