ASU Series Catalogue

Sabro

Air conditioning

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Air Cooled Split Package Unit

Made In PAKISTAN
Since 1969

Sabro

ASC MODELS SERIES

Air Cooled Self Contained Models Series

CONTENTS

Also Available with Environmental Friendly Refrigerant-(R-407C/410A)

Air Cooled Split Package Unit

Sabro has over 50 years of experience on ASU systems.
Modernization & Sophistication of workplaces & industries with massive urbanization has led to a hyper demand for a more holistic approach towards air conditioning.
Units that are engineered with bi-dimensional capabilities, possessing the potential of simultaneously cooling & heating, adaptability to different seasons and varied temperature comfort levels of different spaces within single premises.

Sabro Split Packaged units have always remained popular choice amongst users primarily because they are easy to install and allow cost effective maintenance.

Air-cooled Split packaged systems at Sabro have been distinctively designed having a great regard of our customers' requirement. We at sabro understand that customers want to save time, money & space all of which have been our guiding design & production imperatives, carefully crafting our Air-cooled Split packaged Units to make sure that our ready-made product becomes your tailored solution.

We are also applying our ingenuity to make our products as environmental friendly as possible, with simple effective control over air conditioning units to avoid unnecessary/unhygienic energy wastage.

Standard Range: 3.3 RT to 42.25 RT
Custom Make: Up *to* 150 RT

Equipment Features

Sabro

Economy, Efficiency And Comfort

- Scroll Compressors, a relatively new technology, has proven to more efficient and economical than conventional compressors in refrigeration/electrical usage.
- Factory tested and refrigerant charged at site.
- Intelligent space utilization, in both high rise and conventional buildings.

Improved Indoor Air Quality

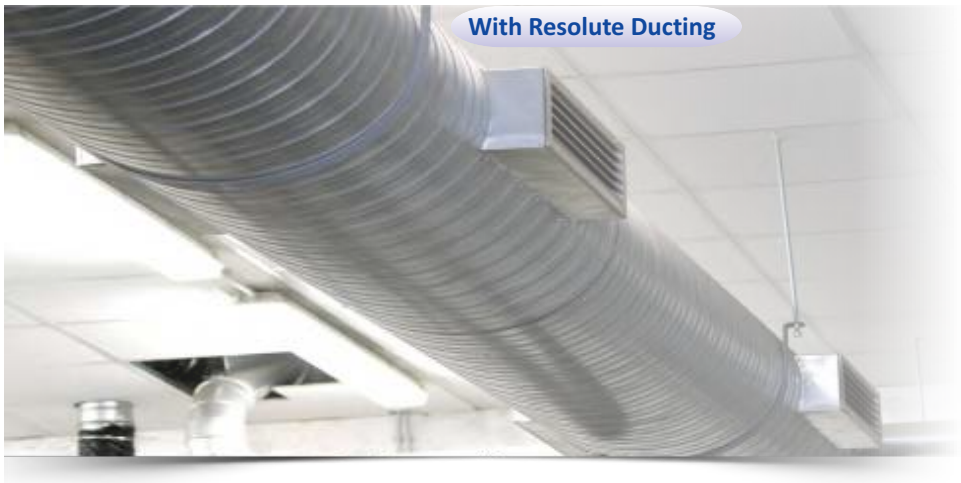
- Pre-filter option, Recycling of dust free air leading to more healthy & hygienic environment.

Noise Reduction

- Specialized design and structural quality.
- Heavy -gauge metal and welded construction to minimize vibrations.
- Statically and dynamically balanced fans

Designed And Manufactured For Longevity

- Convenient access to all parts and maintenance/services need.
- Adjustable(belt drive) centrifugal evaporator fan, enabling fan RPM to be increased or decreased.
- Multiple circuits to maintain required temperatures i.e. allowing great deal of precision in cooling (Selected models only).
- Available in wide range of models from 3.75 Hp to 50 Hp to suite individual area requirement.



Components Details

Casing Material
Units are made from Galvanized fine steel sheets, degreased, de-rusted, phosphate coated and finished electro statically with powder paint which is then baked. This results in excellent corrosion resistance which ensures long lasting life of units.

Compressor
Sabro has always placed sole reliance on Copeland® compressors, one of the most well reputed and reliable manufacturers in the world. All ASU units consist of scrollcompressorsEach compressor is provided with completely independent refrigerant circuits.

Evaporator-Fan And Motor
Statically and dynamically balanced for noiseless and laminar flow, All ASU units consist of forward curved centrifugal fans. These fans are belt driven using 1 or 2 “V” belts with fan pulleys combination(mounted on shafts), that are provided with permanently lubricated ball-bearings.

Condenser-Fan And Motor
The Condenser fans are made up of propeller type blades which are made up of heavy gauge aluminum material. The fans are statically&dynamically balanced for laminar flow enabling low noise operations. The fan motors have class F insulation and IP-55 protection.

Evaporator Coil
The evaporator-coil is made up of seamless copper-tubes that are mechanically expanded to ensure rigid contact with fins to ensure greater heat-transfer efficiency. It is tested under water with nitrogen gas at a gauge pressure of 250 Psi against leakage.

Condenser Coil
The condenser coil is made up of seamless copper-tubes and aluminum plate fins. It is tested under water with nitrogen gas at a gauge pressure of 450 Psi against leakage.

Components Details

Sabro

Air-Filter
2-inch thick washable aluminum media air filters are used in these units.

Electrical Control Panel
Mounted inside the condenser section, the electrical control panel consists of power monitor, magnetic contactors, thermal overload relays and fuses etc. Control panel is provided with hinged door with lock and can be made available for remote installation in the field on request.

Operational Switches And Thermostat
ASU units are provided with electronic thermostats with LCD display, detailing unit's operating status.

Safety Devices

Compressor Internal Protector
Protects the compressor motor winding from overheating.

Power Monitor
P.M Monitors voltage fluctuations. It stops the unit from operating at high/low voltage or wrong phase sequence/phase reversal.

Compressor Over-Load Relay
It Protects the compressor by switching it OFF at higher than required current.

Low And High Pressure Switches
These switches are used to protect the compressor from any damage due to abnormal suction/discharge pressure.

Evaporator And Condenser Fan Motor Over-Load Relays
To protect the evaporator as well condenser fan motor from over current operation.

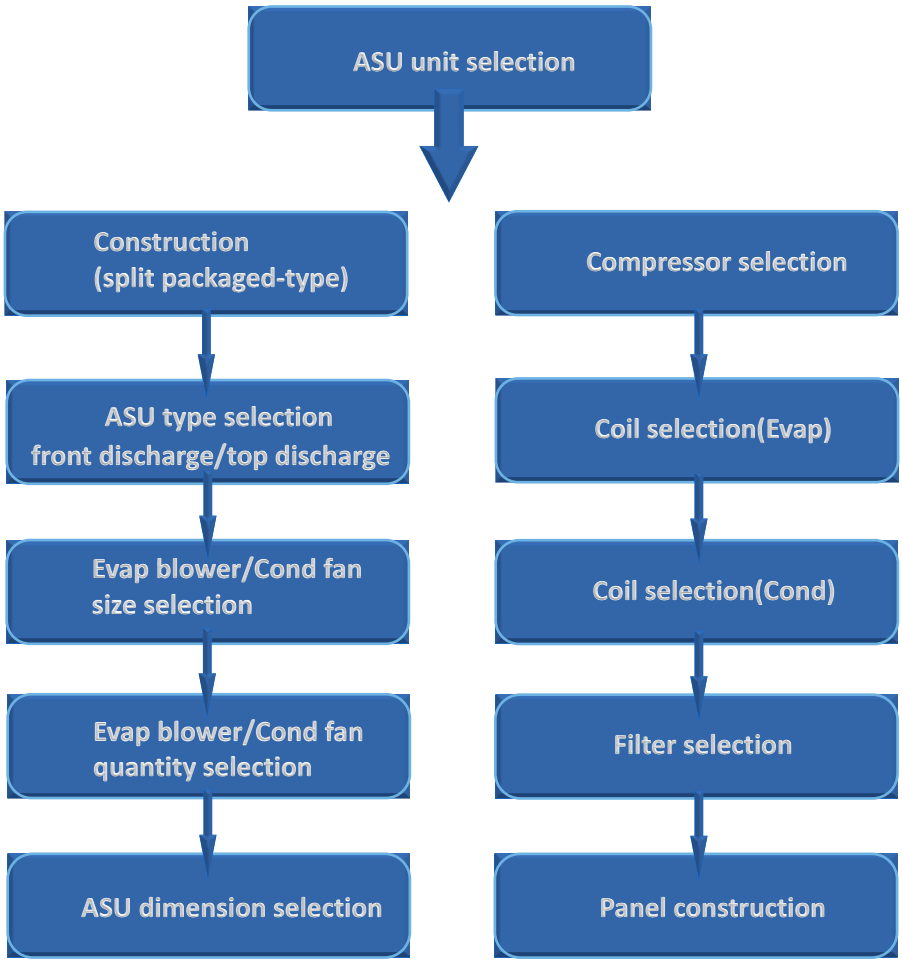
Optional Accessories

Pressure Gauge
Visual representation depicting the compressor's operating conditions, using high and low refrigerant pressure.

Acrylic Protective Coating
On condenser coil a protective coating of acrylic resin is used to prolong its life in sea-line areas.

Low-Ambient Control
A safety device that shifts the condenser fan motor ON & OFF, the aim is to keep the head pressure elevated during low ambient temperatures.

Commercial


ASU unit selection
Construction
(split packaged-type)
ASU type selection
front discharge/top discharge
Evap blower/Cond fan
size selection
Evap blower/Cond fan
quantity selection
ASU dimension selection
Compressor selection
Coil selection(Evap)
Coil selection(Cond)
Filter selection
Panel construction

Air Cooled Split Condenser Unit

APPLICATION / ITEM		ASU 040S-S	ASU 050S-S	ASU 060S-S	ASU 080D-S	ASU 080S-S	ASU 100D-S	ASU 120D-S	ASU 160S-S
Cooling Capacity (Evaporator)	BTU/Hr	39400	51000	60500	78800	79500	102000	121000	155000
	KCAL/Hr	9929	12852	15246	19858	20034	25704	30492	39060
	KW	11.55	15.00	17.74	23.10	23.31	30.00	35.48	45.45
Heating Capacity (Evaporator)	BTU/Hr	40000	51500	61000	80000	80250	103000	121500	156200
	KCAL/Hr	10080	12978	15372	20160	20223	25956	30618	39363
	KW	11.73	15.10	17.89	23.45	23.52	30.20	35.63	45.78
Refrigerant		R-22 (to be charged at site)							
Refrigerant circuits	Qty	01	01	01	02	01	02	02	01
Power Supply		380/415 -3-50 HZ+N							
Compressor	Type	Hermetic Scroll							
	Qty	01	01	01	02	01	02	02	01
	Nominal Hp	3.75	5	6	3.75x2	8	5x2	6x2	16
	Amp.(RLA)	6.0	7.5	8.5	6.0x2	11.5	7.5x2	8.5x2	23.0
	Amp.(FLA)	8.5	10.3	11	8.5x2	16	10.3x2	11x2	30
Condenser Fan	Type	Propeller Type, Directly Mounted On The Motors Shaft							
	Qty	01	01	01	01	01	01	01	01
Condenser Fan Motor	Qty	01	01	01	01	01	01	01	01
	Nominal Hp	0.5	0.75	0.75	0.75	0.75	0.75	0.75	0.75
	Amp.(RLA)	0.7	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Refrigerant Connecton(welded)	Sucton	3/4" OD	7/8" OD	7/8" OD	2x3/4" OD	7/8" OD	2x7/8" OD	2x7/8" OD	1-3/8" OD
	Liquid	3/8" OD	3/8" OD	1/2" OD	2x3/8" OD	1/2" OD	2x3/8" OD	2x1/2" OD	5/8" OD
Dimensions mm(inch)	Height	864(34")	817(32.2")		1059(41.7")		1059(41.7")		
	Width	813(32")	1016(40")		1016(40")		1168(46")		
	Depth	864(34")	1092(43")		1016(40")		1118(46")		
Weight	Kg	130	150	190	200	210	250	260	270

APPLICATION / ITEM		ASU 160D	ASU 200D	ASU 240D	ASU 320D	ASU 370D	ASU 420D	ASU 480T	ASU 500D
Cooling Capacity (Evaporator)	BTU/Hr	159000	212000	240000	310000	359000	408000	465000	506000
	KCAL/Hr	40068	53424	60480	78120	90468	102816	117180	127512
	KW	46.62	62.17	70.38	90.91	105.28	119.65	136.36	148.39
Heating Capacity (Evaporator)	BTU/Hr	159705	212700	241000	312400	365000	415000	NA	508000
	KCAL/Hr	40246	53600	60732	78725	91980	104580	NA	128016
	KW	46.80	62.38	70.68	91.61	107.04	121.70	NA	148.97
Refrigerant		R-22 (to be charged at site)							
Refrigerant circuits	Qty	02	02	02	02	02	02	03	02
Power Supply		380/415 -3-50 HZ+N							
Compressor	Type	Hermetic Scroll							
	Qty	02	02	02	02	02	02	03	02
	Nominal Hp	8x2	10x2	12x2	16x2	16+21	21x2	16x3	25x2
	Amp.(RLA)	11.5x2	14x2	16x2	23x2	23+28	28x2	23x3	32.5x2
	Amp.(FLA)	16x2	19.5x2	21.8x2	30x2	30+37	37x2	30x3	40.5x2
Condenser Fan	Type	Propeller Type, Directly Mounted On The Motors Shaf							
	Qty	01	02	02	02	04	04	06	04
Condenser Fan Motor	Qty	01	02	02	02	04	04	06	04
	Nominal Hp	0.75	0.75x2	0.75x2	0.75	0.75x4	0.75x4	0.5x6	0.75x4
	Amp.(RLA)	1.0	1.0x2	1.0x2	1.0x2	1.0	1.0	1.0	1.0
Refrigerant Connecton(welded)	Sucton	2x 7/8" OD	2x 1-1/8" OD	2x 1-1/8" OD	2x1-3/8" OD	2x1-3/8"or2x1-5/8" OD	2x1-5/8" OD	3x1-3/8" OD	2x 1-5/8" OD
	Liquid	2x 1/2" OD	2x 5/8" OD	2x5/8" OD	2x 5/8" OD	2x 5/8"or2x7/8"OD	2x7/8" OD	3x 5/8" OD	2x 7/8" OD
Dimensions mm(inch)	Height	1059(41.7")	1325(52.2")		1445(56.9")	1438(56.6")		1587(62.5")	1756(69.1")
	Width	1168 (46 .0)	1880 (74 .0)		1961 (77.2)	2362 (93 .0)		2387 (94.0)	2362 (93 .0)
	Depth	1118 (44 .0)	1536 (60.5)		1956 (77 .0)	2286 (90 .0)		2489 (98.0)	2491 (98 .0)
Weight	Kg	290	400	450	800	1050	1100	1200	1400

Note:

The above Specification are based on ARI conditions:

Evaporator Entering Air Temperature =80.0 °F (26.6 °C) DB, & 67 °F (19.5 °C) WB.

Condenser Entering Air Temperature = 95.0 °F (35 °C) DB.

*Both interconnecting Piping in this mode is required to be insulated due to refrigerant control in out door unit

C.F.M = Air Flow Rate **E.S.P** = External static Pressure **R.L.A**= Rated load amps

Air Cooled Split Evaporator (Standard Unit)

APPLICATION	ITEM	ASU 040S-S	ASU 050S-S	ASU 060S-S	ASU 080D-S	ASU 080S-S	ASU 100D-S	ASU 120D-S	ASU 160-S
Cooling Capacity	BTU/Hr	39400	51000	60500	78800	79500	102000	121000	155000
	KCAL/Hr	9929	12852	15246	19858	20034	25704	30492	39060
	KW	11.55	15.00	17.74	23.10	23.31	30.00	35.48	45.45
Heating Capacity	BTU/Hr	40000	51500	61000	80000	80250	103000	121500	156200
	KCAL/Hr	10080	12978	15372	20160	20223	25956	30618	39363
	KW	11.73	15.10	17.89	23.45	23.52	30.20	35.63	45.78
Refrigerant	R-22 (Factory Charged)optional/Charged at site								
Refrigerant Circuits	Qty	1	1	1	2	1	2	2	2
Refrigerant Flow Control	Type	Capillary Tube	Capillary Tube	Capillary Tube	Capillary Tube	TXV	Capillary Tube	Capillary Tube	TXV
Power Supply	380/415-3-50HZ+N								
Evaporator Fan	Type	Forward Curved, Centrifugal, Belt Drive							
	CFM	1200	1500	1800	2200	2400	3000	3600	4800
	ESP.(in.Wg)	0.50	0.60	0.60	0.60	0.60	0.60	0.60	0.60
Evaporator Fan Motor	Nominal Hp	0.75	0.75	1.00	1.00	1.00	2.00	2.00	3.00
	Amp.(RLA)	0.80	1.00	1.40	2.30	2.40	2.70	3.10	3.70
Air Filters	Type	2" Thick Washable Aluminum Air Filters							
Liquid Line Connecton	Type	Welded							
	Size(inch)	3/8" OD	3/8" OD	1/2" OD	2x3/8" OD	1/2" OD	2x3/8" OD	2x1/2" OD	5/8" OD
Sucton Line Connecton	Type	Welded							
	Size(inch)	3/4" OD	7/8" OD	7/8" OD	2x3/4" OD	7/8" OD	2x7/8" OD	2x7/8" OD	1-3/8" OD
Condensate drain connecton	Type	Female Pipe threaded							
	Size (inch)	3/4"							
Dimensions mm. (inch)	Height	955(37.6")	955(37.6")	955(37.6")	1117(44.0")	1117(44.0")	1113(43.8")	1113(43.8")	1219(48.0")
	Width	1092(43.0")	1092(43.0")	1092(43.0")	1092(43.0")	1092(43.0")	1244(49.0")	1244(49.0")	1651(65")
	Depth	915(36.0")	915(36.0")	915(36.0")	915(36.0")	915(36.0")	915(36.0")	915(36.0")	1067(42.0")
Weight (Approx.)	Kg.	50	55	60	90	90	130	130	220

APPLICATION	ITEM	ASU 160D-S	ASU 200D-S	ASU 240D-S	ASU 320D-S	ASU 370D-S	ASU 420D-S	ASU 480T-S	ASU 500D-S
Cooling Capacity	BTU/Hr	159000	212000	240000	310000	359000	408000	465000	506000
	KCAL/Hr	40068	53424	60480	78120	90468	102816	117180	127512
	KW	46.62	62.17	70.38	90.91	150.28	119.65	136.36	148.39
Heating Capacity	BTU/Hr	159705	212700	241000	312400	365000	415000	NA	508000
	KCAL/Hr	40246	53600	60732	78725	91980	104580	NA	128016
	KW	46.80	62.38	70.68	91.61	107.04	121.70	NA	148.97
Refrigerant	R-22 (Factory Charged)optional/Charged at site								
Refrigerant Circuits	Qty	02	02	02	02	02	02	03	02
Refrigerant Flow Control	Type		Thermostatic Expansion Valve						
Power Supply	380/415V-3-50Hz+N								
Evaporator Fan	Type		Forward Curved, Centrifugal, Belt Drive						
	CFM	4800	6000	7000	9000	10500	11500	13000	14500
	ESP.(in.Wg)	0.75	0.75	0.75	1.0	1.0	1.0	1.25	1.25
Evaporator Fan Motor	Nominal Hp	3.0	5.0	5.0	7.5	7.5	10	10	10
	Amp.(RLA)	3.7	5.8	6.5	8.0	10.0	11.7	12.7	13.5
Air Filters	Type	2" Thick Washable Aluminum Air Filters							
Condensate Drain Connection	Type	Female Pipe threaded							
	Size(inch)	3/4"	2"						
Liquid Line Connection	Type	Welded							
	Size(inch)	2x1/2" OD	2x5/8" OD			2x5/8" or 2x7/8" OD	2x7/8" OD	3x5/8" OD	2x7/8" OD
Suction Line Connection	Type	Welded							
	Size(inch)	2x7/8" OD	2x1-1/8" OD		2x1-3/8" OD	2x1-3/8" or 2x1-5/8" OD	2x1-5/8" OD	3x1-3/8" OD	2x1-5/8" OD
Dimensions mm. (inch)	Height	1219(48.0")	1295(51.0")		1448(57.0")	1498(59.0")		1498(59.0")	1549(61.0")
	Width	1651(65")	1880(74.0")		1961(77.2")	2362(93.0")		2413(95.0")	2362(93.0")
	Depth	1067(42.0")	1443(56.8")		1620(63.8")	1443(56.8")		1445(56.9")	1443(56.8")
Weight (Approx.)	Kg.	220	350	350	650	700	700	600	750

