



Product Data Sheet

Ceiling Ducted ADK10N3H2

List: \$6,580

- 1,800W electric heat
- R32
- 230V



SAFETY WARNING

Only qualified professionals should install and service this equipment. Improperly installed or modifications by an unqualified person could result in death or serious injury. When working on the equipment, observe all precautions in the installation manual and labels attached to the equipment.



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AIO Ceiling ducted can be discreetly installed above a ceiling and is ideal for single or multi-room applications. The return can be from the sides or the bottom for maximum flexibility. With up to 0.6" external static pressure, this unit can be used where ducting is required. Use with any interior grille and louver to provide additional design flexibility. A bathroom exhaust can connect to the dedicated stale air exhaust.

Ephoca is constantly innovating and improving its products and reserves the right to modify product design and specifications without notice and without incurring any obligations.

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Key Features

■ No outdoor unit

The single package design means 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 BLDC inverter compressor operates efficiently, quietly, and with minimal vibration. AIO is ideal for any room or area that requires between 4,000 and 10,500 BTU.

■ R32 – Next-gen refrigerant

R-32 has a global warming potential (GWP) that is one-third lower than R410a and low environmental impact.

■ High-efficiency ECM fans with auto ESP

High-efficiency ECM fans enable efficient and quiet operation as the EC motor can ramp up or down depending on the need. Automatically adjusted external static pressure ensures correct airflow.

■ Cold climate heat pump

The heat pump with efficiently function down to 5°F outdoors.

■ 1,800 Watt electric heat

The electric heat works in conjunction with the heat pump when the heat pump has insufficient power.

■ Intelligent defrosting

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

■ Coil cooling system

The condensate mister system drizzles the condensate on the outdoor heat exchanger coils, lowering the coil's temperature and increasing efficiency and performance.

■ Quiet

With whisper-quiet operation as low as 27 decibels, the occupant will barely notice AIO is operating.

■ No outside noise infiltration

AIO has the lowest STC and OITC rating among comparable units. This means less outside noise intruding into the room day and night.

■ Versatile on/off options

AIO's low voltage connection enables connection to any occupancy system, key-card, window sensors, fire alarms, etc.; as long as it can send a signal to AIO via low voltage, the unit can be easily turned on or off.

■ Corrosion protection

AIO comes standard with corrosion protection, assuring many years of trouble-free performance.

■ Minimal clearances and compact footprint

AIO's compact form with no line sets means there is no need to access the sides of the unit. Mount units with as little as 3/4 inch clearance on all sides. Compact footprints take up minimum space.

■ Leak protection

A drain alarm will activate if the drain becomes clogged, and the system will be shut off, preventing water damage.

■ Easy to service

AIO can be easily maintained and repaired from the front or bottom of the unit without having to remove the unit from the wall or ceiling. AIO can also be quickly swapped out with a replacement, reducing downtime.

■ Versatile controls

AIO includes an iOS and android app and an onboard touch controller. AIO can be used with optional wall-mounted controllers, including a TFT with 7 day program and third-party controllers from any company using the optional 3rd party kit. An optional BACnet and Modbus module enables interfacing with building management systems

■ 10-Year limited warranty

An industry-leading ten-year limited on-site warranty provides peace of mind. One full-year parts and labor. Nine-year parts and a full ten-year parts and labor on the sealed system, including the compressor.

Technical requirements

AIO Ceiling ducted specifications

Note: Refer to the full specifications for detailed information about the list of specifications.

- An electrical supply with a grounded 3-prong receptacle.
- The power supply circuit is installed in accordance with the current edition of NEC (ANSI/NFPA 70) and local codes and ordinances. Note: Always consult local and national electric codes.
- Voltage rating of 60 Hz, 208V/230V single phase.
- Properly installed insulated condensate drain line with a minimum of 30% slope if an external drain. An internal drain is highly recommended.
- Approved louvers installed with best practices to ensure no water into the wall assembly.
- Correctly sized ductwork, installed properly and balanced.
- The unit must be perfectly level on the vertical and horizontal axis.
- Interior clearances are only required to prevent vibrations. Leave at least 1/3" of clearance from any surface. All other clearances are only dependent on ducting.
- The unit must be tight to ducts, with zero leakage between the external ducts and the unit.
- Properly affixed ceiling bracket to studs or other supporting material.
- Unblocked vents on the exterior and no obstacles within 36".
- An access panel with adequate clearance to be able to access the entire bottom of the unit for servicing.

