



TECHNICAL OVERVIEW

Intelligent design comes together with advanced machine learning to create more comfortable spaces for people and less impact on the planet.



AIIR Intelligent HVAC

Next-generation HVAC optimized by advanced machine learning to create better projects and more comfortable, efficient living spaces.

AIIR's award winning design features a sleek profile and slim footprint that conserves interior space and makes it easy to install and service.

AIIR Intelligent HVAC is designed to incorporate advanced machine learning algorithms to create the first residential system that can capture, analyze, learn, and optimize comfort and performance over time.

Perfect for Multifamily, Hospitality, Student Housing & other multi-unit applications.

Who we are

AIIR Products is a pioneering provider of AI-powered heating and cooling solutions designed to enhance comfort and energy efficiency. AIIR brings together the collective talent of the best and brightest minds in HVAC, mechanical, electronic hardware, software engineering, and data analytics and machine learning to infuse intelligence into the HVAC industry.

Our Mission

We harness advanced technology and integrated intelligence to build a better future for people, projects and the planet.

R&D Capabilities

Psychometric Chambers

Electronic Labs

Sound Testing

Field Testing with Remote

Data Acquisition

Equipment placement
and airflow modeling



Why choose AIIR

Slim, beautifully designed system maximizes interior space.

Unique design facilitates quick efficient installation onsite saving time and materials. Each unit installs in 1 hour.

Integrated intelligence via advanced AI and ML algorithms.

Onboard Wi-Fi and Bluetooth.

Zoned control that is connected for interoperability to optimize comfort zone by zone or through the entire space.

Variable speed compressor, indoor blower and outdoor fan.

Advanced controls and variable speed compressor work together to create up to 30% energy savings over traditional fixed speed systems.

No A2L sensors needed; Ultra low charge makes AIIR safer and more reliable than competitors.

Motorized Fresh Air Damper Included.

Dehumidification.

Single point power connection.

Microchannel evaporator and condenser coils.

Meets CA Title 24 requirements.

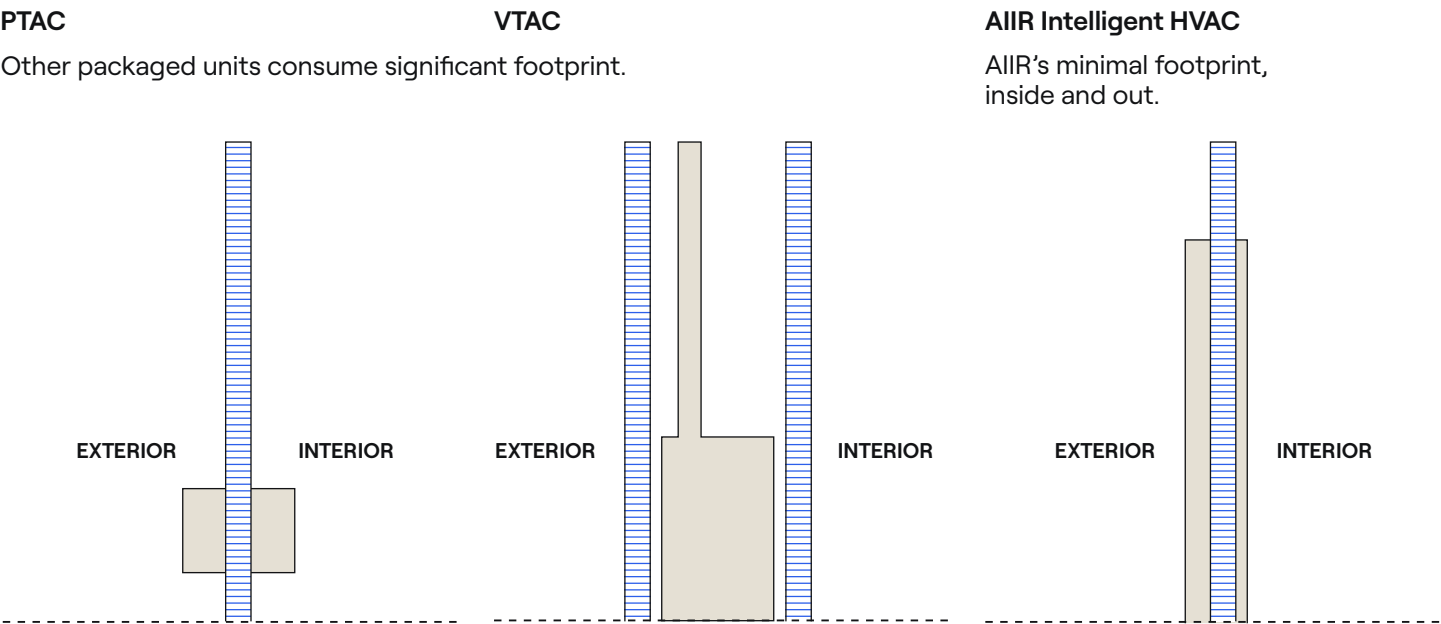


Product
Details

Integrated architectural design

A modern aesthetic and slim profile provides a compact footprint that does not consume valuable interior space and allows for pairing with large glazing units.

