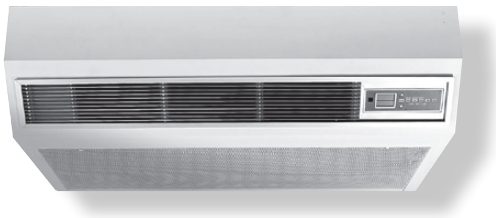
EMI AmericaSeries
Comfort Where It Counts.

UNCA/UNHA
Universal Air Handler

P/N# 240006887, Rev. 1.0 [07/07]

SPECIFICATIONS AND PERFORMANCE



STRAIGHT COOL/HEAT PUMP*

Nominal Circuit Capacities: UNHA 9,000, 12,000, 18,000, 24,000 Btuh and UNCA (only) 30,000 & 36,000 Btuh

** Heat Pump only available for 9,000-24,000 Btuh units.*

PRODUCT DESCRIPTION

The AmericaSeries UNCA/UNHA offers a contemporary design, ductless type evaporator combining attractive appearance in any decor and high efficiency conditioning for small to medium size commercial or residential spaces. The UNCA/UNHA is equipped with unit mounted infrared compatible controls which also supports 24V remote wall thermostat operation. Optional hand held remote is available.

Heat Pump models provide up to a nominal 24,000 Btuh of cooling and heating. Electric heat options are available for up to 5 kW of supplemental heat.

This American-made air handler offers ease of installation, operation, and service. It can be matched with EMI's S1C/S1H 09-24 and S1C 30-36 Btuh Single-Zone Condensing Units, the S2C side discharge Multi-Zone Condensing Unit, the T2C, T3C, and T4C top discharge Multi-Zone Condensing Units, the S2H side discharge Multi-Zone Heat Pump Unit, or the T2H, T3H, and T4H top discharge Multi-Zone Heat Pump Units.

STANDARD FEATURES

▲▼ ***Unit Mounted Control:***

- ***Large LCD Backlit Display***
- ***Single unit mounted control package***, configurable to either unit mount or remote wall thermostat operation, reducing model number or SKU's required.
- ***Universal control*** can be used in cooling only, cooling with electric heat, heat pump, or heat pump with second stage electric heat applications.
- ***Operational range*** set point temperature adjustable between 55°F and 90°F in one-degree increments.
- ***Infrared compatible control*** allows use of optional IR hand held controller

NOTE: *Unit mounted controls are fully functional without the handheld remote.*

- ***Operation modes*** include Heat, Cool, Dry, Fan and Auto Change-over.
- ***Fan Operation –*** Auto/On, High or Low speed fan.
- ***Fan Purge –*** Fan remains on for 60 seconds after Heat/Cool call is dropped for improved efficiency (Auto mode only)
- ***Room air sampling:*** Selectable time intervals ensures the fan will cycle on periodically, in Auto Fan Mode.

Benefit: Helps to eliminate room temperature stratification.

- ***Selectable Fahrenheit (°F) or Centigrade (°C)*** temperature scale.
- ***Dry mode –*** Operates cooling and electric heat simultaneously to remove humidity. Optional electric heat must be selected.

UNCA/UNHA FEATURES AND OPTIONAL EQUIPMENT

NOTE: *Due to ongoing development programs, design and specifications may change without notice.*

STANDARD FEATURES Continued

- ***Anti-Short Cycle Compressor Protection***.
- ***Minimum on time for heating and cooling***.

Benefit: Helps eliminate room temperature droop and system short cycling.

- ***Freeze Protection –*** Prevents evaporator freeze up.
- ***Test operation –*** Allows ease of testing after installation (all timers are eliminated).
- ***Non-volatile back-up memory***

Benefit: Control settings are maintained for an indefinite period during a power outage. When power is restored the equipment will resume operation after a three-minute compressor time delay.

