

# ColdLogik CL80 InRow Cooler

ColdLogik CL80 InRow Coolers ensure efficient thermal and energy performance by removing the heat generated by active equipment, preventing hot exhaust air entering space where it is not permitted.

The InRow solution works in conjunction with racks in aisle containment and is available to suit both CAC and HAC configurations. Warm exhaust air passes over the InRow heat exchanger matrix, either by its own velocity or being pulled through via EC centrifugal fans mounted in the CL80. Heat is rejected to fluid and chilled air is passed back into the ambient space at predetermined temperature.

CL80 InRow Coolers are available as an option with Condensate Pump and Tray for operation at cold fluid temperatures, where the cooling system is designed to operate at below dew point. The InRow coolers can be sited within an existing data centre to work with existing computer room air-conditioning to provide additional cooling. They also reduce energy consumption and remove hot spots.



# Performance Examples

Performance examples—these three examples are showing the CL80 options , with differing duties attainable when regulating or changing the water temperature. Other performance duties are attainable when calculating bespoke project specific requirements.

## Maximum Duty

Our highest duties offer high performance cooling based on maximum airflow volume per InRow and Cold Water using 8/18°C (46.4/64.4°F) water supply / return from mechanically cooled external plant. Each InRow has the ability to offer cooling capacities of up to 80 kW total, and 67kW sensible cooling per unit. The CL80 supports condensate management of over 40L/h (vertical lift dependant) giving potential for even colder water to provide

Cooling Capacity - Maximum		300w
Cooling (Total)	kW	80
Cooling (Sensible)	kW	67
Air flow (50Hz 230v)	m³/h (CFM) @ N	8535 (5027)
DB Air On	°C (°F)	45 (113)
DB Air Out	°C (°F)	19.7 (67.5)
Water In	°C (°F)	8 (46.4)
Water Out	°C (°F)	18 (64.4)
Volume Fluid Flow	m³/h (l/s) / USGPM	6.89 (1.91) / 30.3
Fluid Velocity	m/s (ft/s)	1.3 (4.3)
Condensate Volume (at 25% RH)*	L/h (GPH)	18.9 (5)

## Nominal Duty

This is a more general, workable duty with N+1 airflow volume and 14°C/57.2F water inlet, maintaining the 10 degree fluid ΔT, and covers most requirements in Europe while also maintaining a cold aisle / room temperature of 22.3°C/72°F. Delivering nearly 100% sensible cooling.

Cooling Capacity - Nominal		300w
Cooling (Total)	kW	49
Cooling (Sensible)	kW	48
Air flow (50Hz 230v)	m³/h (CFM) @ N+1	6800 (4005)
DB Air On	°C (°F)	45 (113)
DB Air Out	°C (°F)	22.3 (72)
Water In	°C (°F)	14 (57.2)
Water Out	°C (°F)	24 (75.2)
Volume Fluid Flow	m³/h (l/s) / USGPM	4.3 (1.2) / 19
Fluid Velocity	m/s (ft/s)	0.81 (2.7)
Condensate Volume (at 25% RH)*	L/h (GPH)	2.6 (0.7)

## Efficient Duty

Using N+2 airflow volume, and taking advantage of warmer water temperature inlets of 20°C/68°F the necessity of mechanical cooling is reduced, and allows for most day free cooling. This will provide customers with higher efficiency cooling and lower running costs thus beginning to obtain a return on their investment while maximising real estate and PUE.

Cooling Capacity - Efficient		300w
Cooling (Total)	kW	31
Cooling (Sensible)	kW	31
Air flow (50Hz 230v)	m³/h (CFM) @ N+2	5400 (3180)
DB Air On	°C (°F)	45 (113)
DB Air Out	°C (°F)	26.4 (79.5)
Water In	°C (°F)	20 (68)
Water Out	°C (°F)	30 (86)
Volume Fluid Flow	m³/h (l/s) / USGPM	2.7 (0.75) / 12
Fluid Velocity	m/s (ft/s)	0.51 (1.67)
Condensate Volume (at 25% RH)*	L/h (GPH)	0 (0)

Cooling capacity data is shown for illustration purposes. USystems work alongside their customers who largely have unique challenges and ambitions. The nature of our technology, capabilities and approach is emulated in the delivery of efficient designs and solutions across the globe.

