

The Unico System Small Duct HVAC

Flexible, Efficient, Easy-to-Install Superior Home Climate Control



About Unico

Unico is the perfect example of what vision and determination can achieve when coupled with the right environment and culture. Over 35 years ago, Joe and Sharon Intagliata had a successful HVAC contractor business. They had the drive, entrepreneurial spirit, and commitment to their customer base to want to provide a superior HVAC solution. As a result they decided to start a Small Duct High Velocity heating, cooling and ventilation manufacturing business and founded Unico in the spring of 1985.

Along with their 5 sons (and now the 3rd generation of family members), the Intagliatas have evolved their original contracting business into a family-owned innovative, engineering, manufacturing, and distribution business. Unico is recognised as the global leader in small duct HVAC systems.



Why Use a Small Duct HVAC System?

The Unico System requires about 1/3 the space of traditional ducted air systems and does not compromise on heating, cooling, or ventilation requirements. Because The Unico System® utilises state of the art 50mm or 64mm inner diameter sound attenuated and flexible tubing, it can be designed to fit into your home while delivering superior comfort and virtually silent ventilation and air movement. The Unico System eliminates the need for bulky, space-occupying ductwork and unsightly high wall split system mounted on the wall.

> The Industry-Leading Small Duct HVAC System In the USA & Europe

> > Installed In Over 1 Million **Homes Globally**





Quality

Through product innovation and commitment to ISO standards, Unico continues to deliver category leading products and services both to the trade and end user communities.



Technical Support

With more than 70 years of industry experience, our Technical Support team provides support to international markets through a network of partner distributors. The technical support team guides in-market specialists through hard-to-tackle projects, offering part numbers, pricing, part matchups, installation troubleshooting, warranty processing, and any other technical enquiries one might have.



Performance

The Unico System® is efficient and innovative by design, providing quiet climate control, eliminating drafts and hot/cold spots, removing moisture in humid climates, and delivering unparalleled energy efficiency in a small footprint that preserves the host building's design function and aesthetics.



Design Services

Unico can help design HVAC projects and will lay out the ductwork, outlets, equipment location, and provide a material list, at NO CHARGE! Simply complete a short enquiry form and send the plans through in AutoCad, PDF, JPG, or hard copy.



Training

Installer knowledge and experience are critical to The Unico System operating at the highest level for years to come. We make it easy to learn about The Unico System®, offering in-person and online training courses that are continually updated.



Continuous Innovation

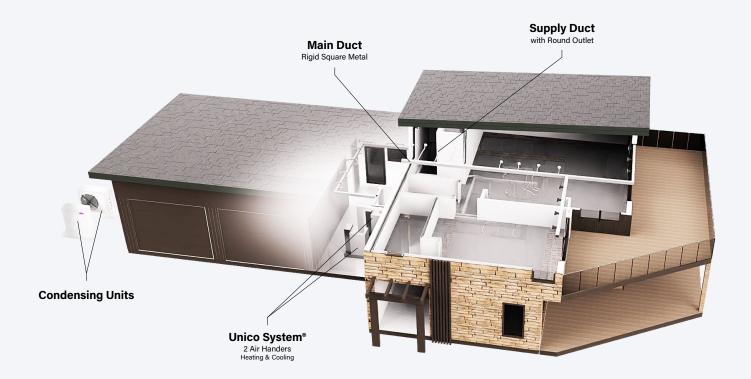
Unico's innovations are known to ease installation challenges, providing years of dependability and worry-free use in applications ranging from new home construction to the retrofitting of historic landmarks. Unico's design and product innovations are trusted by renowned architects and designers when specifying heating, cooling, and ventilation systems for their unique project needs.



The Unico System is a small duct high velocity air handling and management system for heating, cooling and ventilating homes and commercial premises alike. Its compact size allows it to fit into small spaces without disrupting the interior design or décor of the home. The Unico modular air handling units (AHUs) can be either horizontally or vertically mounted in voids between ceilings, floors, into small utility rooms, wardrobes, or cupboards. The small main duct and even smaller, flexible supply ducts (tubes) can thread through existing voids in open-web ceiling or floor joists and weave in and out of wall stud framing. The Unico System delivers conditioned or fresh air through small, unobtrusive round or slotted outlets, available in a variety of finishes and colours, paintable plastic, or several stainable wood species.

