# AIO® Vertical Stack XL without ERV

## Product Data Sheet

**Note:** The image shows the unit with a left-side vent. The unit also comes with right-side and back vent options.



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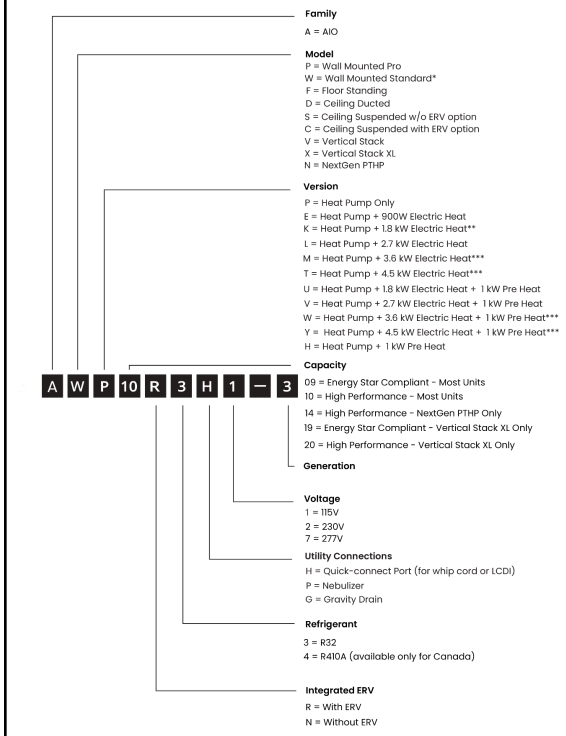
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ETL Listed. Control Number: 5032306. Conforms to: UL 60335-2-40:2022 Ed.4 | CSA C22.2#60335-2-40:2022 Ed.4 | UL 60335-1:2016 Ed.6 | CSA C22.2#60335-1:2016 Ed.2

## MODEL NUMBER NOMENCLATURE

The code identifies the family, model, version, size, voltage, accessories, refrigerant type, and ERV option. See the diagram below for details.

*Figure 1. AIO® nomenclature*




* 8" Vents : Just generation (e.g. = 3)
6" Vents : Generation + SP (e.g. = 3SP)
** Field convertible to 900W
*** AIO® Vertical Stack XL **Only**

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# 1. READING THIS DOCUMENTATION

Some language and symbols in this documentation have specific meanings.

## 1.1 Documentation-specific language

**Reference to the product**
Any reference to "the unit" refers to the AIO® Vertical Stack XL without an ERV unit.

**Unit orientation**
All directions in this guide (left, right, top, bottom) are given from the perspective of facing the unit as installed in the wall opening.

## 1.2 Annotation icons

Annotations are provided throughout this guide. It is essential to read each carefully and follow the instructions stated.

Indicates critical information for correct operation or installation.

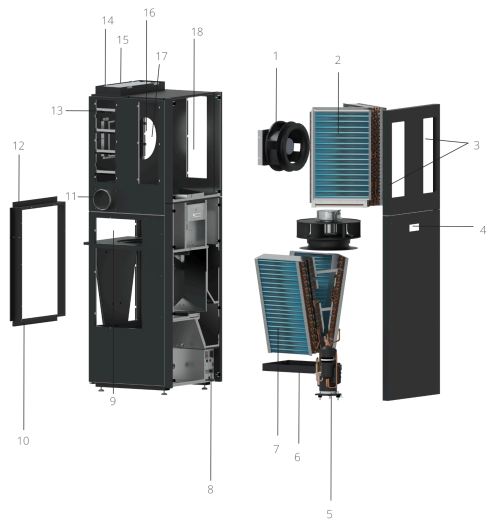
Indicates supplemental information, tips, or useful background information.

# 2. AIO® VERTICAL STACK XL WITHOUT ERV OVERVIEW

AIO® Vertical Stack XL is the ideal multi-room solution when a ceiling-mounted unit is not desired or feasible. The compact 23.8-inch (605mm) by 27.4-inch (695 mm) footprint uses minimal floor space. This unit is perfect anywhere direct venting or ducting is required, with up to 0.6" (15.2 mm) external static pressure. You can use any grille and louver combination for maximum design flexibility.

## 2.1 Components and structure

*Figure 2. AIO® Vertical Stack XL without ERV components and structure*




| | | | |
|---|---|---|---|
| **1** | Indoor air ECM centrifugal supply fan | **10** | Left side condenser intake and exhaust option |
| **2** | Indoor heat exchanger | **11** | Bathroom exhaust (not available for this unit) |
| **3** | Front return air option | **12** | Intake/exhaust flange - can be placed on rear, left, or right sides |
| **4** | Touch controller and display | **13** | Right supply air option |
| **5** | BLDC inverter compressor | **14** | Optional 3 kW electric heat strip |
| **6** | Condensate tray | **15** | Top supply air option |
| **7** | Advanced outdoor heat exchanger | **16** | Left return air option |
| **8** | Electronics | **17** | Right supply air option |
| **9** | Rear condenser intake and exhaust option | **18** | Right return air option |

## 2.2 Key features

**No outdoor unit**
The single package design means that there is no outdoor unit, freeing up space on rooftops and at ground level and enabling installations in buildings without space for an outdoor unit.

**Twin rotary BLDC inverter compressor**
The state-of-the-art, twin, rotary Brushless DC (BLDC) inverter compressor operates efficiently, quietly, and with minimal vibration. AIO®'s Vertical Stack XL unit is ideal for any room or area that requires between 4,500 and 24,000 Btu/h of cooling capacity, or between 5,000 and 24,000 Btu/h of heating capacity.

**Recovery plus™**
With a patent-pending innovation, AIO® utilizes the heat or cold air remaining after passing through the recovery core to lower or raise the temperature of the condenser, providing a boost in performance and efficiency.

**MERV 13 air filter**
The MERV 3 (or optional MERV 13) indoor air filter ensures recirculated air within the room remains clean and safe.

**High-efficiency ECM fans with auto ESP**
High-efficiency electronically commutated motor (ECM) fans enable efficient and quiet operation because the EC motor can ramp up or down as required. Automatically adjusted external static pressure ensures correct airflow.

**Cold climate heat pump**
The heat pump efficiently functions in temperatures as low as 5°F (-15°C) outdoors, with continued operation to -10°F (-23.3°C) and below.

**3,600-watt electric heat**
The electric heat works in conjunction with the heat pump when the heat pump lacks sufficient power.

**Intelligent defrosting**
AIO®'s intelligent defrosting system means more time heating and less time on the reverse cycle defrost.

**Quiet**
With whisper-quiet operation as low as 27 decibels, the occupant will barely notice that the AIO® unit is in operation.

**Versatile on/off options**
AIO®'s low-voltage connection enables connection to any Building Management System (BMS), key-card system, window sensors, fire alarms, etc. As long as a system can send a signal to the AIO® unit via low voltage, the unit can be easily turned on or off.

**Minimal clearances and compact footprint**
AIO®'s compact form does not use any line sets. This means that there is no need to access the sides of the unit. You can mount units with as little as 4" (102 mm) clearance on all sides.

**Leak protection**
If a drain becomes clogged, the system shuts down, and an alarm is activated. This prevents water damage.

**Easy to service**
The AIO® unit can be easily maintained and repaired from the front without having to remove the unit.

**Versatile controls**
The AIO® unit includes an onboard touch controller and an optional iOS and Android app. AIO® can be used with optional wall-mounted controllers, including a Thin Film Transistor (TFT) with a 7-day program, and third-party controllers, using the optional third-party kit. An optional BACnet and Modbus module enables interfacing with building management systems.