Louver specifications

AIO Ceiling Ducted units can be vented through all kinds of custom and creative solutions. The possibilities are endless, from perforated panels to custom louvers.

There are two critical factors in selecting and sizing a solution that will work with AIO Ceiling ducted units.

- **Free area:** This area on a louver/grille is open for the air to flow through. The louver, perforated panel, or other solution must have at least the amount of free area as required in the specifications below in the plenum from the unit so that ample air can enter and exit the condenser chamber. A more restrictive solution with a smaller free area can be utilized by enlarging the louver and plenum until the required free area is achieved.

The minimum free area required is .34 sq feet for the intake vent and .34 sq feet for the exhaust vent.

- **Pressure drop:** Pressure drop is the resistance the louver/grille creates against the airflow. This resistance can create heat build-up inside the condenser portion, causing the compressor to overheat and shut down. A solution with a higher pressure drop than specified can be utilized by enlarging the louver and plenum until the pressure drop is within specification.

The maximum total pressure for the intake and exhaust ducting (if any) and intake and exhaust louvers combined must be under 0.7 WC.

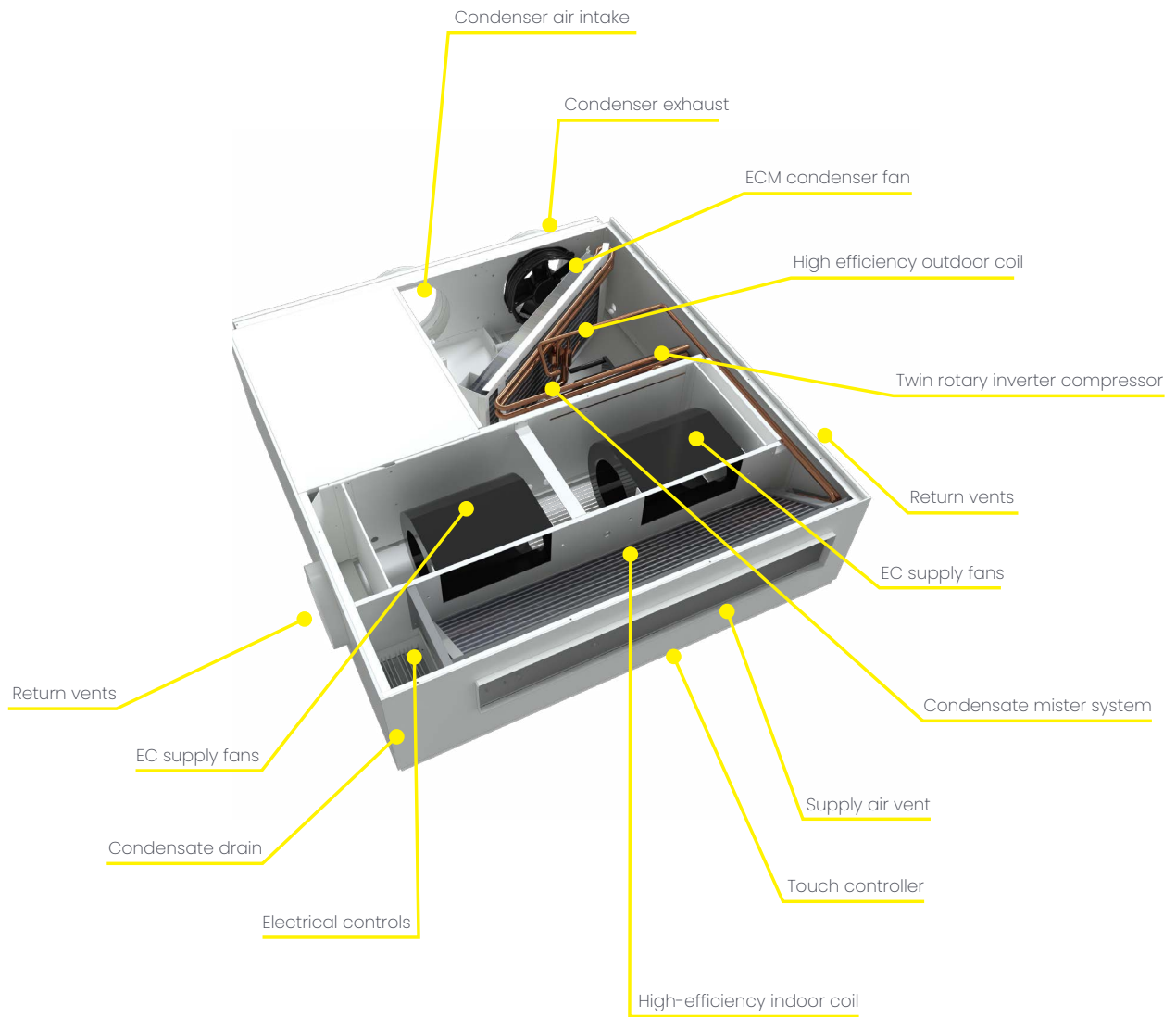
To be clear, the entire assembly of ductwork, plenums, and louvers for the complete air circuit, in and out of the system may not exceed 0.7 WC.

