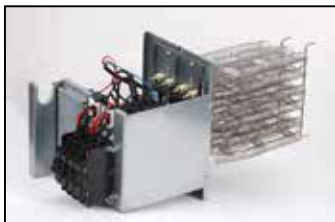


# VCD-Series

Enjoy the ultimate in comfort and efficiency with the VCD-Series cold-climate air source heat pump. With an inverter-driven compressor, the VCD-system fully modulates to use the least amount of energy possible to maintain temperature, while at the same time optimizing sound levels and comfort. Hyper heat performance down to -22°F (-30°C) means the heat pump has world-class operating parameters in all weather conditions-and the optional electric auxiliary heat kits provide further peace of mind.

## FEATURES

- Aluminum-alloy traditional fin-and-tube coil construction for maximum durability and corrosion resistance
- Efficient and quiet ECM blower motor
- Accepts traditional 24VAC thermostats for convenience and advanced control options
- Wired programmable control included
- Optional electric resistance heat kits (up to 25kW) provides auxiliary heat source for comfort during the worst conditions
- Beautiful and durable gloss enameled-steel construction with insulated construction provides less than 2% cabinet leakage
- Built-in return filter rack:  
24K = 16"x 20"x 1"  
30-48K = 20"x 20"x 1"  
60K = 24"x 20"x 1"
- Multi-position air handler



Wired programmable control



## EXTREME PERFORMANCE COLD WEATHER HEAT PUMP

2 to 5 Tons

Five models to choose from  
24,000 to 60,000 BTUH



### COOLING

-22°F (-30°C) – 122°F (50°C)

### HEATING

-22°F (-30°C) – 75°F (24°C)



*Comfort-Aire®*

**Warranty**—10 years on compressor, 10 years on parts  
(Some limitations apply; see printed warranty for details.)

[www.comfort-aire.com](http://www.comfort-aire.com)

