Floating Air™ | *ULTRA®*

# DUCTLESS MINI-SPLIT SYSTEMS

CEILING CASSETTE HEAT PUMPS

| PURCHASER | P.O. # | DATE |
|---|---|---|
| PROJECT | LOCATION | |
| ENGINEER | ARCHITECT | |
| SUBMITTED BY | FOR APPROVAL | FOR REFERENCE |

| ITEM | PLAN DESIGNATION | QUANTITY | COOLING BTU/H | VOLTAGE | RUUD MODEL |
|---|---|---|---|---|---|
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

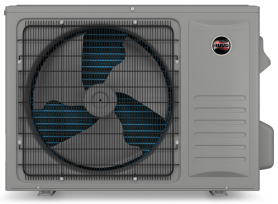
## Key Features

*Indicates sustainability feature*

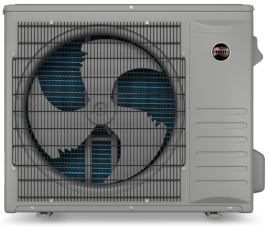
- All models ENERGY STAR® and ENERGY STAR® Cold Climate Heat Pump certified
- **Precision Inverter®** technology (variable speed compressor)
- Soft-Start™ compressor
- BLDC motor
- Built-in Wi-Fi
- Sleep mode
  - 3 fan speeds
  - Ultra quiet operation
- Precise 4-way air distribution
- Evaporator frost control
- Built-in drain lift
- Flexible installation
- Clean modern look
- Wireless remote control included

FPHFC09A3D, FPHFC12A3D

FPHFC18A3D, FPHFC24A3D, FPHSC36A3D



FPHFR09A3D, FPHFR12A3D



FPHFR18A3D, FPHFR24A3D, FPHFR36A3D

EXTREME TEMPERATURE HEATING & COOLING

- Low ambient heat pump operation down to -22°F
- Low ambient cooling operation down to 5°F
- Low temperature compressor start-up protection

## Ceiling Cassette Grilles (Required)

FPCG0912A

FPCG182436A

| DECORATIVE GRILLE | |
|---|---|
| FPCG0912A | FPCG182436A |
| FITS FPHFC09A3D, FPHFC12A3D | FITS FPHFC18A3D, FPHFC24A3D, FPHFC36A3D |

works with Google Home

works with alexa

PRECISION INVERTER | ComfortPRO MOBILE APP | DIAMONDBLUE™ Advanced Corrosion Protection | FreshAire® IAQ READY | ENERGY STAR | ENERGY STAR COLD CLIMATE

