



REF: Domino's Hoyland

6b Market Street,  
Hoyland, Barnsley  
S74 9QR

Date 27<sup>th</sup> August 2024

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### **1.0 INTRODUCTION:**

The information contained within this document should be used as supporting information when applying for Change of Use Planning Approval and is based on the '*DEFRA Annex B – Guidance on the control of odour and noise from Commercial Kitchen Exhaust system – Jan 05*'. This follows feedback from various Local Authorities who use Annex B as a guide when referring to the extract system as part of the application process.

Annex B advises that the aim of any ventilation/extraction is to ensure that no nuisance, disturbance or loss of amenity is caused by odour, fumes, food droplets or noise, to nearby properties. Additionally, the visual appearance of the flue may be important and the flue itself may require a separate planning permission. Enquiries should be made to the Local Authority Planning Department regarding this matter.

A suitably qualified and experienced person with specialist knowledge of ventilation schemes should undertake the design and installation of a ventilation system. Designing and installing appropriate ventilation systems may involve considerable expense.

In circumstances where the end user of the premises is unknown, or where the specific type of food to be cooked is unknown, the installation should be designed to achieve the highest level of odour control in order to cater for a worst-case scenario.

There are many different types of odour abatement available (carbon filters, electrostatic precipitation, high dilution and high velocity extraction) however not all types are suitable for all cooking methods. In each case, grease filters must be installed.

## **2.0 PREAMBLE TO PIZZA TAKEAWAY SPECIFICATION**

Please note that a Pizza takeaway produces very little grease and the extract system is predominately removing heat and gas combustion fumes. All work is carried out in accordance with the latest relevant British (or Irish regulations where applicable) and European Standards, statutory Regulation and Byelaws together with the following publications:

CIBSE Codes and guides to current practice

Water Authority By Laws

HVCA – DW143 Practical Guide to Ductwork Leakage Testing

HVCA DW144 Specification for Sheet Metal Ductwork

HVCA DW172 Guide to Good Practice for Kitchen Ventilation Systems

HVCA – RUAG70 Guide to Good Practice Refrigeration

The Building Regulations

Gas Safety (Installation and Use) Regulations 1998

All plant, ducts, pipe cables etc. shall be adequately protected against accidental damage corrosion and external environment and shall be capable of safe decontamination and removal in the future without disturbing other services. Pipes and ducts shall be adequately sized, kept as short as practicable, leak-proof with a minimum number of joints and have provision for routine maintenance. All facilities shall be designed to prevent the ingress or egress of rodents, vermin, and insects.

The duct will be fixed to the shell of the unit using anti-vibration fixing mounts and under no circumstances will flexible ductwork be used other than the fan connections

The HVAC contractor shall supply the client with system design drawings, prior to manufacture and installation

For projects in England and Wales, the HVAC contractor shall also demonstrate compliance with Building Regulations Approved documents L2A & L2B. This will include:

- (a) Provision of details of the efficiency and controls of heating, cooling and ventilation systems in accordance with Non-Domestic & Heating, Cooling and Ventilation compliance Guide (2006)
- (b) Provision of commissioning certificates including air leakage tests on the ductwork

The HVAC contractor shall ensure that externally the ductwork conforms to the supplied drawings in terms of its route, height and termination. These drawings will have formed part of our Planning Approval and will be built as such.

Upon completion of the installation, all shall be fully tested and proved including airflows. The contractor shall produce an Operating and Maintenance Manual which shall contain details of all equipment supplied, a record drawing of the complete mechanical services installation and copies of all Test Certificates. It shall contain a Maintenance Schedule based on the manufacturer's recommendations.

### **3.0** DETAILED DESIGN OF VENTILATION SYSTEM

#### **3.1** Canopy Hood.

Canopy dimensions

3000mm length, x 2000mm wide x 500mm back x 500 front, box style canopy. The filter banks will run on both sides of the hood, all corners are fully welded, with drain taps fitted to the back-drain channel for cleaning purposes.

##### **Finish Type**

Fine grain stainless steel finish 304 x 1mm.

##### **Filters**

Stainless steel baffle filters for easy cleaning, filter size 395(W)mm x 495(H)mm x 50mm.

Canopy face velocity 127ft/min



#### **3.2** Extraction

##### **Extraction fan**

The fan specified in the extraction system is a Soler and Palau TCBT/4-450, rpm 1400, sound pressure level 63 outlet dBA, pressure level air volume 6650(m<sup>3</sup>/h),

This fan will be fitted with an inverter single phase in, three phase out.

The fan will be fitted with anti-vibration mountings to the ceiling and DEC flexible connections between the fan and silencers; this will stop any reverberation noise travelling back through the ceiling or floors.

Fan duty 1.46m<sup>3</sup>/sec @ 100pa static pressure.

**CONTRA-FOIL™**  
**contra-rotating**  
**cased axial flow fans**  
**(aluminium impellers)**



Range of cylindrical cased axial fans fitted with aluminium impellers and manufactured from high grade rolled galvanised steel and protected against **corrosion by cataforesis primer and black polyester paint finish.** Fitted with **2 contra-rotating complementary impellers** manufactured from die-cast aluminium. All models are supplied with pre-wired wiring junction box located on the outside of the fan casing for easy wiring access. Available with single or three phase 4 poles motors.

**Motors**

All the motors are **IP65**, Class F insulation (1), equipped with **thermal protection.**

Single phase motor Speed controllable up to 560mm\* (\*560mm must be three wire controlled and must not exceed 55° ambient temperature) Three phase motors suitable for inverter control.

Electrical supplies:

- Single phase 230V-50Hz. (Capacitor located inside the wiring terminal box).
- Three phase 400V-50Hz

**Contra-rotating:**  
**High pressure**



Contra-rotating system with two complementary impellers allowing the duplication of the pressure with the same air volume

**Corrosion**  
**resistance**



Rolled steel casings and motor support protected by cataforesis primer and black polyester paint finish. Stainless steel screws

**Terminal**  
**box**



Wiring terminal box with cable gland PG-11

**Impeller dynamically**  
**balanced**



Impellers are dynamically balanced, according to ISO 1940 standard, giving vibration free operation

**Technical characteristics**

Before installation check that the product electrical characteristics listed on the data plate label (Voltage, power, frequency etc) match those of the intended electrical supply.

Code	Model	Diameter Ø (mm)	Speed (r.p.m.)	Maximum Power (kW)	Max. Current (A)	Maximum Air Volume (m³/h)	Weight (Kg)	Speed Controller
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**ContraFoil Contra-Rotating Cased axial flow fans (Aluminium impellers)**

**Single phase**

230V

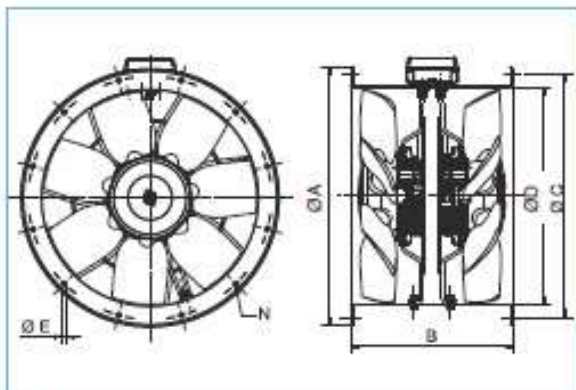
5605384600	TCBBx2/4-450	450	1370	1.24	5.40	6900	42	REB-6
5605385300	TCBBx2/4-500	500	1150	1.40	6.20	8000	50	REB-8
5605751300	TCBBx2/4-500E	500	1375	1.90	8.70	9500	54	REB-10
5605760400	TCBBx2/4-560L	560	1425	2.75	12.30	11800	66	REB-12
5605386100	TCBBx2/4-560	560	1340	3.25	15.50	14300	66	REB-16
5605387900	TCBBx2/4-630	630	1280	3.90	19.00	18200	80	