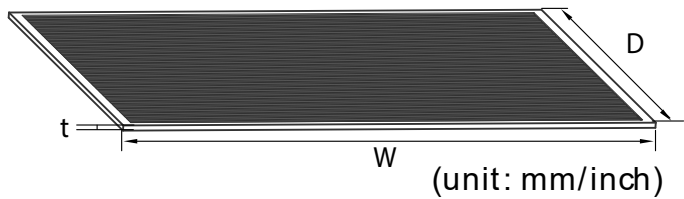
# MULTI-POSITION AIR HANDLER

| Ducted Units                                              |                               |           |                       |                       |                       |                        |                         |
|-----------------------------------------------------------|-------------------------------|-----------|-----------------------|-----------------------|-----------------------|------------------------|-------------------------|
| FEATURES                                                  |                               |           | B-VCD24SA-1           | B-VCD30SA-1           | B-VCD36SA-1           | B-VCD48SA-1            | B-VCD60SA-1             |
| Power supply                                              | Rated                         | V, Ph, Hz | 208/230, 1, 60        | 208/230, 1, 60        | 208/230, 1, 60        | 208/230, 1, 60         | 208/230, 1, 60          |
|                                                           | Voltage range                 | V         | 187-253               | 187-253               | 187-253               | 187-253                | 187-253                 |
| Cooling                                                   | Rated Capacity (range)        | Btu/h     | 24,000(6,400~27,000)  | 30,000(10,000~33,600) | 36,000(13,000~47,400) | 47,000(15,000~48,000)  | 55,000(14,000~56,000)   |
|                                                           | Input power                   | W         | 2050                  | 3060                  | 3673                  | 5731                   | 6280                    |
|                                                           | Rated current                 | A         | 9.10                  | 13.20                 | 15.97                 | 24.95                  | 27.40                   |
|                                                           | EER2                          | Btu/w     | 11.7                  | 10.00                 | 10.00                 | 8.2                    | 8.8                     |
|                                                           | SEER2                         | Btu/w     | 17.4                  | 16.2                  | 16                    | 15.6                   | 15.3                    |
|                                                           |                               |           |                       |                       |                       |                        |                         |
| Heating at 47°                                            | Rated Capacity (range)        | Btu/h     | 24,000(10,100~31,000) | 33,000(11,500~37,000) | 40,000(11,000~57,200) | 50,000(11,000~55,000)  | 55,000(13,400~69,000)   |
|                                                           | Input power                   | W         | 2100                  | 2930                  | 3448                  | 4652                   | 5060                    |
|                                                           | Rated current                 | A         | 9.30                  | 13.30                 | 15.00                 | 21.20                  | 22.00                   |
|                                                           | COP                           | W/W       | 3.35                  | 3.30                  | 3.36                  | 3.15                   | 3.42                    |
|                                                           | HSPF4 2                       | Btu/w     | 10.00                 | 8.9                   | 9.5                   | 9.4                    | 9.4                     |
|                                                           | HSPF5                         | Btu/w     | 8.00                  | 7.00                  | 7.80                  | 7.70                   | 7.6                     |
| Heating at 5° (-15°)                                      | Capacity                      | Btu/h     | 24,130                | 28,550                | 38,890                | 47,060                 | 51,981                  |
|                                                           | COP                           | W/W       | 1.91                  | 1.77                  | 1.97                  | 1.90                   | 1.91                    |
| The Rated Input Current of The Power Conversion Equipment |                               | A         | 3.0                   | 3.5                   | 3.5                   | 3.5                    | 3.5                     |
| MINIMUM CIRCUIT AMPACITY (Indoor unit)                    |                               | A         | 4.0                   | 4.5                   | 5.0                   | 7.5                    | 9.0                     |
| MAX. FUSE (Indoor unit)                                   |                               | A         | 15                    | 15                    | 15                    | 15                     | 15                      |
| MAX. FUSE (Outdoor unit)                                  |                               | A         | 35                    | 35                    | 50                    | 50                     | 60                      |
| Indoor air flow (Hi/Mi/Lo)                                |                               | CFM       | 758.82/694.12/629.41  | 894.12/805.88/711.76  | 1082.35/970.59/864.71 | 1282.35/1094.12/905.88 | 1582.35/1358.82/1135.29 |
| Indoor noise level (Hi/Mi/Lo)                             |                               | dB(A)     | 39/36/33              | 42/40.5/36.5          | 45/43/41              | 50/47/43.5             | 51/45.5/41.5            |
| Indoor unit                                               | Dimension (W×D×H)             | inch      | 21.02x17.52x45.00     | 21.02x21.02x49.02     | 21.02x21.02x49.02     | 21.02x21.02x49.02      | 21.02x24.49x52.99       |
|                                                           | Packing (W×D×H)               | inch      | 25.20x20.87x50.39     | 25.20x24.41x54.33     | 25.20x24.41x54.33     | 25.20x24.41x54.33      | 27.95x26.77x56.60       |
|                                                           | Net/Gross weight              | lbs.      | 105.60/127.43         | 129.19/155.64         | 129.19/155.64         | 130.51/156.31          | 162.70/190.70           |
| Refrigerant piping                                        | Liquid side/Gas side          | inch      | 3/8" / 3/4"           | 3/8" / 3/4"           | 3/8" / 3/4"           | 3/8" / 3/4"            | 3/8 x 7/8               |
| Drainage water pipe diameter                              |                               | inch      | 3/4                   | 3/4                   | 3/4                   | 3/4                    | 3/4                     |
| Thermostat type                                           | Wireless remote controller    |           | Standard              | Standard              | Standard              | Standard               | Standard                |
|                                                           | Wired Controller              |           | n/a                   | n/a                   | n/a                   | n/a                    | n/a                     |
|                                                           | Programmable wired Controller |           | Standard              | Standard              | Standard              | Standard               | Standard                |
| WiFi                                                      |                               |           | Optional              | Optional              | Optional              | Optional               | Optional                |
| Application area (cooling Standard)                       |                               | sq.ft     | 344.44~505.90         | 430.56~635.07         | 516.67~753.47         | 688.89~1011.81         | 861.12-1270.14          |
| Certification                                             | Performance                   | AHRI      | Yes                   | Yes                   | Yes                   | Yes                    | Yes                     |
|                                                           |                               | E*Star    | Yes                   | -                     | -                     | -                      | -                       |
|                                                           |                               | NEEP      | Yes                   | Yes                   | Yes                   | Yes                    | Yes                     |
|                                                           | Safety                        | UL        | Yes                   | Yes                   | Yes                   | Yes                    | Yes                     |
|                                                           |                               | ETL       | -                     | -                     | -                     | -                      | -                       |
|                                                           |                               | CSA       | -                     | -                     | -                     | -                      | -                       |