- ***7-day programmable*** with copy feature.
- ***Filter change indicator:*** A timer feature that indicates the filter should be changed according to the selected time.
- ***Modular design –*** reduces parts required for control package. Deco panel, relay board, ribbon cables and microprocessor all combined into one package.
- ***Integral condensate pump safety-switch connection*** where-by the microprocessor monitors the condensate pump safety switch and displays an error code when a fault occurs. *(Applys only with optional* condensate *pump)*
- ***CEC*** (California Energy Commission) compliant
- Condensate drain pan over flow protection

Cabinet Features:

- G90-U galvanized steel construction.
- Easily accessible, washable, reusable, nylon mesh filter.
- Horizontal discharge louver, constructed of powder coated aluminum.
- Easy access to pipe chase area from cabinet bottom.

Benefit: Allows piping connections and condensate pump installation with the unit mounted on the wall.

- Easily removable cabinet access to control area for installation and service.
- Condensate drain pan constructed of galvanized steel (G90U), with anti-corrosion coating.
- Modular snap-in, 7-day programmable control with large backlit LCD display, a “Change filter” display feature and selectable Fahrenheit (Fº), or Centigrade (Cº) temperature scale.
- Operational range between 55ºF to 90ºF, adjustable in one-degree increments.

OPTIONAL EQUIPMENT

- Condensate pump (field installed)
- 24V remote wall thermostat
- Electric heat with automatic reset high temperature cutout and redundant high temperature fuse link (when heat option is selected)
- Hand held infrared controller.

INSTALLER SUPPLIED ITEMS

- Low voltage wiring
- Power wiring
- Mounting screws and fasteners
- Condensate piping
- Refrigerant piping (if not supplied)
- Refrigerant (for interconnect charge)

UNCA/UNHA DIMENSIONS AND SPECIFICATIONS

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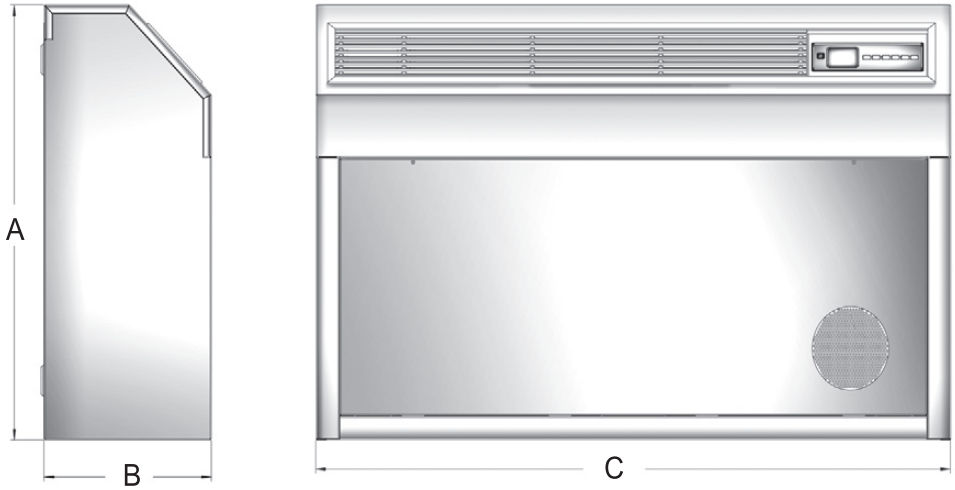


UNCA/UNHA PHYSICAL DIMENSIONS			
Model	**"A" Height Inches (mm)**	**"B" Depth Inches (mm)**	**"C" Length Inches (mm)**
UNHA09/12	26" (660)	11" (279)	41 ½" (1054)
UNHA24	26" (660)	11" (279)	51 ½" (1308)
UNCA36	27 ½" (699)	12 ⅜" (314)	62" (1575)

UNCA/UNHA OBSERVED SOUND VALUES *(230V High Speed Fan)*	
Model	**dBA**
UNHA09/12	51
UNHA24	56
UNCA36	50

UNCA/UNHA SHIPPING WEIGHT	
Model	**Lbs. (kg)**
UNHA09	92 (42)
UNHA12	95 (43)
UNHA24	116 (53)
UNCA36	153 (69)

