



ACDHUM – D
Air Change Dehumidification Unit – DX Packaged



ACDHUM – W
Air Change Dehumidification Unit – Chilled Water





ACDHUM Quick Reference Guide

Model No.	Refrigerant Capacity		Airflow Range L/s		Overall Dimensions (mm) (Standard Unit)	Standard Unit Weight	Nominal Running Amps (per phase)	Phase	Electrical Input
	kWr		Min	Max					
Direct Expansion Units									
ACDHUM2-D	51		600	1400	2325 x 2490 x 2100	975	26.9	3	14.1
ACDHUM3-D	67		900	2000	2325 x 2490 x 2750	1315	37.7	3	20.4
ACDHUM4-D	88		1600	2800	2375 x 2490 x 3550	1743	54.8	3	28.5
ACDHUM5-D	114		2400	3600	2375 x 2490 x 4200	2074	63.2	3	35.1
ACDHUM6-D	140		3000	4300	2450 x 2490 x 4850	2536	88.5	3	46.0
ACDHUM7-D	165		3600	5000	2450 x 2490 x 5500	2820	92.7	3	50.2
Water Coil Units									
ACDHUM2-W	NA		600	1400	1990 x 2490 x 1600	682	2.9	3	1.5
ACDHUM3-W	NA		900	2000	1990 x 2490 x 2250	909	4.2	3	2.2
ACDHUM4-W	NA		1600	2800	1990 x 2490 x 2900	1211	7.0	3	4.0
ACDHUM5-W	NA		2400	3600	1990 x 2490 x 3550	1491	9.7	3	5.5
ACDHUM6-W	NA		3000	4300	2040 x 2490 x 4200	1834	13.0	3	11.0
ACDHUM7-W	NA		3600	5000	2040 x 2490 x 4850	2075	13.0	3	11.0
ACDHUM8-W	NA		5000	6000	2040 x 2490 x 5500	2424	26.0	3	15.0



ACDHUM-D

Air Change Dehumidification Unit – DX Packaged



The Air Change Packaged Dehumidification Unit range efficiently pre-conditions the building's fresh air supply and features counter flow plate heat exchange technology. The unit is capable of being installed as a stand alone unit or as a pre-conditioner serving a conventional air conditioning unit(s).

The system is an ideal solution for situations where exhaust air cannot be recovered or used due to spill air contamination, building pressure requirements or the practical constraint of recovering exhaust air.

Energy Efficient Design

- Plate heat exchanger enables pre-cooling and re-heating
- Higher efficiency and superior humidity control over standard systems
- No return air required – 100% pressurisation
- High COP
- DX units from 700-5,000 L/s
- Multi award winning Australian made, internationally patented technology



ACDHUM-D

Standard Features

- High efficiency sensible only air-to-air counter flow plate heat exchanger
- Variable Speed Compressor for optimal refrigerant cooling/heating load control
- Fully hermetically sealed Danfoss Compliant Scroll Compressors charged with R407c
- Cabinet construction of 50 mm, double skin Colorbond cool room panel
- Purpose built UV treated polymer joiners to eliminate heat loss
- Condenser and Evaporator coils consist of Copper tubes mechanically bonded to aluminium fins and feature interlaced circuitry. All coils come standard with a heavy duty baked resin coating for corrosion protection
- Fully integrated control system that is factory fitted and pre-commissioned. The system works to maintain the supply air at a constant temperature and humidity level during varying ambient conditions (BACnet compatible).
- Unit is fitted with a proprietary G4 Multi-layer (washable) bag filter
- Direct coupled backward curved centrifugal supply air fan
- Reverse Cycle Operation

Options

- **Upgraded Compressors** – to provide increased refrigeration capacity
- **De-superheater** – Reclaim energy from refrigerant to heat water. Suits a variety of applications
- **High Static Fan Upgrade** – Fan upgrades available for high flow or high external static pressure drops
- **Upgraded Condenser Fan** – to achieve 80Pa external pressure
- **HVAC series VSDs** – HVAC series VSD for high level communication with BMS system (BACnet adapter standard on HVAC VSDs)
- **Corrosion Resistant** – Corrosion resistant treatment available for harsh/corrosive environments
- **Filter** – Filter can be upgraded to an F7 multi-layer washable bag filter; requires external G4 pre-filter bank
- **Fan Orientation** – Supply air fan available in horizontal or vertical discharge