Frees up valuable interior space for occupant and exterior or rooftop space for solar, green roof or amenities.



	VTAC	Split	AIIR Intelligent HVAC
Installation Requirements	• Base platform • Plenum opening • Electrical installation	• Concrete base for the outdoor unit • Metal frame prep hanging indoor unit • Electrical installation	• Fits in 17" stud wall structure.
Installation Process	• Drain pan • VTAC installation on base platform • Water proofing	• Refrigerant lines • Fill refrigerant gas and seal • Indoor blower unit install • Outdoor unit install	• Wall trim and waterproofing occur prior to unit arrival • Only requires electric installation and sleeve & support bracket installation
Finishing Requirements	• Ducting • Waterproofing & plumbing • Drywall work • Vent cover installation	• Ducting • Waterproofing & plumbing • Drywall work • Vent cover installation	• Minor drywall work • Interior panel installation

Easy to Install & Service

Uncomplicated product assembly engineered to ease installation in the field.

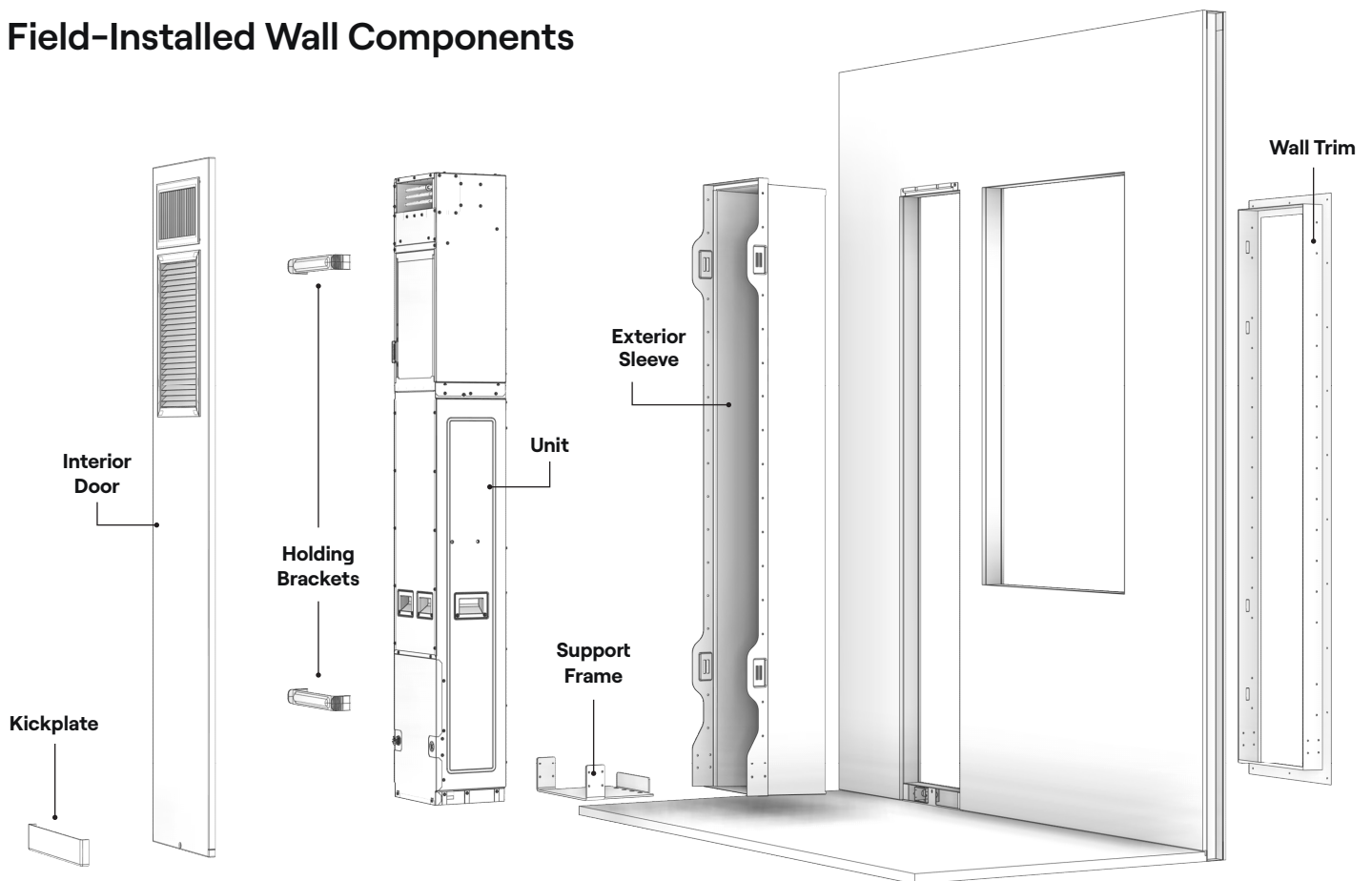
Saves time, material and labor costs associated with other systems.

No need to run refrigerant piping or ducting.

Easy to access and service from the interior.

