



Meeting the World's Technology Needs



Meeting the World's Technology Needs

***Manufacturer of
Air and Gas Filtration & Purification,
Commercial Air Conditioning
and
Specialty Ventilation & Exhaust Products***



AIR & GAS-THE TOTAL SOLUTION!

INTRODUCTION TO ENVITEC

EnviTec Corporation is a privately held USA based company with its headquarters in the Philadelphia, Pennsylvania area and regional offices in New Jersey USA. EnviTec Middle East is a sister company of EnviTec Corporation and has its corporate office based in Jumeirah Lake Towers in Dubai, UAE. EnviTec Middle East is responsible for all EnviTec business development activities and after sales support in the Middle East Region.

EnviTec is a world leading manufacturer of Environmental, Clean Room/Laboratory/Healthcare, Commercial and Industrial technologies, products with focus on air and gas filtration/cleaning/purification, commercial air conditioning and specialty ventilation and exhaust products and systems. Our manufacturing facilities are located in the USA and China (Air Conditioning products).

Our business is divided among four primary sectors.

EnviTec's Environmental Sector is focused on meeting industrial air/gas treatment requirements through product and system integration ranging from simple gas exhaust to dust collection/recovery to complex air and gas handling applications.

EnviTec's Clean Room/Laboratory/Healthcare Sector provides air purification and exhaust solutions for rigorous critical space environments. These applications require the highest functionality and reliability as health and safety cannot be compromised. That is why EnviTec is the supplier of choice. We offer comprehensive system solutions that include laboratory exhaust systems, critical space air supply and exhaust isolation, Bag-in/Bag-out and standard HEPA filter housings, air filtration and purification systems.

Our customers comprise health care facilities, universities, pharmaceutical plants, clean room facilities, and research facilities, including institutional, military, chemical and food.

EnviTec's Commercial sector supplies products and technologies for various air filtration and cleaning requirements, tunnel and car park ventilation and precision air conditioning. We offer kitchen hood exhaust filtration systems, electrostatic air cleaners, odor removal systems, including carbon/media, odor neutralizer and ozone, tunnel and car park fans and a complete line of precision air conditioning systems.

EnviTec's commercial customers include hotels, office buildings, residential buildings, convention centers, airports, theaters, museums, shopping malls, schools, restaurants as well as many others.

EnviTec's Industrial Sector provides solutions for various critical process ventilation, air filtration, and ventilation control requirements. Our products and technologies include a complete line of centrifugal and high pressure fans, industrial dampers, particulate and

ENVITEC *The Manufacturer of Choice!*

What makes EnviTec unique is the approach that we use. In addition to the core products that we manufacture we have entered strategic partnerships with several other high quality companies to offer complete solutions to the key market sectors that we participate in, especially in the clean room/laboratory/healthcare and commercial sectors. This has enabled EnviTec to offer one of the most comprehensive product lines found anywhere in the world related to air and gas filtration & purification, commercial air conditioning and specialty ventilation & exhaust. Our objective is to always offer the most value for the money while meeting our customers' technology needs.

EnviTec has numerous installations in the Middle East. Many prestigious Middle East clients have turned to EnviTec for various products and solutions related to air and gas since we understand the vigorous requirements of the region. EnviTec's reference list is extensive and covers all products and sectors.

LET US SHOW YOU HOW WE CAN MEET YOUR AIR AND GAS TECHNOLOGY NEEDS!



EnviTec *Meeting the World's Technology Needs*



ENVIPURE™ ECOLOGY

APU, EAPU and OCU UNITS



Eliminate Grease, Smoke, Odor... And Worries!

INTRODUCTION

EnviTec's ENVIPURE™ ECOLOGY Air Purification Units (APU and EAPU) series systems are a cost effective way to remove smoke, grease, oil mist and odors from kitchen hood exhaust , while the ENVIPURE ECOLOGY Odor Control Units (OCU) series units are designed for applications when odor needs to be treated without grease, smoke or oil. Standard units can handle flows of up to 36,000 CFM or 16,990 l/s. Custom and/or larger sizes are available upon request.

ELIMINATE GREASE, SMOKE, ODOR.... AND WORRIES!

Grilling, frying and charbroiling emissions can become a problem if these emissions are not properly controlled. Also, visible smoke and odor may alert authorities to possible compliance problems, resulting in potential fines. EnviTec's Ecology systems eliminate these problems.

