

Vertiv™ CoolPhase Flex

A highly efficient, easily installed all-in-one liquid and air-packaged cooling solution



Key benefits:

- **Future-ready** - Deploy air cooling to meet the needs of today, and turn on liquid cooling capabilities when your business is ready with minimal disruptions to daily operations.
- **Versatile solutions** - Enable teams to meet the data center's current and future needs. Whether liquid, air, or a combination of both, Vertiv CoolPhase Flex's refrigerant-based heat rejection technology uses standardized or mixed-rack density designs for a modular and scalable approach.
- **Rapidly deploy and adapt** - Convert between air and liquid cooling in as little as four hours with no additional internal components required. With minimal onsite construction needed to install Vertiv CoolPhase Flex, data centers can begin operations almost immediately.
- **Uncompromised efficiency** - Automatically switch to free cooling modes whenever external conditions are appropriate with pumped refrigerant economization (PRE) technology.
- **Space savings** - Free up valuable whitespace as Vertiv CoolPhase Flex is a self-contained packaged system installed outside the data center.
- **Cost savings** - Simultaneously deliver lower total cost of ownership (TCO) and upgrade to a liquid-cooled deployment as Vertiv CoolPhase Flex needs no major infrastructure overhauls.

Designed for AI, Vertiv™ CoolPhase Flex is a liquid and air-cooled packaged system designed for high-density applications—a first of its kind in the industry. Deploy this hybrid cooling solution initially as either air or liquid cooling, and if the need arises, convert the unit in the field in as little as four hours to support current business needs.

Cooling deployed today, designed for tomorrow.

High-performance computing (HPC) is rapidly changing the data center landscape, making it difficult for some operators to keep up with their business needs. Through close collaboration with industry partners, Vertiv defined a vision for a forward-looking cooling solution with the Vertiv™ CoolPhase Flex packaged system

The Vertiv CoolPhase Flex packaged cooling system can be deployed as an air cooling solution, operating as a legacy Vertiv™ Liebert® DSE packaged unit, or as a liquid cooling solution for high-density requirements. This flexibility-to deploy either air or liquid and subsequently convert as needed—provides businesses with the confidence to solve current problems while anticipating future requirements with minimal operational disruptions.

The popularization of AI pushed the development of new and advanced cooling technologies to prevent downtime, enable agility and flexibility, and adapt for future business growth. The Vertiv CoolPhase Flex delivers all that and more.

Key product features:

- Air and liquid cooling components installed as standard.
- Up to 400kW capacity with variable speed compressor for capacity modulation.
- Economizer operation for increased efficiency.
- Integrated UPS for liquid cooling backup power.
- Built-in controls with unit- to-unit communication.



Vertiv™ CoolPhase Flex

Physical data

Unit dimensions (H x W x D), m (in)	7004 x 4073 x 3989 (275.75 x 157.06 x 160.38)
Shipping dimensions (H x W x D), m (in)	7112 x 4013 x 4115 (280 x 158 x 162)
Weight, kg (lbs)	12,645 (27,878)
Shipping weight, kg (lbs)	12,767.5 (28,148)

Performance data

Maximum air cooling capacity, kW	510
Maximum liquid cooling capacity, kW	510
Maximum liquid cooling flow rate, gpm	200
Liquid cooling pump	15HP
Primary loop fluid	R410A
Secondary loop fluid	Water / Water-glycol
Secondary loop size	3" Stainless Steel
Secondary loop filtration	50μ
Noise level at 3m (10ft)	< 72 dBA (Sound Pressure)
Available head pressure, PSI (kPa)	Water: 44 psi (303.4 kPa). PG25: 42 psi (289.6 kPa).
Service access	Front and Rear
Communication protocols	SNMPv1/v2c/v3, HTTP, SMTP, SMS

1. Nominal air capacity conditions: Air 105°F RA, 95°F OD.
2. Nominal liquid capacity conditions: 80°F SWT, 95°F OD.

Electrical data

Power supply	460V / 60Hz / 3Ph
FLA (Full load amps)	302.6
WSA (Wire size amps)	207.8
OPD (Overcurrent protection device)	350
SCCR (Short circuit current rating)	65,000
Power feeds (with ATS)	Single Disconnect, Dual Disconnect, Dual Disconnect w UPS

Ambient conditions

Operating conditions	0 to 40C (0 - 104F), 10 to 90% RH (non-condensing)
Storage conditions	-40 to 70C (-40 - 158F), 5 to 93% RH (non-condensing)

Compliance

Safety compliance	cULus, RoHS
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Air cooling

RAT (°F)	SAT (°F)	DP (°F)	ESP (inwc)	Outdoor Ambient (°F)	Total Capacity (kW)	Net Sensible Capacity (kW)	Unit Power (kW)	SCOP
85	65	52	0.5	95	425	425	151.2	2.81
95	72.5	52	0.5	95	470	470	150.8	3.12
105	80	52	0.5	95	510	510	149.9	3.4

*Data recorded at 100% Load.

*Data captured using high flow condenser fans (1200 RPM max)

Liquid cooling (Water)

ODT (°F)	SWT (°F)	RWT (°F)	Water Flow Rate (GPM)	Net Cooling Capacity (kW)	Unit Power (kW)	SCOP
70	65	90.2	130	480	78.2	6.14
75	65	89.9	130	475	84.3	5.64
80	65	89.7	130	470	92.1	5.1
85	65	89.4	130	465	113.1	4.11
90	65	88.6	130	450	123.3	3.65
95	65	87.6	130	430	124.7	3.45
100	65	86.8	130	415	128.7	3.22
105	65	86	130	400	131.9	3.03
110	65	85.5	130	390	138.4	2.82
115	65	84.7	130	375	144.8	2.59
120	65	83.9	130	360	152	2.37

*Data recorded at 100% Load.

*Data captured using high flow condenser fans (1200 RPM max)

Liquid cooling net capacity (kW)

SWT (°F)	95°F ODT	100°F ODT	105°F ODT	110°F ODT	115°F ODT	120°F ODT
65	430	415	400	390	375	360
70	440	430	425	410	395	380
75	505	490	470	460	440	425
80	530	520	510	500	485	470

*Data recorded at 100% Load.

*Data captured using high flow condenser fans (1200 RPM max)