# 3. AIRFLOW

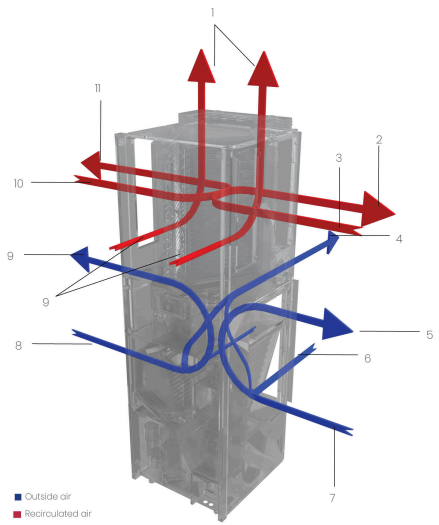
## 3.1 Airflow operation

AIO® Vertical Stack XL's powerful backward centrifugal ECM fan facilitates efficient condenser air movement through ductwork, enabling flexible placement within a room or apartment. Unlike traditional VTACs, it does not require an outside wall. The design allows air supply from the top or both sides, with flexible condenser intake options (left, right, or rear). Flexible ducting choices with 0.7" WC (174.4 Pa) make the AIO® Vertical Stack XL versatile for installation without restrictions in any residence.

For optimal performance, a fully ducted return configuration is recommended. Both return air openings must remain open and unobstructed during operation. The unit may be installed with both returns ducted, or with one return ducted and the other left open as a side plenum return.

## 3.2 Airflow diagram

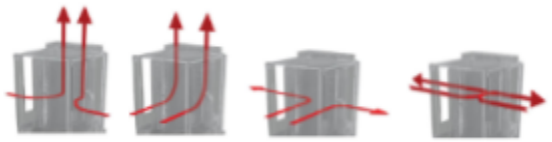
*Figure 3. Airflow*




| | | | |
|---|---|---|---|
| **1** | Top Supply | **7** | Right condenser intake |
| **2** | Right Supply | **8** | Left condenser intake |
| **3** | Right Return | **9** | Front return |
| **4** | Rear condenser exhaust | **10** | Left condenser exhaust |
| **5** | Right intake of kitchen/bathroom exhaust (not available for this unit) | **11** | Left return |
| **6** | Right condenser intake | | |

## 3.3 Fan coil part

*Figure 4. Fan coil part*



Supply: **Top**
Return: **Left & Right**

Supply: **Top**
Return: **Front**

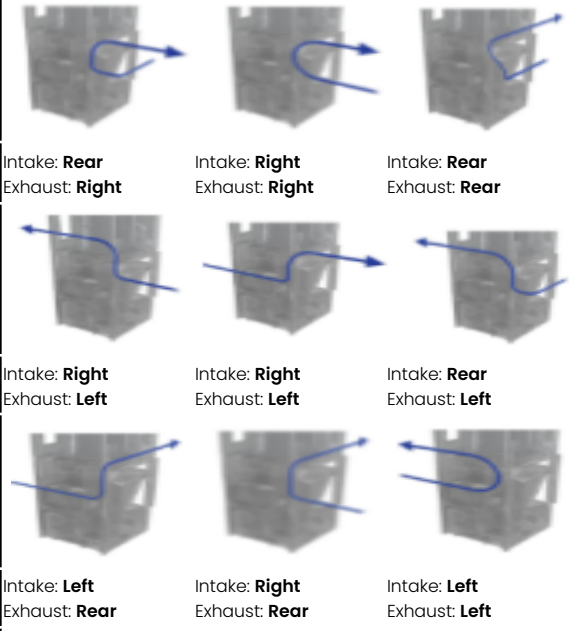
Supply: **Left & Right**
Return: **Front**

Supply: **Left & Right**
Return: **Left & Right**

Recirculate

## 3.4 Condenser part

*Figure 5. Condenser part*



Intake: **Rear**
Exhaust: **Right**

Intake: **Right**
Exhaust: **Right**

Intake: **Rear**
Exhaust: **Rear**

Intake: **Right**
Exhaust: **Left**

Intake: **Right**
Exhaust: **Left**

Intake: **Rear**
Exhaust: **Left**

Intake: **Left**
Exhaust: **Rear**

Intake: **Right**
Exhaust: **Rear**

Intake: **Left**
Exhaust: **Left**

Outside

## 3.5 Fan curves

The following graphs illustrate airflow versus external static pressure at low, medium, and high fan speeds.

*Figure 6. Indoor fan performance curves*

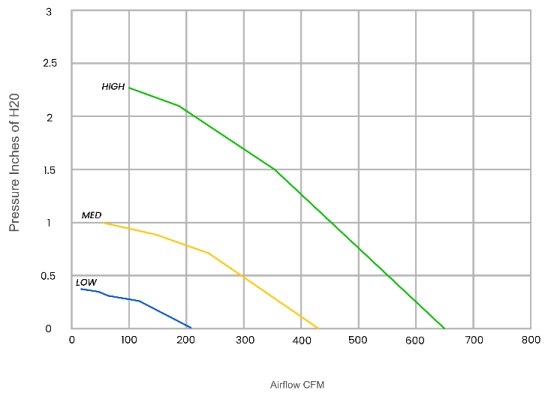
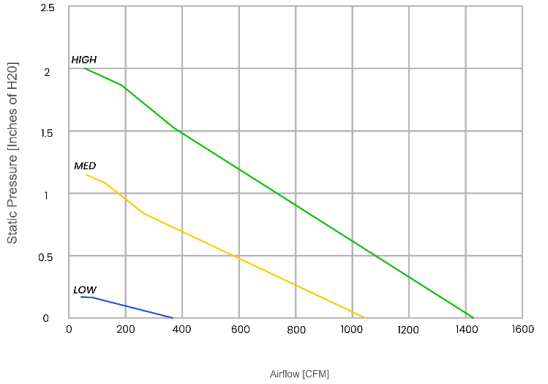



*Figure 7. Outdoor fan performance curves*



# 4. INSTALLATION REQUIREMENTS

*Figure 8. Installation*



Shared supply and exhaust vents

Supply upper wall - return lower on both sides of the unit

Shown with plenum adapter for simplified ducting

## 4.1 Air balancing requirements

- All units must be properly air-balanced by a qualified, professional air-balancing company.
- Air balancing must be performed after installation and prior to final commissioning.
- A formal air balancing report must be completed and made available.
- Failure to perform air balancing properly may result in improper performance, system issues, and voiding of the warranty.

## 4.2 Low ambient heating configuration requirement

To configure the unit for electric resistance heating in low ambient conditions:

1. Press and hold **Power** for 10 seconds to enter the **User Menu**.
2. Press and hold **+** and **–** simultaneously for 10 seconds to enter the **Installer Menu**.
3. Use **+ / –** to scroll to **HE**, then press **Power**.
4. Use **+ / –** to select **RT**, then press **Power** to save (save icon appears).
5. When returned to the main screen, press **A**, then press **A** again.

This setting shifts the unit to electric resistance heating during low ambient conditions, preventing heat pump operation that may contribute to ice formation.

## 4.3 Ambient temperature protection

When installed in climates with ambient temperatures below freezing, the unit must be located in an enclosed, temperature-protected indoor space that will not fall below 5°F (-15°C).

## 4.4 Site requirements

Refer to the installation manual for complete installation requirements and specifications.

- Where practical, avoid installing the unit in a location exposed to direct sunlight. Solar heating may cause the room-air temperature sensor to detect a temperature higher than the actual room temperature, resulting in improper temperature control, unnecessary cooling operation, reduced heating output, and decreased energy efficiency.
- An electrical supply with a grounded 3-prong receptacle.
- A power supply circuit installed in accordance with the current edition of NEC (ANSI/NFPA 70) and local codes and ordinances.

- Always consult local and national electrical codes before installing the unit.
- Damage or premature failure of the quoted equipment resulting from improper voltage conditions, inadequate electrical service, or operating the equipment with excessive THD (Total Harmonic Distortion) levels will void the Manufacturer's warranty.
- Do not operate the unit in or near a construction or renovation site. Dust and debris can enter the unit, causing malfunctions and reduced performance.

- A power supply with a voltage rating of 60 Hz, single phase in 115V or 208/230V, in accordance with the model specified.
- A properly installed condensate drain line with a minimum of 2% slope, when an internal drain is used. An internal drain is highly recommended. If using an externally run condensate line, note the following:
  - The line must be properly insulated.
  - A minimum of 30% slope.
  - If on a low floor, ensure that the end of the drain is above the maximum height of snow buildup.
- Interior clearances are only required to prevent vibrations. Leave at least 4" (102 mm) of clearance from any surface in addition to any clearance required for servicing the unit. All other clearances are dependent on ducting.
- Approved louvers must be installed with best practices to ensure that no water enters the wall assembly.