Air Cooled Split Evaporator Unit (Floor Standing Ducted)

APPLICATION	ITEM	ASU 040S-V	ASU 050S-V	ASU 060S-V	ASU 080D-V	ASU 080S-V	ASU 100D-V	ASU 120D-V	ASU 160-V
Cooling Capacity	BTU/Hr	39400	51000	60500	78800	79500	102000	121000	155000
	KCAL/Hr	9929	12852	15246	19858	20034	25704	30492	39060
	KW	11.55	15.00	17.74	23.10	23.31	30.00	35.48	45.45
Heating Capacity	BTU/Hr	40000	51500	61000	80000	80250	103000	121500	156200
	KCAL/Hr	10080	12978	15372	20160	20223	25956	30618	39363
	KW	11.73	15.10	17.89	23.45	23.52	30.20	35.63	45.78
Refrigerant	R-22 (Factory Charged)-optional/Charged at site								
Refrigerant Circuits	Qty	1	1	1	2	1	2	2	1
Refrigerant Flow Control	Type	Capillary Tube	Capillary Tube	Capillary Tube	Capillary Tube	TXV	Capillary Tube	Capillary Tube	TXV
Power Supply	380/415-3-50HZ+N								
Evaporator Fan	Type	Forward Curved, Centrifugal, Belt Drive							
	CFM	1200	1500	1800	2200	2400	3000	3600	4800
	ESP.(in.Wg)	0.50	0.60	0.60	0.60	0.60	0.60	0.60	0.60
Evaporator Fan Motor	Nominal Hp	0.75	0.75	1.00	1.00	1.00	2.00	2.00	3.00
	Amp.(RLA)	0.80	1.00	1.40	2.30	2.40	2.70	3.10	3.70
Air Filters	Type	2" Thick Washable Aluminum Air Filters							
Liquid Line Connecton	Type	Welded							
	Size(inch)	3/8" OD	3/8" OD	1/2" OD	2x3/8" OD	1/2" OD	2x3/8" OD	2x1/2" OD	5/8" OD
Sucton Line Connecton	Type	Welded							
	Size(inch)	3/4" OD	7/8" OD	7/8" OD	2x3/4" OD	7/8" OD	2x7/8" OD	2x7/8" OD	1-3/8" OD
Condensate drain connecton	Type	Female Pipe threaded							
	Size (inch)	3/4"							
Dimensions mm. (inch)	Height	1308(51.5")	1308(51.5")	1308(51.5")	1315(51.8")	1315(51.8")	1315(51.8")	1315(51.8")	1315(51.8")
	Width	889(35.0")	889(35.0")	889(35.0")	1168(46.0")	1168(46.0")	1168(46.0")	1168(46.0")	1474(58.0")
	Depth	600(23.6")	600(23.6")	600(23.6")	660(26.0")	660(26.0")	660(26.0")	660(26.0")	660(26.0")
Weight (Approx.)	Kg.	130	130	140	160	160	180	185	205

APPLICATION	ITEM	ASU 160D-V	ASU 200D-V	ASU 240D-V	ASU 320D-V	ASU 370D-V	ASU 420D-V	ASU 480T-V	ASU 500D-V
Cooling Capacity	BTU/Hr	159000	212000	240000	310000	359000	408000	465000	506000
	KCAL/Hr	40068	53424	60480	78120	90468	102816	117180	127512
	KW	46.62	62.17	70.38	90.91	150.28	119.65	136.36	148.39
Heating Capacity	BTU/Hr	159705	212700	241000	312400	365000	415000	A	508000
	KCAL/Hr	40246	53600	60732	78725	91980	104580	A	128016
	KW	46.80	62.38	70.68	91.61	107.04	121.70	A	148.97
Refrigerant	R-22 (Factory Charged)-optional/Charged at site								
Refrigerant Circuits	Qty	02	02	02	02	02	02	03	02
Refrigerant Flow Control	Type				Thermostatic Expansion Valve				
Power Supply	380/415V-3-50Hz+N								
Evaporator Fan	Type	Forward Curved, Centrifugal, Belt Drive							
	CFM	4800	6000	7000	9000	10500	11500	13000	14500
	ESP.(in.Wg)	0.75	0.75	0.75	1.0	1.0	1.0	1.25	1.25
Evaporator Fan Motor	Nominal Hp	3.0	5.0	5.0	7.5	7.5	10	10	10
	Amp.(RLA)	3.7	5.8	6.5	8.0	10.0	11.7	12.7	13.5
Air Filters	Type	2" Thick Washable Aluminum Air Filters							
Condensate Drain Connection	Type	Female Pipe threaded							
	Size(inch)	3/4"	2"						
Liquid Line Connection	Type	Welded							
	Size(inch)	2x1/2" OD	2x5/8" OD			2x5/8"or 2x7/8" OD	2x7/8" OD	3x5/8" OD	2x7/8" OD
Suction Line Connection	Type	Welded							
	Size(inch)	2x7/8" OD	2x1-1/8" OD		2x1-3/8" OD	2x1-3/8" or 2x1-5/8" OD	2x1-5/8" OD	3x1-3/8" OD	2x1-5/8" OD
Dimensions mm. (inch)	Height	1315(51.8")	1651(65.0")		2032(80.0")	2032(80.0")		2032(80.0")	2184(86.0")
	Width	1474(58.0")	1651(65.0")		1885(74.2")	2286(90.0")		2337(92.0")	2286(90.0")
	Depth	660(26.0")	991(39.0")		1016(40.0")	915(36.0")		915(36.0")	915(36.0")
Weight (Approx.)	Kg.	205	350	370	400	490	525	610	750

Air Cooled Split Evaporator (Floor Standing Free Discharge)

APPLICATION / ITEM		ASU 040S-VC	ASU 050S-S	ASU 060S-VC	ASU 080D-VC	ASU 080S-VC	ASU 100D-VC	ASU 120D-VC	ASU 160-VC
Cooling Capacity	BTU/Hr	39400	51000	60500	78800	79500	102000	121000	155000
	KCAL/Hr	9929	12852	15246	19858	20034	25704	30492	39060
	KW	11.55	15.00	17.74	23.10	23.31	30.00	35.48	45.45
Heating Capacity	BTU/Hr	40000	51500	61000	80000	80250	103000	121500	156200
	KCAL/Hr	10080	12978	15372	20160	20223	25956	30618	39363
	KW	11.73	15.10	17.89	23.45	23.52	30.20	35.63	45.78
Refrigerant		R-22 (Factory Charged)-optional/Charged at site							
Refrigerant Circuits	Qty	1	1	1	2	1	2	2	1
Refrigerant Flow Control	Type	Capillary Tube	Capillary Tube	Capillary Tube	Capillary Tube	TXV	Capillary Tube	Capillary Tube	TXV
Power Supply		380/415-3-50HZ+N							
Evaporator Fan	Type	Forward Curved, Centrifugal, Belt Drive							
	CFM	1200	1500	1800	2200	2400	3000	3600	4800
	ESP.(in.Wg)	0.50	0.60	0.60	0.60	0.60	0.60	0.60	0.60
Evaporator Fan Motor	Nominal Hp	0.75	0.75	1.00	1.00	1.00	2.00	2.00	3.00
	Amp.(RLA)	0.80	1.00	1.40	2.30	2.40	2.70	3.10	3.70
Air Filters	Type	2" Thick Washable Aluminum Air Filters							
Liquid Line Connecton	Type	Welded							
	Size(inch)	3/8" OD	3/8" OD	1/2" OD	2x3/8" OD	1/2" OD	2x3/8" OD	2x1/2" OD	5/8" OD
Sucton Line Connecton	Type	Welded							
	Size(inch)	3/4" OD	7/8" OD	7/8" OD	2x3/4" OD	7/8" OD	2x7/8" OD	2x7/8" OD	1-3/8" OD
Condensate drain connecton	Type	Female Pipe threaded							
	Size (inch)	3/4"							
Dimensions mm. (inch)	Height	1956(77.0")	1956(77.0")	1956(77.0")	1956(77.0")	1956(77.0")	1943(76.5")	1943(76.5")	2070(81.5")
	Width	838(33.0")	838(33.0")	838(33.0")	838(33.0")	838(33.0")	1397(55.0")	1397(55.0")	1422(56.0")
	Depth	368(14.5")	368(14.5")	457(18.0")	457(18.0")	457(18.0")	457(18.0")	457(18.0")	700(27.6")
Weight (Approx.)	Kg.	145	170	180	205	200	215	225	300

APPLICATION / ITEM		ASU 160D-VC	ASU 200D-VC	ASU 240D-VC	ASU 320D-VC	ASU 370D-VC	ASU 420D-VC
Cooling Capacity	BTU/Hr	159000	212000	240000	310000	359000	408000
	KCAL/Hr	40068	53424	60480	78120	90468	102816
	KW	46.62	62.17	70.38	90.91	150.28	119.65
Heating Capacity	BTU/Hr	159705	212700	241000	312400	365000	415000
	KCAL/Hr	40246	53600	60732	78725	91980	104580
	KW	46.80	62.38	70.68	91.61	107.04	121.70
Refrigerant		R 22 (Factory Charged)-optional/Charged at site					
Refrigerant Circuits	Qty	02					
Refrigerant Flow Control	Type	Thermostatic Expansion Valve					
Power Supply		380/415V-3-50Hz+N					
Evaporator Fan	Type	Forward Curved, Centrifugal, Belt Drive					
	CFM	4800	6000	7000	9000	10500	11500
	ESP.(in.Wg)	0.75	0.75	0.75	1.0	1.0	1.0
Evaporator Fan Motor	Nominal Hp	3.0	5.0	5.0	7.5	7.5	10
	Amp.(RLA)	3.7	5.8	6.5	8.0	10.0	11.7
Air Filters	Type	2 Inch Thick Washable Aluminum Air Filters					
Condensate Drain Connection	Type	Female Pipe threaded					
	Size(inch)	3/4"	3/4"	2"	2"	2"	2"
Liquid Line Connection	Type	Welded					
	Size(inch)	2x1/2" OD	2x5/8" OD	2x5/8" OD	2x5/8" OD	2x5/8" or 2x7/8" OD	2x7/8" OD
Suction Line Connection	Type	Welded					
	Size(inch)	2x7/8" OD	2x1-1/8" OD	2x1-1/8" OD	2x1-3/8" OD	2x1-3/8" or 2x1-5/8" OD	2x1-5/8" OD
Dimensions mm. (inch)	Height	2070(81.5")	2070(81.5")	2070(81.5")	2070(81.5")	2388(94.0")	2388(94.0")
	Width	1422(56.0")	1524(60.0")	1524(60.0")	1778(70.0")	2032(80.0")	2032(80.0")
	Depth	700(27.6")	699(27.5")	699(27.5")	699(27.5")	914(36.0")	914(36.0")
Weight (Approx.)	Kg.	305	375	450	530	615	705

Air Cooled Split Evaporator Unit (Ceiling Ducted)

APPLICATION	ITEM	ASU 040S-C	ASU 050S-C	ASU 060S-C	ASU 080D-C	ASU 080S-C	ASU 100D-C
Cooling Capacity	BTU/Hr	39400	51000	60500	78800	79500	102000
	KCAL/Hr	9929	12852	15246	19858	20034	25704
	KW	11.55	15.00	17.74	23.10	23.31	30.00
Heating Capacity	BTU/Hr	40000	51500	61000	80000	80250	103000
	KCAL/Hr	10080	12978	15372	20160	20223	25956
	KW	11.73	15.10	17.89	23.76	23.52	30.20
Refrigerant	R-22 (Factory Charged)-optional/Charged at site						
Refrigerant Circuits	Qty	1	1	1	2	1	2
Refrigerant Flow Control	Type	Capillary Tube	Capillary Tube	Capillary Tube	Capillary Tube	TXV	Capillary Tube
Power Supply	380/415-3-50HZ+N						
Evaporator Fan	Type	Forward Curved, Centrifugal, Belt Drive					
	CFM	1200	1500	1800	2200	2400	3000
	ESP.(in.Wg)	0.50	0.60	0.60	0.60	0.60	0.60
Evaporator Fan Motor	Nominal Hp	0.75	0.75	1.00	1.00	1.00	2.00
	Amp.(RLA)	0.80	1.00	1.40	2.30	2.40	2.70
Air Filters	Type	2" Thick Washable Aluminum Air Filters					
Liquid Line Connecton	Type	Welded					
	Size(inch)	3/8" OD	3/8" OD	1/2" OD	2x3/8" OD	1/2" OD	2x3/8" OD
Sucton Line Connecton	Type	Welded					
	Size(inch)	3/4" OD	7/8" OD	7/8" OD	2x3/4" OD	7/8" OD	2x7/8" OD
Condensate drain connecton	Type	Female Pipe threaded					
	Size (inch)	3/4"					
Dimensions mm. (inch)	Height	608(24.0")	608(24.0")	608(24.0")	608(24.0")	608(24.0")	608(24.0")
	Width	1092(43.0")	1092(43.0")	1092(43.0")	1244(49.0")	1244(49.0")	1651(65.0")
	Depth	870(34.2")	870(34.2")	870(34.2")	870(34.2")	870(34.2")	870(34.2")
Weight (Approx.)	Kg.	130	140	160	160	185	205

APPLICATION	ITEM	ASU 120D-C	ASU 160S-C	ASU 160D-C	ASU 200D-C	ASU 240D-C	ASU 320D-C
Cooling Capacity	BTU/Hr	121000	155000	159000	212000	240000	310000
	KCAL/Hr	30492	39060	40068	53424	60480	78120
	KW	35.48	45.45	46.62	62.17	70.38	90.91
Heating Capacity	BTU/Hr	121500	156200	159705	212700	241000	312400
	KCAL/Hr	30618	39363	40246	53600	60732	78725
	KW	35.63	45.78	46.80	62.38	70.68	91.61
Refrigerant	R-22 (Factory Charged)-optional/Charged at site						
Refrigerant Circuits	Qty	2	1	2			
Refrigerant Flow Control	Type	Capillary Tube	TXV	TXV	TXV	TXV	TXV
Power Supply	380/415V-3-50Hz+N						
Evaporator Fan	Type	Forward Curved, Centrifugal, Belt Drive					
	CFM	3600	4800	4800	6000	7000	9000
	ESP.(in.Wg)	0.60	0.60	0.70	0.75	0.75	1.00
Evaporator Fan Motor	Nominal Hp	2.00	3.00	3.00	5.00	5.00	7.50
	Amp.(RLA)	3.10	3.70	3.70	5.80	6.50	8.00
Air Filters	Type	2" Thick Washable Aluminum Air Filters					
Condensate Drain Connection	Type	Female Pipe threaded					
	Size(inch)	3/4"	3/4"	3/4"	2"	2"	2"
Liquid Line Connection	Type	Welded					
	Size(inch)	2x1/2" OD	5/8" OD	2x1/2" OD	2x5/8" OD	2x5/8" OD	2x5/8" OD
Suction Line Connection	Type	Welded					
	Size (inch)	2x7/8" OD	1-3/8" OD	2x7/8" OD	2x1-1/8" OD	2x1-1/8" OD	2x1-3/8" OD
Dimensions mm. (inch)	Height	608(24.0")	648(25.5")	648(25.5")	800(31.5")	800(31.5")	952(37.5")
	Width	1651(65.0")	1854(73.0")	1854(73.0")	1981(78.0")	2110(83.0")	2109(83.0")
	Depth	870(34.2")	998(39.3")	998(39.3")	1124(44.2")	1124(44.2")	1276(50.2")
Weight (Approx.)	Kg.	205	350	370	400	490	525

*TXV-Thermostatic Expansion Valve

Refrigerant Piping

Air cooled split units are in two parts;
Outdoor section of unit & Indoor section of unit. These two sections are connected by refrigerant piping.
Refrigerant piping affects on system performance and reliability of compressor.
When planning the layout design of piping, consider following points;

Refrigerant piping length should be as short as possible.
There should be minimum possible bends in piping.
The internal surface of copper pipe should be free of dust, moisture and solid particles.
To avoid transmission of vibration into building,
The piping passing through wall/floor should not touch any structure.
Refrigerant lines should be properly clamped with 5 - 8 feet span.

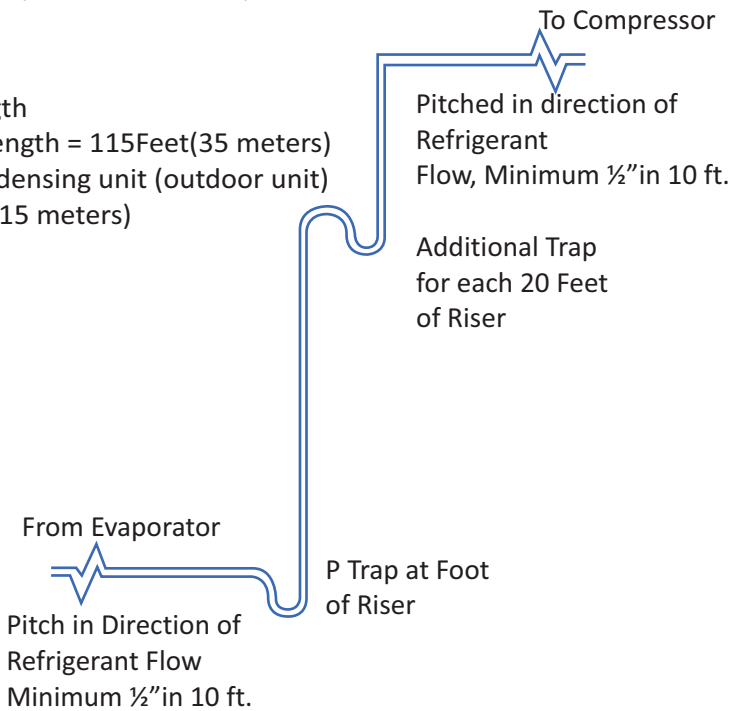
Liquid Lines

Liquid line is not critical for oil return because liquid refrigerant and oil circulate together.
Pitched or uneven copper pipe that may cause excessive pressure, should be avoided.
Liquid line passing through high temperature area should be insulated.

Suction Lines

Suction line is very critical for the oil return.
Pressure drop in suction line directly affects the system performance.
Horizontal suction line should be pitched downward in the direction of refrigerant flow with downward pitch of ½ inch in 10 feet.
Vertical suction line more than 3 to 4 feet in height should have “P” trap at base to ‘facilitate oil return’.
Long vertical suction lines should have additional trap at distance of 20 feet each.
Pitched or uneven copper pipe that may cause excessive pressure, should be avoided.
All suction lines should be insulated.

Recommended Piping Height and Length
Maximum recommended equivalent length = 115Feet(35 meters)
Maximum height difference when condensing unit (outdoor unit) is located above indoor unit = 50Feet (15 meters)



SUCTION LINE RISERS

Equivalent Length Of Fittings

It is not possible to specify one line size to cover all possible conditions which may be encountered. Each valve, fitting and bend in a refrigerant line contributes to friction / pressure drop because of its interruption or restriction of smooth flow. This restriction is converted to equivalent length of the pipe and is shown in Table-1.

