



REF: Domino's Kirkby Liverpool

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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 '*BESA – Guidance on the control of odour and noise from Commercial Kitchen Exhaust system*'. This follows feedback from various Local Authorities who use BESA / EMAQ Control of odour and noise from Commercial Kitchen Exhaust Systems as a guide when referring to the extract system as part of the application process.

The 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

BESA – DW143 Practical Guide to Ductwork Leakage Testing

BESA- DW144 Specification for Sheet Metal Ductwork

BESA- DW172 Guide to Good Practice for Kitchen Ventilation Systems

BESA – 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 430 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 TCBBx2/4-450, rpm 1370, sound pressure level 74 outlet dBA, pressure level air volume 6900(m³/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 1.773/sec @ 200pa static pressure.

CONTRAROTATING CASED AXIAL FANS TCBBx2 / TCBTx2 Series



Range of cylindrical cased axial fans fitted with aluminium impellers and manufactured from high grade rolled galvanised steel and protected against corrosion by cataphoresis primer and black polyester paint finish.

Fitted with 2 contrarotating 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 motors are variable voltage (for TCBBx2/4-630, only if the ambient temperature is up to 40 °C).

Three phase motors suitable for inverter control.

Electrical supplies:

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

Three phase 400V-50Hz

(1) Working temperatures from -40°C up to 70°C.

APPLICATIONS



Warehouses



Workshops



Commercial premises



Naval industry

Contra rotating: High pressure



Contrarotating 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 cataphoresis 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 1040 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.

Model	Speed (r.p.m.)	Maximum absorbed power (kW)	Maximum absorbed current (A)	Sound pressure level (dB(A))	Maximum air volume (m³/h)	Weight (kg)	Speed controller*
TCBBx2/4-450	1370	1,24	5,40	74	6900	42	RMB-8
TCBBx2/4-500	1150	1,40	6,20	76	9400	50	RMB-8
TCBBx2/4-560	1340	3,25	15,50	78	14300	66	-
TCBBx2/4-630	1280	3,90	19,00	79	18200	80	-
TCBTx2/4-450	1400	1,25	3,40	74	6900	42	RMT-5
TCBTx2/4-500	1340	1,75	3,60	76	9400	50	RMT-5
TCBTx2/4-560	1360	3,12	5,80	78	14300	66	VFTM TRI 4
TCBTx2/4-630	1370	4,20	8,00	79	18200	80	VFTM TRI 5,5

* Three phase speed controllers (RMT) or inverter control (VFTM) are suitable for 400V.

Acoustic characteristics

The sound levels -NPS- shown in the technical characteristic chart, correspond to the value of sound pressure dB(A), measured in free field conditions at a distance equivalent to three times the diameter of the impeller with a minimum of 1.5 meters.

The following table shows the sound power level spectrums in dB(A) measured with the fan ducted, at both inlet and discharge sides.

Model	Air volume m³/h	63	125	250	500	1000	2000	4000	8000	Global
450 Inlet	6600	46	73	85	82	85	79	72	64	90
	5850	46	73	84	81	83	79	71	64	88
	4300	58	70	80	80	83	79	71	64	87
450 Outlet	6600	63	75	86	85	87	82	74	67	92
	5850	53	73	85	84	87	81	74	67	91
	4300	58	70	82	83	86	82	74	67	90
500 Inlet	9000	48	78	87	85	87	81	74	67	92
	7500	52	76	85	85	85	80	73	65	90
	6000	60	73	83	82	85	80	73	66	89
500 Outlet	9000	65	76	87	88	90	84	77	70	94
	7500	62	75	86	87	88	83	76	69	92
	6000	59	72	86	85	88	83	76	69	92
560 Inlet	13720	50	85	87	88	91	85	78	73	95
	10800	57	79	83	86	89	84	78	72	93
	9000	63	79	81	86	89	84	78	72	92
560 Outlet	13720	74	86	85	91	94	88	81	75	97
	10800	70	82	84	88	92	87	81	74	95
	9000	74	81	85	89	92	87	81	74	95
630 Inlet	17500	51	85	91	89	93	87	80	74	97
	15600	55	85	85	88	91	86	80	73	95
	12000	64	80	84	88	90	86	80	73	94
630 Outlet	17500	73	87	88	93	95	89	83	77	99
	15600	71	87	86	91	94	89	83	76	98
	12000	67	84	86	90	94	89	84	76	97



3.3 Speed Controls

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!

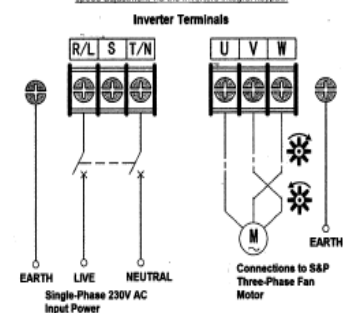
WIRING DIAGRAMS (SINGLE PHASE 230V - 50Hz MAINS SUPPLY)

L = Supply Live 230V - 50Hz

N = Supply Neutral

E = Earth

WIRING DIAGRAM No. 1 - Off/On to installer-defined speed and thereafter manual speed adjustment via the Inverter's integral keypad.

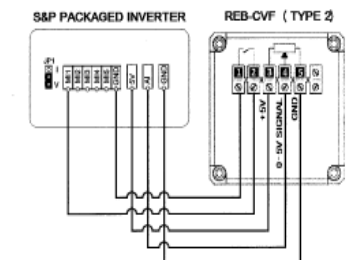
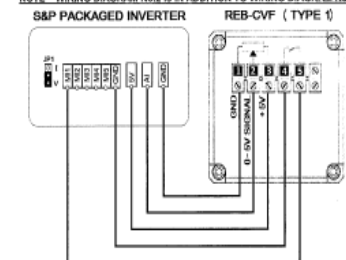


IMPORTANT NOTE TO INSTALLERS!