Any louver or louver assembly must meet these requirements, as exceeding these limits can cause the unit to overheat and fail and void the warranty.

The following louvers are approved for AIO Ceiling ducted units:

- Sunvent: LLA/C, LLA/M, LLA/S - available through your Ephoca distributor.
- Therma duct: RLA8 - available through your Ephoca distributor.

What's inside



Please note this model number does not have the fresh air and ERV feature.



Technical specifications

Cooling

Indoor: 80°F, W.B. 67°F; Outdoor: 95°F, W.B. 75°F

Heat Pump		
Range	Btu/h	3,400 - 14,000
Nominal		8,300
Input Power	W	722
Efficiency	EER	11.50
	SEER	14.60

Heating 47°

Indoor: 70°F, W.B. 60°F; Outdoor: 47°F, W.B. 43°F

Heat pump		
Range	Btu/h	3,900 - 14,500 + 6,100 Electric heat
Nominal		8,200 + 6,100 Electric heat
Input power	W	705
Efficiency	COP	3.41

Heating 13°F

Indoor: 70°F, w.B. 60°F; Outdoor: 13°F, W.B. 9°F

Heat pump		
Capacity range	Btu/h	3,200 - 7,000 + 6,100 Electric heat
Capacity		6,800 + 6,100 Electric heat
Input power	W	906
Efficiency	COP	2.04

Heating 5°F

Indoor: 70°F, W.B. 60°F; Outdoor : 5°F, W.B. 3°F

Heat pump		
Capacity range	Btu/h	2,700 - 6,700 + 6,100 Electric heat
Capacity		5,700 + 6,100 Electric heat
Input power	W	945
Efficiency	COP	1.77

Airflow

General		
Indoor	Type	ECM tangential
	CFM	160 - 290
	Speeds	Low, med, high, auto
	Filter	MERV 3
Outdoor	Type	ECM Axial
	CFM	184 - 490
	Available ESP	0.45" WC
	Intake	
	Exhaust	8" round
	Speeds	Low, med, high, auto

Sound

General		
Indoor	dB(A)	27 - 43
	STC	40
	OITC	35
Outdoor	dB(A)	28 - 55

Compressor

230V

Model voltage		
Type		BLDC twin rotary inverter
Refrigerant	Type	R32
	Oz	21.87
Oil	Type	Fv50s

Electrical

230V

General		
Volt range		207 - 251
Hz/ phase		60 Hz single phase
Power supply		Hardwire
Power factor	%	0.96
Cooling (nominal)		3.3
Cooling (max)		7.8
Heating (nominal)	A	3.2
Heating - Heat pump + Electric (max)		16.1
Input power (standby)		10.8
Input power (off mode)	W	1.7
MCA		18
MOCP	A	25

General

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

Modes	
Operation	Cool, heat, dehumidify, auto
Restricted modes	Heat only, cool only, temperature limiting
Timers	Dependent on controller

