



United Technologies

turn to the experts 

Package Rooftop Units – 60Hz



Quality Assurance
Certificate Reg. No:
04 100 950420



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

Product Data Catalog

50TJM – 60Hz

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° 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	Unit Size	Approximate Shipping Weight		Approximate Shipping Dimensions (L x D x H)	
Number	Tons	kg	lbs	mm	in
50TJM-18AxAxxxAS	15	925	2,017	2,440x2,235x1,375	96x88x54
50TJM-24AxAxxxAS	20	945	2,050		
50TJM-28AxAxxxAS	25	1,190	2,854	3,200x2,485x1,400	126x98x55
50TJM-34AxAxxxAS	30	1,215	2,877		

Unit data with Condenser Only Cu/Cu Coils

Unit Model	Unit Size	Approximate Shipping Weight		Approximate Shipping Dimensions (L x D x H)	
Number	Tons	kg	lbs	mm	in
50TJM-18AxExxxAS	15	990	2,183	2,440x2,235x1,375	96x88x54
50TJM-24AxExxxAS	20	1,032	2,275		
50TJM-28AxExxxAS	25	1,340	2,954	3,200x2,485x1,400	126x98x55
50TJM-34AxExxxAS	30	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 D x H)	
Number	Tons	kg	lbs	mm	in
50TJM-18AxCxxxAS	15	1,074	2,367	2,440x2,235x1,375	96x88x54
50TJM-24AxCxxxAS	20	1,116	2,460		
50TJM-28AxCxxxAS	25	1,452	3,201	3,200x2,485x1,400	126x98x55
50TJM-34AxCxxxAS	30	1,477	3,256		

MINIMUM – MAXIMUM AIRFLOW

50TJM	Cooling (CFM)		Electric Heaters (CFM)	
	Minimum	Maximum	Minimum	Maximum
18	4,000	6,500	4,800	6,500
24	5,000	8,000	6,000	8,000
28	5,000	9,000	7,000	9,000
34	7,000	10,000	7,000	10,000

FACTORY INSTALLED OPTIONS

Option	Description
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

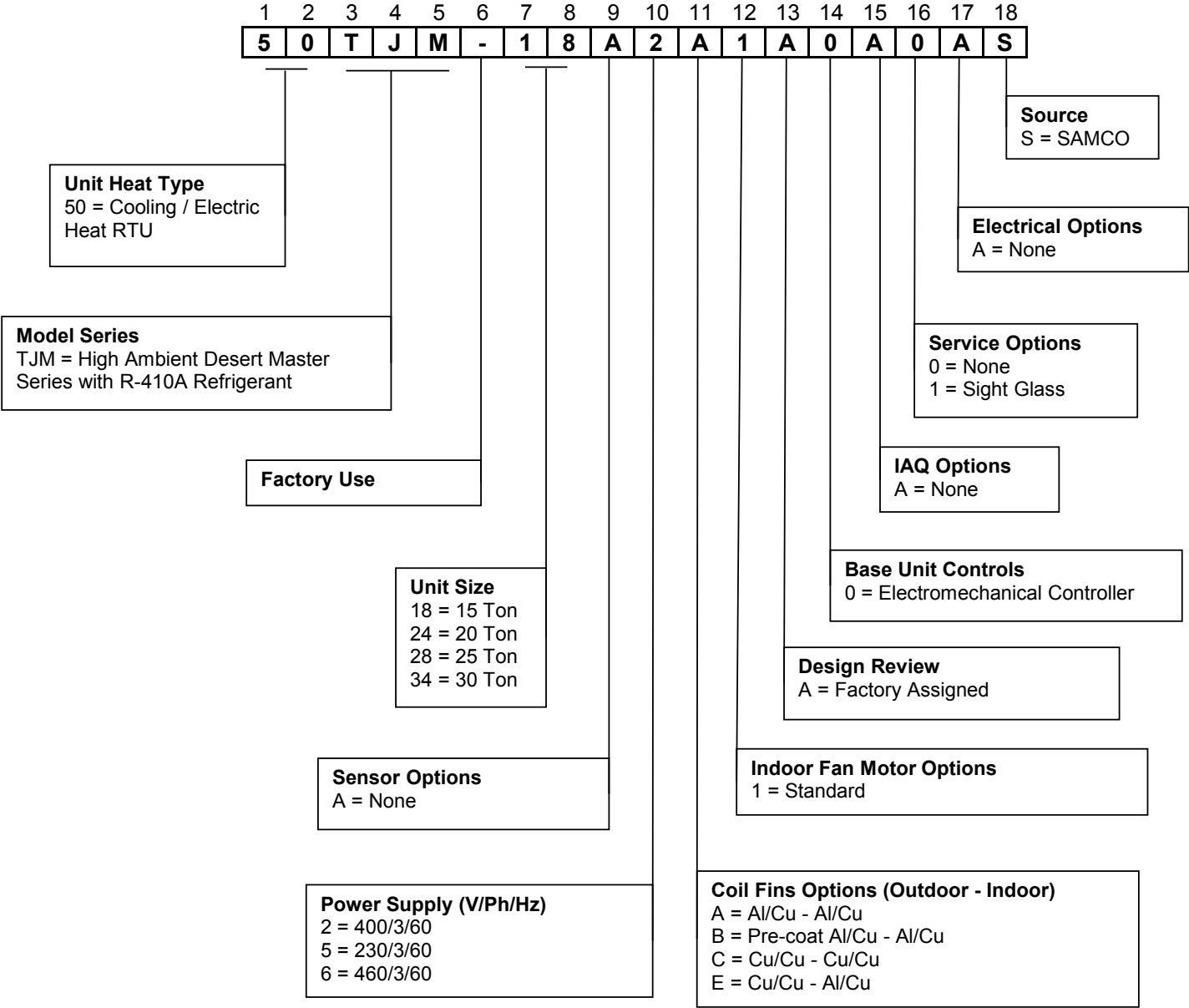
Accessory Soft Bag Filter

50TJM	Part Number
Unit 18 and 24	50TJ600993
Unit 28 and 34	50TJ600992

Accessory Electric Heater

50TJM	230V			400V and 460V		
	Complete Kit P.N.	Casing P.N.	Heater Element P.N.	Complete Kit P.N.	Casing P.N.	Heater Element P.N.
		(1 Per Kit)	(2 Per Kit)		(1 Per Kit)	(2 Per Kit)
18	50TJ600201	50TJ600289	CPHEATER030A00	50TJ600287	50TJ600289	CPHEATER036A00
24	50TJ601161		CPHEATER031A00	50TJ601162		CPHEATER037A00
28	50TJ600729	50TJ600727		50TJ600730	50TJ600727	
34						

MODEL NUMBER NOMENCLATURE – 50TJM – R410A SERIES



AHRI Capacity Rating*

Unit 50TJM	Unit Size (Tons)	Standard Air Flow Rate (CFM)	Gross Cooling Capacity (BTU/hr)	EER	Sound Power (Decibels)
18	15	4,750	193,540	10.3	91.2
24	20	6,300	217,496	10.4	91.9
28	25	8,000	265,525	10.9	91.5
34	30	9,200	331,183	10.5	92.0

EER - Energy Efficiency Ratio

CFM- Cubic Feet per Minute

*AHRI - Air Conditioning, Heating and Refrigeration Institute.

1. Rated in accordance with AHRI Standards 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.

Physical Data - English

50TJM Unit Physical Data (60Hz) (English)				
Unit 50TJM Model	18	24	28	34
Unit Size (Tons)	15	20	25	30
Unit Dimensions	Page - 9		Page - 10	
Unit Operation Weight	Page - 9		Page - 10	
Refrigeration System				
Compressor No. / Type	2 / Scroll			
Refrigerant type	Puron ® R410A			
Circuts No.#	2			
Charge per Circuit (1-Down/2-Up) -LBS	15.65 - 18.07	19.40 - 19.84	32.63 - 30.53	28.22 - 30.10
Metering Device	TXV- adjustable			
Filter Drier Qty/ size	2 / 85		2 / 165	
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	3/8" helical grooved copper tube, 0.866" Aluminum double wavy fins.			
Standard Coil Material (Pipes/Fins) *	Cu/Al			
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)	19000	17500	20000	20000
Quantity	2			
Diameter (in) / No. of Blades	30 / 4			
Motor Type	Induction Motor- Totally Enclosed			
Motor HP/ RPM	1 / 1140			
Evaporator Coil				
Coil Type	3/8" helical grooved copper tube, 0.75" Aluminum LSW fins.			
Standard Coil Material (Pipes/Fins) *	Cu/Al			
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 Qtyx 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 (230v /400v) applications	4.0	5.5		7.5
Motor BHP (460v) applications	4.8	6.0		9.0
Motor Frame Size/ Motor Shaft Diameter (mm)	100 / 28	112 / 28		132 / 38
Motor Pulley Pitch Diameter (Min/Max) (in)	3.1 / 4.1			4.3 / 5.6
Fan RPM Range(RPM)*	1020 - 725	1042 - 732	1042 - 732	1002 - 722
Fan Pulley Pitch Diameter (in)	6.9			10.4
Belt, Quantity..Type	1...BX66			1...BX74
Pulley Center to Center Distance(in)	24.4 - 27.5			
Movable Pulley Maximum full turns from closed position	6			
Aprox.Speed Change per full turn of movable pulley flange(rpm)	49	52		47
Factory Speed Setting	3.5			2.5
Approx. Factory Belt Standard Deflection (in) @ Force (Lb)	0.4 @ 7.09 Lb	0.4 @ 8.73 Lb	0.4 @ 8.73 Lb	0.39 @ 8.96 Lb

* Coils with Copper Fins are available in :

Evaporator Copper Coils : 16 FPI

Condenser Copper Coils : 15 FPI for 50TJM18/24 and 16FPI for 50TJM28/34

* Coils with Copper Fins are available in :

Evaporator Copper Coils : 16 FPI

Condenser Copper Coils : 15 FPI for 50TJM18/24 and 16FPI for 50TJM28/34

Physical Data - SI

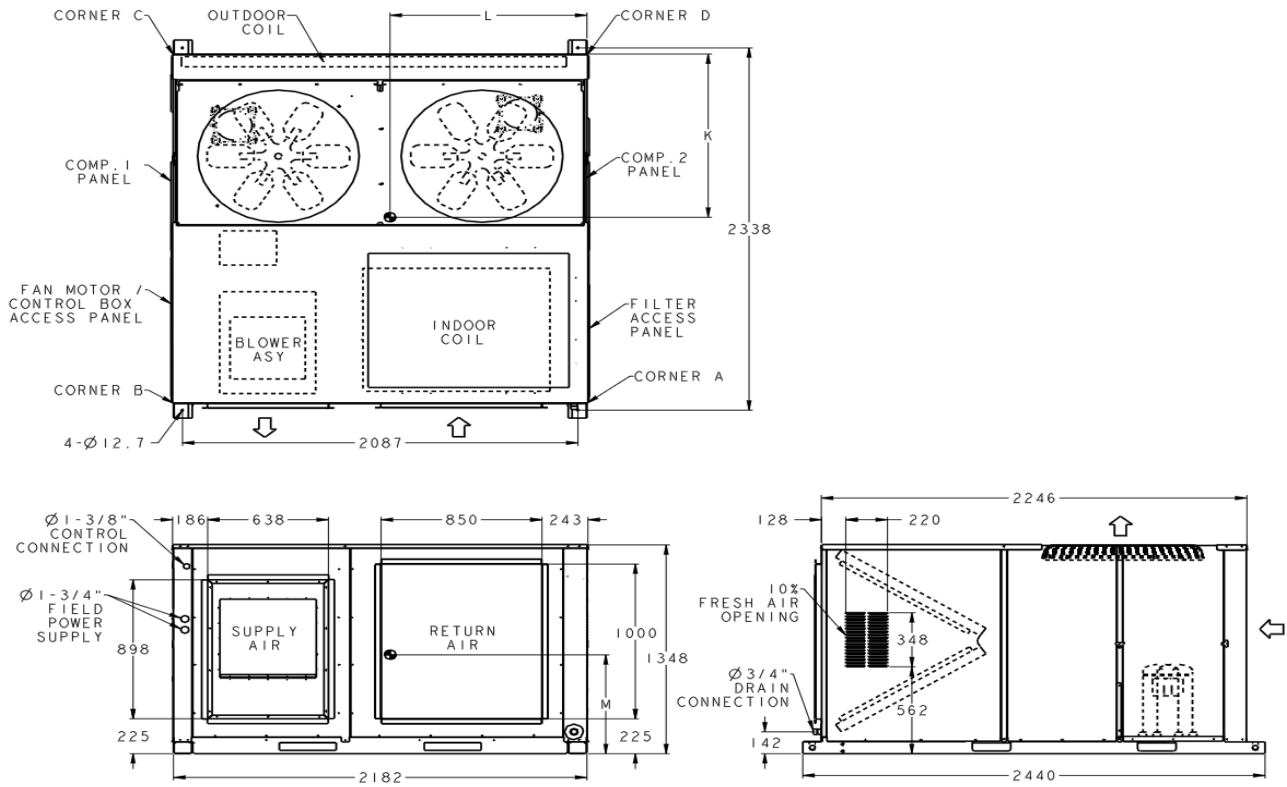
50TJM Unit Physical Data (60Hz) (SI)				
Unit 50TJM Model	18	24	28	34
Unit Size (Tons)	15	20	25	30
Unit Dimensions	Page - 9		Page - 10	
Unit Operation Weight	Page - 9		Page - 10	
Refrigeration System				
Compressor No. / Type	2 / Scroll			
Refrigerant type	Puron ® R410A			
Circuts No.#	2			
Charge per Circuit (1-Down/2-Up) - kG	7.1 / 8.2	8.8 / 9.0	14.8 / 13.8	12.8 / 13.7
Metering Device	TXV- adjustable			
Filter Drier Qty/ size	2 / 85		2 / 165	
High Pressure Switch (Trip/ Reset)- bar	43.4 / 33.1			
Low Pressure Switch (Trip/ Reset)- bar	3.7 / 4.8			
Freeze Protection Thermostat (Open / Close)±1 °C	- 1/7			
Condenser Coil				
Coil Type	10mm helical grooved copper tube, 22mm Aluminum double wavy fins.			
Standard Coil Material (Pipes/Fins) *	Cu/Al			
Qty x Rows x Fins (m)*	1 x 3 x 1280	1 x 4 x 1280	2 x 3 x 1472	
Qty x Face Area (m²)	1 x 2.5		2 x 2.7	
Coil test Pressure (PSIG)	31.0			
Condenser Fan & Motor				
Approx. Air Flow Rate (m³/hr)	32262	29715	33960	33960
Quantity	2			
Diameter (mm) / No. of Blades	762 / 4			
Motor Type	Induction Motor- Totally Enclosed			
Motor HP/ RPS	1 / 19.0			
Evaporator Coil				
Coil Type	10mm helical grooved copper tube, 19mm Aluminum LSW fins.			
Standard Coil Material (Pipes/Fins) *	Cu/Al			
Qty x Rows x Fins (m)*	2 x 3 x 663		2 x 4 x 663	
Qty x Face Area (m²)	2 x 0.91		2 x 0.96	
Coil test Pressure	24.1			
Drain Pan connection Size (mm)	19			
Return Air Filter Qtyx Size (in)	4x 860x550		4x 900x550	
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 (230v /400v) applications	3.0	4.0	5.5	
Motor BkW (460v) applications	3.6	4.6	6.6	
Motor Frame Size/ Motor Shaft Diameter	100 / 28	112 / 28	132 / 38	
Motor Pulley Pitch Diameter (Min/Max) (mm)	78.74 / 104.14			109 / 141.6
Fan RPM Range (r/s)	17.0 - 12.1	17.4 - 12.2	16.7 - 12.0	
Fan Pulley Pitch Diameter (mm)	175.3			264.2
Belt, Quantity...Type	1...BX66			1...BX74
Pulley Center to Center Distance(mm)	620 - 699			
Movable Pullley Maximum full turns from closed position	6			
Aprox.Speed Change per full turn of movable pulley flange(rps)	0.8	0.9	0.8	
Factory Speed Setting	3.5			2.5
Approx. Factory Belt Standard Deflection (mm) @ Force (N)	10.2 @ 31.5 N	10.2 @ 38.9 N	10.2 @ 38.9 N	10 @ 40 N

