Quality Assurance
Certificate Reg. No:
04 100 950420

DesertMaster™

Puron
the environmentally sound refrigerant

Subject to change without notice
Manufacturing point: Jeddah, Saudi Arabia
Nearest port of embarkation: Jeddah Islamic port
Product classification: Commercial

Product Data Catalog

50TJM

Nominal Cooling Capacity 15 - 28 Tons
HFC R-410A Refrigerant

The 50TJM units are single side discharge rooftop cooling unit utilizing electric heat as an option. Units are pre-wired, pre-charged with R-410A refrigerant, and tested at the factory. These units can be placed on the side of a building or can be placed on a roof without roof curbs. Each unit is designed to occupy a minimal space. Piping and drain connections are readily accessible.

Contact your local Carrier representative for additional reference materials.

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Features / Benefits

Every compact one-piece unit arrives fully assembled, charged, tested, and ready to run.

Durable-Dependable Construction

Designed for durability in any climate, the weather-resistant cabinets are constructed of galvanized steel, bonderized, and all exterior panels are coated with a pre-painted baked enamel finish. The paint finish is non-chalking, and is capable of withstanding ASTM (American Society for Testing and Materials) B117 500-hour Salt Spray Test. All internal cabinet panels are primed, permitting longer life and a more attractive appearance for the entire unit. Totally enclosed condenser-fan motor and permanently lubricated bearings provide additional unit dependability.

Indoor-Air Quality

Non corrosive sloped condensate pans minimize biological growth in rooftop units in accordance with ASHRAE (American Society of Heating, Refrigeration and Air Conditioning Engineers) Standard 62-99 (IAQ). 1”inch filters provide for greater particle reduction in the return air.

Simple, Electrical Connections

Terminal boards, located in the unit control box, facilitate connections to room thermostat, outdoor thermostat(s) and electric heater. Service panels are quickly removed, permitting easy servicing. Both power and control connections are made on the same side of the unit to simplify installation. In addition, color-coded wires permit easy tracing and diagnostics.

Easy Installation

All units feature base rail design with forklift slots and rigging holes for easier maneuvering. Durable packaging protects all units during shipment and storage. Convenient side by side openings permit installation very close to face of buildings or on roof top. The non-corrosive sloped condensate pan minimizes residual condensate in off cycle. An external, field-supplied P-trap is required. Field-installed electric heaters are available in two convenient capacities 30kW or 40kW.

Installation Features

- Single point electrical service entry
- Side discharge application
- No roof curb needed
- Side by side supply and return air
- Separate panel for control box

Performance Features

- HFC R-410A refrigerant
- ASHRAE Compliant
- EER's up to 11
- TXV refrigerant metering device
- Two independent refrigerant circuits, each with a scroll compressor
- Low outdoor temperature cooling operation down to 40^{o} F
- Liquid filter drier standard on each circuit
- 10% fresh air intake
- Non-corrosive sloped condensate drain pan in accordance to ASHRAE 62 standard
- Thermally protected and permanently lubricated condenser and evaporator fan motors
- Angle type return air section with washable type filters

Environmentally Sound Refrigerant Choice

R410A refrigerant is:

- A chlorine-free refrigerant from the HFC group
- Has zero ozone depletion potential
- High pressure refrigerant, therefore less refrigerant is required
- Thermally efficient and provides high EER (energy efficiency), COP, and part load efficiencies

Superior Reliability, Efficiency and Safety

- Exceptional endurance tests
    - Painted panels tested to ASTM B-117 500 hours salt spray protection
    - Pre-coated fin condenser coil for extra corrosion protection
- Compressor Protection:
    - High and low pressure cutouts
    - Compressor lockout
    - Phase protection relay
    - Crankcase heaters are standard for all units
    - Internal over temperature protection
    - Freeze protection
- Low vibration design:
    - Leak-tight refrigerant circuit
    - Brazed refrigerant connections for increased leak tightness
    - Low-noise scroll compressors with low vibration levels
- Control circuit protected by circuit breaker
- Thermally protected and permanently lubricated condenser and evaporator fan motors
- Angle type return air section with washable type filters
- Transformer for safe 24v control circuit supply included
- High Efficiency, High Static Blower
- State-of-art scroll compressor technology
- Dual, electrically and mechanically independent refrigerant circuit
- Double skin construction, Insulated cabinet