Condensate	
Pipe size	3/4"

Physical data		
Dimensions	Net	38.3" W x 41.7" D x 11.3" H
	Gross	48" L x 48" W x 18" H
Weight	Net	170 Lb
	Gross	190 Lb
Cabinet	Finish	RAL 9003 signal white
	Material	Steel

Warranty	
Year 1	On-site parts and labor
Year 2 - 10	Parts only
	On-site parts and labor on compressor

Airflow

AIO Ceiling Ducted is flexible in many ways. It can be fully ducted or used with minimal or no ducting. This flexibility enables AIO Ceiling Ducted to be placed anywhere in a dwelling without restrictions

■ Supply air

The rectangular 4" x 29" supply air connection is ideal for a supply grille or ducting, with up to 0.6" external static pressure (combined between return and supply).

■ Return air - bottom option

The bottom 8.7" x 22" return is designed to be used with a ceiling-mounted return grille or an access panel with an integrated return grille.

■ Return air - sides options

The left and right side 6" round connection can be ducted to one or more rooms with up to 0.6" external static pressure (combined between return and supply). It can also be left open as a side plenum return. With two ECM fans, each with auto ESP, each connection is fully independent. Duct both, leave both open or duct one, and leave one open to a plenum.

■ Outside air intake

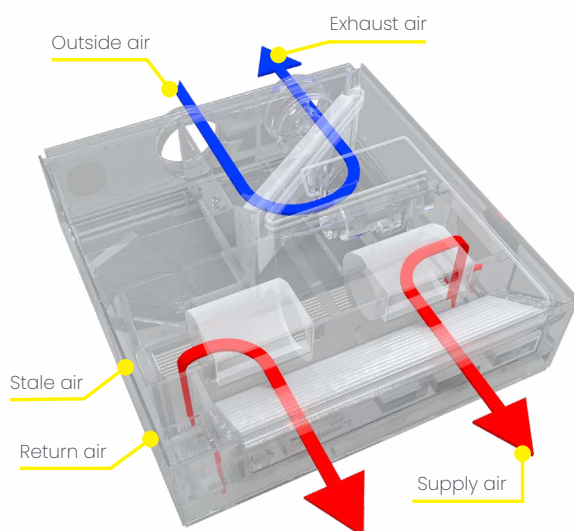
The single 8" round outside air intake connection provides air for the condenser portion and fresh air for the inside. This can be ducted with up to 0.7" external static pressure (combined between intake and exhaust).

■ Outside air exhaust

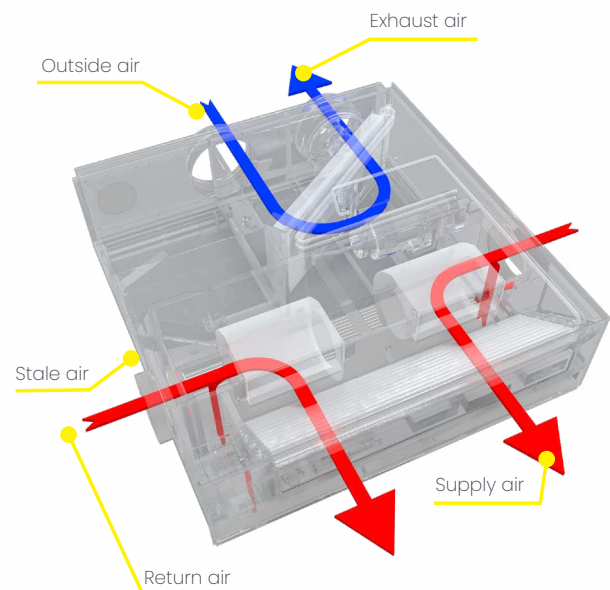
The single 8" round outside air exhaust connection is for the condenser portion and the stale air exhaust. This can be ducted with up to 0.7" external static pressure (combined between intake and exhaust).

Please note this model number does not have the fresh air and ERV feature.

Bottom return



Side return



■ Outside air ■ Recirculate air ■ Fresh air intake ■ Stale air exhaust

AIO Ceiling Ducted ADK10N3H2 Submittal

Products are subject to continuous improvements and Ephoca reserves the right to modify product design, and specifications without notice.

