



CLADE

ASPEN 150KW //

Hydrocarbon Air Source Heat Pumps

Aug 2022//



THE ASPEN //



LOW CARBON HEATING TECHNOLOGY

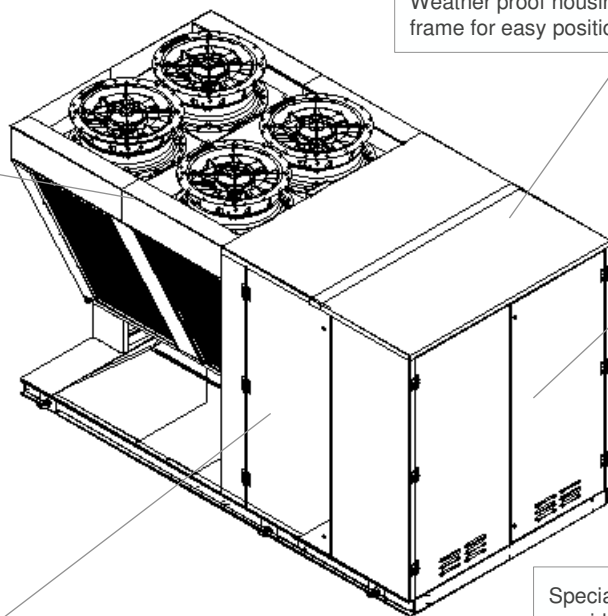
Clade Hydrocarbon heat pumps will reduce carbon emissions whilst maximising efficiency with existing cooling and heating systems. Our full-service offering makes heat pumps a simple and low risk way to improve your ESG and operational performance.





BENEFITS OF THE CLADE ASPEN HC RANGE //

150 KW of heating capacity, single unit for easy installation



V-Block evaporator section minimises space used. EC fans as standard provided optimal energy efficiency.

Weather proof housing and galvanised lifting frame for easy positioning on site

All components are easily accessible for quick and effective maintenance.

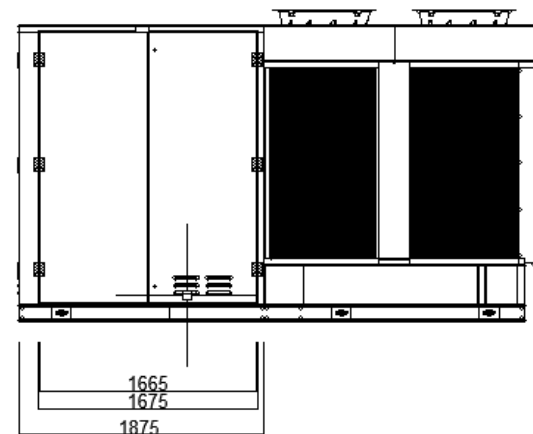
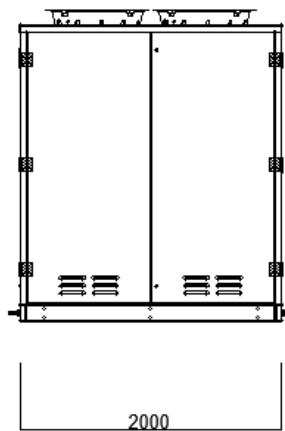
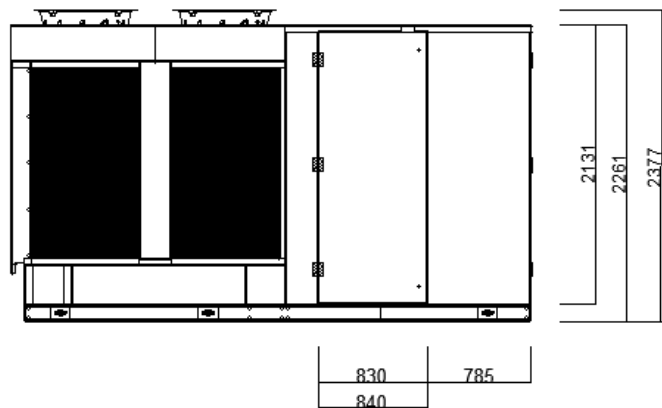
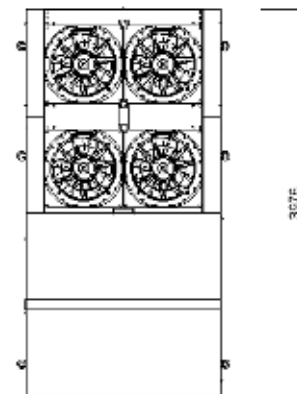
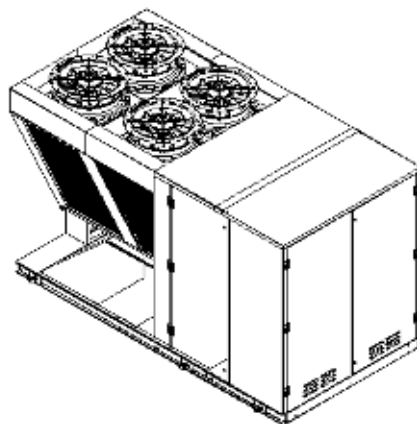
Integrated electrical control panel to work seamlessly alongside client selected BMS system.