SHIPPING INFORMATION

Unit data with Condenser Al/Cu and Evaporator Cu/Al Coils and Condenser only Pre-coat Al/CU

Unit Model	Cap.	Approximate Shipping Weight		Approximate Shipping Dimensions (L x D x H)	
Number	Tons	kg	lbs	mm	in
50TJM-18AxAxxxAxAS	15	925	2,017	2,440x2,235x1,375	96x88x54
50TJM-24AxAxxxAxAS	19	945	2,050		
50TJM-28AxAxxxAxAS	23	1,190	2,854	3,200x2,485x1,400	126x98x55
50TJM-34AxAxxxAxAS	28	1,215	2,877		

Unit data with Condenser Only Cu/Cu Coils

Unit Model	Cap.	Approximate Shipping Weight		Approximate Shipping Dimensions (L x D x H)	
Number	Tons	kg	lbs	mm	in
50TJM-18AxExxxAxAS	15	990	2,183	2,440x2,235x1,375	96x88x54
50TJM-24AxExxxAxAS	19	1,032	2,275		
50TJM-28AxExxxAxAS	23	1,340	2,954	3,200x2,485x1,400	126x98x55
50TJM-34AxExxxAxAS	28	1,365	3,009		

Unit data with Condenser and Evaporator Cu/Cu Coils

Unit Model	Cap.	Approximate Shipping Weight		Approximate Shipping Dimensions (L x D x H)	
Number	Tons	kg	lbs	mm	in
50TJM-18AxCxxxAxAS	15	1,074	2,367	2,440x2,235x1,375	96x88x54
50TJM-24AxCxxxAxAS	19	1,116	2,460		
50TJM-28AxCxxxAxAS	23	1,452	3,201	3,200x2,485x1,400	126x98x55
50TJM-34AxCxxxAxAS	28	1,477	3,256		

FACTORY INSTALLED OPTIONS

Option	Description
Indoor fan system	Standard
	High efficiency motor
Refrigerant sight glass	Installed on each circuit
Pre-coated	Condenser only
Copper fins	Condenser only
Copper fins	Evaporator and Condenser