- The unit is intended for ducted installation. Installation without ductwork may result in airflow performance issues.
- Correctly sized ductwork must be properly installed and balanced.
- The unit must be perfectly level on the horizontal axis and perfectly plumb on the vertical axis.
- The unit must be tightly attached to the ducts, with zero leakage between the external ducts and the unit.
- The unit must be properly affixed with screws to wall studs or other supporting material.
- Unblocked vents on the exterior with no obstacles within 40" (1016 mm) of the air intake and discharge.
- An access panel with adequate clearance to be able to access the entire front of the unit for service.
- The outside air intake duct is intended to be installed as insulated ducting (with a minimum of R-8 insulation). Insulation reduces thermal losses during cooling operation and helps prevent freezing and condensation during heating operation, which may result in equipment or property damage.
- Vertical stack units are intended to be installed within an insulated closet that is thermally coupled to the conditioned space. Insulating the closet helps prevent exposure to extreme outdoor temperatures and limits temperature stratification, ensuring the unit reflects indoor conditions and reducing the risk of inaccurate temperature readings during both heating and cooling operations.

## 4.5 Louver specifications

AIO® Vertical Stack XL units accommodate various outdoor air louver designs, including architectural louvers and perforated panels.

Choose one of the following options:

- Use the INNOVA-approved LLA/F-V XL louver, available through your INNOVA distributor.
- Use a custom louver designed with guidance from INNOVA.



Contact INNOVA before selecting, designing, or fabricating a custom louver. An unsuitable louver may restrict airflow, impair unit operation, and affect warranty coverage.

# 5. TECHNICAL SPECIFICATIONS

## 5.1 High performance

### 5.1.1 Cooling

*Table 1. High Performance - Cooling*

| Heat Pump only | | | 95°F (35°C) (1) | 105°F (40.6°C) (2) | 115°F (46.1°C) (3) |
|---|---|---|---|---|---|
| Capacity | Maximum | BTU/hr | 24,000 | 22,000 | 20,000 |
| | Recommended* | | 22,000 | 20,500 | 18,500 |
| | Rated | | 20,300 | 18,300 | 17,500 |
| | Minimum | | 4,500 | 4,500 | 4,500 |
| Input Power | Maximum | W | 2,346 | 2,450 | 2,520 |
| | Recommended* | | 2,045 | 2,250 | 2,310 |
| | Rated | | 1,743 | 1,956 | 2,147 |
| | Minimum | | 341 | 356 | 358 |
| Efficiency | Maximum | EER | 10.23 | 8.98 | 7.94 |
| | Recommended* | | 10.76 | 9.11 | 8.01 |
| | Rated | EER2 | 11.65 | 9.36 | 8.15 |
| | Seasonal | SEER2 | 13.91 | - | - |
| Moisture Removal | | Pts/h | 1.9 | 2.1 | 2.3 |
| | | L/hr | 0.9 | 1.0 | 1.1 |

**Notes**
(1) ID: 80°F(26.7°C), W.B. 67°F(19.4°C) | OD: 95°F(35°C), W.B. 75°F(23.9°C)
(2) ID: 80°F(26.7°C), W.B. 67°F(19.4°C) | OD: 105°F(40.6°C), W.B. 75°F(23.9°C)
(3) ID: 80°F(26.7°C), W.B. 67°F(19.4°C) | OD: 115°F(46.1°C), W.B. 75°F(23.9°C)
* This is the recommended capacity for sizing the unit to the space.

### 5.1.2 Heating

*Table 2. High Performance - Heating*

| Heat Pump only | | | 47°F (8.3 °C) (1) | 17°F (-8.3 °C) (2) | 5°F (-15°C ) (3) | 0°F (-17.8° C) (4) | -5°F (-20.6 °C) (5) |
|---|---|---|---|---|---|---|---|
| Capacity | Maximum | BTU/ hr | 24,000 | 17,500 | 12,500 | 9,500 | 8,200 |
| | Recomm-ended* | | 20,000 | 11,600 | 9,300 | 8,300 | 7,600 |
| | Rated | | 17,300 | 10,400 | 8,300 | 7,400 | 6,800 |
| | Minimum | | 5,000 | 4,150 | 3,850 | 3,850 | 3,850 |
| Input Power | Maximum | W | 2,340 | 2,280 | 2,210 | 2,375 | 2,380 |
| | Recomm-ended* | | 1,800 | 1,480 | 1,390 | 1,400 | 1,228 |
| | Rated | | 1,424 | 1,286 | 1,210 | 1,215 | 1,060 |
| | Minimum | | 320 | 345 | 344 | 368 | 400 |
| Efficiency | Maximum | COP | 3.01 | 2.25 | 1.66 | 1.17 | 1.01 |
| | Recomm-ended* | | 3.26 | 2.30 | 1.96 | 1.74 | 1.81 |
| | Rated | | 3.56 | 2.37 | 2.01 | 1.79 | 1.88 |
| | Minimum | | 4.58 | 3.53 | 3.28 | 3.07 | 2.82 |
| | Seasonal | HSPF2 | 9.12 | - | - | - | - |

**Notes**
(1) ID: 70°F(21.1°C), W.B. 60°F(15.6°C) | OD: 47°F(8.3°C), W.B. 43°F(6.1°C)
(2) ID: 70°F(21.1°C), W.B. 60°F(15.6°C) | OD: 17°F(-8.3°C), W.B. 15°F(-9.4°C)
(3) ID: 70°F(21.1°C), W.B. 60°F(15.6°C) | OD: 5°F(-15°C), W.B. 3°F(-16.1°C)
(4) ID: 70°F(21.1°C), W.B. 60°F(15.6°C) | OD: 0°F(-17.8°C)
(5) ID: 70°F(21.1°C), W.B. 60°F(15.6°C) | OD: -5°F(-20.6°C)
* This is the recommended capacity for sizing the unit to the space.

Optional heat strips are available for an additional 12,200 BTU/hr of heating capacity.

## 5.2 Energy Star Compliant

### 5.2.1 Cooling

*Table 3. Energy Star Compliant - Cooling*

| Heat Pump only | | | 95°F (35°C) (1) | 105°F (40.6°C) (2) | 115°F (46.1°C) (3) |
|---|---|---|---|---|---|
| Capacity | Maximum | BTU/hr | 24,000 | 22,000 | 20,000 |
| | Recommended* | | 22,000 | 20,500 | 18,500 |
| | Rated | | 11,600 | 18,300 | 17,500 |
| | Minimum | | 4,500 | 4,500 | 4,500 |
| Input Power | Maximum | W | 2,346 | 2,450 | 2,520 |
| | Recommended* | | 1,669 | 2,250 | 2,310 |
| | Rated | | 991 | 1,956 | 2,147 |
| | Minimum | | 341 | 356 | 358 |
| Efficiency | Maximum | EER | 10.23 | 8.98 | 7.94 |
| | Recommended* | | 13.18 | 9.11 | 8.01 |
| | Rated | EER2 | 11.70 | 9.36 | 8.15 |
| | Seasonal | SEER2 | 15.40 | - | - |
| Moisture Removal | | Pts/h | 1.9 | 2.1 | 2.3 |
| | | L/hr | 0.9 | 1.0 | 1.1 |

**Notes**
(1) ID: 80°F(26.7°C), W.B. 67°F(19.4°C) | OD: 95°F(35°C), W.B. 75°F(23.9°C)
(2) ID: 80°F(26.7°C), W.B. 67°F(19.4°C) | OD: 105°F(40.6°C), W.B. 75°F(23.9°C)
(3) ID: 80°F(26.7°C), W.B. 67°F(19.4°C) | OD: 115°F(46.1°C), W.B. 75°F(23.9°C)
* This is the recommended capacity for sizing the unit to the space.