**Three phase**

400V

5605380400	TCBTx2/4-450	450	1400	1.25	3.40	6900	42	RMT-5
5605381200	TCBTx2/4-500	500	1340	1.75	3.60	9400	50	RMT-5
5605382000	TCBTx2/4-560	560	1360	3.12	5.80	14300	66	
5605383800	TCBTx2/4-630	630	1370	4.20	8.00	18200	80	

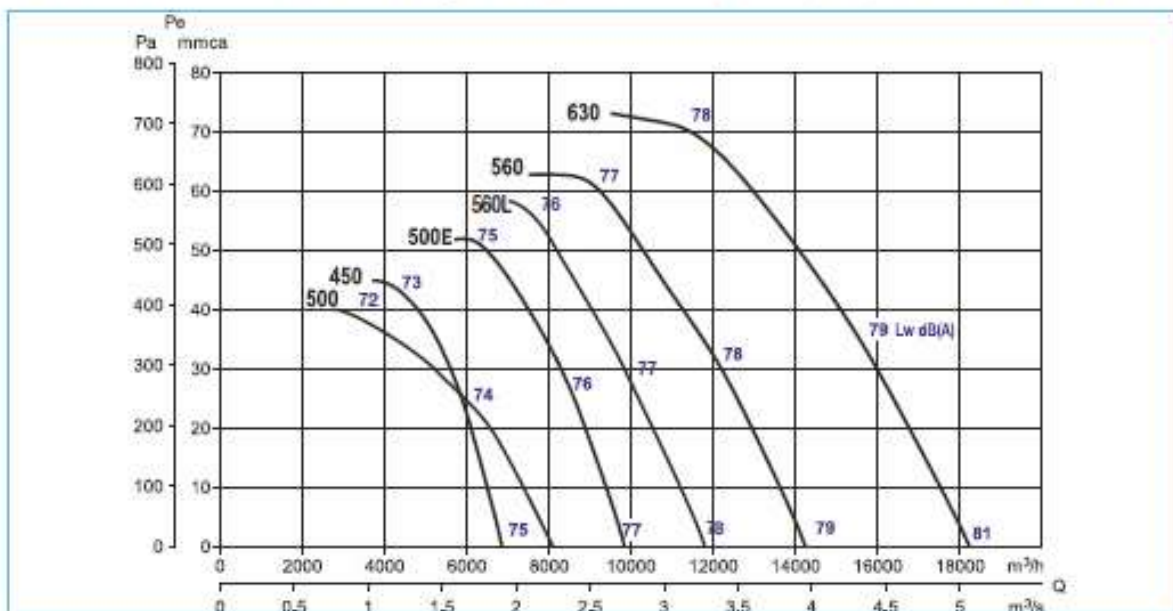
**Dimensions (mm)**



Model	Ø A	B	Ø C	Ø D	Ø E	Number of holes N
450	537	375	500	450	12	8
500	595	375	560	500	12	12
500E	595	520	560	500	12	12
560/560L	655	520	620	560	12	12
630	725	520	690	630	12	12

**Performance curves**

- Q = Air volume in m³/h and m³/s.
- Pe = Static pressure in mmWG and Pa.
- Dry air at 20°C and 760 mmHg.
- Air flow data in accordance with the following standards: UNE 100-212-89, BS 848, Part 1; AMCA 210-85 and ASHRAE 51-1985.



# Speed Controls

## 3.3 Speed Control

### Inverter Extraction

Single phase in, three phase out, the inverter works using single phase in 240V and splits it over three 240v phase to the fan.

This will also be fitted with a stop/start with cook and prep control.

Air-in control REB 5

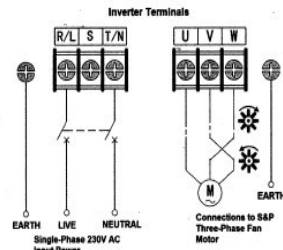
Both extraction and makeup air system will be fitted on time clocks, the system will shut down when the store closes.



47. Remove the front panel of the enclosure by removing the panel fixing screws. This provides access to the control circuit board terminals that are inside the enclosure. Replace the panel when the wiring connections have been made, ensuring that the seal is correctly positioned.  
48. Check that the unit mountings and electrical connections are secure and in accordance with the applicable wiring diagram on page 6 (and if applicable, page 7 also) of this instruction booklet.  
49. For wiring diagrams of other schemes, please contact S&P, 50, IF IN DOUBT, ASK!

**WIRING DIAGRAMS (SINGLE PHASE 230V - 50Hz MAINS SUPPLY)**  
L - Supply Live 230V - 50Hz  
N - Supply Neutral  
E - Earth

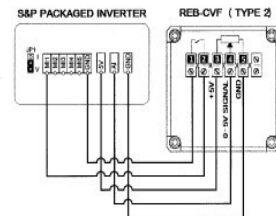
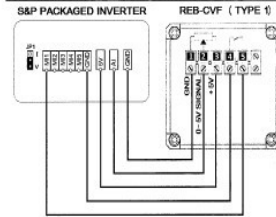
**WIRING DIAGRAM No. 1 - QSDs to install: defined speed and thereafter manual speed adjustment via the Inverter's integral keypad.**



**IMPORTANT NOTE TO INSTALLERS!**  
THE PACKAGED 3-PHASE FAN SUPPLIED WITH THIS INVERTER HAS BEEN CONFIGURED TO ACCEPT A 3-PH 230V SUPPLY, NOT A 400V SUPPLY - IT IS ESSENTIAL THAT THE FAN IS NOT RE-CONFIGURED.  
IF IN DOUBT, ASK!

**WIRING DIAGRAM No. 2 - Operation Mode b, OFFs and speed control by additional accessory S&P REB-CVF 0-10V Speed Controller code S&P5401304100.**

**NOTE - WIRING DIAGRAM No. 2 is in ADDITION TO WIRING DIAGRAM No. 1**



In addition to Wiring Diagram No. 1, Wiring Diagram No. 2 plus the "Programming the Inverter" sequence on page 9 of this instruction booklet must be followed.

### Air input controller REB 5



stop/start with cook and prep control for extraction

### 3.4 Make up Air System

The fan specified in make-up air system is Soler and Palau CBM/6-320/240-550W, rpm 900, sound pressure level 67 inlet dBA @ 0 Metres, air volume 4700(m<sup>3</sup>/h), This fan will be fitted with a REB 5 speed control. Pre filter 496mm x 496mm G4. Code PPF49649647 The fan will be fitted with anti-vibration mountings within the roof cowl this will stop any reverberation noise travelling back through the roof. Fan duty 1.3m<sup>3</sup>/sec @ 200 pa static pressure.

#### LOW PRESSURE CENTRIFUGAL FANS CBM Range



Range of double inlet direct drive low pressure centrifugal fans manufactured from **galvanised sheet steel**.

All the models are fitted with forward curved centrifugal impellers manufactured from galvanized sheet steel.

Available, depending upon the model, with single phase or three phase motors, in 4 or 6 poles.

#### Motors

All standard motors (1) are IP10, Class B, equipped with thermal protection and ball bearings greased for life.

Electrical supply:

Single phase 230V-50Hz (capacitor fitted on the fan housing).

Three phase 230/400V-50Hz .  
(See characteristics chart).

(1) Except CBM-380/380 fitted with an aluminium housing closed motor IP44 class F.

#### Additional Information

Mounting feet as accessory, allowing 4 different positions.

#### On request

Aluminium housing closed motors, IP44, class F (T version).

Coupling flange fitted at the fan outlet (B version).

