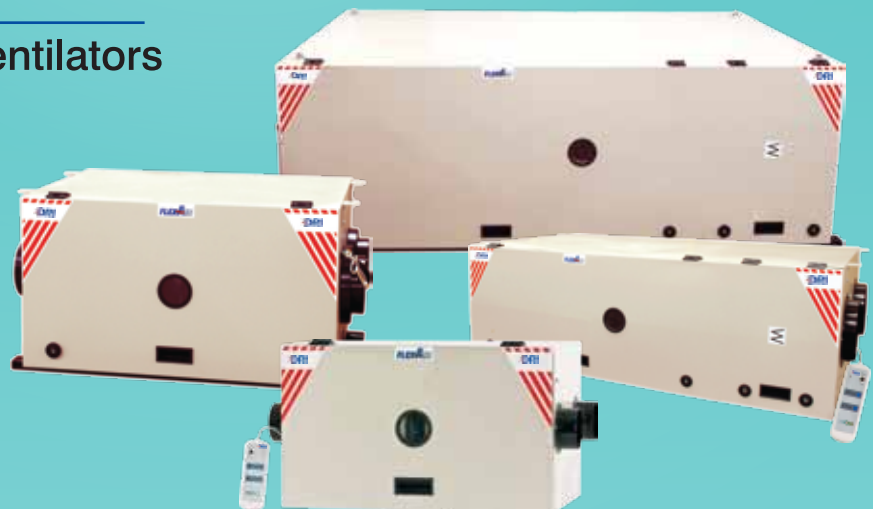




Energy Recovery Ventilators



Innovative Air Solutions

You check the Quality of :

The Food – you eat ! The Water – you drink !

Do you also check the quality of – The Air you breathe . . .?

The EPA* has reported that indoor air quality can be up to 10 times WORSE than the air outside.

Should You Be Concerned About Indoor Air Quality (IAQ)?

Indoor Air Quality (IAQ) has become an important health as well as productivity issue.

The modern construction practices have led to airtight buildings which

minimize the amount of fresh air entering and circulating within the building. This restriction impacts indoor air by allowing a build-up of air contaminants within the building that are not properly removed. We spend 90% of our lives indoors, where air quality is frequently

up to 10 times more polluted than the air outdoors. Conditioned indoor air without the

inclusion of adequate amount of outside air can have a high concentration of respirable dust, pollen, mold, spores, bacteria, viruses and more. People working indoors often

experience symptoms such as dryness and irritation of the eyes, nose, throat and skin,

headaches, shortness of breath, hyper sensitivity, allergies, coughing or nausea just

to mention a few.

Some of the Indoor Air Contaminants

Source	Contaminant
Building occupants	Carbon dioxide (CO ₂), tobacco smoke, perfume, body odors.
Building materials	Dust, fiberglass, asbestos, gases including formaldehyde.
Workplace cleansers, solvents, pesticides, disinfectants, glues	Toxic vapors, volatile organic compounds (VOCs).
Furniture, carpets and paints	Gases, vapors, odors.
Carpets, fabric, foam cushions	Dust mites
Photocopiers, electric motors, electrostatic air cleaners	Ozone.

We generally notice poor Indoor Air Quality (IAQ) symptoms after several hours at work and feel better after we have left the building or when we have been away from the building for a weekend or a vacation.

The Sick Building Syndrome (SBS)

Occupants of buildings with poor IAQ report a wide range of health problems which are often called **Sick Building Syndrome (SBS)** and **Building-Related Illness (BRI)**.

The term **Sick Building Syndrome (SBS)** is used to describe cases in which building occupants experience adverse health effects that are apparently linked to the time they spend in the building. However, no specific illnesses or cause can be identified.

Building-Related Illness (BRI) refers to less frequent (but often more serious) cases of people becoming ill after being in a specific building at a certain time. In these cases, there is usually a similar set of clinical symptoms experienced by the people and a clear cause can often be found upon investigation. Legionnaires disease is an example of BRI caused by bacteria which can contaminate a building's air conditioning system.

Healthy Air to Healthy People

* The Environmental Protection Agency (EPA) is a US government agency concerned with the American environment and its impact on human health. The EPA is responsible for establishing and enforcing environmental standards under measures like the Clean Air Act



The Solution



Energy Recovery Ventilators

lets you enjoy the fresh-air feel of an open window, with virtually little or no heat or energy loss.