* Coils with Copper Fins are available in :

Evaporator Copper Coils : 630 Fins/m

Condenser Copper Coils : 591Fins/m for 50TJM18/24 and 630 Fins/m for 50TJM28/34

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

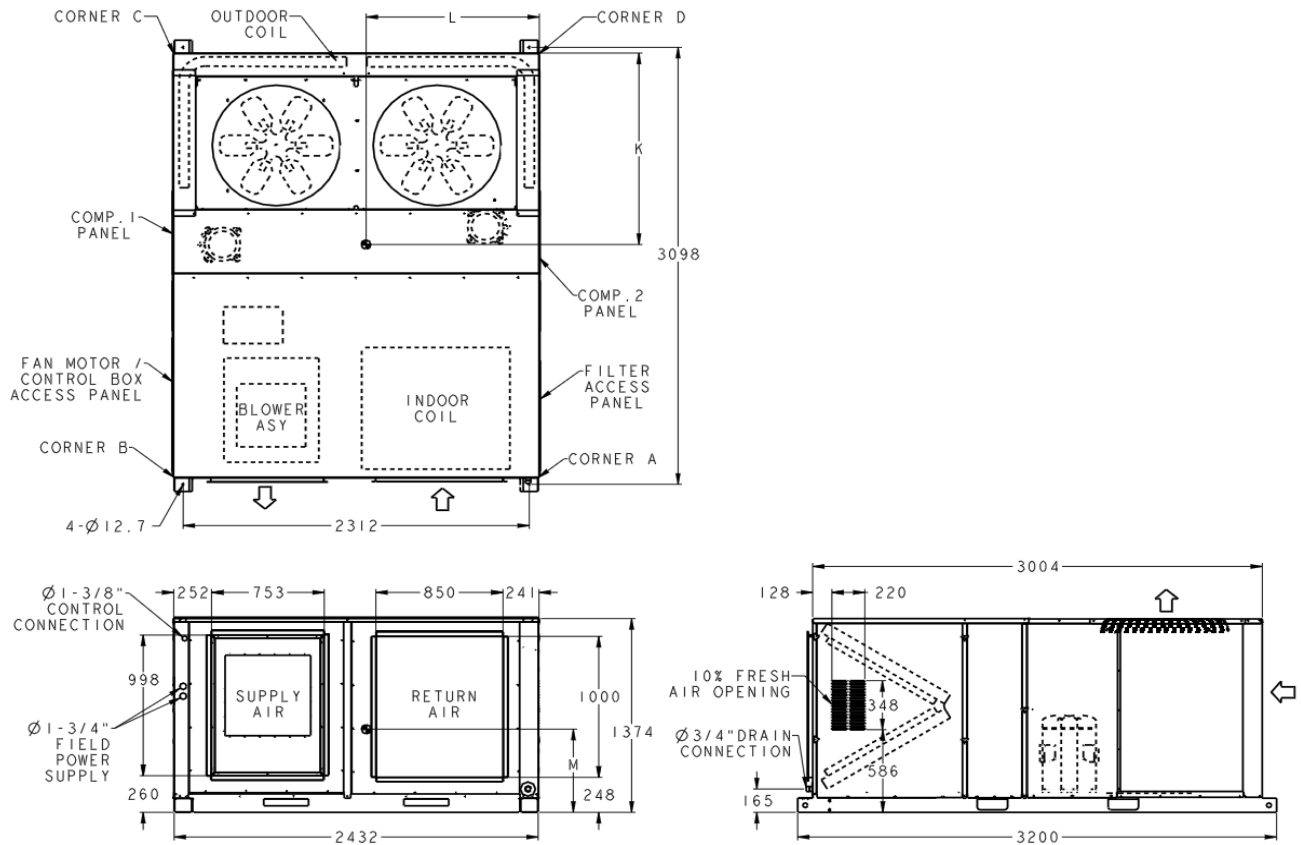


UNIT	SHIPPING DIMENSIONS (mm)			CORNER WEIGHT (Kg)					CENTER OF GRAVITY (mm)		
	LENGTH	WIDTH	DEPTH	A	B	C	D	TOTAL	K	L	M
50TJM - 18	2440	2235	1375	192	178	236	254	860	1050	1050	450
50TJM - 24				197	182	241	260	880			

NOTES:

- Dimensions are in millimeters.
- Center of Gravity.
- Direction of Airflow
- 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.
- 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.
- Dimensions are from outside of corner post. Allow 8mm on each side for top cover drip edge.
- 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:

- Dimensions are in millimeters.
- ☉ Center of Gravity.
- ⇨ Direction of Airflow
- 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.
- 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.
- Dimensions are from outside of corner post. Allow 8mm on each side for top cover drip edge.
- Weights are Given for aluminum evaporator and condenser coil plate fins.

Cooling Capacities

50TJM18 - 60Hz																
Temp (F) Air Entering Condenser (Edb)		Evaporator Air - CFM/BPF														
		4000 / 0.180			4750 / 0.190			5500 / 0.214			6000 / 0.221			6500 / 0.236		
		Evaporator Air - EWB (F)														
		62	67	72	62	67	72	62	67	72	62	67	72	62	67	72
75	TC	180,482	195,814	213,034	188,672	204,604	222,323	201,475	217,892	236,239	209,154	226,051	244,394	213,042	230,615	249,044
	SHC	140,340	122,207	104,444	151,916	131,452	111,272	171,407	147,381	123,297	182,094	157,606	131,347	188,832	164,567	136,180
	kW	9.41	9.59	9.78	9.48	9.67	9.87	9.58	9.77	9.98	9.61	9.81	10.03	9.65	9.85	10.07
85	TC	174,805	189,527	206,005	182,101	197,648	214,527	194,100	209,989	227,317	201,359	217,644	235,148	205,754	221,621	239,264
	SHC	138,782	120,020	101,759	149,950	129,214	108,507	168,544	145,042	120,266	178,578	155,199	128,259	185,870	161,955	133,006
	kW	10.59	10.77	10.97	10.65	10.85	11.05	10.74	10.94	11.16	10.78	10.98	11.20	10.82	11.02	11.24
95	TC	171,404	185,994	201,943	178,611	193,540	209,828	189,565	205,065	221,695	197,509	212,444	229,187	201,856	216,179	232,878
	SHC	136,534	117,508	98,647	148,119	126,626	105,260	164,569	142,171	116,860	176,563	152,189	124,799	182,637	158,888	129,495
	kW	11.87	12.06	12.27	11.94	12.14	12.35	12.03	12.23	12.45	12.07	12.27	12.49	12.12	12.30	12.52
105	TC	161,664	175,647	190,528	168,288	182,433	197,474	179,218	192,779	208,040	186,774	199,634	215,166	190,914	202,658	218,550
	SHC	131,907	113,255	94,191	142,882	122,120	100,625	159,929	137,342	111,936	169,109	147,169	119,815	175,223	153,544	124,445
	kW	13.27	13.46	13.67	13.33	13.53	13.74	13.42	13.61	13.83	13.47	13.65	13.87	13.51	13.67	13.90
115	TC	150,878	163,758	177,260	156,803	169,406	183,474	167,552	178,857	193,221	174,658	185,226	199,692	178,369	188,102	202,783
	SHC	125,851	107,032	88,196	135,211	115,542	94,395	150,153	130,396	105,430	159,036	139,776	113,019	164,106	146,467	117,485
	kW	14.85	15.04	15.25	14.91	15.10	15.31	15.01	15.18	15.39	15.06	15.21	15.43	15.10	15.24	15.45
120	TC	144,159	156,397	169,411	150,200	161,789	175,146	160,440	170,637	184,255	167,321	176,817	190,558	170,833	179,591	193,698
	SHC	120,114	102,127	83,760	129,539	110,449	89,731	142,737	124,713	100,392	150,947	133,900	107,726	155,905	140,199	112,058
	kW	15.72	15.91	16.12	15.79	15.97	16.18	15.89	16.04	16.25	15.93	16.07	16.28	15.97	16.10	16.31
125	TC	132,765	143,705	155,655	138,412	148,654	160,817	148,032	156,703	169,134	154,426	162,416	175,288	157,918	164,924	178,130
	SHC	115,323	98,019	79,918	123,454	106,135	82,568	136,430	119,930	96,093	144,130	129,155	103,258	148,911	134,753	107,458
	kW	16.54	16.73	16.93	16.61	16.78	16.98	16.70	16.85	17.05	16.75	16.87	17.08	16.79	16.90	17.11

50TJM18 - 60Hz																
Temp (C) Air Entering Condenser (Edb)		Evaporator Air - (L/s)/BPF														
		1888 / 0.180			2242 / 0.190			2596 / 0.214			2832 / 0.221			3068 / 0.236		
		Evaporator Air - EWB (C)														
		17	19	22	17	19	22	17	19	22	17	19	22	17	19	22
24	TC	52.9	57.4	62.4	55.3	60.0	65.2	59.0	63.9	69.2	61.3	66.3	71.6	62.4	67.6	73.0
	SHC	41.1	35.8	30.6	44.5	38.5	32.6	50.2	43.2	36.1	53.4	46.2	38.5	55.3	48.2	39.9
	kW	9.41	9.59	9.78	9.48	9.67	9.87	9.58	9.77	9.98	9.61	9.81	10.03	9.65	9.85	10.07
29	TC	51.2	55.5	60.4	53.4	57.9	62.9	56.9	61.5	66.6	59.0	63.8	68.9	60.3	65.0	70.1
	SHC	40.7	35.2	29.8	43.9	37.9	31.8	49.4	42.5	35.2	52.3	45.5	37.6	54.5	47.5	39.0
	kW	10.59	10.77	10.97	10.65	10.85	11.05	10.74	10.94	11.16	10.78	10.98	11.20	10.82	11.02	11.24
35	TC	50.2	54.5	59.2	52.3	56.7	61.5	55.6	60.1	65.0	57.9	62.3	67.2	59.2	63.4	68.3
	SHC	40.0	34.4	28.9	43.4	37.1	30.9	48.2	41.7	34.2	51.7	44.6	36.6	53.5	46.6	38.0
	kW	11.87	12.06	12.27	11.94	12.14	12.35	12.03	12.23	12.45	12.07	12.27	12.49	12.12	12.30	12.52
41	TC	47.4	51.5	55.8	49.3	53.5	57.9	52.5	56.5	61.0	54.7	58.5	63.1	56.0	59.4	64.1
	SHC	38.7	33.2	27.6	41.9	35.8	29.5	46.9	40.3	32.8	49.6	43.1	35.1	51.4	45.0	36.5
	kW	13.27	13.46	13.67	13.33	13.53	13.74	13.42	13.61	13.83	13.47	13.65	13.87	13.51	13.67	13.90
46	TC	44.2	48.0	52.0	46.0	49.7	53.8	49.1	52.4	56.6	51.2	54.3	58.5	52.3	55.1	59.4
	SHC	36.9	31.4	25.8	39.6	33.9	27.7	44.0	38.2	30.9	46.6	41.0	33.1	48.1	42.9	34.4
	kW	14.85	15.04	15.25	14.91	15.10	15.31	15.01	15.18	15.39	15.06	15.21	15.43	15.10	15.24	15.45
49	TC	42.3	45.8	49.7	44.0	47.4	51.3	47.0	50.0	54.0	49.0	51.8	55.8	50.1	52.6	56.8
	SHC	35.2	29.9	24.5	38.0	32.4	26.3	41.8	36.6	29.4	44.2	39.2	31.6	45.7	41.1	32.8
	kW	15.72	15.91	16.12	15.79	15.97	16.18	15.89	16.04	16.25	15.93	16.07	16.28	15.97	16.10	16.31
52	TC	38.9	42.1	45.6	40.6	43.6	47.1	43.4	45.9	49.6	45.3	47.6	51.4	46.3	48.3	52.2
	SHC	33.8	28.7	23.4	36.2	31.1	24.2	40.0	35.1	28.2	42.2	37.9	30.3	43.6	39.5	31.5
	kW	16.54	16.73	16.93	16.61	16.78	16.98	16.70	16.85	17.05	16.75	16.87	17.08	16.79	16.90	17.11

LEGEND

BPF — Bypass Factor

Edb — Entering Dry-Bulb

Ewb — Entering Wet-Bulb

SHC — Sensible Heat Capacity (1000 Btuh) Gross

Boldface - Standard Ratings

Notes:

1. Direct interpolation is permissible. Do not extrapolate.

2. The following formulas may be used.

tlwb = 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 = Enthalpy of air entering evaporator coil.

