Package Rooftop Units – 50Hz

Quality Assurance
Certificate Reg. No:
04 100 950420

DesertMaster™

Puron
the environmentally sound refrigerant

Subject to change without notice

Product Data Catalog

Manufacturing point: Jeddah, Saudi Arabia
Nearest port of embarkation: Jeddah Islamic port
Product classification: Commercial

50TJM – 50Hz

Nominal Cooling Capacity 15 - 26 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
- EER's up to 11.3
- TXV refrigerant metering device
- Two independent refrigerant circuits, each with a scroll compressor
- Low outdoor temperature cooling operation down to 40° F
- Liquid filter drier standard on each circuit
- Design Series "A" with 10% fresh air intake provision
- 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
    - 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	Unit Size	Approximate Shipping Weight		Approximate Shipping Dimensions (L x W x H)	
Number	Tons	kg	lbs	mm	in
50TJM-18xxAxxxAxAS	15	925	2,017	2,440 x 2,235 x 1,375	96 x 88 x 54
50TJM-22xxAxxxAxAS	18	945	2,050		
50TJM-26AxAxAxAxAS	22	1,190	2,854	3,200 x 2,485 x 1,400	126 x 98 x 55
50TJM-32AxAxAxAxAS	26	1,215	2,877		
50TJM-26AxAxBxAxAS	22	1,190	2,854	2,920 x 2,485 x 1,440	115 x 98 x 55
50TJM-32AxAxBxAxAS	26	1,215	2,877		

Unit data with Condenser Only Cu/Cu Coils

Unit Model	Unit Size	Approximate Shipping Weight		Approximate Shipping Dimensions (L x W x H)	
Number	Tons	kg	lbs	mm	in
50TJM-18AxExxxAxAS	15	990	2,183	2,440 x 2,235 x 1,375	96 x 88 x 54
50TJM-22AxExxxAxAS	18	1,032	2,275		
50TJM-26AxExAxAxAS	22	1,340	2,954	3,200 x 2,485 x 1,400	126 x 98 x 55
50TJM-32AxExAxAxAS	26	1,365	3,009		
50TJM-26AxExBxAxAS	22	1,340	2,954	2,920 x 2,485 x 1,440	115 x 98 x 55
50TJM-32AxExBxAxAS	26	1,365	3,009		

Unit data with Condenser and Evaporator Cu/Cu Coils

Unit Model	Unit Size	Approximate Shipping Weight		Approximate Shipping Dimensions (L x W x H)	
Number	Tons	kg	lbs	mm	in
50TJM-18AxCxxxAxAS	15	1,074	2,367	2,440x2,235x1,375	96x88x54
50TJM-22AxCxxxAxAS	18	1,116	2,460		
50TJM-26AxCxAxAxAS	22	1,452	3,201	3,200x2,485x1,400	126x98x55
50TJM-32AxCxAxAxAS	26	1,477	3,256		
50TJM-26AxCxBxAxAS	22	1,452	3,201	2,920 x 2,485 x 1,440	115 x 98 x 55
50TJM-32AxCxBxAxAS	26	1,477	3,256		

MINIMUM – MAXIMUM AIRFLOW

50TJM	Cooling (CFM)		Electric Heaters (CFM)	
	Minimum	Maximum	Minimum	Maximum
18	3,000	6,000	4,800	4,800
22	4,000	6,500	6,000	6,000
26	4,000	7,500	7,000	7,000
32	6,000	9,000	7,000	7,000

FACTORY INSTALLED OPTIONS

Option	Description
Pre-coated	Condenser only
Copper fins	Condenser only
Copper fins	Evaporator and Condenser

FIELD INSTALLED ACCESSORIES

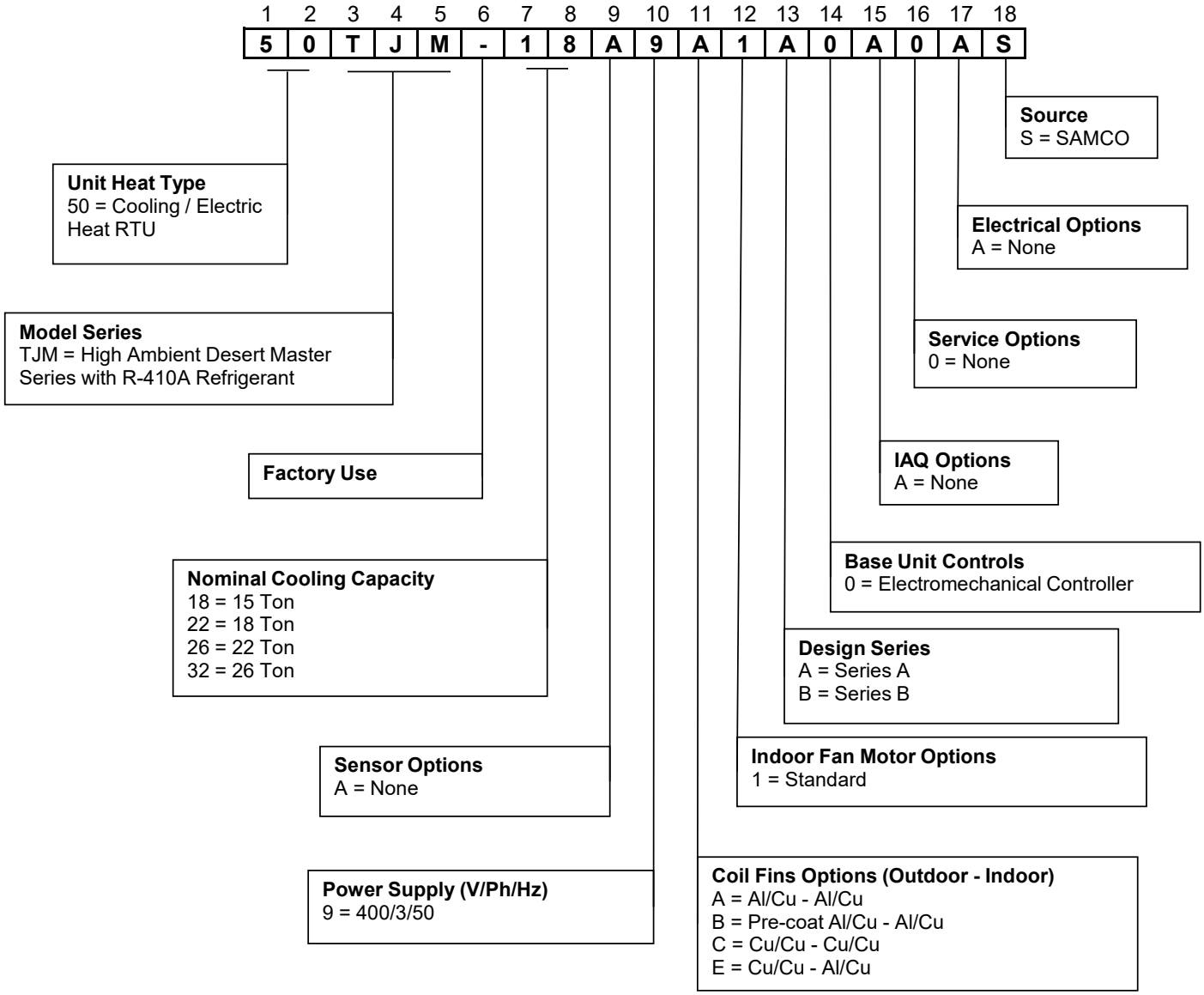
Accessory Soft Bag Filter

50TJM	Part Number	Soft Bag Filter (mm)	Pockets No.	Quantity
Unit 18 and 22	50TJ600993	592 x 592 x 534	6	4
Unit 26 and 32	50TJ600992			6

Accessory Electric Heater

50TJM	Complete Kit P.N.	Casing P.N.	Heater Element P. N.	Electric Heater Kits – 400V		
		(1 Per Kit)	(2 Per Kit)	Description	Stages	Size (Kw)
18	50TJ600287	50TJ600289	CPHEATER036A00	Duct heater assembly, 480V	2	30
22	50TJ601162		CPHEATER037A00			40
26	50TJ600730	50TJ600727				
32						

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	4,300	166500	48797	13.9	310	11.30	90.3
22	18	5,000	195000	57149	16.3	308	11.30	90.9
26	22	6,500	237500	69605	19.8	328	11.30	90.6
32	26	8,000	272000	79716	22.7	353	10.70	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 Standard 340/360.
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**	**22**	**26**	**32**
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	18.14 / 16.53	23.59 / 23.59	31.20 / 29.32	28.66 / 26.90
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 °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	16700	18200
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 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	5.4		7.4
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)	755-953			733-970
Fan Pulley Pitch Diameter (in)	6.6			8.4
Belt, Quantity...Type	1 ... BX66			1 ... BX71
Pulley Center To Center Distance(in)	24.4 - 27.5			
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

Physical Data - SI

50TJM Unit Physical Data (50Hz) (SI)				
Unit 50TJM Size	**18**	**22**	**26**	**32**
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	8.23 / 7.50	10.70 / 10.70	14.15 / 13.30	13.00 / 12.20
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 °C	-1 / 7			

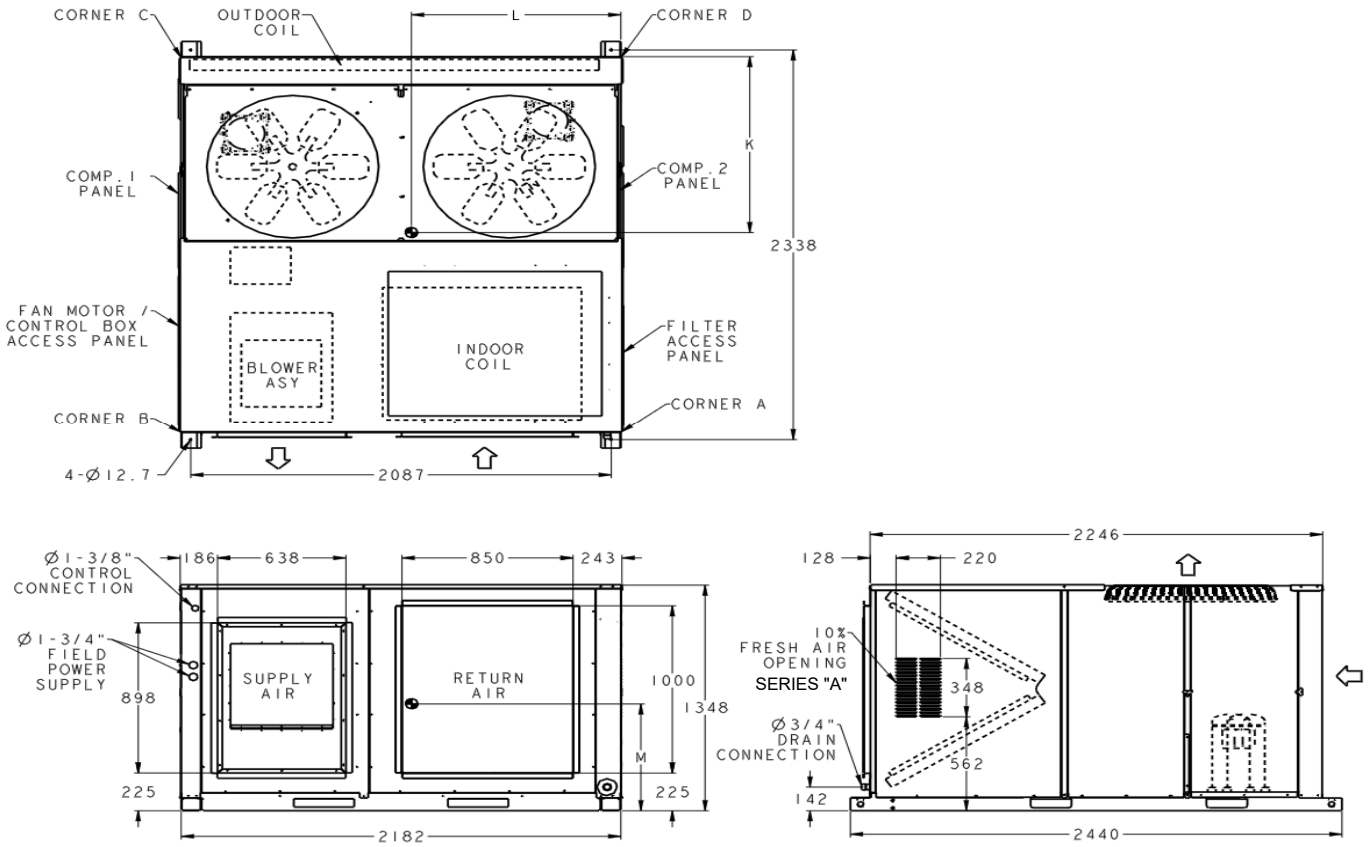
Condenser Coil				
Coil Type	Copper Tube, Aluminium Double Wavy Fins			Copper Tube, Aluminium LSW Fins
Standard Coil Material	Copper / Aluminium			
Qty x Rows x Fins	1 x 3 x 1280	1 x 4 x 1280	2 x 3 x 1472	
Qty x Face Area (m^2)	1 x 2.5		2 x 2.7	
Coil Test Pressure (Bar)	31			