NOTE: Please refer to the Product Nomenclature for ordering information

FIELD INSTALLED ACCESSORIES

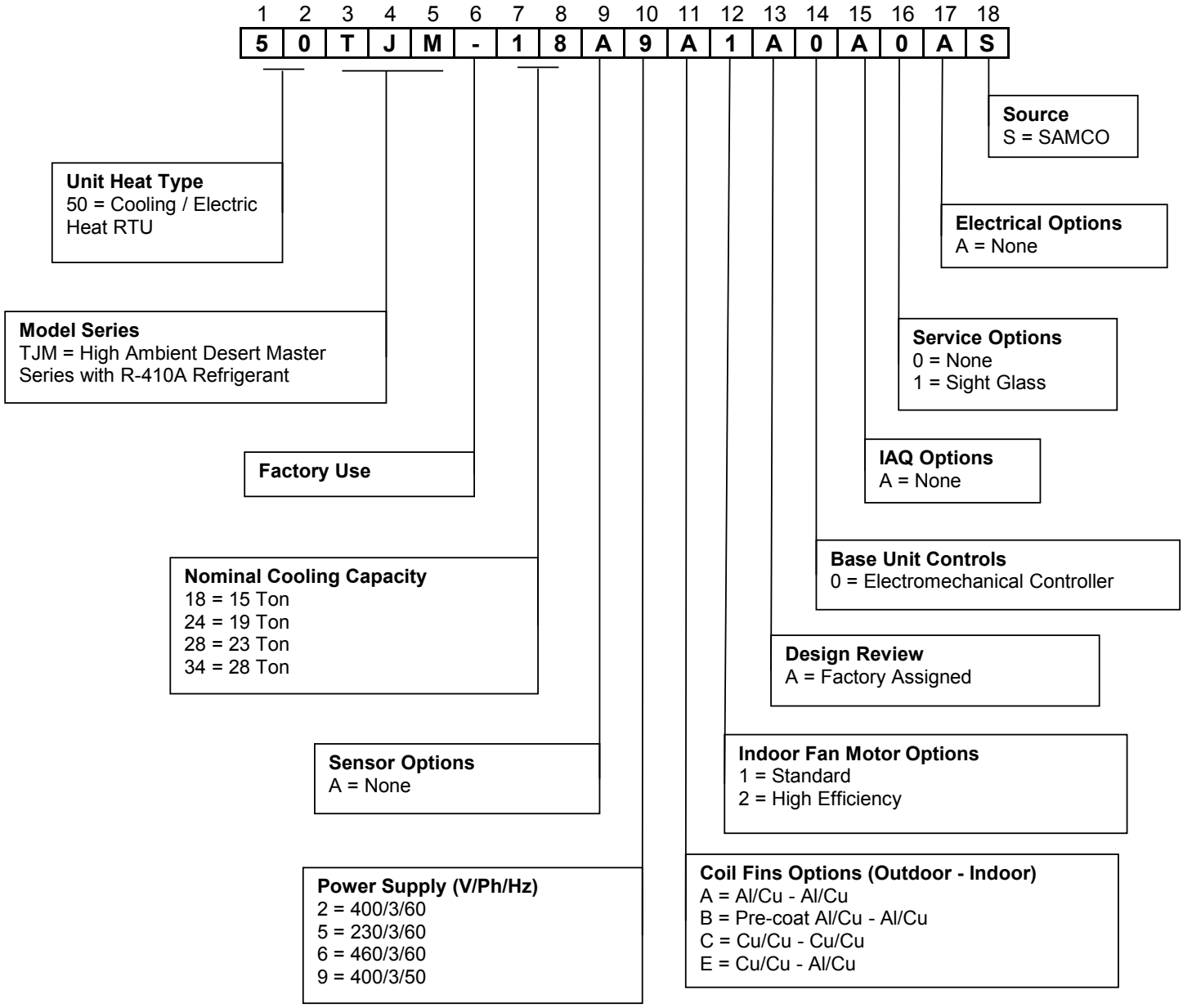
Accessory Electric Heater - 400V

UNIT 50TJM	Complete Kit P.N.	Casing P.N.	Heater Element P. N.	Electric Heater Kits		
		(1 Per Kit)	(2 Per Kit)	Description	Stages	Size (Kw)
18	50TJ600287	50TJ600289	CPHEATER036A00	Duct heater assembly, 480V	2	30
24	50TJ601162	50TJ600289	CPHEATER037A00	Duct heater assembly, 480V	2	40
28	50TJ600730	50TJ600727	CPHEATER037A00	Duct heater assembly, 480V	2	40
34	50TJ600730	50TJ600727	CPHEATER037A00	Duct heater assembly, 480V	2	40

NOTE: Heaters are rated at 480 V. Use the Multiplication Factors table below to determine heater capacity for your particular voltage.

Heater Rating Voltage	Multiplication Factors			
	380	400	460	480
480	0.620	0.700	0.920	1.000

MODEL NUMBER NOMENCLATURE – 50TJM – R410A SERIES



AHRI Capacity Rating*

Unit 50TJM	Nominal Ton	Standard CFM	Net Cooling Capacity (BTU/hr)	Net Cooling Capacity (Watt)	Net Cooling Capacity (Ton)	CFM/TON	EER	Sound Rating (Decibels)
18	15	5,300	172724	50637	14.4	368	11.2	90.3
24	19	6,700	208745	61197	17.4	385	11.1	90.9
28	23	8,000	259367	76038	21.6	370	11.7	90.6
34	28	9,000	302972	88821	25.2	356	10.5	91.1

Bels - Sound Levels (1 bel = 10 decibels)
EER - Energy Efficiency Ratio

*AHRI - Air Conditioning, Heating and Refrigeration Institute.
1. Rated in accordance with AHRI Standards 210/240-89 or 360-86 and 270-84.
2. Ratings are net values, reflecting the effects of circulating fan heat.