Entire unit can be accessed and pulled in the time it takes to troubleshoot a standard solution.

Field-Installed Wall Components

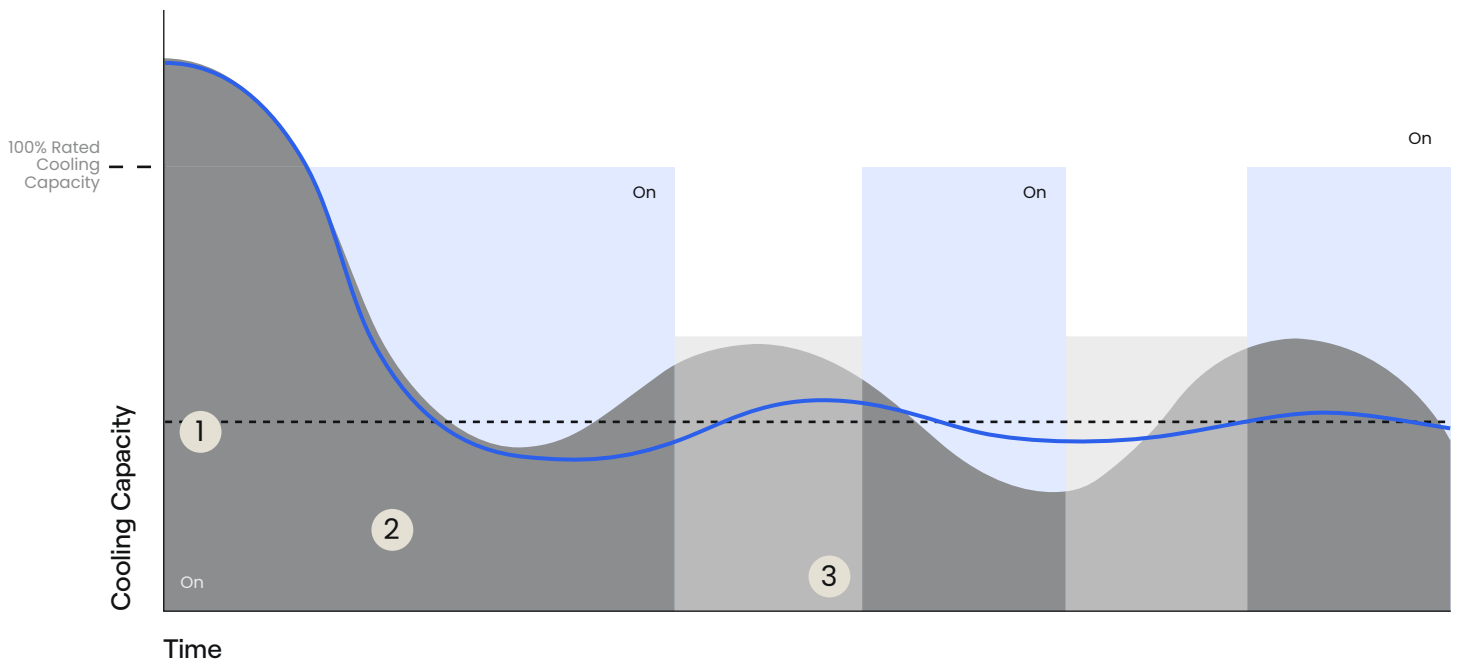


Energy Efficient

30% energy savings

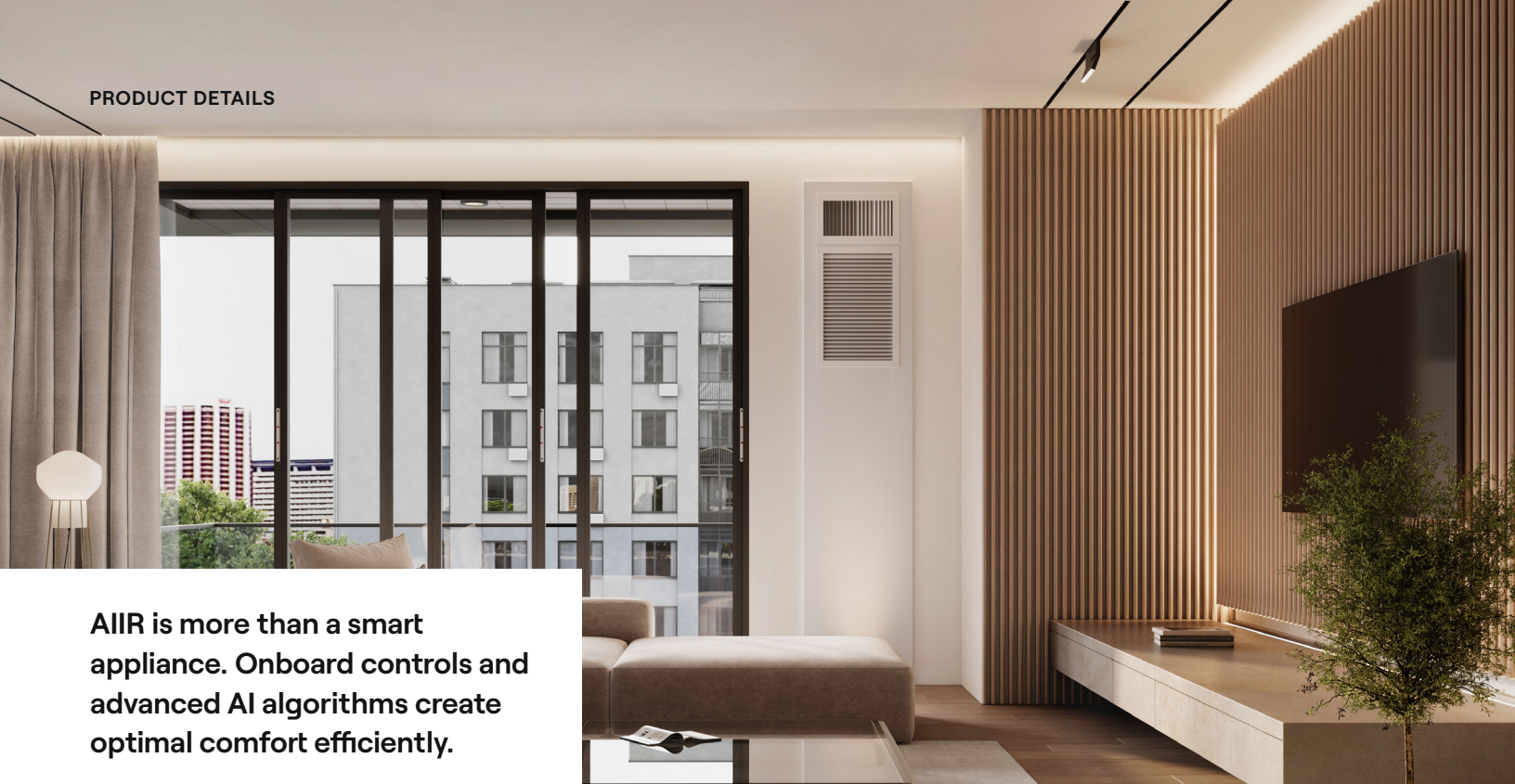
AI-driven optimization and fully variable speed components work together to use only the energy needed to meet heating or cooling loads. This creates less bouncing