Contact Air Change for assistance with options



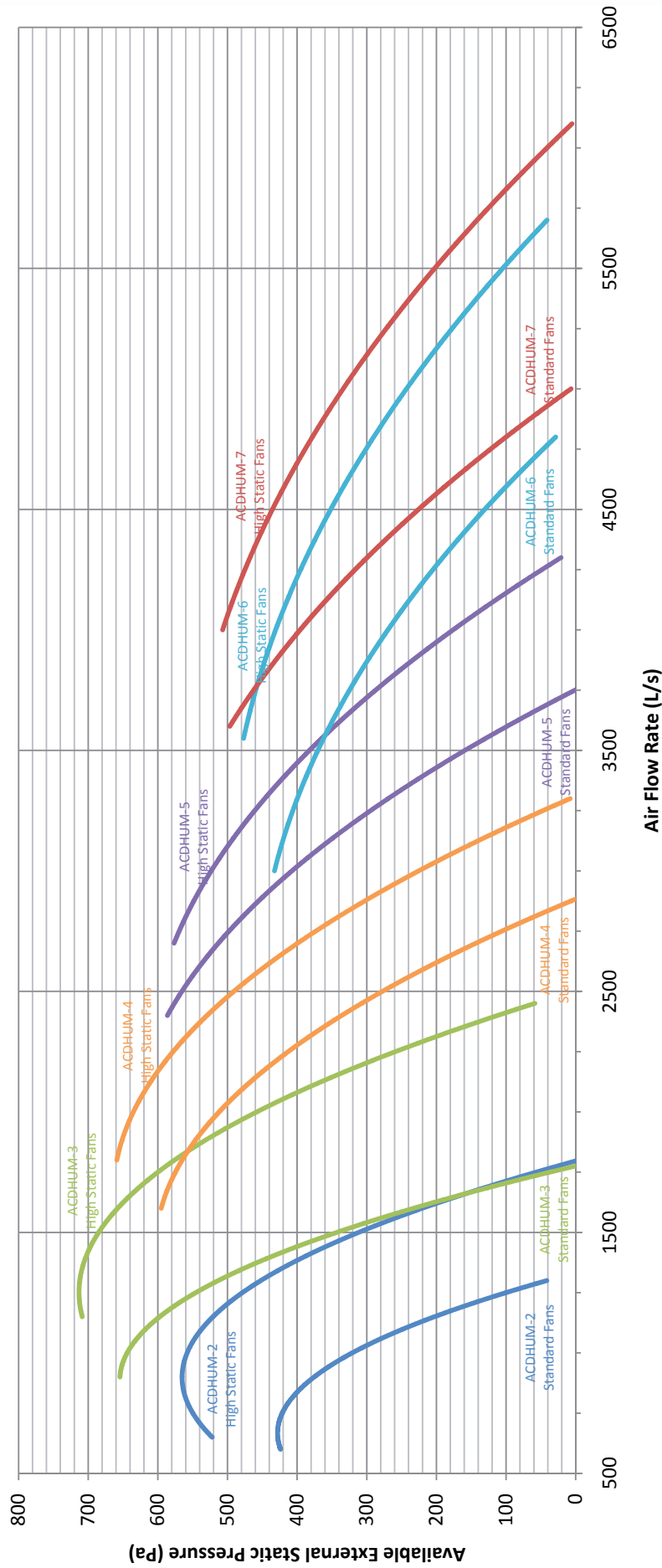
ACDHUM-D Coefficient of Performance (Cooling*)

Location	Ambient Conditions (WB/DB) °C	ACDHUM-2 (850 L/s)	ACDHUM-3 (1100 L/s)	ACDHUM-4 (1700 L/s)	ACDHUM-5 (2400 L/s)	ACDHUM-6 (3500 L/s)	ACDHUM-7 (4000 L/s)
Adelaide	40 / 23	5.016	4.615	4.516	4.951	4.410	4.441
Brisbane	33.5 / 26	5.117	4.782	4.678	5.027	4.562	4.533
Canberra	36 / 20.5	7.015	6.589	6.395	6.830	6.146	6.081
Darwin	34.5 / 28	4.544	4.228	4.140	4.480	4.058	4.049
Hobart	31 / 19.5	11.070	10.690	10.230	10.530	9.512	9.203
Melbourne	37.5 / 21.5	6.438	6.008	5.844	6.291	5.641	5.615
North Queensland	34.5 / 27.5	4.627	4.308	4.220	4.562	4.134	4.123
Perth	40 / 23	5.016	4.615	4.516	4.951	4.410	4.441
Sydney	35.5 / 24	5.384	5.021	4.905	5.291	4.777	4.756

* Based on 24°C/17°C supply air.

Note: Output is calculated over precool, cooling & reheat required.