Cooling Standard: 80 F db, 67 wb indoor entering-air temperature and 95 F db air entering outdoor unit, Side Discharge, 0.4 iwg External Static. .

Physical Data - English

50TJM Unit Physical Data (50Hz) (English)				
Unit 50TJM Size	**18**	**24**	**28**	**34**
Unit Dimensions	Page - 9		Page - 10	
Unit Operating Weight	Page - 9		Page - 10	

Refrigeration System				
Compressor No. / Type	2 / Scroll			
Stage Of Capacity Control (%)	50 / 50			
Refrigerant Type	Puron ® R410A			
Circuts No.	2			
Charge Per Circuit (Down / Up) -LBS	15.96 / 15.96	22.19 / 25.62	31.19 / 29.19	31.62 / 31.37
Metering Device	TXV - Adjustable			
Filter Drier Qty / Size	2 / DML085S		2 / DMS165S	
High Pressure Switch (Trip / Reset) - PSIG	630 / 480			
Low Pressure Switch (Trip / Reset) - PSIG	54 / 70			
Freeze Protection Thermostat (Open / Close) ±1.8 ^{0}F	-18 / -14			

Condenser Coil				
Coil Type	Copper Tube, Aluminum Double Wavy Fins			Copper Tube, Aluminum LSW Fins
Standard Coil Material	Copper / Aluminium			
Qty x Rows x FPI	1 x 3 x 16	1 x 4 x 16	2 x 3 x 17	
Qty x Face Area (ft^2)	1 x 26.7		2 x 28.8	
Coil Test Pressure (PSIG)	450			

Condenser Fan & Motor				
Approx. Air Flow Rate (CFM)	12000	13000	18200	16700
Quantity	2			
Diameter (in) / No. of Blades	30 / 4		30 / 6	
Motor Type	Induction Motor - Totally Enclosed			
Motor HP / RPM	1 / 950			

Evaporator Coil			
Coil Type	Copper Tube, Aluminum LSW Fins.		
Standard Coil Material	Copper / Aluminium		
Qty x Rows Qty x FPI	2 x 3 x 17	2 x 4 x 17	
Qty x Face Area (ft^2)	2 x 9.75	2 x 10.3	
Coil Test Pressure	350		
Drain Pan connection Size (in)	3/4		
Return Air Filter Qty x Size (in)	4 x 33.8 x 21.7	4 x 35.4 x 21.7	

Evaporator Fan and Motor Section			
Fan Quantity / Fan Size (in)	1 / 15.75 x 15.75	1 / 17.7 x 17.7	
Fan Type	Centrifugal - Forward Blade		
Drive Type	Belt		
Motor Type	Induction Motor - TEFC		
Motor BHP	4.0	5.5	7.5
Motor Frame Size / Motor Shaft Diameter (mm)	100 / 28	112 / 28	132 / 38
Motor Pulley Pitch Diameter (Min / Max) (in)	3.7 / 4.7		4.3 / 5.6
Fan RPM Range (RPM)	1030 - 745	1041 - 753	1029 - 740
Fan Pulley Pitch Diameter (in)	6.6		8.4
Belt, Quantity...Type	1 ... BX66		1 ... BX71
Pulley Center To Center Distance(in)	24.4 - 27.51		
Movable Pulley Maximum Full Turns From Closed Position	6		
Approx.Speed Change Per Full Turn Of Movable Pulley Flange (rpm)	48		
Factory Speed Turns Setting	4		1.5
Factory Belt Standard Deflection (in) @ Force (Lb)	0.39 @ 4.65 Lb	0.39 @ 5.99 Lb	0.40 @ 6.63 Lb

Physical Data - SI

50TJM Unit Physical Data (50Hz) (SI)				
Unit 50TJM Size	**18**	**24**	**28**	**34**
Unit Dimensions	Page - 9		Page - 10	
Unit Operating Weight	Page - 9		Page - 10	

