



# ELECTROSTATIC AIR CLEANING SYSTEM

For controlling  
Restaurant Kitchen Exhaust, Smoke and Oil Mist

Reduces  
Pollution

Collect up  
to 95% of  
all cooking  
smoke and  
oil mist

Keeps  
Building and  
environment  
clean.



**RydAiR Electrostatic Air Cleaners** are specifically designed for commercial kitchen extract, for collection of particulates like oil mist, cooking fumes and various pollutants. These are extensively used for commercial kitchen exhausts worldwide.

The RydAiR Electrostatic Air Cleaner is a self contained modular unit housing the prefilter, power supply and electrical controls, ionizing and collecting cell(s). There are 4 models from 1 cell to 4 cells unit. Multiple units can be stacked together to achieve desired airflow, or placed in series for double or triple pass application.

The housing design incorporates 2 sumps within the unit in such a way that, regardless of the airflow direction, one sump is always on the bottom of the unit for grease collection. This prevents grease leaks into ceilings or rooftops.

In addition, each sump has a drainage outlet that allows user to connect drainage pipe or hose to drain the grease or oil, direct from the sump to oil traps or external containers. When not in use, a plug seals up the drain hole. Each unit is delivered with 2 plugs

The Electrostatic cell consists of 2 sections: an ionizing section of 12,000 Volts and a collecting section with alternate plates charged at 6,000 volts. The exhaust air is moved by the external fan, and when the air enters the ionizing section, the pollutants receives a charge. It then moves to the collecting section where the charged plates repelled them to the alternate ground plates where they are collected. Heavier oil particles drop via gravity to the sump below the cell, where they are drained out via the drain holes, or removed during regular service of the unit.

The ionizing process produces some amount of ozone, which while not desirable for humans, becomes a suitable by product to treat unwanted odors from the kitchen exhausts. In cases where the odor is heavy, the RydAiR units can be equipped with UV ozone lamps to increase ozone for odor control.

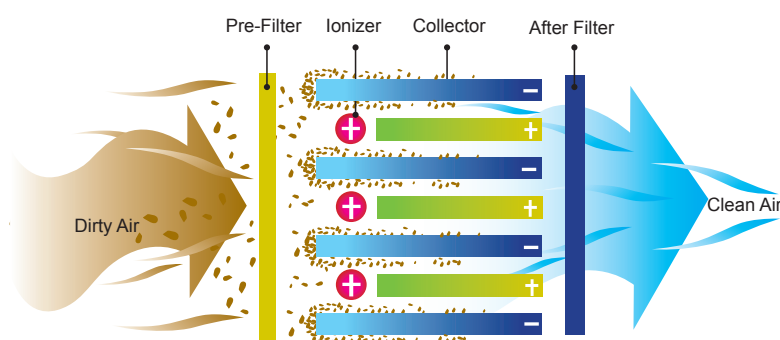
Where units are installed outdoor, RydAiR units can be fitted with a rain shield cover to avoid rain splash into the power supply compartment.



### Common Specifications:

Cabinet Material	Galvanized Steel, 1.4mm / 16 Gauge
Finishing	Powder Coated, Dark Blue
Static Pressure	50 pa / 0.2"
Voltage & Power	230 VAC +/-10%, 50/60Hz,
Ionising Voltages	High Voltage: 12KVdc, Low Voltage: 6KVdc
Air Flow Direction	Default: Right to Left; Reversible: Left to Right
Power Supply	High Frequency solid state and self regulating design
Features	<ul style="list-style-type: none"> <li>• Short circuit, arc protection and auto restore power supply</li> <li>• BMS (Building Management System) terminals provided</li> <li>• Auto power cut off when door is opened</li> <li>• Indicator LEDs for normal or wash indicator</li> <li>• Set of Terminals for remote LED normal or wash indicator</li> </ul>
Particle size	From 0.01microns - 10 microns
Efficiency	DOP: up to 95% single pass, up to 99% double pass, calculated ASHRAE 52-2, 2012: up to 96% single pass, up to 99% double pass. • NIOSH OIL MIST FIELD TEST: up to 96%

### HOW IT WORKS



Contaminated air is drawn by the blower (external) through a washable metal mesh pre-filter which traps large dust particles. The remaining particles, some as small as 0.01micron, pass through a strong electrical field (ionizing section) where the particulates receive an electrical charge. The charged particles then pass into the collector plates section made up of equally spaced parallel plates. Each alternate plate is charged with the same polarity as the particles, which repel, while the interleaving plates are grounded, which attract and collect the contaminants. The contaminants are held on these plates until they are washed off.