- Replace stale, polluted indoor air with fresher, healthier and oxygen rich outside air.
- Ideal for tightly sealed new commercial buildings and modern homes.
- Compact unit size allows it to be retrofitted with your existing air-conditioning system to enhance the indoor air quality.

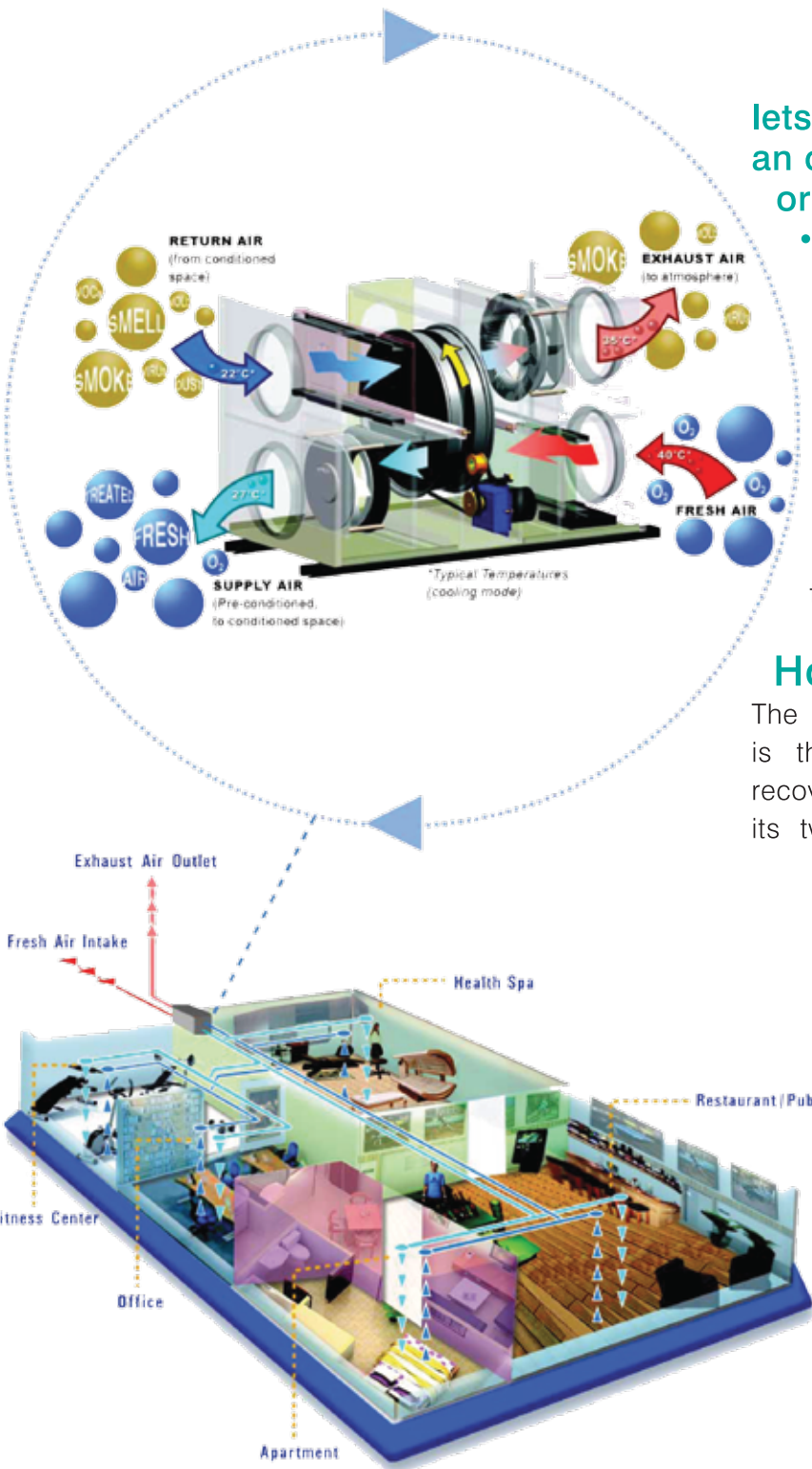
How does it work ?

The heart of the Energy Recovery Ventilator is the **EcoFresh** desiccant coated energy recovery wheel, which slowly rotates between its two sections. In one section, the stale,

conditioned air is passed through the wheel, and exhausted to the atmosphere. During this process, the wheel absorbs sensible and latent energy from the conditioned air, which is used to pre-condition the incoming Fresh Air in the other section, during the second half of its rotation cycle. Thus, you can have more Fresh Air at lower energy costs inside your conditioned space.