Equivalent Length In FEET of Straight Pipe For Valves & Fittings

Line Size OD	Globe Valve	Angle Valve	Elbow 90°	Elbow 45°	Tee Bines	Tee Branch
	5	3	5	0.2	0.3	1.0
1/2"	9	5	9	0.4	0.6	2.0
5/8"	12	6	1.6	0.5	0.8	2.5
3/4"	14	7	1 9	0 6	0 9	3 2
7/8"	15	8	2	0 7	1 0	3 5
1-1/8"	22	12	2.6	0 9	1 5	4 5
1-3/8"	28	15	3.3	1.2	1.8	6.0
1-5/8"	35	17	4	1.4	2.0	7.0

Calculate the equivalent length of the fitting and add to actual length of pipe to find the equivalent length of pipe. Select the pipe size from Tble-2 & Table-3.

Table-2: Recommended Liquid Line Sizes(Equivalent Length In Feet)

Size Of Copper Type L	3/8"	1/2"	5/8"	3/4"	7/8"	1 -1/8"
ASU-035, 070D each refrigerant circuit	40	125				
ASU-050, 100D each refrigerant circuit	20	80				
ASU-060, 120D each refrigerant circuit		60	150			
ASU-080, 160D each refrigerant circuit		50	125			
ASU-200D each refrigerant circuit		10	70	175		
ASU-240D each refrigerant circuit						
ASU-160, ASU-320D, 480T each refrigerant circuit			35	100		
ASU-370D	Follow ASU200D & ASU300D					
ASU-420D each refrigerant circuit				25	75	150
ASU-500D each refrigerant circuit	Subject to the given requirement					

Table-3: Recommended Suction Line Sizes(Equivalent Length In Feet)

Size Of Copper Type L	3/4"	7/8"	1 -1/8"	1 -3/8"	1 -5/8"
ASU-035, 070D each refrigerant circuit	40	100*			
ASU-050, 100D each refrigerant circuit	20	75			
ASU-060, 120D each refrigerant circuit	10	40	125*		
ASU-080, 160D each refrigerant circuit		30	100	240*	
ASU-200D each refrigerant circuit		8	75	175*	
ASU-240D each refrigerant circuit					
ASU-160, ASU-320D, 480T each refrigerant circuit			50	100*	
ASU-370D	Follow ASU200D & ASU300D				
ASU-420D each refrigerant circuit			15	50	120*
ASU-500D each refrigerant circuit	Subject to the given requirement				

* Check gas velocity in vertical suction riser.

MODEL	Evaporator Air Flow Rate CFM(BF)	Cooling Capacites, MBH															
		Condenser Air Entering Temperature(°F)															
		EWB	85°F			95°F			105°F			115°F			125°F		
		°F	TH	SH	KW	TH	SH	KW	TH	SH	KW	TH	SH	KW	TH	SH	KW
ASU 040S	1000(0.11)	62	35.20	32.04	3.00	33.60	30.40	3.00	32.00	28.76	3.20	30.40	27.12	3.30	28.80	25.48	3.50
		67	37.86	26.03	3.10	35.98	25.12	3.20	34.10	24.20	3.40	32.22	23.30	3.50	30.34	22.40	3.70
		72	40.50	20.04	3.30	38.36	20.90	3.40	36.20	19.64	3.60	32.02	18.40	3.70	32.88	18.40	3.90
	1200(0.15)	62	36.37	33.02	3.00	34.63	32.06	3.00	32.89	31.10	3.20	31.15	30.14	3.30	29.40	29.17	3.50
		67	39.05	27.95	3.20	39.40	28.20	3.20	35.25	26.45	3.40	32.40	25.70	3.50	31.54	24.94	3.70
		72	41.20	22.87	3.40	41.60	23.34	3.40	37.62	21.81	3.60	35.64	21.28	3.70	32.66	20.74	3.90
	1400(0.19)	62	37.55	34.00	3.10	35.65	33.70	3.10	33.75	33.40	3.40	31.85	33.16	3.50	29.96	29.96	3.70
		67	40.00	29.85	3.30	41.50	30.30	3.30	36.40	28.65	3.60	34.60	28.00	3.70	32.75	27.45	3.80
		72	42.45	25.70	3.50	42.90	25.25	3.50	39.02	23.90	3.80	37.15	23.00	4.00	35.28	22.10	4.10
ASU 050S	1200(0.11)	62	49.10	42.60	4.12	45.80	40.50	4.38	42.50	38.60	4.65	39.20	36.70	4.92	36.50	34.80	5.19
		67	52.50	35.90	4.22	49.40	34.20	4.61	46.40	32.60	4.99	43.40	31.00	5.37	40.50	29.90	5.75
		72	55.70	29.40	4.33	53.10	28.40	4.83	50.40	27.50	5.31	47.60	26.50	5.79	44.80	25.50	6.00
	1500(0.15)	62	51.00	47.50	4.21	47.90	45.60	4.50	45.60	44.80	4.80	41.60	41.60	5.09	38.50	38.50	5.39
		67	54.10	39.60	4.30	51.00	38.50	4.80	47.70	37.40	5.10	46.00	36.30	5.50	43.30	35.20	5.79
		72	57.20	31.80	4.40	55.00	31.50	3.11	49.60	30.90	5.41	51.20	30.40	5.89	49.20	29.90	6.20
	1800(0.19)	62	53.00	52.20	4.30	50.00	50.00	4.62	47.00	47.00	4.95	44.10	44.10	5.26	40.50	40.50	5.59
		67	55.70	43.40	4.38	53.40	42.70	4.81	51.10	42.10	5.21	48.60	41.50	5.63	45.60	40.30	5.83
		72	58.80	34.20	4.47	55.30	34.60	4.97	55.70	34.20	5.51	54.70	32.40	5.99	53.20	30.90	6.40
ASU 060S	1600(0.11)	62	57.50	49.00	4.40	53.60	46.60	4.70	49.80	44.40	4.91	45.90	42.20	5.85	42.70	40.10	6.95
		67	61.40	41.20	4.42	57.80	39.40	4.81	54.30	37.50	5.21	50.70	35.60	5.95	47.40	34.40	7.15
		72	65.20	33.80	4.44	62.10	32.60	4.90	59.00	31.60	5.35	55.70	30.50	6.15	52.40	29.40	7.35
	1800(0.15)	62	59.60	54.60	4.56	56.10	52.40	5.15	53.30	51.50	5.90	48.70	47.90	6.75	45.00	44.30	7.73
		67	63.30	45.50	4.57	60.50	44.50	5.20	55.80	43.00	5.91	53.80	41.70	6.76	50.60	40.40	7.74
		72	67.00	36.60	4.60	64.40	36.20	5.21	58.10	35.50	5.92	59.90	34.90	6.77	57.60	34.40	7.75
	2000(0.19)	62	62.00	60.00	4.60	58.50	57.50	5.85	55.00	54.10	6.35	51.60	50.70	7.15	47.40	46.40	7.90
		67	65.20	49.90	4.71	61.90	49.20	5.96	59.70	48.50	6.51	56.90	47.80	7.27	53.30	46.00	8.05
		72	68.70	39.40	4.80	63.00	39.80	6.17	65.20	39.40	6.71	64.00	37.30	7.40	62.20	35.50	8.15
ASU 080D	2000(0.13)	62	70.40	64.08	6.00	67.20	60.80	6.00	64.00	57.52	6.40	60.80	54.24	6.60	57.60	50.96	7.00
		67	75.72	52.06	6.20	71.96	50.24	6.40	68.20	48.40	6.80	64.44	46.60	7.00	60.68	44.80	7.40
		72	81.00	40.08	6.60	76.72	41.80	6.80	72.40	39.28	7.20	64.04	36.80	7.40	65.76	36.80	7.80
	2200(0.16)	62	72.74	66.04	6.00	69.26	64.12	6.00	65.78	62.20	6.40	62.30	60.28	6.60	58.80	58.34	7.00
		67	78.10	55.90	6.40	78.80	56.80	6.40	70.50	52.90	6.80	66.80	51.40	7.00	63.08	49.88	7.40
		72	82.40	45.74	6.80	80.20	44.68	6.80	75.24	43.62	7.20	71.28	42.56	7.40	65.32	41.48	7.80
	2400(0.19)	62	75.10	68.00	6.20	71.30	67.40	6.20	67.50	66.80	6.80	63.70	66.32	7.00	59.92	59.92	7.40
		67	80.00	59.70	6.60	80.40	59.75	6.60	72.80	57.30	7.20	69.20	56.00	7.40	65.50	54.90	7.60
		72	84.90	51.40	7.00	83.80	50.60	7.00	78.04	47.80	7.60	74.30	46.00	8.00	70.56	44.20	8.20
ASU 080S	2000(0.13)	62	73.57	65.66	6.50	70.07	63.76	6.60	66.57	62.47	6.90	63.07	61.18	7.20	59.57	59.57	7.50
		67	79.27	54.13	6.60	75.50	52.55	6.70	71.73	50.97	7.00	67.69	49.39	7.50	64.20	47.81	7.80
		72	84.94	42.42	6.80	80.90	41.34	6.90	76.86	40.07	7.30	72.82	38.80	7.80	68.78	37.53	8.00
	2400(0.16)	62	75.86	69.19	6.60	72.24	67.18	6.70	68.62	65.17	7.00	65.03	63.15	7.30	61.44	61.13	7.60
		67	81.26	58.20	6.70	79.50	57.50	6.80	73.53	54.80	7.20	69.66	53.10	7.60	65.79	51.40	8.00
		72	86.66	47.21	6.90	84.50	46.75	7.00	78.44	44.43	7.50	74.25	43.04	8.00	70.10	41.60	8.20
	2800(0.19)	62	78.13	72.72	6.70	74.40	70.60	6.80	70.67	68.47	7.10	66.95	66.34	7.40	63.31	63.21	7.70
		67	83.28	62.27	6.80	80.50	60.90	6.90	75.32	58.63	7.30	71.34	56.81	7.60	67.38	54.99	8.10
		72	88.35	52.00	7.10	84.20	50.30	7.20	80.02	48.79	7.70	75.84	47.28	8.10	71.45	45.77	8.30
ASU 100D	2400(0.11)	62	98.30	85.30	8.50	91.60	81.00	8.95	85.10	77.20	9.40	78.40	73.30	9.90	72.90	69.70	10.3
		67	104.9	71.70	8.65	98.90	68.50	9.10	92.80	65.20	9.55	86.70	62.20	10.1	81.00	59.80	10.4
		72	114.4	58.80	8.80	106.2	56.70	9.25	100.9	54.90	9.67	95.20	53.10	10.3	89.50	51.10	10.6
	3000(0.15)	62	101.9	95.00	9.10	95.80	91.20	9.56	89.50	87.30	10.0	83.20	89.30	10.4	77.00	77.00	10.7
		67	108.2	79.20	9.46	102.0	77.00	10.0	97.50	74.80	10.5	92.00	72.50	11.0	86.60	70.30	11.5
		72	114.5	63.60	9.80	110.0	63.00	10.4	106.2	61.80	11.0	102.4	60.80	11.6	98.40	59.30	12.2
	3600(0.19)	62	106.0	104.3	10.1	100.1	100.1	10.5	94.00	94.00	11.1	88.20	88.10	11.7	81.00	81.00	10.9
		67	111.4	86.70	10.2	107.0	85.50	10.6	102.1	84.30	11.2	97.20	83.10	11.8	91.20	80.60	11.2
		72	117.5	68.50	10.3	115.9	69.30	10.7	111.4	68.50	11.4	109.4	64.80	11.9	106.4	61.80	11.3

See Note on page17

Cooling Capacities

Sabro

MODEL	Evaporator Air Flow Rate CFM(BF)	Cooling Capacites, MBH															
		Condenser Air Entering Temperature(°F)															
		EWB	85°F			95°F			105°F			115°F			125°F		
		°F	TH	SH	KW	TH	SH	KW	TH	SH	KW	TH	SH	KW	TH	SH	KW
ASU 120D	3000(0.11)	62	115.0	98.00	8.60	107.0	93.20	9.80	99.60	88.80	11.2	91.80	84.40	13.0	85.10	80.20	14.9
		67	122.8	82.40	8.75	116.0	78.80	10.0	108.6	75.20	11.3	101.2	71.20	13.2	95.40	68.80	15.1
		72	130.4	67.40	8.87	124.0	65.20	10.2	118.2	63.21	11.5	111.0	61.00	13.3	105.0	58.80	15.2
	3600(0.15)	62	119.2	109.2	9.12	112.0	105.5	10.3	106.6	100.3	11.8	97.40	95.80	13.5	90.00	88.60	15.4
		67	126.6	91.00	9.14	121.0	90.60	10.4	111.6	92.00	11.8	108.2	83.40	13.5	101.0	80.40	15.4
		72	134.0	73.20	9.20	128.8	72.40	10.4	116.2	71.20	11.8	120.3	69.80	13.5	115.0	60.80	15.5
	4200(0.19)	62	124.0	120.0	9.40	117.0	115.2	10.5	110.2	108.3	11.9	103.0	101.0	13.7	95.20	95.20	15.7
		67	130.4	99.80	9.55	125.0	99.40	10.6	119.4	97.20	12.1	114.9	95.60	13.8	107.3	92.25	15.8
		72	137.4	78.80	9.65	134.0	79.60	10.7	130.4	78.80	12.2	128.0	74.60	14.0	124.0	71.00	15.9
ASU 160S	4200(0.16)	62	142.7	127.8	11.3	135.9	124.1	12.9	129.1	120.3	14.5	122.3	116.6	16.0	115.5	112.9	17.5
		67	153.4	105.9	11.3	146.3	102.8	12.9	139.2	99.76	14.5	132.0	96.68	16.0	124.9	93.60	17.5
		72	164.2	84.02	11.3	156.7	81.58	12.9	149.2	79.14	14.5	141.7	76.70	16.0	134.1	74.26	17.5
	4800(0.19)	62	147.1	134.3	11.4	142.1	132.5	13.0	133.1	126.6	14.6	126.1	122.7	16.1	119.1	118.8	17.5
		67	157.4	113.3	11.4	155.0	116.0	13.0	142.6	106.7	14.6	135.2	103.4	16.1	127.8	100.1	17.5
		72	168.1	92.20	11.4	165.1	95.50	13.0	152.1	86.79	14.6	144.1	84.08	16.1	136.1	81.37	17.5
	5400(0.22)	62	151.4	140.9	11.5	148.2	136.9	13.1	137.0	132.8	14.6	129.8	128.8	16.1	122.6	124.7	17.6
		67	161.3	120.7	11.5	159.7	119.1	13.1	146.0	113.5	14.7	138.3	109.9	16.1	130.6	106.4	17.6
		72	171.9	100.5	11.5	168.4	99.42	13.1	155.0	94.30	14.7	146.5	91.20	16.1	138.0	88.06	17.6
ASU 160D	4200(0.16)	62	147.1	131.3	13.0	140.1	127.5	13.2	133.0	124.9	13.8	126.1	122.3	14.4	119.1	119.1	15.0
		67	158.5	108.2	13.2	151.0	105.1	13.4	143.4	101.9	14.0	135.3	98.70	15.0	128.4	95.60	15.6
		72	169.8	84.80	13.6	161.8	82.60	13.8	153.7	80.10	14.6	145.6	77.60	15.6	137.5	75.10	16.0
	4800(0.19)	62	151.7	138.3	13.2	144.4	134.3	13.4	137.2	130.3	14.0	130.1	126.3	14.6	122.8	122.2	15.2
		67	162.5	116.4	13.4	159.0	119.5	13.6	147.1	109.6	14.4	139.3	106.2	15.2	131.5	102.8	16.0
		72	173.3	94.40	13.8	165.1	91.60	14.0	156.8	88.80	15.0	148.5	86.10	16.0	140.2	83.20	16.4
	5400(0.22)	62	156.2	145.4	13.4	148.8	141.2	13.6	141.3	136.9	14.2	133.9	132.6	14.8	126.6	126.4	15.4
		67	166.5	124.5	13.6	161.5	121.5	13.8	150.6	117.2	14.6	142.6	113.6	15.2	134.7	109.9	16.2
		72	176.7	104.0	14.2	168.4	100.6	14.4	160.1	97.50	15.4	151.6	94.50	16.2	142.9	91.50	16.6
ASU 200D	5500(0.11)	62	191.2	169.4	15.0	182.5	166.1	16.8	173.4	162.8	19.1	164.4	159.5	21.4	155.4	155.4	23.5
		67	206.6	141.1	15.0	196.7	136.9	16.9	186.8	132.7	19.2	176.9	128.5	21.4	167.0	124.3	23.6
		72	220.6	112.0	15.0	210.1	107.3	17.0	199.6	102.6	19.2	189.1	97.9	21.5	178.6	93.2	23.6
	6000(0.13)	62	197.5	180.1	15.1	188.1	179.4	16.9	178.7	169.7	19.3	169.3	164.5	21.6	159.9	159.3	23.6
		67	211.6	151.7	15.1	212.0	153.0	17.0	191.6	142.7	19.3	181.6	138.2	21.6	171.6	133.7	23.6
		72	224.9	123.3	15.1	220.0	122.5	17.1	204.3	115.7	19.3	193.0	112.0	21.7	181.7	108.3	23.6
	6500(0.15)	62	203.8	189.0	15.1	193.8	183.5	17.0	183.8	178.0	19.3	173.8	172.5	21.7	162.2	162.2	23.7
		67	216.6	162.2	15.2	216.5	160.5	17.1	196.4	152.8	19.4	186.3	148.1	21.7	176.2	143.4	23.7
		72	231.2	135.5	15.2	224.1	134.5	17.2	209.0	127.5	19.4	197.9	123.5	21.7	186.8	125.5	23.7
ASU 240D	6500(0.11)	62	224.5	196.6	16.5	214.0	192.6	18.9	203.5	188.6	21.3	193.1	184.6	23.5	182.7	180.6	25.0
		67	242.6	164.5	16.5	231.1	159.5	18.9	219.6	154.5	21.4	208.2	149.5	23.6	196.8	144.5	25.0
		72	260.7	132.4	16.5	248.2	126.4	19.0	235.7	120.4	21.4	223.3	114.4	23.6	210.9	108.4	25.0
	7000(0.13)	62	231.5	209.2	16.6	220.5	202.9	19.0	209.5	196.6	21.4	198.5	190.3	23.8	188.0	184.0	25.1
		67	248.6	175.7	16.6	240.0	175.5	19.0	225.0	165.3	21.5	213.2	160.1	23.8	201.5	154.9	25.1
		72	265.6	142.2	16.6	253.0	140.1	19.1	240.4	134.0	21.5	227.8	129.9	23.8	215.1	125.8	25.1
	7500(0.14)	62	238.5	220.4	16.7	227.0	213.2	19.1	215.1	206.0	21.5	203.9	199.5	23.9	193.3	191.6	25.2
		67	254.6	187.0	16.7	245.0	182.5	19.1	230.4	176.0	21.6	218.2	170.5	23.9	206.2	165.0	25.2
		72	270.9	153.5	16.7	258.0	149.8	19.2	254.1	146.1	21.6	232.3	142.4	23.9	219.6	138.7	25.3
ASU 320D	8000(0.12)	62	285.4	255.6	22.6	271.8	248.2	25.8	258.2	240.6	29.0	244.6	233.2	32.0	231.0	225.8	35.0
		67	306.8	211.8	22.6	292.6	205.6	25.8	278.4	199.5	29.0	264.0	193.3	32.0	249.8	187.2	35.0
		72	328.4	168.0	22.6	313.4	163.1	25.8	298.4	158.2	29.0	283.4	153.4	32.0	268.2	148.5	35.0
	9000(0.13)	62	294.2	268.6	22.8	280.2	261.0	26.0	266.2	253.2	29.2	252.2	245.4	32.2	238.2	237.6	35.0
		67	314.8	226.6	22.8	310.0	224.0	26.0	285.2	213.4	29.2	270.4	206.8	32.2	255.6	200.2	35.0
		72	336.2	184.4	22.8	325.2	181.0	26.0	304.2	173.5	29.2	288.2	168.1	32.2	272.2	162.7	35.0
	10000(0.15)	62	302.8	281.8	23.0	288.4	273.8	26.2	274.0	265.6	29.2	259.6	257.6	32.2	245.2	249.4	35.2
		67	322.6	241.4	23.0	311.4	236.2	26.2	292.0	227.0	29.4	276.6	219.8	32.2	261.2	212.8	35.2
		72	343.8	201.0	23.0	336.8	194.8	26.2	310.0	188.6	29.4	293.0	182.4	32.2	276.0	176.1	35.2