Specialist compressors provide a greater operating temperature range and increased COP.





DIMENSIONAL INFORMATION //





TECHNICAL SPECIFICATION //

Clade Aspen ASHP		Aspen -150Kw ASHP
Nominal conditions: Water side		flow 40°C to 60°C
Nominal conditions: CO ₂ side		Ambient air temperature -3°C (85% RH) and -10°C evaporation
Compressor Manufacturer		Dorin
Compressor Heating Qty	Pcs.	2
Compressor Paralell Qty	Pcs.	0
Compressor Power @ Design total	kW	57.9
Evaporator fans Power at design	kW	2.8
Total	kW	63.6
Heat Pump Design Run Amps DRA	A	109.3
Ancillary Controls Amps	A	4
Total Amps		113.3
Variable speed drive (VSD)	Pcs.	1
Refrigerant charge (R290)	kg	70
Electrical supply	-	3~ 400V 50 HZ
Housing Weight (empty)	kg	1,966
Housing Weight (operational)	kg	2,041
Load Cell A Weight (empty)	kg	1,612
Load Cell A Weight (operational)	kg	1,687
Load Cell B Weight (empty)	kg	0
Load Cell B Weight (operational)	kg	0
Connections waterside flow	DN	DN50
Connections waterside Return	DN	DN50
Connections waterside Pressure Rating	PN	10
Waterside Burst Disk	PN	10
Communication protocol	-	MODBUS/BACNET
IP-Class	-	IP54
Evaporators Type		V Block
No. evaporators	Pcs.	4
Fin Material	-	AL/MG
Defrost Type	-	Cool Gas R290
Defrost medium	-	R290
Defrost design/condition	-	> +6c ambient Off Cycle / < +6c ambient Cool Gas
Fan regulation	-	0-10v
Colour	-	RAL6035 Forest Green



HEAT PUMP PERFORMANCE //

Noise Performance Characteristics					
Model name	Nameplate output (kW)	Output Temp (°C)	Noise Data db(A)		
			Sound Power	Sound Pressure @ 1m	Sound Pressure @ 10m
Aspen 150KW	150	65	87	61	49
		70	87	61	49
		75	88	62	50
		80	88	62	50

