



## iM Air Conditioners



### MLA16AZ

EcoNet® Enabled

Cooling Efficiencies up to: 17 SEER2/10.5 EER2

Nominal Sizes: 2 to 5 Tons [7.0 to 17.6 kW]

Cooling Capacities: 23.5 kBTU to 56 kBTU [6.9 to 16.4 kW]

Manufactured for  
**Mainline®**  
HVACmainline.com



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## Features and Benefits

- **EcoNet® Enabled:** Automatic system configuration and optimization
- **Diagnostics & Bluetooth®<sup>1</sup> Connectivity:** With the BluArch™ Contractor & EcoNet® Apps, built-in technology makes advanced set-up, monitoring, troubleshooting and repairing the product easier than ever before
- **Variable Speed Twin Rotary Compressor & Inverter Drive:** Features Inverter operation from 40 to 100% capacity with the EcoNet® Smart Thermostat
- **3-Speed Operation:** When installed with a 24V two-stage thermostat
- **Provides Precise Temperature Control:** Advanced humidity control and greater efficiency
- **Brushless DC Condenser Motors (BLDC):** Enhances reliability and allows for easier serviceability
- **Swept Wing Fan Technology:** Features quieter operation and improved unit acoustics
- **7mm Condenser Copper Coil:** Requires less refrigerant allowing for a smaller and lighter footprint while enhancing reliability
- **Expanded Valve Space:** 3 in. – 4 in. – 5 in. service valve space—provides a minimum working area of 27-square inches for easier access
- **Triple Service Access:** 15 in. wide, industry leading corner service access, two fastener, removeable corner and individual louver panels—makes repairs easier and faster

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# Air Conditioners

<u>ML</u>	<u>A</u>	<u>16</u>	<u>A</u>	<u>Z</u>	<u>24</u>	<u>A</u>	<u>J</u>	<u>3</u>	<u>C</u>	<u>A</u>	<u>LHP</u>
Brand	Product Category	SEER2	Region	Refrigerant	Capacity BTU/HR	Major Series	Voltage	Type	Controls	Minor Series	Option Code
ML - Mainline	A - Air Conditioners	16 - 16 SEER2	A - All	Z - R-410A	24 - 24,000 [7.03 kW] 36 - 36,000 [10.55 kW] 48 - 48,000 [14.07 kW] 60 - 60,000 [17.58 kW]	A - 1st Design	J - 1ph, 208-230/60	3 - 3+ Stage	C - Communicating	A - 1st Design	LHP - W/HLPC

AVAILABLE MODELS	DESCRIPTION
MLA16AZ24AJ3CA	2 ton EcoNet® Enabled 3+ Speed iM Air Conditioner – 208/230/1/60
MLA16AZ36AJ3CA	3 ton EcoNet® Enabled 3+ Speed iM Air Conditioner – 208/230/1/60
MLA16AZ48AJ3CA	4 ton EcoNet® Enabled 3+ Speed iM Air Conditioner – 208/230/1/60
MLA16AZ60AJ3CA	5 ton EcoNet® Enabled 3+ Speed iM Air Conditioner – 208/230/1/60

STANDARD EQUIPMENT
R-410A Refrigerant
Scroll Compressor
Field Installed Filter Drier
Front Seating Service Valves
Internal Pressure Relief Valve
Internal Thermal Overload
Long Line capability
Low Ambient capability with Kit
3-4-5 Expanded Valve Space
Composite Basepan
2 Screw Control Box Access
15" Access to Internal Components
Quick release louver panel design
No fasteners to remove along bottom
Optimized Venturi Airflow
Single row condenser coil
Powder coated paint
Rust resistant screws
QR code
External gauge ports
Service trays