Ldb — Leaving Dry-Bulb

Lwb — Leaving Wet-Bulb

TC — Total Capacity (1000 Btuh) Gross

kW — Compressor Motor Power Input

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).

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Cooling Capacities (Continued)

50TJM24 - 60Hz																
Temp (F) Air Entering Condenser (Edb)		Evaporator Air - CFM/BPF														
		5000 / 0.175			5700 / 0.182			6300 / 0.210			6900 / 0.215			8000 / 0.240		
		Evaporator Air - EWB (F)														
		62	67	72	62	67	72	62	67	72	62	67	72	62	67	72
75	TC	203,452	221,007	240,696	208,640	226,865	247,025	214,020	231,941	252,475	216,604	235,877	256,775	222,013	241,904	263,181
	SHC	168,064	143,351	119,622	178,063	151,055	124,790	185,814	158,796	129,770	195,137	165,852	134,263	209,037	178,570	142,316
	kW	10.53	10.72	10.92	10.59	10.78	10.98	10.64	10.83	11.04	10.68	10.87	11.09	10.74	10.94	11.16
85	TC	196,265	213,296	232,177	200,690	218,554	237,872	204,653	223,027	242,715	208,387	226,591	246,574	213,378	231,887	252,177
	SHC	165,895	140,840	116,634	175,318	148,567	121,635	184,874	156,201	126,563	193,643	163,183	130,989	204,793	175,834	138,861
	kW	11.83	12.01	12.22	11.88	12.07	12.28	11.92	12.12	12.34	11.97	12.17	12.38	12.03	12.23	12.45
95	TC	191,753	208,759	227,176	195,652	213,479	232,299	200,046	217,496	236,646	202,613	220,640	240,031	208,547	225,385	245,143
	SHC	162,655	137,909	113,224	171,874	145,477	118,131	182,121	153,057	122,942	188,328	159,963	127,225	200,943	172,523	135,109
	kW	13.24	13.44	13.65	13.29	13.49	13.71	13.34	13.54	13.76	13.37	13.58	13.80	13.45	13.64	13.86
105	TC	180,225	196,722	214,189	184,449	200,823	218,566	187,455	204,318	222,352	190,746	207,022	225,288	197,248	211,120	229,683
	SHC	156,905	132,952	108,324	166,907	140,408	113,023	174,350	147,882	117,718	180,907	154,654	121,966	192,600	166,972	129,697
	kW	14.77	14.97	15.19	14.83	15.03	15.24	14.87	15.07	15.29	14.91	15.11	15.33	15.00	15.16	15.39
115	TC	167,983	183,215	199,501	171,226	186,734	203,275	174,665	189,646	206,445	179,195	191,927	208,966	184,928	195,272	212,643
	SHC	149,243	125,868	101,627	157,199	133,099	106,177	164,367	140,305	110,681	169,673	146,849	114,807	178,722	158,369	122,325
	kW	16.53	16.72	16.94	16.58	16.77	16.99	16.63	16.81	17.03	16.67	16.85	17.06	16.77	16.89	17.12
120	TC	160,528	175,110	190,720	163,606	178,298	194,105	167,324	180,973	197,006	172,193	183,042	199,259	177,439	185,976	202,599
	SHC	142,540	120,209	96,618	149,762	127,202	100,977	157,343	134,185	105,340	159,999	140,482	109,325	168,769	151,365	116,621
	kW	17.49	17.69	17.89	17.54	17.73	17.94	17.60	17.77	17.98	17.65	17.80	18.01	17.73	17.85	18.06
125	TC	147,582	160,999	175,378	150,712	163,773	178,353	154,969	166,106	180,867	159,346	167,882	182,788	163,779	170,521	185,744
	SHC	136,519	115,411	92,285	143,491	122,220	96,535	149,679	128,995	100,780	153,250	135,022	104,647	159,920	145,625	111,822
	kW	18.39	18.58	18.78	18.45	18.62	18.83	18.49	18.66	18.86	18.56	18.69	18.89	18.64	18.73	18.94

50TJM24 - 60Hz																
Temp (C) Air Entering Condenser (Edb)		Evaporator Air - (L/s)/BPF														
		2360 / 0.175			2690 / 0.182			2973 / 0.210			3256 / 0.215			3776 / 0.240		
		Evaporator Air - EWB (C)														
		17	19	22	17	19	22	17	19	22	17	19	22	17	19	22
24	TC	59.6	64.8	70.5	61.1	66.5	72.4	62.7	68.0	74.0	63.5	69.1	75.3	65.1	70.9	77.1
	SHC	49.3	42.0	35.1	52.2	44.3	36.6	54.5	46.5	38.0	57.2	48.6	39.4	61.3	52.3	41.7
	kW	10.53	10.72	10.92	10.59	10.78	10.98	10.64	10.83	11.04	10.68	10.87	11.09	10.74	10.94	11.16
29	TC	57.5	62.5	68.0	58.8	64.1	69.7	60.0	65.4	71.1	61.1	66.4	72.3	62.5	68.0	73.9
	SHC	48.6	41.3	34.2	51.4	43.5	35.6	54.2	45.8	37.1	56.8	47.8	38.4	60.0	51.5	40.7
	kW	11.83	12.01	12.22	11.88	12.07	12.28	11.92	12.12	12.34	11.97	12.17	12.38	12.03	12.23	12.45
35	TC	56.2	61.2	66.6	57.3	62.6	68.1	58.6	63.7	69.4	59.4	64.7	70.3	61.1	66.1	71.8
	SHC	47.7	40.4	33.2	50.4	42.6	34.6	53.4	44.9	36.0	55.2	46.9	37.3	58.9	50.6	39.6
	kW	13.24	13.44	13.65	13.29	13.49	13.71	13.34	13.54	13.76	13.37	13.58	13.80	13.45	13.64	13.86
41	TC	52.8	57.7	62.8	54.1	58.9	64.1	54.9	59.9	65.2	55.9	60.7	66.0	57.8	61.9	67.3
	SHC	46.0	39.0	31.7	48.9	41.2	33.1	51.1	43.3	34.5	53.0	45.3	35.7	56.4	48.9	38.0
	kW	14.77	14.97	15.19	14.83	15.03	15.24	14.87	15.07	15.29	14.91	15.11	15.33	15.00	15.16	15.39
46	TC	49.2	53.7	58.5	50.2	54.7	59.6	51.2	55.6	60.5	52.5	56.3	61.2	54.2	57.2	62.3
	SHC	43.7	36.9	29.8	46.1	39.0	31.1	48.2	41.1	32.4	49.7	43.0	33.6	52.4	46.4	35.9
	kW	16.53	16.72	16.94	16.58	16.77	16.99	16.63	16.81	17.03	16.67	16.85	17.06	16.77	16.89	17.12
49	TC	47.0	51.3	55.9	48.0	52.3	56.9	49.0	53.0	57.7	50.5	53.6	58.4	52.0	54.5	59.4
	SHC	41.8	35.2	28.3	43.9	37.3	29.6	46.1	39.3	30.9	46.9	41.2	32.0	49.5	44.4	34.2
	kW	17.49	17.69	17.89	17.54	17.73	17.94	17.60	17.77	17.98	17.65	17.80	18.01	17.73	17.85	18.06
52	TC	43.3	47.2	51.4	44.2	48.0	52.3	45.4	48.7	53.0	46.7	49.2	53.6	48.0	50.0	54.4
	SHC	40.0	33.8	27.0	42.1	35.8	28.3	43.9	37.8	29.5	44.9	39.6	30.7	46.9	42.7	32.8
	kW	18.39	18.58	18.78	18.45	18.62	18.83	18.49	18.66	18.86	18.56	18.69	18.89	18.64	18.73	18.94

LEGEND

- BPF — Bypass Factor
- Edb — Entering Dry-Bulb
- Ewb — Entering Wet-Bulb
- SHC — Sensible Heat Capacity (1000 Btuh) Gross
- Boldface** - Standard Ratings
- Notes:
1. Direct interpolation is permissible. Do not extrapolate.
2. The following formulas may be used.
- tiwb =

tedb —

sensible capacity (Btuh)

1.10 x cfm
- tiwb = Wet-bulb temprature corresponding to enthalphy of air leaving evaporater coil (hlwb).
- hlwb =

hewb —

total capacity (Btuh)

4.5 x cfm
- Where: hewb = Enthaply of air entering evaporator coil.
- Ldb — Leaving Dry-Bulb
- Lwb — Leaving Wet-Bulb
- TC — Total Capacity (1000 Btuh) Gross
- kW — Compressor Motor Power Input

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).

Cooling Capacities (Continued)

50TJM28 - 60Hz																
Temp (F) Air Entering Condenser (Edb)		Evaporator Air - CFM/BPF														
		5000 / 0.097			6000 / 0.110			7000 / 0.130			8000 / 0.152			9000 / 0.180		
		Evaporator Air - EWB (F)														
		62	67	72	62	67	72	62	67	72	62	67	72	62	67	72
75	TC	236,627	258,925	283,511	246,505	269,903	295,424	254,317	278,243	304,233	260,185	284,708	311,229	265,961	289,876	316,835
	SHC	188,375	161,916	135,533	206,841	176,000	144,803	224,219	189,337	153,286	239,046	202,192	161,426	251,663	214,567	169,275
	kW	11.83	12.06	12.32	11.94	12.18	12.45	12.02	12.27	12.54	12.09	12.34	12.62	12.15	12.40	12.68
85	TC	227,648	249,297	273,130	237,019	259,436	284,053	243,841	267,049	292,175	249,812	272,963	298,550	256,393	277,598	303,651
	SHC	184,411	157,951	131,553	203,082	171,896	140,638	219,172	185,136	149,063	233,607	197,830	157,091	244,431	210,070	164,850
	kW	13.39	13.63	13.90	13.50	13.75	14.03	13.58	13.84	14.12	13.65	13.91	14.20	13.73	13.97	14.26
95	TC	222,409	243,696	267,017	231,139	253,143	277,206	237,539	260,178	284,745	243,642	265,525	290,576	251,843	269,818	295,248
	SHC	180,095	153,620	127,198	198,333	167,446	136,144	213,893	180,540	144,442	227,087	193,057	152,371	234,920	205,203	160,068
	kW	15.11	15.36	15.64	15.22	15.48	15.76	15.30	15.57	15.85	15.38	15.64	15.93	15.48	15.69	15.98
105	TC	209,461	229,831	251,914	217,209	238,181	260,960	223,414	244,329	267,573	229,836	249,133	272,777	238,488	252,695	276,824
	SHC	173,603	147,529	121,355	190,842	160,969	130,001	205,638	173,736	138,079	218,188	186,091	145,881	222,248	197,757	153,413
	kW	16.96	17.23	17.51	17.07	17.34	17.63	17.16	17.43	17.72	17.25	17.50	17.79	17.35	17.55	17.85
115	TC	193,343	212,222	232,711	200,110	219,408	240,426	206,120	224,745	246,239	213,565	228,729	250,636	220,089	231,942	254,126
	SHC	164,523	139,195	113,669	180,526	152,117	121,901	194,087	164,480	129,727	202,925	176,309	137,252	209,424	187,703	144,537
	kW	19.07	19.34	19.64	19.18	19.46	19.75	19.27	19.54	19.83	19.39	19.60	19.90	19.49	19.65	19.95
120	TC	185,017	203,102	222,827	191,510	209,731	229,927	198,045	214,647	235,246	205,112	218,264	239,330	211,317	221,265	242,530
	SHC	157,241	132,759	108,008	172,553	145,235	115,907	184,156	157,181	123,462	192,108	168,552	130,749	197,919	179,470	137,833
	kW	20.22	20.50	20.79	20.33	20.60	20.90	20.44	20.68	20.98	20.55	20.75	21.05	20.65	20.80	21.10
125	TC	172,312	189,148	207,476	178,316	195,062	213,938	185,396	199,435	218,641	191,715	202,704	222,319	197,421	205,368	225,107
	SHC	151,179	127,359	103,130	165,387	139,475	110,845	175,041	151,107	118,166	182,425	162,172	125,271	187,855	172,641	132,154
	kW	21.30	21.58	21.87	21.41	21.68	21.98	21.54	21.76	22.05	21.65	21.82	22.11	21.74	21.87	22.16