Condenser Fan & Motor				
Approx. Air Flow Rate (m^3/hr)	20376	22074	28357	30904
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)	12.6-16.9			12.2-16.2
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			2

Unit Dimensional Drawing: 50TJM - Size 18 and 22 (Design Series A and B)

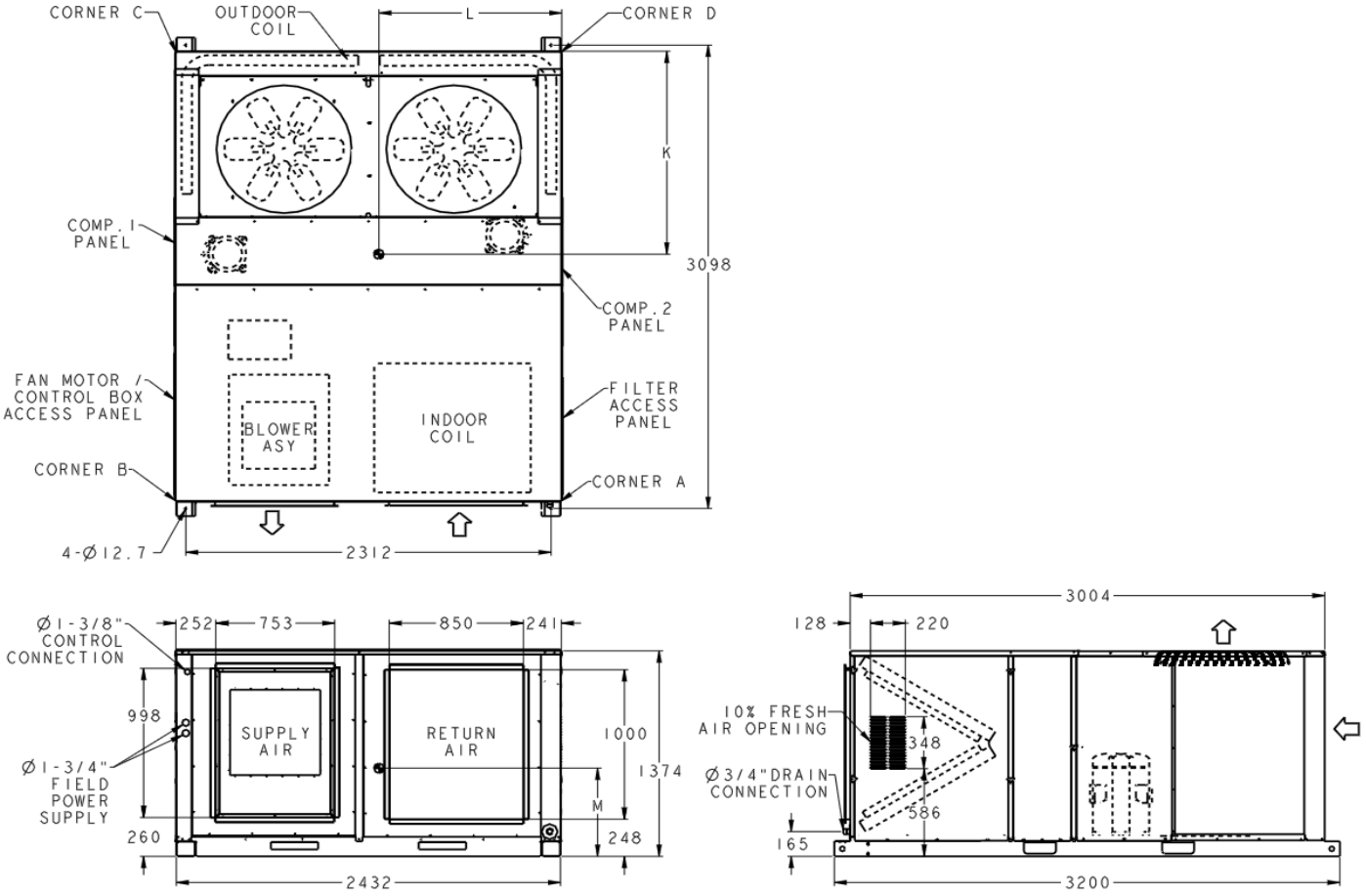


UNIT	SHIPPING DIMENSIONS (mm)			CORNER WEIGHT (Kg)					CENTER OF GRAVITY (mm)		
	LENGTH	WIDTH	HEIGHT	A	B	C	D	TOTAL	K	L	M
50TJM - 18	2440	2235	1375	192	178	236	254	860	1050	1050	450
50TJM - 22				197	182	241	260	880			

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
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.
8. 10% Fresh air opening provision only on Design Series "A".

Unit Dimensional Drawing: 50TJM - Size 26 and 32 (Design Series A)



UNIT	SHIPPING DIMENSIONS (mm)			CORNER WEIGHT (Kg)					CENTER OF GRAVITY (mm)		
	LENGTH	WIDTH	HEIGHT	A	B	C	D	TOTAL	K	L	M
50TJM - 26	3200	2485	1400	248	226	310	340	1125	1350	1160	450
50TJM - 32				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.

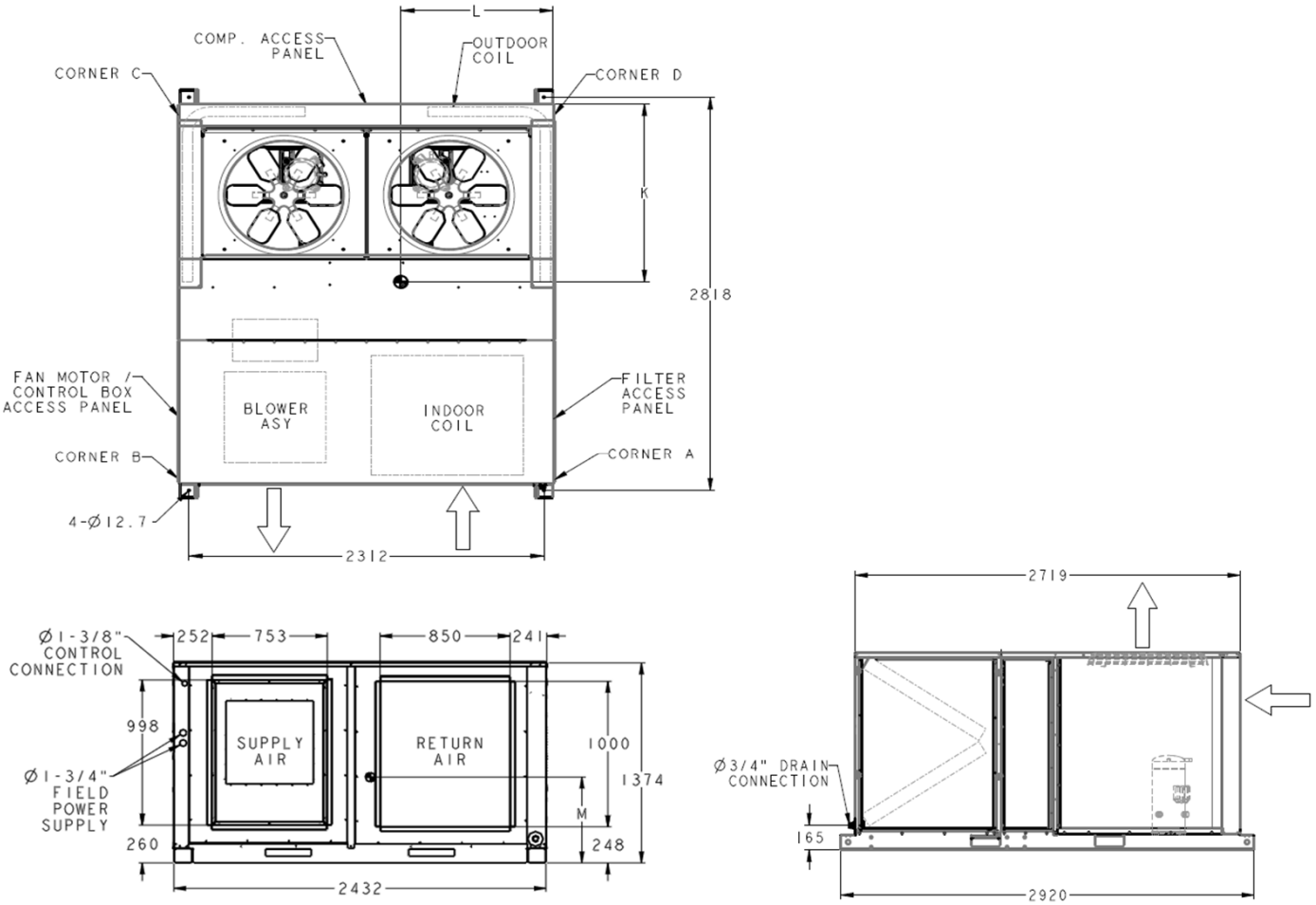
   TOP: 1829mm to assure proper condenser fan operation.

   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.

Unit Dimensional Drawing: 50TJM - Size 26 and 32 (Design Series B)



UNIT	SHIPPING DIMENSIONS (mm)			CORNER WEIGHT (Kg)					CENTER OF GRAVITY (mm)		
	LENGTH	WIDTH	HEIGHT	A	B	C	D	TOTAL	K	L	M
50TJM - 26	2920	2485	1400	248	226	310	340	1125	1275	990	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 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.

Cooling Capacities

Temp (F) Air Entering Condenser (Edb)		50TJM-18											
		Evaporator Air - CFM/BPF											
		3000 / 0.18			4300 / 0.18			5300 / 0.19			6000 / 0.22		
		Evaporator Air - EWB (F)											
		62	67	72	62	67	72	62	67	72	62	67	72
75	TC	165,462	180,811	197,589	170,957	186,046	203,228	173,642	187,907	203,923	175,747	191,665	202,953
	SHC	145,776	124,266	102,823	167,544	141,100	113,815	170,169	153,186	121,583	172,232	161,323	126,729
	kW	7.4	7.6	7.7	7.5	7.7	7.8	7.6	7.7	7.9	7.6	7.7	7.9
85	TC	158,329	172,976	188,986	163,439	177,456	193,853	167,631	179,231	194,099	169,672	182,816	192,828
	SHC	142,348	120,895	99,517	160,170	137,554	110,338	164,278	149,560	117,996	166,279	173,412	123,145
	kW	8.5	8.7	8.8	8.6	8.8	8.9	8.7	8.8	9.0	8.7	8.9	9.0
95	TC	150,782	164337	179,799	155,686	**167,971**	183,796	159,002	169,651	183,660	160,495	173,044	182,141
	SHC	138,649	117723	96018	152,572	**134,345**	106,552	155,822	146323.04	114272	157,285	154,363	119,374
	kW	9.8	9.9	10.1	9.8	**10.0**	10.2	9.9	10.0	10.2	10.0	10.1	10.2
105	TC	142,760	155,701	170,049	148,437	158,531	173,222	151,231	160,116	172,600	152,185	163,318	170,785
	SHC	134,593	113,517	92,369	145,469	129,836	102,841	148,206	141,591	110,313	149,141	149,296	115,374
	kW	11.1	11.2	11.4	11.2	11.3	11.5	11.2	11.3	11.5	11.3	11.4	11.5
115	TC	134,166	146,066	159,909	139,907	148,038	161,723	142,459	149,519	160,637	143,209	152,509	158,587
	SHC	130,182	109,457	88,562	137,109	125,602	98,705	139,610	137,194	106,117	140,344	144,388	111,111
	kW	12.5	12.6	12.8	12.6	12.7	12.9	12.7	12.7	12.9	12.7	12.8	12.9
118.4	TC	131,067	142,602	155,687	137,605	144,288	157,717	139,413	145,731	156,418	140,028	148,646	154,285
	SHC	128,547	108,024	86,993	134,853	124,121	97,213	136,625	135,452	104,597	137,228	138,952	109,581
	kW	13.0	13.1	13.3	13.1	13.2	13.3	13.2	13.2	13.4	13.2	13.3	13.4
125	TC	125,149	135,560	148,532	130,978	136,689	149,359	133,057	138,056	147,766	133,351	140,817	145,527
	SHC	124,655	105,099	84,338	128,358	121,032	94,263	130,396	132,046	101,588	130,684	131,310	106,552
	kW	14.0	14.1	14.3	14.1	14.2	14.3	14.1	14.2	14.3	14.2	14.2	14.4