MODEL	Evaporator Air Flow Rate CFM(BF)	Cooling Capacites, MBH															
		Condenser Air Entering Temperature(°F)															
		EWB	85°F			95°F			105°F			115°F			125°F		
		°F	TH	SH	KW	TH	SH	KW	TH	SH	KW	TH	SH	KW	TH	SH	KW
ASU 370D	9500(0.12)	62	323.2	287.2	26.1	307.8	278.8	29.7	292.4	270.4	33.3	277.0	261.6	36.8	261.6	253.7	40.3
		67	347.9	239.0	26.1	331.6	232.0	29.7	315.2	225.1	33.3	298.8	218.1	36.8	282.4	211.1	40.3
		72	372.8	190.8	26.1	355.3	185.3	29.7	337.9	179.7	33.3	320.4	174.2	36.9	302.9	168.7	40.3
	10500(0.15)	62	333.2	302.2	26.3	267.3	293.5	29.8	301.5	284.7	33.5	285.6	275.9	37.0	269.8	267.1	40.3
		67	356.9	255.7	26.3	359.0	253.5	29.8	323.1	240.8	33.5	306.2	233.4	37.0	289.3	225.9	40.3
		72	381.0	209.1	26.3	368.0	207.0	29.8	344.7	196.9	33.5	326.5	190.8	37.0	308.4	184.7	40.3
	11500(0.15)	62	343.0	316.7	26.4	326.7	308.2	30.0	310.4	299.0	33.5	294.1	289.8	37.0	277.8	279.9	40.4
		67	365.7	272.4	26.4	364.0	272.5	30.0	330.9	256.4	33.6	313.5	248.4	37.0	296.0	240.5	40.4
		72	388.9	227.5	26.4	383.0	224.7	30.0	351.5	213.9	33.6	333.0	207.1	37.0	314.5	200.3	40.4
ASU 420D	10500(0.12)	62	361.1	318.8	29.7	343.9	309.5	33.7	326.7	300.2	37.7	309.5	290.0	41.7	292.3	281.6	45.7
		67	389.1	266.3	29.7	370.6	258.5	33.7	352.1	250.7	37.7	333.6	242.9	41.7	315.1	235.1	45.7
		72	417.2	213.7	29.7	397.3	207.5	33.7	377.4	201.3	37.7	357.5	195.1	41.8	337.6	188.9	45.7
	11500(0.15)	62	372.2	335.9	29.8	254.5	326.1	33.7	336.8	316.3	37.8	319.1	306.5	41.8	301.4	296.7	45.6
		67	399.0	284.9	29.8	408.0	288.7	33.7	361.0	268.3	37.8	342.0	260.0	41.8	323.0	251.7	45.6
		72	425.8	233.9	29.8	418.3	239.0	33.7	385.2	220.3	37.8	364.9	213.5	41.8	344.6	206.7	45.6
	12500(0.17)	62	383.3	351.6	29.9	365.1	342.7	33.8	346.9	332.4	37.9	328.7	322.1	41.9	310.5	310.5	45.7
		67	408.9	303.5	29.9	418.0	299.3	33.8	369.9	285.9	37.9	350.4	277.1	41.9	330.9	268.3	45.7
		72	434.0	254.1	29.9	422.0	253.5	33.8	393.0	239.3	37.9	373.0	231.9	41.9	353.0	224.5	45.7
ASU 480T	12000(0.13)	62	428.1	383.4	33.9	407.7	372.3	38.7	387.3	360.9	43.5	366.9	349.8	48.0	346.5	338.7	52.5
		67	460.2	317.7	33.9	438.9	308.4	38.7	417.6	299.2	43.5	396.0	290.1	48.0	374.7	280.8	52.5
		72	492.6	252.1	33.9	470.1	244.7	38.7	447.6	237.4	43.5	425.1	230.1	48.0	402.3	222.7	52.5
	13000(0.15)	62	441.3	402.9	34.2	428.0	397.5	39.0	399.3	379.8	43.8	378.3	368.1	48.3	357.3	356.4	52.5
		67	472.2	339.9	34.2	465.0	339.0	39.0	427.8	320.1	43.8	405.6	310.2	48.3	383.4	300.3	52.5
		72	504.3	276.6	34.2	489.3	274.0	39.0	456.3	260.3	43.8	432.3	252.2	48.3	408.3	244.1	52.5
	14000(0.17)	62	454.2	422.7	34.5	440.0	416.0	39.3	411.0	398.4	43.8	389.4	386.4	48.3	367.8	374.1	52.8
		67	483.9	362.1	34.5	474.2	358.7	39.3	438.0	340.5	44.1	414.9	329.7	48.3	391.8	319.2	52.8
		72	515.7	301.5	34.5	509.2	295.2	39.3	465.0	282.9	44.1	439.5	273.6	48.3	414.0	264.2	52.8
ASU 500D	12500(0.14)	62	460.8	415.8	34.0	436.9	401.7	38.0	413.0	387.6	42.3	389.1	373.5	46.6	365.2	359.4	50.9
		67	495.3	354.6	34.0	469.4	342.6	38.0	443.5	330.6	42.3	417.6	318.6	46.6	391.7	206.6	50.9
		72	529.8	293.4	34.0	501.9	283.5	38.0	474.0	273.6	42.3	446.1	263.7	46.6	418.2	253.8	50.9
	14500(0.15)	62	490.4	437.7	34.1	465.8	423.7	38.1	39.3	408.1	42.4	413.6	393.3	46.7	388.0	378.5	51.0
		67	526.9	377.3	34.1	506.0	369.1	38.1	471.9	351.7	42.4	444.4	338.9	46.7	416.9	326.1	51.0
		72	563.0	316.8	34.1	527.0	303.2	38.1	504.6	295.4	42.4	475.2	284.7	46.7	445.8	274.0	51.0
	16500(0.18)	62	520.0	459.6	34.1	495.5	448.0	38.2	465.6	428.6	42.5	438.5	413.1	46.8	410.8	397.6	51.1
		67	558.1	400.0	34.1	525.0	386.7	38.2	500.3	372.8	42.5	471.2	359.2	46.8	442.1	345.6	51.0
		72	596.2	340.0	34.1	562.1	329.2	38.2	535.0	317.2	42.5	503.9	306.4	46.8	472.8	295.6	51.0

Note:

HIGHLIGHTED are the values at Nominal ARI Conditions
TH=Total cooling capacity
SH=Sensible cooling capacity
BF=Bypass factor
KW=Compressor motor input
MBH=1000Btu/hr
CFM=Cubic feet per minute
Sensible cooling capacity is based on 80°F DB temperature of air entering evaporator
Below 80°F EDB subtract SHC(sensible cooling correction) from SH
Above 80°F EDB add SHC(sensible cooling correction) to SH

Sensible cooling correction below 80°F=Correction Factor(C.F) x CFM
Cooling correction factor below 80°F=1.1(1-BF)(80-EDB)
Sensible cooling correction below 80°F=1.1(1-BF)(80-EDB) x CFM

Sensible cooling correction above 80°F=Correction Factor(C.F) x CFM
Cooling correction factor above 80°F=1.1(1-BF)(EDB-80)
Sensible cooling correction above 80°F=1.1(1-BF)(EDB-80) x CFM
Leaving dry bulb LDB=EDB-SH(Btu/Hr)/1.08 x CFM

Heating Capacities

ARI Capacity Ratng (Heat Pump Models)									
MODEL ASU		040-S	050-S	060-S	080-D	080-S	100-D	120-D	160-S
High Heating Capacity	Btu/h	40000	51500	61000	80000	80250	103000	121500	156200
	KCal/h	10080	12978	15372	20160	20223	25956	30618	39363
	Watt	11220	15090	17730	22300	23510	30180	35450	45770
Low Heating Capacity	Btu/h	21056	28700	33900	41800	44050	56500	67700	85500
	KCal/h	5310	7237	8548	10540	11108	14247	17072	21560
	Watt	6169	8409	9933	12247	12907	16555	19836	25052

ARI Capacity Ratng (Heat Pump Models)									
MODEL ASU		160-D	200-D	240-D	320-D	370-D	420-D	480-T	500-D
High Heating Capacity	Btu/h	159705	212700	241000	312400	365000	415000	NA	508000
	KCal/h	40246	53600	60732	78725	91980	104580	NA	128016
	Watt	467900	621200	703200	915300	107000	121600	NA	148900
Low Heating Capacity	Btu/h	86500	116480	132720	176400	196200	218400	NA	280100
	KCal/h	21812	29372	33467	44482	49475	55073	NA	70631
	Watt	25345	24129	38887	51685	57487	63991	NA	82069

Note:

High heating capacity is based on indoor entering air temperature 70°F DB(21°C DB), Outdoor entering air temperature 47°F DB(8.3°F DB) & 43°F WB(6.1°C WB)

Low heating capacity is based on indoor entering air temperature 70°F DB(21°C DB), Outdoor entering air temperature 17°F DB(-8.3°C DB)& 15°F WB(-9.4°C WB)

MODEL	CFM	Evap Fan/Motor	External Static Pressure (Inch Wg) 0.00	0.25	0.50	0.75	1.00	1.25	1.50
ASU 040S	1000	RPM	924	1076	1238	1390	1550	-	-
		BHP	0.21	0.30	0.40	0.51	0.61	-	-
	1200	RPM	942	1120	1260	1420	1578	-	-
		BHP	0.26	0.35	0.45	0.57	0.70	-	-
	1400	RPM	978	1140	1283	1435	-	-	-
		BHP	0.35	0.43	0.53	0.70	-	-	-
ASU 050S	1200	RPM	600	690	805	895	970	1005	1090
		BHP	0.20	0.30	0.40	0.50	0.65	0.80	0.90
	1500	RPM	595	700	810	900	990	1040	1100
		BHP	0.20	0.25	0.42	0.55	0.62	0.75	0.84
	1800	RPM	613	728	825	920	1008	1075	-
		BHP	0.30	0.43	0.54	0.73	0.87	0.90	-
ASU 060S	1400	RPM	595	700	810	900	990	1040	1100
		BHP	0.20	0.25	0.42	0.55	0.62	0.75	0.84
	1800	RPM	613	728	825	920	1008	1075	-
		BHP	0.30	0.43	0.54	0.73	0.87	0.90	-
	2200	RPM	640	735	840	933	1026	1098	-
		BHP	0.35	0.54	0.70	0.85	0.98	1.10	-
ASU 080D & ASU 080S	1800	RPM	615	740	850	935	1025	1100	-
		BHP	0.30	0.40	0.51	0.78	0.90	0.96	-
	2200 (FOR 080D)	RPM	635	753	857	947	1039	1119	-
		BHP	0.35	0.55	0.70	0.83	1.05	1.15	-
	2400 (FOR 080S)	RPM	681	771	865	958	1044	1123	-
		BHP	0.50	0.66	0.85	0.96	1.17	1.32	-
ASU 100D	2400	RPM	680	761	860	952	1045	1126	-
		BHP	0.40	0.58	0.74	0.90	1.10	1.27	-
	3000	RPM	684	765	866	960	1054	1131	-
		BHP	0.60	0.70	0.85	1.15	1.31	1.45	-
	3600	RPM	700	775	875	968	1061	1160	-
		BHP	1.05	1.10	1.25	1.55	1.71	1.95	-
ASU 120D	3200	RPM	686	770	873	966	1059	1134	-
		BHP	0.71	0.86	1.0	1.23	1.43	1.65	-
	3600	RPM	700	779	878	972	1063	1151	-
		BHP	0.95	1.05	1.25	1.50	1.70	1.90	-
	4000	RPM	714	788	888	978	1068	-	-
		BHP	1.14	1.32	1.50	1.70	1.83	-	-
ASU 160D & ASU 160S	4200	RPM	490	577	658	732	800	864	947
		BHP	0.8	1.03	1.30	1.60	1.9	2.2	2.55
	4800	RPM	501	582	672	736	815	870	-
		BHP	1.0	1.24	1.52	1.82	2.15	2.48	-
	5400	RPM	520	595	685	753	845	910	-
		BHP	1.25	1.50	1.80	1.82	2.44	2.80	-
ASU 200D	5400	RPM	490	550	610	675	731	789	846
		BHP	1.13	1.41	1.71	2.05	2.41	2.80	3.2
	6000	RPM	500	557	617	681	738	791	855
		BHP	1.42	1.62	2.00	2.25	265	3.05	3.40
	6600	RPM	514	575	635	690	754	810	870
		BHP	1.60	2.10	2.55	2.65	3.10	3.60	3.85

See Note at page 20

Fan Performance Data

Sabro

MODEL	CFM	Evap Fan/Motor	External Static Pressure (Inch Wg) 0.50	0.75	1.00	1.25	1.50	1.75	2.00
ASU 240D	6000	RPM	500	553	615	675	735	790	855
		BHP	1.75	1.85	2.00	2.25	2.55	3.00	3.41
	7000	RPM	520	580	635	692	747	807	870
		BHP	4.91	2.05	2.40	2.70	3.00	3.50	3.95
	8000	RPM	535	610	655	712	764	-	-
		BHP	2.35	2.75	2.85	3.35	3.81	-	-
ASU 320D	8000	RPM	490	540	593	640	670	718	755
		BHP	2.46	2.99	3.57	4.18	4.83	5.50	6.19
	9000	RPM	501	551	600	651	680	730	775
		BHP	2.42	3.35	3.93	4.55	5.21	6.00	6.62
	10000	RPM	522	555	605	680	693	744	-
		BHP	3.27	3.80	4.38	5.00	5.66	6.30	-
ASU 370D	9500	RPM	630	665	736	796	858	925	975
		BHP	3.10	3.90	4.70	5.00	6.10	7.00	8.05
	10500	RPM	635	685	751	810	870	930	985
		BHP	3.48	4.21	4.90	5.61	6.50	7.50	8.45
	11500	RPM	640	705	765	824	882	935	995
		BHP	3.90	4.61	5.29	6.22	7.10	8.00	8.90
ASU 420D	10500	RPM	635	685	751	810	870	930	985
		BHP	3.48	4.21	4.90	5.61	6.50	7.50	8.45
	11500	RPM	638	696	759	815	877	933	990
		BHP	3.70	4.40	5.10	5.95	6.90	7.95	8.75
	12500	RPM	644	708	767	830	889	940	998
		BHP	4.10	4.85	5.45	6.40	7.40	8.10	9.35
ASU 480T	11500	RPM	640	705	765	824	882	935	995
		BHP	3.90	4.61	5.29	6.22	7.10	8.00	8.90
	13000	RPM	650	719	775	841	898	948	1006
		BHP	4.36	5.14	5.85	6.74	7.62	8.52	9.62
	14500	RPM	662	725	787	852	903	955	-
		BHP	4.51	5.27	5.98	6.90	7.87	8.72	-
ASU 500D	12500	RPM	648	715	770	835	892	942	1001
		BHP	4.35	5.10	5.80	6.70	7.60	8.50	9.60
	14500	RPM	662	725	787	852	903	955	-
		BHP	4.51	5.27	5.98	6.90	7.87	8.72	-
	16500	RPM	684	734	792	860	910	972	-
		BHP	6.90	7.73	8.56	9.41	10.40	11.40	-

Note:

Don't operate Evap fan motor in dotted shade area Range of E.S.P

Fan performance is based on wet coil and clean filter

RPM=Revolutions per minute

BHP=Brake Horse Power

Brake horsepower (BHP) is the amount of work generated by a motor under ideal conditions. This work is calculated without the consideration of the effects of any auxiliary component, that may slow down the

MODEL	Compressor (Each)						Evaporator Motor(Each)				Condenser motor(Each)				Total Unit		
	S.M	HP	QTY	RLA	FLA	LRA	HP	QTY	RLA	FLA	HP	QTY	RLA	FLA	RLA	FLA	MFA
ASU 040S	AL	3.75	1	6.0	8.5	50	0.75	1	0.8	2.2	0.5	1	0.7	1.0	7.5	11.7	20
ASU 050S	AL	5.0	1	7.5	10.3	65	0.75	1	1.0	2.2	0.75	1	1.0	1.3	9.5	13.8	25
ASU 060S	AL	6.0	1	8.5	11.0	75	1	1	1.4	2.2	0.75	1	1.0	1.3	10.9	14.5	25
ASU 080D	AL	3.75	2	6.0	8.5	50	1	1	2.3	3.2	0.75	1	1.0	1.3	15.3	21.5	30
ASU 080S	AL	8 0	1	11 5	16 0	95	1	1	2 4	3 4	0 75	1	1 0	1 3	14 9	20 7	40
ASU 100D	AL	5 0	2	7 5	10 3	65	2	1	2 7	3 8	0 75	1	1 0	1 3	18 7	25.7	40
ASU 120D	AL	6.0	2	8.5	11.0	75	2	1	3.1	4.3	0.75	1	1.0	1.3	21.1	27.6	40
ASU 160S	AL	16	1	23.0	30.0	179	3	1	3.7	4.9	0.75	1	1.0	1.3	27.7	36.2	50
ASU 160D	AL	8.0	2	11.5	16.0	95	3	1	3.7	4.9	0.75	1	1.0	1.3	27.7	38.2	60
ASU 200D	AL	10	2	14 0	19 5	125	5	1	5 8	7 3	0 75	2	1 0	1 3	35 8	48.9	75
ASU 240D	AL	12	2	16.0	21.8	25	5	1	6.5	8.3	0.75	2	1.0	1.3	40.5	54.5	100
ASU 320D	AL	16	2	23.0	30.0	179	7.5	1	8.0	10.6	0.75	2	1.0	1.3	56.0	73.2	100
ASU 370D	AL	21+16	2	28+23	37+30	225+179	7.5	1	10.0	13.5	0.75	4	1.0	1.3	65.0	85.7	100
ASU 420D	AL	21	2	28.0	37.0	279	10	1	11.7	14.5	0.75	4	1.0	1.3	71.7	93.7	120
ASU 480T	AL	16	3	23.0	30.0	279	10	1	12.7	15.0	0.5	6	0.7	1.0	85.9	111.0	150
ASU 500D	AL	25	2	32.5	40.5	250	10	1	13.5	16.0	0.75	4	1.0	1.3	82.5	102.2	150

Note:

SM=Starting method

AL=Across the line starting

RLA=Rated load amps at condenser air in 95°F(35°C), Evaporator air in 80°F(26.6°C)DB / 67°F(19.5°C)WB

FLA=Full load amps at condenser air in 125°F(51.6°C)DB

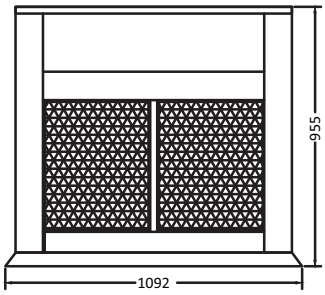
LRA=Compressor locked rotor amps

MFA=Maximum fuse amps

* in multi compressor units the compressor motors start sequence wise

ASU-Standard Evaporator

MODEL-ASU 040S-S, 050S-S, 060S-S (RC)



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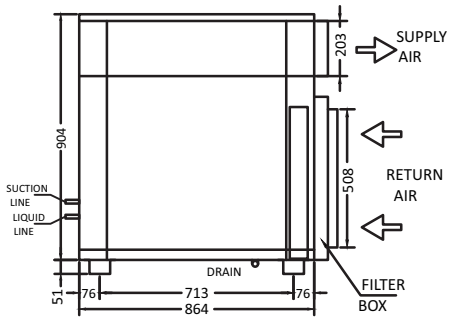

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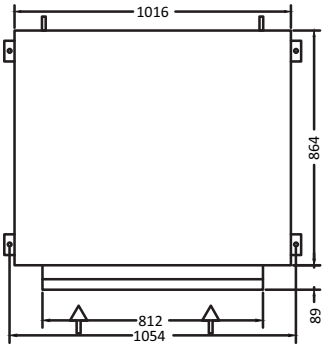
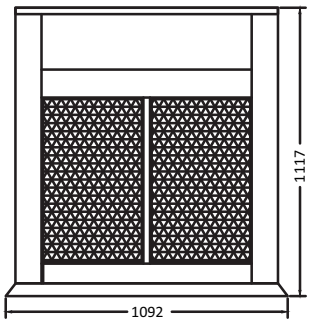


PLAN

NOTE:-
DIMENSIONS ARE IN M.M.
DIMENSIONS SUBJECT TO CHANGE WITHOUT NOTICE.
TOP DISCHARGE IS AVAILABLE ON DEMAND.