### 5.2.2 Heating - Heat pump only

*Table 4. Energy Star Compliant - Heating*

| Heat Pump only | | | 47°F (8.3 °C) (1) | 17°F (-8.3 °C) (2) | 5°F (-15°C ) (3) | 0°F (-17.8° C) (4) | -5°F (-20.6 °C) (5) |
|---|---|---|---|---|---|---|---|
| Capacity | Maximum | BTU/ hr | 24,000 | 17,500 | 12,500 | 9,500 | 8,200 |
| | Recomm-ended* | | 20,000 | 11,400 | 9,200 | 8,300 | 7,600 |
| | Rated | | 14,200 | 10,200 | 8,200 | 7,400 | 6,800 |
| | Minimum | | 5,000 | 4,150 | 3,850 | 3,850 | 3,850 |
| Input Power | Maximum | W | 2,340 | 2,280 | 2,210 | 2,375 | 2,380 |
| | Recomm-ended* | | 1,800 | 1,450 | 1,200 | 1,400 | 1,228 |
| | Rated | | 1,158 | 1,261 | 1,045 | 1,215 | 1,060 |
| | Minimum | | 320 | 345 | 344 | 368 | 400 |
| Efficiency | Maximum | COP | 3.01 | 2.25 | 1.66 | 1.20 | 1.01 |
| | Recomm-ended* | | 3.26 | 2.30 | 2.25 | 1.74 | 1.81 |
| | Rated | | 3.59 | 2.37 | 2.30 | 1.79 | 1.88 |
| | Minimum | | 4.58 | 3.53 | 3.28 | 3.07 | 2.82 |
| | Seasonal | HSPF2 | 9.20 | - | - | - | - |

**Notes**
(1) ID: 70°F(21.1°C), W.B. 60°F(15.6°C) | OD: 47°F(8.3°C), W.B. 43°F(6.1°C)
(2) ID: 70°F(21.1°C), W.B. 60°F(15.6°C) | OD: 17°F(-8.3°C), W.B. 15°F(-9.4°C)
(3) ID: 70°F(21.1°C), W.B. 60°F(15.6°C) | OD: 5°F(-15°C), W.B. 3°F(-16.1°C)
(4) ID: 70°F(21.1°C), W.B. 60°F(15.6°C) | OD: 0°F(-17.8°C)
(5) ID: 70°F(21.1°C), W.B. 60°F(15.6°C) | OD: -5°F(-20.6°C)
* This is the recommended capacity for sizing the unit to the space.

Optional heat strips are available for an additional 12,200 BTU/hr of heating capacity.

## 5.3 Airflow

### 5.3.1 Indoor

*Table 5. Airflow - Indoor*

| Air volume | | | |
|---|---|---|---|
| Indoor | Type | | ECM centrifugal |
| | Flow | CFM | 247 - 740 |
| | | $m^3/hr$ | 420- 1257 |
| | Available ESP | | - |
| | Supply connection | | Integrated top or side |
| | Return connection | | Integrated top or side |
| | Speeds | | Low, med, high, boost, auto |
| | Filter | | MERV 3 - Optional MERV 13 |

### 5.3.2 Outdoor

*Table 6. Airflow - Outdoor*

| Air volume | | | |
|---|---|---|---|
| Outdoor | Type | | ECM centrifugal |
| | Flow | CFM | 382 - 1110 |
| | | $m^3/hr$ | 649- 1886 |
| | Available ESP | | 0.7" WC (174.4 Pa) |
| | Intake and Exhaust Connection | | 18" x 36" (457 x 914 mm) vent |
| | Speeds | | Low, med, high, auto |

## 5.4 Sound

*Table 7. Sound*

| Sound | | | |
|---|---|---|---|
| Measurement | Distance | Fan Speed | Sound Level (dB(A))/Rating |
| Indoor | 1 m | Level 1 - Low | 44 |
| | | Level 2 - Medium | 52 |
| | | Level 3 - High | 54 |
| | 3 m | Level 1 - Low | 36 |
| | | Level 2 - Medium | 43 |
| | | Level 3 - High | 46 |
| Outdoor | - | Range | 28 - 55 |
| STC | - | - | 27 |
| OITC | | | 19 |

## 5.5 General

### 5.5.1 Controls

*Table 8. General - Controls*

| Controls | |
|---|---|
| Basic functionality | Dependent on the controller |
| WiFi | Optional module available |
| Dry contact | Yes |
| Power outage restart | Auto-on based on the last setting |

### 5.5.2 Modes

*Table 9. General - Modes*

| Modes | |
|---|---|
| Operation | Cool + fresh air, cool only, heat + fresh air, heat only, auto |
| Restricted modes | Heat only, cool only, temperature limiting |
| Timers | Dependent on the controller |

### 5.5.3 Condensate

*Table 10. General - Condensate*

| Condensate | |
|---|---|
| Pipe size | 3/4" (19 mm) Outside diameter |
| Pipe material | Rubber |

### 5.5.4 Physical

For detailed dimensions, refer to the drawings in Section 6.

*Table 11. General - Physical*

| Physical data | | | |
|---|---|---|---|
| Dimensions | | in | 23.8 W x 76.3 H x 27.4 D |
| | | mm | 605 W x 1937 H x 695 D |
| Weight | Net | lb | 332 |
| | | kg | 150.1 |
| | Gross | lb | 349 |
| | | kg | 158.3 |
| Cabinet | Finish | | Black covered with dark gray EPDM |
| | Material | | Steel |

### 5.5.5 General

*Table 12: General - Compressor*

| Compressor | | |
|---|---|---|
| Type | BLDC twin rotary inverter | |
| Refrigerant | Type | R32 |
| | Quantity | 45.85 oz. |
| | | 1.3 kg |
| Oil Type | Fv50s (ISO 50) | |

### 5.5.6 Insulation

*Table 13: General - Insulation*

| | |
|---|---|
| Thermal conductivity at 50°F | 0.239 BTU*in/(hr·ft²·°F) |
| Thermal conductivity at 10°C | 0.0344 W/(m·K) |

Insulation R-value is determined by dividing the insulation thickness by the thermal conductivity (k-value). Insulation thickness varies by component and configuration.

## 5.6 Electrical

### 5.6.1 General

*Table 14. Electrical - General*

| General | | High Performance | Energy Star |
|---|---|---|---|
| Volt range | | 180-253 | |
| Hz/phase | | 60 Hz / single phase | |
| Power input connection | | LCDI power cord or hardwire | |
| Power factor | | 0.96 | |
| Input power (standby) | W | 10.8 | |
| Input power (off mode) | | 1.7 | |
| Cooling (nominal) | A | 7.6 | 4.3 |
| Cooling (max) | | 10.2 | 11.2 |
| **Heat Pump Only** | | | |
| Heating - heat pump only (nom.) | A | 6.2 | 5.0 |
| Heating-heat pump only (max) | | 10.2 | 11.2 |
| **Heat Pump + 3.6 kW Elec Heat** | | | |
| Heating-heat pump+3,600 W Elec Heat (nom.) | A | 21.8 | 20.7 |
| Heating-heat pump+3,600 W Elec Heat (max) | | 26.0 | 27.0 |
| **Heat Pump + 4.5 kW Elec Heat** | | | |
| Heating-heat pump+4,500 W Elec Heat (nom.) | A | 27.7 | 26.5 |
| Heating-heat pump+4,500 W Elec Heat (max) | | 31.0 | 30.8 |

*Table 15. Electrical - Circuit breakers*

| Circuit breakers | | | |
|---|---|---|---|
| Heat Pump Only | MCA | A | 13 |
| | MOCP | | 18 |
| Heat Pump + 3600 W Elec Heat | MCA | A | 28 |
| | MOCP | | 34 |
| Heat Pump + 4500 W Elec Heat | MCA | A | 32 |
| | MOCP | | 38 |

### 5.6.2 Motors

*Table 16. Electrical - Motors*

| Motors | | | |
|---|---|---|---|
| Compressor | RLA | A | 6 |
| | LRA | | 6 |
| Indoor ECM fan motor | Watts (max) | W | 425 |
| | FLA | A | 2 |
| | Power | HP | 1/6 |
| Outdoor ECM fan motor | Watts (max) | W | 405 |
| | FLA | A | 1.9 |
| | Power | HP | 1/8 |

### 5.6.3 LCDI power cords

*Table 17. Electrical - LCDI Power cords*

| LCDI Power Cord | | |
|---|---|---|
| Heat Pump Only | Amps | 15 |
| | Plug | 6-15P |
| Heat Pump + Elec Heat | Amps | 30 |
| | Plug | 6-30P |

For units requiring a breaker size above 20 A, a quick-connect whip cord is available as an accessory (60" (1524 mm) length).