# FLOATING AIR™ *ULTRA*® | SINGLE-ZONE | CEILING CASSETTE HEAT PUMPS

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **MODEL** | Model Set | Unit | **FPHC093D** | **FPHC123D** | **FPHC183D** | **FPHC243D** | **FPHC363D** |
| | Indoor Model | | **FPHFC09A3D** | **FPHFC12A3D** | **FPHFC18A3D** | **FPHFC24A3D** | **FPHSC36A3D** |
| | Outdoor Model | | **FPHFR09A3D** | **FPHFR12A3D** | **FPHFR18A3D** | **FPHFR24A3D** | **FPHFR36A3D** |
| | Power Supply | V/Hz/ph | 208V/230V~,60Hz,1P | | | | |
| | ENERGY STAR® Standard | Y/N | Y | Y | Y | Y | Y |
| | ENERGY STAR® – Cold Climate | Y/N | Y | Y | Y | Y | Y |
| **COOLING** | Rated Capacity @ 95°F | Btu/h | 9,000 | 12,000 | 18,000 | 24,000 | 36,000 |
| | Cooling Capacity Range (Min.–Max.) | Btu/h | 4,300-14,500 | 4,300-14,500 | 7,800-24,000 | 9,000-30,000 | 12,000-45,000 |
| | EER2 @ 95°F | Btu/h/W | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| | SEER2 | Btu/h/W | 20.00 | 20.00 | 20.00 | 20.00 | 19.50 |
| | Cooling Operating Range (Min.–Max.) | °F | 5–125 | 5–125 | 5–125 | 5–125 | 5–125 |
| **HEATING** | Rated Capacity @ 47°F | Btu/h | 9,000 | 12,000 | 18,000 | 24,000 | 36,000 |
| | Heating Capacity Range (Min.–Max.) | Btu/h | 5,500-18,000 | 5,500-18,000 | 8,500-24,000 | 7,500-34,000 | 11,000-45,000 |
| | COP @ 47°F | W/W | 3.52 | 3.52 | 3.38 | 3.52 | 3.70 |
| | COP @ 5°F | W/W | 1.80 | 1.80 | 2.00 | 2.00 | 2.00 |
| | HSPF2 | Btu/h/W | 9.50 | 9.50 | 10.00 | 10.50 | 9.50 |
| | Rated Capacity Heating @ 17°F (-8.3°C) | Btu/h | 8,900 | 8,900 | 14,100 | 19,100 | 25,500 |
| | Maximum Heating Capacity @ 5°F (-15°C) | Btu/h | 12,000 | 12,000 | 18,000 | 24,000 | 36,000 |
| | Maximum Heating Capacity @ -13°F (-25°C) | Btu/h | 8,400 | 8,400 | 12,600 | 16,200 | 25,200 |
| | Heating Operating Range (Min.–Max.) | °F | -22–75 | -22–75 | -22–75 | -22–75 | -22–75 |
| **INDOOR AIRFLOW** | Air Circulation (Max/H/M/L) | ft3 CFM | 341/341/294/235 | 341/341/294/235 | 643/643/554/465 | 706/706/588/494 | 1,030/1,030/883/736 |
| | Sound Rating - Indoor (High) | dB (A) | 52 | 52 | 50 | 53 | 60 |
| **INDOOR FAN MOTOR** | Output | W | 57 | 57 | 75 | 75 | 106 |
| | Speed (High/Medium/Low) | r/min | 700/600/500 | 700/600/500 | 420/381/320 | 470/400/340 | 660/560/480 |
| **OUTDOOR AIRFLOW** | Air Circulation (High) for Outdoor | ft3 CFM | 1,354 | 1,354 | 1,853 | 2,235 | 3,350 |
| | Sound Rating - Outdoor | dB (A) | 64.0 | 64.0 | 68.0 | 71.0 | 74.0 |
| **OUTDOOR FAN MOTOR** | Output | W | 40 | 40 | 60 | 110 | 250 |
| | Speed (High) | r/min | 880 | 880 | 880 | 870 | 850 |
| **ELECTRICAL** | Rated Current | Cooling (A) | 3.00 | 4.30 | 6.30 | 8.50 | 14.20 |
| | | Cooling (W) | 750 | 1,000 | 1,500 | 2,000 | 3,000 |
| | | Heating (A) | 3.00 | 4.25 | 6.78 | 8.50 | 13.50 |
| | | Heating (W) | 750 | 1,000 | 1,560 | 2,000 | 2,850 |
| | MOP (Rating of Overcurrent Protective Device) | A | 20 | 20 | 25 | 30 | 50 |
| | MCA (Minimum Circuit Ampacity) | A | 12 | 12 | 16 | 22 | 30 |
| | Communication Wire Size and Type | | 4 x 16AWG | 4 x 16AWG | 4 x 16AWG | 4 x 16AWG | 4 x 16AWG |
| **REFRIGERATION (R454B)** | Moisture Removal | pints/hr | 1.96 | 3.14 | 4.22 | 6.26 | 9.55 |
| | Refrigerant Charge Volume | oz. | 38.1 | 38.1 | 56.4 | 74.1 | 112.8 |
| | Liquid Pipe | in. | 1/4 | 1/4 | 1/4 | 3/8 | 3/8 |
| | Gas Pipe | in. | 3/8 | 3/8 | 1/2 | 5/8 | 5/8 |
| | Max. Pipe Length (Total) | ft. | 130 | 130 | 150 | 165 | 164 |
| | Max. Elevation (Indoor Units Higher Than Outdoor Unit) | ft. | 50 | 50 | 80 | 100 | 98 |
| | Pre-charge Pipe Length | ft. | 25 | 25 | 25 | 25 | 25 |
| | Additional Refrigerant Charge per Foot after 25 ft. | oz./ft. | 0.16 | 0.16 | 0.16 | 0.38 | 0.38 |
| **INDOOR UNIT** | Dimension (W×H×D) | in. | 22-1/2×8-1/2×22-1/2 | 22-1/2×8-1/2×22-1/2 | 33-1/8×9-1/4×33-1/8 | 33-1/8×9-1/4×33-1/8 | 33-1/8×10-3/4×33-1/8 |
| | | mm | 570×215×570 | 570×215×570 | 840×236×840 | 840×236×840 | 840×272×840 |
| | Packing (L×W×H) | in. | 28-3/4×26-1/4×11-1/2 | 28-3/4×26-1/4×11-1/2 | 37-3/8×12-5/8×37-3/8 | 37-3/8×12-5/8×37-3/8 | 37-3/8×14-1/8×37-3/8 |
| | | mm | 730×668×292 | 730×668×292 | 950×320×950 | 950×320×950 | 950×360×950 |
| | Net Weight | lbs. | 34.2 | 34.2 | 52.9 | 52.9 | 57.3 |
| | | kg | 15.5 | 15.5 | 24.0 | 24.0 | 26.0 |
| | Shipping Weight | lbs. | 40.8 | 40.8 | 63.9 | 63.9 | 70.6 |
| | | kg | 18.5 | 18.5 | 29.0 | 29.0 | 32.0 |
| **OUTDOOR UNIT** | Dimension (W×H×D) | in. | 31-7/8×22-7/8×11 | 31-7/8×22-7/8×11 | 33-7/8×26-3/8×12-1/4 | 35-3/8×29-1/2×13-3/8 | 43-1/4×34-1/2×17-3/4 |
| | | mm | 810×580×280 | 810×580×280 | 860×670×310 | 900×750×340 | 1,100×875×450 |
| | Packing (L×W×H) | in. | 37×16-1/2×25-1/4 | 37×16-1/2×25-1/4 | 39×17-3/4×28-3/4 | 41×32-5/8×18-1/8 | 45-7/8×39-1/2×21-1/4 |
| | | mm | 940×420×640 | 940×420×640 | 990×730×450 | 1,040×830×460 | 1,165×1,005×540 |
| | Net Weight | lbs. | 79.4 | 79.4 | 103.6 | 123.4 | 185.2 |
| | | kg | 36.0 | 36.0 | 47.0 | 56.0 | 84.0 |
| | Shipping Weight | lbs. | 86.0 | 86.0 | 111.3 | 132.3 | 209.4 |
| | | kg | 39.0 | 39.0 | 50.5 | 60.0 | 95.0 |
| **GRILLE** | Dimension (W×H×D) | in. | 24-3/8×1-5/8×24-3/8 | 24-3/8×1-5/8×24-3/8 | 37-3/8×2×37-3/8 | 37-3/8×2×37-3/8 | 37-3/8×2×37-3/8 |
| | | mm | 620×40×620 | 620×40×620 | 950×50×950 | 950×50×950 | 950×50×950 |
| | Packing (L×W×H) | in. | 27-1/8×26-3/4×4-1/2 | 27-1/8×26-3/4×4-1/2 | 40-1/8×39-3/8×4-1/8 | 40-1/8×39-3/8×4-1/8 | 40-1/8×39-3/8×4-1/8 |
| | | mm | 690×680×115 | 690×680×115 | 1,020×1,000×105 | 1,020×1,000×105 | 1,020×1,000×105 |
| | Net Weight | lbs. | 5.7 | 5.7 | 14.3 | 14.3 | 14.3 |
| | | kg | 2.6 | 2.6 | 6.5 | 6.5 | 6.5 |
| | Shipping Weight | lbs. | 9.9 | 9.9 | 19.8 | 19.8 | 19.8 |
| | | kg | 4.5 | 4.5 | 9.0 | 9.0 | 9.0 |