MODEL-ASU 080S-S, 080D-S (RC)



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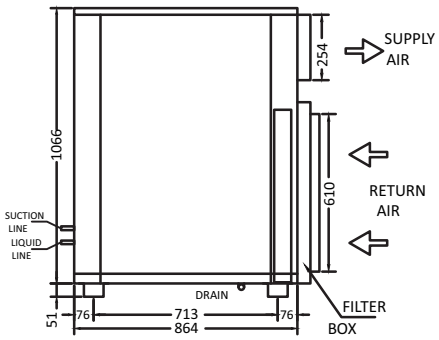

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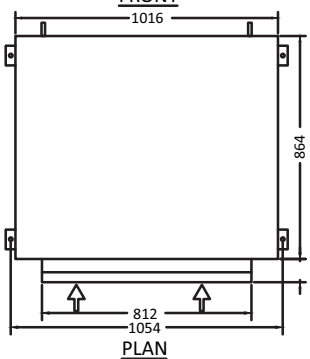
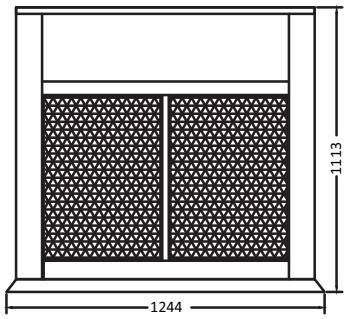


PLAN

NOTE:-
DIMENSIONS ARE IN M.M.
DIMENSIONS SUBJECT TO CHANGE WITHOUT NOTICE.
TOP DISCHARGE IS AVAILABLE ON DEMAND.

ASU-Standard Evaporator

MODEL-ASU 100D-S, 120D-S (RC)



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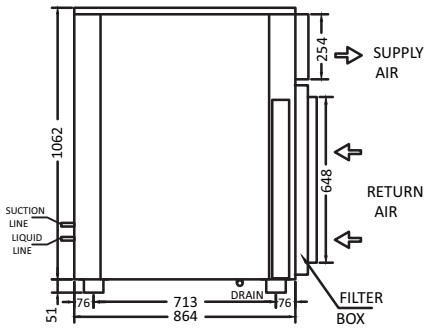

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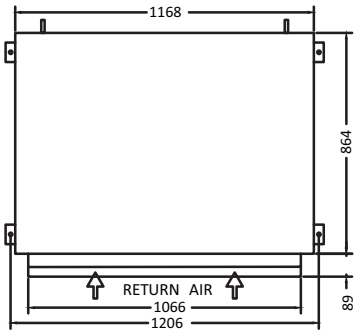
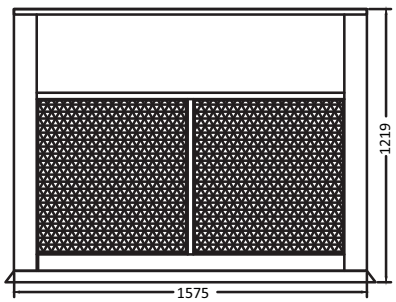


PLAN

NOTE:-
DIMENSIONS ARE IN M.M.
DIMENSIONS SUBJECT TO CHANGE WITHOUT NOTICE.
TOP DISCHARGE IS AVAILABLE ON DEMAND.

MODEL-ASU 160S-S, 160D-S (RC)



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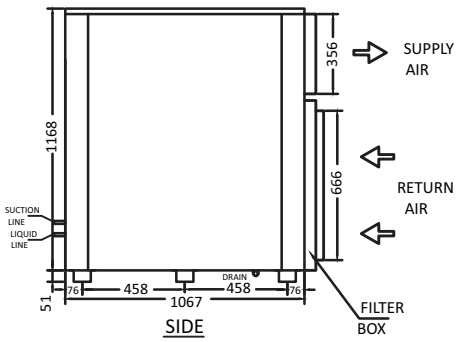

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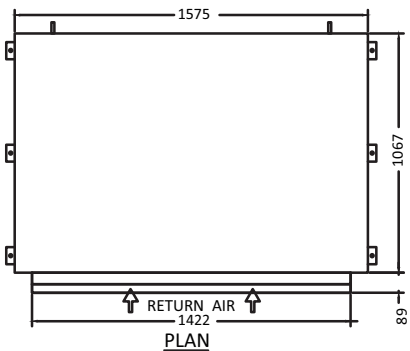


PLAN

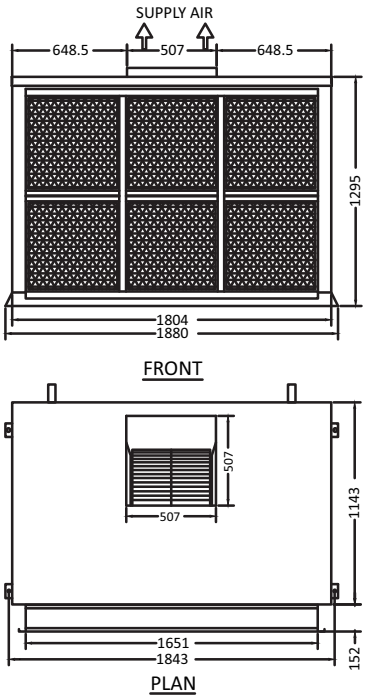
NOTE:-
DIMENSIONS ARE IN M.M.
DIMENSIONS SUBJECT TO CHANGE WITHOUT NOTICE.
TOP DISCHARGE IS AVAILABLE ON DEMAND.

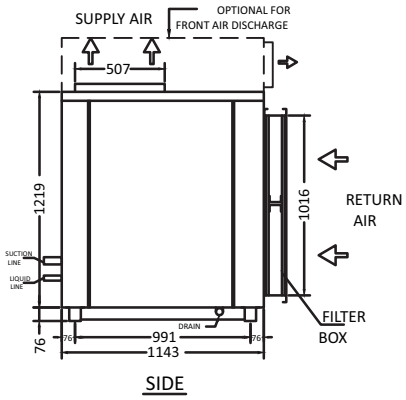
ASU MODELS SERIES

INDOOR UNIT

ASU-Standard Evaporator

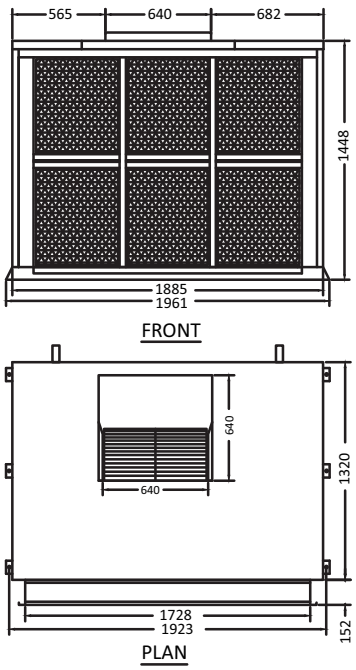
MODEL-ASU 200D-S, 240D-S (RC)

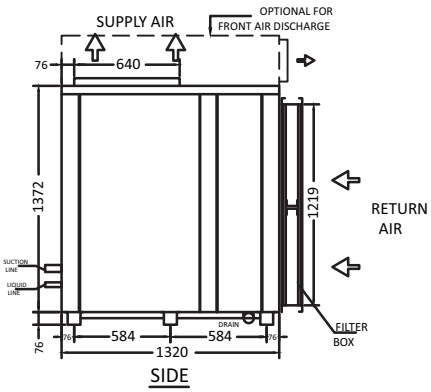




NOTE:-
DIMENSIONS ARE IN M.M.
FRONT AIR DISCHARGE AT TOP AVAILABLE ON DEMAND.
DIMENSIONS SUBJECT TO CHANGE WITHOUT NOTICE.

MODEL-ASU 320D-S (RC)

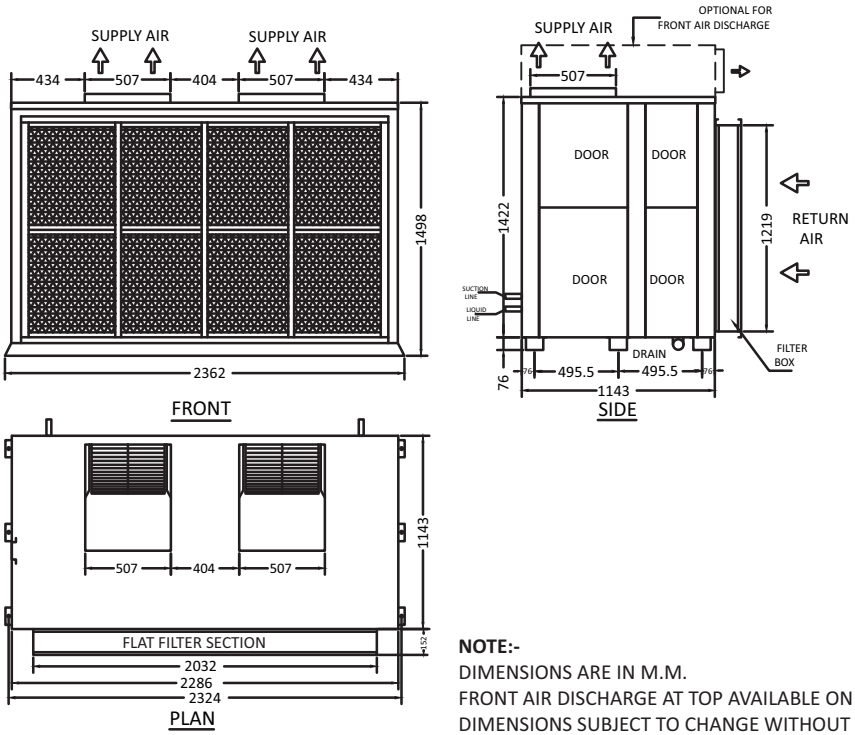




NOTE:-
DIMENSIONS ARE IN M.M.
FRONT AIR DISCHARGE AT TOP AVAILABLE ON DEMAND.
DIMENSIONS SUBJECT TO CHANGE WITHOUT NOTICE.

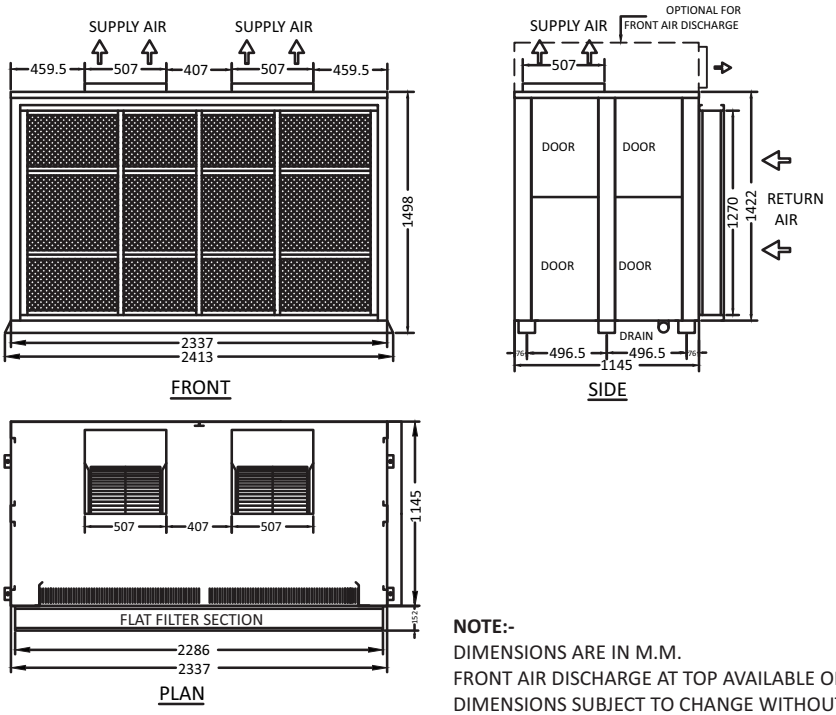
ASU-Standard Evaporator

MODEL-ASU 370D-S, 420D-S (RC)



NOTE:-
DIMENSIONS ARE IN M.M.
FRONT AIR DISCHARGE AT TOP AVAILABLE ON DEMAND.
DIMENSIONS SUBJECT TO CHANGE WITHOUT NOTICE.

MODEL-ASU 480T-S (RC)



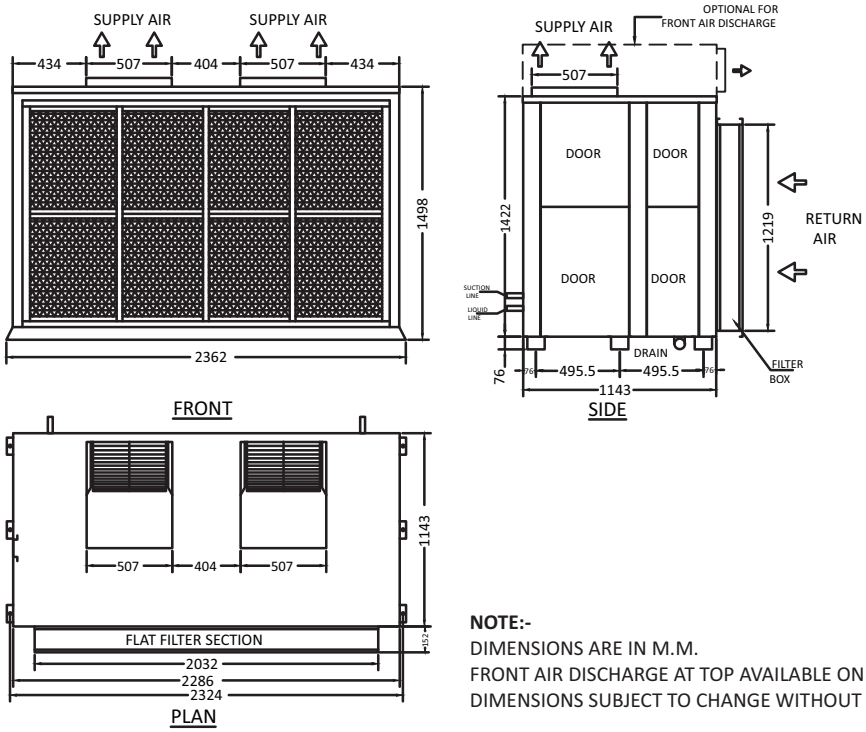
NOTE:-
DIMENSIONS ARE IN M.M.
FRONT AIR DISCHARGE AT TOP AVAILABLE ON DEMAND.
DIMENSIONS SUBJECT TO CHANGE WITHOUT NOTICE.

ASU MODELS SERIES

INDOOR UNIT

ASU-Standard Evaporator

MODEL-ASU 500D-S (RC)



NOTE:-

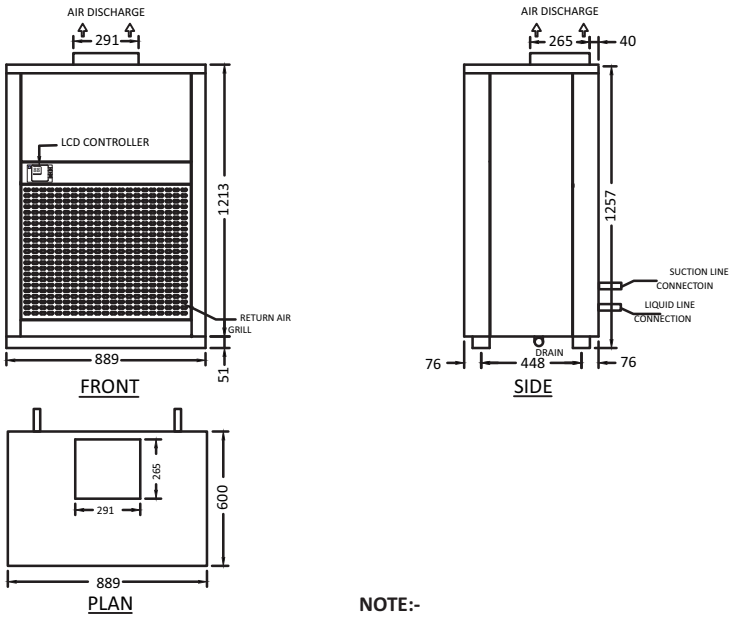
DIMENSIONS ARE IN M.M.

FRONT AIR DISCHARGE AT TOP AVAILABLE ON DEMAND.

DIMENSIONS SUBJECT TO CHANGE WITHOUT NOTICE.

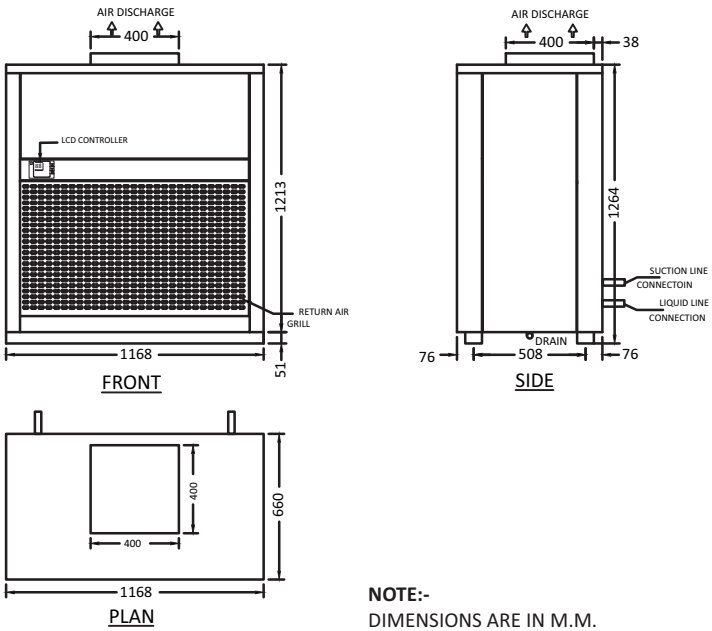
ASU-Floor Standing (Top Ducted)

MODEL-ASU 040S-V, 050S-V, 060S-V (RC)



NOTE:-
DIMENSIONS ARE IN M.M.
DIMENSIONS SUBJECT TO CHANGE WITHOUT NOTICE.

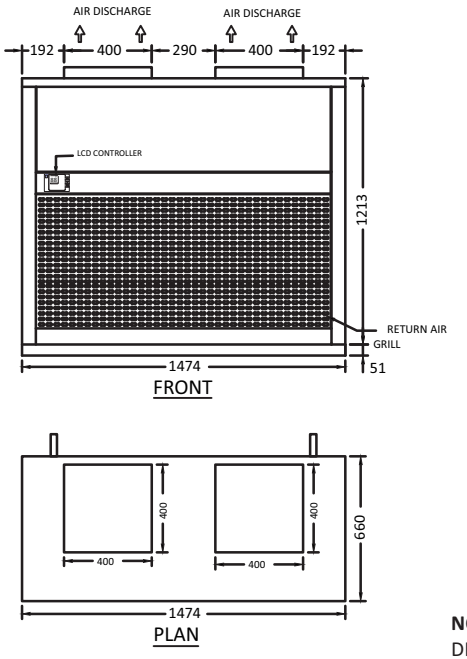
MODEL-ASU 080S-V, 080D-V, 100D-V, 120D-V (RC)

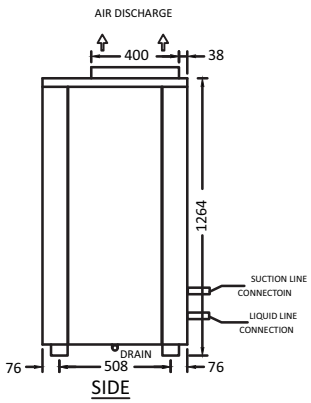


NOTE:-
DIMENSIONS ARE IN M.M.
DIMENSIONS SUBJECT TO CHANGE WITHOUT NOTICE.