## 6. DIMENSIONS

To view the dimensions as a high-resolution PDF, click the link below:

AIO Vertical Stack XL Dimensions (V 5.0).pdf

*Figure 9. Dimensions (top view)*

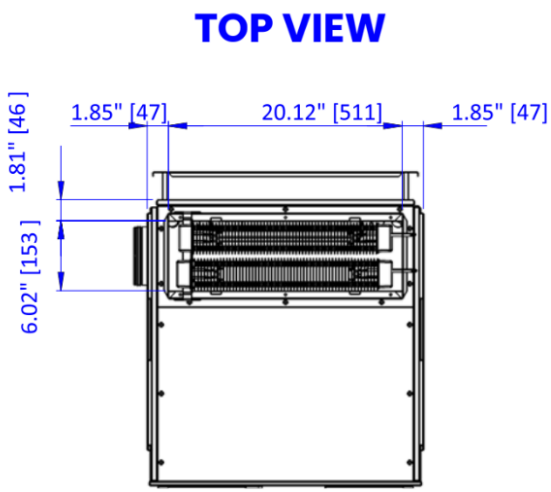



*Figure 10. Dimensions (left view)*

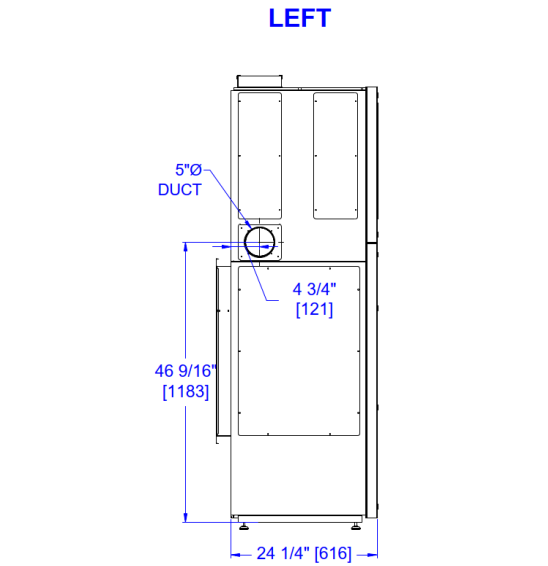


*Figure 11. Dimensions (front view)*

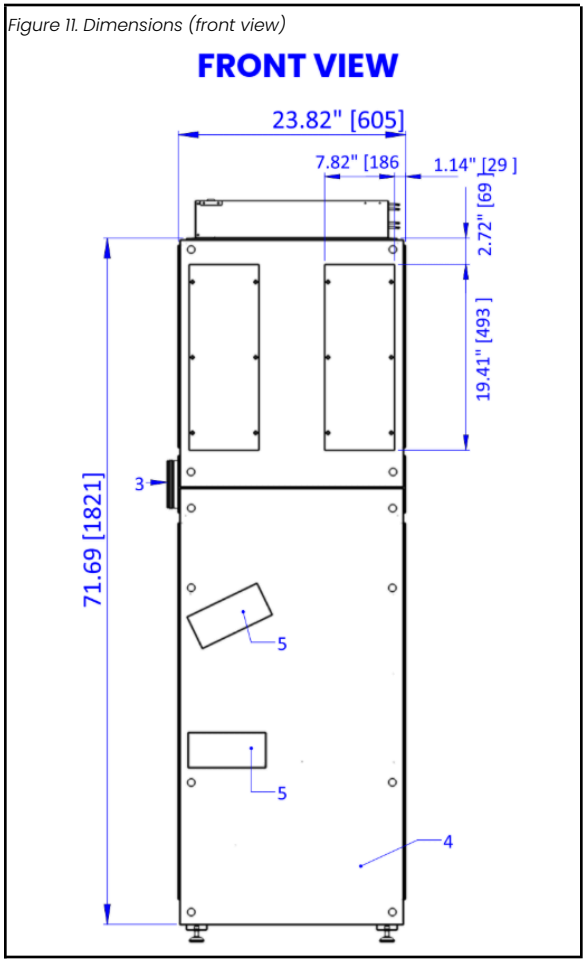



*Figure 12. Dimensions (right view)*

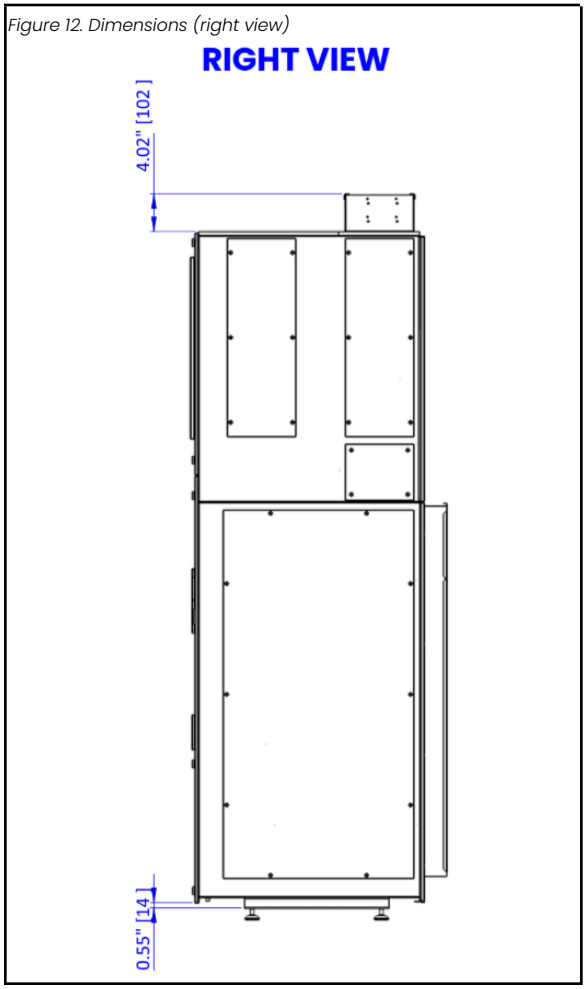



*Figure 13. Dimensions (rear view)*

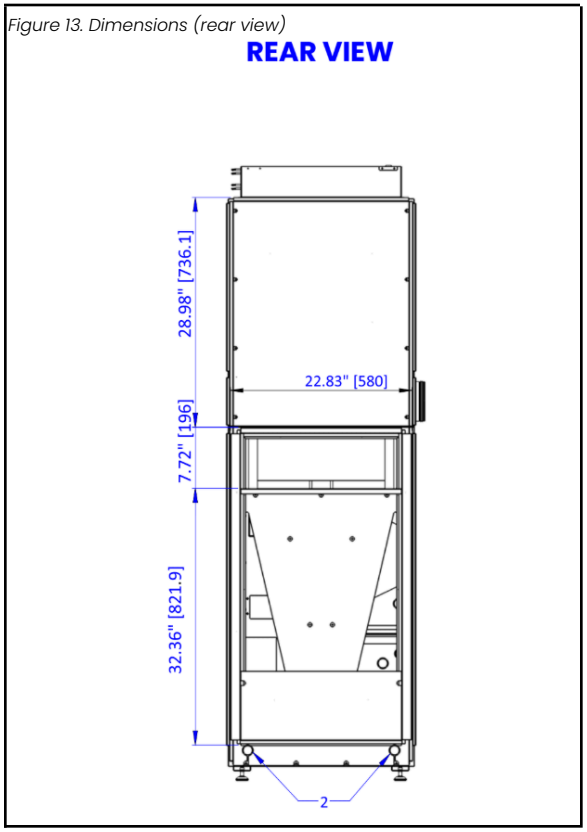
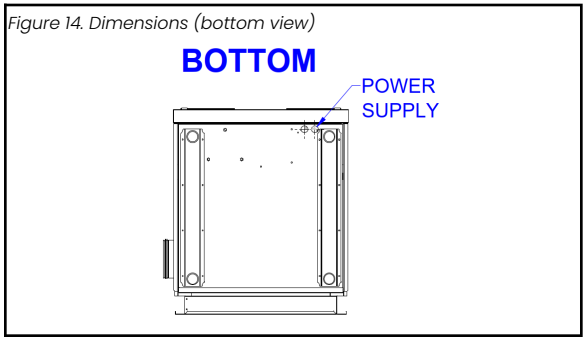



*Figure 14. Dimensions (bottom view)*



# 7. WARRANTY

## 7.1 Basic coverage

- **Parts:** 5 years from delivery.
- **Compressor:** 10 years from delivery.
- **Labor:** 2 years from certification (only if at least 10 units are installed, the site is certified by INNOVA or self-certified, and spare stock equal to 3% of total units is maintained)
- **Controllers:** Covered under a 2-year warranty.