| Auxiliary Heat Kits      |                          |                    |          |               |               |               |                     |                     |                     |
|--------------------------|--------------------------|--------------------|----------|---------------|---------------|---------------|---------------------|---------------------|---------------------|
|                          | Power of Electric Heater | Number of Circuits | Voltage  | Circuit 1 MCA | Circuit 2 MCA | Circuit 3 MCA | Circuit 1 Max. Fuse | Circuit 2 Max. Fuse | Circuit 3 Max. Fuse |
| Optional Electric Heater | ECD8KW                   | 1                  | 208/230V | 37A/42A       | -             | -             | 40A/45A             | -                   | -                   |
|                          | ECD10KW                  | 1                  | 208/230V | 46A/53A       | -             | -             | 50A/60A             | -                   | -                   |
|                          | ECD15KW                  | 2                  | 208/230V | 23A/27A       | 46A/53A       | -             | 25A/30A             | 50A/60A             | -                   |
|                          | ECD20KW                  | 2                  | 208/230V | 46A/53A       | 46A/53A       | -             | 50A/60A             | 50A/60A             | -                   |
|                          | ECD25KW                  | 3                  | 208/230V | 23A/27A       | 46A/53A       | 46A/53A       | 25A/30A             | 50A/60A             | 50A/60A             |

| Model Size Selection |     |      |      |      |      |
|----------------------|-----|------|------|------|------|
| Model (Btu/h)        | 8kW | 10kW | 15kW | 20kW | 25kW |
| 24K                  | Yes | Yes  | Yes  | -    | -    |
| 30K                  | Yes | Yes  | Yes  | -    | -    |
| 36K                  | Yes | Yes  | Yes  | Yes  | -    |
| 48K                  | Yes | Yes  | Yes  | Yes  | -    |
| 60K                  | -   | Yes  | Yes  | Yes  | Yes  |

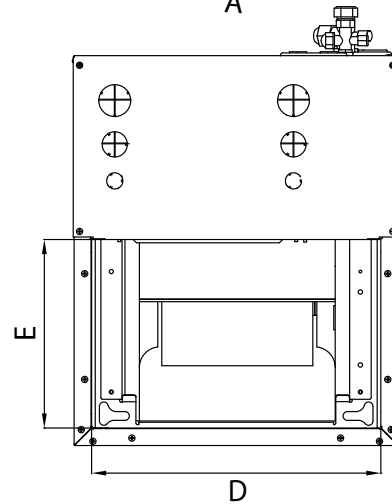
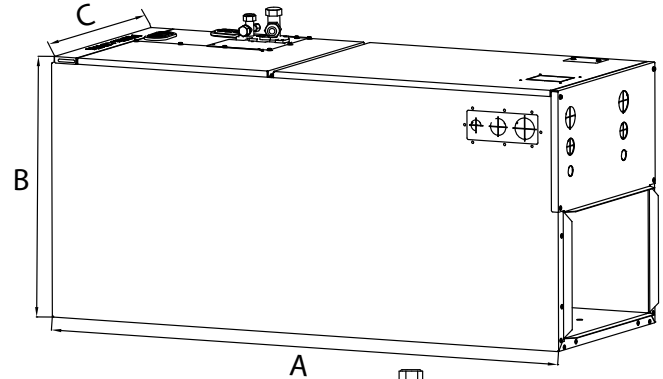
## Recommended Size of Filter