ASU-Floor Standing (Top Ducted)

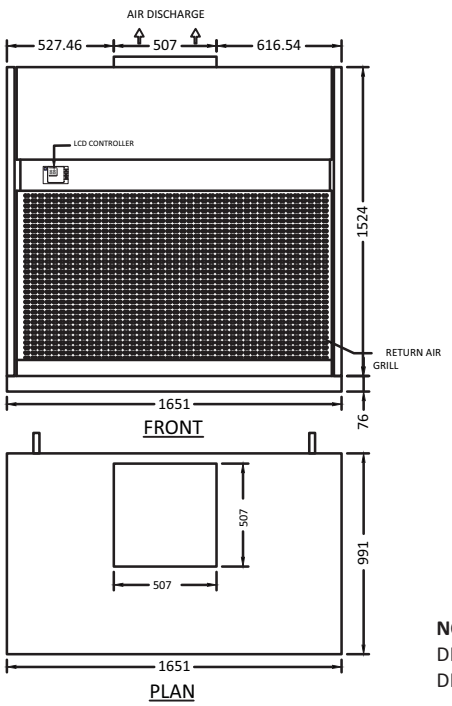
MODEL-ASU 160S-V, 160D-V (RC)

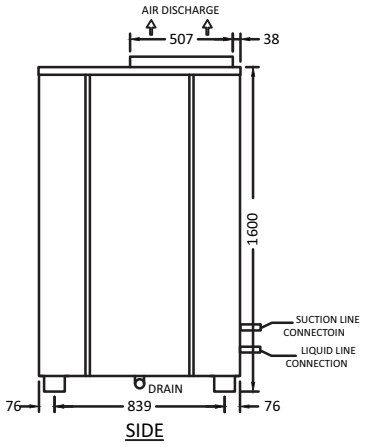




NOTE:-
DIMENSIONS ARE IN M.M.
DIMENSIONS SUBJECT TO CHANGE WITHOUT NOTICE.

MODEL-ASU 200D-V, 240D-V (RC)

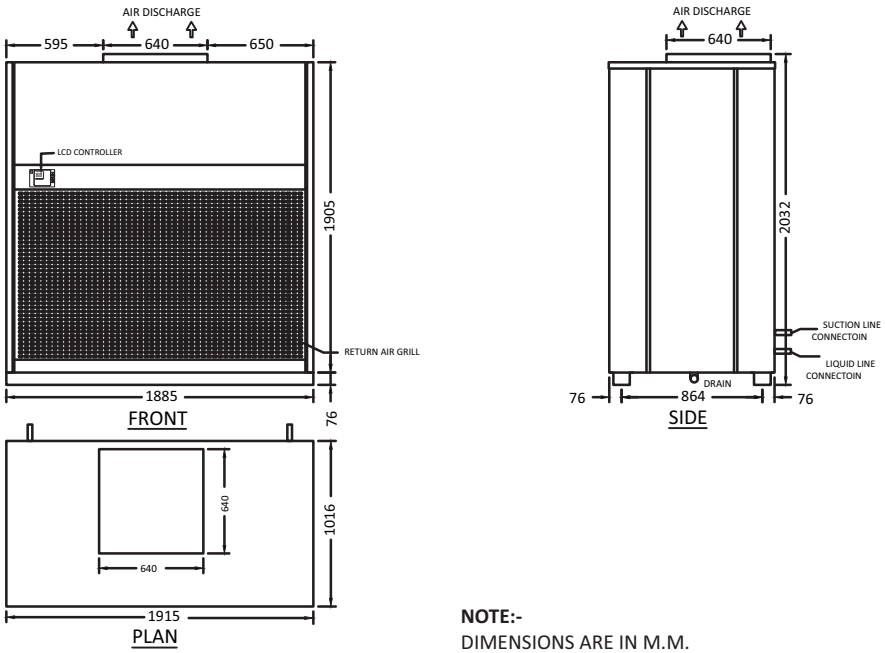




NOTE:-
DIMENSIONS ARE IN M.M.
DIMENSIONS SUBJECT TO CHANGE WITHOUT NOTICE.

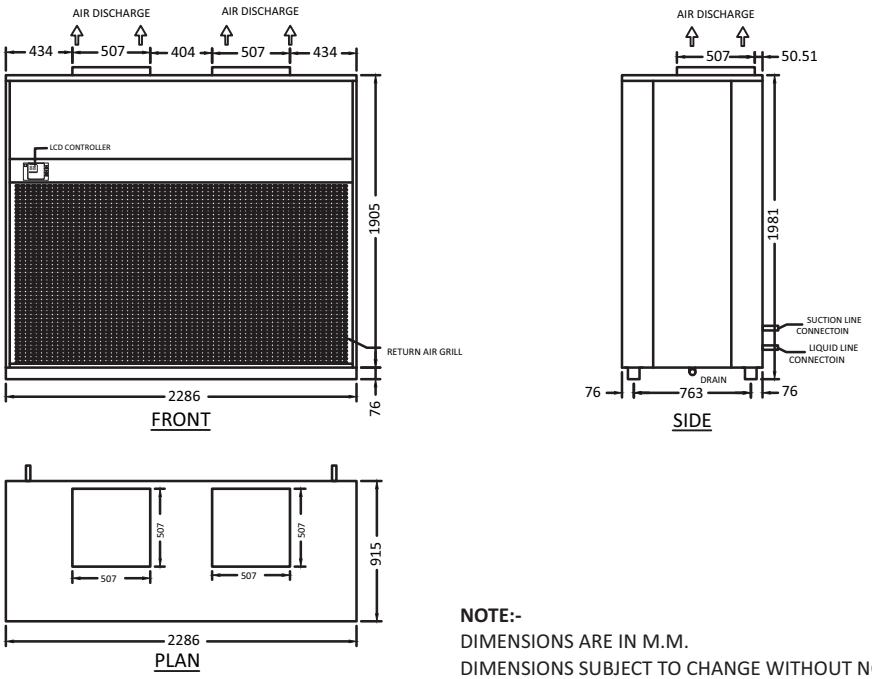
ASU-Floor Standing (Top Ducted)

MODEL-ASU 320D-V (RC)



NOTE:-
DIMENSIONS ARE IN M.M.
DIMENSIONS SUBJECT TO CHANGE WITHOUT NOTICE.

MODEL-ASU 370D-V, 420D-V (RC)



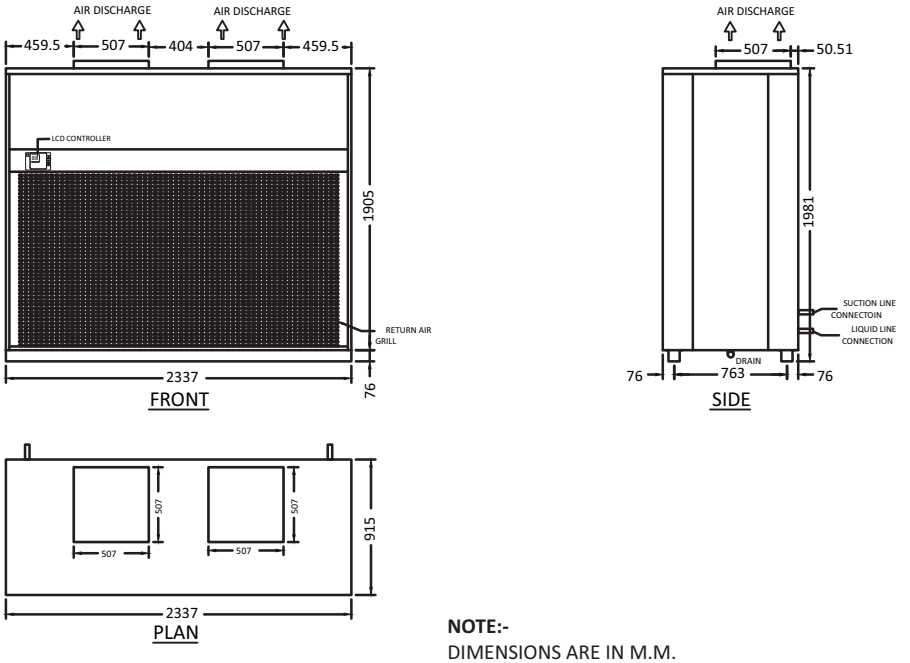
NOTE:-
DIMENSIONS ARE IN M.M.
DIMENSIONS SUBJECT TO CHANGE WITHOUT NOTICE.

ASU MODELS SERIES

INDOOR UNIT

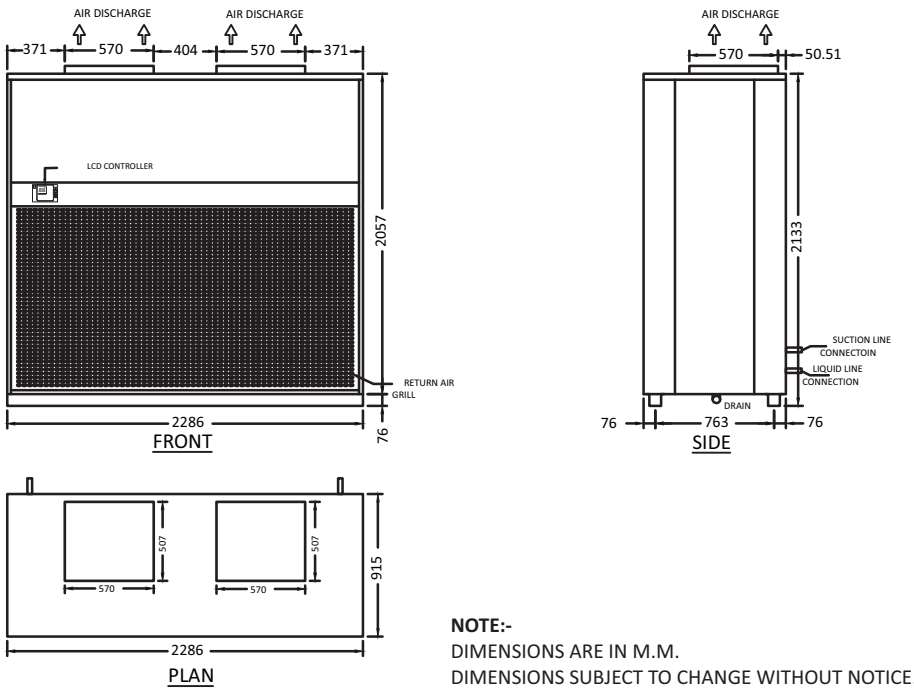
ASU-Floor Standing (Top Ducted)

MODEL-ASU 480T-V (RC)



NOTE:-
DIMENSIONS ARE IN M.M.
DIMENSIONS SUBJECT TO CHANGE WITHOUT NOTICE.

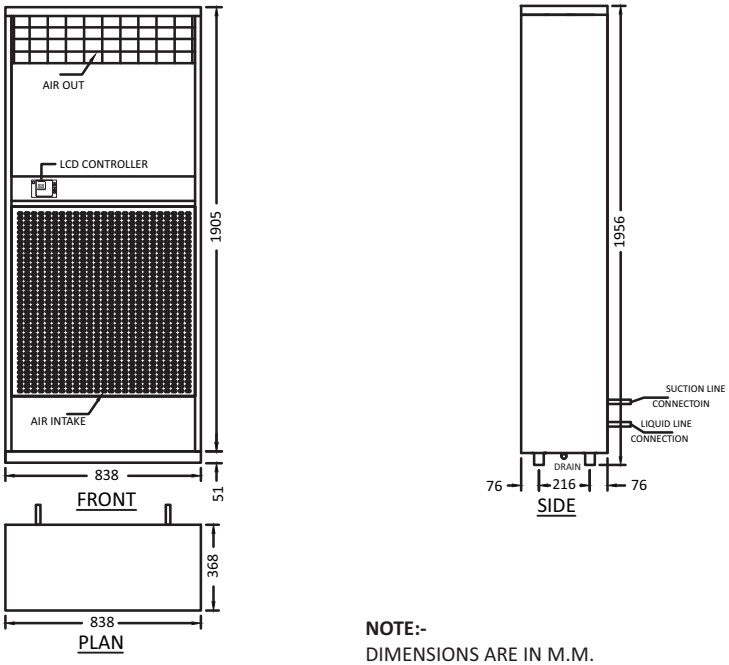
MODEL-ASU 500D-V (RC)



NOTE:-
DIMENSIONS ARE IN M.M.
DIMENSIONS SUBJECT TO CHANGE WITHOUT NOTICE.

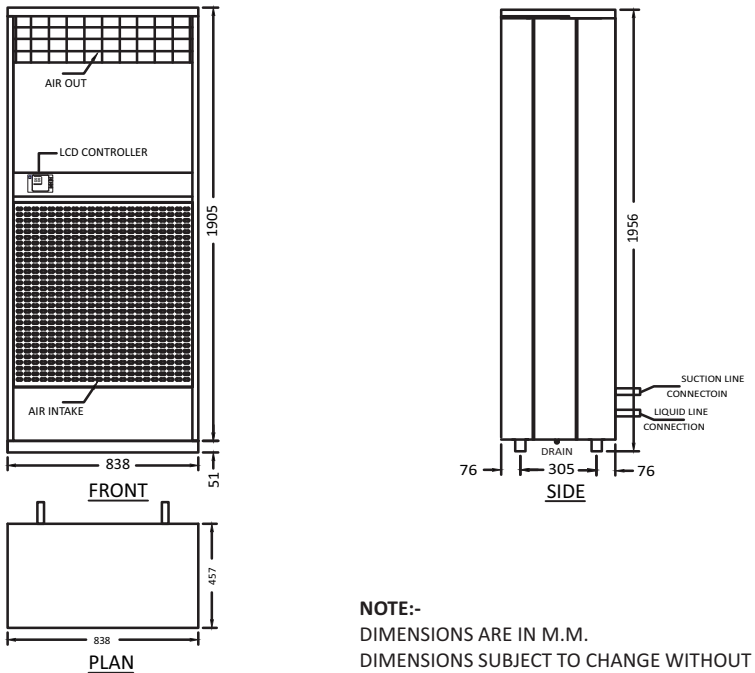
ASU-Floor Standing (Front Free Discharge)

MODEL-ASU 040S-VC, 050S-VC (RC)



NOTE:-
DIMENSIONS ARE IN M.M.
DIMENSIONS SUBJECT TO CHANGE WITHOUT NOTICE.

MODEL-ASU 060S-VC, 080S-VC, 080D-VC (RC)



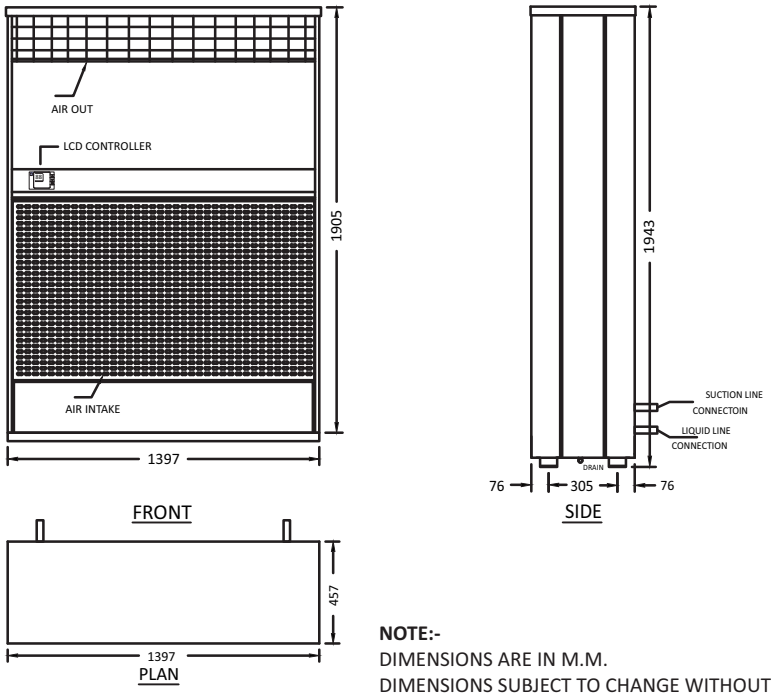
NOTE:-
DIMENSIONS ARE IN M.M.
DIMENSIONS SUBJECT TO CHANGE WITHOUT NOTICE.

ASU MODELS SERIES

INDOOR UNIT

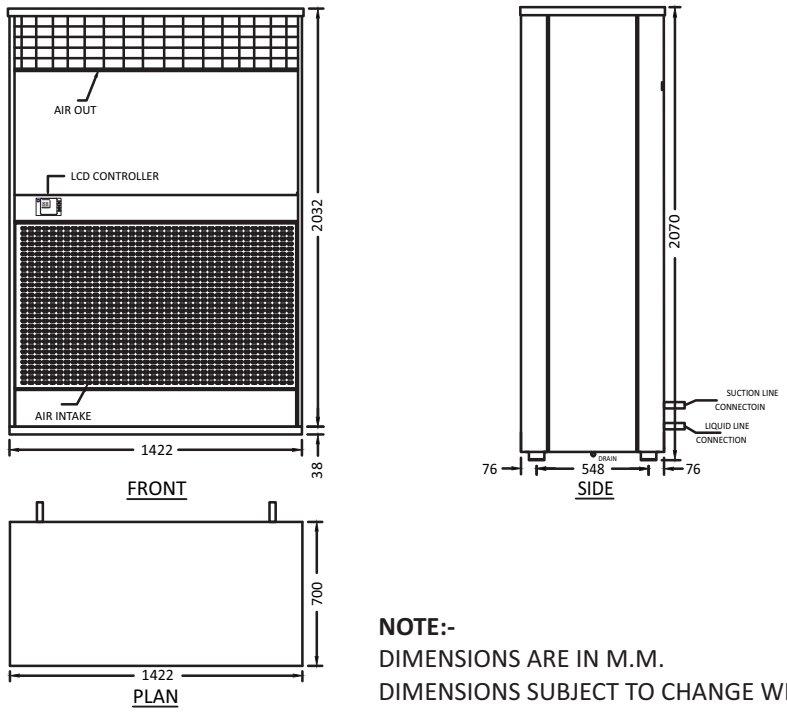
ASU-Floor Standing (Free Discharge)

MODEL-ASU 100D-VC, 120D-VC (RC)



NOTE:-
DIMENSIONS ARE IN M.M.
DIMENSIONS SUBJECT TO CHANGE WITHOUT NOTICE.

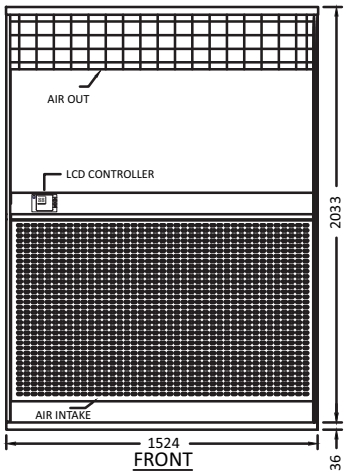
MODEL-ASU 160S-VC, 160D-VC (RC)

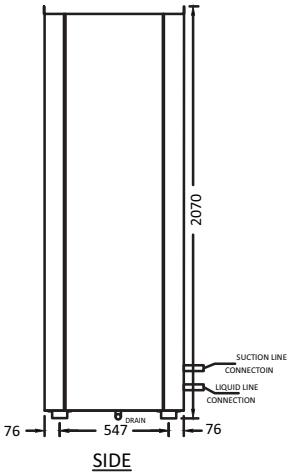


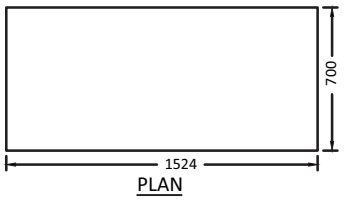
NOTE:-
DIMENSIONS ARE IN M.M.
DIMENSIONS SUBJECT TO CHANGE WITHOUT NOTICE.