Temp (C) Air Entering Condenser (Edb)		50TJM-18											
		Evaporator Air - (L/s)/BPF											
		1414 / 0.18			2029 / 0.18			2501 / 0.19			2831 / 0.22		
		Evaporator Air - EWB (C)											
		17	19	22	17	19	22	17	19	22	17	19	22
24	TC	48.49	52.99	57.91	50.10	54.52	59.56	50.89	55.07	59.76	51.51	56.17	59.48
	SHC	42.72	36.42	30.13	49.10	41.35	33.36	49.87	44.89	35.63	50.48	47.28	37.14
	kW	7.4	7.6	7.7	7.5	7.7	7.8	7.6	7.7	7.9	7.6	7.7	7.9
29	TC	46.40	50.69	55.39	47.90	52.01	56.81	49.13	52.53	56.88	49.73	53.58	56.51
	SHC	41.72	35.43	29.17	46.94	40.31	32.34	48.15	43.83	34.58	48.73	50.82	36.09
	kW	8.5	8.7	8.8	8.6	8.8	8.9	8.7	8.8	9.0	8.7	8.9	9.0
35	TC	44.19	48.16	52.69	45.63	**49.23**	53.87	46.60	49.72	53.83	47.04	50.71	53.38
	SHC	40.63	34.50	28.14	44.71	**39.37**	31.23	45.67	42.88	33.49	46.10	45.24	34.98
	kW	9.8	9.9	10.1	9.8	**10.0**	10.2	9.9	10.0	10.2	10.0	10.1	10.2
40.6	TC	41.84	45.63	49.84	43.50	46.46	50.77	44.32	46.93	50.58	44.60	47.86	50.05
	SHC	39.45	33.27	27.07	42.63	38.05	30.14	43.43	41.50	32.33	43.71	43.75	33.81
	kW	11.1	11.2	11.4	11.2	11.3	11.5	11.2	11.3	11.5	11.3	11.4	11.5
46	TC	39.32	42.81	46.86	41.00	43.39	47.40	41.75	43.04	47.08	41.97	43.90	46.48
	SHC	38.15	32.08	25.95	40.18	36.81	28.93	40.92	37.18	31.10	41.13	42.32	32.56
	kW	12.5	12.6	12.8	12.6	12.7	12.9	12.7	12.7	12.9	12.7	12.8	12.9
48	TC	38.41	41.79	45.63	40.33	42.29	46.22	40.86	41.96	45.84	41.04	42.80	45.22
	SHC	37.67	31.66	25.50	39.52	36.38	28.49	40.04	36.74	30.65	40.22	40.72	32.11
	kW	13.0	13.1	13.3	13.1	13.2	13.3	13.2	13.2	13.4	13.2	13.3	13.4
52	TC	36.68	39.73	43.53	38.39	40.06	43.77	39.00	39.79	43.31	39.08	40.58	42.65
	SHC	36.53	30.80	24.72	37.62	35.47	27.63	38.22	35.83	29.77	38.30	38.48	31.23
	kW	14.0	14.1	14.3	14.1	14.2	14.3	14.1	14.2	14.3	14.2	14.2	14.4

LEGEND

BPF — Bypass Factor
Edb — Entering Dry-Bulb
Ewb — Entering Wet-Bulb
SHC — Sensible Heat Capacity (1000 Btuh) Gross
Ldb — Leaving Dry-Bulb
Lwb — Leaving Wet-Bulb
TC — Total Capacity (1000 Btuh) Gross
kW — Compressor Motor Power Input

Boldface - Standard Ratings

Notes:

1. Direct interpolation is permissible. Do not extrapolate.
2. The following formaulas may be used.

$$tldb = tedb - \frac{\text{sensible capacity (Btuh)}}{1.10 \times \text{cfm}}$$

tlwb = Wet-bulb temprature corresponding to enthalphy of air leaving evaporater coil (hlwb).

$$hlwb = hewb - \frac{\text{total capacity (Btuh)}}{4.5 \times \text{cfm}}$$

Where: hewb = Enthaply of air entering evaporator coil.

3. The SHC is based on 80 F edb temprature of air entering evaporator coil.
- Below 80 F edb, subtract (corr factor x cfm) from SHC.
- Above 80 F edb, add (corr factor x cfm) to SHC.

BF	ENTERING AIR DRY-BULB TEMP (F)					
	79	78	77	76	75	under 75
	81	82	83	84	85	over 85
	Correction Factor					
0.05	1.04	2.07	3.11	4.14	5.18	Use formula shown below.*
0.10	0.98	1.96	2.94	3.92	4.90	
0.20	0.87	1.74	2.62	3.49	4.36	
0.30	0.76	1.53	2.29	3.05	3.82	

- Interpolation is permissible.

*Correction Factor = 1.10 x (1 - BF) x (edb - 80).

4. Cooling capacities are gross and do not include deductions for indoor fan motor heat.
5. Variable Air Volume units will operate down to 70 cfm/ton. Performance at 70 cfm/ton is limited to unloaded operation and may be additinally limited to edb and ewb conditions.

Cooling Capacities (cont)

Temp (F) Air Entering Condenser (Edb)		50TJM-22											
		Evaporator Air - CFM/BPF											
		4000 / 0.176			4700 / 0.182			5700 / 0.214			6500 / 0.230		
		Evaporator Air - EWB (F)											
		62	67	72	62	67	72	62	67	72	62	67	72
75	TC	196,725	213,978	232,610	204,185	221,923	241,096	211,823	231,485	250,898	221,461	239,050	258,795
	SHC	153,750	132,986	111,976	165,959	142,513	118,607	179,177	156,256	127,652	193,096	167,955	135,897
	kW	10.3	10.4	10.6	10.3	10.5	10.7	10.4	10.6	10.8	10.5	10.6	10.8
85	TC	190,371	206,895	224,836	196,819	214,308	232,608	206,126	223,064	241,680	213,401	230,056	249,041
	SHC	152,443	130,879	109,329	163,548	140,603	115,829	179,063	154,250	124,901	190,517	165,767	133,069
	kW	11.7	11.9	12.1	11.8	12.0	12.1	11.9	12.0	12.2	11.9	12.1	12.3
95	TC	183,049	**199,130**	216,147	188,040	205694	223,183	198,657	213598	231,440	204,758	220,041	238,244
	SHC	150,337	**128,815**	106420	159,404	138276	112,813	174,329	151655	121790	184,626	162,933	129,964
	kW	13.3	**13.5**	13.7	13.4	13.5	13.7	13.5	13.6	13.8	13.5	13.6	13.8
105	TC	172,690	188,247	204,406	179,248	194,067	210,527	187,083	201,018	217,886	194,692	206,774	224,080
	SHC	144,243	123,897	101,506	155,063	133,109	107,607	167,216	145,992	116,412	176,459	156,818	124,411
	kW	14.7	14.9	15.1	14.7	14.9	15.1	14.8	15.0	15.2	15.0	15.0	15.2
115	TC	162,397	177,341	192,558	169,067	182,371	197,884	177,288	188,527	204,408	185,748	193,594	209,995
	SHC	137,711	119,274	96,782	149,040	128,208	102,757	160,040	140,715	111,392	169,265	151,000	119,276
	kW	16.4	16.6	16.8	16.5	16.7	16.8	16.6	16.7	16.9	16.6	16.7	16.9
118.4	TC	149,791	163,255	177,277	156,002	167,799	182,045	164,487	173,334	187,962	171,414	178,021	193,048
	SHC	128,689	111,418	90,119	138,634	119,854	95,734	150,496	131,517	103,900	156,834	141,254	111,329
	kW	17.1	17.3	17.5	17.2	17.4	17.6	17.3	17.4	17.6	17.4	17.4	17.6
125	TC	142,532	153,597	166,725	147,001	157,643	170,997	155,710	162,460	176,337	162,322	167,053	181,056
	SHC	122,183	105,764	84,937	129,963	113,853	90,345	140,464	124,686	98,239	146,429	134,205	105,435
	kW	18.3	18.5	18.7	18.4	18.6	18.7	18.5	18.6	18.8	18.6	18.6	18.8

Temp (C) Air Entering Condenser (Edb)		50TJM-22											
		Evaporator Air - (L/s)/BPF											
		1887 / 0.176			2218 / 0.182			2690 / 0.214			3067 / 0.230		
		Evaporator Air - EWB (C)											
		17	19	22	17	19	22	17	19	22	17	19	22
24	TC	57.70	62.70	68.20	59.80	65.00	70.70	62.10	67.80	73.50	64.90	70.10	75.80
	SHC	45.10	39.00	32.80	48.60	41.80	34.80	52.50	45.80	37.40	56.60	49.20	39.80
	kW	10.3	10.4	10.6	10.3	10.5	10.7	10.4	10.6	10.8	10.5	10.6	10.8
29	TC	55.80	60.60	65.90	57.70	62.80	68.20	60.40	65.40	70.80	62.50	67.40	73.00
	SHC	44.70	38.40	32.00	47.90	41.20	33.90	52.50	45.20	36.60	55.80	48.60	39.00
	kW	11.7	11.9	12.1	11.8	12.0	12.1	11.9	12.0	12.2	11.9	12.1	12.3
35	TC	53.60	**58.40**	63.30	55.10	60.30	65.40	58.20	62.60	67.80	60.00	64.50	69.80
	SHC	44.10	**37.80**	31.20	46.70	40.50	33.10	51.10	44.40	35.70	54.10	47.80	38.10
	kW	13.3	**13.5**	13.7	13.4	13.5	13.7	13.5	13.6	13.8	13.5	13.6	13.8
40.6	TC	50.60	55.20	59.90	52.50	56.90	61.70	54.80	58.90	63.90	57.10	60.60	65.70
	SHC	42.30	36.30	29.70	45.40	39.00	31.50	49.00	42.80	34.10	51.70	46.00	36.50
	kW	14.7	14.9	15.1	14.7	14.9	15.1	14.8	15.0	15.2	15.0	15.0	15.2
46	TC	47.60	52.00	56.40	49.60	53.50	58.00	52.00	55.30	59.90	54.40	56.70	61.50
	SHC	40.40	35.00	28.40	43.70	37.60	30.10	46.90	41.20	32.60	49.60	44.30	35.00
	kW	16.4	16.6	16.8	16.5	16.7	16.8	16.6	16.7	16.9	16.6	16.7	16.9
48	TC	43.90	47.80	52.00	45.70	49.20	53.40	48.20	50.80	55.10	50.20	52.20	56.60
	SHC	37.70	32.70	26.40	40.60	35.10	28.10	44.10	38.50	30.50	46.00	41.40	32.60
	kW	17.1	17.3	17.5	17.2	17.4	17.6	17.3	17.4	17.6	17.4	17.4	17.6
52	TC	41.80	45.00	48.90	43.10	46.20	50.10	45.60	47.60	51.70	47.60	49.00	53.10
	SHC	35.80	31.00	24.90	38.10	33.40	26.50	41.20	36.50	28.80	42.90	39.30	30.90
	kW	18.3	18.5	18.7	18.4	18.6	18.7	18.5	18.6	18.8	18.6	18.6	18.8

LEGEND

BPF — Bypass Factor
Edb — Entering Dry-Bulb
Ewb — Entering Wet-Bulb
SHC — Sensible Heat Capacity (1000 Btuh) Gross
Ldb — Leaving Dry-Bulb
Lwb — Leaving Wet-Bulb
TC — Total Capacity (1000 Btuh) Gross
kW — Compressor Motor Power Input

Boldface - Standard Ratings

Notes:

1. Direct interpolation is permissible. Do not extrapolate.

2. The following formaulas may be used.

$$tldb = tedb - \frac{\text{sensible capacity (Btuh)}}{1.10 \times \text{cfm}}$$

tlwb = Wet-bulb temprature corresponding to enthalphy of air leaving evaporater coil (hlwb).

$$hlwb = hewb - \frac{\text{total capacity (Btuh)}}{4.5 \times \text{cfm}}$$

Where: hewb = Enthaply of air entering evaporator coil.