## 7.2 Optional extended coverage

- **Additional 2-Year Parts & Labor Warranty:** Extends the basic coverage to 4 years labor and 7 years parts.
- **Extended 10-Year Parts Warranty:** Extends parts coverage to 10 years total.
- **Extended 5-Year Full Warranty:** Extends full parts and labor coverage to 5 years total.
- **Extended 10-Year Full Warranty:** Provides a 10-year full warranty on parts, labor, and compressor.
- **Extended 15-Year Full Warranty:** Provides a 15-year full warranty on parts, labor, and compressor.

## 7.3 Validation requirements

- Installation must be certified by an INNOVA technician or self-certified within 30 days.
- Installers must complete INNOVA training.
- The system must comply with local codes, use approved louvers, and be properly maintained (e.g., clean filters monthly, coils every 18 months).

For warranty service or claims, contact INNOVA Support at vip@innova.co or (212) 204-2700.

For detailed terms and conditions, click the link below:

AIO Warranty Terms and Conditions - 2026 - INN...

# 8. SUBMITTALS

## 8.1 230V Heat Pump Only - High Performance

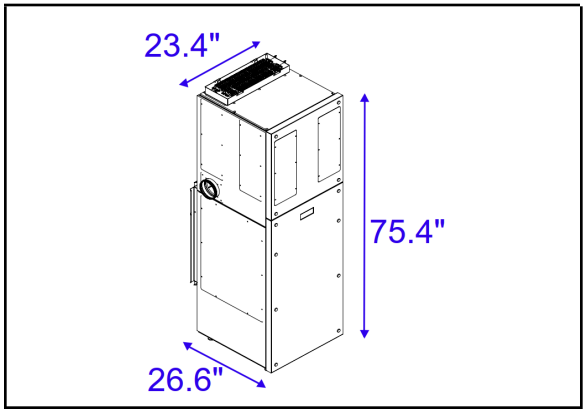
AIO® VERTICAL STACK XL - High Performance - 230V - NO ELECTRIC HEAT - R32 - SUBMITTAL (AXP20N3H2)

| | | |
|---|---|---|
| Job | Reference | Construction |
| Location | Approval | Quote Number |
| Engineer | Date | Drawing Number |
| Submitted To | Submitted By | P.O. Number |

### General Features

- BLDC inverter compressor
- ECM fans
- R32 Refrigerant
- Auto restart
- Intelligent defrost
- No outdoor unit
- Onboard touch controller
- Washable filter
- Electronically controlled air louver
- Compact, slim design
- 4 selectable fan speeds + Auto
- 10-Year limited warranty (after certification)
- Made in Italy

The installing contractor must contact INNOVA Customer Technical Support prior to installation to schedule an installation training overview.
This may be conducted in person or remotely (online). It is the official installation training and may include videos, best practices, and system requirements.
Performing installations without training may result in installation errors, performance issues, and possible warranty limitations.




| Performance Specifications | | | |
|---|---|---|---|
| Cooling | Min-Max | BTU/H | 4,500 - 24,000 |
| | Rated capacity (95°F [35°C]) | | 20,300 |
| | Efficiency | EER2 | 11.65 |
| Heating | Min-Max | BTU/H | 5,000 - 24,000 |
| | Rated capacity (47°F [8.3°C]) | | 17,300 |
| | Rated capacity (5°F [-15°C]) | | 8,300 |
| | Efficiency | COP | 3.56 |
| Sound | Indoor: Low-High at 1 m distance | db(A) | 44 - 54 |
| | Indoor: Low-High at 3 m distance | | 36 - 46 |
| | Outdoor sound range | | 28 - 55 |
| Moisture removal | | Pts/h | 1.9 |
| | | L/hr | 0.9 |
| Airflow | Indoor | CFM | 247 - 740 |
| | | $m^3/hr$ | 420- 1257 |
| | Outdoor | CFM | 382 - 1110 |
| | | $m^3/hr$ | 649 - 1886 |

| Electric Specifications | |
|---|---|
| Power Supply | 230V/1Ph/60Hz |
| Voltage Range | 180 - 253 |
| Running Amps Cooling | 7.6 |
| Running Amps Heating | 6.2 |
| MCA | 13 |
| Maximum Overcurrent Protection (A) | 18 |
| Max Power Input (amps) Cooling | 10.2 |
| Max Power Input (amps) Heating | 10.2 |

| Included | Wall Controllers + Gateways | |
|---|---|---|
| ☐ | Wireless Remote | WRCH20 |
| ☐ | Basic Touch Controller | LTCH20 |
| ☐ | Recessed Touch Controller | RTCH20 |
| ☐ | Advanced TFT Controller with 7-Day program | TFTH20 |
| ☐ | Wireless (AA Battery) Infrared Controller with 7-Day program | WIPT20 |
| ☐ | Third Party Gateway | TPG015 |
| ☐ | WiFi App | WIFI30 |
| ☐ | E-Paper EOS Controller | EEOS12 |
| ☐ | Simple EOS Controller | SEOS12 |
| ☐ | Integration gateway for LTCH20, TFTH20 and MODBUS | GWN |
| ☐ | Integration gateway for LTCH20, TFTH20, MODBUS, BACnet, and third-party thermostats | GWX |

| Included | LCDI Power Cords | NEMA | SKU |
|---|---|---|---|
| ☐ | 89 in. (2260.6 mm) | 6-15P | L259A |

## 8.2 230V Heat Pump + 3.6 kW Elec Heat - High Performance

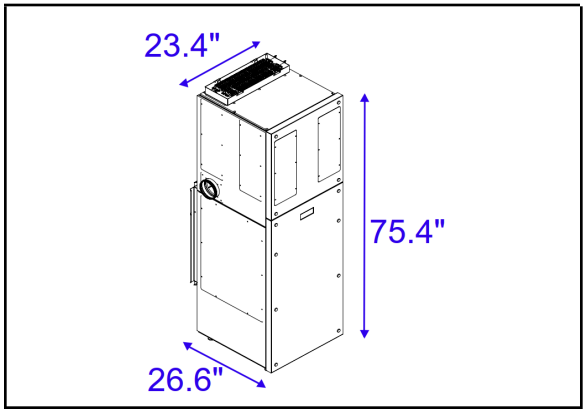
AIO® VERTICAL STACK XL + ERV - High Performance - 230V - 1,800W/3,600W ELECTRIC HEAT STRIP - R32 -SUBMITTAL (AXM20N3H2)

| | | |
|---|---|---|
| Job | Reference | Construction |
| Location | Approval | Quote Number |
| Engineer | Date | Drawing Number |
| Submitted To | Submitted By | P.O. Number |

### General Features

- BLDC inverter compressor
- ECM fans
- R32 Refrigerant
- Field-configured 900W, 1.8 kW, or 3.6 kW electric heat supplement
- Auto restart
- Intelligent defrost
- No outdoor unit
- Onboard touch controller
- Integrated ERV
- Washable filter
- Compact, slim design
- 4 selectable fan speeds + Auto
- 10-Year limited warranty (after certification)
- Made in Italy