(unit: mm/inch)

| Model<br>(Btu/h) | W     |        | D   |      | T    |      |
|------------------|-------|--------|-----|------|------|------|
|                  | mm    | inch   | mm  | inch | mm   | inch |
| 24K              | 406.4 | 16     | 508 | 20   | 25.4 | 1    |
| 30&36K           | 495.3 | 19-1/2 | 508 | 20   | 25.4 | 1    |
| 48&60K           | 584.2 | 23     | 508 | 20   | 25.4 | 1    |

## DIMENSIONAL DRAWINGS

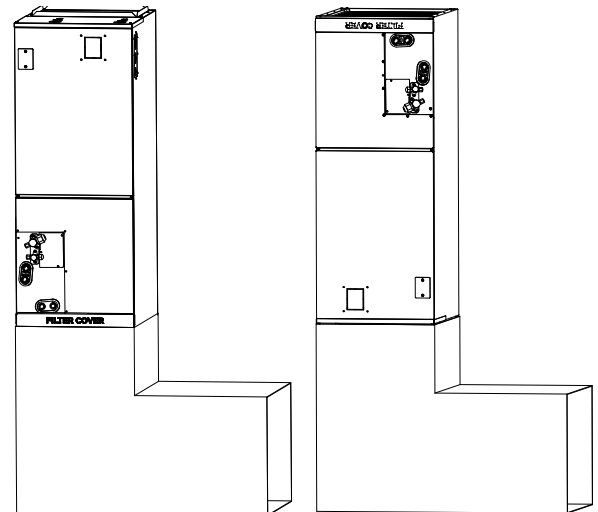


## Dimensional Data

(unit: mm/inch)

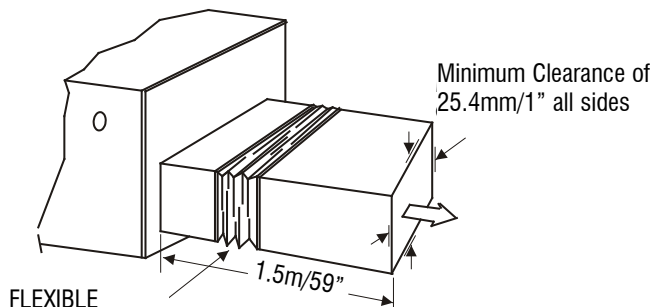
| Model (Btu/h) Dimensions |      | 24K    | 30K~48K | 60K      |
|--------------------------|------|--------|---------|----------|
| Length of A              | mm   | 1143   | 1245    | 1346     |
|                          | inch | 45     | 49      | 53       |
| Length of B              | mm   | 533    | 533     | 533      |
|                          | inch | 21     | 21      | 21       |
| Length of C              | mm   | 445    | 534     | 622      |
|                          | inch | 17-1/2 | 21-1/50 | 24-1/2   |
| Length of D              | mm   | 400    | 490     | 580      |
|                          | inch | 15-3/4 | 19-5/16 | 22-27/32 |
| Length of E              | mm   | 260    | 260     | 260      |
|                          | inch | 10-1/4 | 10-1/4  | 10-1/4   |

## Vertical Installations



## Horizontal Installations

Plenum Clearances



The outlet side pipe length is 1.5m/59".

*Comfort-Cure®*

# COILS

| Coils       |             |             |              |               |
|-------------|-------------|-------------|--------------|---------------|
| Model       | Width (in.) | Depth (in.) | Height (in.) | Weight (lbs.) |
| MCD18/24B1A | 17-1/2      | 21          | 18           | 52            |
| MCD30/36C1A | 21          | 21          | 24           | 76            |
| MCD48C1A    | 21          | 21          | 24           | 77            |
| MCD60D1A    | 24          | 21          | 28           | 95            |

**NOTE:** AHRI combinations with MCD-Series Coils and VCD systems are "coil-only" matches, and result in lower SEER2, EER2, and HSPF2 ratings than with matching air handler. Review latest match information on [www.marsdeliversratings.com](http://www.marsdeliversratings.com) before installation.