Due to continuing research in new energy-saving technology, specifications are subject to change without notice.

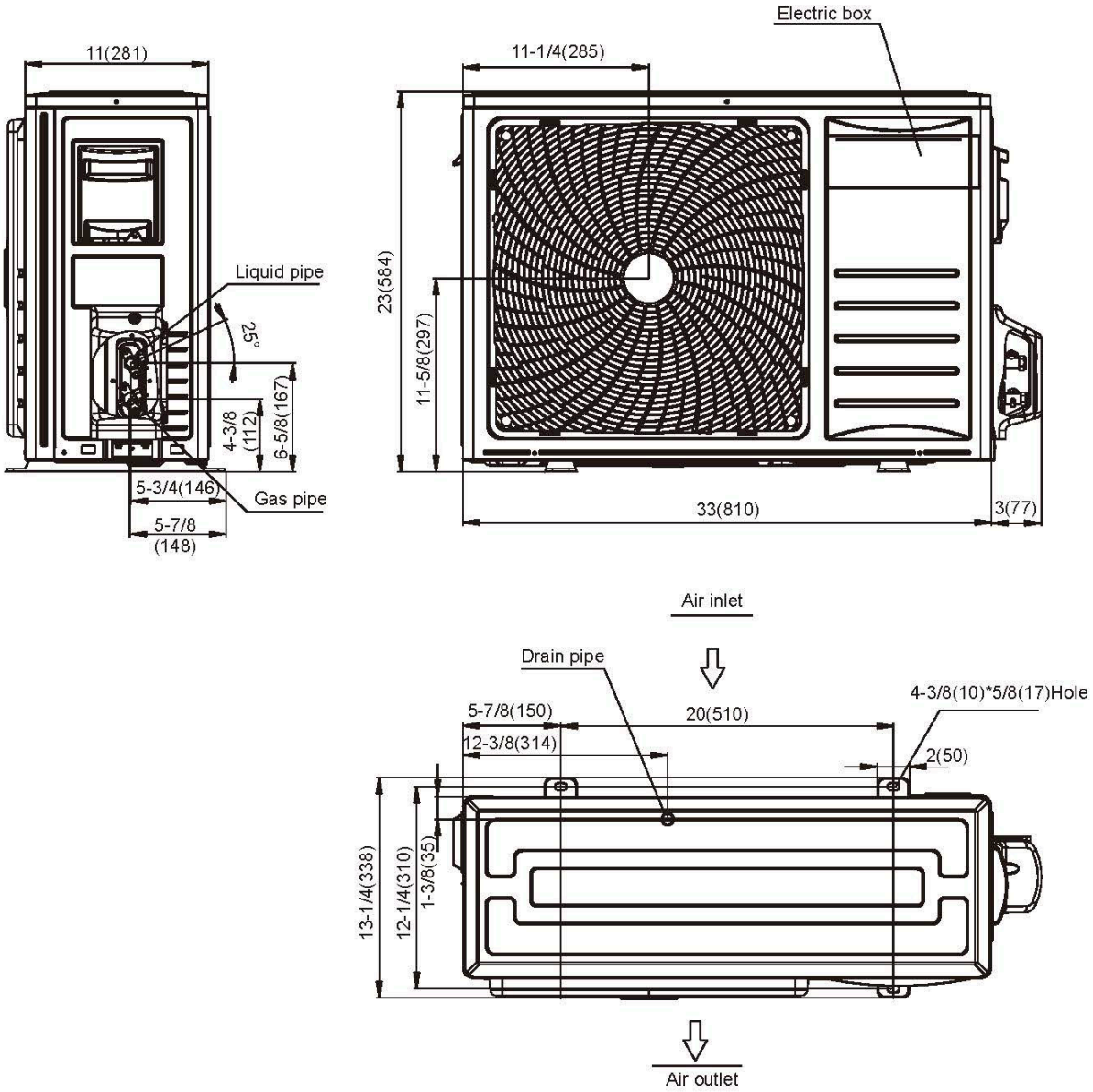
Standard | With Registration

7 YR. PARTS WARRANTY | 10 YR. COMPRESSOR WARRANTY | 10 YR. PARTS WARRANTY | 10 YR. COMPRESSOR WARRANTY

**DIMENSIONAL DRAWINGS: OUTDOOR HEAT PUMPS**

SINGLE ZONE OUTDOOR UNITS / FPHFR09A3D, FPHFR12A3D

UNITS: INCHES (MM)