The Unico System is the preferred climate control solution for:

Homeowners enjoy that The Unico System virtually disappears into their home's décor, cannot be heard when it's in operation, and is draft free. Enjoy the comfort of their preferred temperature with no cold or hot spots and to breathe pure, clean air. And enjoy a truly energy efficient, environmentally friendly indoor climate control system.



HVAC Installers appreciate the system's simple yet state-of-the-art design, durability, flexibility, ease-of-installation, and unparalleled technical support.

Builders are pleased to offer their customers a technologically advanced HVAC system that satisfies their designer's needs and makes their customers happy and comfortable.

Architects and Home Designers value the fact that the system does not intrude on their original design, allowing for vaulted or slanted ceilings, open floor plans, or large glass expanses, etc.

Renovators appreciate the fact that they can now add modern comfort amenities to historically significant homes and buildings without impacting their original design function or aesthetics, helping to ensure the conservation of the built heritage.

Superior Technology with Flexible Options



Air Handling Units: The Heart of The Unico System

At the heart of The Unico System is our air handler unit (AHU) containing the fan and heating and cooling coil modules. Quick and easy to install, our AHUs consist of modular components that are easily transported, fit into the tightest of spaces-lofts, utility rooms, voids, or crawlspaces-and latch together on site. Available in horizontal or vertical configurations our 5 model sizes cater to all types and sizes of properties.

Unico is the only small duct system manufacturer to utilise a true variable speed EC motor combined with our S.M.A.R.T (Software Managed Air Rate Technology) control board that allows for exact airflow and temperature control.

Compatible with Air Source Heat Pumps and a host of other energy source technologies to maximise the efficiency of your customer's home climate system.





Perhaps our most noticeable features that really make The Unico System what it is are our small main duct, even smaller flexible supply ducting with built in sound attenuation, and unobtrusive room outlets.



Unico main ducting is one-third the size of most traditional ducted air systems and can fit into the voids between ceilings or floors.

Unico supply ducting consists of flexible supply ducts (insulated tubes) that snake through existing voids in PosiStrut ceiling or floor joists and weave in and out of wall stud framing.





Unico sound attenuated supply ducting has a built-in sound attenuator material that reduces any noise to a mere whisper, is flexible and insulated.

Unico outlets are available in round (50 or 64mm inner diam./125mm outer diam.) or slotted configurations (25mm by 200mm) in a variety of finishes including black, brass and chrome, and in wood or plastic versions that can be stained or painted to blend into any style of décor. They can even be wall-papered to become virtually invisible in their surroundings.



Unico Outlets

Virtually Invisible In Their Surroundings



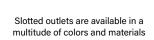
















Mahogany Outlet



Maple Outlet













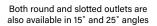


Pine Outlet





Knotty Pine Outlet





Benefits of The Unico System



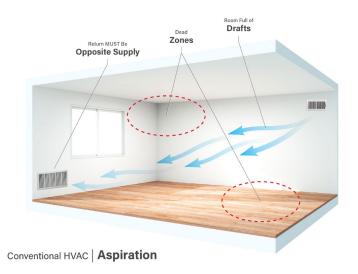


Whisper Quiet Operation

Our supply tubing is designed to be as quiet and efficient as possible, with a nylon inner core and insulation that absorbs sound. Our AHUs are designed to isolate noise and vibration, with closed cell, sound-deadening insulation. Together, these bring decibel levels to the equivalent of a soft whisper, less than 30 decibels.

Draft-Free, Even Temperatures

Most traditional ducted air systems distribute air unevenly by dumping it into rooms, creating drafts and uneven temperatures. By contrast, The Unico System uses a principle called aspiration—an air delivery method in which a lower volume of air is moved at a higher velocity. Aspiration creates a gentle suction around the delivery outlets, drawing the room's air into its stream of conditioned air, providing better comfort to occupants by eliminating drafts and hot/cold spots, and resulting in even temperatures from room to room, floor to floor, and floor to ceiling. The temperature differential is no greater than 1°C throughout the entire space.