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

Cooling

Indoor: 80°F, W.B. 67°F; Outdoor: 95°F, W.B. 75°F

Heat Pump		
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	Exhaust	8" round
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Refrigerant		R410a

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	OITC	35
Outdoor	dB(A)	28 - 55

Electrical

General		
Volt range		207 - 251
Hz/ phase		60 Hz single phase
Power Cord		Hardwire
Power factor	%	0.96
Cooling (nominal)		3.3
Cooling (max)		7.8
Heating (nominal)	A	3.2
Heating - heat pump + electric (max)		16.1
Circuit breakers		
MCA - heat pump only		18
Recommended breaker size	A	20
MOCB		25

Warranty

Warranty		
Year 1		On-site parts and labor
Year 2 - 10		Parts only
		On-site parts and labor on compressor

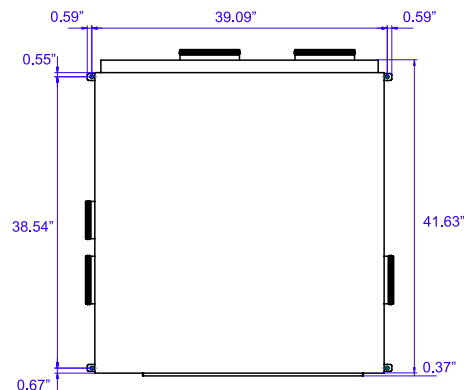
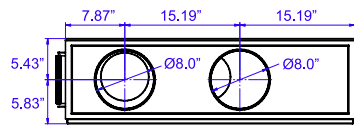
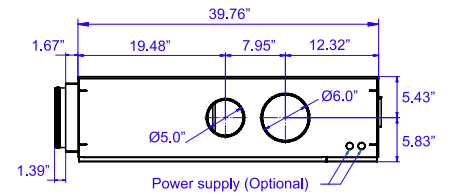
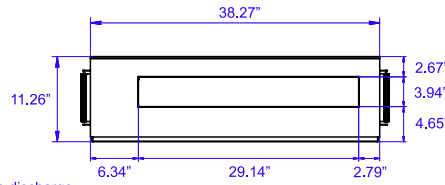
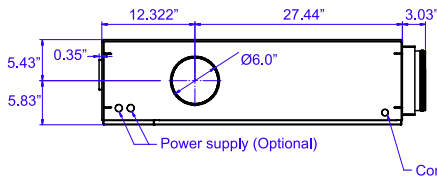
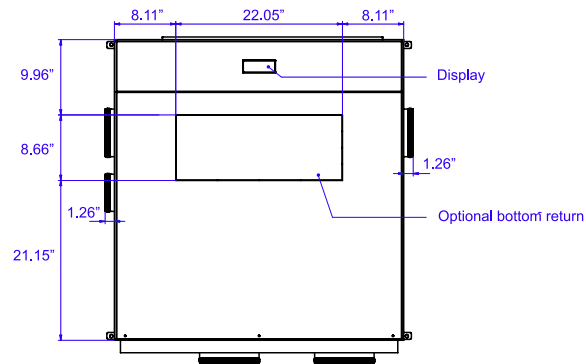
Dimensions

General		
Dimensions	Net	38.3 W x 41.7" D x 11.3" H
	Gross	48" L x 48" W x 18" H
Weight	Net	170 Lb
	Gross	190 Lb
Cabinet	Finish	RAL 9003 signal white
	Material	Steel

Dimensions

Dimensions

For CAD and DWG files, please scan or click the QR code below.



Clearances

The AIO Ceiling Ducted unit's clearance will depend on how it is vented. Please carefully read the criteria below to determine the correct clearance required.

■ Ceiling

There must be $1/3"$ minimum clearance between the unit and ceiling to minimize noise from vibrations.

