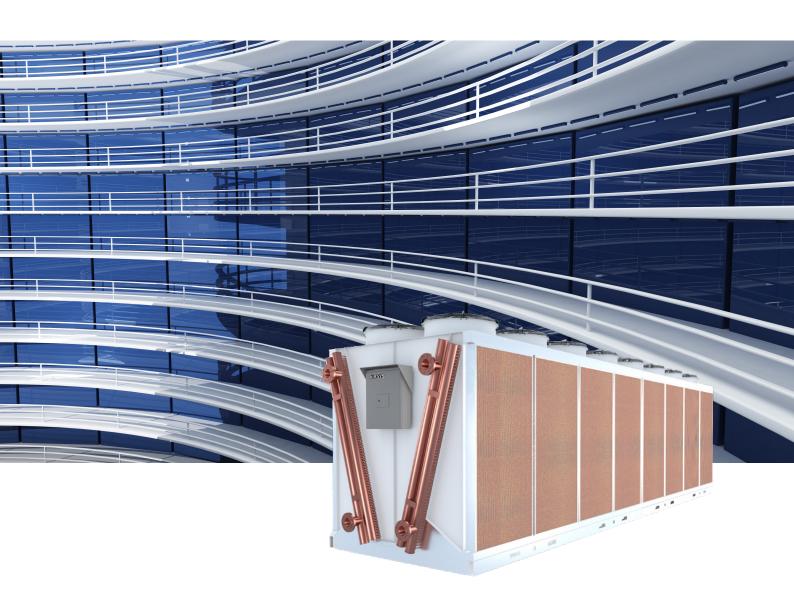


# ADIACOOL DRY COOLER





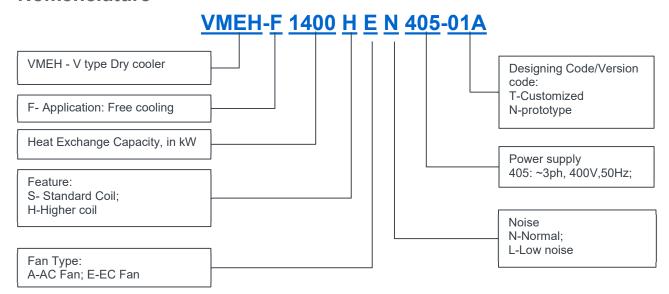
# Introduction

Adiacool is the core product of the cold source part of the AIRSYS PowerOne data center overall cooling solution. It uses an independent large-area dry cooler, large air volume adjustable speed EC fans, and evaporative cooling heat exchanger coils to maximize the use of outdoor cold source.

When the outdoor environment allows, on the air side, the outdoor air is first evaporatively pre-cooled by the evaporative pre-cooling coil (when the wet bulb temperature is available), and then heat-exchanged with the heat exchange coil. The application of the independent large-area dry cooler greatly prolongs the use time of the dry cooler's free cooling, thereby greatly reducing the use time of the chiller.

The Adiacool dry cooler and the CRITICOOL chiller constitute the cold source of the system. It is combined with the indoor air conditioning units (CRAH) and the water pump to form the PowerOne water system solution. The entire system is controlled and optimized by the NetOne control system to adapt to different conditions. The climate and load can meet the cooling demand, while greatly reducing the system energy consumption, thereby reducing the pPUE of the data center to below 1.2.

## **Nomenclature**



# **Features**

# Large temperature difference heat transfer

The design of Adiacool free cooling unit has a maximum outlet water temperature of up to 35 °C and a design temperature difference between inlet and outlet water of up to 16 °C. Energy consumption is substantial.

Taking a data center project in Porto Alegre in southern Brazil as an example, with a total load of 2400 kW, after adopting the Adiacool cold water host solution, the cold water host only starts the mechanical cooling mode when the outdoor temperature is higher than 30 °C, and the annual free cooling utilization time reaches 80 %.

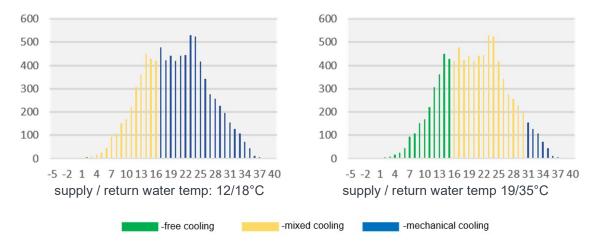


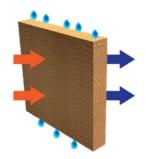
Figure 1 Comparison of free cooling hours between PowerOne solution and traditional solution

# Flexible layout

The Adiacool free cooling unit adopts a modular design, which can be installed independently or assembled on site according to the needs of the site, and can be flexibly expanded as needed. It fundamentally realizes super expansion and super high efficiency and dynamically adapts to the IT load environment. It can be applied to new data centers and renovation projects.

# Optimized water-saving evaporation technology

Different from traditional evaporative pre-cooling, Adiacool accurately controls the amount of water required for evaporation, minimizes the waste of water resources caused by incomplete evaporation, and achieves a good balance between water saving and energy saving.





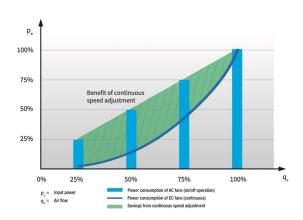
## **Lower TCO**

After adopting Adiacool free cooling unit, the system uses free cooling source longer than the traditional scheme, which can save up to 60% of energy consumption and 85% of water consumption and reduce resource usage. The system CAPEX and OPEX will be greatly reduced, thereby reducing the impact on the environment and reducing the total cost of ownership (TCO).