Refrigeration System				
Compressor No. / Type	2 / Scroll			
Stage Of Capacity Control (%)	50 / 50			
Refrigerant Type	Puron ® R410A			
Circuts No.	2			
Charge Per Circuit (Down / Up) - kG	7.23 / 7.23	10.12 / 11.4	14.15 / 13.3	14.34 / 14.23
Metering Device	TXV- Adjustable			
Filter Drier Qty / Size	2 / DML085S		2 / DMS165S	
High Pressure Switch (Trip / Reset) - Bar	43 / 33			
Low Pressure Switch (Trip / Reset) - Bar	4 / 5			
Freeze Protection Thermostat (Open / Close) ±1 ^{0}C	-1 / 7			

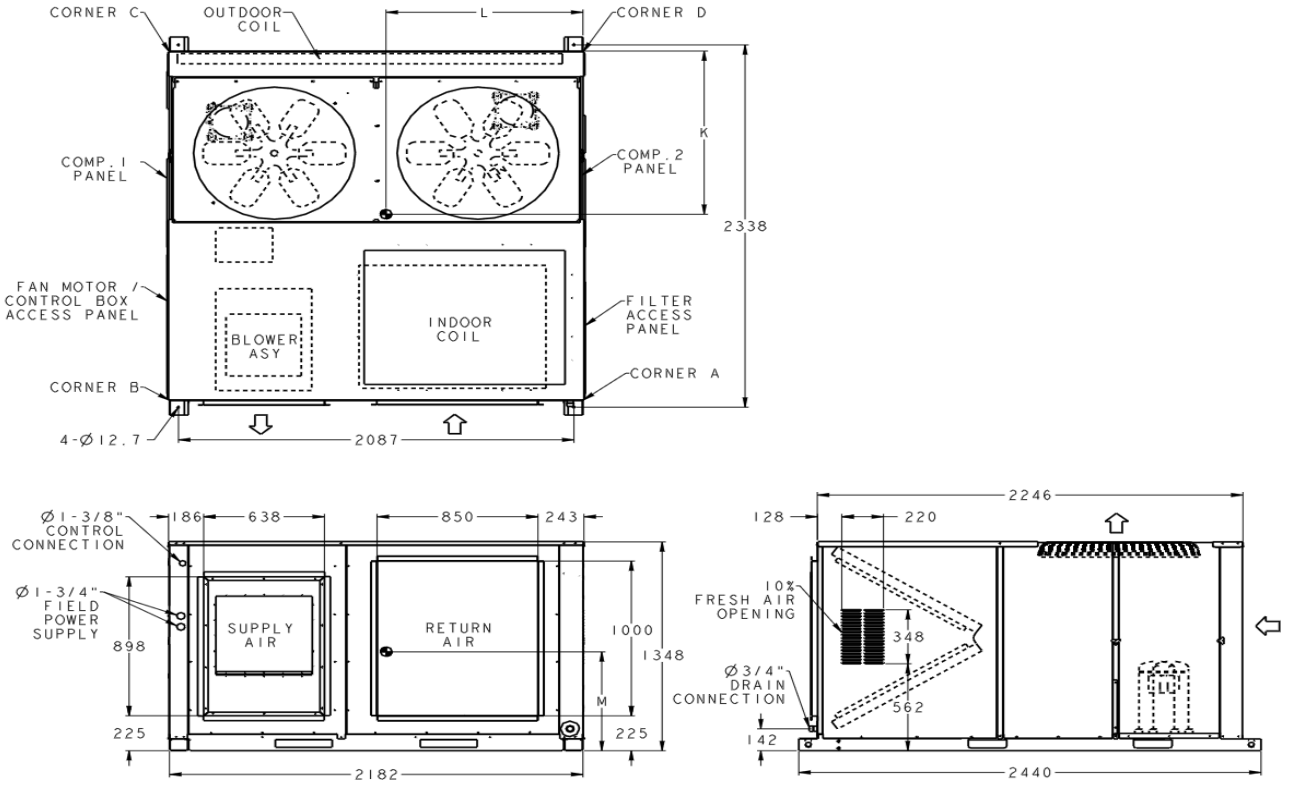
Condenser Coil				
Coil Type	Copper Tube, Aluminium Double Wavy Fins			Copper Tube, Aluminium LSW Fins
Standard Coil Material	Copper / Aluminium			
Qty x Rows x Fins	1 x 3 x 1280	1 x 4 x 1280	2 x 3 x 1472	
Qty x Face Area (m^2)	1 x 2.5		2 x 2.7	
Coil Test Pressure (PSIG)	31			

