



Unit 16 Strawberry Lane Wolverhampton WV13 3RS. T/F: 01902 339709
E:Info@tsgelectrical.co.uk

KFC Waterloooville

Planning Document



KITCHEN EXTRACT SYSTEM DETAILS

GENERAL

This specification covers standards for the selection, supply, delivery, installation, testing and commissioning of Kitchen ventilation in accordance with HVCA Specification DW/172 for Restaurant developments. The cooking of food involves appliances releasing heat, steam, fumes and airborne grease.

The cooking process requires extract ventilation for the removal of fumes, smoke and vapours generated by the cooking activity.

OBJECTIVES

To provide an acceptable working environment for all kitchen staff by the extraction / removal of heated air, fumes, steam and cooking smells, as well as preventing condensation. The extract canopies are designed to enable ease of access for cleaning throughout the system and distribution ductwork and primary fan equipment.

ODOURS

All fumes and odours from the food preparation areas of the kitchens shall be mechanically extracted utilizing an extract canopy specifically designed and installed by a nominated specialist to remove all cooking odours. This will take into account the dimensions of the kitchens in question, the type of grease filters used in the application and the cooking equipment within the grouped cooking range.

NOISE

All fan equipment, ductwork and filter housing shall be so mounted and installed so as not to give rise to a noise nuisance.

LOCATION

The canopies will be sited over the grouped cooking equipment, or any heat, steam or grease producing equipment.

FANS

All fans are to adequately sized to overcome the system resistance and to provide the required extraction/supply rate specified. Multiple fans rather than single units should be used to reduce noise in instances when the system resistance is inherently high.

All fan motors are to be totally enclosed, air cooled, class F rated, with motor protection IP55. All single phased motors are to have "sealed for life" bearings. The fan motor should have an operating temperature of -40 deg. Cent. to +50 deg. Cent. All fans will be provided with suitably rated on/off variable speed controllers, and all fan equipment having local isolators and emergency stops fitted adjacent to the applicable equipment. Fans should be fitted with necessary resilient mounting to prevent noise and vibration transfer to the kitchen, other unit rooms and the external environment. The Contractor will ensure that the fans are capable of producing the required air volumes as specified. All fans and motors arrangements shall be capable of running at 10% over the maximum specified duty.

The Contractor shall ensure that fan motors are suitable for the electrical supply available to the building.

Casing mounted fans shall have internal vibration isolation. Duct mounted fans shall have flexible duct connections consisting of or be externally protected by material having a fire penetration time of at least 15 minutes when tested in accordance with BS 476 Part 8 and shall comply with BS 476 Part 7, Section 2, Clause 2.8 (Class 1 : surface of a very low flame spread properties). Fans shall be selected to meet the specified noise criteria. The construction of the fan shall be such that is capable of withstanding the pressures and stresses experienced under continuous operation. Fan casings shall be constructed such that access can easily be gained to motors and impellers, and that these can be removed if required for maintenance or replacement.

GREASE FILTERS

The canopies shall be fitted with internal extract plenums with filter cells across its length. The filters shall have rigid frames with stainless steel baffle filters designed to remove the grease in the fumes. The filters shall be removed and cleaned at the end of each day. The filters should be easily removed

DISTRIBUTION DUCTWORK

Kitchen canopy exhaust ductwork shall be constructed and installed in accordance with HVCA Specification DW/172 and HVCA Specification DW/144. Ductwork shall be routed to external source in the shortest possible route, without excessive use of bends and horizontal ductwork installation. Ductwork shall be suitable for kitchen extract systems, with smooth internal surfaces that facilitate easy removal of grease deposits.

GENERAL INFORMATION

The kitchen area shall have a mechanical forced air system, with a side-wall mounted canopy arrangement over the main grouped cooking equipment, with supply air make up. The extract system shall have an on/off speed controller sited away from the kitchen area to suit site and operatives requirements.

ODOUR CONTROL SYSTEM

The method of odour control will be a number of stacked electrostatic UV filters which will be mounted inline with the air stream of the extract ductwork system. This removes small particles of grease and smoke in doing so reducing odours. The filters and lamps will need to be regularly maintained to keep the system efficient



RY 5000B

Electrostatic Air Cleaner

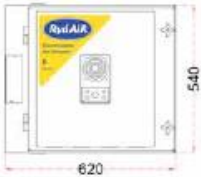
(Without Blower)



Industrial grade Electrostatic Air Cleaners for collection of dry and wet particulates like dust, oil mist, cooking fumes and various pollutants. Typical application include commercial kitchen exhausts, Air Handling Units (AHUs), factories, workshops, CNC machine shops and many other premises