3. The SHC is based on 80 F edb temprature of air entering evaporator coil.
- Below 80 F edb, subtract (corr factor x cfm) from SHC.
- Above 80 F edb, add (corr factor x cfm) to SHC.

BF	ENTERING AIR DRY-BULB TEMP (F)					
	79	78	77	76	75	under 75
	81	82	83	84	85	over 85
	Correction Factor					
0.05	1.04	2.07	3.11	4.14	5.18	Use formula shown below.*
0.10	0.98	1.96	2.94	3.92	4.90	
0.20	0.87	1.74	2.62	3.49	4.36	
0.30	0.76	1.53	2.29	3.05	3.82	

- Interpolation is permissible.
*Correction Factor = 1.10 x (1 - BF) x (edb - 80).

4. Cooling capacities are gross and do not include deductions for indoor fan motor heat.

5. Variable Air Volume units will operate down to 70 cfm/ton. Performance at 70 cfm/ton is limited to unloaded operation and may be additinally limited to edb and ewb conditions.

Cooling Capacities (cont)

50TJM-26													
Temp (F) Air Entering Condenser (Edb)		Evaporator Air - CFM/BPF											
		4000 / 0.097			5500 / 0.120			6500 / 0.140			7500 / 0.170		
		Evaporator Air - EWB (F)											
		62	67	72	62	67	72	62	67	72	62	67	72
75	TC	222,895	243,446	265,751	241,546	262,819	286,028	249,859	270,980	294,699	256,152	276,311	300,340
	SHC	167,617	144,354	120,841	197,115	168,044	137,869	214,047	182,065	147,117	225,428	192,777	154,224
	kW	10.7	10.9	11.1	10.9	11.1	11.3	10.9	11.1	11.3	11.0	11.2	11.4
85	TC	213,830	233,901	255,400	231,441	252,049	274,379	239,749	259,615	282,362	247,199	264,380	287,541
	SHC	163,745	140,708	117,180	192,307	164,168	133,995	208,973	178,133	143,160	219,735	188,615	150,182
	kW	12.3	12.5	12.7	12.4	12.6	12.8	12.5	12.7	12.9	12.5	12.7	13.0
95	TC	204,181	223,087	243,664	220,608	240,042	261,309	229,080	**246,750**	268,514	236,640	251,266	273,209
	SHC	159,276	135,998	112,580	186,851	159,157	129,132	202,286	**172,725**	138,104	211,161	183,233	145,033
	kW	14.0	14.2	14.4	14.1	14.3	14.6	14.2	**14.4**	14.6	14.3	14.4	14.7
105	TC	190,971	208,728	227,904	206,581	224,113	243,965	216,577	230,058	250,343	222,373	234,164	254,474
	SHC	157,421	134,016	110,144	184,864	157,260	126,774	198,041	170,925	135,806	206,230	181,599	142,773
	kW	15.3	15.6	15.8	15.5	15.7	15.9	15.6	15.8	16.0	15.7	15.8	16.1
115	TC	177,067	193,589	211,400	192,675	207,435	225,882	202,372	212,645	231,416	207,720	216,342	235,069
	SHC	147,232	125,015	101,957	173,184	147,184	117,813	181,626	160,281	126,444	189,216	170,293	133,125
	kW	17.0	17.3	17.5	17.2	17.4	17.7	17.3	17.5	17.7	17.4	17.5	17.8
118.4	TC	167,882	183,659	200,604	183,582	196,655	214,218	191,786	201,708	219,345	197,685	205,030	222,736
	SHC	136,969	116,429	94,707	160,638	137,225	109,600	169,889	149,732	117,701	175,114	158,966	123,991
	kW	17.9	18.2	18.5	18.1	18.3	18.6	18.2	18.4	18.7	18.3	18.4	18.7
125	TC	160,453	175,162	191,335	176,037	187,438	204,085	184,173	192,004	208,760	189,720	195,090	211,865
	SHC	132,191	111,817	90,400	153,848	132,291	104,980	160,960	144,287	112,923	165,807	153,084	119,088
	kW	18.9	19.2	19.5	19.1	19.3	19.6	19.3	19.4	19.6	19.3	19.4	19.7

50TJM-26													
Temp (C) Air Entering Condenser (Edb)		Evaporator Air - (L/s)/BPF											
		1887 / 0.097			2595 / 0.120			3067 / 0.140			3539 / 0.170		
		Evaporator Air - EWB (C)											
		17	19	22	17	19	22	17	19	22	17	19	22
24	TC	65.32	71.35	77.88	70.79	77.02	83.83	73.23	79.42	86.37	75.07	80.98	88.02
	SHC	49.12	42.31	35.41	57.77	49.25	40.41	62.73	53.36	43.12	66.07	56.50	45.20
	kW	10.7	10.9	11.1	10.9	11.1	11.3	10.9	11.1	11.3	11.0	11.2	11.4
29	TC	62.67	68.55	74.85	67.83	73.87	80.41	70.26	76.09	82.75	72.45	77.48	84.27
	SHC	47.99	41.24	34.34	56.36	48.11	39.27	61.24	52.21	41.96	64.40	55.28	44.01
	kW	12.3	12.5	12.7	12.4	12.6	12.8	12.5	12.7	12.9	12.5	12.7	13.0
35	TC	59.84	65.38	71.41	64.65	70.35	76.58	67.14	**72.32**	78.69	69.35	73.64	80.07
	SHC	46.68	39.86	32.99	54.76	70.35	37.84	59.28	**50.62**	40.47	61.89	53.70	42.51
	kW	14.0	14.2	14.4	14.1	70.3	14.6	14.2	**14.4**	14.6	14.3	14.4	14.7
40.6	TC	55.97	61.17	66.79	60.54	70.35	71.50	63.47	67.42	73.37	65.17	68.63	74.58
	SHC	46.14	39.28	32.28	54.18	70.35	37.15	58.04	50.09	39.80	60.44	53.22	41.84
	kW	15.3	15.6	15.8	15.5	70.3	15.9	15.6	15.8	16.0	15.7	15.8	16.1
46	TC	51.89	56.74	61.96	56.47	70.35	66.20	59.31	62.32	67.82	60.88	63.40	68.89
	SHC	43.15	36.64	29.88	50.76	70.35	34.53	53.23	46.97	37.06	55.45	49.91	39.01
	kW	17.0	17.3	17.5	17.2	70.3	17.7	17.3	17.5	17.7	17.4	17.5	17.8
48	TC	49.20	53.83	58.79	53.80	70.35	62.78	56.21	59.11	64.28	57.94	60.09	65.28
	SHC	40.14	34.12	27.76	47.08	70.35	32.12	49.79	43.88	34.49	51.32	46.59	36.34
	kW	17.9	18.2	18.5	18.1	70.3	18.6	18.2	18.4	18.7	18.3	18.4	18.7
52	TC	47.02	51.33	56.07	51.59	70.35	59.81	53.98	56.27	61.18	55.60	57.18	62.09
	SHC	38.74	32.77	26.49	45.09	70.35	30.77	47.17	42.29	33.09	48.59	44.86	34.90
	kW	18.9	19.2	19.5	19.1	70.3	19.6	19.3	19.4	19.6	19.3	19.4	19.7

LEGEND

BPF — Bypass Factor
Edb — Entering Dry-Bulb
Ewb — Entering Wet-Bulb
SHC — Sensible Heat Capacity (1000 Btuh) Gross
Ldb — Leaving Dry-Bulb
Lwb — Leaving Wet-Bulb
TC — Total Capacity (1000 Btuh) Gross
kW — Compressor Motor Power Input

Boldface - Standard Ratings

Notes:

1. Direct interpolation is permissible. Do not extrapolate.
2. The following formaulas may be used.

$$tldb = tedb - \frac{\text{sensible capacity (Btuh)}}{1.10 \times \text{cfm}}$$

tlwb = Wet-bulb temprature corresponding to enthalphy of air leaving evaporater coil (hlwb).

$$hlwb = hewb - \frac{\text{total capacity (Btuh)}}{4.5 \times \text{cfm}}$$

Where: hewb = Enthaply of air entering evaporator coil.

3. The SHC is based on 80 F edb temprature of air entering evaporator coil.
- Below 80 F edb, subtract (corr factor x cfm) from SHC.
- Above 80 F edb, add (corr factor x cfm) to SHC.

BF	ENTERING AIR DRY-BULB TEMP (F)					
	79	78	77	76	75	under 75
	81	82	83	84	85	over 85
	Correction Factor					
0.05	1.04	2.07	3.11	4.14	5.18	Use formula shown below.*
0.10	0.98	1.96	2.94	3.92	4.90	
0.20	0.87	1.74	2.62	3.49	4.36	
0.30	0.76	1.53	2.29	3.05	3.82	

- Interpolation is permissible.

*Correction Factor = 1.10 x (1 - BF) x (edb - 80).

4. Cooling capacities are gross and do not include deductions for indoor fan motor heat.
5. Variable Air Volume units will operate down to 70 cfm/ton. Performance at 70 cfm/ton is limited to unloaded operation and may be additinally limited to edb and ewb conditions.

Cooling Capacities (cont)

Temp (F) Air Entering Condenser (Edb)		50TJM-32											
		Evaporator Air - CFM/BPF											
		6000 / 0.088			6500 / 0.113			8000 / 0.164			9000 / 0.187		
		Evaporator Air - EWB (F)											
		62	67	72	62	67	72	62	67	72	62	67	72
75	TC	268,737	292,233	317,731	273,469	296,878	322,653	285,535	309,103	335,536	291,464	313,792	340,564
	SHC	247,184	211,772	175,946	255,729	216,936	177,070	275,109	240,421	194,719	285,635	252,641	202,510
	kW	19.2	19.7	20.2	19.3	19.8	20.4	19.5	20.0	20.5	19.6	20.1	20.6
85	TC	258,923	281,385	305,878	262,834	285,507	310,224	275,034	297,161	322,480	281,519	301,309	327,000
	SHC	236,716	202,320	167,320	244,792	207,417	168,460	269,533	230,142	185,489	275,889	241,929	193,010
	kW	21.4	22.0	22.5	21.7	22.1	22.7	21.7	22.3	22.8	21.9	22.4	22.9
95	TC	248,270	269,644	293,047	252,198	273,286	296,899	254,651	**273,913**	297,193	261,123	277,676	301,130
	SHC	231,388	197,337	162,389	247,154	202,561	163,621	249,558	**224,999**	180,389	255,901	237,018	187,855
	kW	23.9	24.5	25.0	24.0	24.58	25.2	24.2	**24.7**	25.3	24.4	24.8	25.4
105	TC	234,443	254,287	276,283	238,390	257,398	279,525	250,786	267,630	290,271	256,288	271,026	293,841
	SHC	229,754	191,986	157,088	233,622	197,308	158,391	245,771	219,512	174,907	251,162	231,232	182,302
	kW	26.0	26.6	27.1	26.1	26.7	27.3	26.4	26.8	27.4	26.5	26.9	27.5
115	TC	220,446	238,795	259,423	225,008	241,411	262,131	236,754	251,011	272,117	242,566	253,960	275,198
	SHC	216,037	186,155	151,364	220,508	191,596	152,784	232,019	213,687	169,050	237,714	225,083	176,382
	kW	28.4	29.0	29.6	28.6	29.1	29.7	28.8	29.2	29.8	29.0	29.3	29.9
118.4	TC	198,494	214,893	233,382	203,208	217,098	235,705	213,769	225,710	244,656	218,949	228,354	247,346
	SHC	194,525	165,690	134,377	199,144	170,635	135,700	209,493	190,322	150,251	214,570	200,575	156,836
	kW	30.6	31.2	31.8	30.8	31.3	31.9	31.0	31.4	32.1	31.2	31.5	32.2
125	TC	184,188	198,241	215,201	188,178	200,151	217,147	198,540	208,047	225,311	203,282	210,314	227,655
	SHC	180,504	155,537	125,499	184,415	160,523	126,861	194,569	179,071	140,675	199,216	188,618	146,973
	kW	31.8	32.4	33.0	32.0	32.5	33.1	32.3	32.6	33.2	32.5	32.7	33.3

