



Refrigerant Dehumidifier

Dry Air Conditioner

HEAT PUMP SYSTEM



Refrigerant Dehumidifier

Refrigerant dehumidifier is an appliance which control the level of humidity of indoor air system.

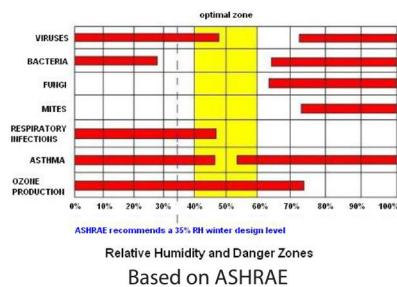
How does refrigerant dehumidifier work?

Air control is done based on the law of physics, one of them is condensation. Air is cooled off by a cooling coil up to the state where the condensed air is sufficient enough to be disposed/emitted. At that point, the air is at a high RH and low temperature with a low moisture content. The next process will be re-heating the air, by using compressor's heat, to achieve the required temperature and low RH with a low moisture content.

When a dehumidifier is needed?

During production of hygroscopic product and clean room environment, such as: Pharmaceutical, Food Industry, Hospital, Surgery Theater, Laboratories, Paper Industry, Textile, Agricultural Production, Museum etc.

Why a dehumidifier is needed?



As graphic has shown above, the condition where either the RH is too high or too low, is not an ideal result for bacteria, viruses, etc. Hence the air should be maintained at 40-60% RH in order to get a healthy and clean air.

Why refrigerant dehumidifier?

Refrigerant dehumidifier gives a **LOW RUNNING ELECTRIC COST** and a **LOW INVESTMENT COST**. Because refrigerant dehumidifier is using compressor's heat in the heating coil in order to maintain temperature and humidity. Hence, no additional heating element or steam installation needed.

Who can control the humidity?

ATS products are the answer to control the humidity needed. We support delivery throughout global market and do installation completely.

4th Generation Body Design

With the new 4th generation AHU body design, there will be no more non-thermal bridge. Everything is already isolated by polyurethane, resulting the inside cooling metal will totally be disconnected from the outside warm metal. NO CONDENSATION AT ALL.

The previous design, which is the 2nd generation AHU body insulation design, has non-thermal bridge (commonly called as "BT"). The internal cooling metal will meet with the external warm body metal. Hence, condensation will happen as long as the unit is running, due to the constant built up of cold when the unit is running at long hours.

2th generation of
AHU body

4th generation of
AHU body

High Temperature (HT)

Temperature Range 30 - 40°C

Relative Humidity 20 - 50%

TYPE	HTP	HTD
Capacity	10.000 - 20.000 Btuh	50.000 - 400.000 Btuh
Model	Portable Type	Duct Type
Air Cooled Efficiency	1 - 1,08 Kw / TR	0,95 - 1,08 Kw / TR
INDOOR UNIT		
Air Flow Rate	200 - 400 Cfm	1000 - 8000 Cfm
Static Pressure	1 Inch H ₂ O	2 Inch H ₂ O - 6 Inch H ₂ O
Model Impeller	Axial	Backward Belt Driven
Material Impeller	Plastic	Metal
Power Indoor	1 HP / 0,75 Kw - 2 HP / 1,5 Kw	2 HP / 1,5 Kw - 15 HP / 11 Kw
Motor Type	AC / EC	AC / EC
Voltage / Frequency / Phase	220 Volts / 50 Hz / 1 Phase	380 Volts / 50 Hz / 3 Phase
Refrigerant	R22 / R407C / R410	R22 / R407C / R410
Dehumidification	28,8 - 57,6 liter / day @ 30°C / 60 RH	168 - 1344 liter / day @ 30°C / 60 RH
Finishing Body	Powder Coating / S. Steel 304	Powder Coating
Dimension	Customized*	Customized*
Body Insulation	Polyurethane / Polyethylene / Rockwool	Polyurethane / Polyethylene / Rockwool
Model Body	Double Skinned	Double Skinned
Dehumidification Coil:		
- Model	Fin & Tube Heat Exchanger	Fin & Tube Heat Exchanger
- Fin Material	Aluminium	Aluminium
- Tube Material	Copper	Copper
Filter Installation	Washable Filter	Washable Filter
		Pre Filter
		Medium Filter
		HEPA Filter
REMOTE CONDENSING UNIT (RCU)		
Compressor Model	Hermetic	Hermetic / Semi Hermetic
Compressor Type	Rotary	Reciprocating
Finishing Body	-	Powder Coating
Power	-	5 HP / 3,5 Kw - 40 HP / 30 Kw

