

**The Energy Solutions of  
Withair Fresh Air & Heat Recovery Packaged Rooftop Unit Catalogue 2017**



**Take Control of Your Energy Future !**

**Withair offers a wide range of clean energy products and solutions to meet the needs of your projects.**



**Ongoing innovation with cutting-edge products**



**Over 20 years of experience**



**Production 100% Made in China**



**Guaranteed support and spare parts**



**Support in design**



**Documentation for incentives**



**Two-year guarantee**



**Free training course**

## About Withair

Withair® is one leading manufacturer in sustainable energy solutions supplying HVACR products & services for cooling, heating, hot water, ventilation, industrial refrigeration and heat recovery that reflect today's demand for sustainable construction, comfortable indoor climate and industrial cooling process application. and specialize in heating & cooling system, air quality system and new energy development and utilization,now it has three factories,manufacturing different kinds of products, and committed to providing the first-class products & system solutions for customers.

At Withair®, our aim is to support the growth, profit, and sustainability goals of our clients by delivering innovative solutions with n x value.we gain a deep understanding of our client's needs and business objectives first and foremost by gaining and leveraging our technical knowledge, innovative thinking, and vast equipment resources. from heating & cooling solutions and air quality management,to energy performance and efficiency determination,Withair® delivers the results.

Withair® operates in a strongly impacting sector in the energy field, and its primary objectives include committing resources to continuous technological research and improvement of production processes, with the aim of streamlining products and raise users' awareness on the actual soundness of ensuing energy savings.

Withair® products & solutions combine utmost efficiency with minimum energy consumption and strict respect of the environment, the idea proved to be a winning one in just a few years, Withair® became the leader in the sector !



**Low energy consumption systems**

**Use of clean energy**

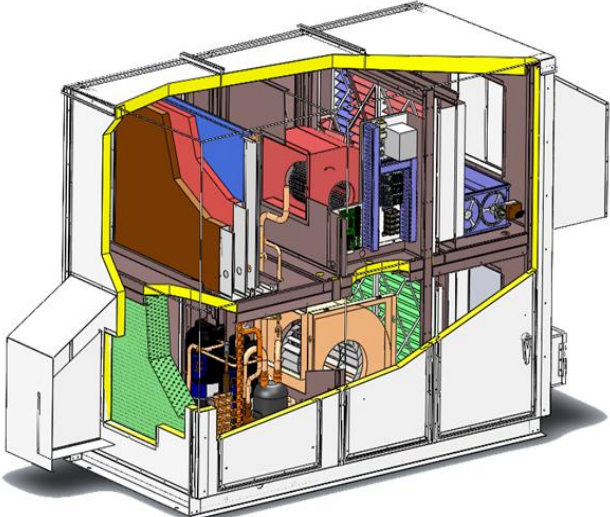
**Use of environmentally-friendly cooling gases**

**ZERO direct CO2 emissions in the environment**

# Fresh Air & Heat Recovery Packaged Rooftop Unit - The most energy-saving fresh air conditioning

Withair® packaged rooftop units were designed to be easy to install, maintain, and operate, Unit is the world's first efficient oval-tube finned heat exchanger, air supply and exhaust design into integration structure, delivery the fresh air and exhaust air heat recovery at the same time. Greatly improve the COP and start a fresh air conditioning energy saving is achieved. Units are field-convertible to horizontal airflow without special adapter curbs or kits, making it easy for the installer to adjust to unexpected jobsite complications. Units are pre-wired and pre-charged with environmentally (R-410A) refrigerant and are factory tested. Withair® packaged rooftop unit applicability is wide and used in shopping malls, hotels, factories, villas, commercial housing, office buildings, shops, hospitals and other places.

## Fresh Air & Heat Recovery Packaged Rooftop Unit--Dedicated Outside Air System (DOAS)



Ceiling type



Floor type



Small outdoor location



Large indoor location



Large outdoor location

# Fresh Air & Heat Recovery Packaged Rooftop Unit

## — Product Description —

Withair® packaged rooftop units were designed to be easy to install, maintain, and operate, Unit is the world's first efficient oval-tube finned heat exchanger, air supply and exhaust design into integration structure, delivery the fresh air and exhaust air heat recovery at the same time. Greatly improve the COP and start a fresh air conditioning energy saving is achieved. Units are field-convertible to horizontal airflow without special adapter curbs or kits, making it easy for the installer to adjust to unexpected jobsite complications. Units are pre-wired and pre-charged with environmentally (R-410A) refrigerant and are factory tested. Withair® packaged rooftop unit applicability is wide and used in shopping malls, hotels, factories, villas, commercial housing, office buildings, shops, hospitals and other places.