#### Anti-vibration mounts



All motors are fitted with support including rubber antivibration mounts **reducing the noise** transmitted to the installation

#### Impeller dynamically balanced



Impeller **dynamically balanced**, according to ISO 1940 standard, providing vibration free operation

#### A P P L I C A T I O N S

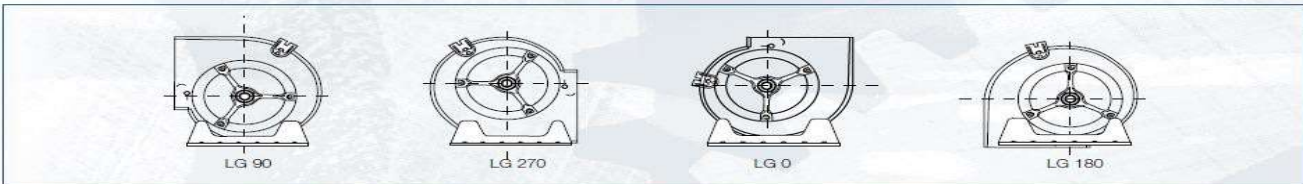


Incorporation in ventilation cabinets



Air conditioning equipment

#### P O S I T I O N S



Mounting feet (accessory) allow 4 positions of the inlet discharge.

## ■ Technical characteristics

Before installation check that the product electrical characteristics listed on the data plate label (Voltage, power, frequency etc) match those of the intended electrical supply.

Model	Motor power		Equiv. in inches	Poles	Speed (r.p.m.)	Capacitor (µF / V)	Maximum current absorbed 230/1/50 (A)	Maximum current absorbed 230-400/3/50 (A)	Airflow (m³/h)	Sound pressure level * (dB(A))	Weight (kg)
	(W)	(PK)									
CBM/6-180/180-72W	72	1/10	7/7	6	960	4/400	1,0	–	1400	56	9
CBM/4-180/180-147W	150	1/5	7/7	4	1350	6/400	1,5	–	1565	59	10
CBM/6-240/180-122W	120	1/6	9/7	6	900	8/500	2,1	–	2430	63	15
CBM/6-240/180-245W	250	1/3	9/7	6	920	10/450	2,45	–	2680	65	16
CBM/6-240/240-122W	120	1/6	9/9	6	850	8/500	2,1	–	2500	61	16
CBM/6-240/240-245W	250	1/3	9/9	6	900	10/450	2,75	–	2900	63	17
CBM/4-240/240-373W	370	1/2	9/9	4	1350	10/400	3,8	–	2650	65	19
CBM/6-270/200-245W	250	1/3	10/8	6	900	10/400	3,0	–	3480	65	18
CBM/6-270/200-373W	370	1/2	10/8	6	970	15/400	4,0	–	4000	68	19
CBM/4-270/200-373W	370	1/2	10/8	4	1300	12/400	5,0	–	3150	66	21
CBM/6-270/270-245W	250	1/3	10/10	6	900	10/400	3,0	–	3550	63	20
CBM/6-270/270-373W	370	1/2	10/10	6	900	15/400	4,0	–	4500	67	21
CBM/4-270/270-550W	550	3/4	10/10	4	1400	15/400	5,9	–	3540	66	23
CBM/6-320/240-550W	550	3/4	12/9	6	900	18/400	5,8	–	4700	67	28
CBM/6-320/240-1100W (trif.)	1100	1,5 (3f)	12/9	6	900	–	–	7,0/4,2	7000	75	28
CBM/6-320/320-550W	550	3/4	12/12	6	900	18/400	5,8	–	5250	66	30
CBM/6-320/320-1100W (trif.)	1100	1,5 (3f)	12/12	6	900	–	–	7,0/4,0	7900	78	30
CBM-RTC/6-380/380-2200W (trif.)	2200	3 (3f)	15/15	6	940	–	–	10,4/6,0	9000	70	45

\* Measured at 1,5 meters at the fan inlet side in free field.

### 3.5 Water Heater within the air in system



## VBR 70-40-3 WATER HEATING BATT

Item no. 5476

Document type: Product card  
Document date: 2019-03-12  
Generated by: Systemair Online Catalogue

### Description

Water-heating battery

Water-heating battery for heating air in ventilation systems with rectangular ducts. Hot-zinc-coated casing, heat transmission element with copper tubes and aluminium fins. In cold conditions, a frost protection device with sensor should be fitted to reduce the risk of damage from freezing. The water-heating battery can be installed in a horizontal or vertical duct with an optional direction.



### Technical parameters

Max. operating temperature	150 °C
Max. operating pressure, at water temp. 100°C	1600000 (16bar) Pa
Max. operating pressure, at water temp. 150°C	1000000 (10bar) Pa

# AIRGARD® Type 11 Pleated Panel Filters



## AIRGARD® TYPE 11 FEATURES:

- Moisture resistant cardboard frame.
- G4 efficiency to provide a good base level of filtration.
- Fully supported media bonded to expanded mesh grid.
- The filtering media is bonded to the case to eliminate air by-pass.
- Strong, robust construction.
- Extended surface area.
- High dust holding capacity.
- Dimensions of product are part marked into frame for positive ID.

## APPLICATIONS

- Hotels
- Offices
- Food production
- Air conditioning
- Hospitals
- Pre-filtration asbestos removal

## AIRGARD® TYPE 11 PLEATED PANEL FILTER

Used in a variety of HEVAC applications where higher level air cleanliness is needed over the standard pre filters. Glass media is unacceptable in food and pharmaceutical industries and in some hospital areas. Especially useful where the installation requires a combination of high arrestance coupled with control over smaller particles. The high capacity version is selected when space is at a premium; filter sizes match the rated capacities of bag filters.

## CONSTRUCTION / MATERIAL SPECIFICATIONS

The Airgard® Type 11 is manufactured with pleated synthetic media, and an expanded diamond grid with 97% open area. The casing is constructed from a heavy duty rigid water resistant card, with support members along the diagonals. The media is bonded to the support grid and the frame in order to avoid the possibility of air bypass. The case is designed for minimum resistance and maximum free area, the case is also crease formed to stop moisture ingress. The product can be manufactured in a variety of depths from 22mm to 97mm deep. Optional metal frame available as shown above.

- 22mm (1") Filters are 9 Pleats per 300mm (1ft)
- 47mm (2") Filters are 9 Pleats per 300mm (1ft)
- 97mm (4") Filters are 9 Pleats per 300mm (1ft)

## TYPE 11 HIGH CAPACITY PLEATED PANEL

We are able to manufacture the Type 11 with increased filter media over the standard product, for situations where an increase in air volume is required.

- 22mm (1") Filters are 12 Pleats per 300mm (1ft)
- 47mm (2") Filters are 12 Pleats per 300mm (1ft)
- 97mm (4") Filters are 12 Pleats per 300mm (1ft)

## TYPE 11 HIGH EFFICIENCY PLEATED PANEL

Where situations arise we manufacture the Type 11 with a higher grade of filter media, F6, F7, F8 are available.

## AIRGARD® TYPE 11 IMPREGNATED CARBON PLEATED PANELS

For less demanding situations the use of impregnated media can be considered. They utilise non-woven synthetic media, which is then impregnated with activated carbon. They offer an alternative to our granular carbon systems however they cannot offer either the life span or dwell time that can be found with the rest of the range.