Temp (C) Air Entering Condenser (Edb)		50TJM-32											
		Evaporator Air - (L/s)/BPF											
		2831/ 0.088			3067 / 0.113			3775 / 0.164			4247 / 0.187		
		Evaporator Air - EWB (C)											
		17	19	22	17	19	22	17	19	22	17	19	22
24	TC	78.74	85.62	93.10	80.13	86.99	94.54	83.66	90.57	98.31	85.40	91.94	99.79
	SHC	72.43	62.05	51.55	74.93	63.56	51.88	80.61	70.44	57.05	83.69	74.02	59.34
	kW	19.2	19.7	20.2	19.3	19.8	20.4	19.5	20.0	20.5	19.6	20.1	20.6
29	TC	75.86	82.45	89.62	77.01	83.65	90.90	80.58	87.07	94.49	82.49	88.28	95.81
	SHC	69.36	59.28	49.02	71.72	60.77	49.36	78.97	67.43	54.35	80.84	70.89	56.55
	kW	21.4	22.0	22.5	21.7	22.1	22.7	21.7	22.3	22.8	21.9	22.4	22.9
35	TC	72.74	79.01	85.86	73.89	80.07	86.99	74.61	**80.26**	87.08	76.51	81.36	88.23
	SHC	67.80	57.82	47.58	72.42	59.35	47.94	73.12	**65.92**	52.85	74.98	69.45	55.04
	kW	23.9	24.5	25.0	24.0	24.6	25.2	24.2	**24.7**	25.3	24.4	24.8	25.4
40.6	TC	68.69	74.51	80.95	69.85	75.42	81.90	73.48	78.42	85.05	75.09	79.41	86.10
	SHC	67.32	56.25	46.03	68.45	57.81	46.41	72.01	64.32	51.25	73.59	67.75	53.41
	kW	26.0	26.6	27.1	26.1	26.7	27.3	26.4	26.8	27.4	26.5	26.9	27.5
46	TC	64.59	69.97	76.01	65.93	70.73	76.80	69.37	73.55	79.73	71.07	74.41	80.63
	SHC	63.30	54.54	44.35	64.61	56.14	44.77	67.98	62.61	49.53	69.65	65.95	51.68
	kW	28.4	29.0	29.6	28.6	29.1	29.7	28.8	29.2	29.8	29.0	29.3	29.9
48	TC	58.16	62.96	68.38	59.54	63.61	69.06	62.63	66.13	71.68	64.15	66.91	72.47
	SHC	57.00	48.55	39.37	58.35	50.00	39.76	61.38	55.76	44.02	62.87	58.77	45.95
	kW	30.6	31.2	31.8	30.8	31.3	31.9	31.0	31.4	32.1	31.2	31.5	32.2
52	TC	53.97	58.08	63.05	55.14	58.64	63.62	58.17	60.96	66.02	59.56	61.62	66.70
	SHC	52.89	45.57	36.77	54.03	47.03	37.17	57.01	52.47	41.22	58.37	55.26	43.06
	kW	31.8	32.4	33.0	32.0	32.5	33.1	32.3	32.6	33.2	32.5	32.7	33.3

LEGEND

BPF — Bypass Factor
Edb — Entering Dry-Bulb
Ewb — Entering Wet-Bulb
SHC — Sensible Heat Capacity (1000 Btuh) Gross
Ldb — Leaving Dry-Bulb
Lwb — Leaving Wet-Bulb
TC — Total Capacity (1000 Btuh) Gross
kW — Compressor Motor Power Input

Boldface - Standard Ratings

Notes:

1. Direct interpolation is permissible. Do not extrapolate.
2. The following formaulas may be used.

$$tldb = tedb - \frac{\text{sensible capacity (Btuh)}}{1.10 \times \text{cfm}}$$

tlwb = Wet-bulb temprature corresponding to enthalphy of air leaving evaporater coil (hlwb).

$$hlwb = hewb - \frac{\text{total capacity (Btuh)}}{4.5 \times \text{cfm}}$$

Where: hewb = Enthaply of air entering evaporator coil.

3. The SHC is based on 80 F edb temprature of air entering evaporator coil.
- Below 80 F edb, subtract (corr factor x cfm) from SHC.
- Above 80 F edb, add (corr factor x cfm) to SHC.

BF	ENTERING AIR DRY-BULB TEMP (F)					
	79	78	77	76	75	under 75
	81	82	83	84	85	over 85
	Correction Factor					
0.05	1.04	2.07	3.11	4.14	5.18	Use formula shown below.*
0.10	0.98	1.96	2.94	3.92	4.90	
0.20	0.87	1.74	2.62	3.49	4.36	
0.30	0.76	1.53	2.29	3.05	3.82	

- Interpolation is permissible.

*Correction Factor = 1.10 x (1 - BF) x (edb - 80).

4. Cooling capacities are gross and do not include deductions for indoor fan motor heat.
5. Variable Air Volume units will operate down to 70 cfm/ton. Performance at 70 cfm/ton is limited to unloaded operation and may be additinally limited to edb and ewb conditions.

Fan Performance Table

Unit - 50TJM-018

Air Flow Rate (CFM)	Available External Static Pressure (in. wg)														
	0.2			0.4			0.6			0.8			1.0		
	RPM	KWI	BHP	RPM	KWI	BHP	RPM	KWI	BHP	RPM	KWI	BHP	RPM	KWI	BHP
3000	555	0.93	1.04	622	1.13	1.27	686	1.36	1.52	*747*	*1.59*	*1.78*	***804***	***1.84***	***2.06***
3500	589	1.20	1.34	652	1.42	1.59	711	1.65	1.86	***767***	***1.90***	***2.14***	***823***	***2.17***	***2.43***
4000	624	1.51	1.69	682	1.75	1.96	737	2.01	2.25	***790***	***2.27***	***2.54***	***841***	***2.54***	***2.85***
4500	658	1.87	2.10	711	2.13	2.39	***762***	***2.40***	***2.69***	***813***	***2.68***	***3.00***	***861***	***2.96***	***3.32***
5000	689	2.28	2.56	739	2.55	2.86	***788***	***2.83***	***3.18***	***835***	***3.13***	***3.51***	***881***	***3.43***	***3.85***
5500	721	2.74	3.07	***765***	***3.01***	***3.38***	***811***	***3.31***	***3.71***	855	3.62	4.06	899	3.93	4.41
6000	*745*	*3.20*	*3.59*	***788***	***3.49***	***3.92***	830	3.80	4.26	873	4.12	4.62	914	4.45	4.99

Unit - 50TJM-018 (cont)

Air Flow Rate (CFM)	Available External Static Pressure (in. wg)														
	1.2			1.4			1.6			1.8			2.0		
	RPM	KWI	BHP	RPM	KWI	BHP	RPM	KWI	BHP	RPM	KWI	BHP	RPM	KWI	BHP
3000	***859***	***2.09***	***2.35***	***910***	***2.43***	***2.72***	***953***	***2.62***	***2.94***	1007	2.90	3.25	1052	3.18	3.57
3500	***875***	***2.44***	***2.73***	***924***	***2.72***	***3.05***	971	3.00	3.37	1018	3.29	3.70	1062	3.60	4.04
4000	***891***	***2.83***	***3.17***	***939***	***3.13***	***3.51***	986	3.43	3.85	1030	3.74	4.20	1073	4.06	4.55
4500	***909***	***3.27***	***3.66***	955	3.58	4.01	998	3.89	4.36	1042	4.23	4.74	1083	4.56	5.11
5000	925	3.74	4.20	969	4.07	4.56	1012	4.40	4.94	1054	4.75	5.32	1094	5.10	5.72
5500	942	4.26	4.78	983	4.60	5.15	1024	4.94	5.54	1065	5.30	5.94	1104	5.66	6.35
6000	954	4.79	5.37	994	5.13	5.76	1034	5.49	6.16	1072	5.86	6.57	1110	6.24	7.00

Unit - 50TJM-22

Air Flow Rate (CFM)	Available External Static Pressure (in. wg)														
	0.2			0.4			0.6			0.8			1.0		
	RPM	KWI	BHP	RPM	KWI	BHP	RPM	KWI	BHP	RPM	KWI	BHP	RPM	KWI	BHP
4000	583	1.30	1.48	642	1.51	1.73	698	1.75	2.00	*754*	*1.99*	*2.28*	***805***	***2.25***	***2.58***
4500	617	1.62	1.86	672	1.86	2.13	724	2.10	2.41	***788***	***2.36***	***2.70***	***825***	***2.63***	***3.01***
5000	654	2.01	2.30	704	2.26	2.58	752	2.51	2.88	***800***	***2.79***	***3.19***	***847***	***3.07***	***3.51***
5500	689	2.44	2.80	735	2.71	3.10	***781***	***2.98***	***3.41***	***826***	***3.27***	***3.74***	***871***	***3.57***	***4.08***
6000	725	2.95	3.37	***768***	***3.22***	***3.69***	***811***	***3.51***	***4.02***	***854***	***3.81***	***4.36***	***895***	***4.12***	***4.72***
6500	***761***	***3.51***	***4.02***	***802***	***3.80***	***4.35***	***842***	***4.11***	***4.70***	***882***	***4.42***	***5.06***	921	4.74	5.43

Unit - 50TJM-22 (cont)

Air Flow Rate (CFM)	Available External Static Pressure (in. wg)														
	1.2			1.4			1.6			1.8			2.0		
	RPM	KWI	BHP	RPM	KWI	BHP	RPM	KWI	BHP	RPM	KWI	BHP	RPM	KWI	BHP
4000	***856***	***2.52***	***2.88***	***906***	***2.80***	***3.20***	***953***	***3.08***	***3.53***	998	3.37	3.86	1040	3.67	4.20
4500	***874***	***2.91***	***3.34***	***920***	***3.20***	***3.67***	966	3.50	4.01	1009	3.81	4.36	1052	4.13	4.72
5000	***893***	***3.37***	***3.85***	***938***	***3.67***	***4.20***	980	3.98	4.56	1023	4.30	4.93	1064	4.63	5.30
5500	***913***	***3.87***	***4.43***	***953***	***4.19***	***4.79***	998	4.51	5.17	1038	4.85	5.55	1077	5.20	5.95
6000	***936***	***4.44***	***5.08***	976	4.77	5.46	1016	5.11	5.85	1055	5.46	6.25	1094	5.82	6.66
6500	959	5.07	5.80	998	5.41	6.20	1035	5.77	6.60	1073	6.13	7.02	1110	6.50	7.44

Legend & Notes:

RPM - Revolutions Per Minute

KWI - Kilo Watts Input to Motor

Bold , Italics **-** Standard Motor and Drive Package

BHP - Brake Horsepower Input to Fan

CFM - Cubic Feet per Minute

in.wg - Inch Water Guage

1. Do not adjust motor rpm such that motor maximum bhp and/or watts is exceeded at the maximum operatin cfm.
2. Static Pressure (i.e Filters) must be added to external static pressure before entering fan performance table.
3. Interpolation is permissible. Do not extrapolate.
4. Fan performance is based on wet coils, clean filters and casing loses.
5. Extensive motor and drive testing on these units ensures that the full brake horsepower and watts range of the motor can be utilized with confidence. Using your fan motors up to the watts or bhp rating shown will not result in nuisance tripping or premature motor failure. Unit warranty will not be affected.
6. Bold data shows the range of air flow rate for unit management system, other rpms require field-supplied drive.
7. Use of field-supplied motor may affect wiring size. Contact your Carrier representative for details.
8. Conversion - Bhp to KWI

$$KWI = \frac{\text{Bhp X } 0.746}{\text{Motor efficiency}}$$

Fan Performance Table (cont)