Better Moisture Removal In Humid Climates

Due to the unique design of its cooling coils, The Unico System can remove 30% more moisture from the air in cooling mode than traditional air conditioning systems. This also helps with energy efficiency in that occupants feel comfortable at higher thermostat settings when in the cooling months, reducing the overall electrical load on the system.

Better Indoor Air Quality (IAQ)

The unique tightly sealed construction of our ducting, together with the higher velocity air delivery and superior moisture removal, results in Unico conditioned air that is truly clean—devoid of dust, pollen, bacteria, viruses, odours, or harmful gases. The Unico System is also an excellent provider of fresh, outdoor air and is also compatible with a host of air purifying accessories such as HEPA filters and ultra-violet disinfectants.

Energy Efficiency



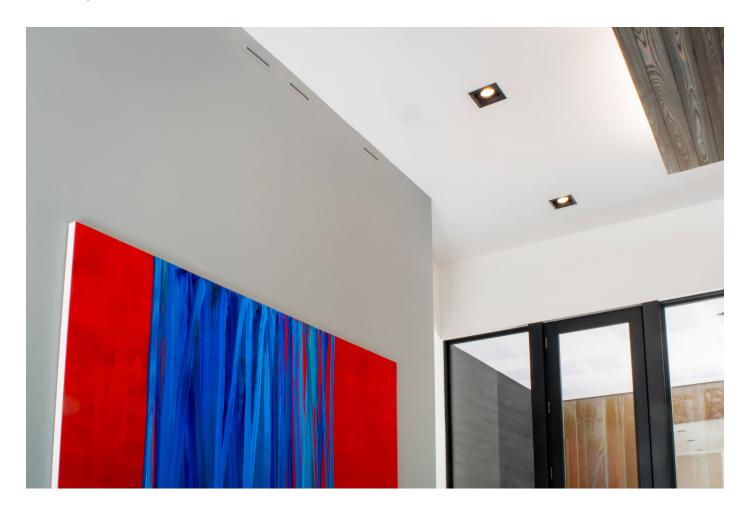
Traditional ducted air systems lose as much as 40% of their conditioned air—especially when ducting is located in an unconditioned area. However, Unico's smaller, tighter ducts lose virtually none of their conditioned air. Plus, Unico blowers are available with programmable, variable speed Eletronically Commutated Motors (ECMs) that use less electricity than their conventional counterparts. Unico achieves superior energy efficiency performance with 97% of the system's actual energy delivered to the conditioned living space.

Elegant Aesthetics

Our discreet outlets allow homeowners to make maximum use of their internal space. Outlets can be positioned in ceilings, walls or floors enabling uncompromised interior design potential because there are no unsightly high wall units, air registers or radiators to work around or accommodate. The freedom of design that The Unico Systems enables is loved by architects, self-builders, and interior designers alike.

Warm In Winter, Cool In Summer

Always Fresh, Filtered Air



During colder periods, The Unico System works efficiently to warm your home to your desired pre-set temperature. Rooms receive a steady, warm supply of air via specially located discreet outlets, based on our unique aspiration delivery method. Unico distributes air evenly and consistently—with no hot or cold spots, just an overall feeling of pleasant warmth and comfort.

When temperatures rise, The Unico System is the perfect antidote to overwhelming heat and stuffiness. Not only does the system cool your space to the desired level, it also removes humidity and irritants, which adds to uncomfortable living conditions during hotter periods. With Unico, you achieve a fresh, cool home environment, no matter the temperature outside.