ACDHUM-D Range Fan Curves

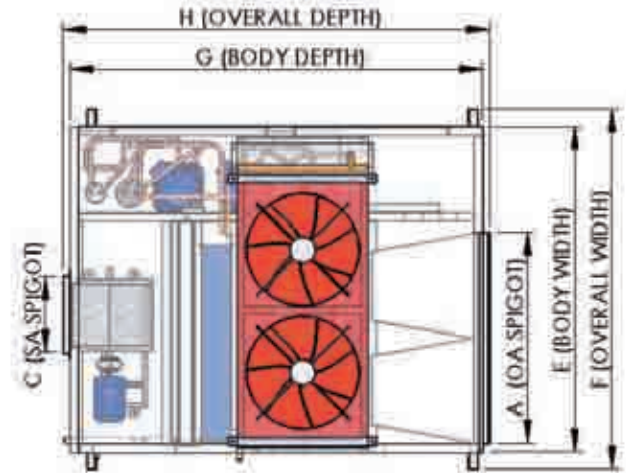


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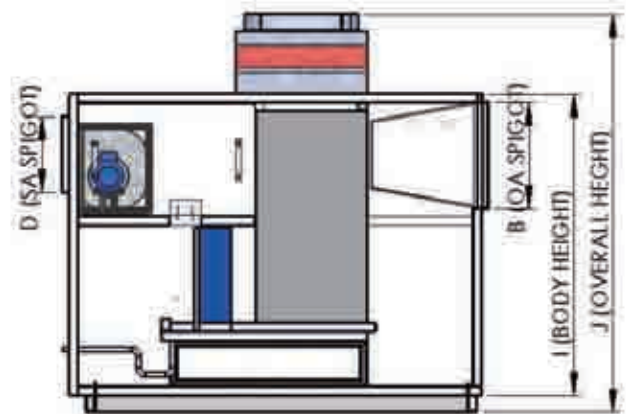


ACDHUM-2-D			
TECHNICAL SPECIFICATIONS	UNIT	STANDARD	COMPRESSOR UPGRADE
Supply Air (Nominal / Max)	L/s	850 / 1400	
Compressor Qty		2	3
Total Compressor Capacity (Cooling)	kWr	51	94
Total Compressor Capacity (Heating)	kWr	30	45
OUTDOOR AIR TO SUPPLY AIR			
Pressure Drop Heat Exchanger	Pa	123	
Pressure Drop Evaporator Coil	Pa	67	
Pressure Drop Filter	Pa	41	
External Static Pressure (Nominal)	Pa	150	
Total Pressure on Supply Fan	Pa	504	
SUPPLY FAN			
Fan Speed (max)	rpm	4000	
Motor Power	kW	1.5	
Motor Poles		2	
COIL SIZE			
Evaporator Coil	mm	1125 x 609.6	
Face Velocity Coil Evap (Nominal)	m/s	1.24	
OUTDOOR AIR FILTER			
Type		Multilayer Washable Bag	
Class		G4	
Size	mm	610 x 610	
Quantity		2	
ELECTRICAL POWERING			
Compressor (RLA / FLA)	A	21.7/34	43.5/69
Supply Fan (FLA)	A	2.9	2.9
Condenser Fan (FLA)	A	2.5	2.5
Nominal Running Current	A	28.1/27.1/27.1	52.4/51.4/51.4
Total Full Load Amps	A	40.4/39.4/39.4	77.9/76.9/76.9
SOUND LEVEL			
Sound Power Level In Supply Duct	dB (A)	82.3	
UNIT DIMENSION and WEIGHT			
Body Width (E) / Overall Width (F)	mm	1900 / 2100	
Body Depth (G) / Overall Depth (H)	mm	2410 / 2490	
Body Height (I) / Overall Height (J)	mm	1760 / 2325	
Weight	kg	975	
SPIGOT SIZES			
Supply Air (C x D)	mm	440 x 440	
Outdoor Air (A x B)	mm	1230 x 620	
CLEARANCE REQUIREMENT			
Minimum LHS Requirement	mm	1000	
Minimum RHS Requirement	mm	800	

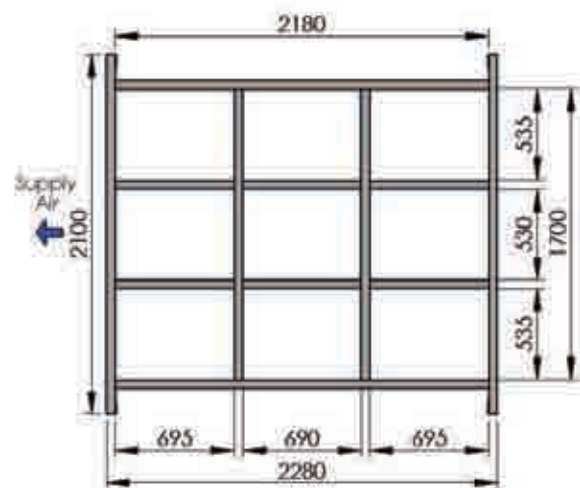
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Plan View