50TJM28 - 60Hz																
Temp (C) Air Entering Condenser (Edb)		Evaporator Air - (L/s)/BPF														
		2360 / 0.097			2832 / 0.110			3304 / 0.130			3776 / 0.152			4248 / 0.180		
		Evaporator Air - EWB (C)														
		17	19	22	17	19	22	17	19	22	17	19	22	17	19	22
24	TC	69.4	75.9	83.1	72.2	79.1	86.6	74.5	81.5	89.2	76.3	83.4	91.2	77.9	85.0	92.9
	SHC	55.2	47.5	39.7	60.6	51.6	42.4	65.7	55.5	44.9	70.1	59.3	47.3	73.8	62.9	49.6
	kW	11.83	12.06	12.32	11.94	12.18	12.45	12.02	12.27	12.54	12.09	12.34	12.62	12.15	12.40	12.68
29	TC	66.7	73.1	80.0	69.5	76.0	83.3	71.5	78.3	85.6	73.2	80.0	87.5	75.1	81.4	89.0
	SHC	54.0	46.3	38.6	59.5	50.4	41.2	64.2	54.3	43.7	68.5	58.0	46.0	71.6	61.6	48.3
	kW	13.39	13.63	13.90	13.50	13.75	14.03	13.58	13.84	14.12	13.65	13.91	14.20	13.73	13.97	14.26
35	TC	65.2	71.4	78.3	67.7	74.2	81.2	69.6	76.3	83.5	71.4	77.8	85.2	73.8	79.1	86.5
	SHC	52.8	45.0	37.3	58.1	49.1	39.9	62.7	52.9	42.3	66.6	56.6	44.7	68.9	60.1	46.9
	kW	15.11	15.36	15.64	15.22	15.48	15.76	15.30	15.57	15.85	15.38	15.64	15.93	15.48	15.69	15.98
41	TC	61.4	67.4	73.8	63.7	69.8	76.5	65.5	71.6	78.4	67.4	73.0	79.9	69.9	74.1	81.1
	SHC	50.9	43.2	35.6	55.9	47.2	38.1	60.3	50.9	40.5	63.9	54.5	42.8	65.1	58.0	45.0
	kW	16.96	17.23	17.51	17.07	17.34	17.63	17.16	17.43	17.72	17.25	17.50	17.79	17.35	17.55	17.85
46	TC	56.7	62.2	68.2	58.6	64.3	70.5	60.4	65.9	72.2	62.6	67.0	73.5	64.5	68.0	74.5
	SHC	48.2	40.8	33.3	52.9	44.6	35.7	56.9	48.2	38.0	59.5	51.7	40.2	61.4	55.0	42.4
	kW	19.07	19.34	19.64	19.18	19.46	19.75	19.27	19.54	19.83	19.39	19.60	19.90	19.49	19.65	19.95
49	TC	54.2	59.5	65.3	56.1	61.5	67.4	58.0	62.9	68.9	60.1	64.0	70.1	61.9	64.8	71.1
	SHC	46.1	38.9	31.7	50.6	42.6	34.0	54.0	46.1	36.2	56.3	49.4	38.3	58.0	52.6	40.4
	kW	20.22	20.50	20.79	20.33	20.60	20.90	20.44	20.68	20.98	20.55	20.75	21.05	20.65	20.80	21.10
52	TC	50.5	55.4	60.8	52.3	57.2	62.7	54.3	58.5	64.1	56.2	59.4	65.2	57.9	60.2	66.0
	SHC	44.3	37.3	30.2	48.5	40.9	32.5	51.3	44.3	34.6	53.5	47.5	36.7	55.1	50.6	38.7
	kW	21.30	21.58	21.87	21.41	21.68	21.98	21.54	21.76	22.05	21.65	21.82	22.11	21.74	21.87	22.16

LEGEND

- BPF — Bypass Factor

Edb — Entering Dry-Bulb

Ewb — Entering Wet-Bulb

SHC — Sensible Heat Capacity (1000 Btuh) Gross

Boldface - Standard Ratings

Notes:

1. Direct interpolation is permissible. Do not extrapolate.

2. The following formulas may be used.

tl_{db} =

ted_b —

sensible capacity (Btuh)

1.10 x cfm

tl_{wb} =

Wet-bulb temprature corresponding to enthalphy of air leaving evaporater coil (hl_{wb}).

hl_{wb} =

hew_b —

total capacity (Btuh)

4.5 x cfm

Where: hew_b = Enthalphy of air entering evaporator coil.

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 additionally limited to edb and ewb conditions.

Ldb — Leaving Dry-Bulb

Lwb — Leaving Wet-Bulb

TC — Total Capacity (1000 Btuh) Gross

kW — Compressor Motor Power Input

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).

Cooling Capacities (Continued)

50TJM34 - 60Hz																
Temp (F) Air Entering Condenser (Edb)		Evaporator Air - CFM/BPF														
		7000 / 0.105			7700 / 0.130			8500 / 0.151			9200 / 0.177			10000 / 0.191		
		Evaporator Air - EWB (F)														
		62	67	72	62	67	72	62	67	72	62	67	72	62	67	72
75	TC	309,515	338,436	370,128	315,738	345,401	377,580	322,309	352,240	384,660	327,024	357,386	390,117	331,744	362,643	395,668
	SHC	255,310	218,399	181,492	267,713	227,876	187,700	281,897	238,501	194,483	293,092	247,499	200,235	305,104	257,858	206,807
	kW	16.53	16.92	17.35	16.62	17.02	17.45	16.71	17.12	17.55	16.78	17.19	17.63	16.85	17.27	17.71
85	TC	296,571	324,431	354,976	302,543	330,846	361,663	308,234	336,957	368,193	312,354	341,596	373,045	317,090	346,280	377,900
	SHC	249,391	212,596	175,669	262,007	222,021	181,792	275,256	232,392	188,463	285,755	241,302	194,101	297,477	251,546	200,497
	kW	18.49	18.91	19.35	18.59	19.01	19.46	18.68	19.10	19.56	18.75	19.18	19.63	18.82	19.25	19.71
95	TC	288,356	315,588	345,219	293,673	321,388	351,417	298,878	326,996	357,307	303,069	331,183	361,727	307,598	335,466	366,169
	SHC	242,972	206,296	169,420	255,038	215,539	175,396	267,661	225,800	181,906	277,929	234,617	187,476	288,497	244,740	193,721
	kW	20.63	21.06	21.53	20.72	21.16	21.63	20.81	21.25	21.73	20.88	21.33	21.80	20.96	21.40	21.87
105	TC	270,115	295,806	323,625	274,961	300,958	329,018	279,691	305,818	334,186	283,644	309,521	337,957	293,415	313,182	341,900
	SHC	233,547	197,459	161,067	244,980	206,555	166,843	256,760	216,601	173,179	265,975	225,250	178,511	268,445	235,135	184,725
	kW	22.89	23.34	23.82	22.98	23.44	23.92	23.07	23.53	24.02	23.15	23.61	24.09	23.33	23.67	24.16
115	TC	250,331	274,143	299,863	254,658	278,591	304,569	259,322	282,750	308,899	267,810	285,861	312,207	271,359	289,051	315,633
	SHC	225,639	190,265	153,893	236,494	199,228	159,577	247,333	209,145	165,764	248,860	217,644	171,077	258,272	227,400	177,227
	kW	25.42	25.89	26.38	25.52	25.99	26.48	25.62	26.07	26.56	25.80	26.14	26.63	25.87	26.21	26.70
120	TC	238,739	261,488	286,065	242,816	265,521	290,270	247,782	269,309	294,260	255,086	272,199	297,327	258,989	275,046	300,353
	SHC	219,161	184,581	148,636	229,329	193,354	154,168	239,875	203,099	160,238	241,106	211,485	165,493	250,348	221,053	171,536
	kW	26.80	27.28	27.77	26.90	27.37	27.86	27.01	27.45	27.95	27.17	27.52	28.02	27.26	27.59	28.08
125	TC	219,300	239,983	262,373	223,243	243,459	266,096	227,950	246,835	269,752	234,794	249,308	272,466	238,629	251,774	275,227
	SHC	212,544	178,815	143,228	221,862	187,422	148,648	230,848	197,038	154,684	232,056	205,240	159,881	239,950	214,654	165,854
	kW	28.07	28.55	29.05	28.17	28.64	29.14	28.29	28.72	29.23	28.46	28.79	29.29	28.57	28.85	29.36

50TJM34 - 60Hz																
Temp (C) Air Entering Condenser (Edb)		Evaporator Air - (L/s)/BPF														
		3304 / 0.105			3634 / 0.130			4012 / 0.151			4342 / 0.177			4719 / 0.191		
		Evaporator Air - EWB (C)														
		17	19	22	17	19	22	17	19	22	17	19	22	17	19	22
24	TC	90.7	99.2	108.5	92.5	101.2	110.7	94.5	103.2	112.7	95.8	104.7	114.3	97.2	106.3	116.0
	SHC	74.8	64.0	53.2	78.5	66.8	55.0	82.6	69.9	57.0	85.9	72.5	58.7	89.4	75.6	60.6
	kW	16.53	16.92	17.35	16.62	17.02	17.45	16.71	17.12	17.55	16.78	17.19	17.63	16.85	17.27	17.71
29	TC	86.9	95.1	104.0	88.7	97.0	106.0	90.3	98.8	107.9	91.5	100.1	109.3	92.9	101.5	110.8
	SHC	73.1	62.3	51.5	76.8	65.1	53.3	80.7	68.1	55.2	83.8	70.7	56.9	87.2	73.7	58.8
	kW	18.49	18.91	19.35	18.59	19.01	19.46	18.68	19.10	19.56	18.75	19.18	19.63	18.82	19.25	19.71
35	TC	84.5	92.5	101.2	86.1	94.2	103.0	87.6	95.8	104.7	88.8	97.1	106.0	90.2	98.3	107.3
	SHC	71.2	60.5	49.7	74.7	63.2	51.4	78.4	66.2	53.3	81.5	68.8	54.9	84.6	71.7	56.8
	kW	20.63	21.06	21.53	20.72	21.16	21.63	20.81	21.25	21.73	20.88	21.33	21.80	20.96	21.40	21.87
41	TC	79.2	86.7	94.8	80.6	88.2	96.4	82.0	89.6	97.9	83.1	90.7	99.0	86.0	91.8	100.2
	SHC	68.4	57.9	47.2	71.8	60.5	48.9	75.3	63.5	50.8	78.0	66.0	52.3	78.7	68.9	54.1
	kW	22.89	23.34	23.82	22.98	23.44	23.92	23.07	23.53	24.02	23.15	23.61	24.09	23.33	23.67	24.16
46	TC	73.4	80.3	87.9	74.6	81.7	89.3	76.0	82.9	90.5	78.5	83.8	91.5	79.5	84.7	92.5
	SHC	66.1	55.8	45.1	69.3	58.4	46.8	72.5	61.3	48.6	72.9	63.8	50.1	75.7	66.6	51.9
	kW	25.42	25.89	26.38	25.52	25.99	26.48	25.62	26.07	26.56	25.80	26.14	26.63	25.87	26.21	26.70
49	TC	70.0	76.6	83.8	71.2	77.8	85.1	72.6	78.9	86.2	74.8	79.8	87.1	75.9	80.6	88.0
	SHC	64.2	54.1	43.6	67.2	56.7	45.2	70.3	59.5	47.0	70.7	62.0	48.5	73.4	64.8	50.3
	kW	26.80	27.28	27.77	26.90	27.37	27.86	27.01	27.45	27.95	27.17	27.52	28.02	27.26	27.59	28.08
52	TC	64.3	70.3	76.9	65.4	71.4	78.0	66.8	72.3	79.1	68.8	73.1	79.9	69.9	73.8	80.7
	SHC	62.3	52.4	42.0	65.0	54.9	43.6	67.7	57.7	45.3	68.0	60.2	46.9	70.3	62.9	48.6
	kW	28.07	28.55	29.05	28.17	28.64	29.14	28.29	28.72	29.23	28.46	28.79	29.29	28.57	28.85	29.36

LEGEND

- BPF — Bypass Factor

Edb — Entering Dry-Bulb

Ewb — Entering Wet-Bulb

SHC — Sensible Heat Capacity (1000 Btuh) Gross

Boldface - Standard Ratings

Notes:

1. Direct interpolation is permissible. Do not extrapolate.

2. The following formulas may be used.

tlwb =

tedb —

sensible capacity (Btuh)

1.10 x cfm

tlwb =

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

hlwb =

hewb —

total capacity (Btuh)

4.5 x cfm

Where: hewb = Enthalphy of air entering evaporator coil.
- Ldb — Leaving Dry-Bulb

Lwb — Leaving Wet-Bulb

TC — Total Capacity (1000 Btuh) Gross

kW — Compressor Motor Power Input

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 additionally limited to edb and ewb conditions.

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).