\*5T Model SEER2: 15.5 SEER2

<b>General Data</b>				
<b>MODEL NO.</b>	<b>MLA16AZ24AJ3</b>	<b>MLA16AZ36AJ3</b>	<b>MLA16AZ48AJ3</b>	<b>MLA16AZ60AJ3</b>
<b>Nominal Tonnage</b>	2.0	3.0	4.0	5.0
<b>Valve Connections</b>				
Liquid Line O.D. – in.	3/8	3/8	3/8	3/8
Suction Line O.D. – in.	3/4	3/4	7/8	7/8
<b>Refrigerant (R410A) furnished oz.<sup>1</sup></b>	91	119	130	154
<b>Compressor Type</b>	Twin Rotary			
<b>Outdoor Coil</b>				
Net face area – Outer Coil	11.79	14.4	16.42	17.88
Net face area – Inner Coil	—	—	—	—
Tube diameter – in.	0.276	0.276	0.276	0.276
Number of rows	1	1	1	1
Fins per inch	24	24	24	24
<b>Outdoor Fan</b>				
Diameter – in.	20	24	24	26
Number of blades	3	3	3	3
Motor hp	1/5	1/5	1/3	1/2
CFM	2883	4138	4508	5348
RPM	1075	1000	1075	1075
watts	168	267	297	379
<b>Shipping weight – lbs.</b>	153	157	195	211
<b>Operating weight – lbs.</b>	146	150	188	204
<b>Electrical Data</b>				
<b>Line Voltage Data (Volts-Phase-Hz)</b>	<b>208/230-1-60</b>	<b>208/230-1-60</b>	<b>208/230-1-60</b>	<b>208/230-1-60</b>
<b>Maximum overcurrent protection (amps)<sup>2</sup></b>	20	30	40	50
<b>Minimum circuit ampacity<sup>3</sup></b>	12	20	25	32
<b>Compressor</b>				
Rated load amps	10	15	20	25
Locked rotor amps	65	70	96	119

<sup>1</sup>Refrigerant charge sufficient for 15 ft. length of refrigerant lines. For longer line set requirements see the installation instructions for information about set length and additional refrigerant charge required.

<sup>2</sup>HACR type circuit breaker or fuse.

<sup>3</sup>Refer to National Electrical Code manual to determine wire, fuse and disconnect size requirements.

## Accessories

MODEL NO.		MLA16AZ24AJ3	MLA16AZ36AJ3	MLA16AZ48AJ3	MLA16AZ60AJ3
Compressor crankcase heater*		X	X	X	X
Low ambient control		Factory Installed	Factory Installed	Factory Installed	Factory Installed
Compressor sound cover		Factory Installed	Factory Installed	Factory Installed	Factory Installed
Compressor hard start kit		Factory Installed	Factory Installed	Factory Installed	Factory Installed
Compressor time delay		Factory Installed	Factory Installed	Factory Installed	Factory Installed
Low pressure control		X	X	X	X
High pressure control		Factory Installed	Factory Installed	Factory Installed	Factory Installed
Liquid Line Solenoid (24 VAC, 50/60 Hz)	Solenoid Valve	200RD2T3TVLC	200RD2T3TVLC	200RD2T3TVLC	200RD2T3TVLC
	Solenoid Coil	61-AMG24V	61-AMG24V	61-AMG24V	61-AMG24V
Liquid Line Solenoid (120/240 VAC, 50/60 Hz)	Solenoid Valve	200RD2T3TVLC	200RD2T3TVLC	200RD2T3TVLC	200RD2T3TVLC
	Solenoid Coil	61-AMG120/240V	61-AMG120/240V	61-AMG120/240V	61-AMG120/240V

\*Crankcase Heater recommended with Low Ambient Kit.