# OUTDOOR UNIT

| FEATURES                             | A-VCD24SA-1                                                   | A-VCD30SA-1        | A-VCD36SA-1        | A-VCD48SA-1        | A-VCD60SA-1        |
|--------------------------------------|---------------------------------------------------------------|--------------------|--------------------|--------------------|--------------------|
| Power Supply                         | 208/230V,1Ph,60Hz                                             | 208/230V,1Ph, 60Hz | 208/230V,1Ph, 60Hz | 208/230V,1Ph, 60Hz | 208/230V,1Ph, 60Hz |
| Cooling Capacity (BTUH)              | 24,000                                                        | 30,000             | 36,000             | 47,000             | 55,000             |
| SEER2                                | 17.4                                                          | 16.2               | 16                 | 15.6               | 15.3               |
| EER2                                 | 11.7                                                          | 10.0               | 10.0               | 8.2                | 8.8                |
| HSPF4 2                              | 10                                                            | 8.9                | 9.5                | 9.4                | 9.4                |
| COP                                  | 3.35                                                          | 3.30               | 3.36               | 3.15               | 3.42               |
| Cooling Amps                         | 9.10                                                          | 13.20              | 15.97              | 24.95              | 27.40              |
| Heating Cap. (BTUH) @ 47°F           | 24,000                                                        | 33,000             | 40,000             | 50,000             | 59,000             |
| Heating Amps                         | 9.30                                                          | 13.30              | 15.0               | 21.20              | 22.0               |
| Outdoor DBA                          | 62                                                            | 60.5               | 64                 | 64                 | 63.5               |
| OUTDOOR UNIT DIMENSIONS              |                                                               |                    |                    |                    |                    |
| Width (inches)                       | 37.24                                                         | 37.24              | 37.48              | 37.48              | 37.48              |
| Height (inches)                      | 31.89                                                         | 31.89              | 52.48              | 52.48              | 52.48              |
| Depth (inches)                       | 16.14                                                         | 16.14              | 16.34              | 16.34              | 16.34              |
| Net Wt/Shipping Wt (lbs.)            | 136.69                                                        | 159.83             | 227.07             | 220.24             | 239.86/271.61      |
| ELECTRICAL DATA OUTDOOR UNIT †       |                                                               |                    |                    |                    |                    |
| Main Power Connection                | Outdoor Unit 208/230-1-60                                     |                    |                    |                    |                    |
| Min. Circuit Ampacity                | 20.5                                                          | 23                 | 41                 | 42                 | 42                 |
| Max. Fuse/HACR Circuit Breaker       | 35                                                            | 35                 | 50                 | 50                 | 60                 |
| Indoor/Outdoor Connecting Cable Type | 14AWG / 4 conductor 600V THHN unshielded stranded bare copper |                    |                    |                    |                    |
| LINE SETS O.D. (inch)                |                                                               |                    |                    |                    |                    |
| LINE SETS O.D. (inch)*               | 3/8 x 3/4                                                     | 3/8 x 3/4          | 3/8 x 3/4          | 3/8 x 3/4          | 3/8 x 7/8          |
| Max. Line Set Length¹                | 164                                                           | 213                | 213                | 213                | 213                |
| Max. Elevation (outdoor)²            | 82                                                            | 98                 | 98                 | 98                 | 98                 |

Note:

\*For alternative line set sizes, please refer to the VCD Vapor Line Sizing Chart