# High efficiency fan

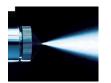
Adiacool adopts high-efficiency EC fans, through an independent intelligent control system, to optimize the operation status of the fans, and the power consumption of the fans is only 30% of that of ordinary AC fans. When the ambient temperature decreases, the speed of the fan decreases accordingly, greatly reducing the energy consumption of the unit.





# **Optional**

- · Super atomization system suitable for special environment
- Anti-corrosion coating suitable for different environments
- Intelligent coil automatic cleaning device
- Air filter (anti catkins, etc.)
- Inlet water circulation softening system
- · Ultraviolet sterilization device
- Independent control box











# Performance

VMEH-F*S		130	300	400	550	700	800	1100	1400
Cooling capacity	kW	132	264	397	531	663	793	1061	1325
Air flow	m³/h	44000	88000	132000	176000	220000	264000	352000	440000
Fans	-	800	800	800	800	800	800	800	800
Fan type	-	EC/ AC+VFD(可选)							
No. fans	n	2	4	6	8	10	12	16	20
Power input	kW	4.2	8.4	12.6	16.8	21	25.2	33.6	42
Power supply		~380V,3Ph,50Hz							
Water flow	m³/h	8.1	16.3	24.5	32.7	40.9	48.9	65.4	81.7
Pipe connections	DN	65	65	100	100	100	100	100	100
Pressure drop	kPa	44	52	58	62	66	73	76	82
Noise	dBA	73	73	74	74	74	75	75	75
Net weight	kg	375	750	1250	1500	1750	2000	2750	3500
Dimension	-								
Length	mm	1420	2520	3620	4720	5820	7240	9440	11640
Width	mm	2200	2200	2200	2200	2200	2200	2200	2200
Height	mm	2350	2350	2350	2350	2350	2350	2350	2350
Options	Independent electric control box, PLC controller, water pump, evaporative pre-cooling component, etc.								

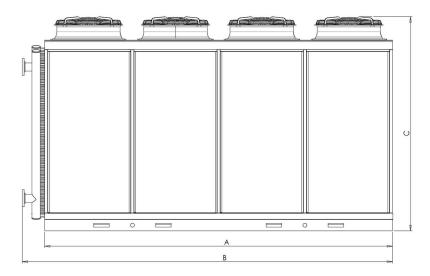
The above data is based on: 30% ethylene glycol solution, inlet and outlet water temperature: 35/19°C, ambient temperature 15°C, altitude below 500m.

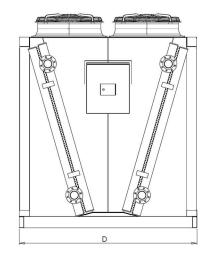
VMEH-F*	Н	150	350	500	650	800	1000	1300	1600
Cooling capacity	kW	141	315	475	630	785	950	1262	1571
Air flow	m³/h	48000	96000	144000	192000	240000	288000	384000	480000
Fans	-	800	800	800	800	800	800	800	800
Fan type	-	EC/ AC+VFD(可选)							
No. fans	n	2	4	6	8	10	12	16	20
Power input	kW	4.7	9.4	14.1	18.8	23.5	28.2	37.6	47
Power supply		~380V,3Ph,50Hz							
Water flow	m³/h	8.7	19.4	29.3	38.8	48.4	58.6	78.0	97.1
Pipe connections	DN	65	65	100	100	100	100	100	100
Pressure drop	kPa	49	56	61	62	70	78	81	86
Noise	dBA	74	74	75	75	75	75	76	76
Net weight	kg	375	875	1250	1625	2000	2500	3250	4000
Dimension	-								
Length	mm	1420	2520	3620	4720	5820	7240	9440	11640
Width	mm	2200	2200	2200	2200	2200	2200	2200	2200
Height	mm	2780	2780	2780	2780	2780	2780	2780	2780
Options	-	Independen etc.	t electric co	ntrol box, PL	C controller,	water pump,	evaporative p	ore-cooling co	omponent,

The above data is based on: 30% ethylene glycol solution, inlet and outlet water temperature: 35/19°C, ambient temperature 15°C, altitude below 500m.

# Dimension

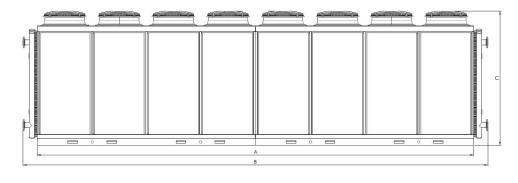
# VMEH-F130/300/400/550/700S、VMEH-F150/350/500/650/800H

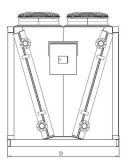




	Α	В	С	D	Flange connection
VMEH-F130S	1180	1420	2350	2200	DN65
VMEH-F300S	2280	2520	2350	2200	DN65
VMEH-F400S	3380	3620	2350	2200	DN100
VMEH-F550S	4480	4720	2350	2200	DN100
VMEH-F700S	5580	5820	2350	2200	DN100
VMEH-F150H	1180	1420	2780	2200	DN65
VMEH-F350H	2280	2520	2780	2200	DN65
VMEH-F500H	3380	3620	2780	2200	DN100
VMEH-F650H	4480	4720	2780	2200	DN100
VMEH-F800H	5580	5820	2780	2200	DN100

# VMEH-F800/1100/1400S、VMEH-F1000/1300/1600H





	Α	В	С	D	Flange connetion
VMEH-F800S	6760	7240	2350	2200	DN65
VMEH-F1100S	8960	9440	2350	2200	DN65
VMEH-F1400S	11160	11640	2350	2200	DN100
VMEH-F1000H	6760	7240	2780	2200	DN100
VMEH-F1300H	8960	9440	2780	2200	DN100
VMEH-F1600H	11160	11640	2780	2200	DN100



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