



## Vertiv™ Liebert® OFC

Air-Cooled from  
300-1800 kW

Water-Cooled from  
450-2400 kW

Oil-Free Centrifugal Chiller



## Efficient and Effective Thermal Management for All Data Center Configurations

**The Vertiv™ Liebert® OFC is a range of chillers based on the oil-free magnetic levitation compressor technology, specifically designed for the data center application.**

Available in air-cooled, water-cooled, or air-cooled freecooling versions, these chillers are suitable for all data center configurations and the different climate conditions around the world.

They are designed for cutting energy consumption and increasing overall energy efficiency across the thermal management system.

In fact, the Liebert OFC uses the most efficient compressor technology available in the market today, minimizing partial power usage effectiveness (pPUE) values and allowing a reduction

in annual energy usage from 20-50 percent when compared to traditional screw or scroll compressor technology.

The oil-free compressors of the Liebert OFC chillers are also more compact and lightweight than those used with traditional technology.

Reducing carbon dioxide as a result of lower electricity consumption and using a refrigerant with a low global warming potential (GWP) makes the Liebert OFC an environmentally friendly solution that supports sustainability.

The Liebert OFC is also an easy choice for all top-tier data centers as any of the chiller versions can be adapted to the needs of your specific configuration and application.

## Value of Liebert OFC Chillers

### Features

- Oil-free, variable-speed centrifugal compressor with magnetic levitation technology
- Low GWP refrigerant (HFO R1234ze)
- Direct drive, electronically commutated (EC) fans
- Micro-channel condenser
- Freecooling finned coils integrated into condenser module
- Flooded or dry evaporator
- Variable water flow operation
- Fast Restart function
- Low in-rush current per compressor
- Configurable electrical panel

### How You Benefit

- Minimized energy consumption
- Maximized efficiency
- Reduced energy costs
- Sustainable solution for the environment
- Minimized friction and sound emission for ultra-quiet operation
- Minimized maintenance
- Quickened restart after a power outage and reduced costs related to buffer tank sizing
- Improved reliability
- Reduced electrical infrastructure and installation cost savings

## Chiller Versions

### Air-Cooled:

- From 300-1800 kW
- From 1-4 compressors
- From 6-24 fans

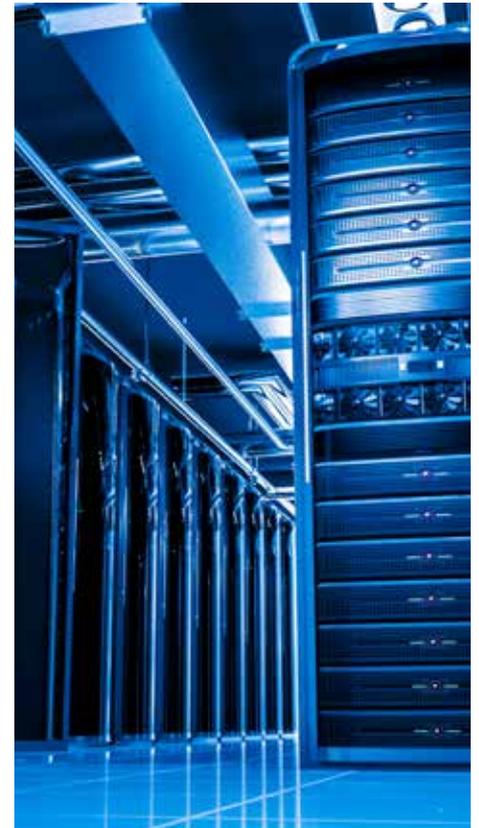
### Air-Cooled Freecooling:

- From 300-1400 kW
- From 1-3 compressors
- From 6-22 fans

### Water-Cooled:

- From 450-2400 kW
- From 1-5 compressors

All versions are available with the new hydrofluoroolefin (HFO) refrigerant R1234ze, an eco-friendly alternative to the traditional hydrofluorocarbons.