■ Bottom

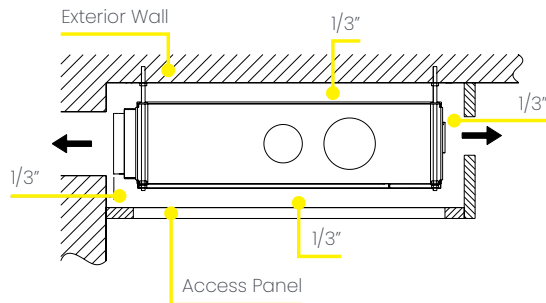
There must be a minimum of $1/3"$ clearance between the unit and the false ceiling or access panel to minimize noise from vibrations.

■ Front

The clearance required in front of the unit to drywall or other material is $1/3"$ to minimize noise from vibrations.

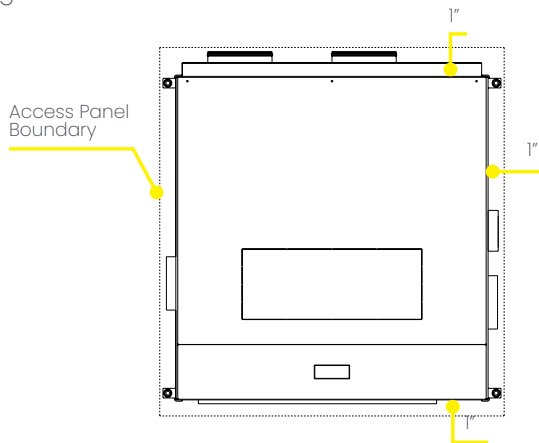
■ Rear

There must be $1/3"$ minimum clearance between the unit and wall to minimize noise from vibrations. Ensure sufficient clearance to attach ductwork to the rear vents.



■ Access Panel

There must be an access panel of at least the size of the unit plus $1/2$ inch all around. The recommended size is 39.5 x 41. The minimum size is 39 x 40.5. You can use a return grill as an access panel or an access panel with an integrated return grille.

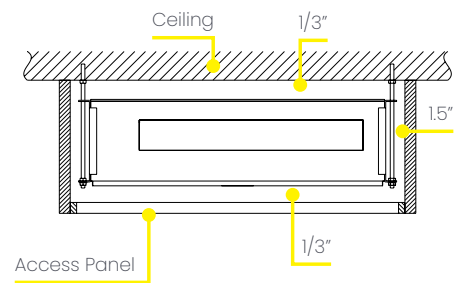


■ Sides

The clearance required on the sides is dependent on how the unit is configured for return and stale exhaust air. Minimum clearance between the unit and wall to minimize noise from vibrations. Ensure sufficient clearance to attach ductwork to the rear vents.

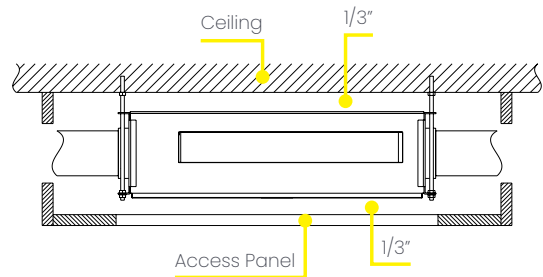
■ Bottom return configuration:

The only clearance required on the sides is $1.5"$. This is only necessary for the mounting brackets and to eliminate noise from vibrations. Larger clearance will make it easier to mount and service the unit.



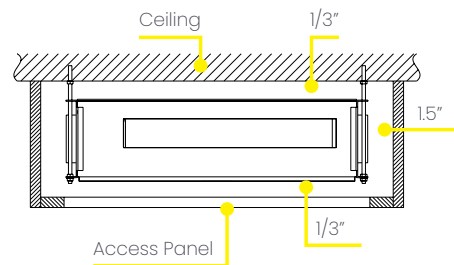
■ Side ducted return configuration

The clearance required is based solely on ductwork design. Ensure sufficient clearance to attach the ductwork to the side return.



■ Side plenum return configuration

A minimum of $3.5"$ should be free for airflow on each side to allow the air to flow into the returns.



■ Exterior

On the exterior of the building, there should be no obstacles blocking the airflow from the louver. There must be at least $40"$ of free and clear space in front of the louvers.



With over 15 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.

Ephoca is the US subsidiary of Innova SRL - Via 1° Maggio, 8 - 38089 Storo (TN) Italy.

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MADE IN ITALY

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