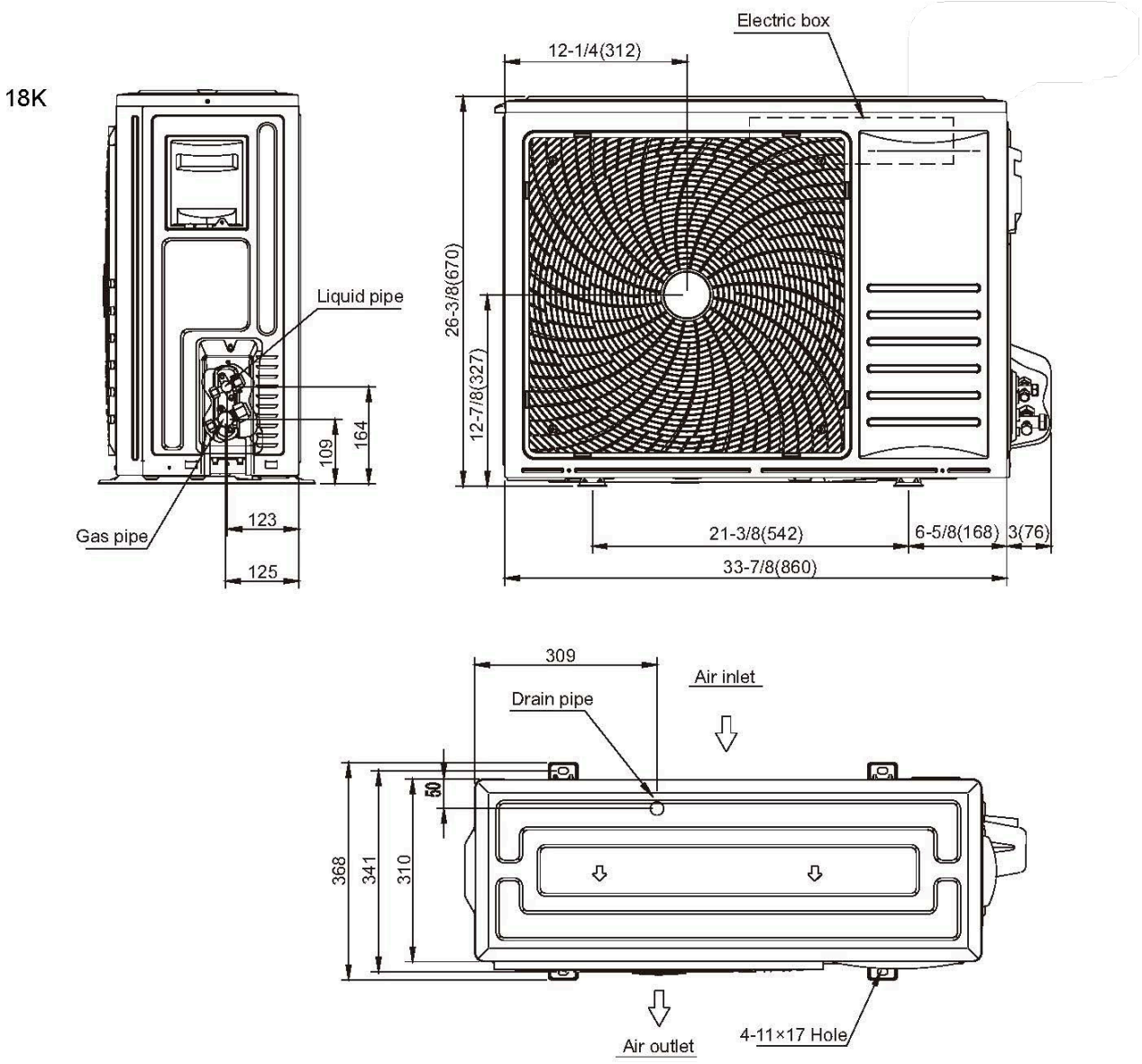


**DIMENSIONAL DRAWINGS: OUTDOOR HEAT PUMPS**

SINGLE ZONE OUTDOOR UNITS / FPHFR18A3D,

UNITS: INCHES (MM)