Right Hand Side View



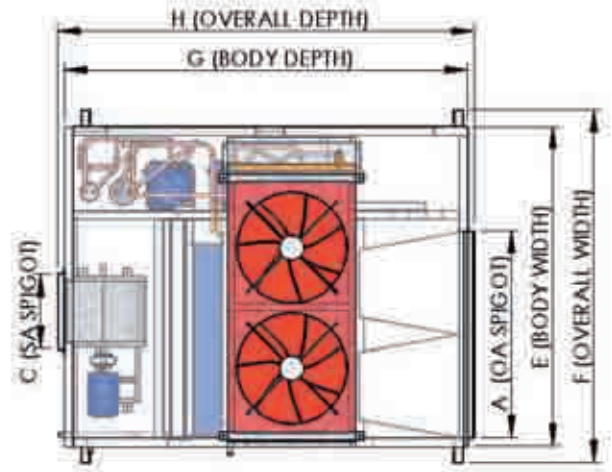
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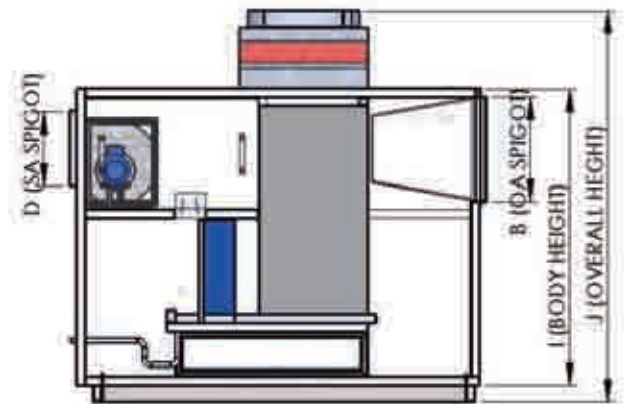


ACDHUM-3-D			
TECHNICAL SPECIFICATIONS	UNIT	STANDARD	COMPRESSOR UPGRADE
Supply Air (Nominal / Max)	L/s	1100 / 2000	
Compressor Qty		2	3
Total Compressor Capacity (Cooling)	kWr	67	94
Total Compressor Capacity (Heating)	kWr	38	45
OUTDOOR AIR TO SUPPLY AIR			
Pressure Drop Heat Exchanger	Pa	106	
Pressure Drop Evaporator Coil	Pa	55	
Pressure Drop Filter	Pa	35	
External Static Pressure (Nominal)	Pa	200	
Total Pressure on Supply Fan	Pa	502	
SUPPLY FAN			
Fan Speed (max)	rpm	3500	
Motor Power	kW	2.2	
Motor Poles		2	
COIL SIZE			
Evaporator Coil	mm	1750 x 609.6	
Face Velocity Coil Evap (Nominal)	m/s	1.03	
OUTDOOR AIR FILTER			
Type		Multilayer Washable Bag	
Class		G4	
Size	mm	610 x 610	
Quantity		3	
ELECTRICAL POWERING			
Compressor (RLA / FLA)	A	30/49	43.5/69
Supply Fan (FLA)	A	4.2	4.2
Condenser Fan (FLA)	A	5	5
Nominal Running Current	A	40.2/39.2/39.2	53.7/52.7/52.7
Total Full Load Amps	A	59.2/58.2/58.2	79.2/78.2/78.2
SOUND LEVEL			
Sound Power Level In Supply Duct	dB (A)	83.4	
UNIT DIMENSION and WEIGHT			
Body Width (E) / Overall Width (F)	mm	2550 / 2750	
Body Depth (G) / Overall Depth (H)	mm	2410 / 2490	
Body Height (I) / Overall Height (J)	mm	1760 / 2325	
Weight	kg	1315	
SPIGOT SIZES			
Supply Air (C x D)	mm	445 x 445	
Outdoor Air (A x B)	mm	1840 x 620	
CLEARANCE REQUIREMENT			
Minimum LHS Requirement	mm	1000	
Minimum RHS Requirement	mm	1000	

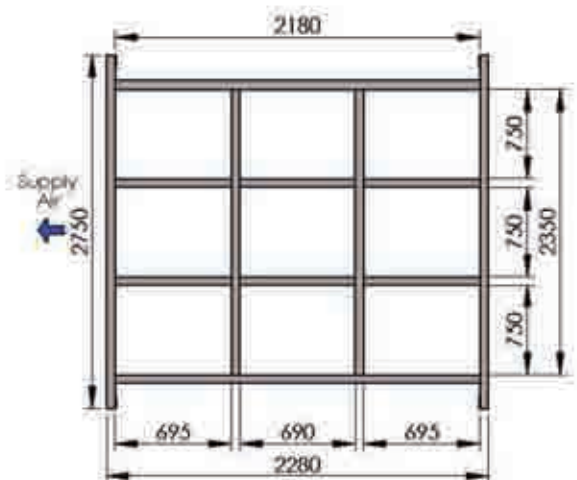
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Plan View