DRI ERVi is the first choice of an HVAC engineer and architect as it provides triple advantage of :

- **better IAQ**
- **energy saving**
- **humidity control**



Ideal for :

- **Residential** : Apartment Complexes, Homes, Luxury Villas
- **Light Commercial** : Showrooms, Pubs, Gyms, Spas, Beauty Saloons, Cafeterias
- **Commercial** : Cabins, Conference Rooms, Institutions, Labs, Speciality Clinics, Offices, Auditoriums and other Air conditioned environment for human comfort . . .

Tonnage Reduction Chart
(per 1700 CMH (1000 CFM) of fresh air supply)

City	Tonnage Recovery in Summer		Tonnage Recovery in Monsoon		A/C Equipment size Reduction	
(AP)	TR	KW	TR	KW	TR	KW
Vishakapatnam	4.38	15.42	4.38	15.42	4.38	15.42
Hyderabad	3.21	11.29	4.12	14.50	4.12	14.50
(Assam)						
Dibrugarh	3.34	11.76	3.35	11.79	3.35	11.79
Guwahati	3.34	11.76	4.38	15.42	4.38	15.42
(Jharkhand)						
Ranchi	4.22	14.85	3.35	11.79	4.22	14.85
(Bihar)						
Patna	3.20	11.26	4.65	16.37	4.65	16.37
(Goa)	4.37	15.38	4.12	14.50	4.37	15.38
(Gujarat)						
Ahmedabad	3.19	11.23	4.12	14.50	4.12	14.50
Vadodara	3.19	11.23	3.59	12.64	3.59	12.64
(Karnataka)						
Bangalore	3.32	11.69	3.35	11.79	3.35	11.79
Mysore	3.22	11.33	3.10	10.91	3.22	11.33
Manglore	4.36	15.35	4.39	15.45	4.39	15.45
(Kerala)						
Cochin	4.35	15.31	4.39	15.45	4.39	15.45
Trivandrum	3.83	13.48	3.86	13.59	3.86	13.59
(MP)						
Indore	2.96	10.42	4.37	15.38	4.37	15.38
Bhopal	2.08	7.32	4.64	16.33	4.64	16.33
(Maharashtra)						
Mumbai	4.63	16.30	4.39	15.45	4.63	16.30
Pune	2.74	9.64	3.61	12.71	3.61	12.71
Nagpur	2.72	9.57	4.12	14.50	4.12	14.50
Aurangabad	2.74	9.64	3.84	13.52	3.84	13.52
(Orissa)						
Bhubneshwar	4.22	14.85	4.65	16.37	4.65	16.37
(Punjab)						
Ambala/Chandigarh	2.5	8.8	3.83	13.48	3.83	13.48
(Rajasthan)						
Jaipur	2.5	8.8	3.33	11.72	3.33	11.72
Jodhpur	2.96	10.42	3.83	13.48	3.83	13.48
(Tamil Nadu)						
Chennai	4.21	14.82	3.86	13.59	4.21	14.82
Coimbatore	2.76	9.72	2.64	9.29	2.76	9.72
Madurai	3.22	11.33	3.33	11.72	3.33	11.72
(Delhi / UP)						
Delhi	2.5	8.8	4.63	16.30	4.63	16.30
Lucknow	3.43	12.07	4.63	16.30	4.63	16.30
Kanpur	2.96	10.42	4.49	15.8	4.49	15.8
(West Bengal)						
Kolkata	4.48	15.77	4.65	16.37	4.65	16.37

IAQ maintained with



Tonnage Reduction Chart
(per 1700 CMH (1000 CFM) of fresh air supply)