* ATS can do customized unit if required

NOTE:

1. In a condition where the temperature required is higher than the state above, additional electric heater may be applicable
2. Efficiency is the amount of power consumption needed in order to produce 1 ton refrigerant cooling power (12.000 Btuh)



Normal Temperature (NT)

Temperature Range 20 - 25°C

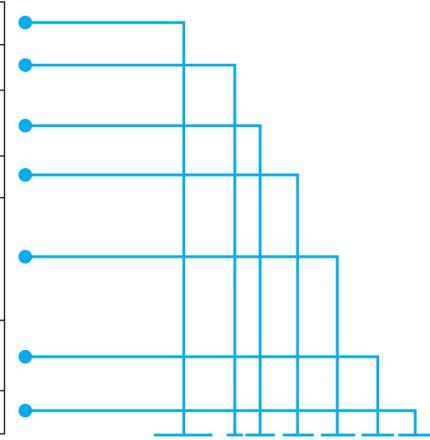
Relative Humidity 40 - 60%

TYPE	NTD
Capacity	50.000 - 400.000 Btu/h
Model	Duct Type
Air Cooled Efficiency	1,14 - 1,32 Kw / TR
Water Cooled Efficiency	0,73 - 0,88 Kw / TR
INDOOR UNIT	
Air Flow Rate	1000 - 8000 Cfm
Static Pressure	2 Inch H ₂ O - 6 Inch H ₂ O
Model Impeller	Backward Direct Driven
Material Impeller	Composite
Power Indoor	2 HP / 1,5 Kw - 15 HP / 11 Kw
Motor Type	AC / EC
Voltage / Frequency / Phase	380 Volts / 50 Hz / 3 Phase
Refrigerant	R22 / R407C / R410 / Brine Chiller
Dehumidification	168 - 1344 liter / day @ 30°C / 60 RH
Finishing Body	Powder Coating / Stainless Steel 304
Dimension	Customized*
Body Insulation	Polyurethane / Polyethylene / Rockwool
Model Body	Double Skinned
Dehumidification Coil:	
- Model	Fin & Tube Heat Exchanger
- Fin Material	Aluminium
- Tube Material	Copper
Filter Installation	
	Washable Filter
	Pre Filter
	Medium Filter
	HEPA Filter
REMOTE CONDENSING UNIT (RCU)	
Model	Air / Water Cooled
Compressor Model	Hermatic / Semi Hermatic
Compressor Type	Reciprocating / Scroll
Motor Fan Type	AC / EC
Finishing Body	Powder Coating
Power	5 HP / 3,5 Kw - 40 HP / 30 Kw