EnviTec's ENVIPURE APU and EAPU kitchen hood exhaust filtration systems effectively remove up to 99%+ of all grease and smoke efficiently and effectively to ASHRAE Standard 52-2-2012 thereby eliminating fire hazards and odors. EnviTec's Ecology units can be installed indoors or outdoors on the rooftop.

The EnviTec ECOLOGY APU series utilizes a three stage filtration system to eliminate grease and oil particles and smoke from the kitchen hood exhaust air stream while the EPAU series utilizes a combination of electrostatic filters and standard filters. Through the use of a media or liquid odor removal system objectionable odors from commercial kitchen cooking and frying are removed effectively. A fan module used to exhaust the purified air completes the unit. The OCU includes the media or liquid spray system and the fan module. The units have been designed to operate with all dry, wet and UV exhaust hoods in order to provide optimum filter life. All models can meet the requirements of NFPA 96 .

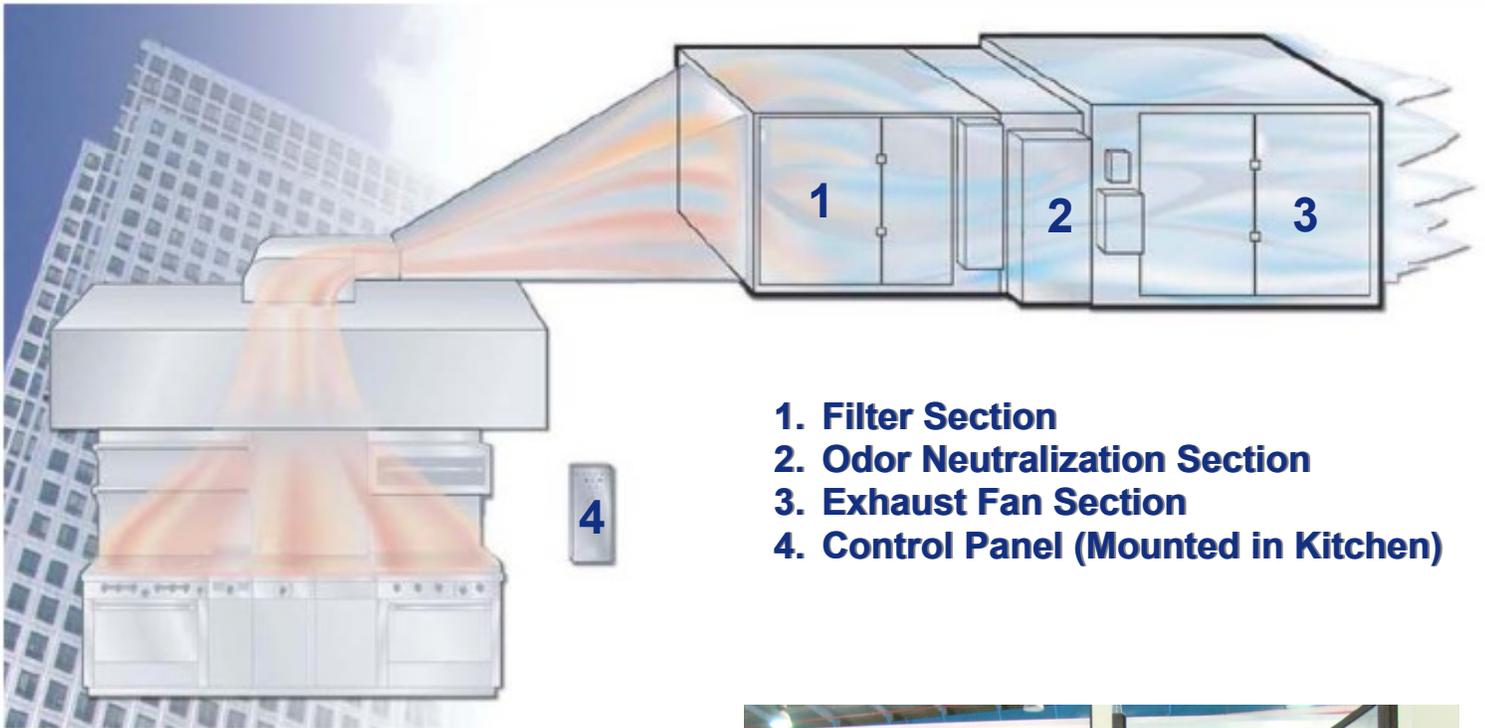
EnviTec is the only ECOLOGY unit manufacturer that fabricates Ecology Units specifically for the harsh Middle East climate. We understand the Middle East's requirements based on hands-on experience with numerous ECOLOGY unit installations in the region. The EnviTec ENVIPURE Ecology Units are engineering to withstand very high ambient temperatures and are simple to install and maintain.