Unit - 50TJM-26

Air Flow Rate (CFM)	Available External Static Pressure (in. wg)														
	0.2			0.4			0.6			0.8			1.0		
	RPM	KWI	BHP	RPM	KWI	BHP	RPM	KWI	BHP	RPM	KWI	BHP	RPM	KWI	BHP
4000	535	1.06	1.21	592	1.27	1.45	647	1.50	1.71	700	1.75	2.00	***755***	***2.02***	***2.31***
4500	564	1.30	1.49	618	1.53	1.75	669	1.77	2.03	718	2.03	2.32	***766***	***2.29***	***2.62***
5000	596	1.59	1.82	643	1.82	2.09	692	2.07	2.37	738	2.34	2.68	***788***	***2.63***	***3.01***
5500	625	1.92	2.19	671	2.16	2.47	715	2.43	2.78	***759***	***2.70***	***3.09***	***801***	***2.99***	***3.43***
6000	656	2.28	2.61	698	2.54	2.91	740	2.82	3.22	***788***	***3.10***	***3.55***	***821***	***3.40***	***3.89***
6500	686	2.70	3.09	726	2.97	3.40	***766***	***3.26***	***3.73***	***804***	***3.55***	***4.06***	***843***	***3.86***	***4.42***
7000	714	3.15	3.61	***755***	***3.43***	***3.93***	***790***	***3.74***	***4.28***	***827***	***4.04***	***4.63***	***864***	***4.37***	***5.00***
7500	743	3.64	4.17	***779***	***3.94***	***4.51***	***815***	***4.25***	***4.87***	***849***	***4.56***	***5.22***	884	4.89	5.60

Unit - 50TJM-26 (cont)

Air Flow Rate (CFM)	Available External Static Pressure (in. wg)														
	1.2			1.4			1.6			1.8			2.0		
	RPM	KWI	BHP	RPM	KWI	BHP	RPM	KWI	BHP	RPM	KWI	BHP	RPM	KWI	BHP
4000	***801***	***2.30***	***2.64***	***849***	***2.61***	***2.98***	***898***	***2.93***	***3.36***	***944***	***3.28***	***3.75***	989	3.64	4.17
4500	***813***	***2.60***	***2.97***	***859***	***2.90***	***3.32***	***904***	***3.23***	***3.70***	***948***	***3.58***	***4.10***	990	3.94	4.51
5000	***827***	***2.93***	***3.36***	***870***	***3.23***	***3.70***	***913***	***3.57***	***4.09***	***953***	***3.92***	***4.48***	996	4.28	4.90
5500	***843***	***3.30***	***3.77***	***884***	***3.62***	***4.15***	***924***	***3.96***	***4.53***	964	4.30	4.93	1002	4.67	5.34
6000	***861***	***3.72***	***4.25***	***900***	***4.05***	***4.64***	***939***	***4.39***	***5.02***	976	4.74	5.43	1013	5.11	5.85
6500	***880***	***4.19***	***4.79***	***917***	***4.52***	***5.18***	954	4.87	5.57	989	5.22	5.98	1025	5.60	6.41
7000	899	4.69	5.37	935	5.04	5.76	969	5.39	6.17	1004	5.76	6.59	1038	6.14	7.03
7500	919	5.23	5.99	952	5.59	6.40	985	5.96	6.82	1017	6.32	7.24	1051	6.71	7.68

Unit - 50TJM-32

Air Flow Rate (CFM)	Available External Static Pressure (in. wg)														
	0.2			0.4			0.6			0.8			1.0		
	RPM	KWI	BHP	RPM	KWI	BHP	RPM	KWI	BHP	RPM	KWI	BHP	RPM	KWI	BHP
6000	661	2.42	2.79	704	2.69	3.11	***746***	***2.98***	***3.44***	***787***	***3.29***	***3.79***	***827***	***3.60***	***4.15***
6500	691	2.86	3.30	732	3.15	3.63	***773***	***3.46***	***3.99***	***811***	***3.77***	***4.34***	***849***	***4.10***	***4.72***
7000	723	3.36	3.87	***761***	***3.65***	***4.22***	***798***	***3.96***	***4.57***	***836***	***4.30***	***4.95***	***872***	***4.64***	***5.35***
7500	***754***	***3.90***	***4.50***	***791***	***4.22***	***4.86***	***826***	***4.55***	***5.25***	***860***	***4.88***	***5.63***	***896***	***5.23***	***6.04***
8000	***785***	***4.49***	***5.18***	***819***	***4.83***	***5.57***	***853***	***5.17***	***5.96***	***887***	***5.52***	***6.37***	***920***	***5.89***	***6.79***
8500	***814***	***5.13***	***5.92***	***846***	***5.48***	***6.32***	***879***	***5.83***	***6.72***	***910***	***6.19***	***7.14***	943	6.57	7.58
9000	***843***	***5.83***	***6.72***	***875***	***6.19***	***7.14***	905	6.56	7.56	936	6.93	8.00	966	7.32	8.44

Unit - 50TJM-32 (cont)

Air Flow Rate (CFM)	Available External Static Pressure (in. wg)														
	1.2			1.4			1.6			1.8			2.0		
	RPM	KWI	BHP	RPM	KWI	BHP	RPM	KWI	BHP	RPM	KWI	BHP	RPM	KWI	BHP
6000	***867***	***3.94***	***4.55***	***906***	***4.28***	***4.94***	***945***	***4.65***	***5.36***	***983***	***5.02***	***5.79***	1020	5.41	6.24
6500	***887***	***4.44***	***5.12***	***924***	***4.79***	***5.53***	***961***	***5.16***	***5.95***	***996***	***5.53***	***6.38***	1032	5.93	6.84
7000	***908***	***4.99***	***5.76***	***944***	***5.36***	***6.18***	***970***	***5.73***	***6.61***	1012	6.12	7.05	1046	6.51	7.51
7500	***930***	***5.60***	***6.46***	***964***	***5.97***	***6.89***	***997***	***6.36***	***7.34***	1029	6.75	7.78	1062	7.16	8.25
8000	***952***	***6.25***	***7.21***	985	6.64	7.65	1017	7.03	8.11	1049	7.44	8.58	1080	7.86	9.07
8500	973	6.96	8.02	1004	7.34	8.47	1035	7.75	8.94	1065	8.16	9.41	1095	8.59	9.91
9000	996	7.72	8.90	1026	8.12	9.36	1055	8.54	9.84	1085	8.97	10.34	1114	9.40	10.84

Legend & Notes:

RPM - Revolutions Per Minute

KWI - Kilo Watts Input to Motor

Bold , Italics **-** Standard Motor and Drive Package

BHP - Brake Horsepower Input to Fan

CFM - Cubic Feet per Minute

in.wg - Inch Water Guage

1. Do not adjust motor rpm such that motor maximum bhp and/or watts is exceeded at the maximum operatin cfm.
2. Static Pressure (i.e Filters) must be added to external static pressure before entering fan performance table.
3. Interpolation is permissible. Do not extrapolate.
4. Fan performance is based on wet coils, clean filters and casing loses.
5. Extensive motor and drive testing on these units ensures that the full brake horsepower and watts range of the motor can be utilized with confidence. Using your fan motors up to the watts or bhp rating shown will not result in nuisance tripping or premature motor failure. Unit warranty will not be affected.
6. Bold data shows the range of air flow rate for unit management system, other rpms require field-supplied drive.
7. Use of field-supplied motor may affect wiring size. Contact your Carrier representative for details.
8. Conversion - Bhp to KWI

$$KWI = \frac{\text{Bhp X } 0.746}{\text{Motor efficiency}}$$

Fan RPM At Motor Pulley Settings

Freq.	Unit 50TJM	Motor Pulley Turns Open - (English)												
		0	1/2	1	1 1/2	2	2 1/2	3	3 1/2	4	4 1/2	5	5 1/2	6
50Hz	18	-	-	953	933	913	894	874	854	**834**	814	795	775	755
	22	-	-	953	933	913	894	874	854	**834**	814	795	775	755
	26	-	-	953	933	913	894	874	854	**834**	814	795	775	755
	32	970	950	931	911	**891**	871	852	832	812	792	773	753	733

Freq.	Unit 50TJM	Motor Pulley Turns Open - (SI)												
		0	1/2	1	1 1/2	2	2 1/2	3	3 1/2	4	4 1/2	5	5 1/2	6
50Hz	18	-	-	15.9	15.6	15.2	14.9	14.6	14.2	**13.9**	13.6	13.2	12.9	12.6
	22	-	-	15.9	15.6	15.2	14.9	14.6	14.2	**13.9**	13.6	13.2	12.9	12.6
	26	-	-	15.9	15.6	15.2	14.9	14.6	14.2	**13.9**	13.6	13.2	12.9	12.6
	32	16.2	15.8	15.5	**15.2**	14.9	14.5	14.2	13.9	13.5	13.2	12.9	12.5	12.2

The standard belt size may not cover all the above range. Other RPMs require field supplied drive package.
Bold RPM is the factory setting .

Air Filter Pressure Drop

50TJM	Air Flow Rate (CFM) - Air Filter Pressure Drop (inch water gage) - Based on Clogging Factor of 25%													
	4000	4500	5000	5500	5700	6000	6300	6700	6900	7500	7600	8000	8500	9000
18-22	0.020	0.025	0.031	0.037	0.040	0.044	0.049	0.055	0.058	0.069	0.071	0.079	-	-
26-32	-	-	0.028	0.032	0.034	0.040	0.047	0.050	0.054	0.062	0.064	0.071	0.080	0.090

50TJM	Air Flow Rate (m^3/hr) - Air Filter Pressure Drop (Pascal gage) - Based on Clogging Factor of 25%													
	6790	7640	8490	9085	9340	10190	11035	11380	11890	12735	12905	13585	14435	15280
18-22	5	6	8	9	10	11	12	14	14	17	18	20	-	-
26-32	-	-	7	8	8	10	12	12	14	16	16	18	20	22

50TJM	Air Flow Rate (CFM) - Air Filter Pressure Drop (inch water gage) - Based on Clogging Factor of 50%													
	4000	4500	5000	5500	5700	6000	6300	6700	6900	7500	7600	8000	8500	9000
18-22	0.024	0.030	0.037	0.045	0.048	0.053	0.058	0.066	0.070	0.083	0.085	0.094	-	-
26-32	-	-	0.034	0.039	0.041	0.049	0.057	0.061	0.066	0.076	0.078	0.087	0.098	0.109

50TJM	Air Flow Rate (m^3/hr) - Air Filter Pressure Drop (Pascal gage) - Based on Clogging Factor of 50%													
	6790	7640	8490	9085	9340	10190	11035	11380	11890	12735	12905	13585	14435	15280
18-22	6	7	9	11	12	13	14	16	17	21	21	23	-	-
26-32	-	-	8	10	10	12	14	15	16	19	19	22	24	27

Soft Bag Filter

50TJM Size 18-22 50TJ600993	(CFM)	4000	4500	5000	5500	6000	6500	7000	7500	8000
	Pressure Drop "Pa"	60	69	77	86	95	105	114	123	133
50TJM Size 26-32 50TJ600992	(CFM)	5000	5500	6000	6500	7000	7500	8000	8500	9000	9500
	Pressure Drop "Pa"	49	54	60	66	71	77	83	89	95	102

Motor Efficiency Table

Unit	50TJM-18	50TJM-22	50TJM-26	50TJM-32
HP (kW)	4 (3)	5 (4)	5 (4)	7.5 (5.5)
Standard Efficiency	0.83	0.85	0.85	0.86
High Efficiency	0.88	0.89	0.89	0.90

Sound Rating Data

Unit Sound (dB) at 50Hz (Based on cooling mode)										
Unit 50TJM	Cooling Stages	A-Weighted	63	125	250	500	1000	2000	4000	8000
18	2	90.3	96	88	88	88	85.6	82.4	77.8	71.6
22	2	90.9	96	87	90	89	85.7	82.5	78.6	72.4
26	2	90.6	90	91	88	88	86	82	79.1	72.1
32	2	91.1	91	92	89	89	86.3	82.6	79.8	72.7

dB – Decibel

NOTES:

1. Outdoor sound data is measure in accordance with AHRI standard 370 – 2011.

2. Measurements are expressed in terms of sound power. Do not compare these values to sound pressure values because sound pressure accounts for specific environment factors which do not match individual applications. Sound power values are independent of the environment and therefore more accurate.