# AIRGARD® Type II Pleated Panel Filters

## TECHNICAL SPECIFICATIONS

SIZE ORDERING GUIDE (TOLERANCES +/- 2mm)				
Part Number	Actual Size HxWxD	Nominal Size HxWxD	Weight	Available Efficiencies *
PPF49724347	497 x 243 x 47mm	508 x 254 x 50mm	0.21kgs	G4, F6, F7, F8, High Capacity, Carbon Impregnated Pleated Panels
	19.57 x 9.57 x 1.85"	20 x 10 x 2"	0.45lbs	
PPF29329347	293 x 293 x 47mm	304 x 304 x 50mm	0.15kgs	G4, F6, F7, F8, High Capacity, Carbon Impregnated Pleated Panels
	11.54 x 11.54 x 1.85"	12 x 12 x 2"	0.33lbs	
PPF59628947	596 x 289 x 47mm	609 x 304 x 50mm	0.28kgs	G4, F6, F7, F8, High Capacity, Carbon Impregnated Pleated Panels
	23.46 x 11.38 x 1.85"	24 x 12 x 2"	0.61lbs	
PPF37237247	372 x 372 x 47mm	381 x 381 x 50mm	0.22kgs	G4, F6, F7, F8, High Capacity, Carbon Impregnated Pleated Panels
	14.65 x 14.65 x 1.85"	15 x 15 x 2"	0.48lbs	
PPF39439447	394 x 394 x 47mm	406 x 406 x 50mm	0.25kgs	G4, F6, F7, F8, High Capacity, Carbon Impregnated Pleated Panels
	15.51 x 15.51 x 1.85"	16 x 16 x 2"	0.54lbs	
PPF49637547	496 x 375 x 47mm	508 x 381 x 50mm	0.27kgs	G4, F6, F7, F8, High Capacity, Carbon Impregnated Pleated Panels
	19.53 x 14.76 x 1.85"	20 x 15 x 2"	0.60lbs	
PPF49639647	496 x 396 x 47mm	508 x 406 x 50mm	0.29kgs	G4, F6, F7, F8, High Capacity, Carbon Impregnated Pleated Panels
	19.53 x 15.59 x 1.85"	20 x 16 x 2"	0.63lbs	
PPF62039647	620 x 396 x 47mm	635 x 406 x 50mm	0.34kgs	G4, F6, F7, F8, High Capacity, Carbon Impregnated Pleated Panels
	24.41 x 15.59 x 1.85"	25 x 16 x 2"	0.75lbs	
PPF44644647	446 x 446 x 47mm	457 x 457 x 50mm	0.28kgs	G4, F6, F7, F8, High Capacity, Carbon Impregnated Pleated Panels
	17.56 x 17.56 x 1.85"	18 x 18 x 2"	0.61lbs	
PPF49649647	496 x 496 x 47mm	508 x 508 x 50mm	0.34kgs	G4, F6, F7, F8, High Capacity, Carbon Impregnated Pleated Panels
	19.53 x 19.53 x 1.85"	20 x 20 x 2"	0.75lbs	
PPF59639647	596 x 396 x 47mm	609 x 406 x 50mm	0.33kgs	G4, F6, F7, F8, High Capacity, Carbon Impregnated Pleated Panels
	23.46 x 15.59 x 1.85"	24 x 16 x 2"	0.73lbs	
PPF59649647	596 x 496 x 47mm	609 x 508 x 50mm	0.39kgs	G4, F6, F7, F8, High Capacity, Carbon Impregnated Pleated Panels
	23.46 x 19.53 x 1.85"	24 x 20 x 2"	0.87lbs	
PPF62049647	620 x 496 x 47mm	635 x 508 x 50mm	0.39kgs	G4, F6, F7, F8, High Capacity, Carbon Impregnated Pleated Panels
	24.41 x 19.53 x 1.85"	25 x 20 x 2"	0.87lbs	
PPF59659647	596 x 596 x 47mm	609 x 609 x 50mm	0.47kgs	G4, F6, F7, F8, High Capacity, Carbon Impregnated Pleated Panels
	23.46 x 23.46 x 1.85"	24 x 24 x 2"	1.02lbs	
PPF24824897	248 x 248 x 97mm	254 x 254 x 102mm	0.22kgs	G4, F6, F7, F8, High Capacity, Carbon Impregnated Pleated Panels
	9.76 x 9.76 x 3.82"	10 x 10 x 4"	0.49lbs	
PPF49624897	496 x 248 x 97mm	508 x 254 x 102mm	0.38kgs	G4, F6, F7, F8, High Capacity, Carbon Impregnated Pleated Panels
	19.53 x 9.76 x 3.82"	20 x 10 x 4"	0.84lbs	
PPF29329397	293 x 293 x 97mm	304 x 304 x 102mm	0.28kgs	G4, F6, F7, F8, High Capacity, Carbon Impregnated Pleated Panels
	11.54 x 11.54 x 3.82"	12 x 12 x 4"	0.61lbs	
PPF59728997	597 x 289 x 97mm	609 x 304 x 102mm	0.48kgs	G4, F6, F7, F8, High Capacity, Carbon Impregnated Pleated Panels
	23.50 x 11.38 x 3.82"	24 x 12 x 4"	1.06lbs	

Pressure drop and airflow information available on request.

### 3.6 Silencers.

Two silencers will be fitted to the extraction system, inflow side this silencer will be 600mm long, x 450mm 1D (inside measurement) wall thickness of 75mm.

On the outflow side 450mm long 600mm 1D (inside measurement) wall thickness of 75mm.

One silencer will be fitted to the supply system on the Negative side.

Silencer Ref: Extraction SIL 450-600 450 560 450 1D Positive side

SIL 450-600 450 560 450 1D Negative side

Supply Air SIL 450-600 450 560 450 1D Negative side

The sound level at termination point will be lowered by a further 2 to 3 dBA due to where the fan will be mounted with in the ductwork.

#### Circular silencers

## SIL

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#### Description

The silencers are usually supplied with SPIRAL®system sealing. Diameters  $d_1 > 315$  mm require additional NSL couplings to be ordered, which should be installed in the silencer prior to installation. These male ends are not silencer parts, and they should be ordered separately.

Glass mineral wool inside with thickness:

50 mm  $d_{ia}$  SIL-50 - depending on the dimension of the outer casing

100 mm  $d_{ia}$  SIL-100 - depending on the dimension of the outer casing

#### Example identification

Product code: SIL - iii - aaa - bbb

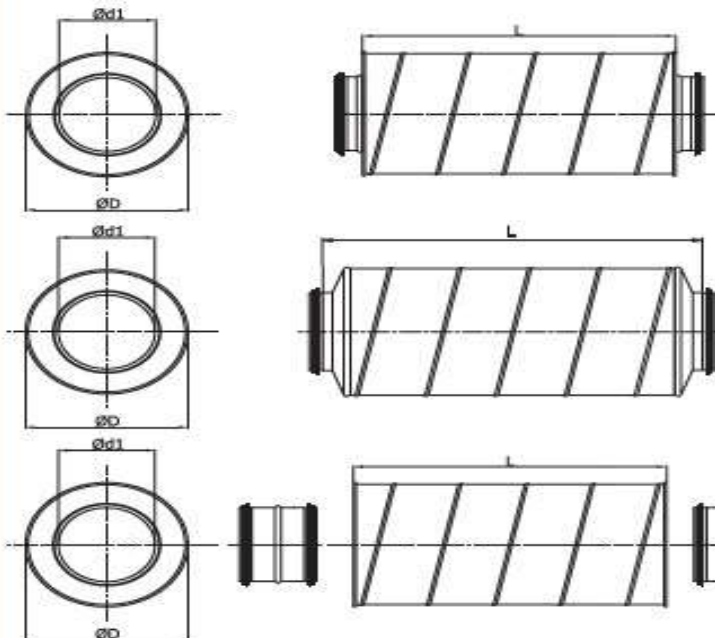
type

insulation thickness

$\varnothing d_1$

L

#### Dimensions



Cross-section for individual types: SIL, SIRC,  $d_1 \leq 315$  mm.

Not applicable diameters: D-100, D-125, D-160, D-200, D-250 - in the embodiment of the insulation thickness of 50 mm.

Cross-section for silencers: SIL, SIRC in the embodiment of the insulation thickness of 50 mm and applicable diameters: D-100, D-125, D-160, D-200, d-250.

Silencers made with pressed reductions.

Cross-section for individual types: SIL, SIRC,  $d_1 > 315$  mm.

**ALNOR® ventilation systems**

is a legally protected trademark and technical patent. All rights reserved.

