

TOSOT

MULTI **ULTRA** Ductless heat-pump systems 24,000 BTU

Submittal Data: TM24H50 Heat Pump System

Job Name Location Date

Purchaser Engineer

Submitted To For Reference Approval Construction

Unit Designation Schedule No.

- GENERAL FEATURES**
- Up to 3 Indoor Units (3-Port)
 - G10 DC Inverter Technology R410A
 - Automatic Defrosting
 - Compressor/Chassis Heaters
 - Copper Tubing w/ Acrylic-Resin Coated Aluminum Fins
 - Intelligent Defrost
 - Auto Restart on Power Outages
 - Mult-point Diagnostics
 - Limited 5 yr Parts & Compressor Warranty-Residential Only



System Ratings

Rated Cooling Capacity	22,000 BTUH
Cooling Capacity (min-max)	7,500-33,000 BTUH
Rated Heating Capacity	26,000 BTUH
Heating Capacity (min-max)	7,500-31,000 BTUH
SEER/EER	23.0 / 12.5
HSPF/COP	10.5 / 3.7

Operating Range

Cooling - Low/High Ambient	(min-max)	0 - 118°F -18 - 48°C
Heating - Low Ambient (ULTRA)	(min-max)	-31 - 75°F -35 - 24°C

Power Supply

Normal Operational Voltage	208/230 V, 1 Phase, 60 Hz
Voltage Range	187 - 253 V
Main Power Wire Size	10-2 AWG
Interconnecting Cable Wire Size	14-4 AWG
MCA	23.0 A
MOCP/Breaker Size	40 A

Outdoor Unit Data

Compressor	Type	DC Inverter Driven Rotary
	RLA	17.0 A
	Starting Current	5.0 A
Fan Motor	Output Power	90 W
	FLA	0.4 A
	Air Flow (Max)	2531 CFM
Sound Pressure Level		
	Cooling	60 dB(A)
	Heating	60 dB(A)
Dimensions & Weights		
	Unit Dimensions Overall (WxDxH)*	39.5 x 16.8 x 31.1-in
	* including Valve Covers and Grilles	
	Weight (Net/Shipping)	174/185-lbs
	Min. Number of Indoor Units	2
	Max. Number of Indoor Units	3

Refrigerant Piping Data

Refrigerant Type	R410A
Refrigerant Charge	95.2 oz
Additional Charge Per Line Length	0.2-oz/ft
Connection Method-Flared	1/4x3/8-in
Factory Charge for Total Line Length	98-ft
Total Refrigerant Pipe Length	230-ft
Max Refrigerant Piping Length to any Indoor Unit	82-ft
Min Refrigerant Piping Length to any Indoor Unit	10-ft
Max Elevation between Indoor Units	26-ft
Max Lift from Outdoor to Indoor Unit	26-ft
Max Drop from Outdoor to Indoor Unit	26-ft



SYSTEM FEATURES	
Compressor Type	Inverter Rotary
Core Technology Three Cylinder Two Stage Compressor	G10
Ultra Low Frequency Torque Control	YES
Power Factor Correction	YES
Refrigerant Type	R410A
Electronic Expansion Valve (EEV)	3
Basepan With Electric Heater	YES
Compressor Preheat	YES
Compressor With Electric Heater (-40°F)	YES
-40°F Wiring UL Approved	YES
Multi "Independent" Port Design	YES
Condenser Fan	Axial
Condenser Motor Type	DC
Condenser Motor Drive	Direct
Condenser Coil	Aluminum Fin/Copper Tube
Outdoor Fin Coating (Blue)	Acrylic Resin
Intelligent Defrosting	YES
Low Voltage Startup	YES
Memory/Power Failure Recovery	YES
Self Diagnosis	YES
Ultra Heating (-31°F - 75°F)	YES
Ultra Cooling (0°F - 118°F)	YES
XK19 Wired Controller Interface	YES

REMOTE CONTROLLER FUNCTIONS¹	See individual Indoor Unit Controllers Functions
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¹ Not all Remote Controller functions are supported.