Right Hand Side View



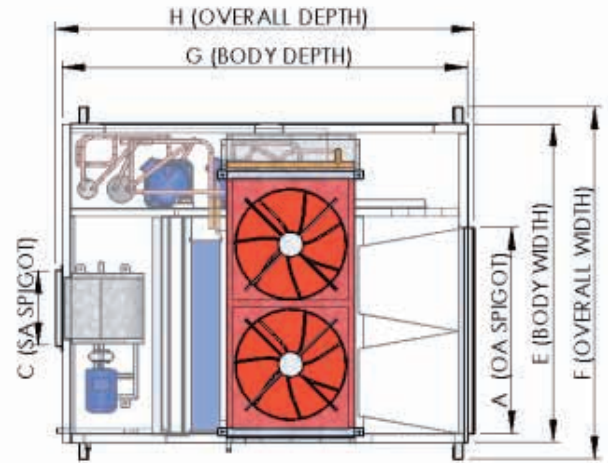
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ACDHUM-D – TECHNICAL DATA

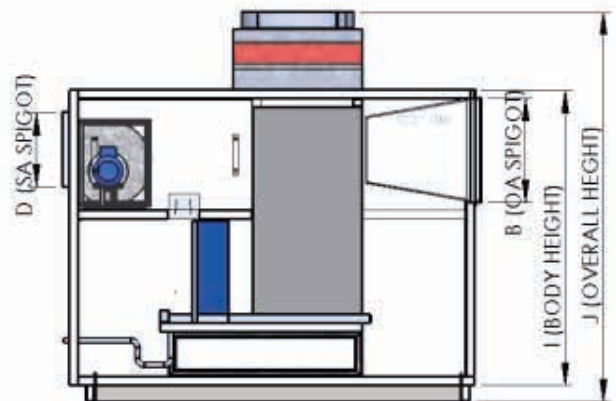


ACDHUM-4-D			
TECHNICAL SPECIFICATIONS	UNIT	STANDARD	COMPRESSOR UPGRADE
Supply Air (Nominal / Max)	L/s	1700 / 2700	
Compressor Qty		2	3
Total Compressor Capacity (Cooling)	kWr	88	116
Total Compressor Capacity (Heating)	kWr	45	59
OUTDOOR AIR TO SUPPLY AIR			
Pressure Drop Heat Exchanger	Pa	123	
Pressure Drop Evaporator Coil	Pa	67	
Pressure Drop Filter	Pa	41	
External Static Pressure (Nominal)	Pa	200	
Total Pressure on Supply Fan	Pa	554	
SUPPLY FAN			
Fan Speed (max)	rpm	3400	
Motor Power	kW	4	
Motor Poles		2	
COIL SIZE			
Evaporator Coil	mm	2400 x 609.6	
Face Velocity Coil Evap (Nominal)	m/s	1.16	
OUTDOOR AIR FILTER			
Type		Multilayer Washable Bag	
Class		G4	
Size	mm	610 x 610	
Quantity		4	
ELECTRICAL POWERING			
Compressor (RLA / FLA)	A	39.3/64	52/90
Supply Fan (FLA)	A	7	7
Condenser Fan (FLA)	A	7.5	7.5
Nominal Running Current	A	54.8/53.8/53.8	67.5/66.5/66.5
Total Full Load Amps	A	79.5/78.5/78.5	105.5/104.5/104.5
SOUND LEVEL			
Sound Power Level In Supply Duct	dB (A)	85.6	
UNIT DIMENSION and WEIGHT			
Body Width (E) / Overall Width (F)	mm	3350 / 3550	
Body Depth (G) / Overall Depth (H)	mm	2410 / 2490	
Body Height (I) / Overall Height (J)	mm	1760 / 2375	
Weight	kg	1743	
SPIGOT SIZES			
Supply Air (C x D)	mm	1080 x 400	
Outdoor Air (A x B)	mm	2450 x 620	
CLEARANCE REQUIREMENT			
Minimum LHS Requirement	mm	1000	
Minimum RHS Requirement	mm	1500	

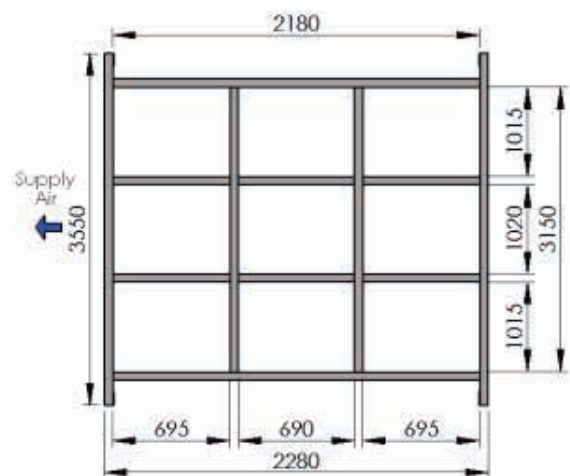
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Plan View