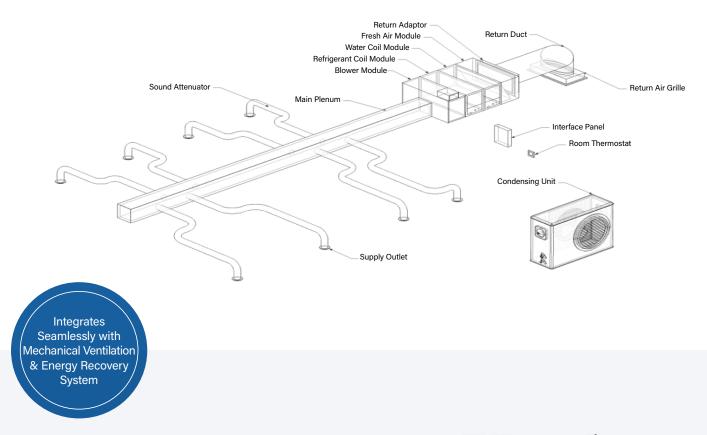
The Unico System dramatically improves indoor air quality (IAQ), which is important for everyone, but especially those with conditions such as asthma, respiratory illness, compromised immune systems, or thermoregulation problems.

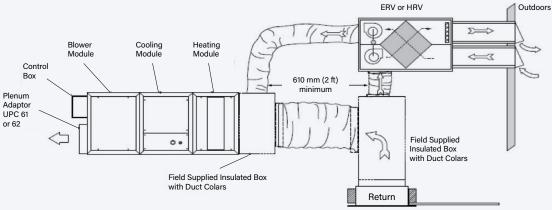
Superior Home Climate Control



Excellent When Paired with a Reversible Air Source Heat Pump

The Unico System is a home climate solution that works efficiently and discreetly to maintain perfect, optimum temperatures and exceptional indoor air quality in homes and light commercial settings. Unico warms in the winter and cools in the summer, whilst removing pollutants and irritants all-year-round to leave occupants with clean, healthy, filtered air. It perfectly creates climate-controlled living spaces to combat our changing and challenging weather conditions. Unico is the best HVAC option for any new build property or self-build project where the system can be designed to fit perfectly within the fabrication of the building. It is also an ideal solution for retrofitting homes and buildings where space is at a premium.







& Installation Instructions

Optimal Duct Patterns

Loop (Best)



H-Pattern (Better)



Horseshoe (Good)



Dogleg (Good)



Duct Size

The Unico System can be installed with either round or rectangular duct, either traditional galvanised circular duct or rectangular fibreboard for enhanced system performance and ease of installation. Unico provides adapters for both types. The size of the central duct system will vary according to the required airflow and length required. Please refer to the Duct Layout and Design Manual for more specific information on duct sizing. For rectangular duct sizes, size the duct for equal friction. If using a tee to split the airflow it is acceptable to reduce the duct size immediately after the tee. (Note: Each elbow or tee is equivalent to 5m (15 feet) of straight duct.)

			1218	2430	3036	3642	4860	
Pigid	Max. Plenum Length	m (ft)	45 (150)					
	Min. Length to First Tee/Bend	mm (in)	600 (24)					
	Min. Length Between Fittings	mm (in)	600 (24)					
	Min. Round Duct	mm (in)	180 (7)		230 (9)		250 (10)	
	Min. Rectangular Duct	mm (in)	165 x 165 (6.5 x 6.5)		215 x 215 (8.5 x 8.5)	240 x 240 (9.5 x 9.5)	
			150 x 200 (6 x 8)		200 x 250) (8 x 10)	230 x 300 (8 x 12)	
			100 x 300 (4 x 12)		150 x 300 (6 x 12)		150 x 350 (6 x 14)	
			90 x 350 (3.5 x 14)	3.5 v 1/1)	100 x 500	(4 x 20)	100 x 600 (4 x 24)	
			30 X 330 (3.3 X 14)		90 x 600	(3.5 x 24)	100 x 000 (4 x 24)	

Installation

The duct must be designed for 992 Pa (4" water column) internal pressure. A sheet metal thickness of at least 26-gauge (0.45 mm) is recommended in order to cut the 51mm holes for the branch ducts without collapsing the central duct.

Sealing. It is extremely important to seal all of the duct seams and joints. The method of sealing shall be in accordance with the latest local building regulations.

Insulation

The Unico System is designed to produce a greater temperature drop across the heat exchanger than a conventional system. To prevent condensation or excessive duct losses to the surrounding air, all main ducting and components must be insulated to the local building codes and regulations.