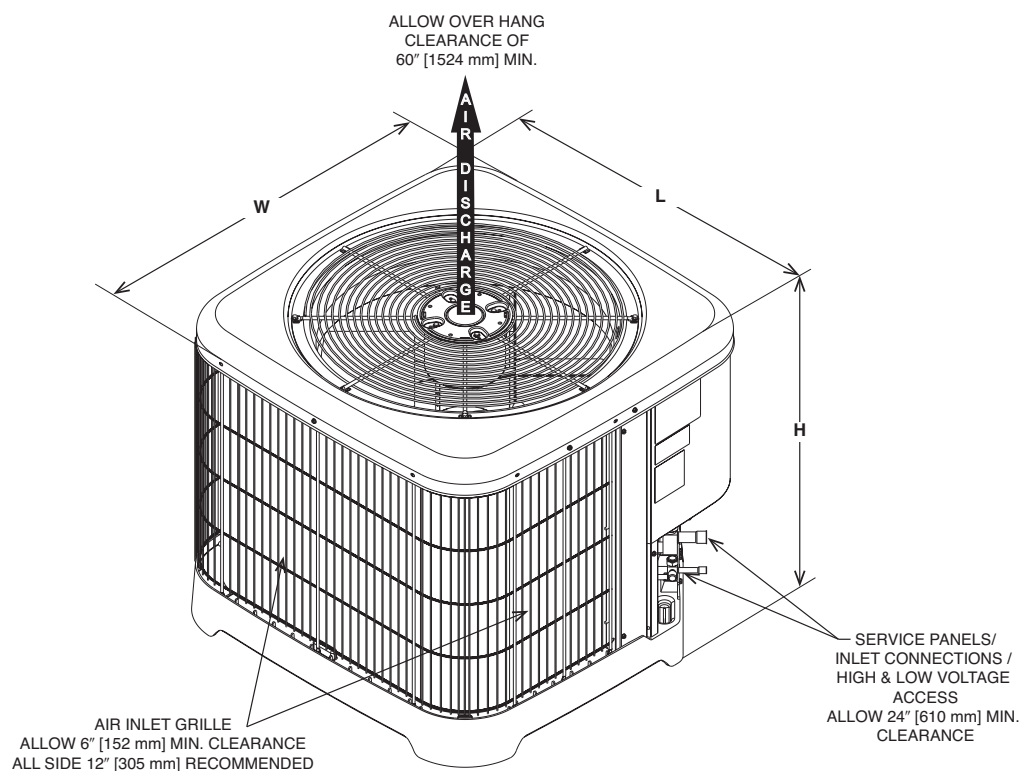
## Weighted Sound Power Level (dBA)

UNIT SIZE - VOLTAGE, SERIES	STANDARD RATING (DBA)	TYPICAL OCTAVE BAND SPECTRUM (DBA WITHOUT TONE ADJUSTMENT)							SOUND POWER LEVEL (DB(A)) WITH SOUND BLANKET
		125	250	500	1000	2000	4000	8000	
MLA16AZ24AJ3	63.3	35.9	47.9	55.3	53.2	50.4	47.1	43.8	Sound Blankets - Standard
	71.7	46.1	59.1	63.2	60.8	58.7	56.5	47.9	
MLA16AZ36AJ3	61.4	38.5	48.0	53.8	49.2	45.9	47.0	47.4	
	72.9	47.5	59.5	64.9	60.7	62.6	57.0	49.6	
MLA16AZ48AJ3	63.8	42.3	45.9	53.5	48.9	45.8	59.1	36.4	
	76.2	49.4	61.4	68.1	53.9	60.8	57.4	48.5	
MLA16AZ60AJ3	65.7	39.7	49.0	58.2	54.5	52.2	53.8	41.3	
	76.7	49.3	64.6	68.1	65.1	62.6	58.6	53.0	