UNCA/UNHA INTERCONNECTING-LINE SIZE			
System Capacity Btuh (kW)	**Liquid O.D.**	**Suction O.D.**	**Condensate I.D.**
9,000 (2.6)	1/4"	1/2"	1/2"
12,000 (3.5)	1/4"	1/2"	1/2"
18,000 (5.3)	3/8"	5/8"*	1/2"
24,000 (7.0)	3/8"	3/4"	1/2"
30,000 (8.8)	3/8"	3/4"	1/2"
36,000 (9.5)	3/8"	3/4"	1/2"

** UNHA24 Suction Connection size is 3/4" O.D. and must bush down at the UNHA Unit.*

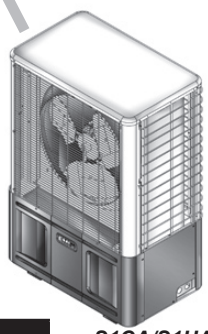
UNCA/UNHA ELECTRICAL SPECIFICATIONS									
MODEL #	**VOLTS/HZ/PH**	**FAN RLA**	**HP**	**HEATER K.W.**	**AMPS**	**TOTAL AMPS**	**MIN VOLT**	**M.C.A.**	**HACR BRKR**
SMALL CABINET 9,000/12,000									
UNHA 09/12	115/60/1	0.64	0.02	–	–	0.64	104	0.8	15
	115/60/1	0.64	0.02	0.75	6.50	7.14	104	8.9	15
	208/230/60/1	0.34	0.02	–	–	0.34	197	0.4	15
	208/230/60/1	0.34	0.02	3.00	13.04	13.38	197	16.7	20
MEDIUM CABINET 18,000/24,000									
UNHA24	115/60/1	1.20	0.08	–	–	1.20	104	1.5	15
	115/60/1	1.20	0.08	0.75	6.52	7.72	104	9.7	15
	115/60/1	1.20	0.08	1.25	10.90	12.10	104	15.1	20
	208/230/60/1	0.56	0.07	–	–	0.56	197	0.7	15
	208/230/60/1	0.56	0.07	3.00	13.04	13.60	197	17.0	20
	208/230/60/1	0.56	0.07	5.00	21.74	22.30	197	27.9	30
LARGE CABINET 30,000/36,000									
UNCA 36	208/230/60/1	0.80	0.10	–	–	0.80	197	1.0	15
	208/230/60/1	0.80	0.10	5.00	21.74	22.54	197	28.2	30

UNCA/UNHA SYSTEM OPTIONS

NOTE: *Due to ongoing development programs, design and specifications may change without notice.*

COOLING SYSTEMS WITH UNIVERSAL UNITS						
Air Handler	**Condenser**	**Btuh (kW)**	**SEER**	**SHR**	**EER**	**Ref.**
UNHA09	S1CA9	9,000 (2.6)	13.0	.77	11.6	R22
UNHA12	S1CA2	11,800 (3.5)	13.0	.76	12.3	R22
UNHA24	S1CA8	18,000 (5.3)	13.0	.76	12.4	R22
UNHA24	S1CA4	24,000 (7.0)	13.0	.69	12.0	R22
UNCA36	S1CA3	30,000 (8.8)	13.0	.71	11.7	R22
UNCA36	S1CA6	32,500 (9.5)	13.0	.67	12.0	R22

UNCA/UNHA



S1CA/S1HA
Side Discharge

HEAT PUMP SYSTEM OPTIONS WITH UNIVERSAL UNITS									
Air Handler	**Condenser**	**Cooling Btuh (kW)**	**Heating Btuh (kW)**	**SEER**	**HSPF**	**SHR**	**EER**	**COP**	**Ref.**
UNHA09	S1HA9	8,800 (2.6)	7,800 (2.3)	13.0	7.7	.73	11.6	3.4	R22
UNHA12	S1HA2	11,800 (3.5)	10,200 (3.0)	13.0	7.7	.73	11.7	3.5	R22
UNHA24	S1HA8	18,000 (5.3)	16,400 (4.8)	13.0	7.7	.71	11.7	3.5	R22
UNHA24	S1HA4	23,000 (6.7)	20,600 (6.0)	13.0	7.7	.69	12.0	3.5	R22