Metal Return Duct

We recommend the Unico return duct tubing on all installations, however, if the return duct tubing is made of metal, always add an acoustical lining to the inside of the duct. This is in addition to or instead of the wrapped insulation. The duct should be sealed at the seams and be designed for a negative 124 Pa (0.5" water column) static pressure.

Sound Attenuator & Supply Tube

						Sound Attentuated	
	UPC-25T	UPC-225	UPC-26T	UPC-226			
Core Material	-		Corrugated Aluminum		Spun-Bond Nylon		
Internal Diameter, mm (in)	mm (in)		50.8 (2)	63.5 (2.5)	50.8 (2)	63.5 (2.5)	
	mm (in)	RSI-0.58 (R3.3)	89 (3.5)	102 (4.0)	89 (3.5)	102 (4.0)	
Outside Diameter		RSI-0.74 (R4.2)	102 (4.0)	114 (4.5)	102 (4.0)	114 (4.5)	
Outside Diameter	111111 (111)	RSI-1.06 (R6)	127 (5.0)	140 (5.5)	127 (5.0)	140 (5.5)	
		RSI-1.41 (R8)	152 (6.0)	165 (6.5)	152 (6.0)	165 (6.5)	
Available Lengths, m (ft)	m (ft)		7.6 (25)		0.9 (3) / 3.6 (12)		
R Values - (Imperial, ft 2, °F, hr/Btu)	Rated		3.3 / 4.2 / 6 / 8				
In values - (imperial, it · i · iii/btu)	Effective		4 / 5.8 / 9.5 / 13.7				
RSI-Values (Metric m ² · K/W)	Rated		0.58 / 0.74 / 1.06 / 1.41				
Ther values (wette in * 10, 00)	Effective		0.70 / 1.02 / 1.67 / 2.41				
Min. Pressure	Pa (in. w.c.)		125 (0.5)				
Max. Pressure	Pa (in. w.c.)		1000 (4.0)				
Max. Velocity	m/s (ft/min)		25 (5000)				
Min. Length	m (ft)		- 0.9 (3)				
Max. Length	m (ft)		10.7 (35)				
Min. Inside Bend Radius	mm (in)		150 (6)				
Flame Spread Index	-		<25				
Smoke Development Rating	-		<50				