**NOTE:** Tested in accordance with AHRI Standard 270-08 (not listed in AHRI)

## Unit Dimensions

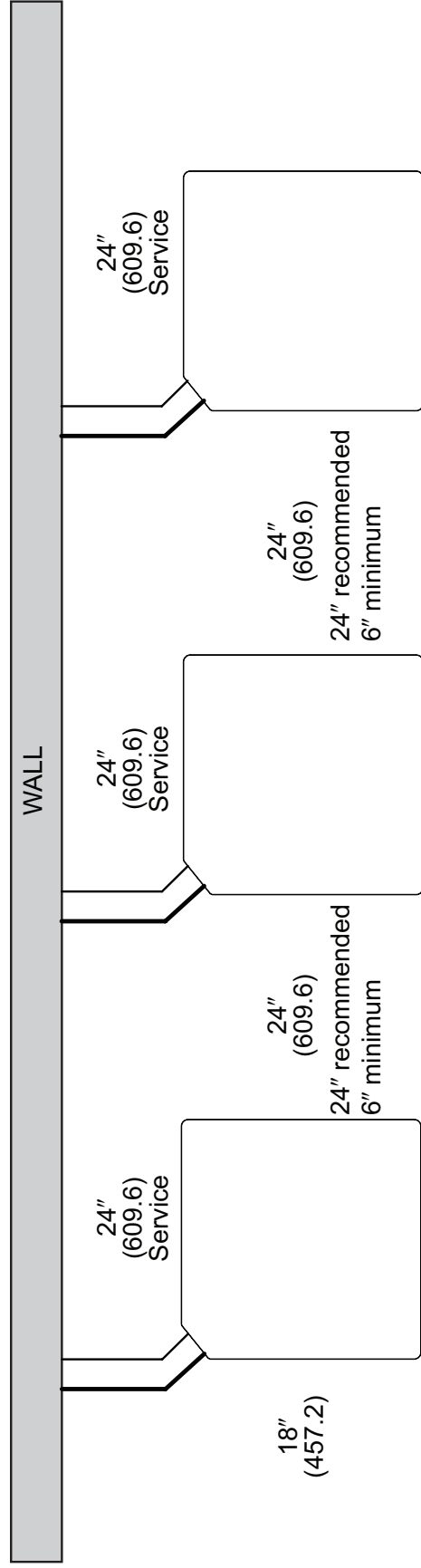
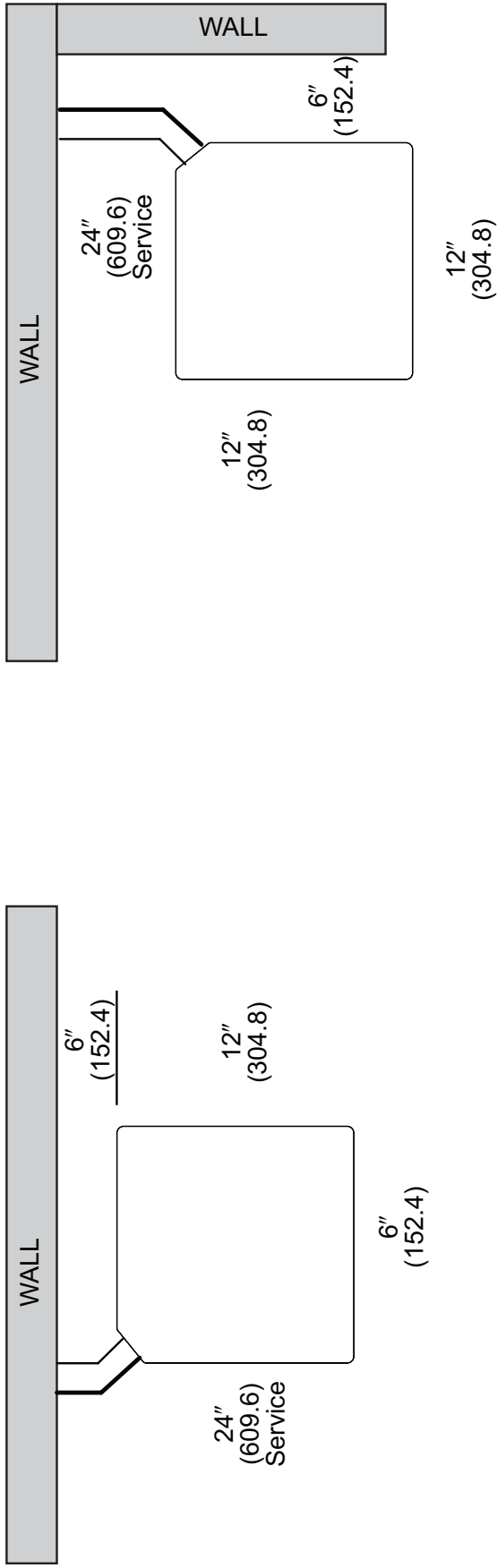
MODEL NO.	OPERATING						SHIPPING					
	H (Height)		L (Length)		W (Width)		H (Height)		L (Length)		W (Width)	
	INCHES	mm	INCHES	mm	INCHES	mm	INCHES	mm	INCHES	mm	INCHES	mm
MLA16AZ24AJ3	27.00	686	29.75	756	29.75	756	28.50	724	32.38	822	32.38	822
MLA16AZ36AJ3	27.00	686	33.75	857	33.75	857	28.50	724	36.38	924	36.38	924
MLA16AZ48AJ3	31.00	787	33.75	857	33.75	857	32.50	826	36.38	924	36.38	924
MLA16AZ60AJ3	31.00	787	35.75	908	35.75	908	32.50	826	38.38	975	38.38	975