City	Tonnage Recovery in Summer		Tonnage Recovery in Monsoon		KW Recovery in Winter		A/C Equipment size Reduction	
Africa	TR	KW	TR	KW	TR	KW	TR	KW
Cairo	1.92	6.76	2.62	9.23	NA	NA	2.62	9.23
Durban	2.62	9.23	3.33	11.72	NA	NA	3.33	11.72
Lagos	4.17	14.68	4.21	14.82	NA	NA	4.21	14.82
Mauritius	4.10	14.44	4.10	14.44	NA	NA	4.10	14.44
Indian sub continent								
Colombo	4.21	14.82	3.86	13.59	NA	NA	4.21	14.82
Karachi	4.63	16.30	4.39	15.46	NA	NA	4.63	16.30
West Asia								
Abu Dhabi	4.28	15.07	NA	NA	NA	NA	4.28	15.07
Amman	3.40	11.97	NA	NA	NA	NA	3.40	11.97
Damascus	2.96	10.42	NA	NA	NA	NA	2.96	10.42
Doha	6.56	23.10	NA	NA	NA	NA	6.56	23.10
Dubai	4.28	15.07	NA	NA	NA	NA	4.28	15.07
Jeddah	4.41	15.53	NA	NA	NA	NA	4.41	15.53
Kuwait	5.55	19.54	NA	NA	NA	NA	5.55	19.54
Manama	4.11	14.47	NA	NA	NA	NA	4.11	14.47
Ras Al Khaimah	4.28	15.07	NA	NA	NA	NA	4.28	15.07
Sharjah	4.28	15.07	NA	NA	NA	NA	4.28	15.07
China								
Beijing	1.76	6.20	3.58	12.61	NA	18.00	NA	18.00
Guangzhou	3.81	13.42	4.35	15.32	NA	NA	4.35	15.32
Shanghai	4.07	14.33	4.61	16.23	NA	NA	4.61	16.23
Far East Asia								
Bangkok	3.81	13.42	4.88	17.18	NA	NA	4.88	17.18
Ho Chi Minh City	3.09	10.88	4.09	14.40	NA	NA	4.09	14.40
Jakarta	3.33	11.72	4.09	14.40	NA	NA	4.09	14.40
Manilla	4.09	14.40	4.63	16.30	NA	NA	4.63	16.30
Seoul	3.11	10.95	3.86	13.59	NA	NA	3.86	13.59
Tokyo	3.33	11.72	3.83	13.49	NA	NA	3.83	13.49
S. America								
Buenos Aires	2.20	7.75	2.86	10.07	NA	NA	2.86	10.07
Rio de Janeiro	3.54	12.46	4.35	15.32	NA	NA	4.35	15.32
Sao Paulo	1.38	4.86	2.20	7.75	NA	NA	2.20	7.75
Barcelona	2.43	8.56	3.35	11.80	NA	NA	3.35	11.80
Rome	2.40	8.45	3.61	12.71	NA	NA	3.61	12.71

AI Maktoum Hospital, UAE



Hyatt Hotel - Malaysia



IIT, Guwahati, India



Hospitality :

- Felda Hotel Kuala Terengganu, Malaysia
- Promenade Hotel, Malaysia
- Karambunai Lanai, Malaysia
- Shangri-IA AT The Fort Manila, Philippines
- Hyatt Hotel, Malaysia
- Hotel Amit International, India
- Kapila Hotel, India

Schools / Institutes

- CHYN-YIH Junior College, Taiwan
- Ten Champ Ind, Taiwan
- Aldrich Bay & Chaiwan Primary Schools, Hong Kong
- TUEN Mun Area 16 Secondary School,Hong Kong
- SHAM SHIU PO Pumping Station, Hong Kong
- PVPST Educational Services, Mumbai, India
- University Malaysia Sabah, Sekolah Pertanian Lestari, Malaysia
- USM Labs, Malaysia
- Baharampur Medical College, India
- Pondicherry University, India
- IIT Madras, India

Medical Facilites

- ACH Hospital, Pakistan
- JOE Medical Centre Dan Pusat Bersalin, Malaysia
- Ganesan Medical Centre, Malaysia
- N.R.S. Medical College, India
- Pusat Perubatan Damansara Damai, Malaysia
- Rafflesia Medical Centre, Malaysia
- KK Medical Centre, Malaysia
- Rafflesia Medical Centre, KK, Malaysia
- IMR-institut Penyelidikan Perubatan, Malaysia
- Klinik Sarmukh & Pusat Bersalin, Malaysia
- Coach Bihar Mjn Hospital, India
- AL Maktoum Hospital, UAE
- Sterling Hospital, Mumbai, India

Health Club / Spa

- Novotel Hotel Spa, Mumbai, India
- Gold Gym, India
- Karmarkar Spa, Mumbai, India
- Lambency Chandan Soarsh Spa, Ahemdabad, India
- Silver Spring Club, Kolkata, India