UNHA

S2CA
Side Discharge

COOLING SYSTEMS WITH S2CA SIDE DISCHARGE						
Air Handler	**Condenser**	**Btuh (kW)**	**SEER**	**SHR**	**EER**	**Ref.**
UNHA09 + UNHA09	S2CA99	18,600 (5.4)	13.0	.75	12.2	R22
UNHA12 + UNHA12	S2CA22	22,600 (6.6)	13.0	.73	12.0	R22
UNHA09 + UNHA12	S2CA92	20,600 (6.0)	13.0	.74	12.0	R22

UNCA/UNHA SYSTEM OPTIONS

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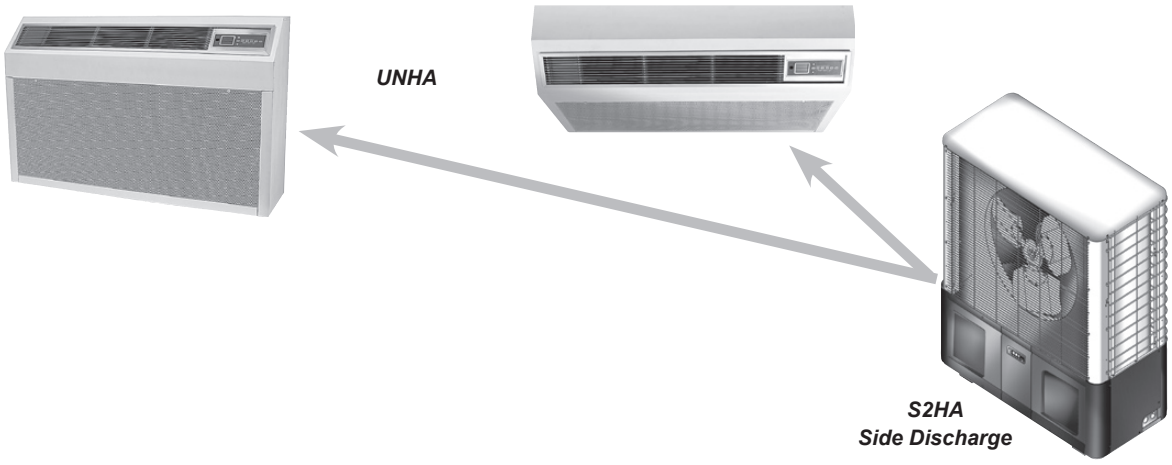

UNHA WITH S2HA SIDE DISCHARGE								
MODEL		COOLING					HEATING	
Air Handler	Condenser	Btuh (kW)	SEER	SHR	EER	Ref.	Btuh (kW)	C.O.P.
UNHA09 UNHA09	S2HA99	18,600 (5.4)	13.0	.75	12.2	R22	16,000 (4.7)	3.3
UNHA12 UNHA12	S2HA22	22,600 (6.6)	13.0	.73	12.0	R22	20,000 (5.9)	3.3
UNHA09 UNHA12	S2HA92	20,600 (6.0)	13.0	.74	12.0	R22	18,000 (5.3)	3.3