## — The Key Advantages Include —

- All model sizes share a common, compact cabinet in a single footprint for on-site flexibility.
- Installation time and costs are reduced by easy power and control wiring. All units are factory-wired, charged and tested prior to shipment.
- Elliptic tube high efficiency heat exchanger and without air stripping, the heat transfer can be maximized.
- Compressor is internally protected against high pressure and temperature.
- Units are engineered and built to be among the quietest models.
- Full-perimeter base rails are easily removable, yet provide a solid unit foundation.
- Durable finish, made of powder-painted, galvanized steel to meet 500-hour salt-spray test demands.
- Unique product structure design:
  - In Summer, the cool condenser is cooled by cold return air in summer, and there is no overheating phenomenon;
  - In Winter, the evaporator is heated through the hot return air, without the risk of frost crack and frosting at low temperature.
- Condensate pan is non-corrosive, long-lasting and watertight.
- Strong heat capacity in winter, because of the use of exhaust heat recovery, the heat system is guaranteed at  $-12.5^{\circ}\text{C}$ , supply air temperature can be up to  $20.5^{\circ}\text{C}$ .
- Heat exchangers are built in and with filter design, corrosion-resistant, with aluminized steel tubular construction for durability and long service life.
- Post-purge induced draft combustion exhausts combustion products from the heat exchanger to prolong heat exchanger life.
- Precise temperature and humidity control.
- Complete line of field-installed accessories, including propane and high altitude conversion kits, economizers, single- and dual-enthalpy sensors and more.
- Control terminal board facilitating simple safety circuit troubleshooting and simplified control box arrangement.
- Access panels with easy grip handles and tool-less filter access door
- Belt drive evaporator-fan motor and pulley combinations available on all three phase models to meet any application
- Field convertible from vertical to horizontal airflow for slab mounting.
- Dependable time/temperature defrost board and logic.
- The unit adopts centrifugal fan as the exhaust fan, low noise and high efficiency.
- No cross contamination- because it is completely separate structure, unit is absolutely no cross contamination, and other heat recovery unit, plate heat exchanger and heat recovery wheel, due to the influence of structure will produce cross-contamination, so unit is particularly suitable for hospital use.

## — Technical Data —

### Ceiling type (air flow:350~5000m<sup>3</sup>/h)---Indoor location

Model W05R1-			4RFHI	5RFHI	9RFHI	11RFHI	17RFHI	23RFHI	36RFHI	43RFHI
Fresh air volume		m <sup>3</sup> /h	350~500	500~750	750~1000	1000~1500	1500~2000	2000~3000	3000~4000	4000~5000
Exhaust air volume		m <sup>3</sup> /h	350~500	500~750	750~1000	1000~1500	1500~2000	2000~3000	3000~4000	4000~5000
Cooling capacity		kW	3.8	5.4	8.7	11.1	16.6	23.3	35.7	43.1
		EER	4.13	4.15	4.35	4.44	4.15	4.24	4.52	4.84
		BTU	12,966	18,425	29,684	37,873	56,639	79,500	121,808	147,057
		USRT	1.1	1.5	2.5	3.2	4.7	6.6	10.2	12.3
Heating capacity		kW	4.1	5.7	9.4	13.1	17.5	24.9	38.6	46.8
		COP	4.88	6.06	6.27	6.01	5.13	5.19	5.64	5.81
		BTU	13,989	19,448	32,073	44,697	59,710	84,959	131,703	159,682
		USRT	1.2	1.6	2.7	3.7	5.0	7.1	11.0	13.3
Wet film humidifier		kg/h	1.8	2.1	3.9	5.8	7.9	11.5	17.5	22
Unit type			Air cooled type							
Compressor	Type		Hermetic high efficiency rotary or scroll compressor							
	Cooling	kW	0.92	1.3	2.0	2.5	4.0	5.50	7.9	8.9
	Heating	kW	0.84	0.94	1.5	2.18	3.41	4.8	6.84	8.05
Refrigerant			R410A & R407C							
Power supply		V/P/Hz	380~420/3/50							
Outer casing material			Galvanized steel sheet							
Capacity control		%	100.50.0				100.50.25.0			
Protection device			High/low pressure switch, overload protection, counter clock Wise, short phase protection, compressor overheat protection, fan motor overheat protection and anti-freeze protection, ect							
Condenser	Type		Elliptic tube high efficiency heat exchanger							
	E.A	kW	0.08	0.4	0.48	1.5	1.5	2.2	2.2	2.2
	ESP	Pa	120	150			180		250	
Evaporator	Type		Elliptic tube high efficiency heat exchanger							
	A.S	kW	0.08	0.4	0.48	1.5	1.5	2.2	2.2	2.2
	ESP	Pa	120	150			180		250	
Air filter	Pre-filter		Primary filter							
	Unit filter		Medium efficiency filter							
Noise		dB(A)	42	43	43	45	47	49	49	49
Product size	L*W*H	mm	1195*1140*465	1290*1140*490	1630*1380*605		1630*1380*785		1700*1620*1000	1700*1620*1250
Weight	Net	kg	195	280	330	750	920	1050	1050	1050
	Gross	kg	210	305	355	790	975	1180	1180	1180