**Dimensions****SIL-50 - 50 mm thickness insulation**

Description	Ød, nom [mm]	D nom [mm]	L [mm]	attenuation [dB] for frequency [Hz]										[kg]
				125	250	500	1000	2000	4000	8000				
SIL 080-300	80	180	300	6	15	29	45	50	26	28	2			
080-500	80	180	500	9	18	32	48	53	29	31	3			
080-600	80	180	600	11	19	33	49	54	30	32	3			
080-900	80	180	900	13	22	36	52	57	33	35	5			
080-1000	80	180	1000	14	23	37	53	58	34	36	6			
080-1200	80	180	1200								7			
SIL *100-300	100	200	350	5	13	26	41	44	22	24	2			
*100-500	100	200	550	8	16	29	44	47	26	27	3			
*100-600	100	200	650	9	17	30	45	49	27	29	3			
*100-900	100	200	950	12	19	32	48	51	29	31	5			
* 100-1000	100	200	1050	13	21	34	49	52	30	32	6			
* 100-1200	100	200	1250								7			
SIL *125-300	125	224	350	4	11	22	37	41	19	21	3			
*125-500	125	224	550	7	14	26	40	44	22	24	4			
*125-600	125	224	650	8	15	27	41	45	24	25	4			
*125-900	125	224	950	11	18	29	44	47	26	28	7			
* 125-1000	125	224	1050	12	19	31	45	49	27	29	7			
* 125-1200	125	224	1250								9			
SIL 150-300	150	250	300	4	11	23	34	36	18	19	4			
150-500	150	250	500	7	14	26	37	39	21	22	4			
150-600	150	250	600	8	15	27	39	41	22	23	6			
150-900	150	250	900	11	18	29	42	43	25	26	8			
150-1000	150	250	1000	12	19	30	42	44	26	27	8			
150-1200	150	250	1200								10			
SIL *160-300	160	250	350	3	9	20	33	35	16	18	3			
*160-500	160	250	550	6	12	23	36	38	19	21	5			
*160-600	160	250	650	7	14	24	37	39	21	22	6			
*160-900	160	250	950	10	16	26	40	42	23	25	8			
* 160-1000	160	250	1050	11	17	28	41	43	24	26	8			
* 160-1200	160	250	1250								10			
SIL *200-300	200	300	350	2	7	16	31	31	15	16	4			
*200-500	200	300	550	5	10	19	34	34	18	19	6			
*200-600	200	300	650	6	11	20	35	35	19	20	7			
*200-900	200	300	950	8	13	23	38	38	22	23	10			
* 200-1000	200	300	1050	9	15	24	39	39	23	24	11			
* 200-1200	200	300	1250								12			
SIL *250-500	250	355	550	4	9	18	29	27	15	16	9			
*250-600	250	355	650	5	11	19	30	28	16	18	11			
*250-900	250	355	950	8	13	22	33	31	19	20	14			
* 250-1000	250	355	1050	9	14	23	33	32	20	21	12			

**SIL-50 - 50 mm thickness insulation**

Description	Ød, nom [mm]	D nom [mm]	L [mm]	attenuation [dB] for frequency [Hz]										[kg]
				125	250	500	1000	2000	4000	8000				
* 250-1250	250	355	1200	11	17	25	35	34	21	23	17			
* 250-1550	250	355	1500	12	18	26	37	35	23	24	20			
SIL 300-500	300	400	500	4	8	16	25	23	13	15	13			
300-600	300	400	600	5	10	18	27	25	14	16	15			
300-900	300	400	900	7	12	20	30	27	17	18	16			
300-1000	300	400	1000	8	13	21	30	28	18	19	19			
300-1200	300	400	1200	10	15	23	32	30	20	21	22			
300-1500	300	400	1500	12	17	24	34	32	21	23	25			
SIL 315-500	315	400	500	4	7	14	23	21	13	14	11			
315-600	315	400	600	5	8	16	25	19	14	15	12			
315-900	315	400	900	7	11	18	28	21	17	18	16			
315-1000	315	400	1000	8	12	19	28	22	18	19	16			
315-1200	315	400	1200	10	14	21	30	24	19	21	19			
315-1500	315	400	1500	12	16	23	32	26	21	22	25			
SIL 355-600	355	450	600	4	9	16	22	17	13	14	13			
355-900	355	450	900	7	11	19	25	19	16	17	18			
355-1000	355	450	1000	8	12	20	26	21	17	18	20			
355-1200	355	450	1200	10	15	22	27	22	18	20	22			
355-1500	355	450	1500	11	16	23	29	24	20	21	27			
SIL 400-600	400	500	600	4	8	15	20	15	12	13	15			
400-900	400	500	900	6	10	18	23	17	15	16	20			
400-1000	400	500	1000	8	12	19	24	18	16	17	22			
400-1200	400	500	1200	9	14	21	25	20	17	19	25			
400-1500	400	500	1500	11	15	22	27	22	19	20	31			
SIL 450-600	450	560	600	4	8	16	18	13	12	12	23			
450-900	450	560	900	6	11	18	21	16	15	15	27			
450-1000	450	560	1000	7	12	19	22	17	16	16	29			
450-1200	450	560	1200	9	14	21	23	18	17	17	31			
450-1500	450	560	1500	11	16	23	25	20	19	19	36			
SIL 500-600	500	600	600	3	7	14	17	11	11	12	32			
500-900	500	600	900	6	9	16	20	14	13	14	42			
500-1000	500	600	1000	7	11	17	21	15	14	15	51			
500-1200	500	600	1250	9	13	19	22	17	16	17	59			
500-1500	500	600	1500	10	14	20	24	18	17	19	72			

### 3.7 Odour Control

Unit size 1200mm D x 600mm H x 1200mm W

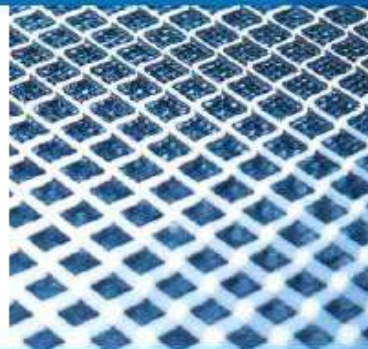
Constructed from galvanised steel with access doors to remove and replace the filters

Pre-filter 2 x 595 x 595 Mesh filter      Cleaning period once a month

Pre- filter 2 x 595 x 595 G4 filter      Change once a month

Carbon bag filters 2 x 595 x 595      Change every six months

## LONGAR® Type 4 Mesh Filter



#### LONGAR® TYPE-4 FEATURES:

- The LONGAR® Type 4 Mesh filter is manufactured using a patented expanded mesh, this offers a unique design based on many years of R&D. This results in a mesh that delivers greater air or grease arrestance, integral strength and low pressure loss.
- Comes with a safety edge channel to offer greater strength and safety over conventional products available on the market place.
- Using an Expanded metal multi-layer pad we are able to offer a panel with greater rigidity and importantly the pad cannot migrate particles, which can be found in 'knit mesh' filters, these types of panels can be hazardous where strands can break away from the filter.
- Due to the nature of the material that we use, its integral strength means when it comes to cleaning it will stand up well, and outlast panels of lesser constructions.
- Tested to Eurovent 4/5.
- Handles and drain holes are available.
- Available in Galvanised Steel, Stainless Steel and Aluminium.

#### APPLICATIONS

- Primary air filtration G2/G3
- Kitchens
- Cooker hoods
- All types of grease extraction
- General heating and ventilation pre-filtration

#### LONGAR® TYPE 4 MESH FILTER

The LONGAR® Type 4 Mesh filter is the result of years of experience in the manufacture and development of filters for the HEVAC world. With over 40 years of manufacturing experience the products brought to the market place today are clearly world class in price and product.

The LONGAR® Type 4 is a superior grease filter, available in a large selection of sizes and materials options.

Our Mesh filters are of robust construction and are used for a variety of applications, grease and air or dust collection applications, coalescer and spark arrestance, ideal as a prefilter for large particle contaminants and widely used in high air volume applications.