UNCA/UNHA SYSTEM OPTIONS

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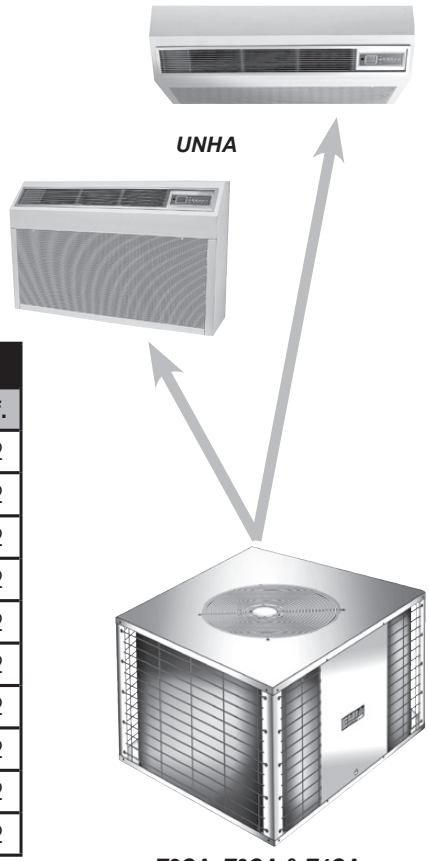
SYSTEM OPTIONS WITH T2CA TOP DISCHARGE						
Air Handler	**Condenser**	**Btuh (kW)**	**SEER**	**SHR**	**EER**	**Ref.**
UNHA24 + UNHA24	T2CA88	36,000 (10.5)	13.0	.72	11.7	R22
UNHA24 + UNHA24	T2CA44	45,000 (13.2)	13.0	.65	11.4	R22
UNHA09 + UNHA24	T2CA98	27,000 (7.9)	13.0	.74	11.4	R22
UNHA24 + UNHA24	T2CA84	41,000 (12.0)	13.0	.68	11.4	R22
UNHA12 + UNHA24	T2CA24	34,000 (10.0)	13.0	.67	11.4	R22



UNHA

T2CA, T3CA & T4CA
Top Discharge

SYSTEM OPTIONS WITH T3C TOP DISCHARGE						
Air Handler	**Condenser**	**Btuh (kW)**	**SEER**	**SHR**	**EER**	**Ref.**
UNHA09 + UNHA09 + UNHA24	T3CA994	41,000 (12.0)	13.0	.71	11.5	R22
UNHA09 + UNHA09 + UNHA09	T3CA999	27,000 (7.9)	13.0	.80	11.3	R22
UNHA12 + UNHA12 +UNHA12	T3CA222	34,000 (10.0)	13.0	.72	11.3	R22
UNHA09 +UNHA12 + UNHA24	T3CA928	39,000 (11.4)	13.0	.73	11.5	R22
UNHA09 + UNHA12 + UNHA24	T3CA924	43,000 (12.6)	13.0	.69	11.4	R22
UNHA12 + UNHA12 + UNHA24	T3CA228	41,000 (12.0)	13.0	.76	11.4	R22
UNHA09 + UNHA12 + UNHA12	T3CA922	32,000 (9.4)	13.0	.74	11.4	R22
UNHA09 + UNHA09 + UNHA12	T3CA992	30,000 (8.8)	13.0	.76	11.5	R22
UNHA09 + UNHA09 + UNHA24	T3CA998	36,000 (10.5)	13.0	.76	11.4	R22
UNHA12 + UNHA12 + UNHA24	T3CA224	46,000 (13.5)	13.0	.68	11.5	R22

SYSTEM OPTIONS WITH T4C TOP DISCHARGE						
Air Handler	**Condenser**	**Btuh (kW)**	**SEER**	**SHR**	**EER**	**Ref.**
UNHA09 + UNHA09 + UNHA09 +UNHA09	T4CA9999	36,000 (10.5)	13.0	.80	11.4	R22
UNHA12 +UNHA12 +UNHA12 +UNHA12	T4CA2222	45,000 (13.2)	13.0	.72	11.3	R22
UNHA09 + UNHA12 +UNHA12 +UNHA12	T4CA9222	42,000 (12.3)	13.0	.72	11.4	R22
UNHA09 + UNHA09 + UNHA09 + UNHA12	T4CA9992	38,000 (11.1)	13.0	.77	11.4	R22
UNHA09 + UNHA09 + UNHA12 + UNHA12	T4CA9922	41,000 (12.0)	13.0	.76	11.5	R22