[ ] Designates Metric Conversions

ST-A1226-24-00

# CLEARANCES

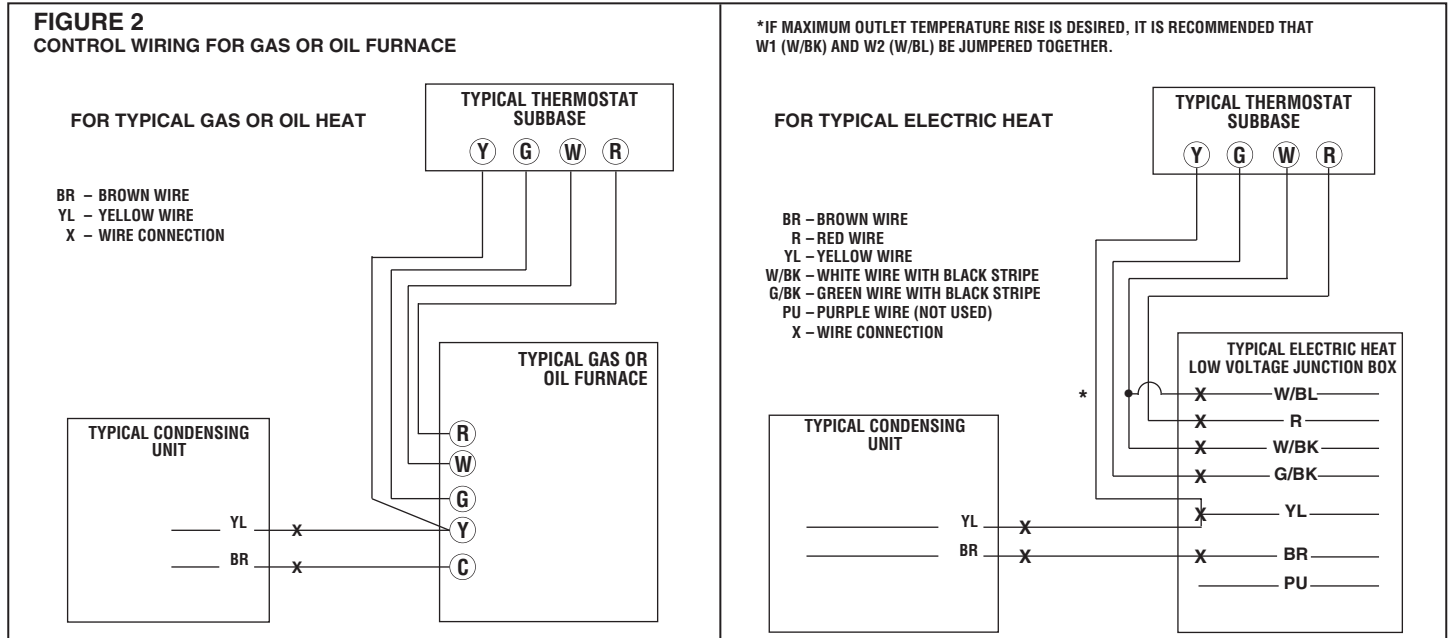


**NOTE: NUMBERS IN ( ) = mm**

**IMPORTANT:** When installing multiple units in an alcove, roof well or partially enclosed area, ensure there is adequate ventilation to prevent re-circulation of discharge air.