ASU-Floor Standing (Free Discharge)

MODEL-ASU 200D-VC, 240D-VC (RC)

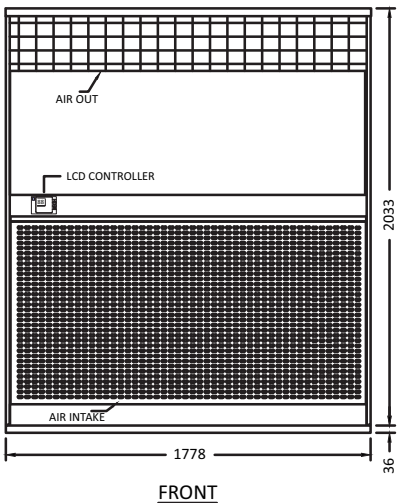


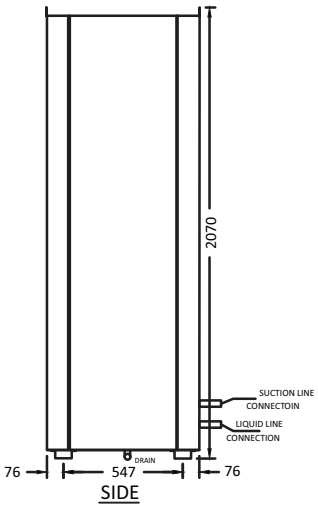


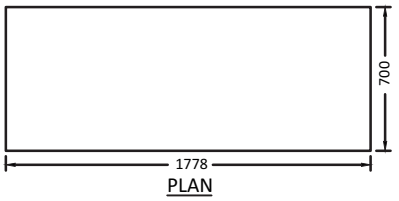


NOTE:-
DIMENSIONS ARE IN M.M.
DIMENSIONS SUBJECT TO CHANGE WITHOUT NOTICE.

MODEL-ASU 320D-VC (RC)







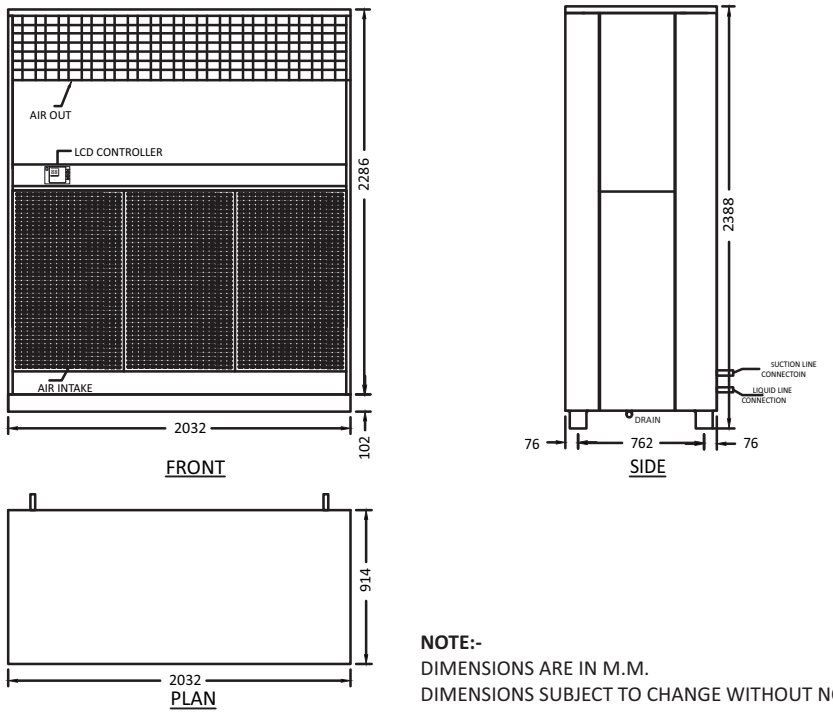
NOTE:-
DIMENSIONS ARE IN M.M.
DIMENSIONS SUBJECT TO CHANGE WITHOUT NOTICE.

ASU MODELS SERIES

INDOOR UNIT

ASU-Floor Standing (Free Discharge)

MODEL-ASU 370D-VC, 420D-VC (RC)



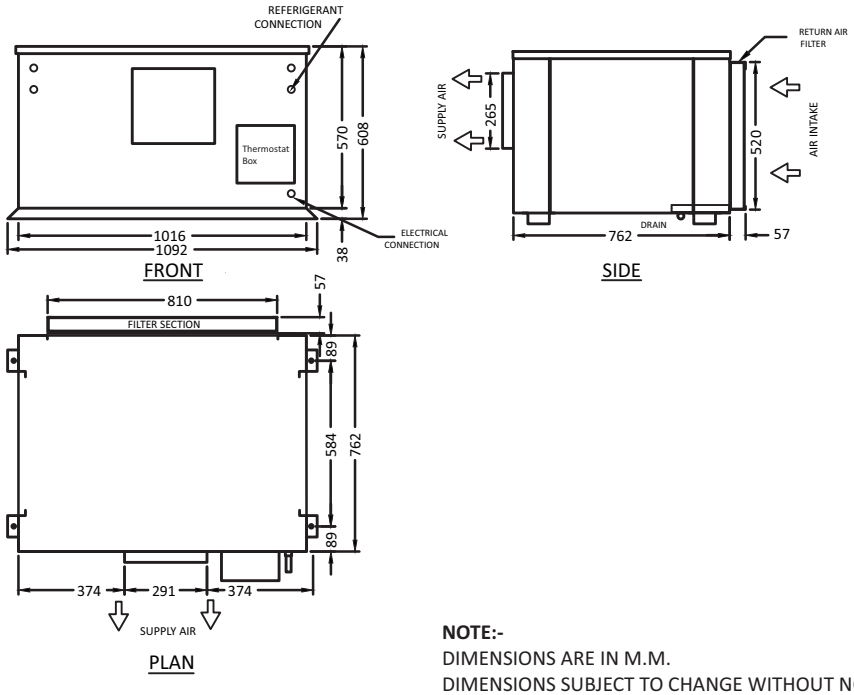
NOTE:-

DIMENSIONS ARE IN M.M.

DIMENSIONS SUBJECT TO CHANGE WITHOUT NOTICE.

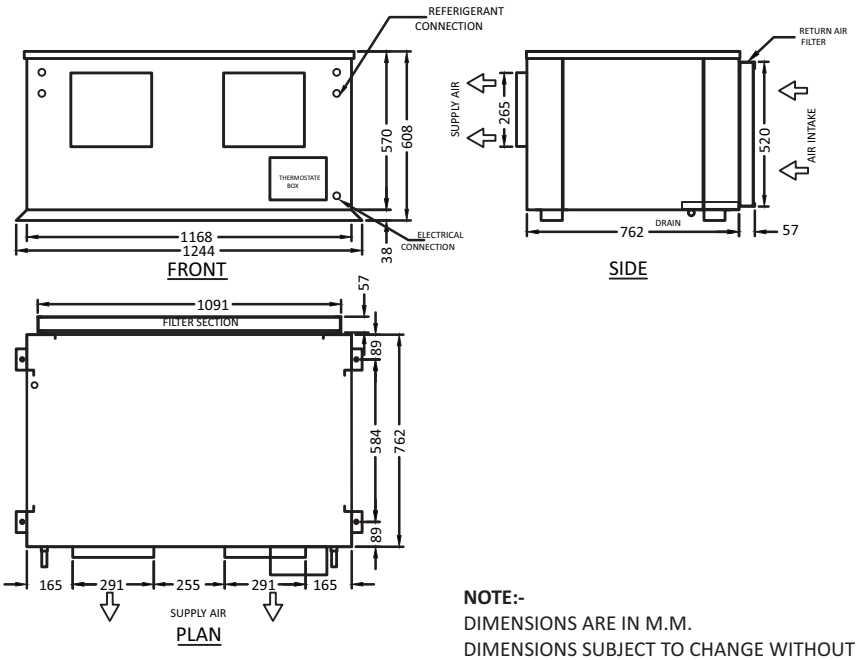
ASU-Ceiling Ducted

MODEL-ASU 040S-C, 050S-C, 060S-C (RC)



NOTE:-
DIMENSIONS ARE IN M.M.
DIMENSIONS SUBJECT TO CHANGE WITHOUT NOTICE.

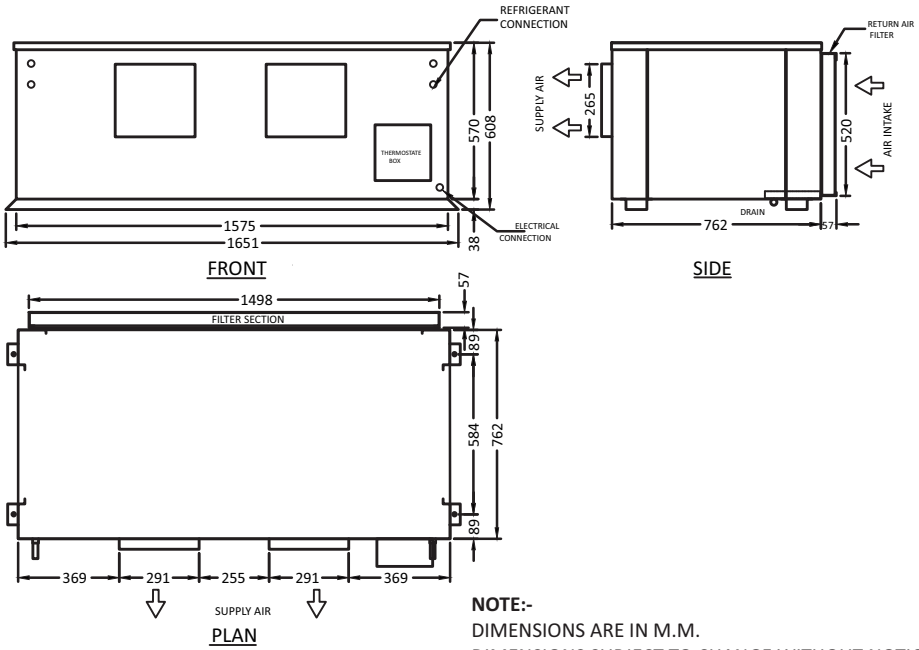
MODEL-ASU 080S-C, 080D-C (RC)



NOTE:-
DIMENSIONS ARE IN M.M.
DIMENSIONS SUBJECT TO CHANGE WITHOUT NOTICE.

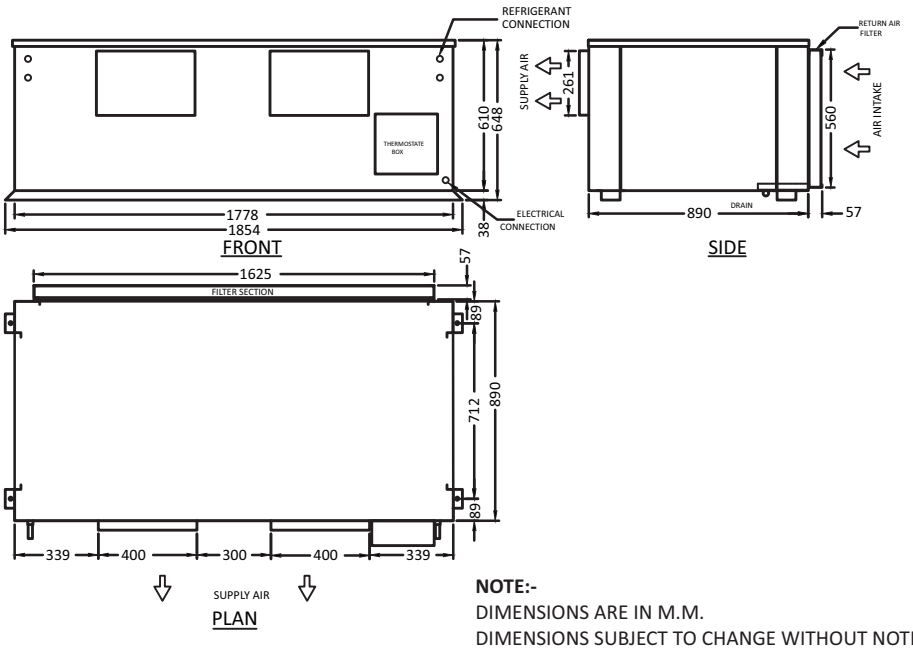
ASU-Ceiling Ducted

MODEL-ASU 100D-C, 120D-C (RC)



NOTE:-
DIMENSIONS ARE IN M.M.
DIMENSIONS SUBJECT TO CHANGE WITHOUT NOTICE.

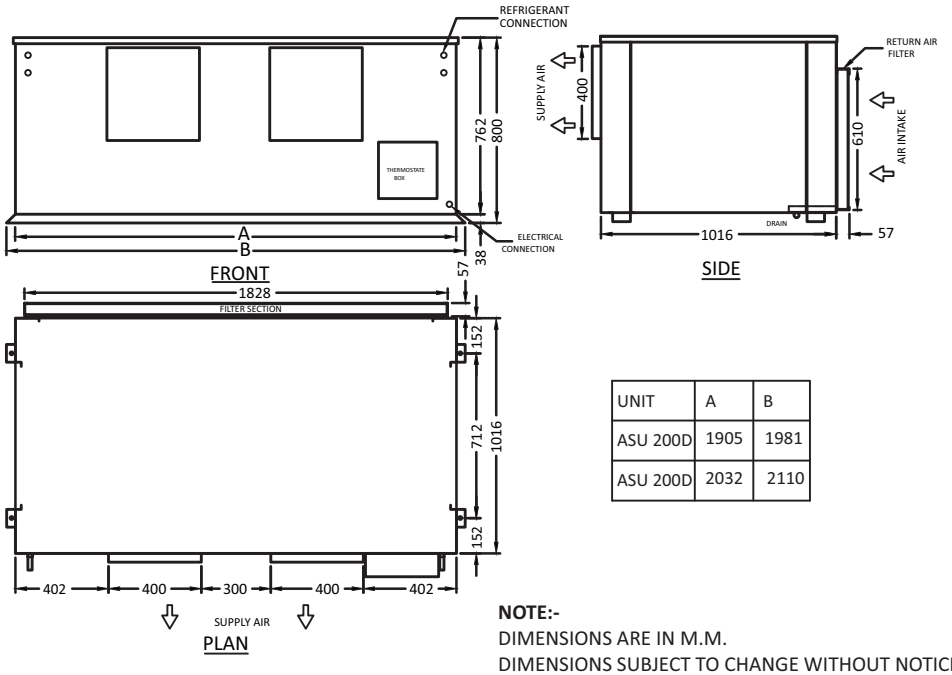
MODEL-ASU 160S-C, 160D-C (RC)



NOTE:-
DIMENSIONS ARE IN M.M.
DIMENSIONS SUBJECT TO CHANGE WITHOUT NOTICE.

ASU-Ceiling Ducted

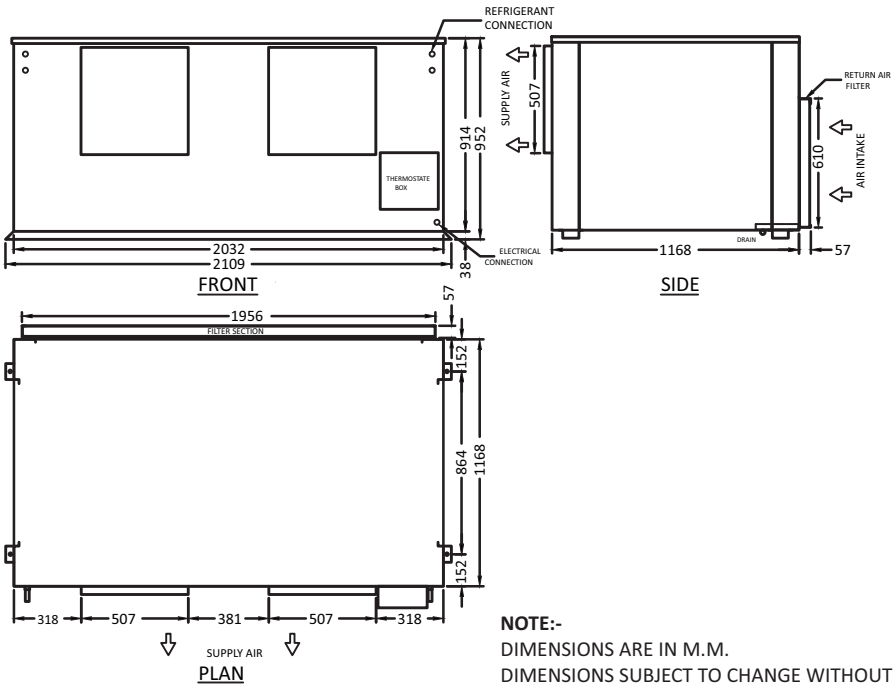
MODEL-ASU 200D-C, 240D-C (RC)



UNIT	A	B
ASU 200D	1905	1981
ASU 200D	2032	2110

NOTE:-
DIMENSIONS ARE IN M.M.
DIMENSIONS SUBJECT TO CHANGE WITHOUT NOTICE.

MODEL-ASU 320D-C (RC)



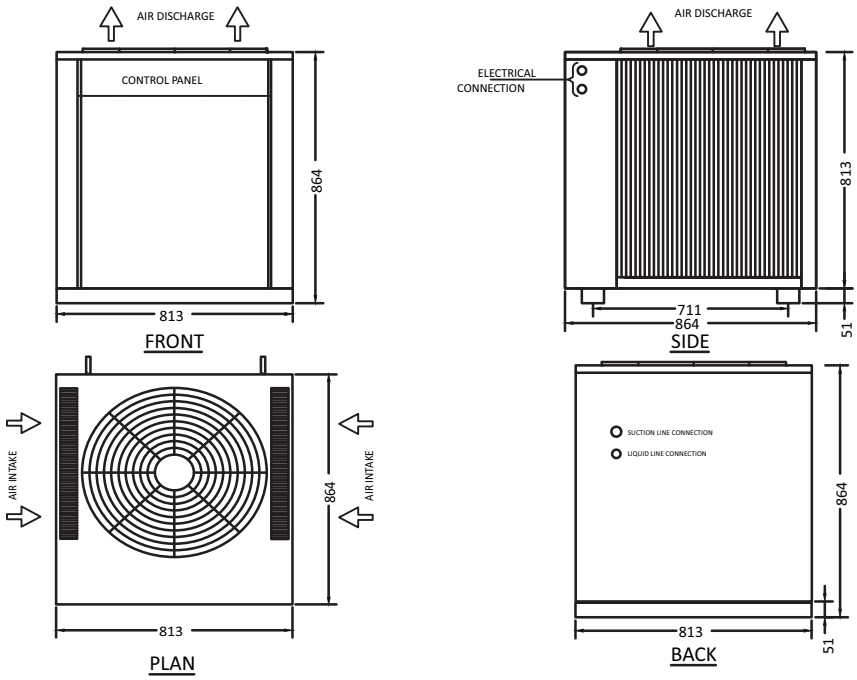
NOTE:-
DIMENSIONS ARE IN M.M.
DIMENSIONS SUBJECT TO CHANGE WITHOUT NOTICE.