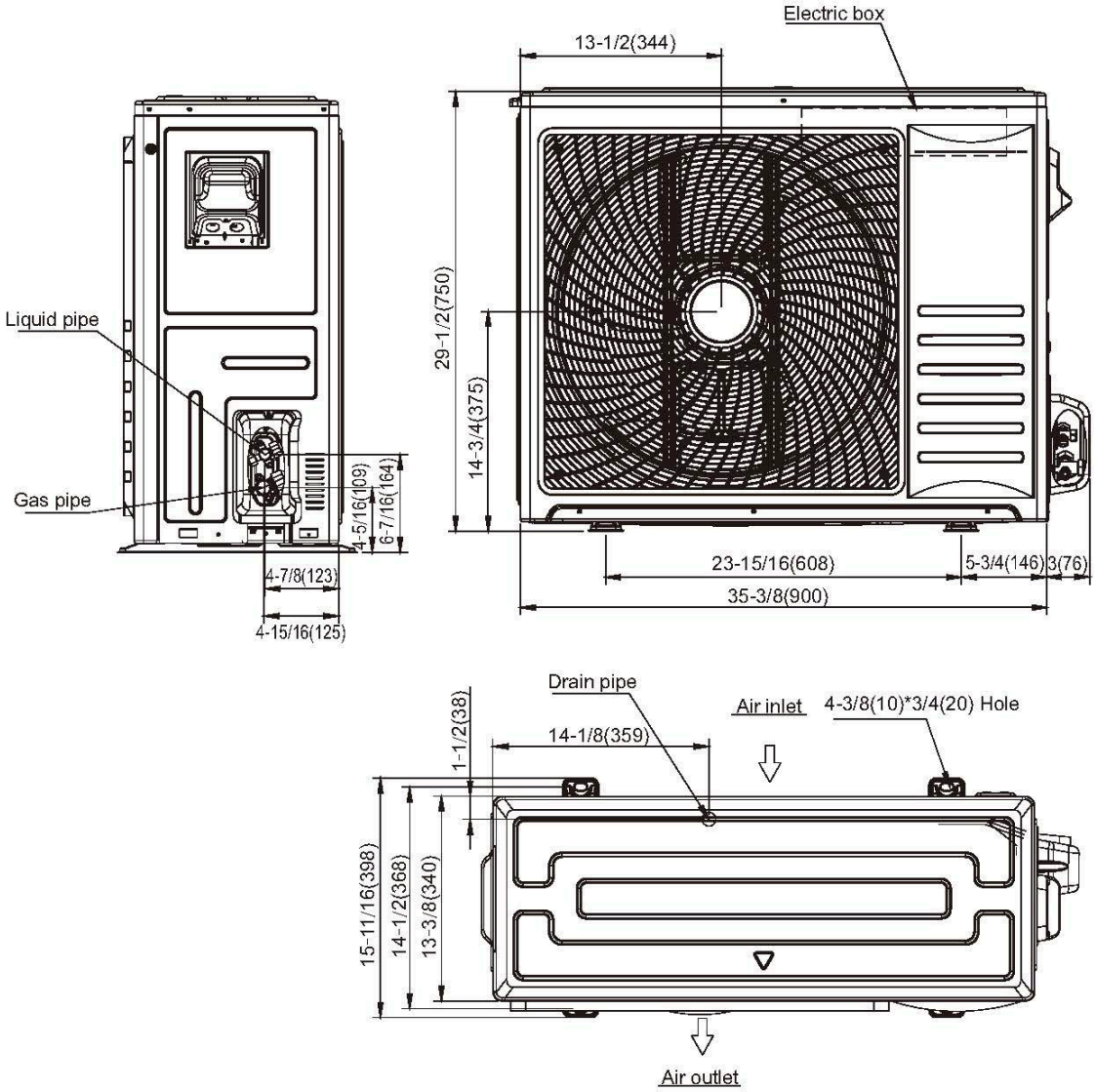
18K



**DIMENSIONAL DRAWINGS: OUTDOOR HEAT PUMPS**

SINGLE ZONE OUTDOOR UNITS / FPHFR24A3D,

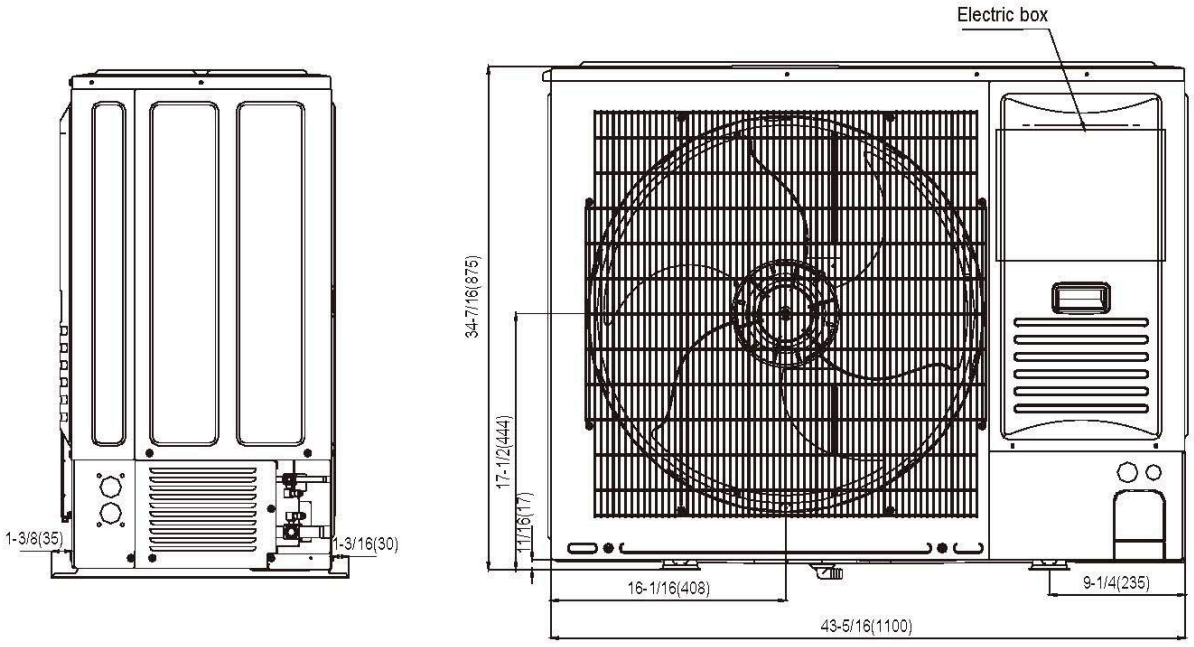
UNITS: INCHES (MM)