Clade Heat Pump Performance Charateristics																				
Model name	Nameplate output (kW)	Output Temp (°C)	Return Temp (°C)	SCOP	SPF	-10°C External			-5°C External			0°C External			5°C External			10°C External		
						kW(th)	kW(e)	COP	kW(th)	kW(e)	COP	kW(th)	kW(e)	COP	kW(th)	kW(e)	COP	kW(th)	kW(e)	COP
Aspen 150	150	50.0	30.0	3.5	3.6	126.0	46.2	2.7	137.7	46.1	3.0	153.0	46.4	3.3	174.0	47.8	3.6	199.8	49.7	4.0
		55.0	30.0	3.2	3.3	124.7	49.9	2.5	137.7	50.4	2.7	153.0	51.2	3.0	174.0	52.7	3.3	199.8	55.5	3.6
		60.0	30.0	2.9	3.0	131.7	57.0	2.3	137.7	55.1	2.5	153.0	56.0	2.7	174.0	58.0	3.0	199.8	60.5	3.3
		65.0	30.0	2.7	2.7	131.7	61.0	2.2	137.7	59.6	2.3	153.0	61.2	2.5	174.0	64.4	2.7	199.8	66.6	3.0
Aspen 150	150	50.0	40.0	3.3	3.4	119.7	46.2	2.6	130.8	46.1	2.8	145.4	46.4	3.1	165.3	47.8	3.5	189.8	49.7	3.8
		55.0	40.0	3.0	3.1	118.4	49.9	2.4	130.8	50.4	2.6	145.4	51.2	2.8	165.3	52.7	3.1	189.8	55.5	3.4
		60.0	40.0	2.8	2.8	125.1	57.0	2.2	130.8	55.1	2.4	145.4	56.0	2.6	165.3	58.0	2.9	189.8	60.5	3.1
Aspen 150	150	65.0	40.0	2.5	2.6	125.1	61.0	2.1	130.8	59.6	2.2	145.4	61.2	2.4	165.3	64.4	2.6	189.8	66.6	2.9
		50.0	45.0	3.2	3.3	115.9	47.2	2.5	126.7	47.1	2.7	140.8	47.4	3.0	160.1	48.9	3.3	183.8	50.8	3.6
		55.0	45.0	2.9	3.0	114.7	51.0	2.3	126.7	51.6	2.5	140.8	52.3	2.7	160.1	53.9	3.0	183.8	56.7	3.2
		60.0	45.0	2.6	2.7	121.2	58.3	2.1	126.7	56.3	2.3	140.8	57.3	2.5	160.1	59.3	2.7	183.8	61.9	3.0
		65.0	45.0	2.4	2.5	121.2	62.3	1.9	126.7	60.9	2.1	140.8	62.6	2.3	160.1	65.9	2.4	183.8	68.1	2.7

BUILDING CONNECTIONS //

POWER

3 phase.

Connection box mounted in position shown.

Isolation at control panel only.

Installer to provide local isolator external to heat pump.

HEATING

Supplied with primary pump with 14m spare head.

Flow and return located in position shown.

PN 10 Flanged steel connections with butterfly valve.

CONDENSATE

Condensate from the evaporator will drain centrally from the base of the unit.

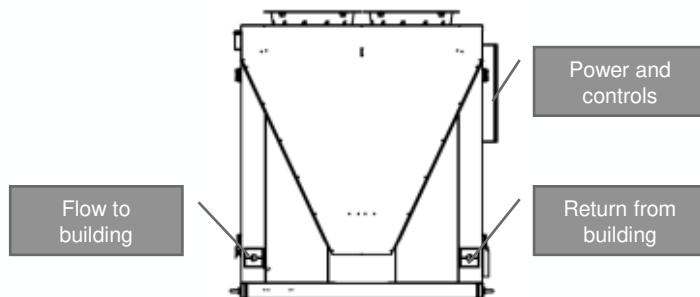
It is recommended that a gully be installed below the heat pump and lead to a soak away.

CONTROLS

The heat pump has self contained controls that manage its operation and the primary pump.

Alarms

- Hardwired shut down signal for fire alarm
- Leak detection (inc. external visible beacon)
- Other fault
- High return water temperature.





PROVEN PERFORMANCE //



In 2019 Clade supplied a HC heat pump for the Trago Mills store in Devon, which at 12,500 square feet was one of Co-op's larger format stores in the portfolio.

The store has operated for over a year and the measured results are a fantastic reflection of the standard of engineering that Clade delivers.

Seasonal COP is 3.7

	COP		
	MAX	AVERAGE	MIN
June	6.9	4	2.9
July	6.8	4	3.1
August	6.8	4	3.1
September	6.5	3.9	3
October	5.9	3.8	3.1
November	6.5	3.8	2.9
December	7.4	3.5	2.8
January	5.6	3.6	2.8
February	5.2	3.4	2.8
March	5.6	3.4	2.8
April	5.3	3.4	2.8
May	5.6	3.6	2.8



LEEDS MANUFACTURING CENTRE //



- UK based
- 35 years of engineering experience
- Leeds manufacturing division
- Committed to sustainable business and sustainable products
- Investing in people, diversity & inclusion
- Non leveraged, owner operated

ACCREDITATIONS
 ISO 9001:2015
 ISO 14001:2015
 OHSAS ISO 18001:2007

CERTIFICATIONS
 Altius Assured Vendor Award
 Altius ODM Vendor Award
 CHAS
 Sales Contractor



———— THANK YOU //

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