Commercial / Offices

- Murata Electronics Sdn Bhd, Malaysia
- Gasea Co Ltd, Thailand
- Taipei Business Bank, Taiwan
- HCP Design Planning and Management Ltd., India
- CNI, Indonesia
- SKF-BSL-Mumbai, India
- Miinistry Of Defence, Brunei
- Schlumberger Office, Malayisa
- SNT Science & Tech Co Ltd, Hong Kong
- VALE, Malaysia
- IFS, Srilanka
- Coal India, India
- Merlin Ibiza, India
- Nagaland Showroom, India
- Emirates Green Building Council, UAE

Residential

- Abdulla AL Ghurair Residence Villa, UAE
- Abdul Aziz Ghurair Villa, UAE
- Amiya Misra Residence, India
- DATO' Mohaned Sofiadin Bungalow, Malaysia
- Ajit Gupta Residence, Delhi, India
- Mrs. Geeta Anand Residence, Delhi, India

CNI, Indonesia



DSD Preliminary Treatment Plant Hong Kong



(The above details are based on inside conditions of 22.2°C (72°F) and 55% RH)

(The above details are based on inside conditions of 22.2°C (72°F) and 55% RH)

Monitor your IAQ with **ECO FRESH™** CO₂ Sensor



When indoor pollutants level go up, the productivity in your office comes down !

Monitor your IAQ with CO₂ Sensor

CO₂ Sensor is used as a surrogate ventilation index for diagnosing ventilation inefficiency or distribution problems. As the number of people in the building increases or the level of activity goes up, so will be the CO₂ concentration. High Concentration of CO₂ indicates poor Indoor Air Quality (IAQ) which causes drowsiness, discomfort and an inability to retain information and respond . . . low productivity.

EcoFresh CO₂ Sensor detects and displays the parts per million (ppm) of CO₂ in the air. The unit may be mounted on a wall or ceiling of the occupied spaces of a building or in an aspiration box attached to the return air duct.

CO₂ can be Monitored as well as Controlled

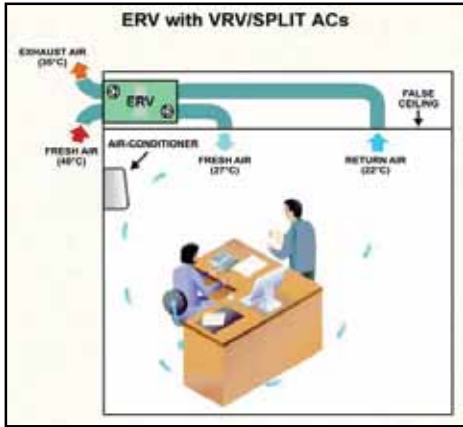
CO₂ control provides a good balance between comfort control and energy savings by assuring an adequate amount of fresh air based on actual occupancy.

CO₂ Sensor controls the ventilation system according to ventilation requirements (**ASHRAE standard 62**). The unit may be mounted on a wall or ceiling of the occupied spaces of a building or in an aspiration box attached to the return air duct.

EcoFresh CO₂ – ideal for Monitoring IAQ in . . .

- Office buildings
 - Restaurants, Pubs
 - Green Houses
 - Museums
- Conference Halls
 - Dry Ice Facilities
 - Animal Houses
 - Schools
- Retail Stores
 - Ware Houses
 - Theatres
 - Hospitals