## Control Wiring



## Application Guidelines

1. Intended for outdoor installation with free air inlet and outlet. Outdoor fan external static pressure available is less than 0.01 -in. wc.
2. Minimum outdoor operation air temperature for cooling mode without low-ambient operation accessory is 55°F (12.8°C).
3. Maximum outdoor operating air temperature is 125°F (51.7°C).
4. For reliable operation, unit should be level in all horizontal planes.
5. Use only copper wire for electric connections at unit. Aluminum and clad aluminum are not acceptable for the type of connector provided.
6. Do not apply capillary tube indoor coils to these units.
7. Factory-supplied filter drier must be installed.

## Refrigerant Line Size Information

15/16 SEER2 VARIABLE SPEED AIR CONDITIONERS								
UNIT SIZE	ALLOWABLE LIQUID LINE SIZE	ALLOWABLE VAPOR LINE SIZE	OUTDOOR UNIT ABOVE OR BELOW INDOOR UNIT EQUIVALENT LENGTH (FEET)					
			< 25	26-50	51-75	76-100	101-125	126-150
			MAXIMUM VERTICAL SEPARATION / CAPACITY MULTIPLIER					
2.0 Ton <b>**SEE NOTE 3</b>	1/4"	5/8"	25/1.00	50/0.99	32/0.98	40/0.97	NR	NR
	5/16"	5/8"	25/1.00	50/0.99	50/0.98	50/0.97	50/0.96	50/0.95
	3/8"	5/8"	25/1.00	50/0.99	50/0.98	50/0.97	50/0.96	50/0.95
	1/4"	3/4"	25/1.00	50/1.00	32/0.99	40/0.99	NR	NR
	5/16"	3/4"	25/1.00	50/1.00	50/0.99	50/0.99	50/0.99	50/0.98
	3/8"	3/4"	25/1.00	50/1.00	50/0.99	50/0.99	50/0.99	50/0.98
3 Ton	5/16"	5/8"	25/0.99	50/0.97	50/0.95	50/0.93	37/0.91	NR
	3/8"	5/8"	25/0.99	50/0.97	50/0.95	50/0.93	50/0.91	NR
	5/16"	3/4"	25/1.00	50/0.99	50/0.99	50/0.98	37/0.97	22/0.96
	3/8"	3/4"	25/1.00	50/0.99	50/0.99	50/0.98	50/0.97	50/0.96
	1/2"	3/4"	25/1.00	50/0.99	50/0.99	50/0.98	50/0.97	50/0.96
4 Ton	3/8"	3/4"	25/0.99	50/0.98	50/0.97	50/0.96	50/0.94	50/0.93
	1/2"	3/4"	25/0.99	50/0.98	50/0.97	50/0.96	50/0.94	50/0.93
	3/8"	7/8"	25/1.00	50/0.99	50/0.99	50/0.98	50/0.98	50/0.97
	1/2"	7/8"	25/1.00	50/0.99	50/0.99	50/0.98	50/0.98	50/0.97
5 Ton	3/8"	3/4"	25/0.99	50/0.97	50/0.95	50/0.93	50/0.91	NR
	1/2"	3/4"	25/0.99	50/0.97	50/0.95	50/0.93	50/0.91	NR
	3/8"	7/8"	25/1.00	50/0.99	50/0.98	50/0.98	50/0.97	38/0.96
	1/2"	7/8"	25/1.00	50/0.99	50/0.98	50/0.98	50/0.97	50/0.96

**NOTES:**

- 1) Do not exceed 150 ft. linear line length.
- 2) \*Do not exceed 50 ft. vertical separation if outdoor unit is above indoor unit.
- 3) \*\*3/4" suction line should only be used for 2 ton systems if outdoor unit is below or at same level as indoor to assure proper oil return.
- 4) Always use the smallest liquid line allowable to minimize refrigerant charge.
- 5) Applications shaded in light gray indicate capacity multipliers between 0.90 and 0.96 which are not recommended, but are allowed.
- 6) Applications shaded in dark gray are not recommended due to excessive liquid or suction pressure drop.