Fan Performance Table

Unit 50TJM - 18 - 15 Tons - 230V and 400V - 60Hz - (Standard Motor)

Air flow Rate (CFM)	Available External Static Pressure (in. wg)														
	0.2			0.4			0.6			0.8			1		
	RPM	KWI	BHP	RPM	KWI	BHP	RPM	KWI	BHP	RPM	KWI	BHP	RPM	KWI	BHP
4000	583	1.25	1.38	654	1.52	1.68	721	1.82	2.02	775	2.14	2.36	835	2.47	2.73
4500	619	1.61	1.78	686	1.91	2.11	747	2.22	2.46	807	2.56	2.83	865	2.91	3.22
5000	656	2.03	2.25	716	2.35	2.60	775	2.69	2.98	830	3.04	3.37	885	3.42	3.78
5500	692	2.52	2.79	747	2.86	3.17	802	3.22	3.57	855	3.60	3.98	905	3.98	4.41
6000	730	3.06	3.39	777	3.43	3.79	828	3.80	4.21	877	4.20	4.65	927	4.61	5.10
6500	757	3.69	4.09	805	4.05	4.48	853	4.44	4.92	899	4.86	5.38	945	5.29	5.85

Unit 50TJM - 18 - 15 Tons - 230V and 400V - 60Hz - (Standard Motor) (Continued)

Air flow Rate (CFM)	Available External Static Pressure (in. wg)														
	1.2			1.4			1.6			1.8			2		
	RPM	KWI	BHP	RPM	KWI	BHP	RPM	KWI	BHP	RPM	KWI	BHP	RPM	KWI	BHP
4000	893	2.81	3.11	967	3.26	3.61	990	3.52	3.90	1019	3.73	4.13	1092	4.28	4.74
4500	919	3.28	3.63	972	3.65	4.04	1015	3.99	4.42	1068	4.30	4.76	1116	4.84	5.36
5000	937	3.73	4.13	987	4.20	4.65	1036	4.61	5.11	1082	4.90	5.42	1128	5.45	6.04
5500	955	4.39	4.86	1003	4.81	5.32	1050	5.23	5.79	1096	5.55	6.14	1139	6.12	6.78
6000	973	5.03	5.57	1019	5.47	6.05	1064	5.92	6.55	1108	6.25	6.92	1150	6.85	7.58
6500	990	5.73	6.34	1033	6.17	6.84	1076	6.64	7.35	1119	6.99	7.74	1160	7.61	8.42

Unit 50TJM - 18 - 15 Tons - 460V - 60Hz - (Standard Motor)

Air flow Rate (CFM)	Available External Static Pressure (in. wg)														
	0.2			0.4			0.6			0.8			1		
	RPM	KWI	BHP	RPM	KWI	BHP	RPM	KWI	BHP	RPM	KWI	BHP	RPM	KWI	BHP
4000	583	1.25	1.38	654	1.52	1.68	722	1.82	2.02	775	2.14	2.36	835	2.47	2.73
4500	619	1.61	1.78	686	1.91	2.11	747	2.22	2.46	807	2.56	2.83	865	2.91	3.22
5000	656	2.03	2.25	716	2.35	2.60	775	2.69	2.98	830	3.04	3.37	885	3.42	3.78
5500	692	2.52	2.79	747	2.86	3.17	802	3.22	3.57	855	3.60	3.98	905	3.98	4.41
6000	730	3.06	3.39	777	3.43	3.79	828	3.80	4.21	877	4.20	4.65	927	4.61	5.10
6500	757	3.68	4.07	805	4.05	4.48	853	4.44	4.92	899	4.86	5.38	945	5.29	5.85

Unit 50TJM - 18 - 15 Tons - 460V - 60Hz - (Standard Motor) (Continued)

Air flow Rate (CFM)	Available External Static Pressure (in. wg)														
	1.2			1.4			1.6			1.8			2		
	RPM	KWI	BHP	RPM	KWI	BHP	RPM	KWI	BHP	RPM	KWI	BHP	RPM	KWI	BHP
4000	893	2.81	3.11	967	3.26	3.61	988	3.52	3.90	1020	3.75	4.15	1106	4.28	4.74
4500	919	3.28	3.63	972	3.65	4.04	1018	4.01	4.44	1070	4.30	4.76	1116	4.84	5.36
5000	937	3.80	4.21	987	4.20	4.65	1036	4.61	5.11	1082	4.90	5.42	1128	5.45	6.04
5500	955	4.39	4.86	1003	4.81	5.32	1050	5.23	5.79	1096	5.55	6.14	1139	6.12	6.78
6000	973	5.03	5.57	1019	5.47	6.05	1064	5.92	6.55	1108	6.25	6.92	1150	6.85	7.58
6500	990	5.73	6.34	1033	6.17	6.84	1076	6.64	7.35	1119	6.99	7.74	1160	7.61	8.42

Legend:

Bold , Italics - Standard Motor and Drive Package. In range of ±5% due to different voltage application (230V, 400V and 460V).

RPM - Revolutions Per Minute

KWI - Kilo Watts Input to Motor

BHP - Brake Horsepower Input to Fan

CFM - Cubic Feet per Minute

in.wg - Inch Water Gage

Notes:

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

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

Fan Performance Table (Continued)

Unit 50TJM - 24 - 20 Tons - 230V and 400V - 60Hz - (Standard Motor)

Air flow Rate (CFM)	Available External Static Pressure (in. wg)														
	0.2			0.4			0.6			0.8			1		
	RPM	KWI	BHP	RPM	KWI	BHP	RPM	KWI	BHP	RPM	KWI	BHP	RPM	KWI	BHP
5000	562	1.47	1.66	619	1.72	1.95	673	1.98	2.25	726	2.26	2.56	776	2.55	2.89
5500	595	1.84	2.09	648	2.11	2.39	698	2.39	2.70	747	2.68	3.03	795	2.99	3.38
6000	631	2.28	2.58	679	2.56	2.90	725	2.85	3.23	771	3.16	3.58	817	3.48	3.95
6500	665	2.77	3.14	709	3.07	3.48	753	3.38	3.83	796	3.71	4.20	839	4.05	4.58
7000	699	3.34	3.79	741	3.66	4.14	782	3.98	4.51	823	4.32	4.90	863	4.68	5.30
7500	734	3.99	4.51	774	4.31	4.89	812	4.66	5.28	851	5.01	5.68	888	5.38	6.09
8000	767	4.60	5.20	809	4.97	5.63	849	5.37	6.08	889	5.78	6.55	929	6.20	7.03

Unit 50TJM - 24 - 20 Tons - 230V and 400V - 60Hz - (Standard Motor) (Continued)

Air flow Rate (CFM)	Available External Static Pressure (in. wg)														
	1.2			1.4			1.6			1.8			2		
	RPM	KWI	BHP	RPM	KWI	BHP	RPM	KWI	BHP	RPM	KWI	BHP	RPM	KWI	BHP
5000	825	2.86	3.24	873	3.17	3.59	919	3.50	3.96	963	3.82	4.33	1005	4.16	4.72
5500	842	3.31	3.74	887	3.63	4.12	932	3.97	4.50	973	4.32	4.89	1014	4.68	5.30
6000	861	3.82	4.33	904	4.17	4.72	945	4.52	5.11	986	4.88	5.53	1026	5.26	5.95
6500	880	4.39	4.97	921	4.75	5.38	963	5.12	5.80	1001	5.50	6.23	1039	5.89	6.68
7000	902	5.03	5.70	941	5.41	6.13	979	5.80	6.57	1017	6.19	7.01	1055	6.60	7.47
7500	925	5.75	6.51	963	6.14	6.96	998	6.54	7.41	1035	6.95	7.88	1070	7.37	8.35
8000	967	6.63	7.51	1006	7.08	8.02	1044	7.54	8.54	1082	8.02	9.08	1118	8.50	9.63

Unit 50TJM - 24 - 20 Tons - 460V - 60Hz - (Standard Motor)

Air flow Rate (CFM)	Available External Static Pressure (in. wg)														
	0.2			0.4			0.6			0.8			1		
	RPM	KWI	BHP	RPM	KWI	BHP	RPM	KWI	BHP	RPM	KWI	BHP	RPM	KWI	BHP
5000	562	1.47	1.66	619	1.72	1.95	673	1.98	2.25	726	2.26	2.56	776	2.55	2.89
5500	595	1.84	2.09	648	2.11	2.39	698	2.39	2.70	747	2.68	3.03	795	2.99	3.38
6000	631	2.28	2.58	679	2.56	2.90	725	2.85	3.23	771	3.16	3.58	817	3.48	3.95
6500	665	2.77	3.14	709	3.07	3.48	753	3.38	3.83	796	3.71	4.20	839	4.05	4.58
7000	699	3.34	3.79	741	3.66	4.14	782	3.98	4.51	823	4.32	4.90	863	4.68	5.30
7500	734	3.99	4.51	774	4.31	4.89	812	4.66	5.28	851	5.01	5.68	888	5.38	6.09
8000	767	4.60	5.20	809	4.97	5.63	849	5.37	6.08	889	5.78	6.55	929	6.20	7.03

Unit 50TJM - 24 - 20 Tons - 460V - 60Hz - (Standard Motor) (Continued)

Air flow Rate (CFM)	Available External Static Pressure (in. wg)														
	1.2			1.4			1.6			1.8			2		
	RPM	KWI	BHP	RPM	KWI	BHP	RPM	KWI	BHP	RPM	KWI	BHP	RPM	KWI	BHP
5000	825	2.86	3.24	873	3.17	3.59	919	3.50	3.96	963	3.82	4.33	1005	4.16	4.72
5500	842	3.31	3.74	887	3.63	4.12	932	3.97	4.50	973	4.32	4.89	1014	4.68	5.30
6000	861	3.82	4.33	904	4.17	4.72	945	4.52	5.11	986	4.88	5.53	1026	5.26	5.95
6500	880	4.39	4.97	921	4.75	5.38	963	5.12	5.80	1001	5.50	6.23	1039	5.89	6.68
7000	902	5.03	5.70	941	5.41	6.13	979	5.80	6.57	1017	6.19	7.01	1055	6.60	7.47
7500	925	5.75	6.51	963	6.14	6.96	998	6.54	7.41	1035	6.95	7.88	1070	7.37	8.35
8000	967	6.63	7.51	1006	7.08	8.02	1044	7.54	8.54	1082	8.02	9.08	1118	8.50	9.63

Legend:

Bold , Italics - Standard Motor and Drive Package. In range of ±5% due to different voltage application (230V, 400V and 460V).

RPM - Revolutions Per Minute

KWI - Kilo Watts Input to Motor

BHP - Brake Horsepower Input to Fan

CFM - Cubic Feet per Minute

in.wg - Inch Water Gage

Notes:

- Do not adjust motor rpm such that motor maximum bhp and/or watts is exceeded at the maximum operatin cfm.
- Static Pressure (i.e Filters) must be added to external static pressure before entering fan performance table.
- Interpolation is permissible. Do not extrapolate.
- Fan performance is based on wet coils, clean filters and casing losses.
- 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.
- Bold data shows the range of air flow rate for unit management system, other rpms require field-supplied drive.
- Use of field-supplied motor may affect wiring size. Contact your Carrier representative for details.
- Conversion - Bhp to KWI

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

Fan Performance Table (Continued)

Unit 50TJM - 28 - 25 Tons - 230V and 400V - 60Hz - (Standard Motor)

Air flow Rate (CFM)	Available External Static Pressure (in. wg)														
	0.2			0.4			0.6			0.8			1		
	RPM	KWI	BHP	RPM	KWI	BHP	RPM	KWI	BHP	RPM	KWI	BHP	RPM	KWI	BHP
5000	501	1.10	1.25	554	1.32	1.50	606	1.56	1.77	656	1.83	2.07	704	2.11	2.39
5500	529	1.36	1.54	579	1.60	1.81	627	1.85	2.09	673	2.12	2.40	717	2.39	2.71
6000	558	1.66	1.88	603	1.90	2.15	648	2.16	2.45	692	2.45	2.77	733	2.74	3.11
6500	586	2.00	2.27	628	2.25	2.55	670	2.54	2.87	711	2.82	3.19	750	3.13	3.54
7000	614	2.38	2.70	654	2.66	3.01	693	2.94	3.33	732	3.23	3.66	769	3.55	4.02
7500	643	2.82	3.19	680	3.10	3.52	717	3.40	3.85	753	3.70	4.20	789	4.03	4.57
8000	669	3.29	3.73	706	3.58	4.06	740	3.90	4.42	775	4.22	4.78	809	4.56	5.17
8500	696	3.79	4.30	734	4.11	4.65	761	4.44	5.03	796	4.77	5.40	829	5.10	5.78
9000	737	4.37	4.95	777	4.73	5.36	806	5.11	5.79	842	5.49	6.21	877	5.88	6.66

Unit 50TJM - 28 - 25 Tons - 230V and 400V - 60Hz - (Standard Motor) (Continued)

Air flow Rate (CFM)	Available External Static Pressure (in. wg)														
	1.2			1.4			1.6			1.8			2		
	RPM	KWI	BHP	RPM	KWI	BHP	RPM	KWI	BHP	RPM	KWI	BHP	RPM	KWI	BHP
5000	750	2.40	2.72	796	2.72	3.08	841	3.06	3.47	885	3.42	3.87	926	3.80	4.31
5500	762	2.71	3.07	805	3.03	3.43	847	3.38	3.83	888	3.74	4.23	927	4.11	4.65
6000	775	3.06	3.47	815	3.38	3.83	855	3.73	4.22	894	4.09	4.63	933	4.47	5.06
6500	789	3.44	3.90	829	3.78	4.28	866	4.13	4.68	903	4.49	5.09	939	4.87	5.52
7000	806	3.88	4.39	843	4.23	4.79	879	4.58	5.19	914	4.95	5.61	949	5.33	6.04
7500	824	4.37	4.95	859	4.72	5.35	894	5.08	5.76	926	5.45	6.18	960	5.85	6.62
8000	842	4.90	5.55	876	5.26	5.95	908	5.63	6.38	941	6.01	6.81	973	6.42	7.27
8500	861	5.46	6.19	892	5.84	6.61	923	6.22	7.04	953	6.60	7.48	984	7.01	7.94
9000	911	6.29	7.13	944	6.72	7.61	977	7.16	8.11	1009	7.60	8.61	1042	8.07	9.14

Unit 50TJM - 28 - 25 Tons - 460V - 60Hz - (Standard Motor)