Right Hand Side View



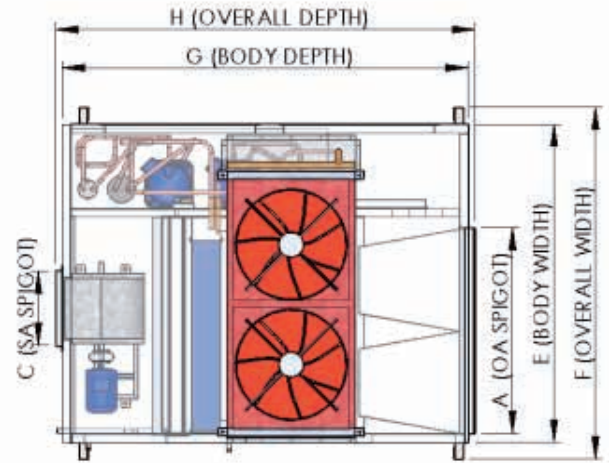
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ACDHUM-D – TECHNICAL DATA

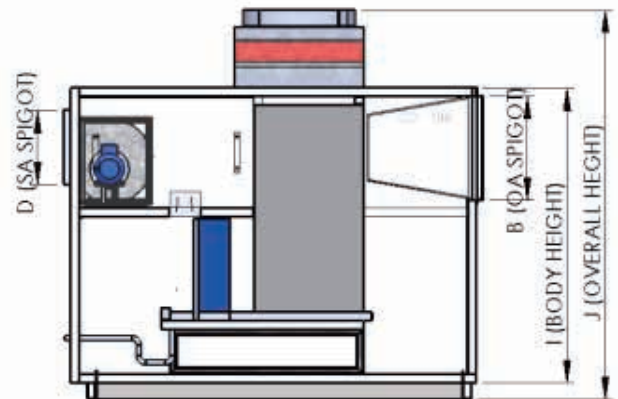


ACDHUM-5-D			
TECHNICAL SPECIFICATIONS	UNIT	STANDARD	COMPRESSOR UPGRADE
Supply Air (Nominal / Max)	L/s	2400 / 3600	
Compressor Qty		2	3
Total Compressor Capacity (Cooling)	kWr	114	135
Total Compressor Capacity (Heating)	kWr	55	59
OUTDOOR AIR TO SUPPLY AIR			
Pressure Drop Heat Exchanger	Pa	139	
Pressure Drop Evaporator Coil	Pa	73	
Pressure Drop Filter	Pa	46	
External Static Pressure (Nominal)	Pa	200	
Total Pressure on Supply Fan	Pa	597	
SUPPLY FAN			
Fan Speed (max)	rpm	3300	
Motor Power	kW	5.5	
Motor Poles		2	
COIL SIZE			
Evaporator Coil	mm	3050 x 609.6	
Face Velocity Coil Evap (Nominal)	m/s	1.29	
OUTDOOR AIR FILTER			
Type		Multilayer Washable Bag	
Class		G4	
Size	mm	610 x 610	
Quantity		5	
ELECTRICAL POWERING			
Compressor (RLA / FLA)	A	45/82	57/96
Supply Fan (FLA)	A	9.7	9.7
Condenser Fan (FLA)	A	7.5	8.75
Nominal Running Current	A	63.2/62.2/62.2	76.5/75.5/75.5
Total Full Load Amps	A	100.2/99.2/99.2	115.5/114.5/114.5
SOUND LEVEL			
Sound Power Level In Supply Duct	dB (A)	88.9	
UNIT DIMENSION and WEIGHT			
Body Width (E) / Overall Width (F)	mm	4000 / 4200	
Body Depth (G) / Overall Depth (H)	mm	2410 / 2490	
Body Height (I) / Overall Height (J)	mm	1760 / 2375	
Weight	kg	2074	
SPIGOT SIZES			
Supply Air (C x D)	mm	1205 x 445	
Outdoor Air (A x B)	mm	3060 x 620	
CLEARANCE REQUIREMENT			
Minimum LHS Requirement	mm	1000	
Minimum RHS Requirement	mm	1500	

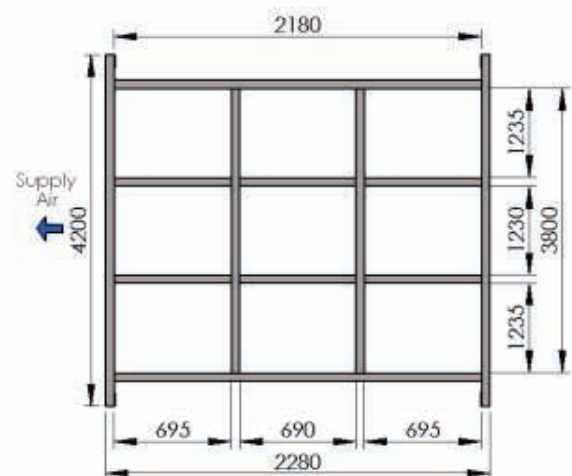
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Plan View