## Refrigerant Line Size Information (Con't.)

15/16 SEER2 VARIABLE SPEED AIR CONDITIONERS								
UNIT SIZE	ALLOWABLE LIQUID LINE SIZE	ALLOWABLE VAPOR LINE SIZE	OUTDOOR UNIT ABOVE OR BELOW INDOOR UNIT EQUIVALENT LENGTH (METERS)					
			< 25	26-50	51-75	76-100	101-125	126-150
			MAXIMUM VERTICAL SEPARATION / CAPACITY MULTIPLIER					
2.0 Ton **SEE NOTE 3	6.35 [1/4]	15.88 [5/8]	8/1.00	15/0.99	10/0.98	10/0.97	NR	NR
	7.94 [5/16]	15.88 [5/8]	8/1.00	15/0.99	15/0.98	15/0.97	15/0.96	15/0.95
	9.53 [3/8]	15.88 [5/8]	8/1.00	15/0.99	15/0.98	15/0.97	15/0.96	15/0.95
	6.35 [1/4]	19.05 [3/4]**	8/1.00	15/0.99	10/0.99	12/0.99	NR	NR
	7.94 [5/16]	19.05 [3/4]**	8/1.00	15/0.99	15/0.99	15/0.99	15/0.99	15/0.98
	9.53 [3/8]	19.05 [3/4]**	8/1.00	15/0.99	15/0.99	15/0.99	15/0.99	15/0.98
3 Ton	7.94 [5/16]	15.88 [5/8]	8/0.99	15/0.97	15/0.95	15/0.93	11/0.91	NR
	9.53 [3/8]	15.88 [5/8]	8/0.99	15/0.97	15/0.95	15/0.93	15/0.91	NR
	7.94 [5/16]	19.05 [3/4]	8/1.00	15/0.99	15/0.99	15/0.98	11/0.97	7/0.96
	9.53 [3/8]	19.05 [3/4]	8/1.00	15/0.99	15/0.99	15/0.98	15/0.97	15/0.96
	12.7 [1/2]	19.05 [3/4]	8/1.00	15/0.99	15/0.99	15/0.98	15/0.97	15/0.96
4 Ton	9.53 [3/8]	19.05 [3/4]	8/0.99	15/0.98	15/0.97	15/0.96	15/0.94	15/0.93
	12.7 [1/2]	19.05 [3/4]	8/0.99	15/0.98	15/0.97	15/0.96	15/0.94	15/0.93
	9.53 [3/8]	22.23 [7/8]	8/1.00	15/0.99	15/0.99	15/0.98	15/0.98	15/0.97
	12.7 [1/2]	22.23 [7/8]	8/1.00	15/0.99	15/0.99	15/0.98	15/0.98	15/0.97
5 Ton	9.53 [3/8]	19.05 [3/4]	8/0.99	15/0.97	15/0.95	15/0.93	15/0.91	NR
	12.7 [1/2]	19.05 [3/4]	8/0.99	15/0.97	15/0.95	15/0.93	15/0.91	NR
	9.53 [3/8]	22.23 [7/8]	8/1.00	15/0.99	15/0.98	15/0.98	15/0.97	12/0.96
	12.7 [1/2]	22.23 [7/8]	8/1.00	15/0.99	15/0.98	15/0.98	15/0.97	15/0.97

**NOTES:**

- 1) Do not exceed 46 meters linear line length.
- 2) \*Do not exceed 15 meters vertical separation between indoor and outdoor units.
- 3) \*\*19.05mm [3/4"] vapor line should only be used for 2 ton systems if outdoor unit is below or at same level as indoor unit to assure proper oil return.
- 4) Always use the smallest liquid line allowable to minimize refrigerant charge.
- 5) Applications shaded in light gray indicate capacity multipliers between 0.90 and 0.96 which are not recommended, but are allowed.
- 6) Applications shaded in dark gray are not recommended due to excessive liquid or suction pressure drop.