UNCA/UNHA SYSTEM OPTIONS

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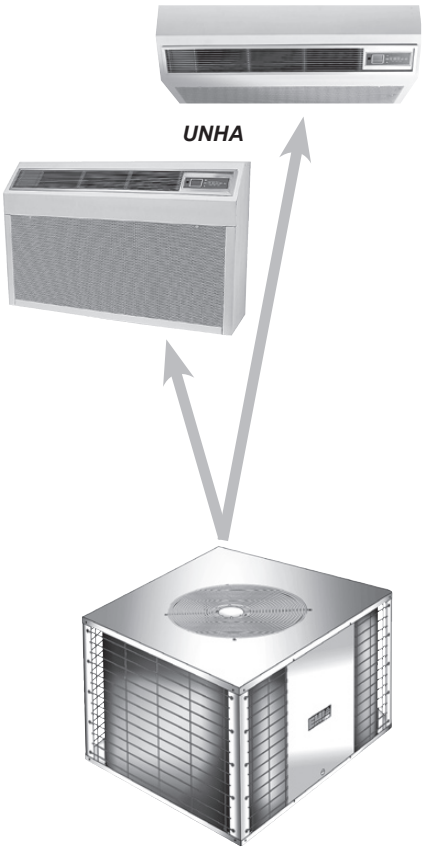
UNHA / T2HA, T3HA, OR T4HA SYSTEM PERFORMANCE DATA							
Model		Cooling				Heating	
Outdoor	Indoor Air Handler	Btuh (kW)	SEER	SHR	EER	Btuh (kW)	COP
T2HA8800	(2) UNHA24	36000 (10.5)	13	0.72	12.4	29000 (8.5)	3.3
T2HA8400	(2) UNHA24	42000 (12.3)	13	0.68	12.2	34800 (10.2)	3.2
T2HA4400	(2) UNHA24	48000 (14.0)	13	0.65	12.1	40500 (11.9)	3.2
T2HA2400	(1) UNHA12 (1) UNHA24	35000 (10.2)	13	0.67	12.0	30200 (8.8)	3.2
T2HA9800	(1) UNHA09 (1) UNHA24	27200 (8.0)	13	0.74	12.3	22400 (6.6)	3.3
T3HA9990	(3) UNHA09	27800 (8.1)	13	0.80	12.2	24000 (7.0)	3.3
T3HA9920	(2) UNHA09 (1) UNHA12	29800 (8.7)	13	0.76	12.1	26000 (7.6)	3.3
T3HA9980	(2) UNHA09 (1) UNHA24	36400 (10.7)	13	0.76	12.3	30400 (8.9)	3.3
T3HA9940	(2) UNHA09 (1) UNHA24	42500 (12.4)	13	0.71	12.1	36200 (10.6)	3.2
T3HA9220	(1) UNHA09 (2) UNHA12	31800 (9.3)	13	0.74	12.0	28000 (8.2)	3.3
T3HA9280	(1) UNHA09 (1) UNHA12 (1) UNHA24	38500 (11.3)	13	0.73	12.2	32400 (9.5)	3.3
T3HA9240	(1) UNHA09 (1) UNHA12 (1) UNHA24	44500 (13.0)	13	0.69	12.0	38000 (11.1)	3.2
T3HA2280	(2) UNHA12 (1) UNHA24	40500 (11.9)	13	0.76	12.1	34500 (10.1)	3.3
T3HA2240	(2) UNHA12 (1) UNHA24	46500 (13.6)	13	0.68	12.0	40000 (11.7)	3.2
T3HA2220	(3) UNHA12	34000 (10.0)	13	0.72	12.0	30000 (8.8)	3.3
T4HA9999	(4) UNHA09	37200 (11.0)	13	0.8	12.2	32000 (9.4)	3.3
T4HA9992	(3) UNHA09 (1) UNHA12	39000 (11.4)	13	0.77	12.1	34000 (10.0)	3.3
T4HA9922	(2) UNHA09 (2) UNHA12	41000 (12.0)	13	0.76	12.1	36000 (10.6)	3.3
T4HA9222	(1) UNHA09 (3) UNHA12	43000 (12.6)	13	0.72	11.9	38000 (11.1)	3.3
T4HA2222	(4) UNHA12	45000 (13.2)	13	0.72	12.0	40000 (11.7)	3.3

Circuit Designators: 9 = 9000 Btuh 2 = 12000 Btuh 8 = 18000 Btuh 4 = 24000 Btuh *(ex. - 8400 consists of one 18000 Btuh compressor and one 24000 Btuh compressor)*



UNHA

T2HA, T3HA & T4HA
Top Discharge