**Oil-free, magnetic levitation compressor**

Cutting-edge technology of magnetic bearings completely removes the friction among mechanical rotating parts for silent operation and enhanced performance.



**EC fans**

Continuous speed adjustment ensures precise temperature of supply water in freecooling mode.



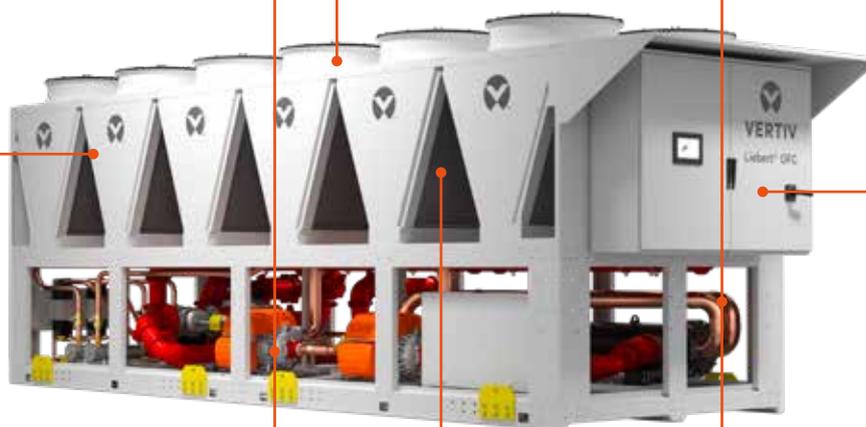
**Evaporator**

Flooded design minimizes the thermal approach between refrigerant and water/glycol for increased cooling capacity and reduced power consumption, while a dry evaporator design on the freecooling version improves the fluid flow dynamic in cases of high glycol percentage.

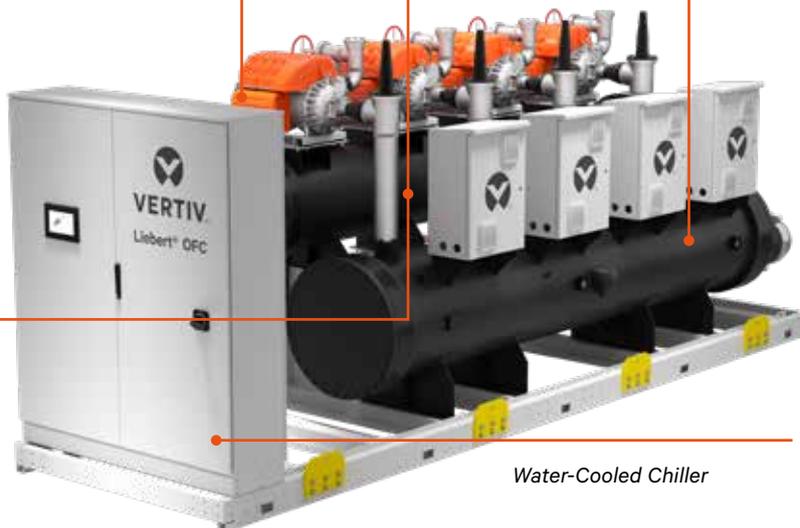


**Freecooling finned coils**

Complete integration into condenser module supports a streamlined footprint, while the freecooling design enables a drastic reduction in energy consumption when outside temperatures are lower than water temperature.



*Air-Cooled Chiller*



*Water-Cooled Chiller*



**Condenser**

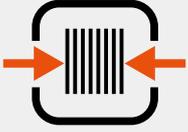
Micro-channel design maximizes performance, reduces weight, and minimizes refrigerant charge in air-cooled versions, while shell and tube design increases heat transfer in water-cooled versions.



**Electrical control**

Flexible, configurable panel supports an array of electrical configurations, ensuring cooling continuity even after a power outage and includes automatic transfer switch (ATS), dual power supply, power factor capacitor, and ultracapacitor options.