3. A – Weighted sound ratings filter out very high and very low frequencies, to better approximate the response of an “average” human ear. A – Weighted measurements for Carrier units are taken in accordance with 370 – 2011.

Electrical Data Table

50TJM Size				Compressor				OFM			IFM		Electric Heater		MCA	MOCP ◊
Unit Size 50TJM	Min Voltage	Max Voltage	Power Supply V / Ph / Hz	No.1		No.2										
				RLA	LRA	RLA	LRA	Qty	HP	FLA	HP	FLA	Appl. KW	FLA		
18	360	440	400 / 3 / 50	12.2	101	12.2	101	2	1	3.4	4.00	6.15	-	-	40.4	50
	360	440	400 / 3 / 50	12.2	101	12.2	101	2	1	3.4	4.00	6.15	21	30.3	44.0	50
22	360	440	400 / 3 / 50	16.7	111	16.7	111	2	1	3.4	5.50	8	-	-	52.4	60
	360	440	400 / 3 / 50	16.7	111	16.7	111	2	1	3.4	5.50	8	28	40.4	58.5	90
26	360	440	400 / 3 / 50	17.9	118	17.9	118	2	1	3	5.50	8	-	-	57.3	70
	360	440	400 / 3 / 50	17.9	118	17.9	118	2	1	3	5.50	8	28	40.4	61.5	100
32	360	440	400 / 3 / 50	21.8	140	21.8	140	2	1	3	7.50	11	-	-	66.1	80
	360	440	400 / 3 / 50	21.8	140	21.8	140	2	1	3	7.50	11	28	40.4	66.1	100

Legend and Notes for Electrical Data Table

FLA - Full Load Amps
IFM - Indoor (Evaporator) Fan Motor
LRA - Locked Rotor Amps
MCA - Minimum Circuit Amps
MOCP - Maximum Overcurrent Protection
NEC - National Electrical Code
OFM - Outdoor (Condenser) Fan Motor
RLA - Rated Load Amps
HACR - Heating, Air-Conditioning and Refrigeration
◊ Fuse or HACR Circuit Breaker

* Application heater kW @ 400 volt (Using multiplication factor table in Electric Resistance Heater Data)

Unbalanced 3-Phase Supply Voltage

Never operate a motor where phase imbalance in supply voltage is greater than 2%.

Use the following formula to determine the percentage of voltage imbalance

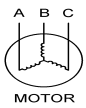
$$= 100 \times \frac{\text{Maximum Deviation From Average Voltage}}{\text{Average Voltage}}$$

Example: Supply Voltage is 400V - 3ph - 50Hz

AB = 392v BC = 404v AC = 395v	Average Voltage = $\frac{392 + 404 + 395}{3}$
	$= \frac{1191}{3}$ = 397V

Determine maximum deviation from average voltage.

(AB) 397 - 392 =5v
(BC) 404 - 397 =7v
(AC) 457 - 397 =2v



Maximum Deviation is 7v.

Determine Percentage Voltage Imbalance.

$$\text{\% Voltage Imbalance} = 100 \times \frac{7}{397} = 1.76\%$$

This amount of phase imbalance is satisfactory as it is below the maximum allowable 2%

IMPORTANT: If the supply voltage phase imbalance is more than 2% contact your local electric utility company

Electric Heater Data

UNIT 50TJM	Unit Voltage 400V		Heater Stages	Heat Per Stage	Minimum Heating	
	Application kW	Heater FLA (Per Stage)			Cfm	L/s
18	21kW	15.2	2	50/50	4800	2265
22	28kW	20.2			6000	2832
26					7000	3304
32						

Accessory Heater Part Number						
UNIT 50TJM	400V					
	Complete Kit P.N.	Casing P.N. (1 Per Kit)	Heater Element P. N. (2 Per Kit)	Description	Stages	Rated (KW)
18	50TJ600287	50TJ600289	CPHEATER036A00	Duct heater assembly 480V	2	30
22	50TJ601162		CPHEATER037A00			40
26	50TJ600730	50TJ600727				
32						

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

Multiplication Factors			
Heater Rating Voltage	Actual Heater Voltage		
	380	400	480
480	0.62	0.7	1

NOTE: The following equation converts kW of heat energy to Btuh: kW x 3.413 = Btuh.

EXAMPLE: 30 kW (at 480V) heater on 400V

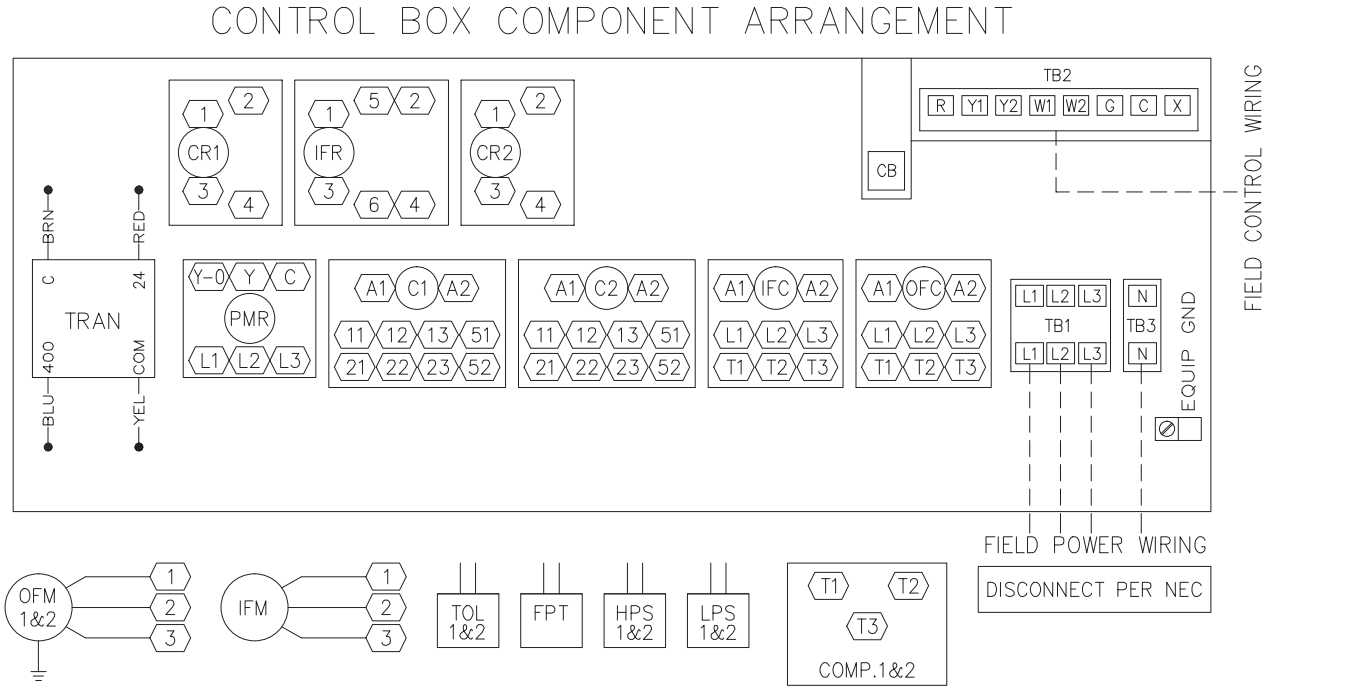
= 30.0 (0.7 multiplication factor)

= 21kW

Heater capacity (kW) is based on heater rated capacity at 480V. If power distribution voltage to unit varies from heater voltage, heater kW will vary accordindly. To Detemine heater capacity at actual unit voltage, multiply 480v capacity by multipliers found in table " Multiplication Factors" above.

MCA calculation for 50TJM 18 - 32 size units with electric heaters over 50 kW = (1.25 x IFM amps) + (1.00 x heater FLA).

Typical Wiring Schematic (18/22/26/32) 400V - 50Hz



L1-T1, L2-T2, L3-T3, 21-22	11-21, 12-22, 13-23, 51-52
TJM-18A2 COM1	TJM-18 A2 COM2
TJM-18A9 COM1 &COM2	TJM -24/28/34 A2 COM1 &COM2
TJM-24A9 COM1 &COM2	TJM-28/34 A9 COM1 &COM2

LEGEND:

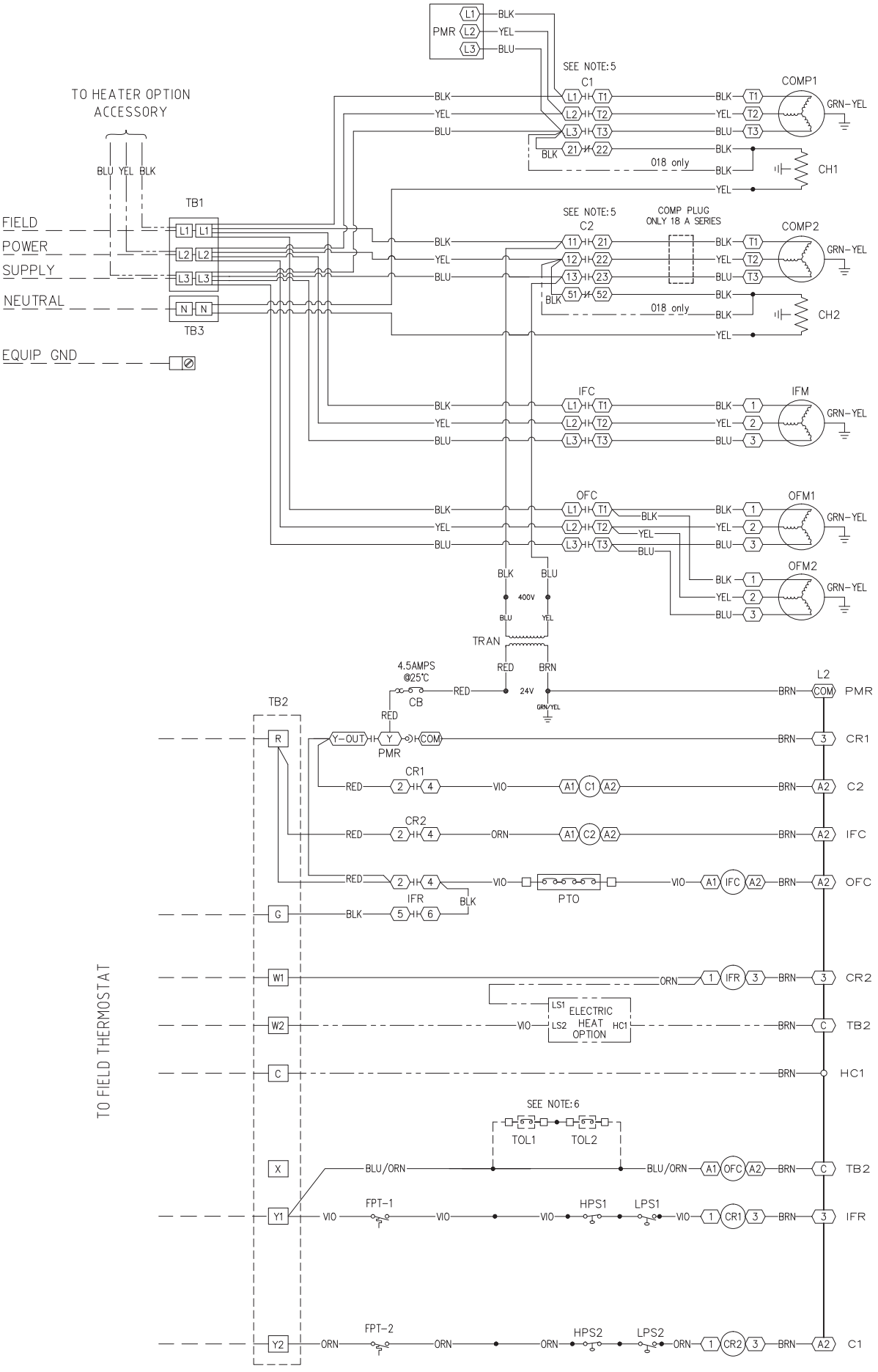
- ⬡ TERMINAL (MARKED)
- ○ TERMINAL (UNMARKED)
- ▭ TERMINAL BLOCK
- ● SPLICE
- ——— FACTORY WIRING
- — — — FIELD WIRING
- ——- - -——- - ——— OPTION / ACCESSORY WIRING
- ——— TO INDICATE COMMON POTENTIAL ONLY: NOT TO REPRESENT WIRING