#### CONSTRUCTION DETAILS / MATERIAL SPECIFICATION

Media: Expanded metal patented design to aid filtration, available in stainless steel, galvanised steel, and aluminium.

Frame: U shaped section supplied with safety edge, available in stainless steel, galvanised steel and aluminium.

Filter thickness: Filter panels are available in actual thicknesses of: 8,10,12,20,25,40,45,50 and 95mm. Other sizes available on request.

Support mesh: Our own Q14 mesh is used in the grease filter as the support mesh.

Handles and drain holes: Folding handles and drain holes can be supplied as an option when required. They are fitted by default to the short dimension, unless otherwise stated by the customer at the time of ordering.

Housings: We can supply front withdrawal housings where required, see separate data sheet.

For technical specifications, part numbers and ordering information, please see overleaf.

## FITTING INSTRUCTIONS

- Fit products, handles in direction of air in.
- Product vertical in air stream.
- Drain holes lower edge to exit into drip tray if installed.

## HANDLING

- Handle with care when unpacking.
- Store in dry and frost protected place.

## TECHNICAL SPECIFICATIONS

Tested to Eurovent 4/5

Fire rating = UL Class 2

100% relative humidity

Longar specifies the Grease Filter as height x width x thickness. The handles are fixed to the height and drain holes punched on the width. Please ensure correct orientation is given when ordering.

## MAINTENANCE

- All maintenance should be carried out in accordance with the planned maintenance set by installation contractor.
- When handling any components suitable PPE should be used - gloves, eye protection and access equipment.
- Filters should be cleaned by a trained operative either daily for heavy use or weekly for light use.
- For more exact guide to cleaning you should contact a cleaning specialist.

## PACKAGING

All units are packaged in double wall boxes with separators for standard sizes, glued closed for protection whilst in transit against contamination.



## Carbon Impregnated Bag Filters

### Applications

The Activated Carbon impregnated bag filter, can be utilised to remove the slight general odours associated with towns and cities.

When a Carbon Bag Filter is used in the extract systems of light duty catering establishments, such as coffee shops, the life of it will be very short, as the odour retention is directly proportional to the weight of activated carbon on the product.

Airclean will not recommend this product for new installations for odour removal.



### Description

The fully cured coating of the activated carbon powder on the polyester non-woven bag filter material is formed into pockets which are stitched and tagged to minimise blinding from each other.

The formed pockets are supported by a copper coated rod assembly which, with the media, is sealed into the corrosion resistant galvanised steel header frame.

### Technical

Filter Classification:  
 Maximum Operating Temperature : 40 Degrees Centigrade  
 Maximum Operating Humidity: 80% RH

#### STANDARD CARBON IMPREGNATED BAG FILTERS

Dimensions					Flow Rate		Part Numbers
OT Inches		Actual mm			Flow	Pressure Drop	
H x W	D	H	W	D	m <sup>3</sup> /s	Pa	
24 x 12	12	594	289	289	0.38	70	1410801
	20	594	289	492	0.47	70	1410804
24 x 20	12	594	492	289	0.50	70	1410802
	20	594	492	492	0.64	70	1410805
24 x 24	12	594	594	289	0.75	70	1410803
	20	594	594	492	0.94	70	1410806
NON STANDARD							1410899



Front Withdrawal Frame



MEZ Flanged Side



Duct Mounted Filter



Fully Welded Side



3.8 Dwell time 0.2 sec

### 3.10 Extraction Duct Work Brief

#### Extraction duct work

The ducting systems will be mounted above the suspended ceiling running from the canopy, with the fan and silencers hung from ant-vibration to the ceiling, stopping any vibration.

From the canopy the ducting will be in 250mm x 600mm rectangular changing into 450mm SPT to the fan and silencers inside the store, the ducting will stay to same ducting 450mm SPT until going through the wall where it will bend 90 degrees. The ducting will travel up the rear wall to 1 meter above the roof line terminate with a jet cowl.

**duct runs as shown on plans.**

### 3.11 Make Up Air Duct Work Brief

The air supply will be mounted above the suspended ceiling the air will be brought into the store through a roof cowl on the roof. Two sky light along from the extraction system on the roof. The air will be distributed through 600mm x 600mm four-way ceiling grilles.

The system will give 80% volume of the extraction system, 80% volume of the extracted air is required to be replaced by mechanical air supply fan and controller discharging through surface mounted grilles or sufficient free area space ie: windows or doors open with fly screens to give air replacement.

Ducting Colour .....galvanised

Cowl .....Jet Cowl

Discharge velocity on the cowl 12-15m3/s

All our systems comply with DW175 regulations and specifications with regards to ducting sizes, heights and fan duties etc.

The Commissioning sheet will be issued after the work has been completed showing air flow rate and inventory of the system fitted.

Air in Roof Cowl



Cowl Size 900mmx900m

Extraction cowl



Spiral Tube

450mm will be used for the Extraction and Air supply.



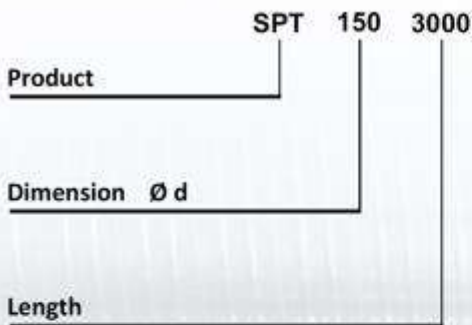
**Description**

**Spiral Tube | Hotchkiss**

**Spirally Wound Tubing.**

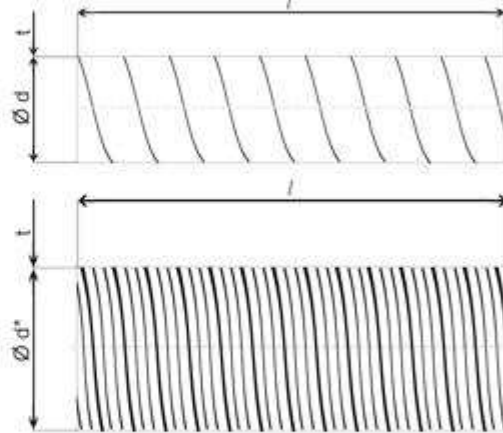
- Comes in a wide variety of diameters.
- Manufactured in standard 3.0m lengths.
- Custom lengths can be made upon request.
- Galvanised material - manufactured in accordance with DW144 specification.

**Order Example:**



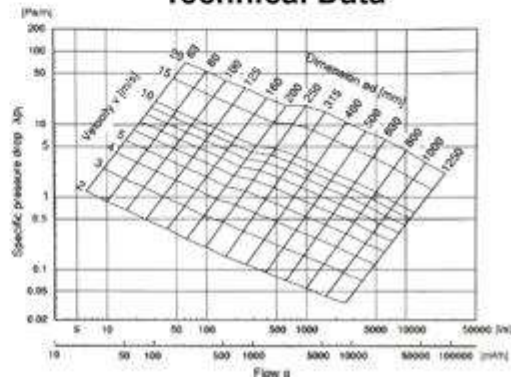
Also available in custom lengths.  
Manufactured to order.