XK19 WIRED CONTROLLER FUNCTIONS ²	
On/Off	YES
Operating Mode	YES
Fan Speed	YES
Room Setpoint	YES
Model Numbers	YES
Timer Mode	YES
Sleep Mode	YES
Turbo Mode	YES
X-Fan Mode	YES
Privacy Lock	YES

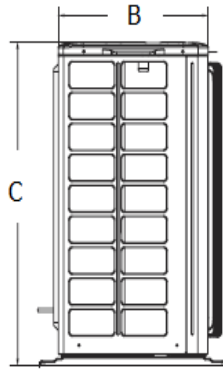
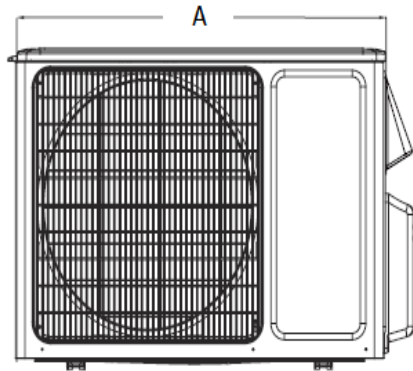
² Note: Some indoor models may not support specific system features or functions.

24,000 BTUH MODEL

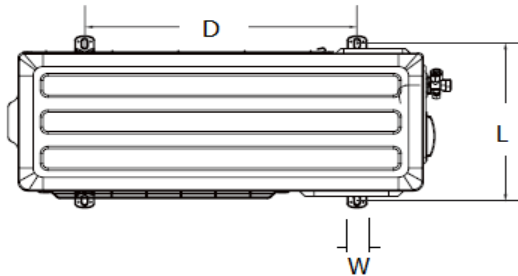
Model # TM24H50

24,000 BTUH 230V

Units: inch



A (in)	36.2
B (in)	14.6
C (in)	31.1



D (in)	24.0
L (in)	15.6
W (in)	2.4

Weight (Net/Shipping)	174/185 lbs
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Suction/Gas Line Port Size

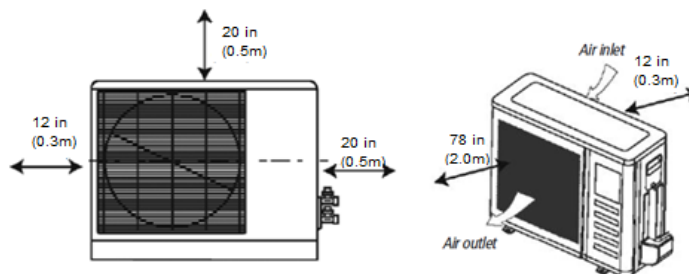
Port #1	3/8-in OD Flared
Port #2	3/8-in OD Flared
Port #3	3/8-in OD Flared

Liquid Line Port Size

Port #1	1/4-in OD Flared
Port #2	1/4-in OD Flared
Port #3	1/4-in OD Flared

MINIMUM SPACING REQUIREMENTS

Units: inch (mm)



Notes:

1. Recommended Interconnecting Cable Type Stranded Copper Conductors THHN 600V Unshielded Wire
2. Power wiring cable size must comply with applicable national and local codes.
3. Test conditions are based on AHRI 210/240.

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EXTENDED RATINGS

TM24H50

ULTRA COOL

COOLING PERFORMANCE (BtuH)*

Outdoor Ambient Temperature (DB) °F	Indoor Entering Air Temperatures					
	68°F DB		73°F DB		80°F DB	
	57°F WB		61°FWB		67°FWB	
	TC	SHC	TC	SHC	TC	SHC
0°F	17067	13385	18044	14137	19870	15590
5°F	17664	13852	18674	14631	20564	16135
14°F	18502	14511	19546	15324	22059	17302
23°F	20271	15901	21682	17008	24843	19485
32°F	21541	16894	22756	17847	25682	20137
41°F	22315	17502	23566	18482	26931	21116
50°F	22704	17806	24284	19045	27825	21817
59°F	24582	19279	26293	20621	28797	22579
68°F	27840	21835	29580	23196	31610	24792
77°F	27511	21580	29261	22951	31320	24567
86°F	26158	20513	27898	21884	30450	23882
95°F	24756	19417	26487	20768	29000	22746
104°F	23558	18477	25278	19828	28246	22158
113°F	22949	17997	24679	19348	27647	21678
122°F	22349	17527	24070	18878	27047	21208
129°F	21750	17057	23200	18193	26100	20474