of power, greater comfort and less energy use throughout the day delivering up to 30% energy savings compared to fixed speed solutions.

System Operations



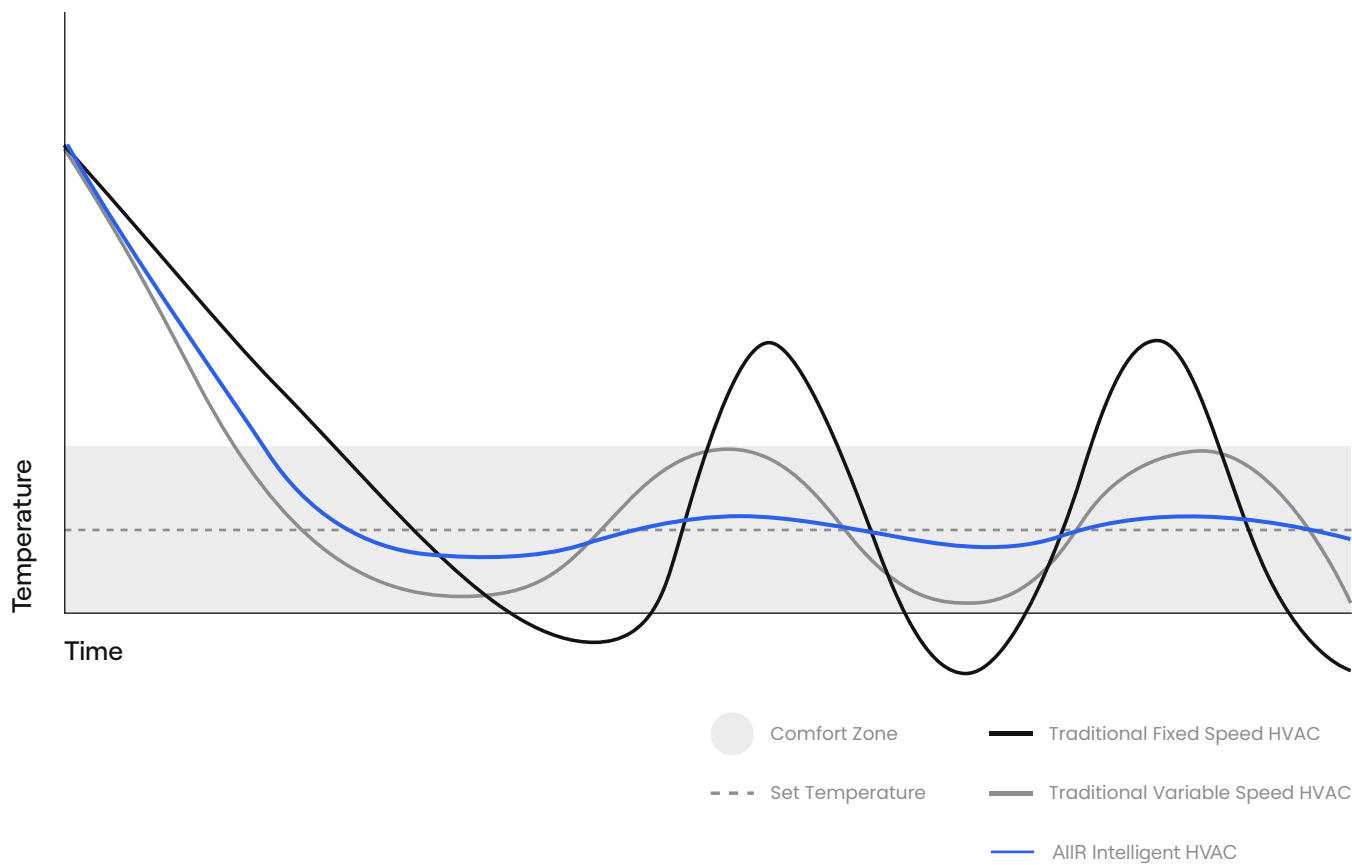
- 1 System engages when occupancy sensors indicate to quickly heat or cool the space
- 2 When comfort level is reached, system load backs off to maintenance
- 3 AI-model feeds forward to predict necessary loads