**Dimensions**

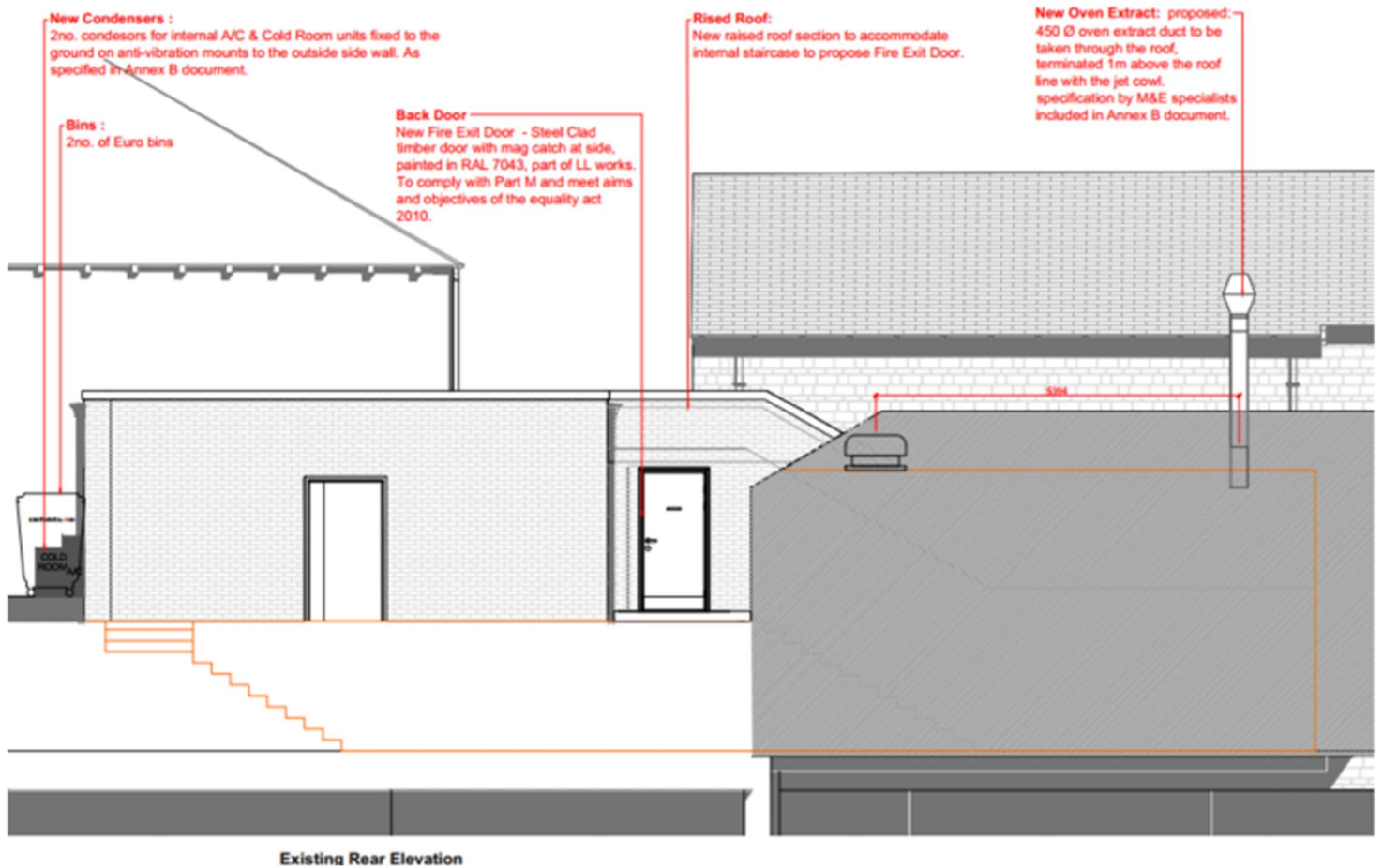
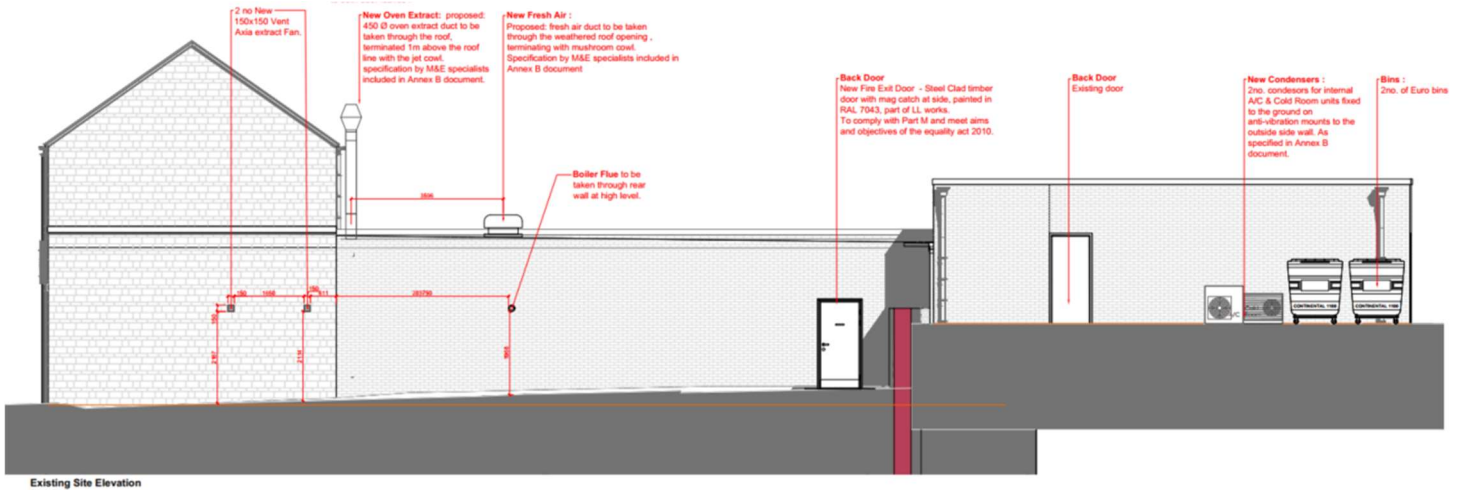


Nominal Diameter mm	Surface Area m <sup>2</sup>	Cross Sectional Area m <sup>2</sup>	Standard Gauge mm	Standard Length mm	Weight Kg/m
63	0.198	0.003	0.5	3000	1.01
80	0.251	0.005	0.5	3000	1.14
100	0.314	0.008	0.5	3000	1.42
112	0.352	0.010	0.5	3000	1.59
125	0.393	0.012	0.5	3000	1.78
140	0.440	0.015	0.5	3000	1.99
150	0.471	0.018	0.5	3000	2.13
160	0.503	0.02	0.5	3000	2.28
180	0.565	0.025	0.6	3000	3.07
200	0.628	0.031	0.6	3000	3.41
224	0.704	0.039	0.6	3000	3.82
250	0.785	0.049	0.6	3000	4.26
280	0.880	0.062	0.6	3000	4.78
300	0.942	0.071	0.6	3000	5.12
315	0.990	0.078	0.6	3000	5.38
355	1.115	0.099	0.8	3000	8.08
400	1.257	0.126	0.8	3000	9.10
450	1.414	0.159	0.8	3000	10.23
500	1.571	0.196	0.8	3000	11.37
560	1.759	0.246	0.8	3000	12.73
600	1.885	0.283	0.8	3000	13.65
630	1.979	0.312	0.8	3000	14.33
710	2.231	0.396	0.8	3000	16.15
800	2.513	0.503	0.8	3000	18.20
900	2.827	0.636	1.0	3000	25.58
1000	3.142	0.785	1.0	3000	28.43
1120	3.519	0.985	1.2	3000	38.21
1250	3.927	1.227	1.2	3000	42.64
1400	4.398	1.539	1.2	3000	47.76
1500	4.712	1.767	1.2	3000	51.17
1600	5.027	2.011	1.2	3000	54.58

**Technical Data**



### 3.13 Proposed Elevations



### 3.14 Gas inter-Lock System

#### Gas inter-lock

The Ventilation/Gas interlock system for the kitchen area shall be supplied by Canopy UK Direct Ltd Gas Safety Systems type Merlin CT1250.

The panel dimensions are 254mm high x 178mm wide x 62 mm deep. The box shall be rated to IP65 it shall be an ABS enclosure and be CE Approved. The fascia of the panel should be key operated (on/off) and a shrouded emergency shut off button located in the top right hand corner should be fitted (to meet BS6173.2001).The Ventilation/Gas interlock panel shall have a total of 7 L.E.D'S on the fascia, these should be: Power, Gas On, EM Stop, Supply Fan, Extract Fan, Fan Fault and Service).