#### Notes:

- 1.Cooling condition: outdoor air inlet dry bulb temperature 33°C, wet bulb temperature 28°C, return air (exhaust air) dry bulb temperature 27°C, wet bulb temperature 19.5°C.
- 2.Heating condition: outdoor air inlet dry bulb temperature 7°C, wet bulb temperature 6°C, return air (exhaust air) dry bulb temperature 20°C, wet bulb temperature 13.8°C.
- 3.Wet film humidifier, heat recovery and filter are for options.
- 4.All models, sizes, dimensions, and specifications are subject to change without prior notice, please refer to nameplates for the most accurate specifications.

## Floor type (air flow:1200~10000m³/h)---Indoor location

Model W05R1-			14RFHI	19RFHI	30RFHI	37RFHI	45RFHI	60RFHI	70RFHI	89RFHI
Fresh air volume		m³/h	1200~1500	1500~2000	2500~3000	3000~4000	4000~5000	5000~7000	7000~8000	8000~10000
Exhaust air volume		m³/h	1200~1500	1500~2000	2500~3000	3000~4000	4000~5000	5000~7000	7000~8000	8000~10000
Cooling capacity		kW	13.8	18.9	29.6	37.0	45.2	60.5	69.3	88.9
		EER	3.73	3.63	3.84	3.89	3.83	4.35	4.05	3.97
		BTU	47,086	64,487	100,995	126,244	154,222	206,426	236,452	303,327
		USRT	3.9	5.4	8.4	10.5	12.9	17.2	19.7	25.3
Heating capacity		kW	13.5	19.1	29.5	38.0	45.4	58.3	73.7	90.8
		COP	4.82	4.66	4.84	4.87	4.88	4.98	4.85	4.86
		BTU	46,062	65,169	100,654	129,656	154,905	198,920	251,464	309,810
		USRT	3.8	5.4	8.4	10.8	12.9	16.6	21.0	25.8
Wet film humidifier		kg/h	5.9	8.3	13.1	17.2	20	28	35	39
Unit type			Air cooled type							
Compressor	Type		Hermetic high efficiency rotary or scroll compressor							
	Cooling	kW	3.7	5.2	7.7	9.5	11.8	13.90	17.1	22.4
	Heating	kW	2.8	4.1	6.1	7.8	9.3	11.7	15.2	18.7
Refrigerant			R410A & R407C							
Power supply		V/P/Hz	380~420/3/50							
Outer casing material			Galvanized steel sheet							
Capacity control		%	100.75.50.25.0							
Protection device			High/low pressure switch,overload protection,counter clock Wise,short phase protection, compressor overheat protection, fan motor overheat protection and anti-freeze protection,ect							
Condenser	Type		Elliptic tube high efficiency heat exchanger							
	ESP	kW	0.75	1.5	1.5	2.2	2.2	3.0	4.0	5.5
	ESP	Pa	250					270	300	400
Evaporator	Type		Elliptic tube high efficiency heat exchanger							
	ESP	kW	0.75	1.5	1.5	2.2	2.2	3.0	4.0	5.5
	ESP	Pa	250					270	300	400
Air filter	Pre-filter		Primary filter							
	Unit filter		Medium efficiency filter							
Noise		dB(A)	45	46	47	49	51	55	57	59
Product size	L*W*H	mm	2300*690*1890	2300*760*1890	2500*860*19	2600*860*22	2800*960*23	3000*1200*251	3000*1230*251	3000*1630*251
Weight	Net	kg	660	730	890	1010	1160	1600	1720	1950
	Gross	kg	750	860	1010	1150	1290	1810	1050	2190