Condenser Fan & Motor				
Approx. Air Flow Rate (m^3/hr)	20376	22074	30903.6	28356.6
Quantity	2			
Diameter (mm) / No. of Blades	762 / 4		762 / 6	
Motor Type	Induction Motor - Totally Enclosed			
Motor HP/ RPS	1 / 16			

Evaporator Coil				
Coil Type	Copper Tube, Aliminium LSW Fins			
Standard Coil Material	Copper / Aluminium			
Qty x Rows x Fins	2 x 3 x 663		2 x 4 x 663	
Qty x Face Area (m^2)	2 x 0.91		2 x 0.96	
Coil Test Pressure	24			
Drain Pan connection Size (mm)	19.05			
Return Air Filter Qty x Size (in)	4 x 860 x 550		4 x 900 x 550	

Evaporator Fan and Motor Section				
Fan Quantity / Fan Size (mm)	1 / 400 x 400		1 / 450 x 450	
Fan Type	Centrifugal- Forward Blade			
Drive Type	Belt			
Motor Type	Induction Motor - TEFC			
Motor BkW	3.0	4.0		5.5
Motor Frame Size / Motor Shaft Diameter (mm)	100 / 28	112 / 28		132 / 38
Motor Pulley Pitch Diameter (Min / Max) (mm)	94 / 119.4			109 / 141.6
Fan RPM Range (r/s)	17.2 - 12.4	17.4 - 12.5		17.2 - 12.3
Fan Pulley Pitch Diameter (mm)	167.6			212.2
Belt, Quantity...Type	1 … BX66			1 … BX71
Pulley Center To Center Distance(mm)	620 - 699			
Movable Pullley Maximum Full Turns From Closed Position	6			
Approx. Speed Change Per Full Turn Of Movable Pulley Flange (rps)	0.8			
Factory Speed Turns Setting	4			1.5
Factory Belt Standared Deflection (mm) @ Force (N)	10 @ 20.7 N	10 @ 26.7 N		10.2 @ 29.5 N