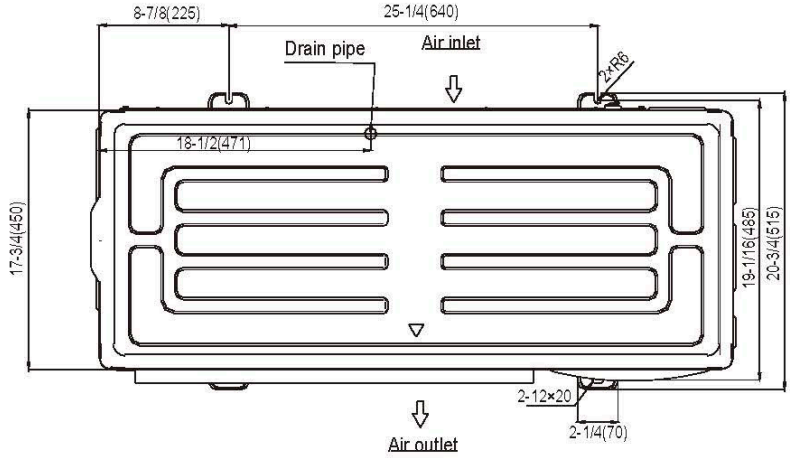


**DIMENSIONAL DRAWINGS: OUTDOOR HEAT PUMPS**

SINGLE ZONE OUTDOOR UNITS / FPHFR36A3D

UNITS: INCHES (MM)