### Notes:

- 1.Cooling condition: outdoor air inlet dry bulb temperature 33℃, wet bulb temperature 28℃, return air (exhaust air) dry bulb temperature 27℃,wet bulb temperature 19.5℃.
- 2.Heating condition: outdoor air inlet dry bulb temperature 7℃, wet bulb temperature 6℃, return air (exhaust air) dry bulb temperature 20℃,wet bulb temperature 13.8℃.
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## Floor type (air flow:1500~15000m³/h)---Outdoor location

Model W05R1-			20RFHO	30RFHO	45RFHO	64RFHO	89RFHO	108RFHO	135RFHO	
Fresh air volume		m³/h	1500~2000	2500~3000	4000~5000	5250~7000	7500~10000	10000~12000	12000~15000	
Exhaust air volume		m³/h	1500~2000	2500~3000	4000~5000	5250~7000	7500~10000	10000~12000	12000~15000	
Cooling capacity		kW	19.8	29.6	44.9	63.8	88.9	107.5	135.3	
		EER	4.21	4.17	4.40	4.31	4.36	4.28	4.42	
		BTU	67,558	100,995	153,199	217,686	303,327	366,790	461,644	
		USRT	5.6	8.4	12.8	18.1	25.3	30.6	38.5	
Heating capacity		kW	20.1	29.5	46.1	64.4	90.2	108.8	132.0	
		COP	5.43	5.46	5.42	5.28	5.27	5.26	5.18	
		BTU	68,581	100,654	157,293	219,733	307,762	371,226	450,384	
		USRT	5.7	8.4	13.1	18.3	25.6	30.9	37.5	
Wet film humidifier		kg/h	8.3	13.1	20	28	39	49	60	
Compressor		Type	Hermetic high efficiency rotary or scroll compressor							
		Cooling	kW	4.7	7.1	10.2	14.8	20.4	25.10	30.6
		Heating	kW	3.7	5.4	8.5	12.2	17.1	20.7	25.5
Refrigerant			R410A & R407C							
Power supply		V/P/Hz	380~420/3/50							
Outer casing material			Galvanized steel sheet							
Capacity control		%	100.75.50.25.0							
Protection device			High/low pressure switch, overload protection, counter clock Wise, short phase protection, compressor overheat protection, fan motor overheat protection and anti-freeze protection, ect							
Condenser		Type	Elliptic tube high efficiency heat exchanger							
		ESP	Pa	500						
		Power	kW	1.5	1.5	3.7	5.5	7.5	7.5	11.0
Evaporator		Type	Elliptic tube high efficiency heat exchanger							
		ESP	Pa	500						
		Power	kW	1.5	1.5	3.7	5.5	7.5	7.5	11.0
Air filter		Pre-filter	Primary filter							
		Unit filter	Medium efficiency filter							
Noise		dB(A)	48	50	52	53	54	56	56	
Product size		L*W*H mm	1850*1520*730	2100*1700*830	2750*1700*2200	2750*1510*2200	2800*1700*2200	3050*2100*2200	3050*2100*2200	
Weight		Net	kg	580	840	1350	1700	2080	2950	3210
		Gross	kg	650	960	1520	1950	2310	3260	3530

### Notes:

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- 2.Heating condition: outdoor air inlet dry bulb temperature 7°C, wet bulb temperature 6°C, return air (exhaust air) dry bulb temperature 20°C, wet bulb temperature 13.8°C.
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**Withair, your perfect partner for successful projects.**



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01/2017 - The technical data in this document are not binding.

Withair reserves the right to introduce at any time whatever modifications deemed necessary for improving the product.

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