- Comfort Zone
- Traditional Fixed Speed HVAC
- Traditional Variable Speed HVAC
- AIIR Intelligent HVAC
- Set Temperature



AIIR is more than a smart appliance. Onboard controls and advanced AI algorithms create optimal comfort efficiently.

Room Temperature



Healthier Climate Control



Comes standard with AIIR-configured thermostat featuring BMS integration

Pair with AIIR User App to control on site or remotely.

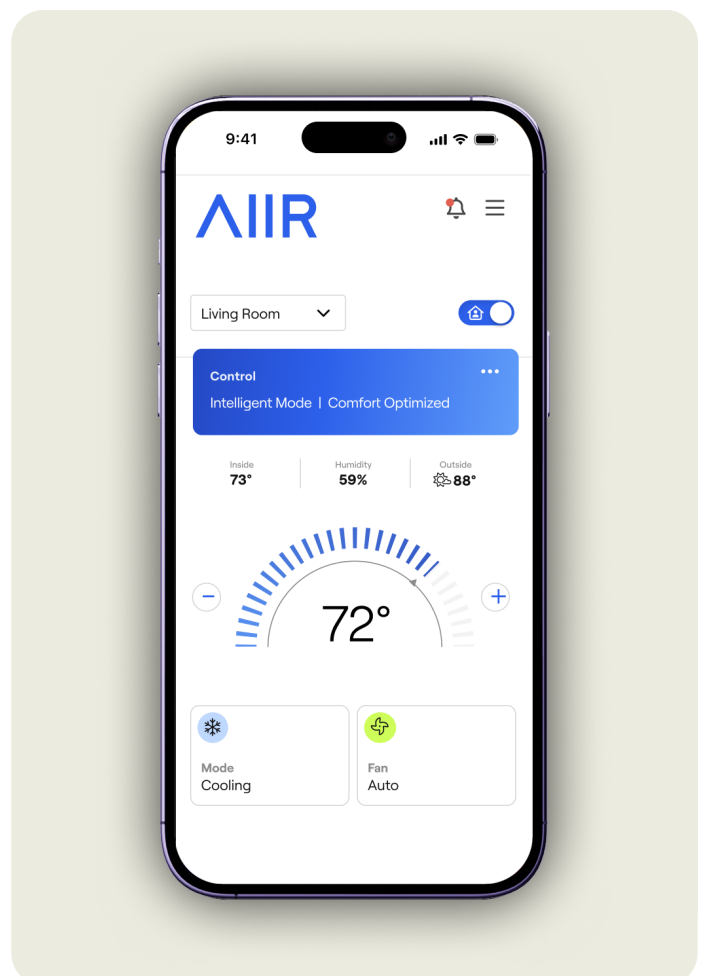
Choose classic controls or Intelligent mode that learns and adapts to user preference, sensor data and occupancy.

Control single HVAC or orchestrate control across an entire living space.