Air flow Rate (CFM)	Available External Static Pressure (in. wg)														
	0.2			0.4			0.6			0.8			1		
	RPM	KWI	BHP	RPM	KWI	BHP	RPM	KWI	BHP	RPM	KWI	BHP	RPM	KWI	BHP
5000	501	1.10	1.25	554	1.32	1.50	606	1.56	1.77	656	1.83	2.07	704	2.11	2.39
5500	529	1.36	1.54	579	1.60	1.81	627	1.85	2.09	673	2.12	2.40	717	2.39	2.71
6000	558	1.66	1.88	603	1.90	2.15	648	2.16	2.45	692	2.45	2.77	733	2.74	3.11
6500	586	2.00	2.27	628	2.25	2.55	670	2.54	2.87	711	2.82	3.19	750	3.13	3.54
7000	614	2.38	2.70	654	2.66	3.01	693	2.94	3.33	732	3.23	3.66	769	3.55	4.02
7500	643	2.82	3.19	680	3.10	3.52	717	3.40	3.85	753	3.70	4.20	789	4.03	4.57
8000	669	3.29	3.73	706	3.58	4.06	740	3.90	4.42	775	4.22	4.78	809	4.56	5.17
8500	696	3.79	4.30	734	4.11	4.65	761	4.44	5.03	796	4.77	5.40	829	5.10	5.78
9000	737	4.37	4.95	777	4.73	5.36	806	5.11	5.79	842	5.49	6.21	877	5.88	6.66

Unit 50TJM - 28 - 25 Tons - 460V - 60Hz - (Standard Motor) (Continued)

Air flow Rate (CFM)	Available External Static Pressure (in. wg)														
	1.2			1.4			1.6			1.8			2		
	RPM	KWI	BHP	RPM	KWI	BHP	RPM	KWI	BHP	RPM	KWI	BHP	RPM	KWI	BHP
5000	750	2.40	2.72	796	2.72	3.08	841	3.06	3.47	885	3.42	3.87	926	3.80	4.31
5500	762	2.71	3.07	805	3.03	3.43	847	3.38	3.83	888	3.74	4.23	927	4.11	4.65
6000	775	3.06	3.47	815	3.38	3.83	855	3.73	4.22	894	4.09	4.63	933	4.47	5.06
6500	789	3.44	3.90	829	3.78	4.28	866	4.13	4.68	903	4.49	5.09	939	4.87	5.52
7000	806	3.88	4.39	843	4.23	4.79	879	4.58	5.19	914	4.95	5.61	949	5.33	6.04
7500	824	4.37	4.95	859	4.72	5.35	894	5.08	5.76	926	5.45	6.18	960	5.85	6.62
8000	842	4.90	5.55	876	5.26	5.95	908	5.63	6.38	941	6.01	6.81	973	6.42	7.27
8500	861	5.46	6.19	892	5.84	6.61	923	6.22	7.04	953	6.60	7.48	984	7.01	7.94
9000	911	6.29	7.13	944	6.72	7.61	977	7.16	8.11	1009	7.60	8.61	1042	8.07	9.14

Legend:

Bold , Italics - Standard Motor and Drive Package. In range of ±5% due to different voltage application (230V, 400V and 460V).

RPM - Revolutions Per Minute

KWI - Kilo Watts Input to Motor

BHP - Brake Horsepower Input to Fan

CFM - Cubic Feet per Minute

in.wg - Inch Water Gage

Notes:

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

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

Fan Performance Table (Continued)

Unit 50TJM - 34 - 30 Tons - 230V and 400V - 60Hz - (Standard Motor)

Air flow Rate (CFM)	Available External Static Pressure (in. wg)														
	0.2			0.4			0.6			0.8			1		
	RPM	KWI	BHP	RPM	KWI	BHP	RPM	KWI	BHP	RPM	KWI	BHP	RPM	KWI	BHP
7000	602	2.72	3.13	641	3.03	3.49	679	3.35	3.86	717	3.70	4.27	753	4.05	4.67
7500	630	3.22	3.71	667	3.54	4.08	704	3.89	4.48	739	4.23	4.88	773	4.61	5.31
8000	659	3.77	4.35	693	4.11	4.74	727	4.46	5.14	761	4.83	5.57	794	5.22	6.01
8500	687	4.38	5.05	720	4.74	5.47	753	5.12	5.90	784	5.49	6.33	816	5.89	6.78
9000	715	5.05	5.83	746	5.43	6.26	777	5.81	6.70	808	6.21	7.16	838	6.49	7.49
9500	741	5.77	6.66	771	6.16	7.10	800	6.51	7.50	829	6.97	8.03	859	7.39	8.52
10000	768	6.51	7.50	797	6.97	8.03	825	7.38	8.50	853	7.80	8.99	880	8.23	9.49

Unit - 50TJM - 34 - 30 Tons - 230 & 400V - 60Hz - (Standard Motor) (Continued)

Air flow Rate (CFM)	Available External Static Pressure (in. wg)														
	1.2			1.4			1.6			1.8			2		
	RPM	KWI	BHP	RPM	KWI	BHP	RPM	KWI	BHP	RPM	KWI	BHP	RPM	KWI	BHP
7000	790	4.43	5.11	826	4.82	5.55	861	5.23	6.03	895	5.65	6.51	929	6.08	7.01
7500	808	4.99	5.75	842	5.39	6.21	875	5.80	6.68	907	6.22	7.17	940	6.52	7.52
8000	827	5.61	6.47	860	6.02	6.94	891	6.44	7.43	922	6.88	7.93	953	7.33	8.45
8500	847	6.30	7.26	878	6.72	7.74	908	7.15	8.25	938	7.59	8.75	967	8.05	9.28
9000	867	7.03	8.10	897	7.46	8.60	927	7.91	9.12	955	8.37	9.65	984	8.84	10.19
9500	887	7.82	9.02	914	8.26	9.52	943	8.72	10.05	970	9.18	10.58	998	9.66	11.14
10000	907	8.68	10.01	934	9.13	10.52	961	9.60	11.06	988	10.08	11.62	1014	10.57	12.18

Unit - 50TJM - 34 - 30 Tons - 460V - 60Hz - (Standard Motor)

Air flow Rate (CFM)	Available External Static Pressure (in. wg)														
	0.2			0.4			0.6			0.8			1		
	RPM	KWI	BHP	RPM	KWI	BHP	RPM	KWI	BHP	RPM	KWI	BHP	RPM	KWI	BHP
7000	602	2.72	3.13	641	3.03	3.49	679	3.35	3.86	717	3.70	4.27	753	4.05	4.67
7500	630	3.22	3.71	667	3.54	4.08	704	3.89	4.48	739	4.23	4.88	773	4.61	5.31
8000	659	3.77	4.35	693	4.11	4.74	727	4.46	5.14	761	4.83	5.57	794	5.22	6.01
8500	687	4.38	5.05	720	4.74	5.47	753	5.12	5.90	784	5.49	6.33	816	5.89	6.78
9000	715	5.05	5.83	746	5.43	6.26	777	5.81	6.70	808	6.21	7.16	838	6.62	7.63
9500	741	5.77	6.66	771	6.16	7.10	800	6.56	7.56	829	6.97	8.03	859	7.39	8.52
10000	768	6.56	7.56	797	6.97	8.03	825	7.38	8.50	853	7.80	8.99	880	8.23	9.49

Unit - 50TJM - 34 - 30 Tons - 460V - 60Hz - (Standard Motor) (Continued)

Air flow Rate (CFM)	Available External Static Pressure (in. wg)														
	1.2			1.4			1.6			1.8			2		
	RPM	KWI	BHP	RPM	KWI	BHP	RPM	KWI	BHP	RPM	KWI	BHP	RPM	KWI	BHP
7000	790	4.43	5.11	826	4.82	5.55	861	5.23	6.03	895	5.65	6.51	929	6.08	7.01
7500	808	4.99	5.75	842	5.39	6.21	875	5.80	6.68	907	6.22	7.17	940	6.67	7.69
8000	827	5.61	6.47	860	6.02	6.94	891	6.44	7.43	922	6.88	7.93	953	7.33	8.45
8500	847	6.30	7.26	878	6.72	7.74	908	7.15	8.25	938	7.59	8.75	967	8.05	9.28
9000	867	7.03	8.10	897	7.46	8.60	927	7.91	9.12	955	8.37	9.65	984	8.84	10.19
9500	887	7.82	9.02	914	8.26	9.52	943	8.72	10.05	970	9.18	10.58	998	9.66	11.14
10000	907	8.68	10.01	934	9.13	10.52	961	9.60	11.06	988	10.08	11.62	1014	10.57	12.18

Legend:

Bold , Italics - Standard Motor and Drive Package. In range of ±5% due to different voltage application (230V, 400V and 460V).

RPM - Revolutions Per Minute

KWI - Kilo Watts Input to Motor

BHP - Brake Horsepower Input to Fan

CFM - Cubic Feet per Minute

in.wg - Inch Water Gage

Notes:

- Do not adjust motor rpm such that motor maximum bhp and/or watts is exceeded at the maximum operatin cfm.
- Static Pressure (i.e Filters) must be added to external static pressure before entering fan performance table.
- Interpolation is permissible. Do not extrapolate.
- Fan performance is based on wet coils, clean filters and casing losses.
- 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.
- Bold data shows the range of air flow rate for unit management system, other rpms require field-supplied drive.
- Use of field-supplied motor may affect wiring size. Contact your Carrier representative for details.
- Conversion - Bhp to KWI

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

Fan RPM At Motor Pulley Settings

Freq.	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
60Hz	18	-	-	1020	994	969	934	904	867	841	808	780	749	725
	24	-	-	1042	1004	979	944	913	876	850	816	788	757	732
	28	-	-	1042	1004	979	944	913	876	850	816	788	757	732
	34	1002	968	933	902	876	850	823	806	789	772	756	739	722

Freq.	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
60Hz	18	-	-	17.0	16.6	16.1	15.6	15.1	14.5	14.0	13.5	13.0	12.5	12.1
	24	-	-	17.4	16.7	16.3	15.7	15.2	14.6	14.2	13.6	13.1	12.6	12.2
	28	-	-	17.4	16.7	16.3	15.7	15.2	14.6	14.2	13.6	13.1	12.6	12.2
	34	16.7	16.1	15.6	15.0	14.6	14.2	13.7	13.4	13.2	12.9	12.6	12.3	12.0

Bold, Italics are RPM is the factory setting . In range of ±5% due to different voltage application (230V, 400V and 460V).

The standard belt size may not cover all the above range. Other RPMs require field supplied drive package.

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	9500	10000
18-24	0.020	0.025	0.031	0.037	0.040	0.044	0.049	0.055	0.058	0.069	0.071	0.079	-	-	-	-
28-34	-	-	0.028	0.032	0.034	0.040	0.047	0.050	0.054	0.062	0.064	0.071	0.080	0.090	0.100	0.111

50TJM	Air Flow rate (CFM) - 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	16130	16980
18-24	5	6	8	9	10	11	12	14	14	17	18	20	-	-	-	-
28-34	-	-	7	8	8	10	12	12	14	16	16	18	20	22	25	28

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	9500	10000
18-24	0.024	0.030	0.037	0.045	0.048	0.053	0.058	0.066	0.070	0.083	0.085	0.094	-	-	-	-
28-34	-	-	0.034	0.039	0.041	0.049	0.057	0.061	0.066	0.076	0.078	0.087	0.098	0.109	0.122	0.135

50TJM	Air Flow rate (CFM) - 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	16130	16980
18-24	6	7	9	11	12	13	14	16	17	21	21	23	-	-	-	-
28-34	-	-	8	10	10	12	14	15	16	19	19	22	24	27	30	34

Soft Bag Filter

50TJM Size 18-24	(CFM)	4000	4500	5000	5500	6000	6500	7000	7500	8000
	Pressure Drop "Pa"	60	69	77	86	95	105	114	123	133

50TJM Size 28-34	(CFM)	5000	5500	6000	6500	7000	7500	8000	8500	9000	9500	10000
	Pressure Drop "Pa"	49	54	60	66	71	77	83	89	95	102	108

Motor Efficiency Table

Unit	50TJM-18	50TJM-24	50TJM-28	50TJM-34
HP (kW)	4 (3)	5.5 (4)	5.5 (4)	7.5 (5.5)
Standard Efficiency	0.83	0.85	0.85	0.86

Sound Rating Data

50TJM	Cooling Stages	Unit Sound (dB) @60hz (Based on cooling mode)								
		A-Weighted	63	125	250	500	1000	2000	4000	8000
18	2	91.2	97.2	88.5	89.4	88.4	86.6	83.4	78.1	72.6
24	2	91.9	98.5	88.7	90.9	89.1	87.9	82.4	78.8	72.5
28	2	91.5	90.8	93.5	89.1	88.7	87.1	82.8	79.8	71.8
34	2	92.0	90.1	93.7	90.7	88.7	87.9	82.9	80.1	71.8

dB – Decibel

NOTES:

1. 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.

2. A-Weighted sound ratings filter out very high and very low frequencies, to better approximate the response of an "average" human ear.