## Data center-centric design



- Oil-free, variable speed drive centrifugal compressor uses cutting-edge magnetic levitation technology and is more compact and lightweight than traditional screw compressors
- Three versions are suitable for all data center configurations and include water-cooled, air-cooled, and air-cooled freecooling chillers
- Cooling capacities ranging from 300-2400 kW
- Fast Restart function allows a quick restart after a power outage for cooling continuity

## Improved energy efficiency



- Most efficient compressor technology available on the market
- Minimal pPUE for reduced operating costs related to electrical consumption
- Continuous speed adjustment of EC fans ensures precise temperature for supply water temperature in freecooling mode
- Shell and tube design of condenser in water-cooled version increases heat transfer for improved overall system efficiency
- Freecooling enables a drastic cut in energy consumption during colder outside temperatures
- Freecooling finned coils are completely integrated into condenser module for improved efficiency and the best possible footprint
- Flooded evaporator design minimizes the thermal approach between refrigerant and water/glycol for increased cooling capacity and decreased power consumption
- Variable water flow lowers the pump's consumption when the cooling load decreases
- Micro-channel condenser used primarily with the air-cooled version maximizes performance, reduces weight, and minimizes refrigerant charge

## Eco-friendly solution



- Lower electrical consumption reduces carbon dioxide emissions
- HFO R1234ze refrigerant has a GWP measure that is close to zero

## Better, quieter operation



- Magnetic bearings eliminate the friction between mechanical rotating parts for silent running and more consistent unit performance over time
- Absence of friction and vibration makes the chiller 6-7 decibels quieter than comparable scroll or screw compressors
- Design of EC fans minimize sound emission

## Versatile integration and control



- Configurable electrical panel ensures the best reliability and cooling continuity for varied applications
- Chiller is adaptable for each site, ensuring installation flexibility
- Low in-rush current value makes a reduction in electrical infrastructure possible for savings on installation costs
- Variety of electrical panel or control options include ATS, dual power supply, power factor capacitor, and ultracapacitor

## Rely on a Higher Level of Service Expertise for Thermal Management in Your Data Center

*Who is better prepared to meet the service needs for your thermal management system than the company that pioneered the precision air conditioning market? We're a world leader in research and development of innovative products that protect mission-critical thermal applications and have supported data centers around the world for decades.*

Afterall, there's a vast difference in the expertise necessary to address the comfort cooling needs of a normal building and the thermal management needs of your sensitive and sophisticated data center. An incorrect repair procedure by improperly trained technicians, or the use of non-genuine parts, can have a profound effect on your equipment's performance, your data center's availability, and your energy costs.

The factory trained and certified technicians of Vertiv know the difference. We are equipped to maximize the performance and efficiency of your thermal management system as no one else can.

### Supporting Your Business Around the Globe

We bring our combination of strengths to life on a global scale, ensuring that we're able to serve you wherever you do business. Vertiv has the largest factory-trained service force with more than 2,700 field engineers. Our service team members are located in virtually every major country across the globe and are backed by more than 330 technical support/response personnel. This means that no matter where you operate, you are covered by the most knowledgeable engineers and technicians available, giving you peace of mind.



### Our Presence

#### Global

- Manuf. and Assembly Locations **28**
- Service Centers **250+**
- Service Field Engineers **2,650+**
- Technical Support/Response **300+**
- Customer Experience Centers/Labs **16**



#### US and Canada

- Manuf. and Assembly Locations **13**
- Service Centers **100+**
- Service Field Engineers **850+**
- Technical Support/Response **120+**
- Customer Experience Centers/Labs **4**



#### Latin America

- Manuf. and Assembly Locations **1**
- Service Centers **20+**
- Service Field Engineers **240+**
- Technical Support/Response **20+**
- Customer Experience Centers/Labs **2**



#### Europe, Middle East And Africa

- Manuf. and Assembly Locations **9**
- Service Centers **70+**
- Service Field Engineers **590+**
- Technical Support/Response **90+**
- Customer Experience Centers/Labs **5**