1 x Merlin CT1250 Pan

1 x Gas Solenoid Valve (Size to be 1 1/4)

2 x Remote Gas Shut-Off Button (where required) to be fitted to the fire exists

## THE MERLIN RANGE CT1250 SYSTEM

The Merlin CT1250 ventilation interlock system, with built in current monitoring, is designed specifically for use in commercial kitchens to meet BS6173. This panel is to be used when the kitchen appliances do have flame failure devices, therefore Gas proving is not a requirement.

The Merlin CT1250 acts as an interlock between the ventilation system and the gas solenoid valve.

The system has built in current monitors in order to interlock with up to 2 fans and offers an alternative to using air pressure differential switches.



#### Key Features of the Merlin CT1250 System

- Allows Compliance with BS6173 for commercial kitchens
- To be used when all appliances have flame failure devices
- 2 built in current monitors can be easily adjusted to the user's requirements
- Reliable method of interlock, with no moving parts there's little to go wrong
- BMS Terminals Normally Closed or Normally open and common
- Will accept remote emergency knock-off buttons
- Can monitor 2 fans with running currents between 51A – 20A
- Clear LED display for system indications
- Can be used when pressure differential switches cannot be used e.g. wall-mounted fans
- Straightforward to install and calibrate. The CT1250 can be easily adjusted to the user's requirements
- Easy installation
- Covered by S&S Northern Ltd 3 year warranty



This system work on using current monitoring instead of air flow switch

## 4.0 Cold-rooms and Airconditioning Compressor data sheets

Cold room up to 10sqm

### TYPICAL AIR CONDITIONING AND COLD ROOM COMPRESSOR DETAILS

# TOSHIBA **Leading Innovation >>>**

## Toshiba Air Conditioning - RAV-GM Data Sheet

### RAV-GM1401ATP-E Outdoor Unit

#### Features

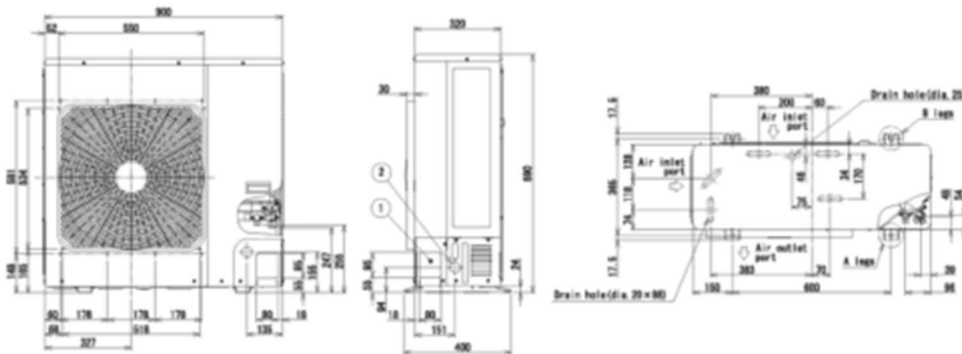
- Redesigned for use with refrigerant R32
- Wide operating range (cooling mode -15°C to +46°C)
- Auto-diagnostic function
- Flexible, can be utilised for single, twin, triple and quad indoor applications
- Compact size



#### Technical Data

Model reference		RAV-GM1401ATP-E	
Nominal	Cooling Capacity	kw	12.0
	Heating Capacity	kw	12.8
Operating Range	Cooling/Heating	°C	-15 to 46/-15 to 15
	Air Flow	m³/h - l/s	4300 - 1167
Sound	Pressure High Cooling/Heating	dB(A)	55/57
	Power High Cooling/Heating	dB(A)	70/74
Unit	Height x Width x Depth	mm	890 x 900 x 320
	Weight	kg	68
Pipe Connection	Flare Connections (gas - liquid)	inch	5/8 - 3/8
	Min.-Max. Length	m	5-50
	Maximum Height Difference	m	±30
	Drain Port Connection	mm	16
Refrigerant R32	Base Charge/Chargeless Length	kg/m	2.1/30
	Additional Charge Liquid Side	g/m	35
Run Current	Maximum	A	20.75
Power Cable	Outdoor to Indoor		3 core + earth
Power Supply	Suggested Fuse Size	V/ph/Hz-A	220-240/1/50-32

#### Dimensional Drawings



**Cool Designs Ltd**


Raising the Standards in Air Conditioning Distribution

[www.cdweb.info](http://www.cdweb.info)



All UK duties are based on Cooling Indoor air temperature 22°C DB/16°C WB Outdoor air temperature 28°C DB 50% RH, high fan speed, 5 m pipe run.  
Heating Indoor air temperature 20°C DB Outdoor air temperature -5°C DB 100% RH, high fan speed, 5 m pipe run. Values are based on the maximum compressor output.  
Data obtained from Toshiba Air Conditioning Published Data July 2018.

Cold room up to 10sqm



**UPTO 10M2 CAPACITY**

**Wintsys®**

**R452A**

MODEL NUMBER	REF. REFRIGERATION OUTPUT 32" amb., 1.0K evap. eff. ing. 3K subcooling, 8Kd. (Mtd)										REFRIG. OUTPUT EN13215 Evap., T = -10°C	As. P. (dB(A))	Air Flow m <sup>3</sup> /h	Liq. Rec. Vol.	Diam. for tubing O.D.		Net Gross weight kg	No. Dim	Maximum current according to voltage code	
	Evaporation temperature (°C):														Sec.	Liq. Line			F2	T2
	-25°	-15°	-10°	-5°	0°	5°	15°	Perf. (W)	COP (NHW)											
W10UE4-60Z	368	608	805	1004	1237	1506	2167	820	1,78	27	1650	0,75	3/8"	1/4"	5,371	5	5,6	na		
W10UE4-80Z	470	771	957	1178	1406	1735	2470	981	1,84	28	1650	0,75	3/8"	1/4"	5,371	5	6,4	na		
W10UE4-09Z	474	833	1056	1324	1641	2019	3004	1081	1,66	29	1650	0,75	3/8"	1/4"	5,371	5	7,6	na		
W10UJ-04-80Z	607	1027	1286	1590	1943	2348	3329	1316	1,90	30	1650	1,50	1/2"	3/8"	6,260	5	7,3	3,7		
W10UJ-05-10Z	758	1263	1571	1934	2352	2830	3988	1614	1,93	30	1650	1,50	5/8"	3/8"	6,361	5	8,9	4,1		
W10UJ-05-13Z	914	1568	1968	2432	2963	3566	5005	2021	2,08	30	1650	1,50	5/8"	3/8"	65,63	5	11,8	4,9		
W10UJ-05-17Z	1008	1689	2094	2562	3097	3711	5216	2171	1,96	30	1650	2,35	5/8"	3/8"	65,63	5	13,2	4,7		
W10UJ-05-19Z	1130	2093	2596	3171	3826	4587	6519	2398	1,72	32	1650	2,35	5/8"	3/8"	65,63	5	15,5	6,7		
W10FPH-05-24Z	1319	2439	3122	3911	4807	5821	8236	3213	1,83	39	2750	2,35	5/8"	1/2"	79,000	M	20,3	8,4		
W10FPH-05-31Z	1797	3150	3947	4868	5922	7129	10089	4092	1,90	41	2750	3,90	7/8"	1/2"	83,004	M	23,1	9,7		
W10AWH-05-38Z	2174	3851	4814	5877	7027	8267	11132	5008	2,98*	47	2750	3,90	7/8"	1/2"	79,000	M	27,0*	9,7*		

Statement of the seasonal COP / n.c. not applicable / \* voltage code XC, \*\* voltage code YZ, \*\*\* voltage code MZ

**MHBP**

For any more advice or support before placing the order please feel free to contact me  
**07876 500 438 / 01733 7004**