C	CONTACTOR
CB	CIRCUIT BREAKER
CH	CRANKCASE HEATER
COMP	COMPRESSOR MOTOR
CR	COMPRESSOR RELAY
FPT	FREEZE PROTECTION THERMOSTAT
FU	FUSE
GND	GROUND
HC	HEATER CONTACTOR
HPS	HIGH PRESSURE SWITCH
IFC	INDOOR FAN CONTACTOR
IFM	INDDOR FAN MOTOR
IFR	INDOOR FAN RELAY
L	INDICATOR LAMP
LPS	LOW PRESSURE SWITCH
OFC	OUTDOOR FAN CONTACTOR
OFM	OUTDOOR FAN MOTOR
PMR	PHASE MONITOR RELAY
PTO	MOTOR THERMOSTAT (NC)
TB	TERMINAL BLOCK
TRAN	TRANSFORMER
TOL	THERMAL OVER LOAD

NOTES:

1) IF ANY OF THE ORIGINAL WIRE FURNISHED MUST BE REPLACED, IT MUST BE REPLACED WITH TYPE 105°C WIRE OR ITS EQUIVALENT.
2) USE COPPER, COPPER CLAD, OR ALUMINUM CONNECTORS.
3) USE COPPER CONDUCTOR ONLY.
4) COMPRESSORS & FAN MOTORS ARE THERMALLY PROTECTED.
   THREE PHASE MOTORS ARE PROTECTED AGAINST PRIMARY SINGLE PHASING CONDITIONS.
5) FOR CONTACTOR CONNECTION REFER TO ABOVE TABLE
6) APPLICABLE ONLY OUT DOOR MOTOR WITH EXTERNAL TOL CONNECTION

Typical Wiring Schematic (18/22/26/32) 400V - 50Hz



Controls

Operating Sequence

Cooling Units
When thermostat calls for cooling, terminals G and Y1 are energized. The indoor evaporator fan contactor (IFC) and compressor contactor no. 1 (C1) are energized, and evaporator-fan motor (IFM), compressor no. 1 and condenser fan(s) start. The condenser-fan motor(s) runs continuously while unit is cooling. When the thermostat calls for a second stage of cooling by energizing Y2, compressor contactor no. 2 (C2) is energized and compressor no. 2 starts.

Application Data

Thermostat
Use of 2-stage cooling thermostat with 3-5 min. time delay for compressor is recommended for all units. A 2-stage cooling thermostat is required on units if the economizer is used to provide integrated cooling.

Heating-To-Cooling Changeover
All units are automatic changeover from heating to cooling when automatic changeover thermostat and sub-base are used.

Airflow
Units are draw-thru on cooling and blow-thru on heating.

Maximum Airflow

To minimize the possibility of condensate blow-off from evaporator, airflow velocity through the unit should not exceed 2.5 m/s on size 018-032 unit.

Minimum Airflow

The minimum airflow for cooling is 220 CFM/ton (29 L/s per kW) on size 018-032 unit.

Minimum Ambient Cooling Operation Temperature
Units are designed to operate at outdoor temperatures down to 41 F (5 C). To operate at lower outdoor-air temperatures, contact your local Carrier representative for appropriate accessories for specific applications.

Maximum Operating Outdoor-Air Temperature
For cooling, this temperature is 125 F (52 C) for all sizes.

If Accessory or Optional Heater Is Installed
Upon a call for heating through terminal W1, IFC and heater contactor no. 1 (HC1) are energized. On units equipped for 2 stages of heat, when additional heat is needed, HC2 is energized through W2.

IMPORTANT
1. Field installed thermostat should include time delay between stages to limit the inrush current during the unit starting and to ensure proper operation of unit control.
2. The minimum heating CFM must be maintained to ensure proper operation in the Heating mode.
3. The minimum heating CFM value takes precedence over the minimum cooling CFM value.

GUIDE SPECIFICATIONS - 50TJM SIZE 18 TO 32

Packaged Rooftop Electric Cooling, Electric Heat, Constant Volume Application

HVAC Guide Specifications
Carrier Model Number: **50TJM SIDE – DISCHARGE PACKAGE UNITS**
Size Range: **15 to 26 Tons**

Part 1 — **General**
1.01 SYSTEM DESCRIPTION

Unit is an outdoor rooftop (or building side) mounted, electrically controlled cooling and heating (optional) unit utilizing scroll hermetic compressors for cooling duty and electric heat. Unit is specifically designed for horizontal supply and return ducts, as shown on contract drawings. Standard unit shall include a manual outdoor-air inlet.

1.02 QUALITY ASSURANCE

A. Unit meets ASHRAE 90.1 minimum efficiency requirements.
B. Unit shall be rated in accordance with AHRI Standard 340/360.
C. Unit shall be designed to conform to ASHRAE 15.
D. Insulation and adhesive shall meet NFPA 90A requirements for flame spread and smoke generation.
E. Unit casing shall be capable of withstanding 500-hour salt spray exposure per ASTM B117.
F. Unit shall be designed and manufactured in a facility in accordance and registered by ISO 9001:2015
G. Unit shall have a completely run test on the assembly line with copy of the run test data inside the unit.
H. Unit shall be designed in accordance with UL Standard 1995.

1.03 DELIVERY, STORAGE, AND HANDLING

A. Unit shall be stored and handled per manufacturer's recommendations, positioned in upright position.
B. Lifted by crane requires either shipping top panel or spreader bars.

PART 2 — PRODUCTS
2.01 EQUIPMENT (STANDARD)

A. General:

The 50TJM unit shall be a factory assembled, single piece cooling unit, with optional electric heat. Contained within the unit enclosure shall be all factory wiring, piping, controls, refrigerant charge (R-410a), and special features required prior to field start-up.

B. Unit Cabinet:

1. Unit cabinet shall be constructed of galvanized steel, and shall be bonderized and coated with a pre-painted baked enamel finish on all externally exposed surfaces.
2. Indoor blower compartment interior surfaces shall be insulated with a minimum 1-in thick, 1lb (.45 kg) density neoprene coated. Evaporator panels shall be double skin.
3. Base of unit shall have a minimum of four locations for factory thru-the-base electrical connections; connections shall be internal to the cabinet to protect from environmental issues.
4. Base Rail
    a. Unit shall have base rails on a minimum of 2 sides.
    b. Holes shall be provided in the base rails for rigging shackles to facilitate maneuvering and overhead rigging. Holes also shall be provided in the base rail for moving the rooftop by fork truck.
    d. Base rail shall be a minimum of 12 gauge thickness.
5. Condensate pan and connections:
    a. Shall be a sloped condensate drain pan made of a non-corrosive material.
    b. Shall comply with ASHRAE Standard 62.
    c. Shall use a 19mm (3/4-in.) -14 NPT drain connection at the end of the drain pan. Connection shall be made per manufacturer's recommendations.
6. Top panel shall be a multi-piece top panel linked with water tight flanges and interlocking systems.
7. Component access panels (standard) shall be easily removable for servicing.

C. Fans:

1. Indoor blower (evaporator fan) shall be belt-driven, double inlet, forward-curved, centrifugal type. Belt drive shall include an adjustable-pitch motor pulley.
2. Indoor blower (evaporator fan) shall be made from steel with a corrosion-resistant finish and shall be dynamically balanced.
3. Bearings shall be of the sealed, permanently lubricated, ball-bearing type for longer life and lower maintenance.
4. Condenser fan shall be of the direct-driven propeller type and shall discharge air vertically.
5. Condenser fan shall have aluminum blades riveted to corrosion-resistant steel spiders and shall be dynamically balanced.

D. Compressor(s):

1. Unit shall use one fully hermetic, scroll compressor for each independent refrigeration circuit.
2. Motors shall be cooled by refrigerant gas passing through motor windings.
3. Internally protected from high discharge temperature conditions.
4. Protected from an over-temperature and over-current conditions by an internal motor overload device.
5. Compressor shall be factory mounted on rubber grommets.

E. Coils:

1. Standard evaporator and condenser coils shall have aluminum fins mechanically bonded to seamless internally grooved copper tubes with all joints brazed.
2. Evaporator coils shall be leak tested to 150 psig, pressure tested to 350 psig. Condenser coils shall be leak tested to 150 psig; pressure tested to 450 psig, and qualified to UL 1995 burst test at 1980 psig.
3. Optional condenser coil only shall be aluminum-fin coils with a durable epoxy-phenolic coating to provide protection in mildly corrosive coastal environments fins with copper tubes.
4. Optional condenser coil only shall be constructed of copper-fins mechanically bonded to copper tube, condenser coil available with 15 Fins per Inch (FPI) for the 50TJM-18/22 and 16 FPI for 50TJM-26/32.
5. Optional condenser and evaporator coil shall be constructed of copper-fins bonded to copper tube with evaporator copper coils available with 16 FPI and condenser coils available with 15 FPI for the 50TJM-18/22 and 16 FPI for 50TJM-26/32.
6. Copper fins provide increased corrosion resistance in moderate coastal environments where industrial air pollution is not present, copper-fin coils have extended life compared to standard or pre-coated aluminum-fin coils. All copper coils eliminate bimetallic contact to eliminate the potential for galvanic corrosion. Application in industrial environments is not recommended due to potential attack from sulfur oxide, nitrogen oxides, carbon and several other industrial airborne contaminants.

F. Refrigerant Circuit Components Shall Include:

1. Thermostatic expansion valve (TXV).
2. Refrigerant filter driers.

G. Filter Section:

1. Filters access is specified in the unit cabinet section of this specification.
2. Filters shall be held in place by a preformed filter tray, facilitating easy removal and installation.
3. Shall consist of factory-installed, low velocity, angle type (1-in.) thick washable aluminum filters.
4. Filters shall be standard, commercially available sizes.
5. Only one size filter per unit is allowed.

H. Controls and Safeties:

1. Unit Controls
    a. Shall be complete with self-contained low-voltage control circuit protected by a resettable circuit breaker on the 24-v transformer side.
    b. Shall utilize color-coded wiring.

2. Safeties:
    a. Low and High-pressure switch.
    b. Phase monitors to protect against phase loss, phase reverse and phase unbalance.
    c. Freeze protection thermostat.
    d. Crankcase heater is standard is for each compressor.
    e. Automatic reset, condenser motor thermal overload protector.
    f. Protection Thermal Overload (PTO) motor thermostat is standard for Indoor Fan Motor (IFM) protection.

I. Operating Characteristics:

1. Unit shall be capable of starting and running at 125°F (52°C) ambient outdoor temperature per maximum load criteria of AHRI Standard 360.
2. Unit with standard controls will operate in cooling down to outdoor ambient temperature of 40°F (4.4°C).

J. Electrical Requirements:

1. Electrical Connections all unit power wiring shall enter unit cabinet at a single location.

K. Motors:

1. Evaporator Motor:
    a. Shall have TEFC motor, IP55 with class F insulation.
    b. Shall use permanently lubricated bearings.
    c. Shall have thermal overload protection with an automatic reset feature.

2. Condenser Motor:
    a. Shall use permanently lubricated bearings.
    b. Shall have thermal overload protection with an automatic reset feature.
    c. TE motor with class F insulation

Field Installed Options

1. Electric Heater Package: The electric heater package is factory supplied for field installed. Heater assemblies are provided with internal fusing for protection of heater circuits not exceeding 25 amps each. All power wiring leads are 8 AWG and control wiring are 18AWG, both rated at 105°c. Auto reset thermo limit controls, magnetic heater contractors (24v coil) and terminal block are mounted in electric heater control box attached to heater assembly.

2. UVC Ready: The unit shall be UVC ready for easy installation. UVC Lamp is field supplied and field installed.

3. Softbag Filters: Softbag filters are factory supplied and field installed. Softbag filters are in compliance of Eurovent EU7.

NOTES


Carrier