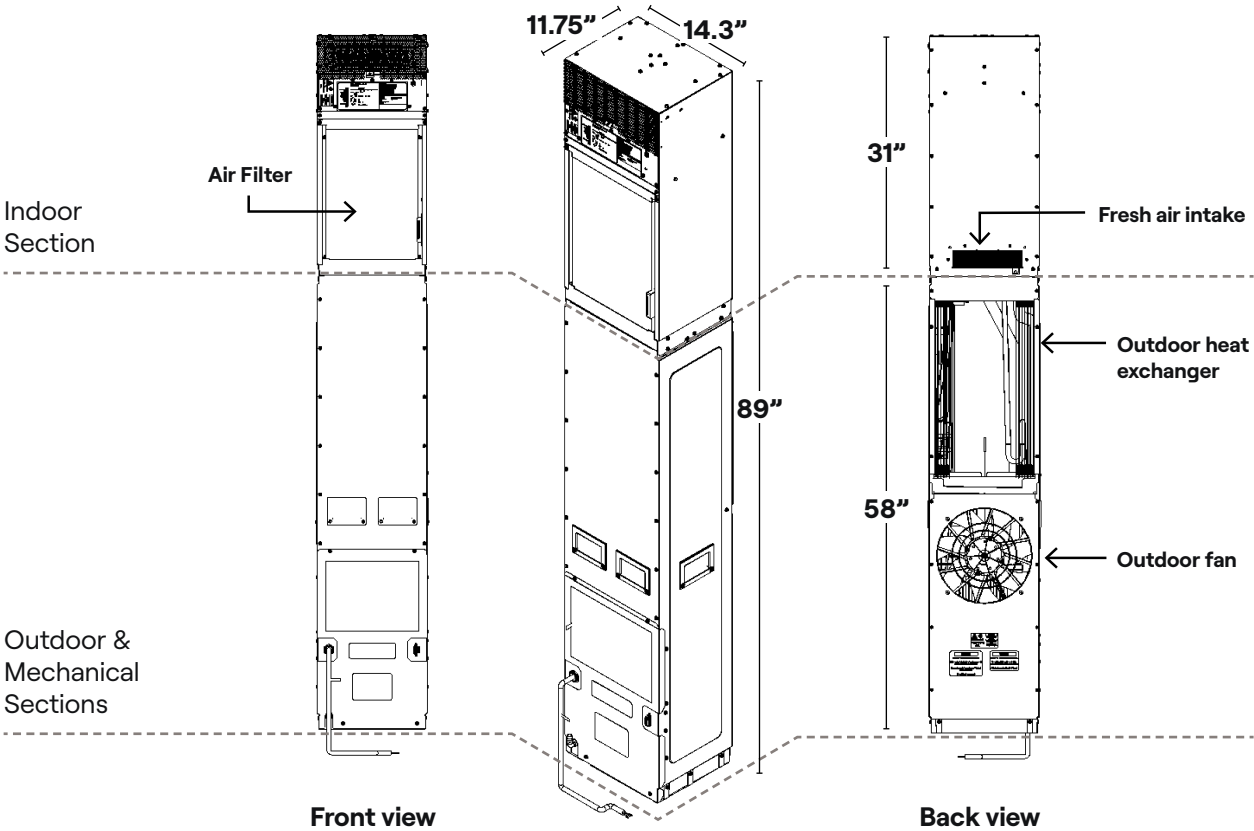
Built-in sensors to optimize operations, comfort and performance.

Fresh air intake
Dehumidification

Intuitive Controls & System Interface



Product Specifications



Unit Information

Input Power	Nominal	208/230/1/60
	Operating Range	187-253 V
Compressor	Type	Variable Speed Rotary
	Oil	POE
	Max Full Load Amps	3.3 A
Indoor Blower	Blower Type	Backward Curve Blower
	Motor Type	Constant Torque ECM
	Motor Power	0.18 HP
	Max Full Load Amps	0.61 A
Outdoor Fan	Fan Type	Axial Fan
	Motor Type	Constant Torque ECM
	Motor Power	0.19 HP
	Max Full Load Amps	0.41 A

Electric Heat*	Power	1300 W
	Amps	7.6 A
Dimensions	Height	89 in
	Width	14.3 in
	Depth	11.75 in
Weight		110 lbs
Sound	Standard Cooling	58 dBA
Maximum Operating Elevation		3300 Feet (1000 M)



*If equipped/installed

Performance Data, AHRI 210/240 – 2024

Cooling Capacity at 95°F, 80/67°F	2500–8000 BTU/h
Energy Efficiency Rating (EER2) at 95°F, 80/67°F	12.5 BTU/h.W
Seasonal Energy Efficiency Ratio (SEER2)	17.0
Heat Pump Heating Capacity at 47°F, 70°F	8600 BTU/h
Coefficient of Performance (COP) at 47°F, 70°F	3.3
Heat Pump Heating Capacity at 17°F, 70°F	4900 BTU/h
Heat Pump Heating Capacity at 5°F, 70°F	3600 BTU/h
Heating Capacity Range	2900–9300 BTU/h
Heating Seasonal Performance Factor (HSPF2)	8.0

Sensible Heat Ratio at 95°F, 80/67°F	0.72
Moisture Removal at 95°F OD	1.9 pints/hr
Electric Heater Size	1300 W
Outdoor Cooling Operating Range	50 – 115°F
Outdoor Heat Pump Heating Operating Range	0–75°F
Electric Heat Operating Range	0–40°F
Refrigerant (R454B) Charge Amount	24 oz
Refrigerant Control	Electronic Expansion Valve

Air Flow

Supply Air Flow Range (cooling)	150–280 CFM
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Fresh Air	Up to 30 CFM
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Model Number Breakdown