Versatility and Performance

Unico Modular Air Handlers

	Model		M1218BL1-EC3 + M1218CL1-C/E + M1218CL1-H	M2430B*1-EC3 + M2430C*1-B/C/E + M2430C*1-H	M3036B*1-EC3 + M3036C*1-B/C/E + M3036C*1-H	M3642B*1-EC3 + M3642C*1-B/C/E + M3642C*1-H	M4860B*1-EC3 + M4860C*1-B/C/E + M4860C*1-H	
	Power Supply	V/Hz/Ph			120/208-240 / 50/60 /	1		
	Motor Size	kW (HP)	0.37 (1/2)		0.75 (1)			
Electrical Data	Motor Minimum Circuit Ampacity	A, 120V/240V	7.0 / 4.0		12.8 / 7.7			
	Max. Overcurrent Protection	A, 120V/240V	15 / 15		20 / 15			
	Motor Full Load Amps	A, 120V/240V	5.6	/ 3.2		10.2 / 6.1		
	Motor Speed	RPM	400 - 1800 (Variable)					
	Blower Wheel Diameter	mm	241					
	Blower Wheel Width	mm	38	95	127	127	197	
	Nominal Airflow Rate	L/s (CFM)	189 (400)	354 (750)	425 (900)	520 (1100)	614 (1300)	
	Nominal Static Pressure	kPa (in. w.c.)		-	0.373 (1.5)	-		
	0 18	dB(A)	52	56	56	56	58	
Blower Module, MxxxxB*1-EC3	Sound Pressure Level	NC	40	50	47	47	50	
MIXXXXB*I-EC3	Maximum Air Temperature over Motor	°C			65	-		
	Minimum Supply Duct Size	mm (in)	178 (7) 229 (9) 2			254 (10)		
	Maximum Elevation of Operation	m (ft)			4572 (15,000)			
	Dimensions, L x W x H	mm	508 x 392 x 305	635 x 349 x 445	762 x 349 x 445	965 x 349 x 445	965 x 349 x 445	
	Net Unit Weight	kg (lb)	15.9 (35)	19.1 (42)	22.7 (50)	24.5 (54)	26.8 (59)	
	Shipping Weight	kg (lb)	22.7 (50)	24.5 (54)	28.6 (63)	30.5 (67)	31.4 (69)	
	Nominal Capacity (Cooling)	kW	3.5 - 5	9	10.5	12.3	17.6	
	Nominal Capacity (Heating @ 7°C ODT)	kW	3.5 - 5	9	10.5	12.3	17.6	
	Compatible ODU Nominal Capacity	kW	3.5 - 5	5 - 9	7 - 10.5	10.5 - 14	14 - 19.3	
	Design Pressure	MPa			3,45	1 100	1	
	Suction Line OD	mm (in)	15.9 (5/8) 22.2 (7/8)					
Heat Pump Module,	Liquid Line OD	mm (in)	9.5 (3/8)					
MxxxxC*1-B/E	Drain Connection	mm (in)	19 (3/4) FPT					
	Refrigerant Type	-	R-410A					
	Expansion Device		TXV with Internal Check Valve					
	Dimensions, L x W x H	mm	508 x 406 x 305 635 x 349 x 445 762 x 349 x 445 965 x 349 x 445 965 x 349 x 445					
	Net Unit Weight	kg (lb)	16.4 (36)	22.7 (50)	26.4 (58)	31.8 (70)	49.1 (108)	
	Shipping Weight	kg (lb)	18.6 (41)	24.5 (54)	28.2 (62)	35 (77)	54.1 (119)	
	Capacity Range (Cooling @ 4.4°C Entering Water Temp.)	kW	3.3 - 6.1	5.5 - 11.1	6.2 - 12.2	9.6 - 16	11.1 - 20.2	
	Capacity Range (Heating @ 60°C Entering Water Temp.)	kW	5.7 - 11.1	7.9 - 13.7	9.4 - 16.1	14.1 - 20.0	17.0 - 24.9	
	Water Flow Rate Range	L/s	0.13 - 0.38	0.13 - 0.38	0.13 - 0.50	0.25 - 0.50	0.25 - 0.63	
	Entering Water Temp. (Cooling)	°C	0.13 - 0.36					
	Entering Water Temp. (Heating)	°C	35 - 60					
Chilled Water Coil,	Design Pressure	MPa	2.2					
MxxxxC*1-C	Coil Water Volume	1	2.2	3.4	3.9	5.3	7.6	
	Connection Size	mm (in)	15.9 (5/8) ODF Sweat	0.1	22.2 (7/8) ODF Sweat		28.5 (1-1/8) ODF Sweat	
	Dimensions, L x W x H	mm	508 x 406 x 305	635 x 349 x 445	762 x 349 x 445	965 x 349 x 445	965 x 349 x 445	
	Net Unit Weight	kg (lb)	16 (35)	21.8 (48)	26.4 (58)	31.8 (70)	51.4 (113)	
	Shipping Weight	kg (lb)	20 (44)	23.6 (52)	29 (64)	34.5 (76)	55 (121)	
	Capacity Range (Heating @ 60°C Entering Water Temp.)	kW	4.1 - 7.5	7.9 - 11.6	9.1 - 13.9	11.9 - 22.3	11.9 - 22.3	
	Water Flow Rate Range	L/s	0.13 - 0.38	0.25 - 0.50	0.13 - 0.50	0.25 - 0.63	0.25 - 0.63	
	Entering Water Temp.	°C	48.9 - 71.1					
	Design Pressure	MPa	1.03					
Heating Module,	Coil Water Volume	1	1.2	3.4	4.2	5,2	5.2	
MxxxxC*1-H	Connection Size	mm (in)	1.2 3.4 4.2 5.2 15.9 (5/8) ODF Sweat 22.2 (7/8) ODF Sweat			J.E		
	Dimensions, L x W x H	mm	508 x 152 x 305	635 x 305 x 445	762 x 305 x 445	965 x 305 x 445	965 x 305 x 445	
	Net Unit Weight	kg (lb)	7.9 (17.5)	22.7 (50)	29 (64)	31.8 (70)	31.8 (70)	
	Shipping Weight	kg (lb)	11.7 (25.5)	24.1 (53)	31.7 (70)	34.5 (76)	34.5 (76)	
	Jourshand Modern	g (ib)	11.7 (20.0)	24.1 (55)	31.7 (70)	04.0 (70)	34.3 (70)	