### Legend

DB - Dry Bulb

ΔT - Delta T / difference supply and return temperatures

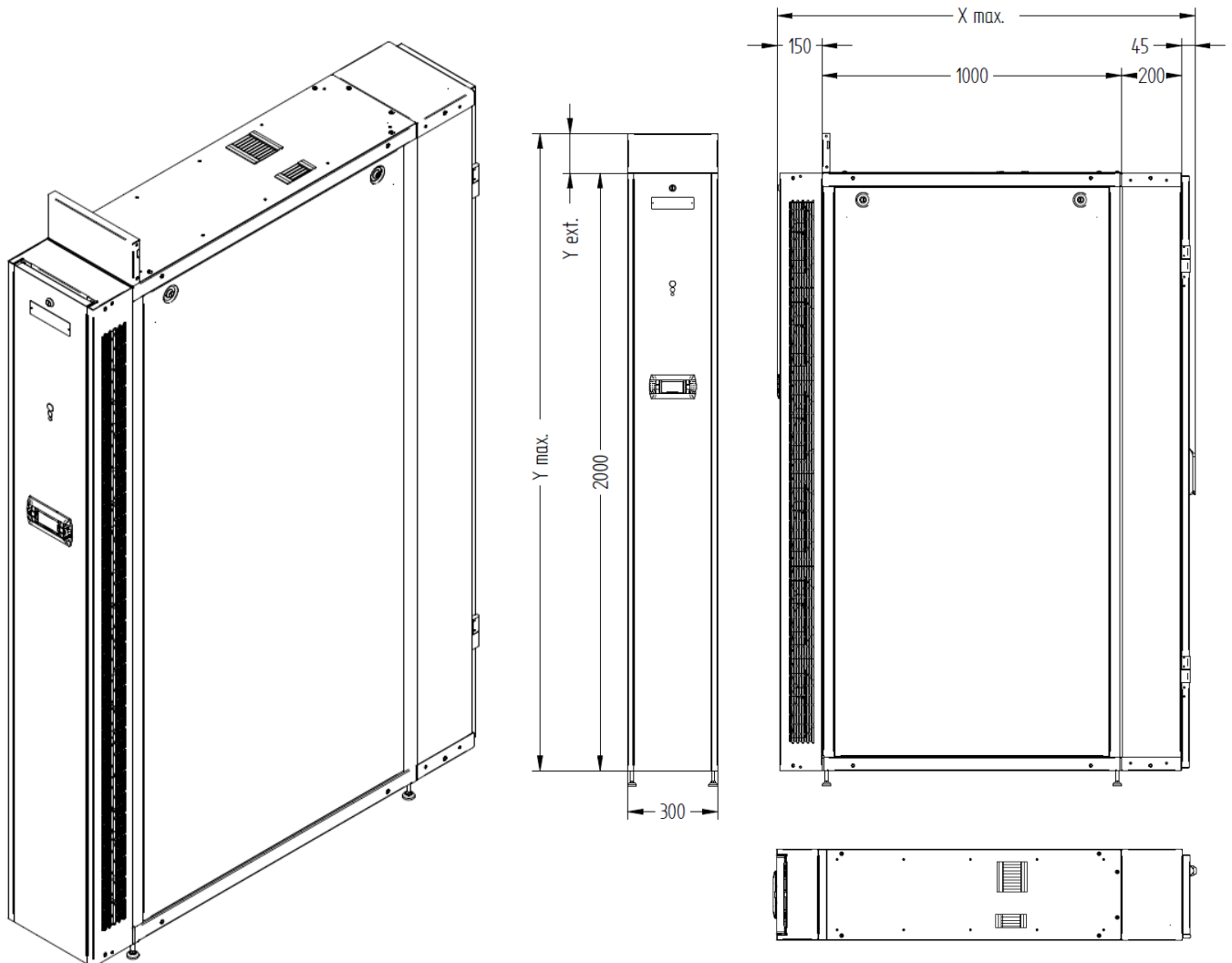
Air On - Air onto coil / air off active equipment