SPECIFICATIONS

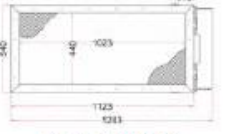
Dimensions/Weight	H:540 x W:1243 x L:620 mm / 90Kg
Cabinet	Galvanized Steel, 1.4mm / 16 Gauge
Finishing	Powder Coated, Dark Blue
Air Volume (Rated-Max)#	CFM: 3000 – 4100; CMH: 5000-7000; L/s: 1400-1900
Static Pressure	50 pa / 0.2"
Voltage & Power	230 VAC +/-10%, 50/60Hz, 75Watts
Ionising Voltages	High Voltage: 12KVdc, Low Voltage: 6KVdc
Power Supply	High Frequency solid state and self regulating design
Air Flow Direction	Default : Right to Left; Reversible : Left to Right
Features	*Short circuit, arc protection and auto restore power supply *BMS (Building Management System) terminals provided *Auto power cut-off when door is opened *Indicator LEDs for normal or wash indicator *Set of Terminals for remote LED normal or wash indicator
Particle size	From 0.01 microns - 10 microns
Efficiency	DOP Test, 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, calculated. NIOSH 5026 OIL MIST FIELD TEST : UP TO 96%
MERV Ratings	Meets MERV 15 at velocity of 2.5m/s to 3.8m/s
Pre-Filter	Aluminum wire mesh, Washable x 2
Electrostatic Cell	H: 472mm, W: 550mm, L: 340mm
No of Cells / Weight	2/16.5Kg
No Of Plates per Cell	59
Total Collecting Area	12.14 Sq meters
Post Filter (Optional)	Aluminum Wire Mesh, Washable x 2
Installation	Ceiling Suspended; Wall or Frame Mounted, Multiple Units Stack



Front View



Air Intake View

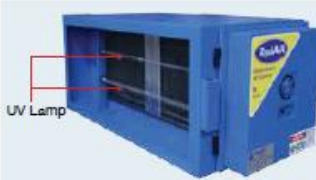


Air Discharge View



Top View

RY5000B with UV Ozone Lamp



ODOUR CONTROL OPTION:

- UV ozone Lamp fitted after electrostatic cell
- Lamp Wattage : 150 watts (75 W x 2 lamps)
- Ozone output : 14 Grams/Hour
- Lamp Life : 13,000 Hours
- Lamp Operation Blue LEDs on Unit's Panel
- All accessories are contained in RY Unit

RY5000B-UV03

EXTERNAL PLANT INFORMATION

KFC will provide a comfortable environment for both customers and staff

The restaurant area shall be provided with heating, cooling and adequate ventilation via a mechanical forced air movement system from a heat recovery system. The indoor units shall be of a ducted/cassette type system utilising R410A or R32 refrigerant

Supply and extract air shall be via galvanized ductwork installed as per the design drawings.

Temperature control for the area shall be via local stats or return air stats controlled via a localised hard wired controller.

The condensing units shall be installed into the allocated plant area installed on plarock feet or big foot systems to reduce vibration

RESTAURANT/KITCHEN AREA

The external condensing units serving the restaurant are:

4 x MITSUBISHI ELECTRIC PUZM100VAR CONDENSING UNITS

SIZE: 1050 X 930 X 281

WEIGHT: 76KG / SOUND POWER LEVEL: 70dBA



STAFF AREA

The units serving the staff area is:



X1 MITSUBISHI ELECTRIC MVZHR25F CONDENSING UNIT

SIZE: 699 X 249 X 538

WEIGHT: 23KG / SOUND POWER LEVEL: 63dBA



KITCHEN SUPPLY AND EXTRACT DETAILS:

x1 VES T-LINE 560/42-3 KITCHEN EXTRACT FAN
SIZE: 950 X 850 X 750MM
WEIGHT 140KG / NOISE @ 3M=75dBA



x1 VES CAS 10410 WAETHERPROOF SUPPLY AHU
SIZE: 1800 X 1500 X 1275MM
WEIGHT 420KG / NOISE @ 3M=75dBA



KITCHEN COLD ROOM DETAILS

X3 FOSTERS COLD ROOM CONDENSING UNIT
ESTIMATED SIZE: 800 X 700 X 300MM
WEIGHT 60KG / SOUND POWER LEVEL 63dBA



ELECTROSTATIC FILTERS



WC EXTRACT DETAILS

Each area to be installed with an inline duct fan wired into the local lighting circuit or PIR

1 x Elta Jetflow