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Model Nomenclature

Type of Dehumidifier	HTP / HTD / NTD / LHD / LHC
Material of Body	P (Powder Coating / S (Stainless Steel 304)
Air Capacity	01 (1000 Cfm) / 02 (2059 Cfm) / 03 (3235 Cfm) 07 (7647 Cfm) / 11 (11765 Cfm)
Air Pressure	04 (4 Inch H ₂ O) / 06 (6 Inch H ₂ O)
Compressor Capacity	5H (50.000 Btu/h) / 6H (60.000 Btu/h) / 8H (80.000 Btu/h) 10H (100.000 Btu/h) / 12H (125.000 Btu/h) / 13H (130.000 Btu/h) 15H (150.000 Btu/h) / 20H (200.000 Btu/h) / 25H (250.000 Btu/h) 30H (300.000 Btu/h) / 35H (350.000 Btu/h) / 40H (400.000 Btu/h)
Total Pre and Medium Per Housing	1 / 2 / 3 / 4 / 6 / 8 / 9 / 12P (Pre Filter) 1 / 2 / 3 / 4 / 6 / 8 / 9 / 12PM (Pre Filter & Medium Filter)
Total HEPA Per Housing	1 / 2 / 3 / 4 / 6 / 8 / 9 / 12H (HEPA Filter)



Example: LHD-P01025H1P1H

Low Humidity (LH)

Temperature Range 15 - 25°C

Relative Humidity 10 - 39%

TYPE	LHD	LHC
Capacity	50.000 - 400.000 Btuh	50.000 - 400.000 Btuh
Model	Duct Type	Ceiling Type (Exposed)
Air Cooled Efficiency	1,98 - 2,26 Kw / TR	1,98 - 2,26 Kw / TR
Water Cooled Efficiency	1,40 - 1,59 Kw / TR	1,40 - 1,59 Kw / TR
INDOOR UNIT		
Air Flow Rate	750 - 6000 Cfm	750 - 6000 Cfm
Static Pressure	2 Inch H ₂ O - 6 Inch H ₂ O	1 Inch H ₂ O - 2,5 Inch H ₂ O
Model Impeller	Backward Direct Driven	Axial Direct Driven
Material Impeller	Composite	Composite
Power Indoor	2 HP / 1,5 Kw - 15 HP / 11 Kw	2 HP / 1,5 Kw - 15 HP / 11 Kw
Motor Type	AC / EC	AC / EC
Voltage / Frequency / Phase	380 Volts / 50 Hz / 3 Phase	380 Volts / 50 Hz / 3 Phase
Refrigerant	R22 / R407C / R410 / Brine Chiller	R22 / R407C / R410
Dehumidification	24 - 192 liter / day @ 30°C / 60 RH	120 - 960 liter / day @ 30°C / 80 RH
Finishing Body	Powder Coating / Stainless Steel 304	Powder Coating / Stainless Steel 304
Dimension	Customized*	Customized*
Body Insulation	Polyurethane / Polyethylene / Rockwool	Polyurethane / Polyethylene / Rockwool
Model Body	Double Skinned	Double Skinned
Dehumidification Coil:		
- Model	Fin & Tube Heat Exchanger	Fin & Tube Heat Exchanger
- Fin Material	Aluminium	Aluminium
- Tube Material	Copper	Copper
Filter Installation	Washable Filter	Washable Filter
	Pre Filter	
	Medium Filter	
	HEPA Filter	
REMOTE CONDENSING UNIT (RCU)		
Model	Air / Water Cooled	Air / Water Cooled
Compressor Model	Hermetic / Semi Hermetic	Hermetic / Semi Hermetic
Compressor Type	Reciprocating / Scroll	Reciprocating / Scroll
Motor Fan Type	AC / EC	AC / EC
Finishing Body	Powder Coating	Powder Coating
Power	5 HP / 3,5 Kw - 40 HP / 30 Kw	5 HP / 3,5 Kw - 40 HP / 30 Kw

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NOTE:

- Efficiency air cooled is, efficiency calculated based on a condition where the condenser temperature is 50°C by air.
- Efficiency water cooled is, efficiency calculated based on a condition where the condenser temperature is 35°C by water.
- Water cooling condition requires the temperature of water source to be at a maximum of 26°C, whether it comes from a cooling tower or other sources.
- EC motor is an electrically commutated motor, which has high precision for performance to support energy saving and to avoid noises by electromagnetic motors.



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