Right Hand Side View



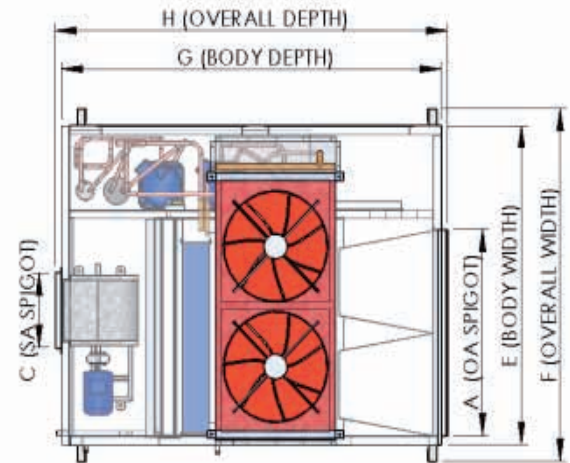
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ACDHUM-D – TECHNICAL DATA

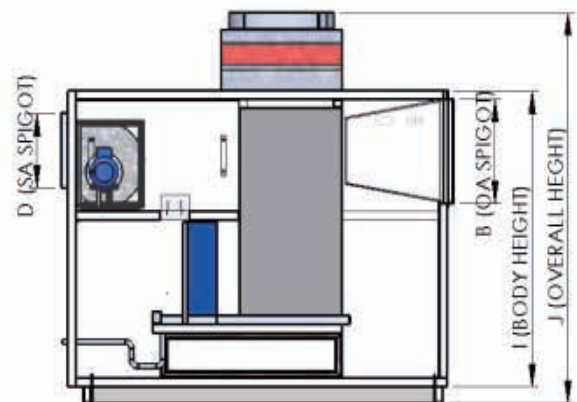


ACDHUM-6-D			
TECHNICAL SPECIFICATIONS	UNIT	STANDARD	COMPRESSOR UPGRADE
Supply Air (Nominal / Max)	L/s	3500 / 4300	
Compressor Qty		2	3
Total Compressor Capacity (Cooling)	kWr	140	178
Total Compressor Capacity (Heating)	kWr	67	92
OUTDOOR AIR TO SUPPLY AIR			
Pressure Drop Heat Exchanger	Pa	169	
Pressure Drop Evaporator Coil	Pa	114	
Pressure Drop Filter	Pa	56	
External Static Pressure (Nominal)	Pa	250	
Total Pressure on Supply Fan	Pa	758	
SUPPLY FAN			
Fan Speed (max)	rpm	3400	
Motor Power	kW	7.5	
Motor Poles		2	
COIL SIZE			
Evaporator Coil	mm	3700 x 603.5	
Face Velocity Coil Evap (Nominal)	m/s	1.57	
OUTDOOR AIR FILTER			
Type		Multilayer Washable Bag	
Class		G4	
Size	mm	610 x 610	
Quantity		6	
ELECTRICAL POWERING			
Compressor (RLA / FLA)	A	62/104	72.6/120
Supply Fan (FLA)	A	13	13
Condenser Fan (FLA)	A	12.5	12.5
Nominal Running Current	A	88.5/87.5/87.5	99.1/98.1/98.1
Total Full Load Amps	A	130.5/129.5/129.5	146.5/145.5/145.5
SOUND LEVEL			
Sound Power Level In Supply Duct	dB (A)	88.1	
UNIT DIMENSION and WEIGHT			
Body Width (E) / Overall Width (F)	mm	4650 / 4850	
Body Depth (G) / Overall Depth (H)	mm	2410 / 2490	
Body Height (I) / Overall Height (J)	mm	1760 / 2450	
Weight	kg	2536	
SPIGOT SIZES			
Supply Air (C x D)	mm	2365 x 440	
Outdoor Air (A x B)	mm	3670 x 620	
CLEARANCE REQUIREMENT			
Minimum LHS Requirement	mm	1000	
Minimum RHS Requirement	mm	1500	

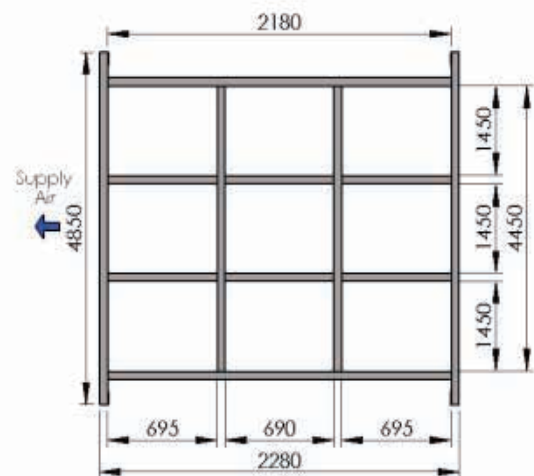
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Plan View