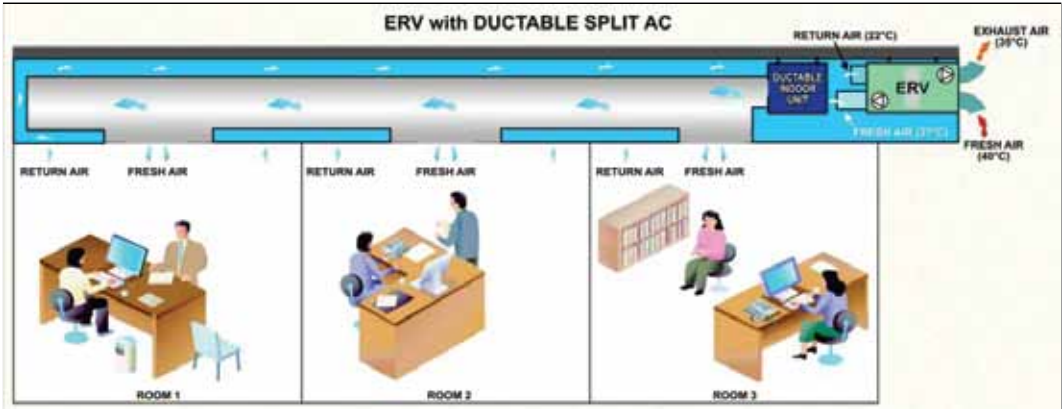
Installation Options



ASHRAE* Recommended Ventilation Rates

Rate/person	Ventilation Application cfm (cmh)
Office Space	20 cfm (34)
Restaurants	20 cfm (34)
Bars	30 cfm (51)
Conference Rooms	30 cfm/room (51)
Auditoriums	15 cfm (26)
Classrooms	15 cfm (26)
Patient Rooms	30 cfm (43)

*American Society of Heating, Refrigeration and Air-conditioning Engineers.



Energy Recovery Ventilators

TECHNICAL DATA

SPECIFICATION

ERV - 80/100*i*, 150*i* & 250*i*

Model	Supply Air Flow CMH	Duct Connection in mm	Exhaust Air Flow CMH	Duct Connection in mm	Supply Blower WATT	Exhaust Blower WATT	Bed Drive Motor WATT	Power Consumption	Noise Level (dbA)	Dimensions in mm (Excluding Base Frame)			Approx. Shipping Weight in KG	AC Power Source	Efficiency
										L	W	H			
ERV-80/100 <i>i</i>	80/100	100	80/100	100	62	62	6	130	45*	650	425	385	26	230V/1Ph/50Hz	Up to 70%
ERV-150 <i>i</i>	150	150	150	150	62	62	6	130	45*	700	550	385	32	230V/1Ph/50Hz	
ERV-250 <i>i</i>	250	150	250	150	85	85	25	195	45*	800	600	440	51	230V/1Ph/50Hz	

*MEASURED AT 3 MTRS. DISTANCE (AT 90 DEGREES), WHEN UNIT IS DUCTED.

SPECIFICATION

ERV - 500*i*, 800*i* & 1000*i*

Model	Supply Air Flow CMH	Duct Connection in mm	Exhaust Air Flow CMH	Duct Connection in mm	Supply Blower WATT	Exhaust Blower WATT	Bed Drive Motor WATT	Power Consumption at rated Air Flow (in WATT)	Noise Level (dbA)	Dimensions in mm (Excluding Base Frame)			Approx. Shipping Weight in KG	AC Power Source	Efficiency
										L	W	H			
ERV-500 <i>i</i>	500	200	500	200	158	158	25	341	45*	1030	720	440	71	230V/1Ph/50Hz	Up to 70%
ERV-800 <i>i</i>	800	250	800	250	190	190	25	405	45*	1400	800	440	95	230V/1Ph/50Hz	
ERV-1000 <i>i</i>	1000	250	1000	250	225	255	25	475	45*	1500	850	440	110	230V/1Ph/50Hz	

*MEASURED AT 3 MTRS. DISTANCE (AT 90 DEGREES), WHEN UNIT IS DUCTED.

SPECIFICATION

ERV - 1500*i*, 2000*i* & 3000*i*

Model	Supply Air Flow CMH	Duct Connection in mm	Exhaust Air Flow CMH	Duct Connection in mm	Supply Blower WATT	Exhaust Blower WATT	Bed Drive Motor WATT	Power Consumption at rated Air Flow (in WATT)	Noise Level (dbA)	Dimensions in mm			Approx. Shipping Weight in KG	AC Power Source	Efficiency
										L	W	H			
ERV-1500 <i>i</i>	1500	300x400	1500	300x400	650	650	40	1340	45*	1700	1150	600	210	230V/1Ph/50Hz	Up to 70%
ERV-2000 <i>i</i>	2000	350x450	2000	350x450	550	550	40	1140	45*	2150	1200	650	240	230V/1Ph/50Hz	
ERV-3000 <i>i</i>	3000	400x500	3000	400x500	550	550	90	1190	45*	2300	1600	650	280	230V/1Ph/50Hz	

*MEASURED AT 3 MTRS. DISTANCE (AT 90 DEGREES), WHEN UNIT IS DUCTED.



A few Green Buildings with DRI Green Products . . . World-wide



Disun Co Ltd., Hong Kong



Joe Medical Centre Dan Pusat
Bersalin, Malaysia



Shangri-la At The Fort Manila,
Philippines



Infosys, Bangalore, India



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Innovation is life

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