UNIT DIMENSIONAL DRAWING: 50TJM - 18 and 50TJM - 24

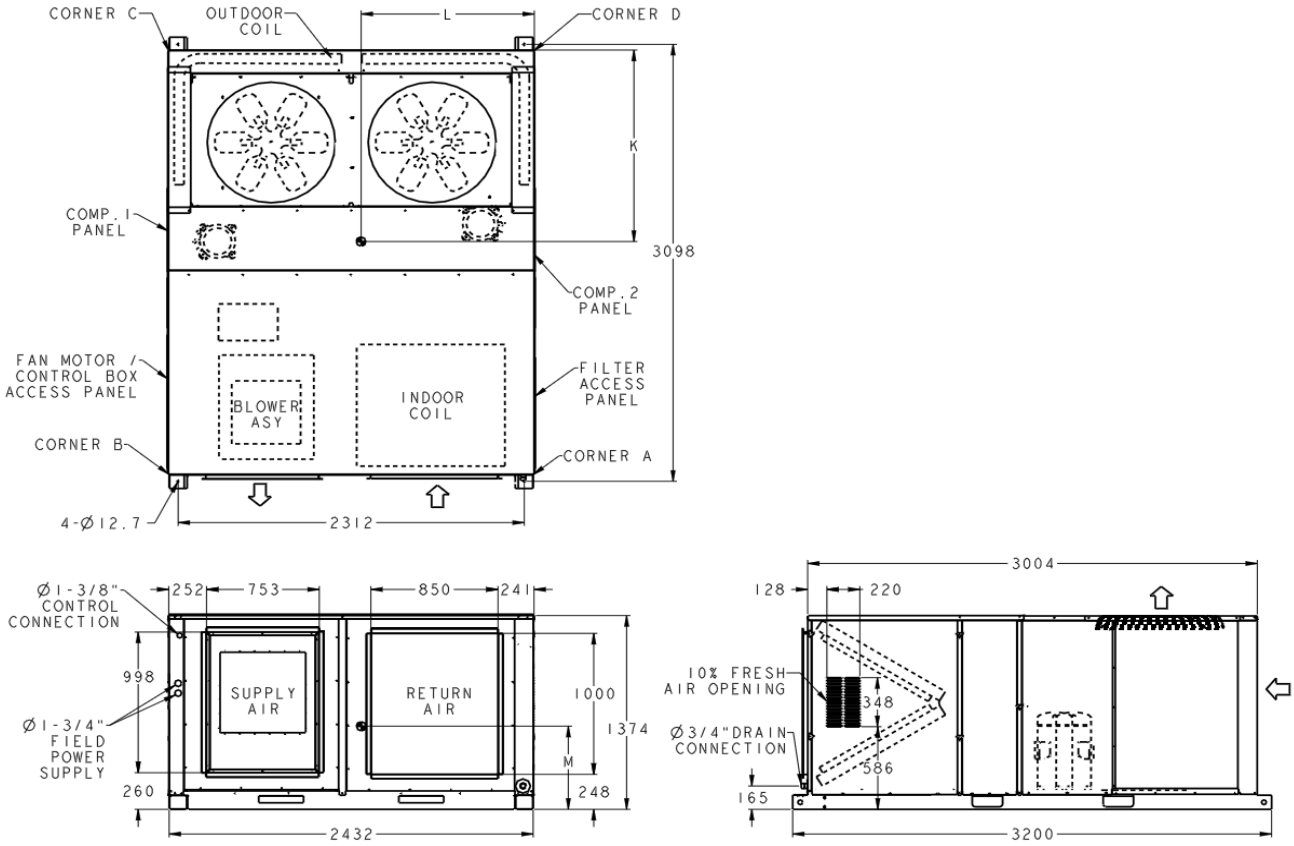


UNIT	SHIPPING DIMENSIONS (mm)			CORNER WEIGHT (Kg)					CENTER OF GRAVITY (mm)		
	LENGTH	WIDTH	DEPTH	A	B	C	D	TOTAL	K	L	M
50TJM - 18	2440	2235	1375	192	178	236	254	860	1050	1050	450
50TJM - 24				197	182	241	260	880			

NOTES:

1. Dimensions are in millimeters.
2. Center of Gravity.
3. Direction of Airflow
4. Minimum clearance:
   REAR: 2134mm for coil removal. This dimension can be reduced to 1219mm if conditions permit coil removal from the top.
   TOP: 1829mm to assure proper condenser fan operation.
   SIDE: 1219mm for Compressor, Filter and Control boxes access.
   - Local codes or jurisdiction may prevail.
5. With the exception of clearance for the condenser coil and the damper / power exhaust as stated in Note no. 6, a removal fence or barricade requires no clearance.
6. Dimensions are from outside of corner post. Allow 8mm on each side for top cover drip edge.
7. Weights are Given for aluminum evaporator and condenser coil plate fins.

UNIT DIMENSIONAL DRAWING: 50TJM - 28 and 50TJM - 34



UNIT	SHIPPING DIMENSIONS (mm)			CORNER WEIGHT (Kg)					CENTER OF GRAVITY (mm)		
	LENGTH	WIDTH	DEPTH	A	B	C	D	TOTAL	K	L	M
50TJM - 28	3200	2485	1400	248	226	310	340	1125	1350	1160	450
50TJM - 34				254	231	317	348	1150			

NOTES:

1. Dimensions are in millimeters.
2. ⊕ Center of Gravity.
3. ⇨ Direction of Airflow
4. Minimum clearance:

   REAR: 2134mm for coil removal. This dimension can be reduced to 1219mm if conditions permit coil removal from the top.

   TOP: 1829mm to assure proper condenser fan operation.

   SIDE: 1219mm for Compressor, Filter and Control boxes access.

   - Local codes or jurisdiction may prevail.

5. With the exception of clearance for the condenser coil and the damper / power exhaust as stated in Note no. 6, a removal fence or barricade requires no clearance.
6. Dimensions are from outside of corner post. Allow 8mm on each side for top cover drip edge.
7. Weights are Given for aluminum evaporator and condenser coil plate fins.