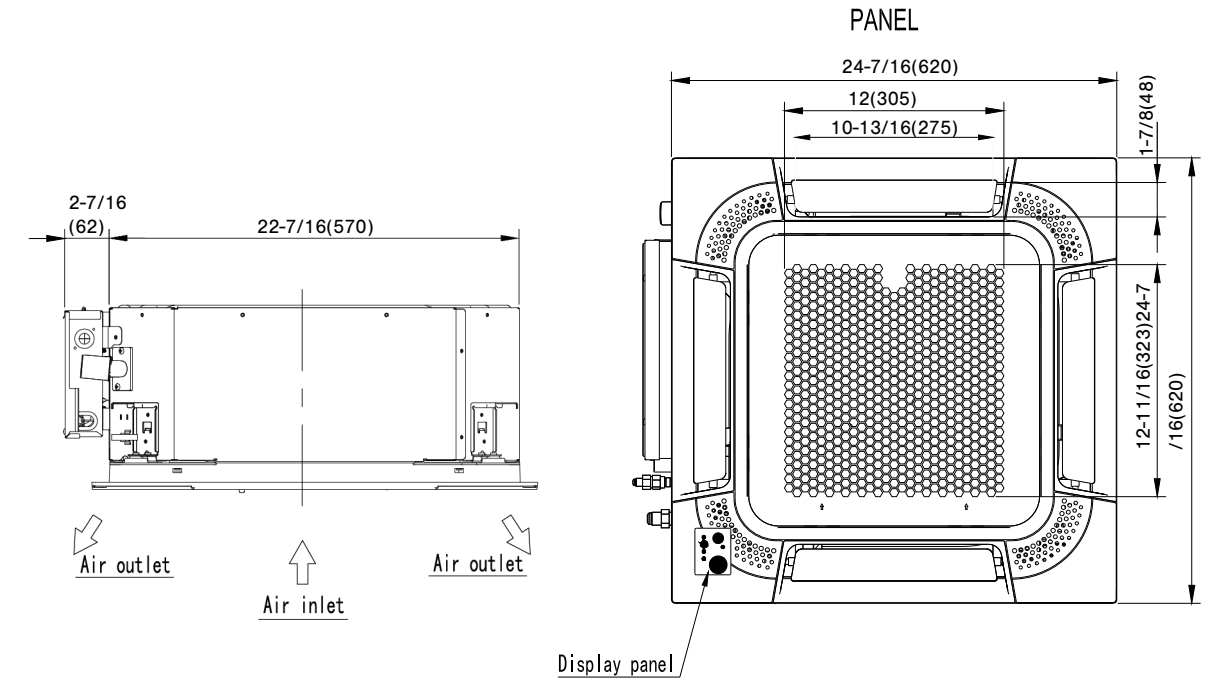


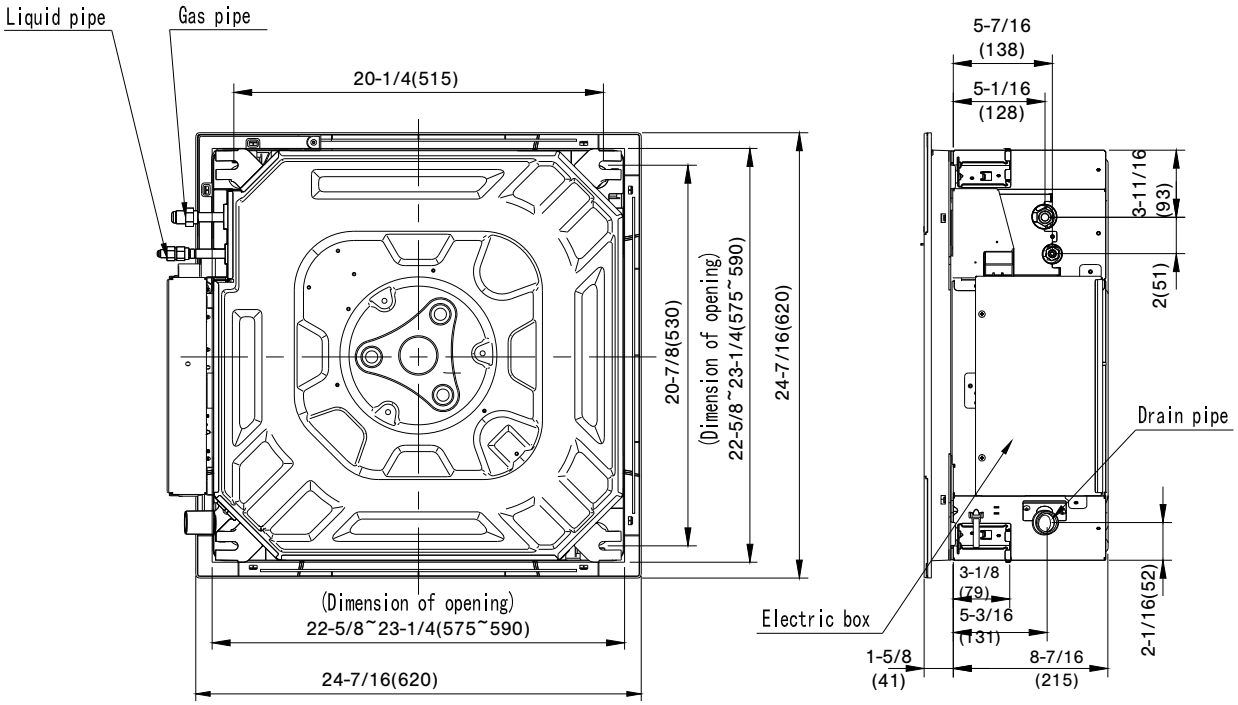



## DIMENSIONAL DRAWINGS: OUTDOOR HEAT PUMPS

SINGLE ZONE OUTDOOR UNITS / FPHFC09A3D, FPHFC09A3D

UNITS: INCHES (MM)



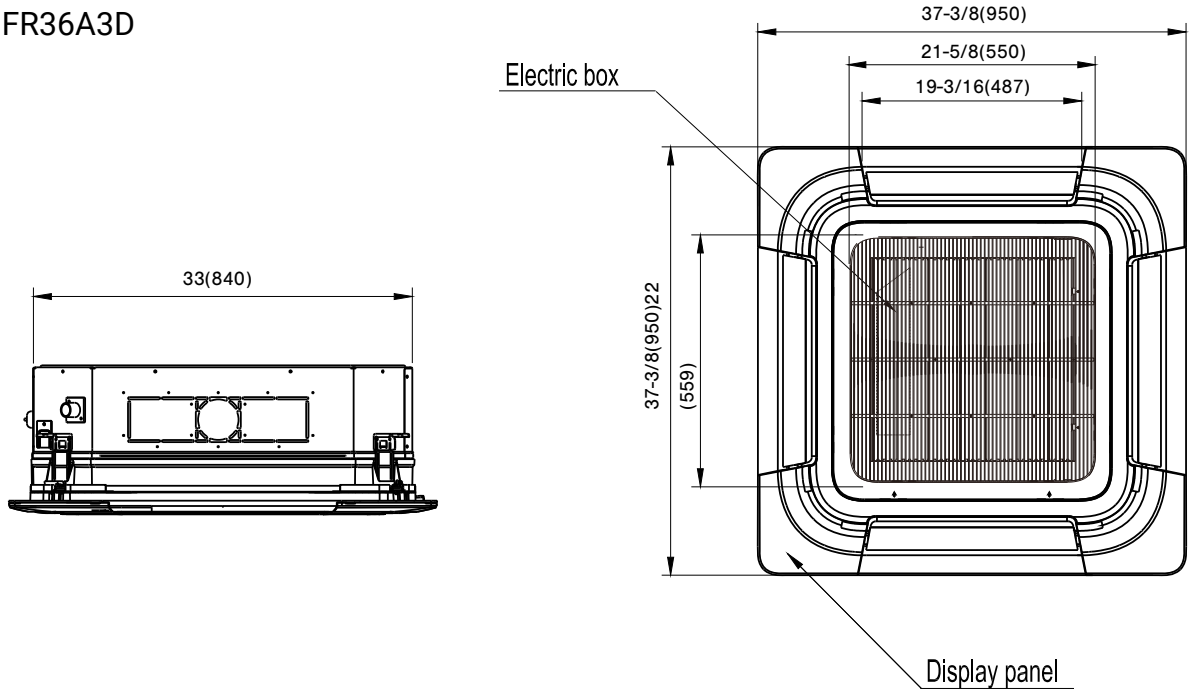
## DIMENSIONAL DRAWINGS: OUTDOOR HEAT PUMPS