Right Hand Side View



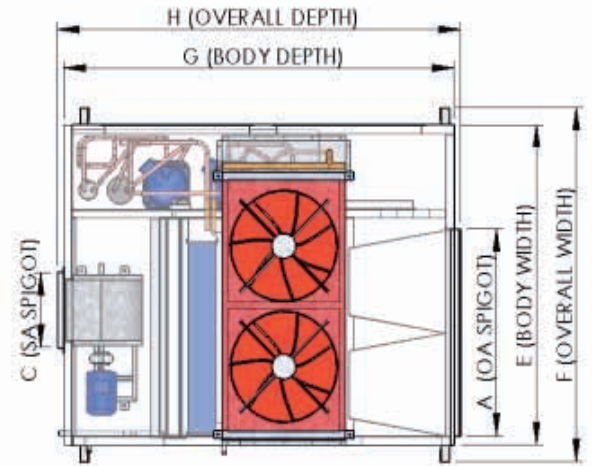
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ACDHUM-D – TECHNICAL DATA

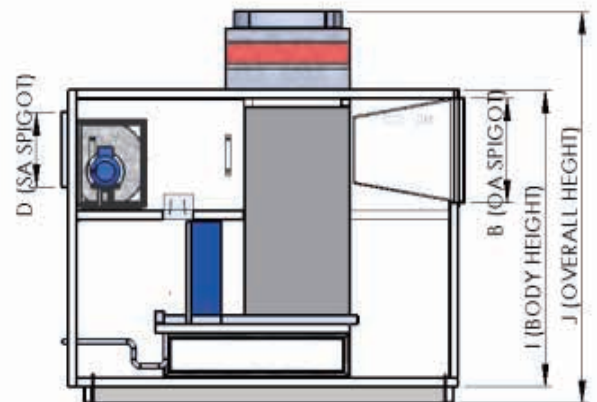


ACDHUM-7-D			
TECHNICAL SPECIFICATIONS	UNIT	STANDARD	COMPRESSOR UPGRADE
Supply Air (Nominal / Max)	L/s	4000 / 5000	
Compressor Qty		2	3
Total Compressor Capacity (Cooling)	kWr	165	210
Total Compressor Capacity (Heating)	kWr	92	92
OUTDOOR AIR TO SUPPLY AIR			
Pressure Drop Heat Exchanger	Pa	165	
Pressure Drop Evaporator Coil	Pa	120	
Pressure Drop Filter	Pa	55	
External Static Pressure (Nominal)	Pa	250	
Total Pressure on Supply Fan	Pa	755	
SUPPLY FAN			
Fan Speed (max)	rpm	3400	
Motor Power	kW	7.5	
Motor Poles		2	
COIL SIZE			
Evaporator Coil	mm	4350 x 603.5	
Face Velocity Coil Evap (Nominal)	m/s	1.52	
OUTDOOR AIR FILTER			
Type		Multilayer Washable Bag	
Class		G4	
Size	mm	610 x 610	
Quantity		7	
ELECTRICAL POWERING			
Compressor (RLA / FLA)	A	66.2/119	81/150
Supply Fan (FLA)	A	13	13
Condenser Fan (FLA)	A	12.5	13.75
Nominal Running Current	A	92.7/91.7/91.7	108.8/107.8/107.8
Total Full Load Amps	A	145.5/144.5/144.5	177.8/176.8/176.8
SOUND LEVEL			
Sound Power Level In Supply Duct	dB (A)	89.3	
UNIT DIMENSION and WEIGHT			
Body Width (E) / Overall Width (F)	mm	5300 / 5500	
Body Depth (G) / Overall Depth (H)	mm	2410 / 2490	
Body Height (I) / Overall Height (J)	mm	1760 / 2450	
Weight	kg	2820	
SPIGOT SIZES			
Supply Air (C x D)	mm	2365 x 440	
Outdoor Air (A x B)	mm	4280 x 620	
CLEARANCE REQUIREMENT			
Minimum LHS Requirement	mm	1000	
Minimum RHS Requirement	mm	1500	

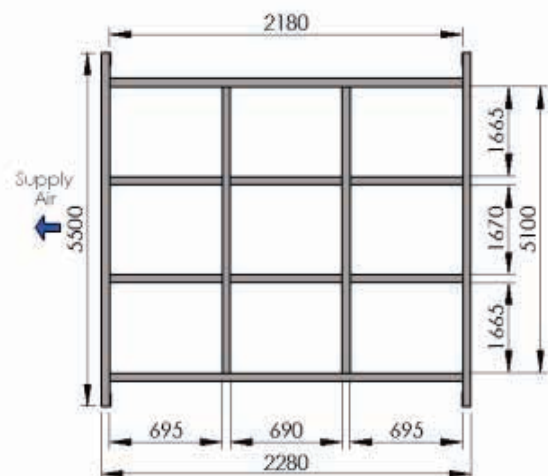
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Plan View



Right Hand Side View



Base Frame