EnviTec's 15,000 ft² fabrication facility, shown above, is located at 3 Brook Road, Howell, N.J USA and is a multi-purpose facility designed to handle a full range of welded and mechanical assemblies.

***LET US SHOW YOU HOW WE CAN MEET YOUR
ECOLOGY UNIT TECHNOLOGY NEEDS!***

PRINCIPLE OF OPERATION - APU



1. Filter Section
2. Odor Neutralization Section
3. Exhaust Fan Section
4. Control Panel (Mounted in Kitchen)

Filter Section

The exhaust air leaving the kitchen hood is ducted to the Filter Module, which consists of a series of 3 filters designed to achieve 99% (ASHRAE) particulate free air for excellent grease and smoke control.

PRE-FILTER - The UL Class 1 disposable pleated 4" deep Pre-Filter is a MERV 8 (G4) filter - 30%-35% efficiency based on 3.0 to 10.0 μm particles when tested in accordance with ASHRAE 52.2-2012.

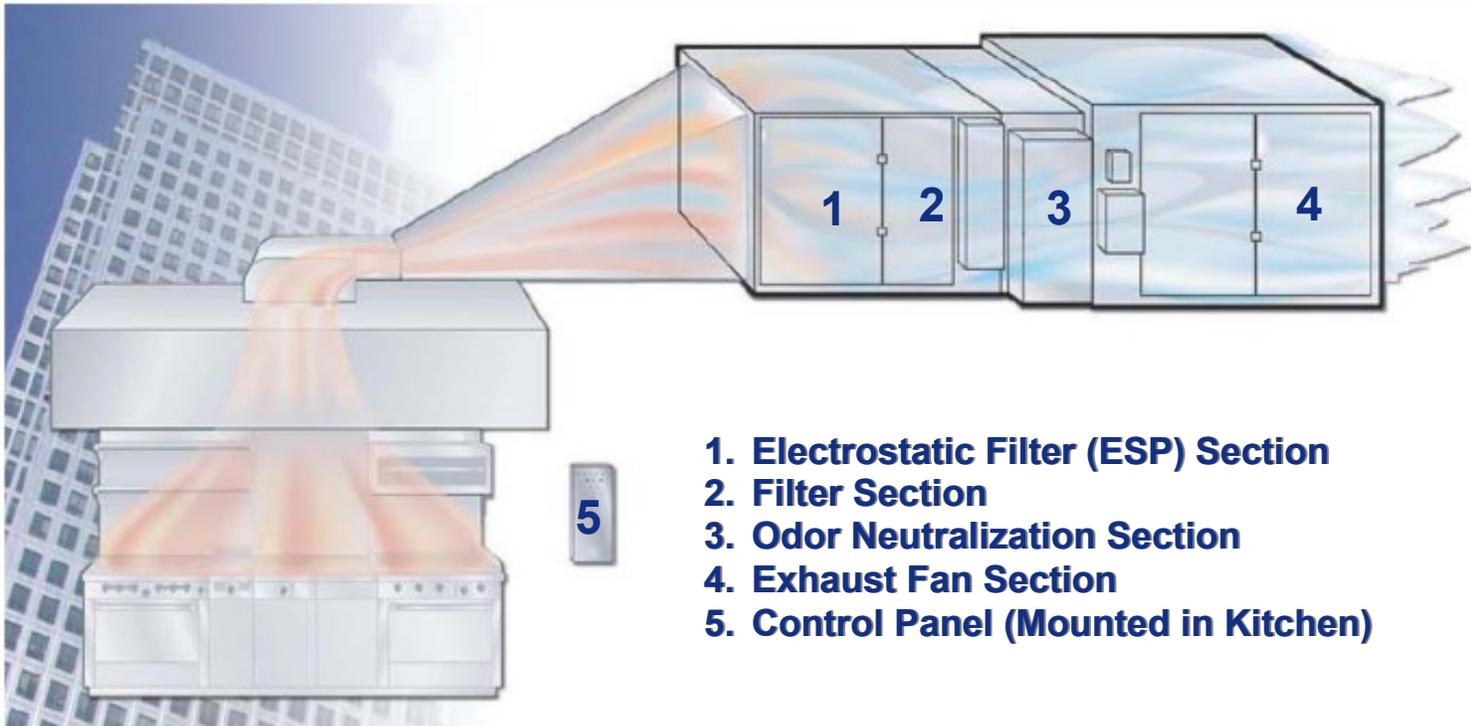
MEDIUM FILTER - The UL Class 1 disposable 20" deep Bag Filter is a MERV 14 (F8) filter - 90%-95% efficiency based on 3.0 to 10.0 μm particles when tested in accordance with ASHRAE 52.2-2012.