	P	A	V	H	O	8	S	1	A	R	H	B
Family												
P – Packaged												
Design Style												
A – In Wall Design												
Compressor												
V – Inverter Drive												
Type												
H – Heat Pump												
Capacity												
08 – 8000 BTU/hr												
Power Supply												
S – 208/230 AC volts, single phase, 60 hz												
Max Heating Configuration												
1 – Modulating electric heat 1.3kW												
Configuration												
A – Base Model + MERV 8 Filter												
B – Base Model + MERV 13 Filter												
C – Base Model + Factory Heater Kit + MERV 8 Filter												
D – Base Model + Factory Heater Kit + MERV 13 Filter												
Control Interface												
R – Wireless Remote Interface												
W – Wired Remote Interface												
Power Connection												
H – Hardwire												
Refridgerant												
B – R454b												
Revision												
A–Z – Revision												

PRODUCT DETAILS

Part Numbers

PART NUMBER	DESCRIPTION
PAVH08S1AWHB	8k AI/ML HVAC System, MERV 8 Fresh/Return Air Filter, Wired Thermostat
PAVH08S1ARHB	8k AI/ML HVAC System, MERV 8 Fresh/Return Air Filter, Wireless Thermostat
PAVH08S1BWHB	8k AI/ML HVAC System, MERV 13 Fresh/Return Air Filter, Wired Thermostat
PAVH08S1BRHB	8k AI/ML HVAC System, MERV 13 Fresh/Return Air Filter, Wireless Thermostat
PAVH08S1CWHB	8k AI/ML HVAC System, MERV 8 Fresh/Return Air Filter, Heater Kit, Wired Thermostat
PAVH08S1CRHB	8k AI/ML HVAC System, MERV 8 Fresh/Return Air Filter, Heater Kit, Wireless Thermostat
PAVH08S1DWHB	8k AI/ML HVAC System, MERV 13 Fresh/Return Air Filter, Heater Kit, Wired Thermostat
PAVH08S1DRHB	8k AI/ML HVAC System, MERV 13 Fresh/Return Air Filter, Heater Kit, Wireless Thermostat

Options/Consumables

COMPONENT	SPECIFICATION	PART NUMBER
Return Air Filter 18" x 12" x 1"	MERV 8 - Standard	C-01429
	MERV 13	C-01684
Fresh Air Filter 10.75" x 4.25" x 1"	MERV 8 - Standard	C-01050
	MERV 13	C-01683
Remote Occupancy Sensor	Verdant ZX-AOS	AIIR-00013

Key Installation Selections

COMPONENT	SPECIFICATION	PART NUMBER
Door with 3.5" Kickplate Door with 5.5" Kickplate	4" Baseboard	AIIR-00008
	6" Baseboard	AIIR-00009
Exterior Enclosure Assembly (OD Louver)	Louver Panel (Standard)	
	4" Stud	AIIR-00005
	6" Stud	AIIR-00006
	Concrete / Block	AIIR-00007
	Mesh Panel	
	4" Stud	AIIR-00002
	6" Stud	AIIR-00003
	Concrete / Block	AIIR-00004
Exterior Enclosure Assembly Colors	Black	BK
	White	WH
	Sand	SD
	Custom Color*	CC

*will impact price and lead time

Performance

Extended Heating Performance

INDOOR TEMPERATURE DRY BULB (°F)							
OUTDOOR TEMPERATURE DRY BULB (°F)	60		70		80		
	(°F) DB	Capacity (Btu/h)	Input (W)	Capacity (Btu/h)	Input (W)	Capacity (Btu/h)	Input (W)
	5	4310	580	3670	640	3440	710
	17	5370	610	4900	660	4600	730
	25	6120	630	5700	680	5490	750
	35	7510	660	7120	720	6930	800
	47	9120	680	8780	760	8610	850
	55	9790	700	9540	790	9360	890

Tabulated data at maximum allowed heat stage, 0" external static pressure, compressor only operation
Compressor operation prevented below 0°F

Extended Heating Performance Heat Pump + Electric Heat

INDOOR TEMPERATURE DRY BULB (°F)							
OUTDOOR TEMPERATURE DRY BULB (°F)	60		70		80		
	(°F) DB	Capacity (Btu/h)	Input (W)	Capacity (Btu/h)	Input (W)	Capacity (Btu/h)	Input (W)
	5	8750	1880	8110	1940	10750	2030
	17	9810	1910	9310	1960	9040	2030
	25	10560	1930	10140	1980	9930	2050
	35	11950	1960	11560	2020	11370	2100
	47	-	-	-	-	-	-
	55	-	-	-	-	-	-

Tabulated data at maximum allowed heat stage, 0" external static pressure, compresor + electric heat operation
Compressor operation prevented below 0°F
Electric heat disabled above 40F ambient temperature
Maximum supply air temperatures of 130°F for heat pump and electric heat operation

Extended Cooling Performance

INDOOR TEMPERATURE (°F)

OUTDOOR TEMPERATURE DRY BULB (°F)		70 FDB / 59 FWB		75 FDB / 63 FWB		80 FDB / 67 FWB		85 FDB / 71 FWB	
	(°F) DB	Capacity (Btu/h)	Input (W)	Capacity (Btu/h)	Input (W)	Capacity (Btu/h)	Input (W)	Capacity (Btu/h)	Input (W)
	65	8020	450	8620	450	9270	440	9920	440
	75	7670	510	8260	510	8880	510	9510	510
	85	7330	570	7880	570	8480	570	9080	570
	95	6970	630	7480	640	8070	640	8630	640
	105	6590	690	7060	700	7630	710	8170	720
	115	6190	760	6610	770	7170	780	7680	790

Tabulated data at maximum cooling stage, 0" external static pressure.