ADDITIONAL OIL, OZ.											
LINESET LENGTH	50	60	70	80	90	100	110	120	130	140	150
2T	N/A	N/A	N/A	N/A	N/A	1	2	3	5	6	7
3T	N/A	N/A	N/A	N/A	N/A	N/A	1	2	3	5	6
4T	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
5T	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

## Performance Data @ AHRI Standard Conditions – Cooling

DESIGNATED TESTED COMBINATION (DTC)							
OUTDOOR UNIT	INDOOR COIL	TOTAL CAPACITY BTU/H [KW]	NET SENSIBLE BTU/H [KW]	NET LATENT BTU/H [KW]	SEER2	EER2	INDOOR CFM [L/S]
MLA16AZ24AJ3C	MLH3VZ2417STACN	22,800 [6.7]	17,600 [5.2]	5,200 [1.5]	16.0	10.5	750 [354.0]
MLA16AZ36AJ3C	MLH3VZ3617STACN	34,200 [10.0]	26,600 [7.8]	7,600 [2.2]	16.0	10.5	1,125 [530.9]
MLA16AZ48AJ3C	MLH3VZ4821STACN	45,500 [13.3]	35,500 [10.4]	10,000 [2.9]	16.0	10.5	1,425 [672.5]
MLA16AZ60AJ3C	MLH3VZ6024STACN	55,500 [16.3]	43,000 [12.6]	12,500 [3.7]	15.5	9.8	1,675 [790.5]

**NOTE:** This data includes DTC (Designated Test Combination) ratings and is for reference purposes only. A full listing of official ratings and system match-ups, along with downloadable certificates, can be accessed from the AHRI website: [www.ahridirectory.org](http://www.ahridirectory.org).

[ ] Designates Metric Conversions

## Integrated Controls



EcoNet® is smart, technology that allows Heating and Cooling, products to communicate with each other on one integrated network.

### THE ECONET® SMART THERMOSTAT

#### BUILT-IN WIFI

#### 4.3" LCD TOUCH SCREEN

**LOCAL WEATHER** – Current conditions plus 6-day forecast

**5 OPERATING MODES** – Heat, Cool, Auto, Emergency Heat and Fan Only

**7-DAY PROGRAMMABLE SCHEDULE** – Offers comfort without thought

**ONE-TOUCH AWAY** – Quickly switch to your energy-saving away preferences

**VACATION SCHEDULING** – Allows you to save while you're away and come home to comfort

**STANDBY SCREEN** – Displays indoor temperature and current weather



**CETST800SYS**

### OPERATIONAL FEATURES

**AUTOMATIC CHANGEOVER** – Transitions between heating and cooling automatically to keep the house comfortable

**INTEGRATED WATER CONTROL** – Enables easy water heater management

**SMOOTH ARRIVAL** – Prompts the system to start ahead of schedule to ensure the home is at the desired temperature at the scheduled time

**HUMIDITY CONTROL** – Supports humidifier accessories or over-cool based dehumidification

**DETAILED OPERATING STATUS** – View pertinent equipment status information and run times

**CONTINUOUS FAN** – Offers 5 speeds (Low, Medium Low, Medium, Medium High, High)

**SHORT-CYCLE PROTECTION** – Avoids damage to equipment from short run cycles

### MONITORING & REMOTE CONTROL FEATURES

**ACTIVE MONITORING** – Alerts to problems that need immediate attention

**REMOTE CONTROL** – Allows adjusting of comfort and settings from anywhere using a mobile device

**SERVICE ALERTS** – Sends routine maintenance reminders

**AIR FILTER MONITORING** – Detects when it's time to replace the air filter

**ALARM HISTORY** – Displays time-stamped alarm codes with clear descriptions







**GENERAL TERMS OF LIMITED WARRANTY\***

Mainline® will furnish a replacement for any part of this product which fails in normal use and service within the applicable period stated, in accordance with the terms of the limited warranty.

\*For complete details of the Limited and Conditional Warranties, including applicable terms and conditions, contact your local contractor or the Manufacturer for a copy of the product warranty certificate.

Conditional Unit Replacement (Registration Required)..... Ten (10) Years  
Parts ..... Ten (10) Years

**Before proceeding with installation, refer to installation instructions packaged with each model, as well as complying with all Federal, State, Provincial, and Local codes, regulations, and practices.**

*"In keeping with its policy of continuous progress and product improvement, Mainline reserves the right to make changes without notice."*

[www.MainlineCollection.com](http://www.MainlineCollection.com)