FINAL FILTER - The UL Class 1 disposable 12" deep Box Filter is a MERV 16 (H10) filter - 95% DOP efficiency based on 0.3 μm particles when tested in accordance with ASHRAE 52.2-2012.

A differential pressure switch assembly is located on the access side of the Filter Module to monitor clean/dirty filter status and filter missing condition.



PRINCIPLE OF OPERATION - EAPU



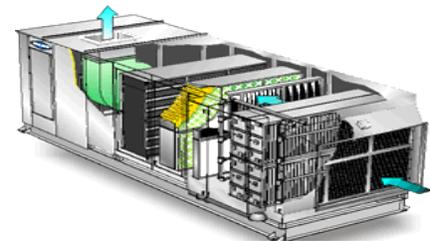
1. Electrostatic Filter (ESP) Section
2. Filter Section
3. Odor Neutralization Section
4. Exhaust Fan Section
5. Control Panel (Mounted in Kitchen)

The EnviTec ENVIPURE EAPU Ecology unit is available in 4 configurations as follows:

1. Manual wash ESP (ENVICLEAN™) section with External Fan
2. Manual wash ESP (ENVICLEAN™) section with Fan in Sound Insulated Housing
3. Auto wash ESP (ENVIWASH™) section with External Fan
4. Auto wash ESP (ENVICLEAN™) section with Fan in Sound Insulated Housing



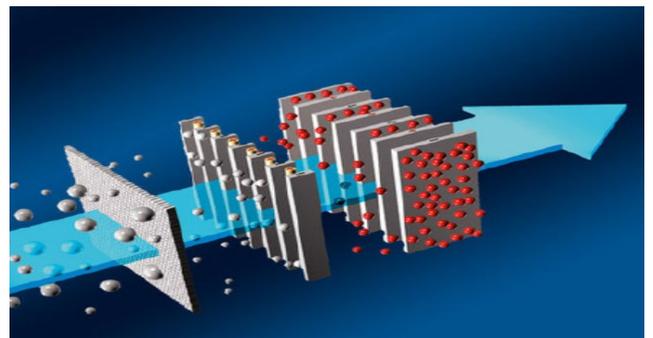
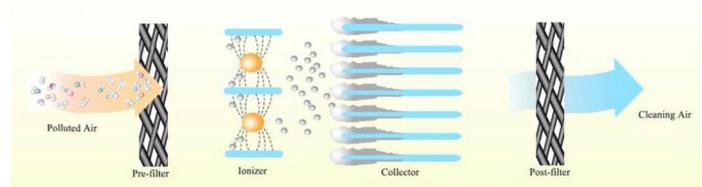
EAPU with Externally Mounted Fan



EAPU with Fan Mounted in Housing

ESP

EnviTec's electrostatic precipitators conform to UL 867 and include two parts: the charging and the collecting sections. In the charging section, the incoming smoke, grease, mist, and other particulates pass by ionizer wires which impart a positive electrical charge to these contaminants. The positively charged contaminants are then drawn through the collection section which contains a secondary electrical field with negatively charged aluminum plates. Since opposite charges attract, the positively charged contaminants collect on the negatively charged aluminum plates, removing them from the airstream.