Electrical Data Table

50TJM 18 - 34				Compressor				OFM			IFM		Electric Heater		MCA	MOCP ◇
Unit Size	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	207	253	230 / 3 / 60	23.2	164	29.5	195	2	1	6.6	4.0	11.0	-	-	84.3	110
	207	253	230 / 3 / 60	23.2	164	29.5	195	2	1	6.6	4.0	11.0	28	69.0	100.0	110
	414	506	460 / 3 / 60	11.2	75	14.7	95	2	1	3.3	4.8	6.8	-	-	43.0	50
	414	506	460 / 3 / 60	11.2	75	14.7	95	2	1	3.3	4.8	6.8	28	34.5	51.6	60
	342	420	400 / 3 / 60	12.2	73	16.7	123	2	1	3.9	4.0	6.4	-	-	47.3	60
	342	420	400 / 3 / 60	12.2	73	16.7	123	2	1	3.9	4.0	6.4	21	30.3	47.3	60
24	207	253	230 / 3 / 60	29.5	195	29.5	195	2	1	6.6	5.5	14.3	-	-	93.9	110
	207	253	230 / 3 / 60	29.5	195	29.5	195	2	1	6.6	5.5	14.3	37	92.9	134.0	150
	414	506	460 / 3 / 60	14.7	95	14.7	95	2	1	3.3	6.2	8.3	-	-	48.0	60
	414	506	460 / 3 / 60	14.7	95	14.7	95	2	1	3.3	6.2	8.3	37	46.4	68.4	70
	342	420	400 / 3 / 60	16.7	123	16.7	123	2	1	3.9	5.5	8.3	-	-	53.7	70
	342	420	400 / 3 / 60	16.7	123	16.7	123	2	1	3.9	5.5	8.3	28	39.7	60.0	70
28	207	253	230 / 3 / 60	30.1	225	30.1	225	2	1	6.6	5.5	14.3	-	-	95.2	125
	207	253	230 / 3 / 60	30.1	225	30.1	225	2	1	6.6	5.5	14.3	37	92.9	134.0	150
	414	506	460 / 3 / 60	16.7	114	16.7	114	2	1	3.3	6.2	8.3	-	-	52.5	60
	414	506	460 / 3 / 60	16.7	114	16.7	114	2	1	3.3	6.2	8.3	37	46.4	68.4	70
	342	420	400 / 3 / 60	19.2	140	19.2	140	2	1	3.9	5.5	8.3	-	-	59.3	70
	342	420	400 / 3 / 60	19.2	140	19.2	140	2	1	3.9	5.5	8.3	28	39.7	60.0	70
34	207	253	230 / 3 / 60	48.1	245	48.1	245	2	1	6.6	7.5	19.0	-	-	140.4	175
	207	253	230 / 3 / 60	48.1	245	48.1	245	2	1	6.6	7.5	19.0	37	92.9	140.4	175
	414	506	460 / 3 / 60	18.6	125	18.6	125	2	1	3.3	9.0	11.5	-	-	60.0	70
	414	506	460 / 3 / 60	18.6	125	18.6	125	2	1	3.3	9.0	11.5	37	46.4	72.4	80
	342	420	400 / 3 / 60	23.7	145	23.7	145	2	1	3.9	7.5	11.0	-	-	72.1	90
	342	420	400 / 3 / 60	23.7	145	23.7	145	2	1	3.9	7.5	11.0	28	39.7	72.1	90

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

Application heater kW (Using multiplication factor table in Electric Resistance Heater Data Table)

NEC - National Electrical Code

OFM - Outdoor (Condenser) Fan Motor

RLA - Rated Load Amps

HACR - Heating, Air-Conditioning and Refrigeration

◇ Fuse or HACR Circuit Breaker

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 - 60Hz

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

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 Resistance Heater Data

Accessory Heater Part Number

UNIT 50TJM	230V			400V				
	Complete Kit P.N.	Casing P.N.	Heater Element P.N.	Complete Kit P.N.	Casing P.N.	Heater Element P. N.		
		(1 Per Kit)	(2 Per Kit)		(1 Per Kit)	(2 Per Kit)		
18	50TJ600201	50TJ600289	CPHEATER030A00	50TJ600287	50TJ600289	CPHEATER036A00		
24	50TJ601161		CPHEATER031A00	50TJ601162		CPHEATER037A00		
28	50TJ600729	50TJ600727		50TJ600730	50TJ600727			
34								

Electric Heater Kits

Kit Ordering No	Description	Stages	Size (KW)
50TJ600201	Duct heater assembly, 50TJM 18, @240 V	2	30
50TJ600287	Duct heater assembly, 50TJM 18, @480 V	2	30
50TJ601161	Duct heater assembly, 50TJM 24, @240 V	2	40
50TJ601162	Duct heater assembly, 50TJM 24, @480 V	2	40
50TJ600729	Duct heater assembly, 50TJM 28 - 34, @240 V	2	40
50TJ600730	Duct heater assembly, 50TJM 28 - 34, @480 V	2	40

NOTE: Heaters are rated at 240 and 480 V. Use the Multiplication Factors table below to determine heater capacity for your particular voltage.

Multiplication Factors

Heater Rating	Actual Heater Voltage							
	200	208	230	240	380	400	460	480
240	0.694	0.751	0.918	1	—	—	—	—
480	—	—	—	—	0.62	0.7	0.92	1

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

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

= 30.0 (0.7 multiplication factor)

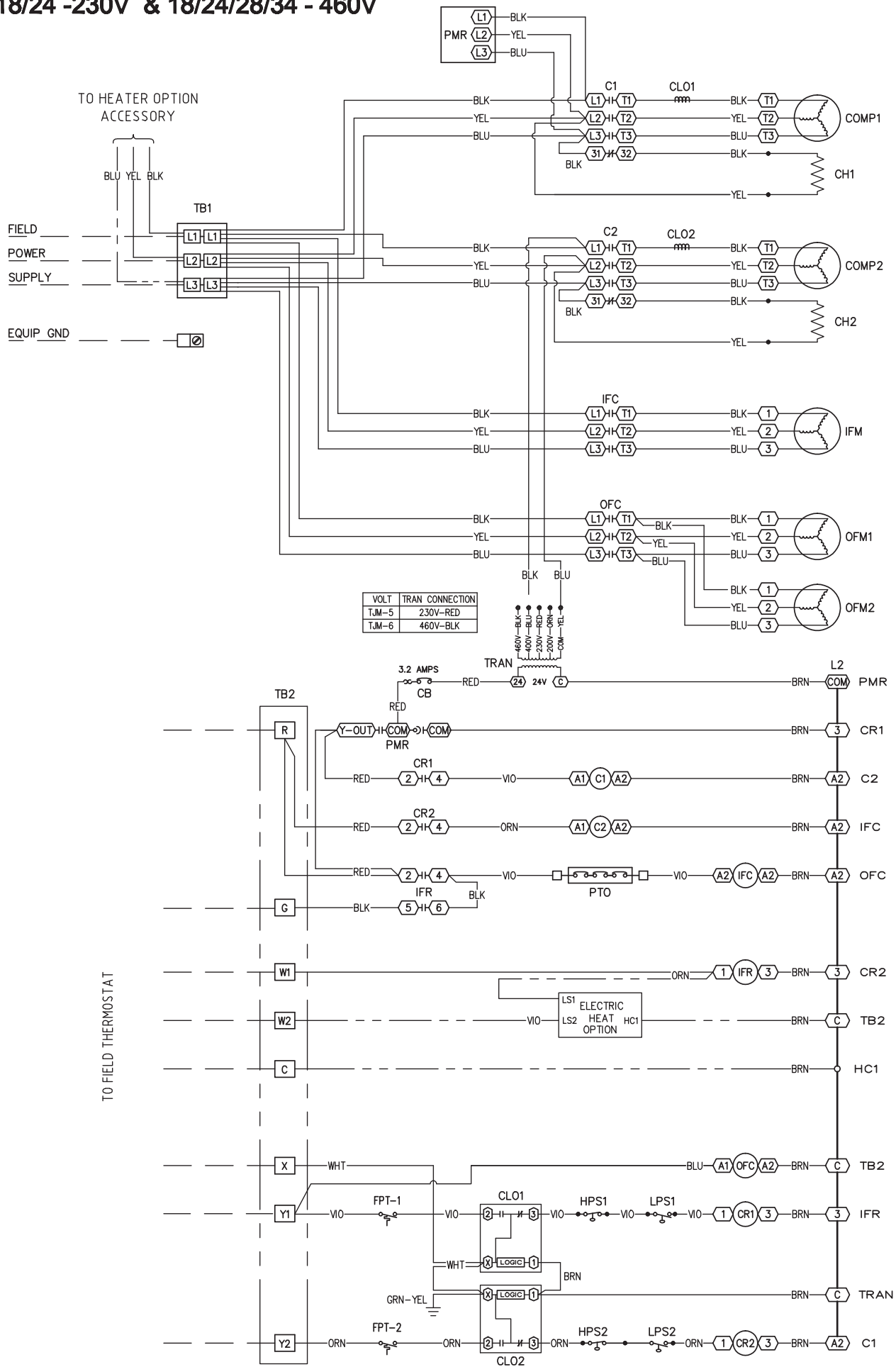
= 21kW

Heater capacity(kW) is based on heater voltage of 240v or 480v. If power distribution voltage to unit varies from heater voltage, heater kW will vary accordingly. To Determine heater capacity at actual unit voltage, multiply 480v capacity by multipliers found in table " Multiplication Factors" above.

MCA calculation for 50TJM 18 - 34 size units with electric heaters over 50 kW = (1.25 x IFM amps) + (1.00 x heater FLA).

Typical Wiring Schematic

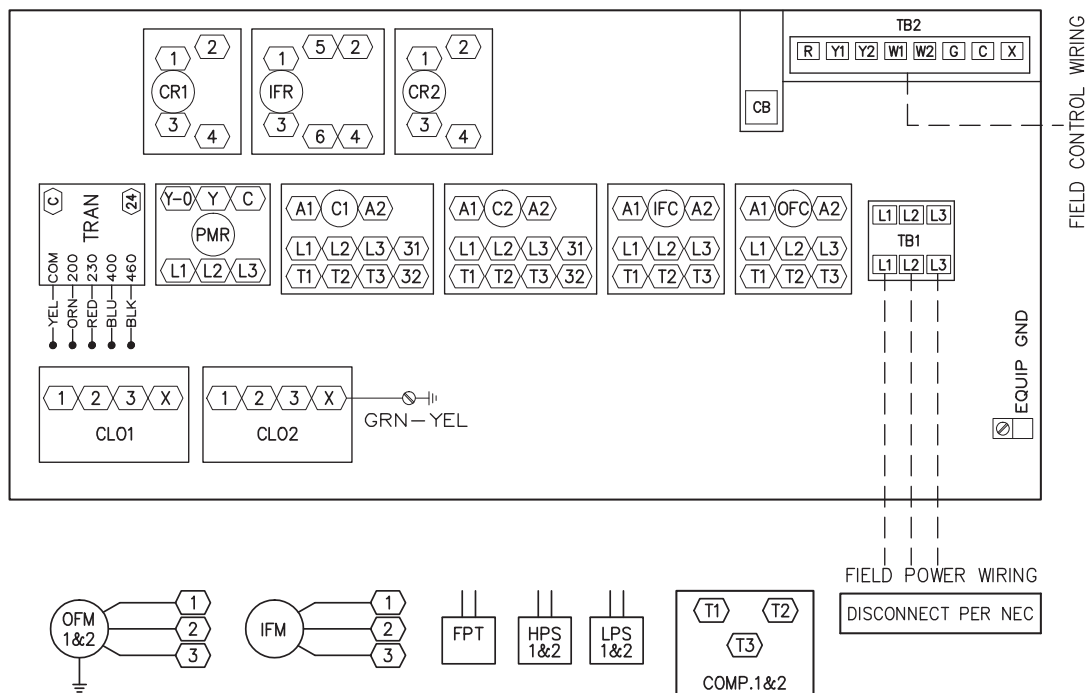
18/24 -230V & 18/24/28/34 - 460V



Typical Wiring Schematic (Continued)

18/24 -230V & 18/24/28/34 - 460V

CONTROL BOX COMPONENT ARRANGEMENT



LEGEND:

- ◻ TERMINAL (MARKED)
- TERMINAL (UNMARKED)
- ◻ TERMINAL BLOCK
- SPLICE
- _____ FACTORY WIRING
- FIELD WIRING
- -- -- OPTION / ACCESSORY WIRING
- _____ TO INDICATE COMMON POTENTIAL ONLY:
NOT TO REPRESENT WIRING