# B Series Electrostatic Air Cleaners Without Blowers



**RY2500B / RY2500B-UV03**

Dimension	H:540 x W:694 x L:620mm
Weight	55 Kg
Air Volume	CFM: 1500-2000 max CMH: 2500-3500 max L/S: 700-970 max
No. of Cells	1



**RY5000B / RY5000B-UV03**

Dimension	H:540 x W:1243 x L:620mm
Weight	90 Kg
Air Volume	CFM: 3000-4100 CMH: 5000-7000 L/S: 1400-1900
No. of Cells	2



**RY2500BV / RY2500BV-UV03**  
(Vertically Mounted Unit)

Dimension	H: 485 x W:645 x W:645mm
Weight	50 Kg
Air Volume	CFM: 1500-2000 max CMH: 2500-3500 max L/S: 700-900 max
No. of Cells	1



**RY7500B / RY7500B-UV03**

Dimension	H:540 x W:1790 x L:620mm
Weight	122 Kg
Air Volume	CFM: 4500-6100 CMH: 7500-10,500 L/S: 2100-2900
No. of Cells	3



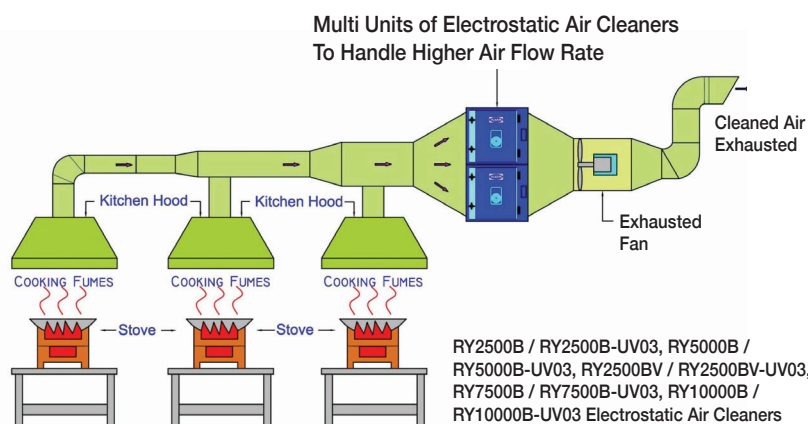
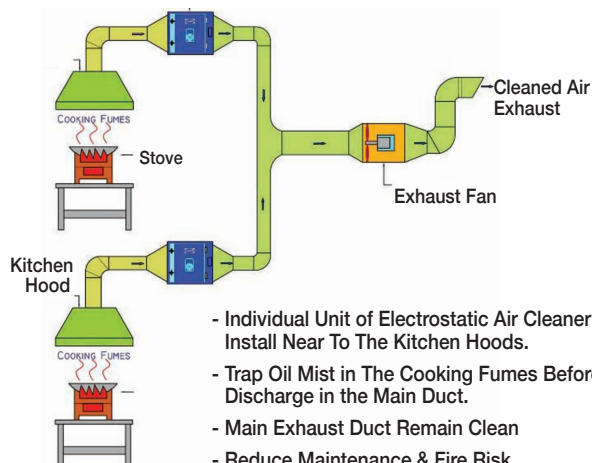
**RY10000B / RY10000B-UV03**

Dimension	H: 540 x W:2338 x L:620mm
Weight	154 Kg
Air Volume	CFM: 6000-8200 CMH: 10,000-14,000 L/S: 2800-3800
No. of Cells	4

## KITCHEN EXHAUST APPLICATIONS

- UV03 indicates unit is fitted with UV Ozone Lamps.

RY2500B / RY2500B-UV03, RY5000B / RY5000B-UV03, RY2500BV / RY2500BV-UV03, RY7500B / RY7500B-UV03, RY10000B / RY10000B-UV03 Electrostatic Air Cleaners

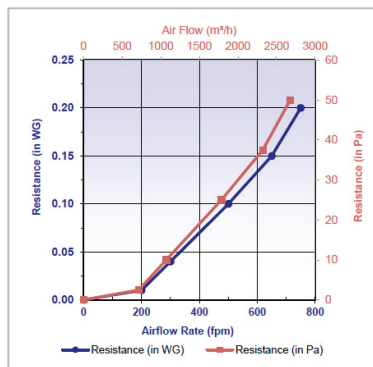




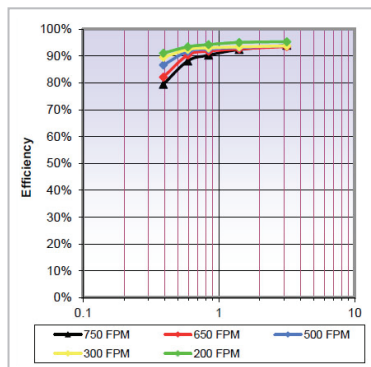
RydAiR's B series are tested for efficiency and static pressure drops under ASHRAE 52-2 and EN779 DOP Test. Extracts are reproduced for reference