‡ Always follow local, state and national electrical codes

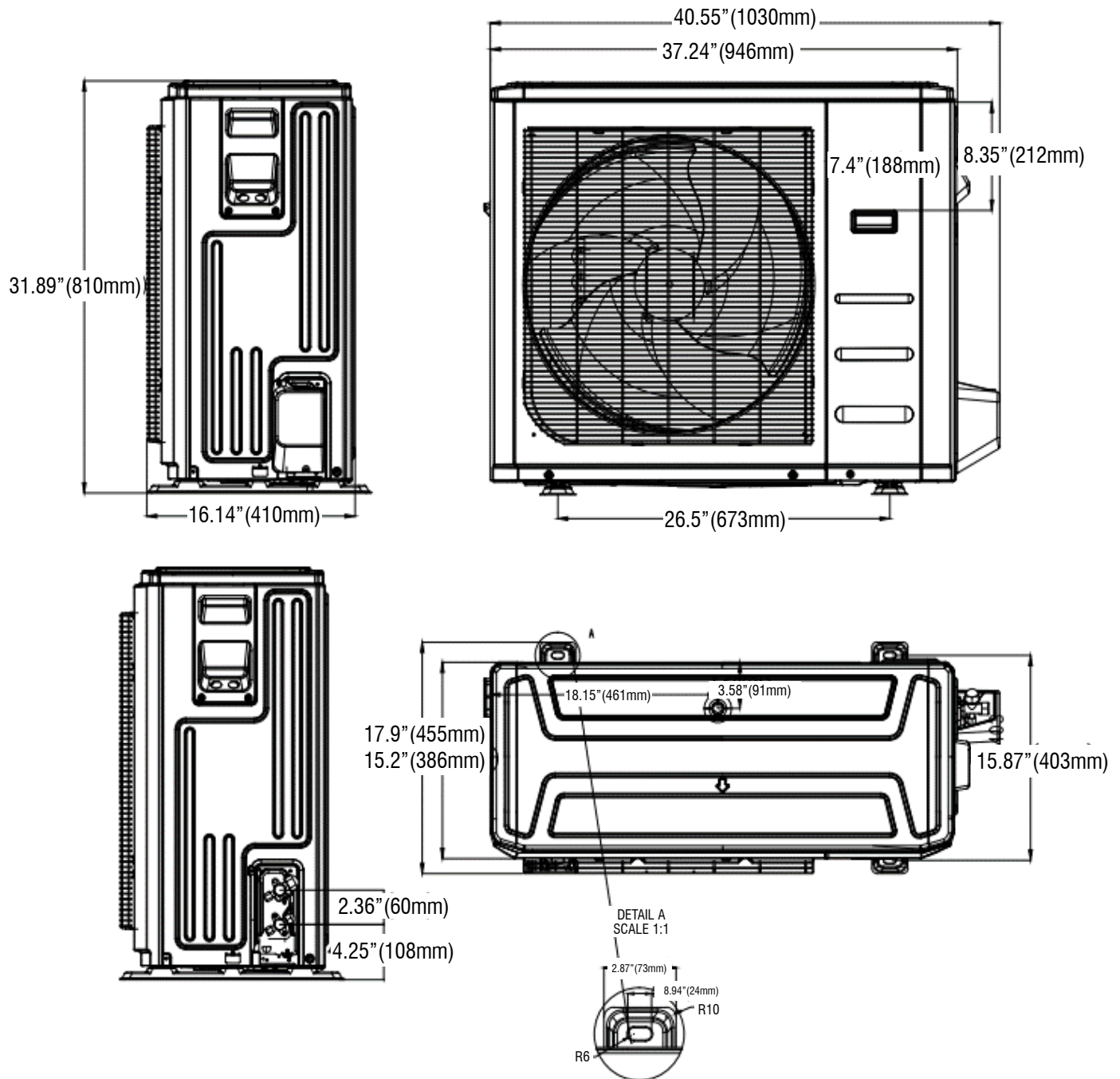
¹ Min. 10 ft. line set recommended

² Oil traps should be installed every 16.5 to 23 feet (5-7m) when the outdoor unit is installed above the indoor unit