ASU MODELS SERIES

OUTDOOR UNIT

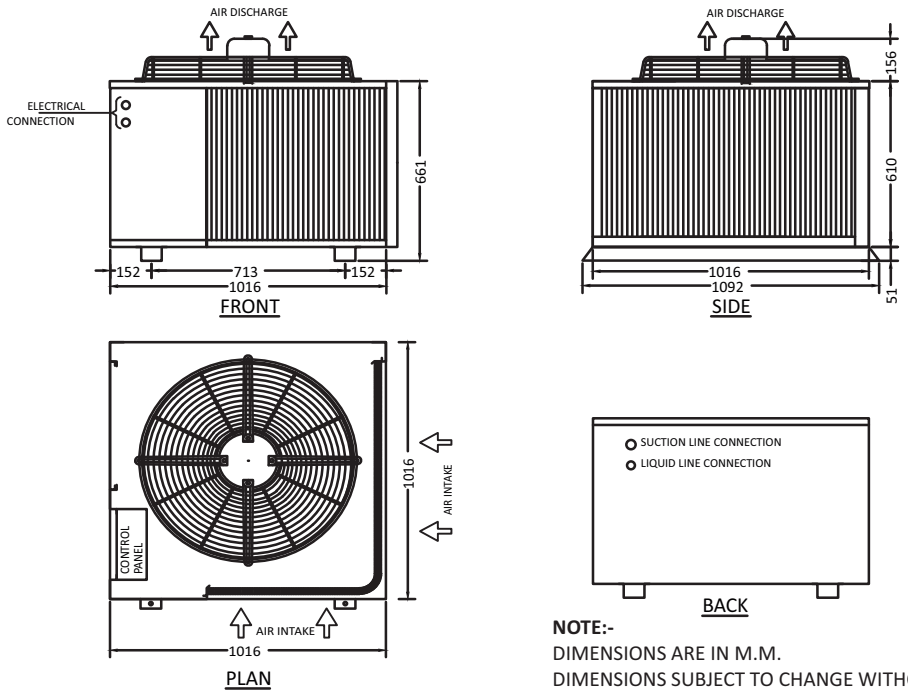
ASU-Standard Condenser

MODEL-ASU 040S-S (RC)



NOTE:-
DIMENSIONS ARE IN M.M.
DIMENSIONS SUBJECT TO CHANGE WITHOUT NOTICE.

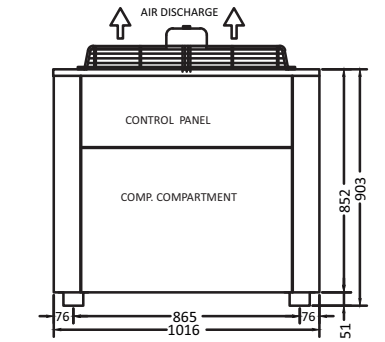
MODEL-ASU 050S-S, 060S-S (RC)



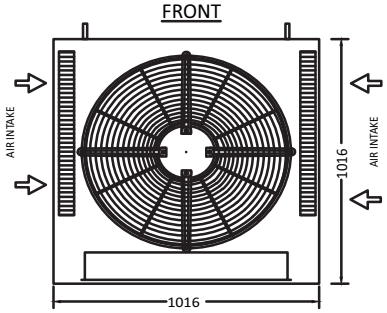
NOTE:-
DIMENSIONS ARE IN M.M.
DIMENSIONS SUBJECT TO CHANGE WITHOUT NOTICE.

ASU-Standard Condenser

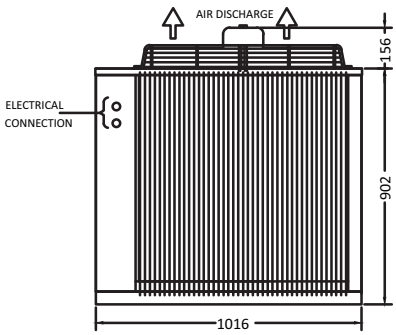
MODEL-ASU 080S-S, 080D-S (RC)



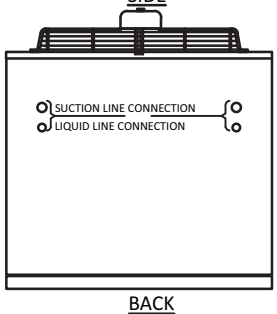
FRONT



PLAN



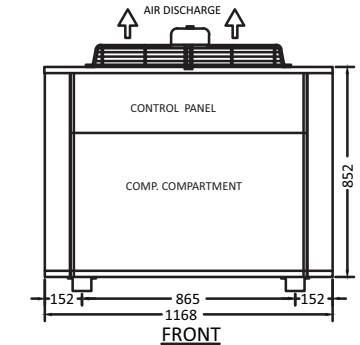
SIDE



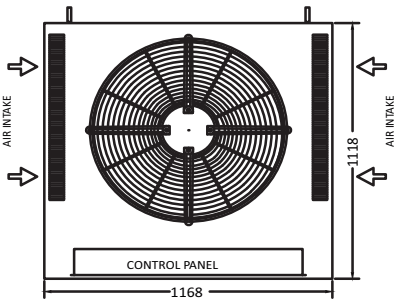
BACK

NOTE:-
DIMENSIONS ARE IN M.M.
DIMENSIONS SUBJECT TO CHANGE WITHOUT NOTICE.

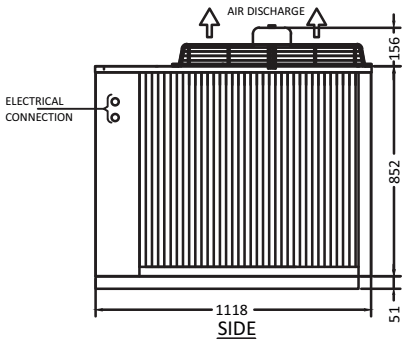
MODEL-ASU 100D-S, 120D-S, 160S-S, 160D-S (RC)



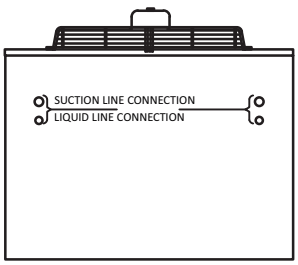
FRONT



PLAN



SIDE



BACK

NOTE:-
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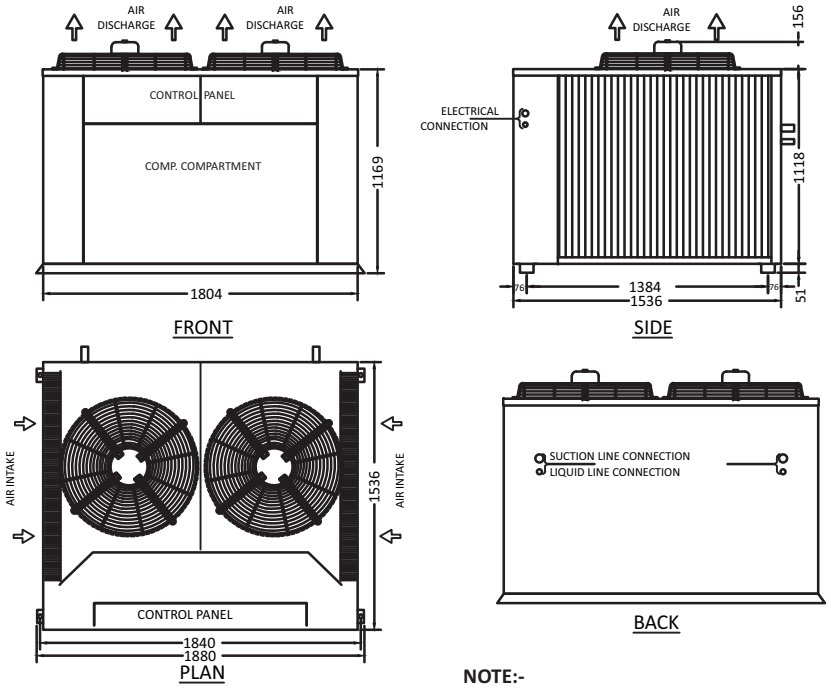
DIMENSIONS SUBJECT TO CHANGE WITHOUT NOTICE.

ASU MODELS SERIES

OUTDOOR UNIT

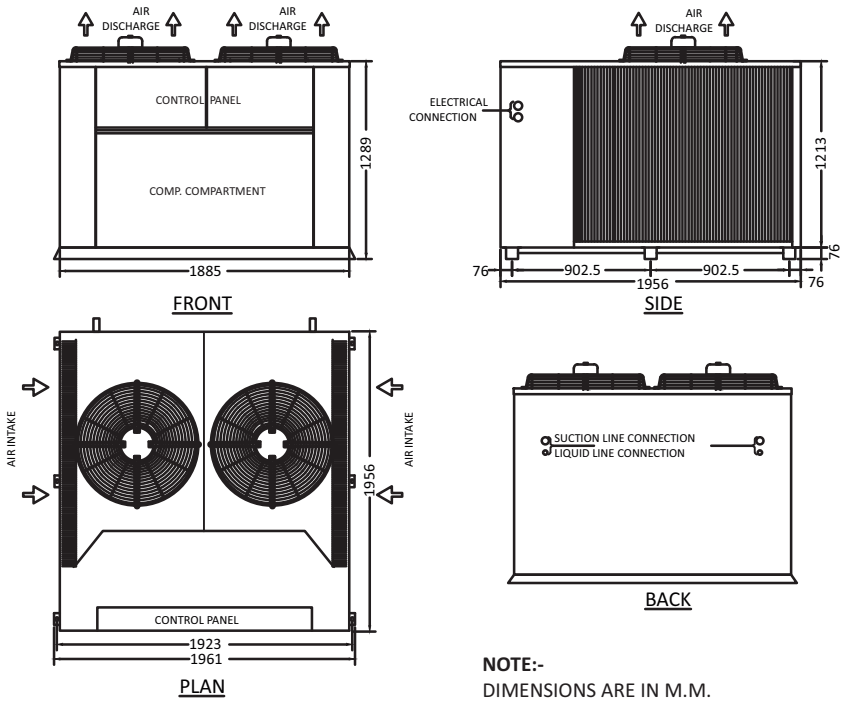
ASU-Standard Condenser

MODEL-ASU 200D-S, 240D-S (RC)



NOTE:-
DIMENSIONS ARE IN M.M.
DIMENSIONS SUBJECT TO CHANGE WITHOUT NOTICE.

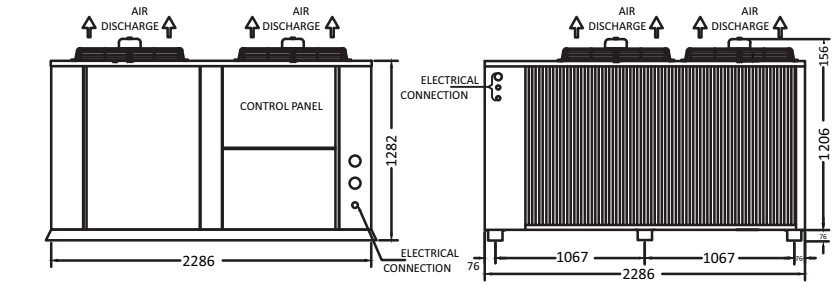
MODEL-ASU 320D-S (RC)

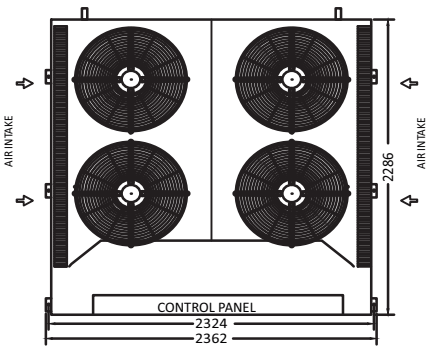


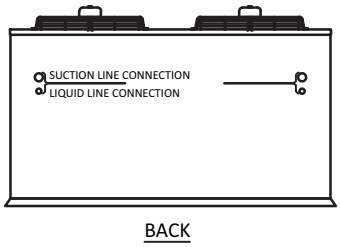
NOTE:-
DIMENSIONS ARE IN M.M.
DIMENSIONS SUBJECT TO CHANGE WITHOUT NOTICE.

ASU-Standard Condenser

MODEL-ASU 370D-S, 420D-S (RC)







NOTE:-
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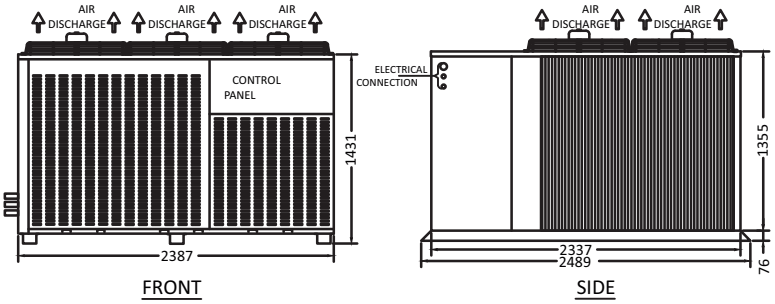
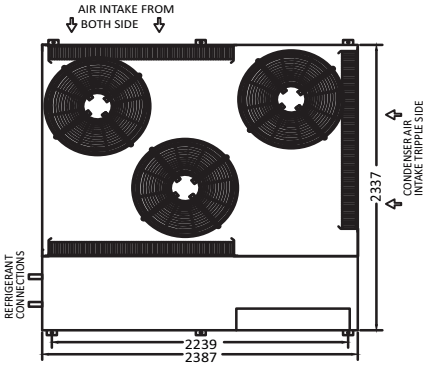
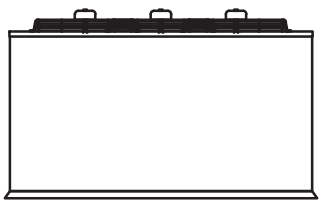
DIMENSIONS SUBJECT TO CHANGE WITHOUT NOTICE.

MODEL-ASU 480T-S (RC)







NOTE:-
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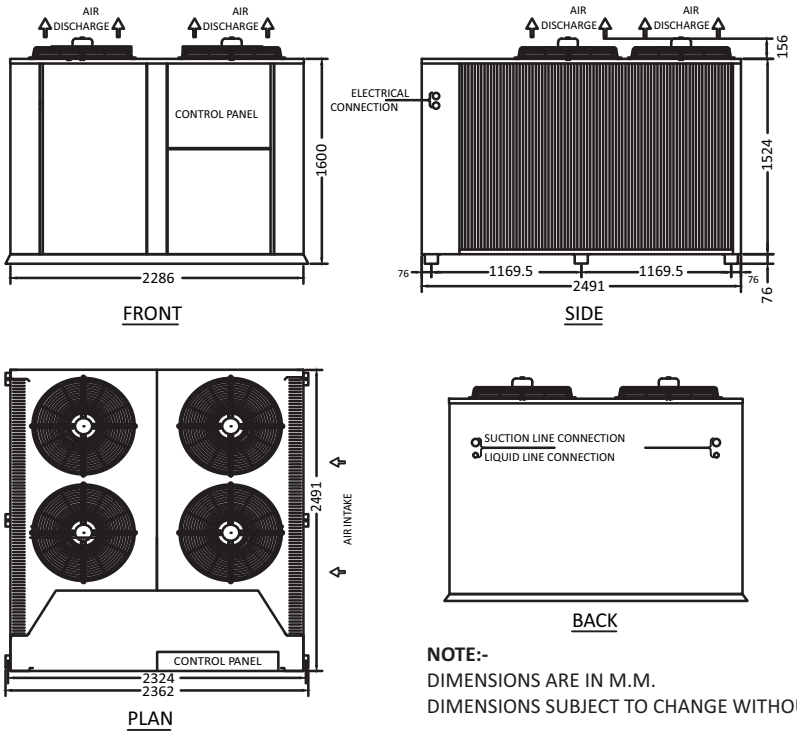
DIMENSIONS SUBJECT TO CHANGE WITHOUT NOTICE.

ASU MODELS SERIES

OUTDOOR UNIT

ASU-Standard Condenser

MODEL-ASU 500D-S (RC)



NOTE:-

DIMENSIONS ARE IN M.M.

DIMENSIONS SUBJECT TO CHANGE WITHOUT NOTICE.

Metric/Imperial Unit Conversion Table

Imperial → Metric

Linear Measure (Length/Distance)

Imperial	Metric
1 inch	25.4 millimetres
1 foot (=12 inches)	0.3048 metre
1 yard (=3 feet)	0.9144 metre
1 (statute) mile (=1760 yards)	1.6093 kilometres
1 (nautical) mile (=1.150779 miles)	1.852 kilometres

Square Measure (Area)

Imperial	Metric
1 square inch	6.4516 sq. centimeters
1 square foot (=144 square inches)	9.29 square decimeters
1 square yard (=9 square feet)	0.8361 square metres
1 acre (=4840 square yards)	0.40469 hectare
1 square mile (=640 acres)	259 hectares

Cubic Measure (Volume)

Imperial	Metric
1 cubic inch	16.4 cubic centimeters
1 cubic foot (=1728 cubic inches)	0.0283 cubic metres
1 cubic yard (=27 cubic feet)	0.765 cubic metres

Capacity Measure (Volume)

Imperial	Metric
1 (imperial) fl. oz. (=1/20 imperial pint)	28.41 ml
1 (US liquid) fl. oz. (=1/16 US pint)	29.57 ml
1 (imperial) gill (=1/4 imperial pint)	142.07 ml
1 (US liquid) gill (=1/4 US pint)	118.29 ml
1 (imperial) pint (=20 fl. imperial oz.)	568.26 ml
1 (US liquid) pint(=16 fl. US oz.)	473.18 ml
1 (US dry) pint (= 1/2 quart)	550.61 ml
1 (imperial) gallon (=4 quarts)	4.546 litres
1 (US liquid) gallon (=4 quarts)	3.785 litres
1 (imperial) peck (=2 gallons)	9.092 litres
1 (US dry) peck (= 8 quarts)	8.810 litres
1 (imperial) bushel (=4 pecks)	36.369 litres
1 (US dry) bushel (=4 pecks)	35.239 litres

Mass (Weight)

Imperial	Metric
1 grain	0.065 gram
1 dram	1.772 grams
1 ounce (=16 drams)	28.35 grams
1 pound (=16 ounces =7000 grains)	0.45359237 kilogram
1 stone (=14 pounds)	6.35 kilograms
1 quarter (=2 stones)	12.70 kilograms
1 hundred weight (=4 quarters =112 lb.)	50.80 kilograms
1 (long) ton (=2240 lbs)	1.016 tonnes
1 (short) ton (=2,000 lbs)	0.907 tonne

Metric → Imperial

Linear Measure (Length/Distance)

Metric	Imperial
1 millimetre	0.0394 inch
1 centimetre (=10 mm)	0.3937 inch
1 decimetre (=10 cm)	3.937 inches
1 metre (=100 cm)	1.0936 yards
1 decametre (=10 m)	10.936 yards
1 hectometre (=100 m)	109.36 yards
1 kilometre (=1000 m)	0.6214 miles

Square Measure (Area)

Metric	Imperial
1 square centire metre	0.1550 sq. inch
1 square metre (=10 000 sq. cm)	1.1960 sq. yards
1 are (=100 sq. metres)	119.60 sq. yards
1 hectare (=100 ares)	2.4711 acres
1 square kilometer (=100 hectares)	0.3861 sq. mile

Cubic Measure (Volume)

Metric	Imperial
1 cubic centimeter	0.0610 cubic inch
1 cubic metre (one million cu. cm)	1.308 cubic yards

Capacity Measure (Volume)

Metric	Imperial
1 millilitre	0.002 (imperial) pint
1 centilitre (=10 ml)	0.018 pint
1 decilitre (=100 ml)	0.176 pint
1 litre (=1000 ml)	1.76 pints
1 decalitre (=10 l)	2.20 (imperial) gallons
1 hectolitre (=100 l)	2.75 (imperial) bushels

Mass (Weight)

Metric	Imperial
1 milligram	0.015 grain
1 centigram (=10 mg)	0.154 grain
1 decigram (=100 mg)	1.543 grain
1 gram (=1000 mg)	15.43 grain
1 decagram (=10 g)	5.64 drams
1 hectogram (=100 g)	3.527 ounces
1 kilogram (=1000 g)	2.205 pounds
1 tonne (=1000 kg)	0.984 (long) ton

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Sabro Airconditioning

Inspired by the 'stimulus to grow' through knowledge, interlaced with the zeal and sheer commitment of an enthusiastic team and gripped by the obsession of three brothers of turning the dream-into reality, **Sabro** has evolved, grown and expanded **since its inception in 1969.**

For over five decades, Sabro has been a trusted brand name that has exceeded expectations nationwide & internationally, catering to the needs of both domestic as well international customers.

Made In
PAKISTAN
Since 1969

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Sabro

C_02_24-01