#### Asia Pacific

- Manuf. and Assembly Locations **5**
- Service Centers **60+**
- Service Field Engineers **970+**
- Technical Support/Response **80+**
- Customer Experience Centers/Labs **5**

# Vertiv™ Liebert® OFC | Oil-Free Centrifugal Chiller

R1234ze	Air-Cooled Chiller	CTZ027W	CTZ035Z	CTZ045W	CTZ065Z	CTZ065W	CTZ080Z	CTZ110Z	CTZ130Z
<b>Air 35°C Water 26-20°C<sup>1</sup></b>	Cooling capacity nom. (kW)	270	400	550	800	900	1150	1500	1600
	EER	5,47	5,45	5,20	5,38	5,04	5,23	5,10	5,16
	Power input (kW)	49	73	106	149	179	220	294	310
<b>Components</b>	GWP <sup>2</sup>	<1	<1	<1	<1	<1	<1	<1	<1
	n. compressors	1	1	2	2	3	3	4	4
	n. ref. circuit	1	1	1	1	1	1	2	2
	Power supply (V/ph/Hz)	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
	Fans	6	8	10	14	16	18	20	24
	Evaporator	Flooded							
	Condenser	MHE							
<b>Dimensions</b>	Length (mm)	3460	4510	5560	7660	8760	9760	10810	12910
	Width (mm)	2250	2250	2250	2250	2250	2250	2250	2250
	Height (mm)	2540	2540	2540	2540	2540	2540	2540	2541

	Freecooling Chiller	FTZ020W	FTZ030Z	FTZ040W	FTZ050Z	FTZ060Z	FTZ090Z	FTZ105Z	FTZ120Z
<b>Air 35°C Ethylene Glycol 30% 26-20°C<sup>1</sup></b>	Cooling capacity nom. (kW)	250	400	500	650	800	950	1200	1400
	EER	4,66	4,64	4,61	4,56	4,48	4,75	4,41	4,42
	Power input (kW)	54	86	109	143	179	200	272	317
	ZET (°C)	12	10,5	10,2	9,3	10,2	11,6	10	8,4
<b>Components</b>	GWP <sup>2</sup>	<1	<1	<1	<1	<1	<1	<1	<1
	n. compressors	1	1	1	2	2	3	3	4
	n. ref. circuit	1	1	1	2	2	3	3	4
	Power supply (V/ph/Hz)	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
	Fans	6	8	10	12	16	22	24	24
	Evaporator	Shell & Tube							
	Condenser	Finned coil							
<b>Dimensions</b>	Length (mm)	3460	4510	5560	6610	8710	11860	12910	12910
	Width (mm)	2250	2250	2250	2250	2250	2250	2250	2250
	Height (mm)	2790	2790	2790	2790	2790	2790	2790	2790

	Water-Cooled Chiller	WTZ025W	WTZ030Z	WTZ040W	WTZ060Z	WTZ090Z	WTZ130Z	WTZ160Z	WTZ210Z
<b>Cond. Water 35°C-40°C Evap. Water 26-20°C<sup>1</sup></b>	Cooling capacity nom. (kW)	250	350	500	700	1000	1300	1700	2000
	EER	7,81	8,06	7,31	7,95	8,12	8,73	8,53	8,83
	Power input (kW)	32	43	68	88	123	149	199	227
<b>Components</b>	GWP <sup>2</sup>	<1	<1	<1	<1	<1	<1	<1	<1
	n. compressors	1	1	2	2	3	4	5	6
	n. ref. circuit	1	1	1	1	1	1	1	1
	Power supply (V/ph/Hz)	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
	Evaporator	Flooded							
	Condenser	Shell & Tube							
<b>Dimensions</b>	Length (mm)	2300	2800	3400	3400	4000	5700	6000	6700
	Width (mm)	1200	1000	1250	1250	1600	1600	1600	2100
	Height (mm)	2000	1780	1960	2100	2200	2100	2300	2100