Air Flow Data

Mode	Compressor Stage								
	1	2	3	4	5	6	7	8	EH
Cool	140	160	160	160	170	190	250	250	-
Dehum	-	-	-	140	150	160	170	-	-
Heat	170	180	190	210	210	220	230	250	280

Electrical Data

Model	Voltage	Electric Heater Watts	Electric Heating BTU	Total Electric Heating Amps	ID Blower Amps	OD Blower Amps	MCA	MOP/MOCP
PAVH08S1ARHB PAVH08S1BRHB	208/230	-	-	-	0.61	1.1	8	15
PAVH08S1CRHB PAVH08S1DRHB		1300	4780	7.6			18	20

Under all conditions AIIR Products recommends using 12 gauge solid copper conductor to account for future heater kit installation.

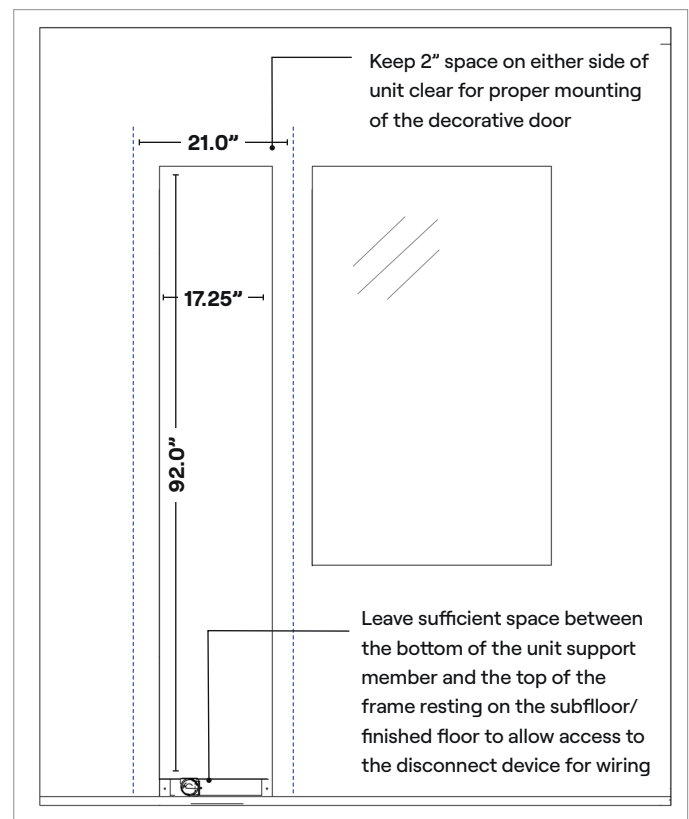
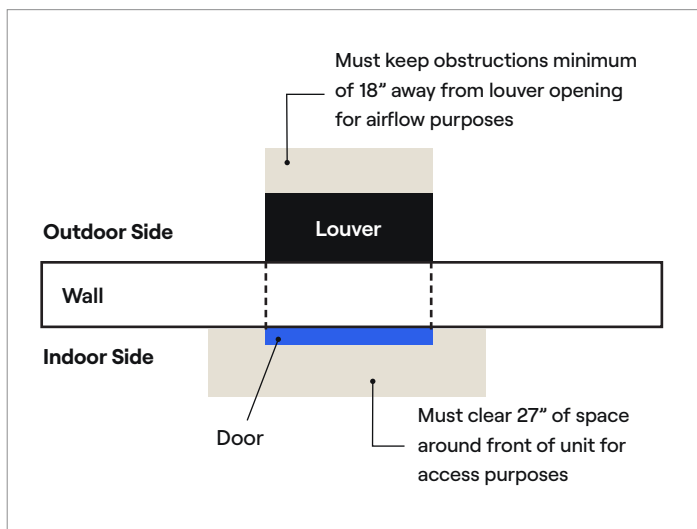
Installation

The AIIR Intelligent HVAC (AIH) System is an 8000 BTU/Hr heat pump that is designed for through-the-wall installation. The exterior (outdoor louver side) must have no obstructions (trees, landscape material, etc.) within 18 inches. Do not locate two units adjacent to each other on an inside corner or where they may exhaust into each other.

These guidelines give minimum spacing requirements only. It is acceptable to go beyond these limits at any time. At least 27 inches of unobstructed space

should be provided in front of the unit on the indoor side to permit removal of the unit, should repair and inspection be required.

The AIH refrigerant system utilizes one variable speed rotary compressor, one reversing valve, one electronic expansion valve, variable speed indoor blower, variable speed outdoor fan and other parts common to a heat pump. An optional 1300-watt electric heat can be field installed in AIH units.





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AIIR is Designed, Developed, and
Manufactured in the United States

Let's talk about your
next project.

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