The installing contractor must contact INNOVA Customer Technical Support prior to installation to schedule an installation training overview.
This may be conducted in person or remotely (online). It is the official installation training and may include videos, best practices, and system requirements.
Performing installations without training may result in installation errors, performance issues, and possible warranty limitations.




| Performance Specifications | | | |
|---|---|---|---|
| Cooling | Min-Max | BTU/H | 4,500 - 24,000 |
| | Rated capacity (95°F [35°C]) | | 20,300 |
| | Efficiency | EER2 | 11.65 |
| Heating | Min-Max | BTU/H | 5,000 - 24,000 |
| | Rated capacity (47°F [8.3°C]) | | 17,300 |
| | Rated capacity (5°F [-15°C]) | | 8,300 |
| | Efficiency | COP | 3.56 |
| Sound | Indoor: Low-High at 1 m distance | db(A) | 44 - 54 |
| | Indoor: Low-High at 3 m distance | | 36 - 46 |
| | Outdoor sound range | | 28 - 55 |
| Moisture removal | | Pts/h | 1.9 |
| | | L/hr | 0.9 |
| Airflow | Indoor | CFM | 247 - 740 |
| | | $m^3$/hr | 420- 1257 |
| | Outdoor | CFM | 382 - 1110 |
| | | $m^3$/hr | 649 - 1886 |

| Electric Specifications | |
|---|---|
| Power Supply | 230V/1Ph/60Hz |
| Voltage Range | 180 - 253 |
| Running Amps Cooling | 7.6 |
| Running Amps Heating | 21.8 |
| MCA | 28 |
| Maximum Overcurrent Protection (A) | 34 |
| Max Power Input (amps) Cooling | 10.2 |
| Max Power Input (amps) Heating | 26.0 |

| Included | Wall Controllers + Gateways | |
|---|---|---|
| ☐ | Wireless Remote | WRCH20 |
| ☐ | Basic Touch Controller | LTCH20 |
| ☐ | Recessed Touch Controller | RTCH20 |
| ☐ | Advanced TFT Controller with 7-Day program | TFTH20 |
| ☐ | Wireless (AA Battery) Infrared Controller with 7-Day program | WIPT20 |
| ☐ | Third Party Gateway | TPG015 |
| ☐ | WiFi App | WIFI30 |
| ☐ | E-Paper EOS Controller | EEOS12 |
| ☐ | Simple EOS Controller | SEOS12 |
| ☐ | Integration gateway for LTCH20, TFTH20 and MODBUS | GWN |
| ☐ | Integration gateway for LTCH20, TFTH20, MODBUS, BACnet, and third-party thermostats | GWX |

| Included | Power Cords | NEMA | SKU |
|---|---|---|---|
| ☐ | Whip Cord Only | - | W226A |

## 8.3 230V Heat Pump + 4.5 kW Elec Heat - High Performance

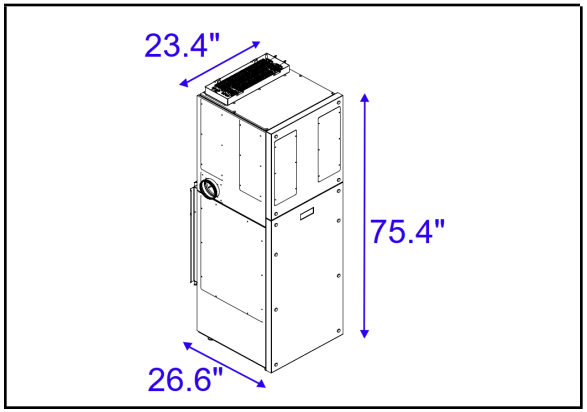
AIO® VERTICAL STACK XL + ERV - High Performance - 230V - 1,800W/3,600W ELECTRIC HEAT STRIP - R32 -SUBMITTAL (AXT20N3H2)

| | | |
|---|---|---|
| Job | Reference | Construction |
| Location | Approval | Quote Number |
| Engineer | Date | Drawing Number |
| Submitted To | Submitted By | P.O. Number |

### General Features

- BLDC inverter compressor
- ECM fans
- R32 Refrigerant
- Field-configured 900W, 1.8 kW, 3.6 kW, or 4.5 kW electric heat supplement
- Auto restart
- Intelligent defrost
- No outdoor unit
- Onboard touch controller
- Integrated ERV
- Washable filter
- Compact, slim design
- 4 selectable fan speeds + Auto
- 10-Year limited warranty (after certification)
- Made in Italy

The installing contractor must contact INNOVA Customer Technical Support prior to installation to schedule an installation training overview.
This may be conducted in person or remotely (online). It is the official installation training and may include videos, best practices, and system requirements.
Performing installations without training may result in installation errors, performance issues, and possible warranty limitations.




| Performance Specifications | | | |
|---|---|---|---|
| Cooling | Min-Max | BTU/H | 4,500 - 24,000 |
| | Rated capacity (95°F [35°C]) | | 20,300 |
| | Efficiency | EER2 | 11.65 |
| Heating | Min-Max | BTU/H | 5,000 - 24,000 |
| | Rated capacity (47°F [8.3°C]) | | 17,300 |
| | Rated capacity (5°F [-15°C]) | | 8,300 |
| | Efficiency | COP | 3.56 |
| Sound | Indoor: Low-High at 1 m distance | db(A) | 44 - 54 |
| | Indoor: Low-High at 3 m distance | | 36 - 46 |
| | Outdoor sound range | | 28 - 55 |
| Moisture removal | | Pts/h | 1.9 |
| | | L/hr | 0.9 |
| Airflow | Indoor | CFM | 247 - 740 |
| | | $m^3$/hr | 420- 1257 |
| | Outdoor | CFM | 382 - 1110 |
| | | $m^3$/hr | 649 - 1886 |

| Electric Specifications | |
|---|---|
| Power Supply | 230V/1Ph/60Hz |
| Voltage Range | 180 - 253 |
| Running Amps Cooling | 7.6 |
| Running Amps Heating | 21.8 |
| MCA | 28 |
| Maximum Overcurrent Protection (A) | 34 |
| Max Power Input (amps) Cooling | 10.2 |
| Max Power Input (amps) Heating | 26.0 |

| Included | Wall Controllers + Gateways | |
|---|---|---|
| ☐ | Wireless Remote | WRCH20 |
| ☐ | Basic Touch Controller | LTCH20 |
| ☐ | Recessed Touch Controller | RTCH20 |
| ☐ | Advanced TFT Controller with 7-Day program | TFTH20 |
| ☐ | Wireless (AA Battery) Infrared Controller with 7-Day program | WIPT20 |
| ☐ | Third Party Gateway | TPG015 |
| ☐ | WiFi App | WIFI30 |
| ☐ | E-Paper EOS Controller | EEOS12 |
| ☐ | Simple EOS Controller | SEOS12 |
| ☐ | Integration gateway for LTCH20, TFTH20 and MODBUS | GWN |
| ☐ | Integration gateway for LTCH20, TFTH20, MODBUS, BACnet, and third-party thermostats | GWX |

| Included | Power Cords | NEMA | SKU |
|---|---|---|---|
| ☐ | Whip Cord Only | - | W226A |

## 8.4 230V Heat Pump Only - Energy Star Compliant

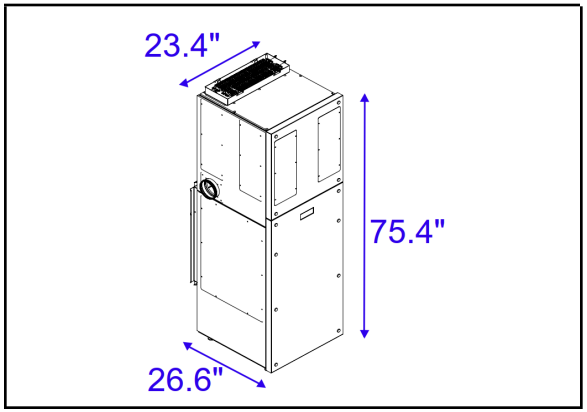
AIO® VERTICAL STACK XL - Energy Star Compliant - 230V - NO ELECTRIC HEAT - R32 - SUBMITTAL (AXP19N3H2)

| | | |
|---|---|---|
| Job | Reference | Construction |
| Location | Approval | Quote Number |
| Engineer | Date | Drawing Number |
| Submitted To | Submitted By | P.O. Number |