<sup>1</sup> Preliminary Value - Declared according to EN 14511-2018

<sup>2</sup> Global Warming Potential Value - Declared according to the 5th IPCC Assessment Report on Climate Change

R134a	Air-Cooled Chiller	CT4026A	CT4040B	CT4060A	CT4084B	CT4096A	CT4110B	CT4128A	CT4135B
<b>Air 35°C Water 26-20°C<sup>1</sup></b>	Cooling capacity nom. (kW)	350	500	700	1000	1100	1400	1500	1800
	EER	4,72	5,07	5,03	5,21	5,06	4,94	5,04	4,90
	Power input (kW)	74	99	139	192	218	284	298	368
<b>Components</b>	GWP <sup>2</sup>	1300	1300	1300	1300	1300	1300	1300	1300
	n. compressors	1	1	2	2	3	3	4	4
	n. ref. circuit	1	1	1	1	1	1	2	2
	Power supply (V/ph/Hz)	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
	Fans	6	8	12	16	18	20	24	24
	Evaporator	Flooded							
	Condenser	MHE							
<b>Dimensions</b>	Length (mm)	3460	4510	6610	8710	9760	10810	12910	12910
	Width (mm)	2250	2250	2250	2250	2250	2250	2250	2250
	Height (mm)	2525	2525	2525	2525	2525	2525	2525	2525

	Freecooling Chiller	FT4026A	FT4035B	FT4050A	FT4055A	FT4070B	FT4080B	FT4110B	FT4120B
<b>Air 35°C Ethylene Glycol 30% 26-20°C<sup>1</sup></b>	Cooling capacity nom. (kW)	330	450	600	700	850	950	1300	1400
	EER	4,41	4,36	4,54	4,44	4,37	4,58	4,11	3,99
	Power input (kW)	75	103	132	158	195	207	316	351
	ZET (°C)	8,4	8,5	10,2	10,2	9,7	10,8	10	9,1
<b>Components</b>	GWP <sup>2</sup> (kg)	1300	1300	1300	1300	1300	1300	1300	1300
	n. compressors	1	1	2	2	2	2	3	3
	n. ref. circuit	1	1	2	2	2	2	3	3
	Power supply (V/ph/Hz)	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
	Fans	6	8	12	14	16	20	22	22
	Evaporator	Shell & Tube							
	Condenser	Finned coil							
<b>Dimensions</b>	Length (mm)	3460	4510	6610	7660	8710	10810	11860	11860
	Width (mm)	2250	2250	2250	2250	2250	2250	2250	2250
	Height (mm)	2790	2790	2790	2790	2790	2790	2790	2790

	Water-Cooled Chiller	WT4040B	WT4060A	WT4080B	WT4090A	WT4120B	WT4150A	WT4160B	WT4200B
<b>Cond. Water 35°C-40°C Evap. Water 26-20°C<sup>1</sup></b>	Cooling capacity nom. (kW)	450	700	950	1050	1400	1700	1900	2400
	EER	7,87	7,20	7,69	7,24	7,92	7,52	7,85	7,7
	Power input (kW)	57	97	124	145	177	226	242	312
<b>Components</b>	GWP <sup>2</sup>	1300	1300	1300	1300	1300	1300	1300	1300
	n. compressors	1	2	2	3	3	5	4	5
	n. ref. circuit	1	1	1	1	1	1	1	1
	Power supply (V/ph/Hz)	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
	Evaporator	Flooded							
	Condenser	Shell & Tube							
<b>Dimensions</b>	Length (mm)	3000	3400	3400	4000	4000	6000	5700	6000
	Width (mm)	1000	1250	1250	1600	1600	1600	1600	1600
	Height (mm)	1960	2100	2100	2200	2200	2300	2200	2300

<sup>1</sup> Preliminary Value - Declared according to EN 14511-2018

<sup>2</sup> Global Warming Potential Value - Declared according to the 5th IPCC Assessment Report on Climate Change

