

Vertiv™ CoolPhase Flex

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



Key benefits:

- **Future-ready** - Deploy as either liquid cooling or air cooling today and rapidly change in the future to meet current business needs.
- **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) with the flexibility to choose between air cooled and liquid cooled deployments as Vertiv CoolPhase Flex needs no major infrastructure overhauls.

Designed for evolving cooling requirements, 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 with capacity modulation.
- Economizer operation for increased efficiency by utilizing free cooling whenever conditions allow.
- Integrated UPS for liquid cooling backup power.
- Built-in controls enable multiple units to work together in a single cooling system.



Vertiv™ CoolPhase Flex

Physical data

Unit dimensions (H x W x D), mm (in)	7004 x 4073 x 3989 (275.75 x 157.06 x 160.38)
Shipping dimensions (H x W x D), mm (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 ¹	473
Maximum liquid cooling capacity, kW ²	544
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	500μ
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)	307.8
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 (net)	Unit Power (kW)	SCOP
85	67	52	0.5	95	391	391	166	2.35
95	74	52	0.5	95	442	442	168	2.64
105	82	52	0.5	95	473	473	169	2.80

*Data recorded at 100% Load.

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

Liquid cooling (Water)

ODT (°F)	SWT (°F)	RWT (°F)	ESP (ft-h2o)	Water Flow Rate (GPM)	Net Cooling Capacity (kW)	Unit Power (kW)	SCOP
70	65	90.4	35	130	482	83.3	5.78
75	65	90.3	35	130	481	107.0	4.50
80	65	90.0	35	130	473	114.7	4.12
85	65	89.5	35	130	462	118.5	3.90
90	65	88.8	35	130	450	122.2	3.68
95	65	88.0	35	130	436	126.1	3.46
100	65	87.5	35	130	426	130.7	3.26
105	65	86.8	35	130	413	135.7	3.04
110	65	86.2	35	130	401	141.2	2.84
115	65	85.4	35	130	387	147.5	2.63
120	65	84.6	35	130	373	156.2	2.39

*Data recorded at 100% Load.

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

Liquid cooling net capacity kW (Water)

SWT (°F)	95°F ODT	100°F ODT	105°F ODT	110°F ODT	115°F ODT	120°F ODT
65	436	426	413	401	387	373
70	470	458	447	434	420	408
75	509	495	482	469	454	441
80	544	532	518	504	490	477

*Data recorded at 100% Load, 130 GPM Flow, and 35ft-H2O ESP

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