### General Features

- BLDC inverter compressor
- ECM fans
- R32 Refrigerant
- Auto restart
- Intelligent defrost
- No outdoor unit
- Onboard touch controller
- Integrated ERV
- Washable filter
- Electronically controlled air louver
- Compact, slim design
- 4 selectable fan speeds + Auto
- 10-Year limited warranty (after certification)
- Made in Italy

The installing contractor must contact INNOVA Customer Technical Support prior to installation to schedule an installation training overview.
This may be conducted in person or remotely (online). It is the official installation training and may include videos, best practices, and system requirements.
Performing installations without training may result in installation errors, performance issues, and possible warranty limitations.




| Performance Specifications | | | |
|---|---|---|---|
| Cooling | Min-Max | BTU/H | 4,500 - 24,000 |
| | Rated capacity (95°F [35°C]) | | 11,600 |
| | Efficiency | EER2 | 11.7 |
| Heating | Min-Max | BTU/H | 5,000 - 24,000 |
| | Rated capacity (47°F [8.3°C]) | | 14,200 |
| | Rated capacity (5°F [-15°C]) | | 8,200 |
| | Efficiency | COP | 3.59 |
| Sound | Indoor: Low-High at 1 m distance | db(A) | 44 - 54 |
| | Indoor: Low-High at 3 m distance | | 36 - 46 |
| | Outdoor sound range | | 28 - 55 |
| Moisture removal | | Pts/h | 1.9 |
| | | L/hr | 0.9 |
| Airflow | Indoor | CFM | 247 - 740 |
| | | $m^3$/hr | 420- 1257 |
| | Outdoor | CFM | 382 - 1110 |
| | | $m^3$/hr | 649 - 1886 |

| Electric Specifications | |
|---|---|
| Power Supply | 230V/1Ph/60Hz |
| Voltage Range | 180 - 253 |
| Running Amps Cooling | 4.3 |
| Running Amps Heating | 5.0 |
| MCA | 13 |
| Maximum Overcurrent Protection (A) | 18 |
| Max Power Input (amps) Cooling | 11.2 |
| Max Power Input (amps) Heating | 11.2 |

| Included | Wall Controllers + Gateways | |
|---|---|---|
| ☐ | Wireless Remote | WRCH20 |
| ☐ | Basic Touch Controller | LTCH20 |
| ☐ | Recessed Touch Controller | RTCH20 |
| ☐ | Advanced TFT Controller with 7-Day program | TFTH20 |
| ☐ | Wireless (AA Battery) Infrared Controller with 7-Day program | WIPT20 |
| ☐ | Third Party Gateway | TPG015 |
| ☐ | WiFi App | WIFI30 |
| ☐ | E-Paper EOS Controller | EEOS12 |
| ☐ | Simple EOS Controller | SEOS12 |
| ☐ | Integration gateway for LTCH20, TFTH20 and MODBUS | GWN |
| ☐ | Integration gateway for LTCH20, TFTH20, MODBUS, BACnet, and third-party thermostats | GWX |

| Included | LCDI Power Cords | NEMA | SKU |
|---|---|---|---|
| ☐ | 89 in. (2260.6 mm) | 6-15P | L259A |

## 8.5 230V Heat Pump + 3.6 kW Elec Heat - Energy Star Compliant

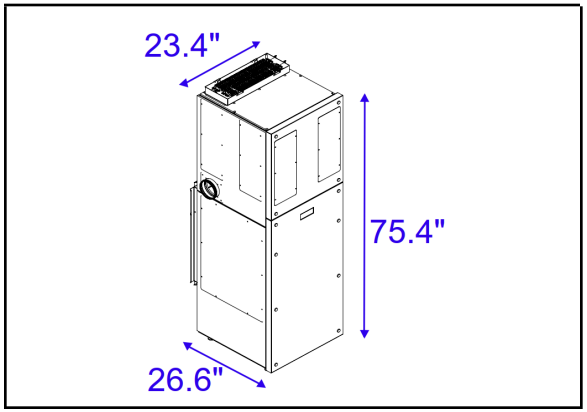
AIO® VERTICAL STACK XL - Energy Star Compliant - 230V - 3,600W ELECTRIC HEAT STRIP - R32 -SUBMITTAL (AXM19N3H2)

| | | |
|---|---|---|
| Job | Reference | Construction |
| Location | Approval | Quote Number |
| Engineer | Date | Drawing Number |
| Submitted To | Submitted By | P.O. Number |

### General Features

- BLDC inverter compressor
- ECM fans
- R32 Refrigerant
- Field configured 1,800W or 3,600W electric heat supplement
- Auto restart
- Intelligent defrost
- No outdoor unit
- Onboard touch controller
- Integrated ERV
- Washable filter
- Compact, slim design
- 4 selectable fan speeds + Auto
- 10-Year limited warranty (after certification)
- Made in Italy

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| Performance Specifications | | | |
|---|---|---|---|
| Cooling | Min-Max | BTU/H | 4,500 - 24,000 |
| | Rated capacity (95°F [35°C]) | | 11,600 |
| | Efficiency | EER2 | 11.7 |
| Heating | Min-Max | BTU/H | 5,000 - 24,000 |
| | Rated capacity (47°F [8.3°C]) | | 14,200 |
| | Rated capacity (5°F [-15°C]) | | 8,200 |
| | Efficiency | COP | 3.59 |
| Sound | Indoor: Low-High at 1 m distance | db(A) | 44 - 54 |
| | Indoor: Low-High at 3 m distance | | 36 - 46 |
| | Outdoor sound range | | 28 - 55 |
| Moisture removal | | Pts/h | 1.9 |
| | | L/hr | 0.9 |
| Airflow | Indoor | CFM | 247 - 740 |
| | | $m^3$/hr | 420- 1257 |
| | Outdoor | CFM | 382 - 1110 |
| | | $m^3$/hr | 649 - 1886 |

| Electric Specifications | |
|---|---|
| Power Supply | 230V/1Ph/60Hz |
| Voltage Range | 180 - 253 |
| Running Amps Cooling | 4.3 |
| Running Amps Heating | 20.7 |
| MCA | 28 |
| Maximum Overcurrent Protection (A) | 34 |
| Max Power Input (amps) Cooling | 11.2 |
| Max Power Input (amps) Heating | 27.0 |

| Included | Wall Controllers + Gateways | |
|---|---|---|
| ☐ | Wireless Remote | WRCH20 |
| ☐ | Basic Touch Controller | LTCH20 |
| ☐ | Recessed Touch Controller | RTCH20 |
| ☐ | Advanced TFT Controller with 7-Day program | TFTH20 |
| ☐ | Wireless (AA Battery) Infrared Controller with 7-Day program | WIPT20 |
| ☐ | Third Party Gateway | TPG015 |
| ☐ | WiFi App | WIFI30 |
| ☐ | E-Paper EOS Controller | EEOS12 |
| ☐ | Simple EOS Controller | SEOS12 |
| ☐ | Integration gateway for LTCH20, TFTH20 and MODBUS | GWN |
| ☐ | Integration gateway for LTCH20, TFTH20, MODBUS, BACnet, and third-party thermostats | GWX |

| Included | Power Cords | NEMA | SKU |
|---|---|---|---|
| ☐ | Whip Cord Only | - | W226A |

With over 20 years of experience in the climate comfort sector, we have a clear goal: growth through innovation. Our team is laser-focused on the conception, development, and production of innovative heating, ventilation, and air conditioning solutions. This mission has developed through bringing together technical skills, creativity, technology, design, Italian passion, and a global vision to achieve the best energy efficiency and performance.

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MADE IN ITALY

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AIO® Vertical Stack XL without ERV **Product Data Sheet**