ULTRA HEAT

HEATING PERFORMANCE (BtuH)*

Outdoor Ambient Temperature (DB)	Indoor Entering Air Temperatures								
	68°F DB			73°F DB			80°F DB		
	57°FWB			61°FWB			67°FWB		
	TC	Power Input (KW)	COP	TC	Power Input (KW)	COP	TC	Power Input (KW)	COP
-31°F	21500	5.45	1.16	21000	5.50	1.12	20500	5.70	1.05
-22°F	24954	5.50	1.33	24292	5.57	1.28	23801	5.74	1.21
-13°F	27324	5.58	1.44	26614	5.64	1.38	26089	5.82	1.31
-5°F	31846	5.42	1.72	31034	5.48	1.66	30433	5.66	1.58
0°F	31376	5.51	1.67	30550	5.58	1.61	29933	5.75	1.52
5°F	31523	5.24	1.76	30703	5.30	1.70	30097	5.46	1.61
10°F	31872	5.29	1.77	31044	5.35	1.70	30423	5.52	1.62
17°F	31268	5.25	1.75	30448	5.31	1.68	29825	5.48	1.60
19°F	30852	4.91	1.84	30427	4.96	1.80	29802	5.12	1.71
24°F	29903	5.08	1.72	29546	5.14	1.68	29011	5.30	1.60
32°F	29135	4.86	1.76	28814	4.92	1.72	28344	5.07	1.64
41°F	30281	4.50	1.97	29984	4.55	1.93	29535	4.69	1.84
43°F	31110	3.52	2.59	30813	3.56	2.54	30373	3.67	2.42
47°F	34000	3.60	2.77	33065	3.64	2.66	32366	3.76	2.52
53°F	34340	3.27	3.08	33394	3.31	2.96	32695	3.41	2.81
59°F	31614	3.30	2.81	30734	3.34	2.70	30085	3.45	2.56
64°F	32283	3.03	3.12	31394	3.06	3.00	30734	3.16	2.85
70°F	32895	3.08	3.13	31987	3.11	3.01	31308	3.21	2.86
75°F	33354	2.81	3.48	32436	2.84	3.34	31757	2.93	3.17
78°F	33660	2.84	3.48	32732	2.87	3.34	32044	2.96	3.17

* Maximum system capacity

TC- Total Capacity (BtuH)

COP- Coefficient of Performance

ULTRA HEAT

ULTRA COOL

COOLING CAPACITY (BTUH)

Indoor Units Combinations	Rated System Capacity (BtuH)	Indoor Unit A (BtuH)	Indoor Unit B (BtuH)	Indoor Unit C (BtuH)	Indoor Unit D (BtuH)
9K + 9K	18,000	9,000	9,000	NA	NA
9K + 12K	21,000	9,000	12,000	NA	NA
9K + 18K	25,000	8,400	16,600	NA	NA
12K + 12K	24,000	12,000	12,000	NA	NA
12K + 18K	25,000	10,000	15,000	NA	NA
18K + 18K	25,500	12,750	12,750	NA	NA
9K + 9K + 9K	26,001	8,667	8,667	8,667	NA
9K + 9K + 12K	26,000	8,000	8,000	10,000	NA
9K + 9K + 18K	26,000	7,000	7,000	12,000	NA
9K + 12K + 12K	26,000	6,000	10,000	10,000	NA
12K + 12K + 12K	26,001	8,667	8,667	8,667	NA

HEATING CAPACITY (BTUH)

Indoor Units Combinations	Rated System Capacity (BtuH)	Indoor Unit A (BtuH)	Indoor Unit B (BtuH)	Indoor Unit C (BtuH)	Indoor Unit D (BtuH)
9K + 9K	19,000	9,500	9,500	NA	NA
9K + 12K	22,500	9,500	13,000	NA	NA
9K + 18K	27,000	9,000	18,000	NA	NA
12K + 12K	26,000	13,000	13,000	NA	NA
12K + 18K	28,000	11,200	16,800	NA	NA
18K + 18K	28,500	14,250	14,250	NA	NA
9K + 9K + 9K	29,001	9,667	9,667	9,667	NA
9K + 9K + 12K	29,000	9,000	9,000	11,000	NA
9K + 9K + 18K	29,000	6,000	6,000	17,000	NA
9K + 12K + 12K	29,000	6,000	11,500	11,500	NA
12K + 12K + 12K	29,001	9,667	9,667	9,667	NA

Capacity data is based on the following conditions :

Cooling Nominal Test Conditions

Indoor: 80°F DB/67°F WB
 Outdoor: 95°F DB/75°F WB

Heating Nominal Test Conditions

Indoor: 70°F DB/60°F WB
 Outdoor: 47°F DB/43°F W

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