Meeting the World's Technology Needs

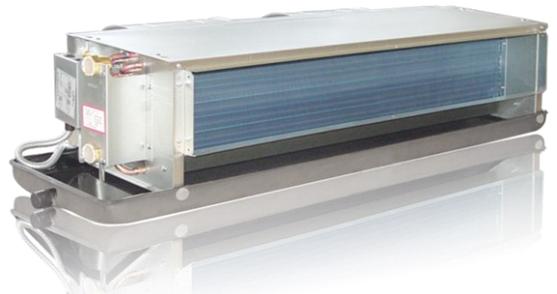


Meeting the World's Technology Needs

ENVICOOL™

Modular Air Handling Units (FAHU/AHU)

Blower Units and Fan Coil Units (FCU)



EnviTec – The leader in air conditioning.

INTRODUCTION

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EnviTec is a world leading manufacturer of Environmental, Clean Room/Laboratory/Healthcare, Commercial and Industrial products with focus on air and gas filtration/cleaning/purification and specialty ventilation and exhaust systems.

EnviTec's Commercial sector manufactures products for various air filtration and cleaning requirements. We offer kitchen hood exhaust filtration systems, including ecology units (APU and EAPU Series) and electrostatic air cleaners (ESP) and odor removal systems, including carbon/media, odor neutralizer and ozone.

What makes EnviTec unique is the approach that we use. In addition to the core products that we manufacture we have entered into strategic partnerships with leading companies in order to offer complete solutions to the key market sectors that we participate in.

EnviTec has partnered with the premier China based manufacturer of air conditioning products and systems (joint venture company with United Technologies Corporation, UTC, who is the owner of Carrier) to offer a complete line of modular air handling units, blower units and fan coil units.

EnviTec's ENVICOOL™ EAC/EMC/EBC Series Modular Air Handling units include both FAHU's and AHU's (chilled water or DX). The ENVICOOL™ Series Fan Coil units include ceiling concealed/exposed units, floor concealed/standing units, ceiling cassette units and high air flow and high static pressure units.

EnviTec's manufacturing facility is 260,000 m² and is both ISO 9001 and 14001 certified.

Testing facilities include an airflow testing room with a capacity of up to 33,333 l/s (70,630 CFM), a noise testing lab, stress-strain deformation testing room, ISO1 level ultra-clean room and an operating theater testing room.

ENVICOOL™ **THE ONLY CHOICE FOR** **GUARANTEED PERFORMANCE**

EnviTec's EAC/EMC/EBC Series Modular Air Handling units are both Eurovent and AHRI certified. There are only 4 companies in the world who's air handling units are both Eurovent and AHRI Standard 1350 (Mechanical Performance Rating of Central Station Air-handling Unit Casings) certified. EnviTec is proud to be one of these 4 companies.

EnviTec's cooling coils are also AHRI certified as are EnviTec's room fan coil units.

EnviTec's patented air handling unit construction provides no thermal bridging, lower air leakage, higher casing strength, lower cost, easier casing assembly and smooth casing inner structure. FAHU and AHU airflows range from 660 l/s (1398 CFM) up to 92,645 l/s (196,300 CFM) and include a unique leveling device mounted in the base.

Various FAHU and AHU options are available, including energy recovery (heat recovery wheels or plate heat exchangers), heat pipes, inspection windows, lifting lugs, flanges, manual and motorized dampers, plug fans, parallel fans, various fan discharge configurations, side or rear motor mounting, internal lights, various types of filters, differential pressure switches and gauges, moisture eliminators, electric heaters, humidifiers, diffusers and silencers.

EnviTec's fan coil units airflows range from 47 l/s (100 CFM) to 1,625 l/s (3,443 CFM). ESP's range from 12 pa to 180 pa and cooling capacities range from 1.5 kw to 40.9 kw. Options include extended drain pan, thermostat, 3-speed control switch and 2-way or 3-way valve.



LET US SHOW YOU HOW WE CAN MEET YOUR AIR CONDITIONING TECHNOLOGY NEEDS!

PRODUCT CERTIFICATION



EnviTec's modular air handling units are Eurovent certified under diploma no. 17.01.002. All performance ratings have been verified by tests performed in independent laboratories selected by Eurovent Certita Certification. The following standards were used as a basis for these tests:

- EN 1886: Ventilation for buildings – Air Handling Units – Mechanical performance
- EN 13053: Ventilation for buildings – Air Handling Units – Rating and performance for unit's components and sections.

The following mechanical characteristics are certified: a - Casing strength (CS); b - Casing air leakage (CAL); c - Filter bypass leakage (FBL); d - Thermal transmittance of the casing (TT); e - Thermal bridging factor (TBF) and f - Acoustical insulation of casing.