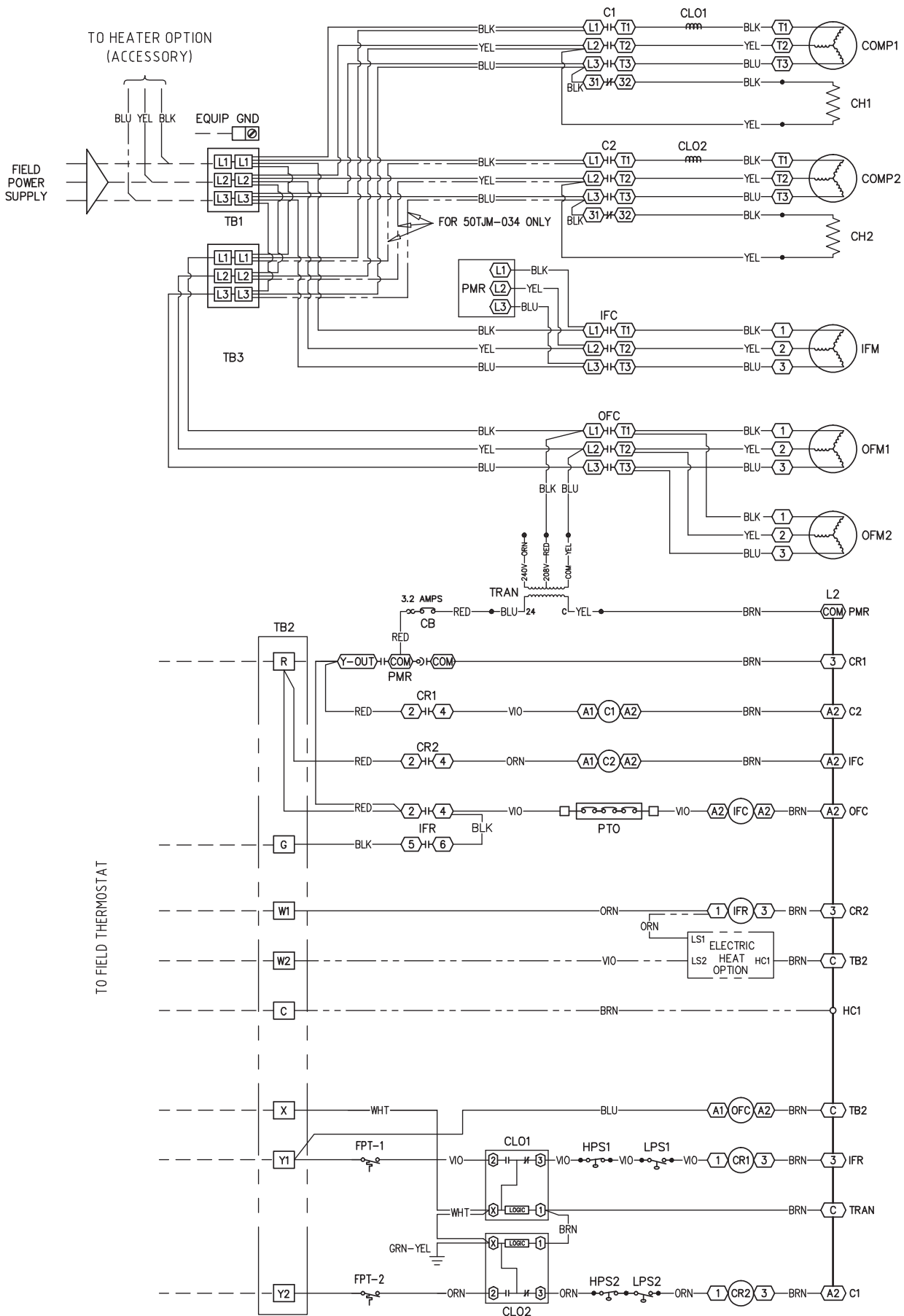
C	CONTACTOR	IFC	INDOOR FAN CONTACTOR
CB	CIRCUIT BREAKER	IFM	INDOOR FAN MOTOR
CH	CRANKCASE HEATER	IFR	INDOOR FAN RELAY
CLO	COMPRESSOR LOCKOUT	L	INDICATOR LAMP
COMP	COMPRESSOR MOTOR	LPS	LOW PRESSURE SWITCH
CR	COMPRESSOR RELAY	OFC	OUTDOOR FAN CONTACTOR
FPT	FREEZE PROTECTION THERMOSTAT	OFM	OUTDOOR FAN MOTOR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

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) THE CLO LOCKS OUT THE COMPRESSOR TO PREVENT SHORT CYCLING ON THE COMPRESSOR OVERLOAD AND SAFETY DEVICES. BEFORE REPLACING CLO, CHECK THESE DEVICES.

Typical Wiring Schematic (Continued)

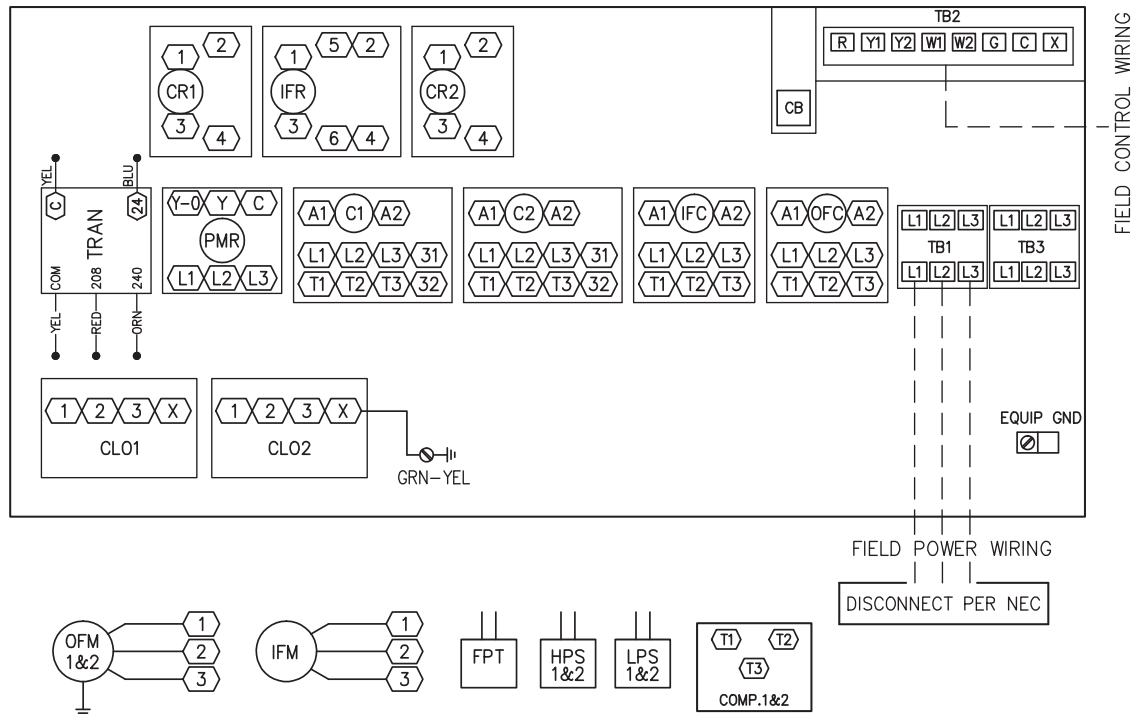
28/34 -230V



Typical Wiring Schematic (Continued)

28/34 -230V

CONTROL BOX COMPONENT ARRANGEMENT



LEGEND

- ◻ TERMINAL (MARKED)
- TERMINAL (UNMARKED)
- ◻ TERMINAL BLOCK
- SPLICE

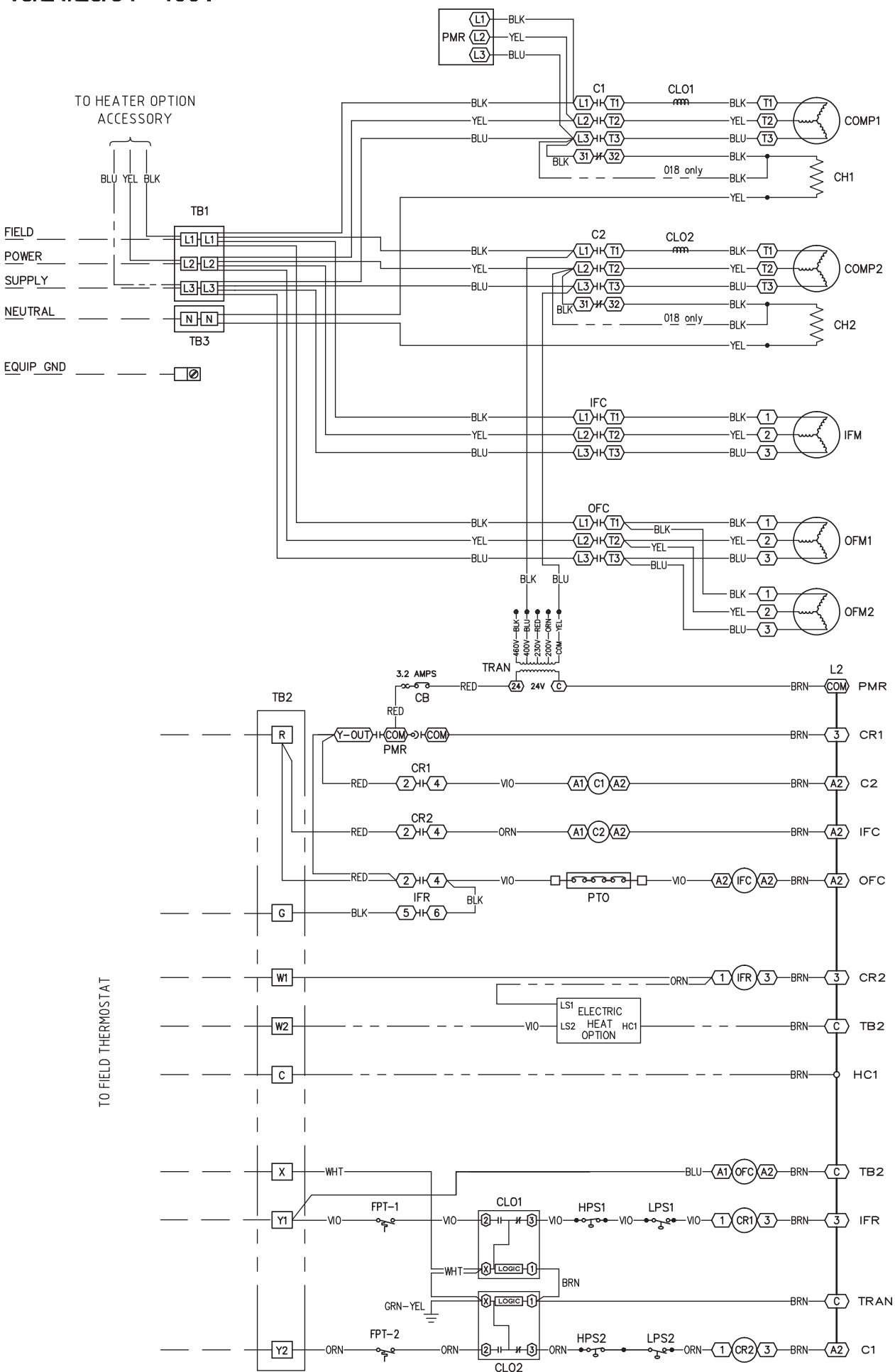
- FACTORY WIRING
- FIELD WIRING
- OPTION/ACCESSORY WIRING
- TO INDICATE COMMON POTENTIAL ONLY:
NOT TO REPRESENT WIRING

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

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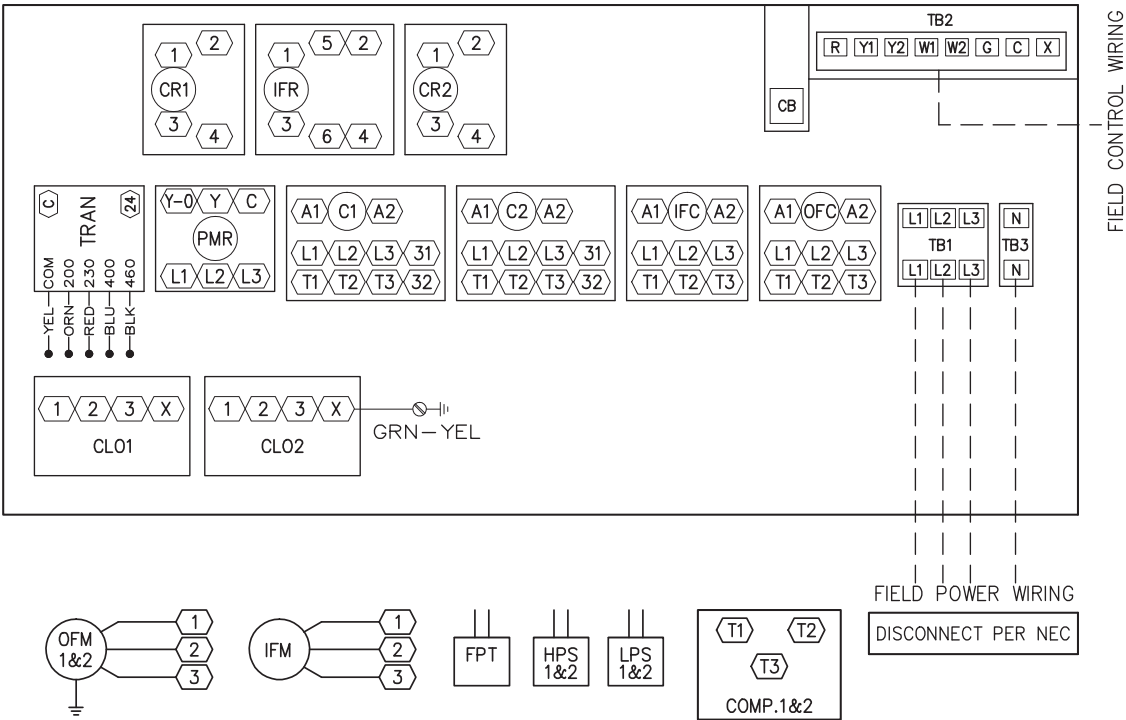
Typical Wiring Schedules



Typical Wiring Schematic (Continued)

18/24/28/34 - 400V

CONTROL BOX COMPONENT ARRANGEMENT



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

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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.

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 34

Packaged Rooftop Electric Cooling, Electric Heat, Constant Volume Application

HVAC Guide Specifications

Carrier Model Number: **50TJM SIDE – DISCHARGE PACKAGE UNITS**

Size Range: **15 to 30 Tons**

193,540 to 331,183 Btuh, Gross

20 to 30 kW (Electric Heat)

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 9001:2008
- 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-18/24 and 16 FPI for 50TJM-28/34.
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-18/24 and 16 FPI for 50TJM-28/34.
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. Unit shall incorporate a solid-state compressor lockout which provides reset capability at the space thermostat, should High/Low pressure safety devices trip and shut off compressor.
 - b. Low and High-pressure switch.
 - c. Phase monitors to protect against phase loss, phase reverse and phase unbalance.
 - d. Freeze protection thermostat.
 - e. Crankcase heater is standard is for each compressor.
 - f. Automatic reset, condenser motor thermal overload protector.
 - g. 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.