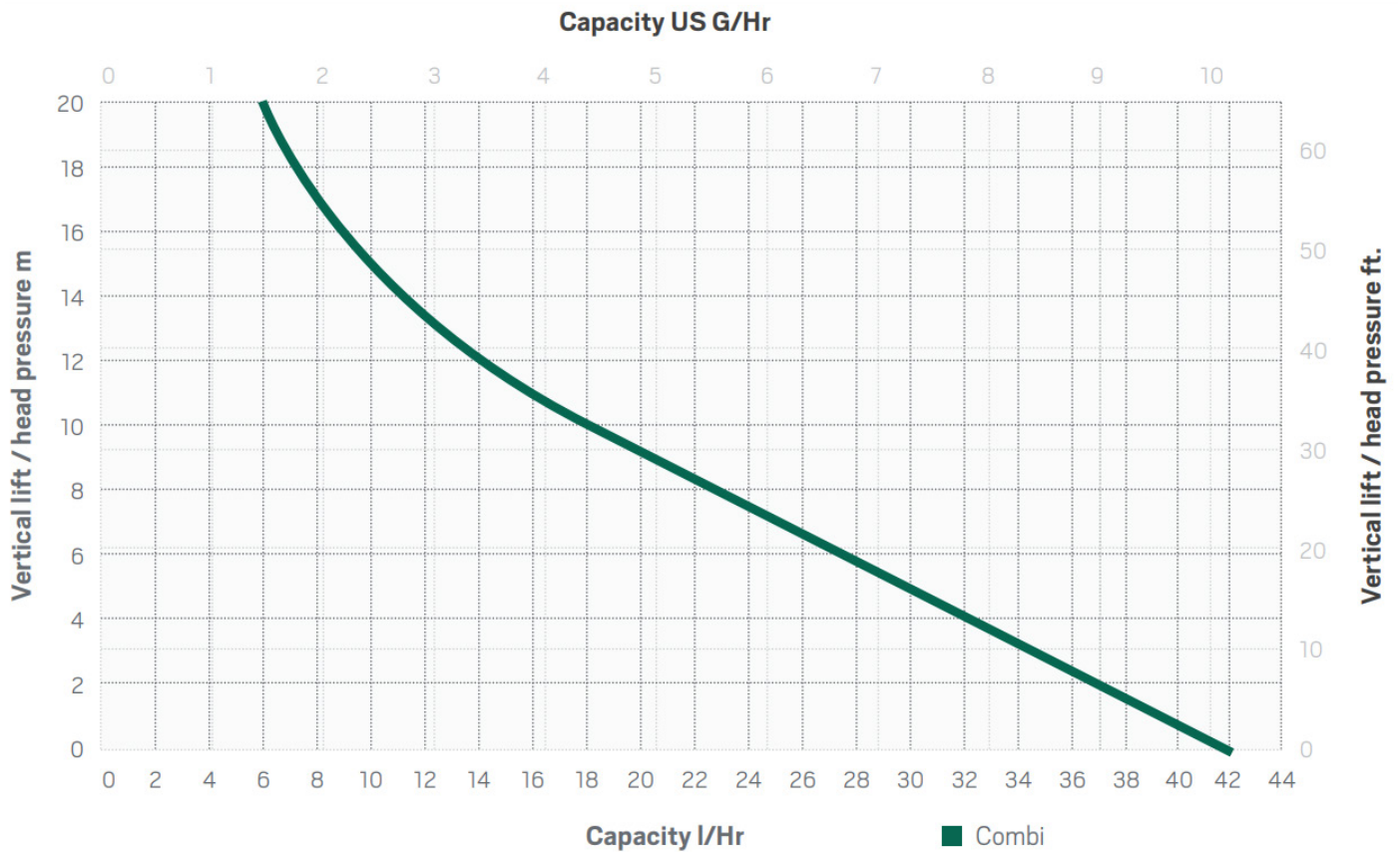
Air Off - Air off coil / air out from ColdLogik cooler

CL80 Physical Specification				Combined Fan Performance***			
Technical Information to Suit:		42U*		Type: Backwards Curved Centrifugal			
		300w					
		1000d	1200d**				
Height (X)	mm (")	2000 (78.4)		Number of fans		6	
Width (B)	mm (")	300 (11.8)		Air flow	m <sup>3</sup> /h (CFM)	30%	2561 (1508)
Frame Depth (C)	mm (")	1000 (39.4)	1200 (47.2)			70%	5975 (3519)
Maximum Depth (D)	mm (")	1195 (48.5)	1395 (56.3)			100%	8535 (5027)
Dry Weight	kg (lb.)	150 (330.7)	165 (363.8)	Current	A	30%	0.76 / 0.84
Wet Weight	kg (lb.)	160.7 (354.3)	175.7 (387.4)			70%	3.54 / 3.91
Paint	Finalised on Order	RAL 9003 (White, Fine Texture)				50Hz 230v / 60Hz 208v	W
		RAL 9005 (Black, Fine Texture)					
Comms Protocols	-	Modbus over TCP/IP, SNMP, BACnet		Power Input	W		
Connections	mm (")	25 (1)				70%	379
Fluid Capacity	L (USG)	10.5 (2.8)				100%	1014
Power Input	-	1~200-240v 50/60Hz - A & B Inputs with ATS		Total fan noise	dB	30%	68
Maximum Rated Current	A	12.5				70%	83
						100%	89

\*Telescopic height extension kits supplied for 45U to 52U heights  
 \*\*1200d depth profile created with 200d extension to 1000d base frame

\*\*\*Based on positive pressure environment. PF 1. Others may vary.





Condensate Pump		300w
Maximum Flow Rate	L/h (USGPH) / pnt/d	42 (11) / 2,112
Maximum Suction:	m (ft)	3 (9.8) (self priming)
Maximum Head:	m (ft)	20 (65.6)
Maximum horizontal run:	m (ft)	100 (330) at 0 head and 0 suction
Discharge star tube:	mm (") x m (ft)	6.25 I.D (1/4) x 1 (3.3)
Protection		IP-44 (Fully Potted)
Additional Power (@~110V)	W	8



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## Further Documentation

For additional information, please refer to the below. Available through your USystems representative, or our central enquires line at [sales@usystems.com](mailto:sales@usystems.com)

Complete Product Range  
Operations and Maintenance Manual  
Troubleshooting Guide  
Product Brochure

Available at [www.usystems.com](http://www.usystems.com)  
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