The class values for each mechanical characteristic as per Eurovent/EN 1886 are as follows:

Casing Strength (CS)		Casing Air Leakage (CAL), -400 pa		Casing Air Leakage (CAL), +700 pa		Filter Bypass Leakage (FBL)		Thermal Resistance (TT)		Thermal Bridging Factor (TBF)	
Class	Maximum Relative Deflection, mm x m ⁻¹	Class	l/s per m ²	Class	l/s per m ²	Filter Class	Max. Bypass Leakage Rate, %	Class	Thermal Resistance, U W x K/m ²	Class	Thermal Bridging Factor, kb
D1	4	L1	0.15	L1	0.22	F9	0.5	T1	U<0.5	TB1	0.75<k _b <1
D2	10	L2	0.44	L2	0.63	F8	1	T2	0.5<U≤1	TB2	0.6<k _b <0.75
D3	>10	L3	1.32	L3	1.9	F7	2	T3	1<U≤1.4	TB3	0.45<k _b <0.6
						F6	4	T4	1.4<U≤2	TB4	0.3<k _b <0.45
						G1-G5	6	T5	No Requirements	TB5	No Requirements

The Eurovent certified mechanical characteristic values for EnviTec's modular air handling units are as follows:

EnviTec Model Series	Casing Strength (CS)	Casing Air Leakage (CAL), -400 pa	Casing Air Leakage (CAL), +700 pa	Filter Bypass Leakage (FBL)	Thermal Resistance (TT)	Thermal Bridging Factor (TBF)
	Class	Class	Class	Filter Class	Class	Class
EBC (PU50)	D1	L2	L2	F9	T2	TB1
EMC (PU35)	D1	L1	L1	F9	T3	TB2
EAC (PU25)	D1	L2	L2	F9	T3	TB2

AHRI STANDARD 1350

EnviTec's is proud to be only one of 8 companies in the world to have AHRI Standard 1350 certification and only one of 4 companies worldwide to have both Eurovent and AHRI Standard 1350 certification.

AHRI Standard 1350, Mechanical Performance Rating of Central Station Air-handling Unit Casings, is the American equivalent of Eurovent's AHU program with slight variations. AHRI certifies AHU's for casing deflection, casing air leakage rates, thermal transmittance with and without air leakage and thermal bridging factor. The class values for each mechanical characteristic as per AHRI standard 1350 are shown on the next page along with EnviTec's certified AHRI standard 1350 values.



PRODUCT CERTIFICATION

The class values for each mechanical characteristic as per AHRI Standard 1350 are as follows:

Casing Deflection Rating			Casing Air Leakage		Thermal Resistance Rating			Thermal Bridging Rating	
Class	Rating Differential Static Pressure, in H ₂ O	Max. Deflection, in/in of Span	Class	Max. Air Leakage Rate, cfm/100 ft ² (at P _r = 1 in H ₂ O)	Class	Thermal Transmittance without Leakage (U), Btu/hr/ft ² /°F	Thermal Transmittance with Leakage (U), Btu/hr/ft ² /°F	Class	Thermal Bridging Factor, kb
CD ₁	10	0.0033 (1/300)	CL ₁	1	CT ₁	U ≤ 0.14	U ≤ 0.16	CB ₁	kb ≥ 0.8
CD ₂	8	0.0042 (1/240)	CL ₂	2	CT ₂	0.14 > U ≥ 0.23	0.16 > U ≥ 0.26	CB ₂	0.8 > kb ≥ 0.60
CD ₃	6	0.0042 (1/240)	CL ₃	3	CT ₃	0.23 > U ≥ 0.36	0.26 > U ≥ 0.39	CB ₃	0.60 > kb ≥ 0.40
CD ₄	4	0.0042 (1/240)	CL ₆	6	CT ₄	0.36 > U ≥ 0.55	0.39 > U ≥ 0.61	CB ₄	0.40 > kb ≥ 0.20
CD ₅	1	≥ 0.0042 (1/240)	CL ₁₂	12	CT ₅	U > 0.55	U > 0.61	CB ₅	kb < 0.20
			CL ₂₄	24					
			CL ₁₀₀	100					

The AHRI Standard 1350 certified mechanical characteristic values for EnviTec's modular air handling units are as follows:

EnviTec Model Series	Casing Deflection Rating	Casing Air Leakage	Thermal Resistance Rating		Thermal Bridging Rating
	Class	Class	Without Air Leakage Class	With Air Leakage Class	Class
EBC (PU50)	CD ₁	CL ₁	CT ₁	CT ₁	CB ₁
EMC (PU35)	CD ₃	CL ₁	CT ₂	CT ₂	CB ₁
EAC (PU25)	CD ₄	CL ₁	CT ₂	CT ₂	CB ₂

AHRI Standard 410

EnviTec's modular air handling unit cooling and heating coils have been tested in accordance with ANSI/ASHRAE Standard 33 and are certified by AHRI under Standard 410, Forced-Circulation Air-Cooling and Air-Heating Coils. The coil ratings which are certified include:

- Average total cooling and heating capacity
- Air pressure drop through coil at standard air density.
- Fluid pressure drop through coil (including headers) at average fluid density.



AHRI Standard 440

EnviTec's fan coil units have been tested and are AHRI certified under Standard 440, Performance Rating Of Room Fan Coils. Certified performance ratings include:

- Total and sensible cooling capacity
- Temperature rise
- Airflow rating
- Chilled water flow rating
- Air and water pressure drop





ENVICOOL™
**VARIABLE REFRIGERANT FLOW
SYSTEMS
(VRF)**
Technical Guide



EnviTec – The leader in air conditioning.

OUTDOOR UNIT (ODU) MODULES

TIMS-X Combination modules



Model	TIMS-AX	TIMS080AX	TIMS100AX	TIMS120AX	TIMS140AX	TIMS160AX	TIMS180AX	TIMS200AX	TIMS220AX	Power type	208-230V	380-415V
Capacity	HP	8	10	12	14	16	18	20	22	50Hz/3N	/	Available
	KW	28.1	35.2	42.2	49.2	56.3	63.3	70.3	77.4	60Hz/3N	/	Available
Compressor		DC	DC	DC	DC	DC	DC+DC	DC+DC	DC+DC			
Fan motor		DC	DC	DC	DC	DC	DC+DC	DC+DC	DC+DC			

TIMS-S Independent modules



Model	TIMS-AS	TIMS080AS	TIMS100AS	TIMS120AS	TIMS140AS	TIMS160AS	TIMS180AS	TIMS200AS	TIMS220AS	TIMS260AS	TIMS280AS	TIMS300AS	TIMS320AS	Power type	208-230V	380-415V
Capacity	HP	8	10	12	14	16	18	20	22	26	28	30	32	50Hz/3N	/	Available
	KW	28.1	35.2	42.2	49.2	56.3	63.3	70.3	77.4	91.4	98.5	105.5	112.5	60Hz/3N	/	Available
Compressor		DC	DC	DC	DC	DC	DC+DC									
Fan motor		DC	DC	DC	DC	DC	DC+DC									

INDOOR UNIT (IDU) MODULES

Fan Coils Units

Model	Type	Image	Capacity(kW)																											
			2.2	2.5	2.8	3.2	3.6	4	4.5	5	5.6	6.3	7.1	8	9	10	11.2	12.5	14	16	19.5	25	25.5	28	41	45	52	56	62	79
TMCF	Round Flow cassette				●		●		●	●	●	●	●	●	●	●	●	●	●											
TMCS	One way cassette				●		●		●		●																			
TMCD	Two way cassette				●		●		●		●	●	●	●	●	●	●	●												
TMDN-AC	Slim duct		●	●	●	●	●	●	●	●	●	●	●																	
TMDN-AB	Low ESP duct		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●												
TMDH-A	High ESP duct													●	●	●	●													
TMVX	Ceiling & Floor				●		●				●	●	●		●	●	●													
TMVW	Wall-mounted				●		●	●			●	●	●																	
TMDH-AI	Big Capacity duct																				●		●		●		●		●	
TMDF	Fresh air processor																					●		●		●		●		

Air Handling Units

Model	Cooling capacity setting (HP)	Indoor unit capacity (kW)	Internal volume of heat exchanger (m3)	Air Volume, l/s	
TMDK280	8	20~25	3.6855~4.6069	833	
	10	25~30	4.6069~5.5283	1028	
TMDK450	12	30~36	5.5283~6.6430	1250	
	14	36~40	6.6430~7.3711	1500	
	16	40~45	7.3711~8.2925	1667	