**INDEPENDENT THIRD PARTY TEST REPORTS**  
By U.S. Based Laboratory

## ASHRAE 52.2-2012 TEST Report

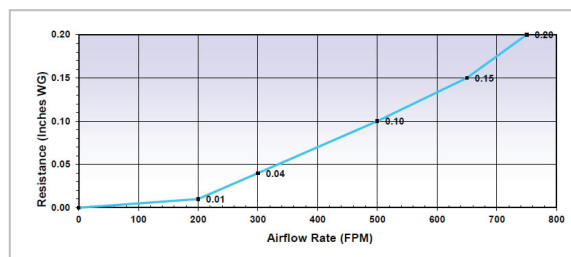


Air Flow vs Resistant Clean Device

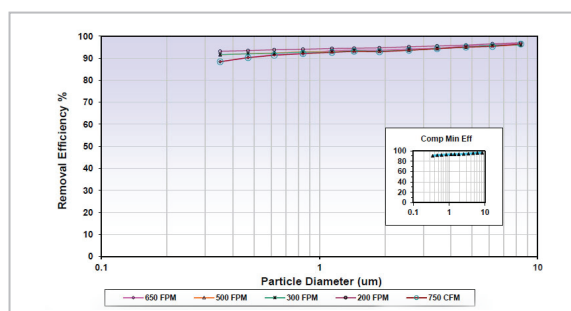


Efficiency vs Particle Size

## EN779 DOP Test Report



Air Flow vs Resistant Clean Device



Particle Size Removal Efficiency

### Particle Removal Efficiency %

AVERAGE PARTICLE SIZE	200 FPM	300 FPM	500 FPM	650 FPM	750 FPM
0.30 - 1.0 um	94	92	92	91	91
1.0 - 3.0um	95	93	93	94	93
3.0 - 10.0 um	96	95	95	96	95
Resistance (in W.G.)	0.01	0.04	0.1	0.15	0.2

Test results indicate that RydAiR units meet MERV 15 requirements even at velocity of 3.81 m/s (750 FPM)  
See table below.

Standard 52.2 Minimum Efficiency Reporting Value (MERV)	Composite Average Particle Size Efficiency, % in Size Range, um			
	Range 1 (0.3-1.0)	Range 2 (1.0-3.0)	Range 3 (3.0-10.0)	Average Arrestance, %
1	n/a	n/a	E3 < 20	Aavg < 65
2	n/a	n/a	E3 < 20	65 ≤ Aavg < 70
3	n/a	n/a	E3 < 20	70 ≤ Aavg < 75
4	n/a	n/a	E3 < 20	75 ≤ Aavg
5	n/a	n/a	20 ≤ E3 < 35	n/a
6	n/a	n/a	35 ≤ E3 < 50	n/a
7	n/a	n/a	50 ≤ E3 < 70	n/a
8	n/a	20 ≤ E2	70 ≤ E3	n/a
9	n/a	35 ≤ E2	75 ≤ E3	n/a
10	n/a	50 ≤ E2 < 65	80 ≤ E3	n/a
11	20 ≤ E1	65 ≤ E2 < 80	85 ≤ E3	n/a
12	35 ≤ E1	80 ≤ E2	90 ≤ E3	n/a
13	50 ≤ E1	85 ≤ E2	90 ≤ E3	n/a
14	75 ≤ E1 < 85	90 ≤ E2	95 ≤ E3	n/a
15	85 ≤ E1 < 95	90 ≤ E2	95 ≤ E3	n/a
16	95 ≤ E1	95 ≤ E2	95 ≤ E3	n/a

\*\*Above is the requirement of Merv 15-ASHRAE Standard 52.2-2012

### Particle Removal Efficiency %

AVERAGE PARTICLE SIZE	200 FPM	300 FPM	500 FPM	650 FPM	750 FPM
0.30 - 0.50 um	91.1	89.5	86.6	82.2	79.5
0.50 - 0.70 um	93.4	92.4	91.7	90.3	88.1
0.70 - 1.00 um	94.3	93	92.6	91.8	90.3
1.00 - 2.00 um	95.1	93.4	93.2	92.6	92.4
2.00 - 5.00 um	95.4	93.8	93.8	93.5	94
Resistance (in W.G.)	0.01	0.04	0.1	0.15	0.2

RydAiR is a Singapore based brand of electrostatic air cleaners, with strong emphasis on practical design and suitability in application. We continue to strive for improvement in both quality and design and remain constantly open to clients' needs and industry trend.

RydAiR products are now distributed from Japan to Australia to India, Middle East and Europe.



Whiteleaf Business Centre  
11 Little Balmer  
Buckingham  
MK18 1TF

Telephone: 0854 1220724

Email: [enquiries@ecoveryinnovations.com](mailto:enquiries@ecoveryinnovations.com)