Unico Vertical Air Handlers

	Model		V2430B-1EC3*H	V3036B-1EC3*H	V3642B-1EC3*H				
	Power Supply	V/Hz/Ph	120/208-240 / 50/60 / 1						
Electrical Data	Motor Size	kW (HP)	0.37 (1/2)	0.75	(1)				
	Motor Minimum Circuit Ampacity	A, 120V/240V	7.0 / 4.0	12.8 / 7.7					
	Max. Overcurrent Protection	A, 120V/240V	15 / 15	20 / 15					
	Motor Full Load Amps	A, 120V/240V	5.6 / 3.2	10.2 / 6.1					
	Motor Speed	RPM		400 - 1800 (Variable)					
	Blower Wheel Diameter	mm		241					
	Blower Wheel Width	mm	95	127	127				
	Nominal Airflow Rate	L/s (CFM)	354 (750)	425 (900)	520 (1100)				
A1-f1	Nominal Static Pressure	kPa (in. w.c.)		0.373 (1.5)					
Airflow Specs.	Sound Pressure Level	dB(A)	56	56	56				
	Sound Pressure Level	NC	50	47	47				
	Maximum Air Temperature over Motor	°C		65					
İ	Minimum Supply Duct Size	mm (in)	178 (7)	229 (9)					
	Maximum Elevation of Operation	m (ft)		4572 (15,000)					
	Nominal Capacity (Cooling)	kW	9	10.5	12.3				
	Nominal Capacity (Heating @ 7°C ODT)	kW	9	10.5	12.3				
	Compatible ODU Nominal Capacity	kW	5 - 9	7 - 10.5	10.5 - 14				
	Design Pressure	MPa		3.45					
Refrigerant Cooling/ Heating Specs.	Suction Line OD	mm (in)	15.9 (5/8)	15.9 (5/8) 19 (3/4)					
ricating opecs.	Liquid Line OD	mm (in)	9.5 (3/8)						
	Drain Connection	mm (in)		19 (3/4) FPT					
	Refrigerant Type	-	R-410A						
	Expansion Device	-		TXV with Internal Check Valve					
	Capacity Range (Cooling @ 4.4°C Entering Water Temp.)	kW	4.7 - 9.8	6.2 - 14.2	8.8 - 16.1				
	Capacity Range (Heating @ 60°C Entering Water Temp.)	kW	6 - 12.2	9.4 - 15.7	11.7 - 20.8				
Chilled Water Coil Specs. (Cooling/	Water Flow Rate Range	L/s	0.13 - 0.38	0.13 -	0.50				
Heating)	Entering Water Temp.	°C							
3,	Design Pressure	MPa	2.2						
	Connection Size	mm (in)	22.2 (7/8) ODF Sweat						
	Capacity Range (Heating @ 60°C Entering Water Temp.)	kW	5.9 - 9	6.7 - 7.8	7.7 - 15.3				
Hot Water Coil	Water Flow Rate Range	L/s	0.25 - 0.50	0.13 - 0.50	0.25 - 0.63				
Specs.	Entering Water Temp.	°C	48.9 - 71.1						
(Heating Only)	Design Pressure	MPa	1.03						
	Connection Size	mm (in)		22.2 (7/8) ODF Sweat					
	Dimensions, L x W x H	mm	508 x 508 x 1068	610 x 508 x 1068	636 x 603 x 1068				
Construction Specs.	Net Unit Weight	kg (lb)	53 (117)	63 (138)	74 (163)				
	Shipping Weight	kg (lb)	80 (177)	91 (200)	103 (227)				



Assistance You Can Count On | Always Here to Help

Meet Your Australasia Unico Team:

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