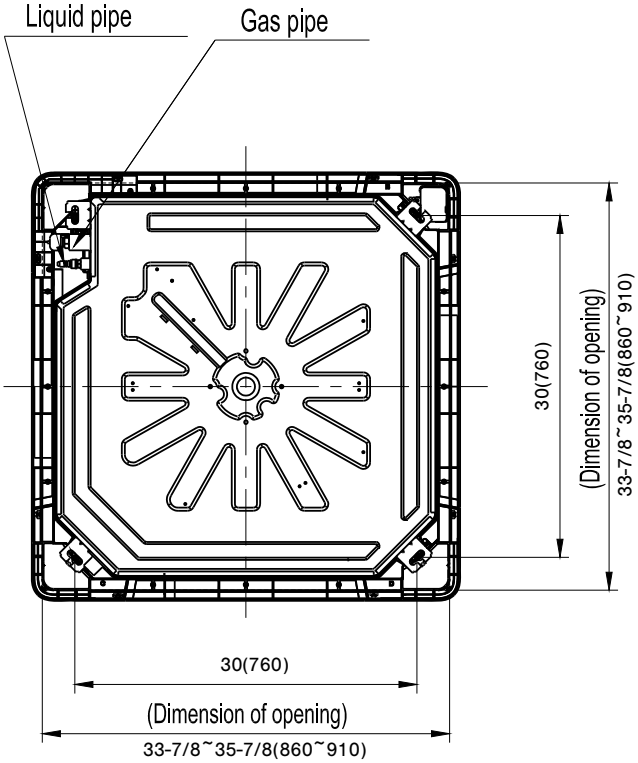
SINGLE ZONE OUTDOOR UNITS / FPHFR18A3D, FPHFR24A3D, FPHFR36A3D

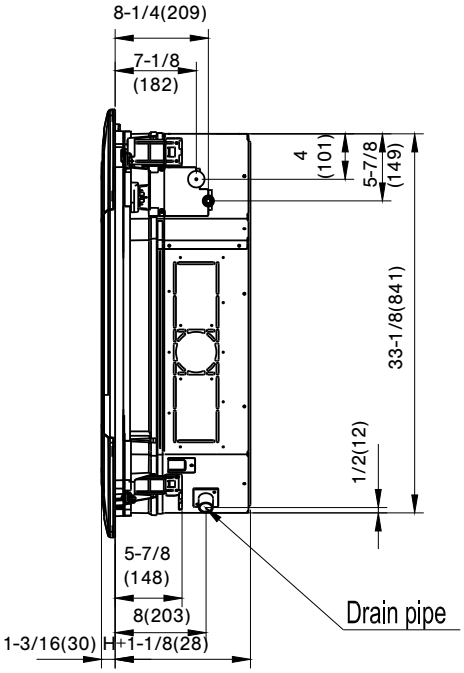
UNITS: INCHES (MM)

**DIMENSIONAL DRAWINGS INDOOR UNIT /**
FPHFR18A3D,FPHFR24A3D,
FPHFR36A3D

PANEL




| Model | H |
|---|---|
| **18K/24K** | 236 |
| **36K** | 272 |

## REFRIGERATION LINE SETS*

**SINGLE-ZONE**

| Kit# | Length (ft.) | Liquid | Suction | System Model |
|---|---|---|---|---|
| T32150 | 15' | 1/4" | 3/8" | FPHC093D, FPHC123D |
| T32350 | 35' | 1/4" | 3/8" | |
| T41250 | 15' | 1/4" | 1/2" | FPHC183D |
| T42250 | 25' | 1/4" | 1/2" | |
| T52350 | 25' | 3/8" | 5/8" | FPHC243D |
| T53350 | 35' | 3/8" | 5/8" | |
| T63500 | 50' | 3/8" | 3/4" | FPHC363D |

*Insulated line sets are available for all Ruud split systems in 15 ft. and 35 ft. lengths. Each line set is equipped with flare nuts on both ends. Both liquid and suction lines are insulated. Line sets can be joined together with field supplied double male connectors. Each system requires one line set for each indoor unit installed.

### REFRIGERATION LINE SETS MIN./MAX. LENGTHS

| SINGLE-ZONE | | |
|---|---|---|
| System Model | Min. (ft.) | Max. Each/ Total(ft.) |
| FPHC093D | 25 | 82 |
| FPHC123D | 25 | 82 |
| FPHC183D | 25 | 82 |
| FPHC243D | 25 | 164 |
| FPHC363D | 25 | 164 |

### TORQUE WRENCH SETTINGS

| Outside Diameter | | Torque | |
|---|---|---|---|
| mm | inch | ft-lbs. | N·m |
| 6.35 | 1/4 | 13 – 18 | 17.6 – 24.5 |
| 9.52 | 3/8 | 25 – 30 | 33.3 – 41.2 |
| 12.7 | 1/2 | 40 – 47 | 53.9 – 64.7 |
| 15.88 | 5/8 | 45 – 59 | 61.7 – 80.4 |

# ACCESSORIES

**FPWC1 –** Optional hard-wired controller for Floating Air wall-mounted and cassette indoor models. Included with concealed ducted models. Not compatible with AHU indoor models. See your Ruud representative for options.

**DSSXEMWRTA4 –** Optional wireless energy management thermostat with occupancy sensor. For Floating Air Achiever Plus® Series, single- and multi-zone models.