# DIMENSIONAL DRAWINGS

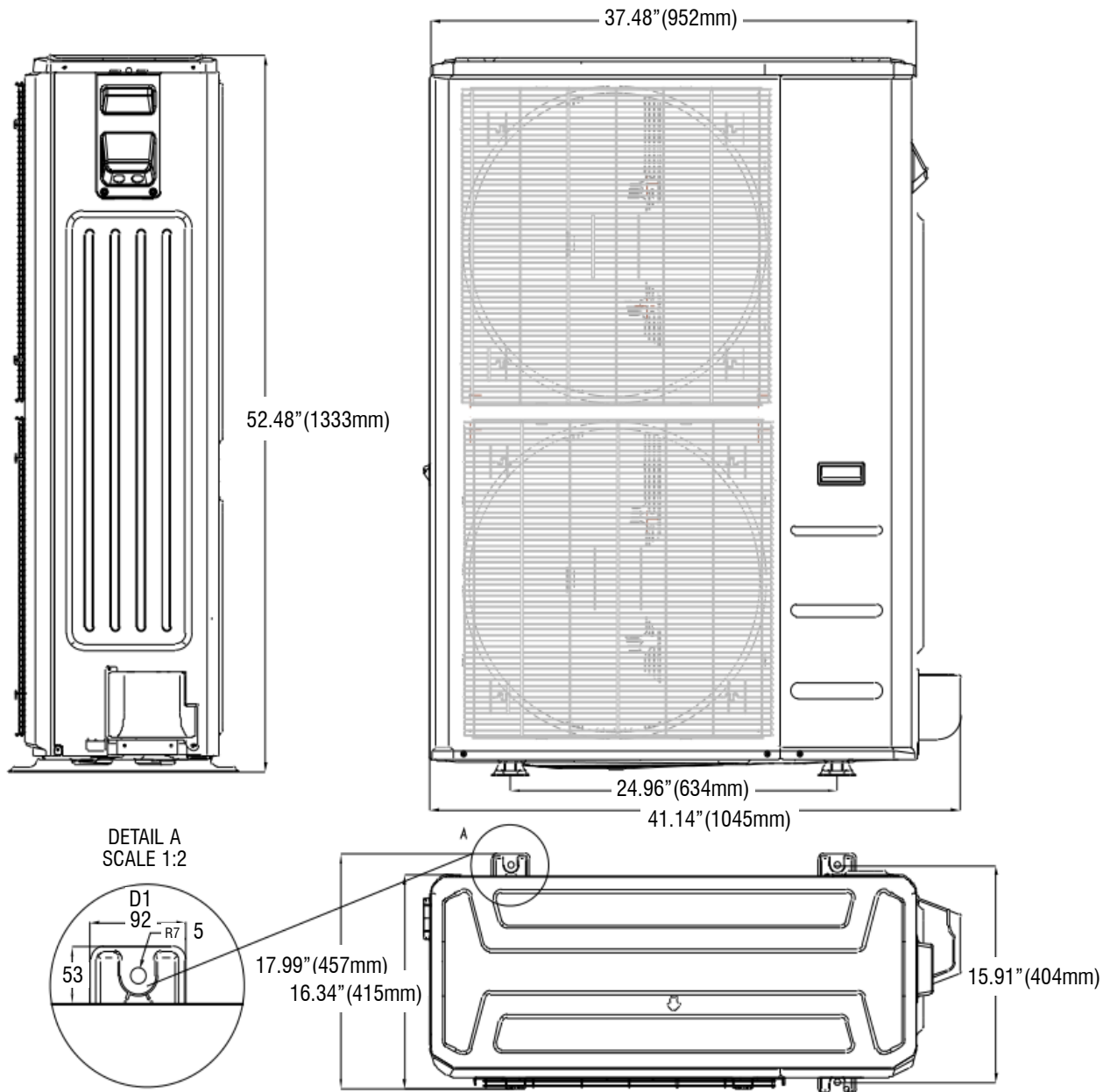
## Outdoor Unit Dimensions - 24K & 30K



*Comfort-Cire®*

## DIMENSIONAL DRAWINGS

### Outdoor Unit Dimensions - 36K - 60K



Due to ongoing product improvements, specifications and dimensions are subject to change and correction without notice or incurring obligations. Determining the application and suitability for use of any product is the responsibility of the installer. Additionally, the installer is responsible for verifying dimensional data on the actual product prior to beginning any installation preparations. Third party incentive and rebate programs have precise requirements as to product performance and certification. All products meet applicable regulations in effect on date of manufacture; however, certifications are not necessarily granted for the life of a product. Therefore, it is the responsibility of the applicant to determine whether a specific model qualifies for these incentive/rebate programs.

"This product complies with all California product labeling laws including, but not limited to, the Safe Drinking Water and Toxic Enforcement Act of 1986, more commonly known as Proposition 65."