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, Off/On and speed control by additional accessory S&P REB-CVF 0-10V Speed Controller code S&P5461304100.

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(m³/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 this will stop any reverberation noise travelling back through the ceiling.

Fan duty 1.3m³/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

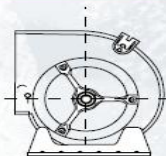


Incorporation in ventilation cabinets

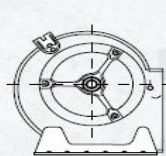


Air conditioning equipment

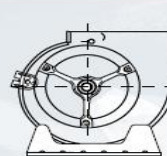
P O S I T I O N S



LG 90



LG 270



LG 0



LG 180

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 II

Pleated Panel Filters



AIRGARD® TYPE II 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 II 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 II 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 II HIGH CAPACITY PLEATED PANEL

We are able to manufacture the Type II 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 II HIGH EFFICIENCY PLEATED PANEL

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

AIRGARD® TYPE II 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

FITTING INSTRUCTIONS

- Fit products, observe direction of airflow indicator

HANDLING

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

MAINTENANCE

- All maintenance and replacement schedules will be set by the original equipment installer. Please refer to this for more information.
- When handling any components suitable PPE should be used – gloves, eye protection and access equipment should be used where required.
- Filters should not be cleaned but replaced when required in accordance with maintenance schedule set by the installation contractor.

PACKAGING

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

TECHNICAL SPECIFICATIONS

SIZE ORDERING GUIDE (TOLERANCES +/- 2mm)				
Part Number	Actual Size HxWxD	Nominal Size HxWxD	Weight	Available Efficiencies *
PPF24824822	248 x 248 x 22mm	254 x 254 x 25mm	0.07kgs	G4, F6, F7, F8, High Capacity, Carbon Impregnated Pleated Panels
	9.76 x 9.76 x 0.87"	10 x 10 x 1"	0.15lbs	
PPF49624822	496 x 248 x 22mm	508 x 254 x 25mm	0.14kgs	G4, F6, F7, F8, High Capacity, Carbon Impregnated Pleated Panels
	19.53 x 9.76 x 0.87"	20 x 10 x 1"	0.31lbs	
PPF29329322	293 x 293 x 22mm	304 x 304 x 25mm	0.09kgs	G4, F6, F7, F8, High Capacity, Carbon Impregnated Pleated Panels
	11.54 x 11.54 x 0.87"	12 x 12 x 1"	0.21lbs	
PPF59429422	594 x 294 x 22mm	609 x 304 x 25mm	0.19kgs	G4, F6, F7, F8, High Capacity, Carbon Impregnated Pleated Panels
	23.39 x 11.57 x 0.87"	24 x 12 x 1"	0.41lbs	
PPF37537522	375 x 375 x 22mm	381 x 381 x 25mm	0.15kgs	G4, F6, F7, F8, High Capacity, Carbon Impregnated Pleated Panels
	14.76 x 14.76 x 0.87"	15 x 15 x 1"	0.34lbs	
PPF49637522	496 x 375 x 22mm	508 x 381 x 25mm	0.19kgs	G4, F6, F7, F8, High Capacity, Carbon Impregnated Pleated Panels
	19.53 x 14.76 x 0.87"	20 x 15 x 1"	0.41lbs	
PPF49639622	496 x 396 x 22mm	508 x 406 x 25mm	0.20kgs	G4, F6, F7, F8, High Capacity, Carbon Impregnated Pleated Panels
	19.53 x 15.59 x 0.87"	20 x 16 x 1"	0.43lbs	
PPF62039622	620 x 396 x 22mm	635 x 406 x 25mm	0.24kgs	G4, F6, F7, F8, High Capacity, Carbon Impregnated Pleated Panels
	24.41 x 15.59 x 0.87"	25 x 16 x 1"	0.53lbs	
PPF44844822	448 x 448 x 22mm	457 x 457 x 25mm	0.19kgs	G4, F6, F7, F8, High Capacity, Carbon Impregnated Pleated Panels
	17.64 x 17.64 x 0.87"	18 x 18 x 1"	0.42lbs	
PPF49649622	496 x 496 x 22mm	508 x 508 x 25mm	0.24kgs	G4, F6, F7, F8, High Capacity, Carbon Impregnated Pleated Panels
	19.53 x 19.53 x 0.87"	20 x 20 x 1"	0.52lbs	
PPF59649622	596 x 496 x 22mm	609 x 508 x 25mm	0.27kgs	G4, F6, F7, F8, High Capacity, Carbon Impregnated Pleated Panels
	23.46 x 19.53 x 0.87"	24 x 20 x 1"	0.60lbs	
PPF62049622	620 x 496 x 22mm	635 x 508 x 25mm	0.28kgs	G4, F6, F7, F8, High Capacity, Carbon Impregnated Pleated Panels
	24.41 x 19.53 x 0.87"	25 x 20 x 1"	0.63lbs	
PPF59659622	596 x 596 x 22mm	609 x 609 x 25mm	0.31kgs	G4, F6, F7, F8, High Capacity, Carbon Impregnated Pleated Panels
	23.46 x 23.46 x 0.87"	24 x 24 x 1"	0.68lbs	
PPF24824847	248 x 248 x 47mm	254 x 254 x 50mm	0.12kgs	G4, F6, F7, F8, High Capacity, Carbon Impregnated Pleated Panels
	9.76 x 9.76 x 1.85"	10 x 10 x 2"	0.26lbs	

Pressure drop and airflow information available on request.

3.1 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 50mm.

On the outflow side 600mm long 450mm 1D (inside measurement) wall thickness of 50mm.

Silencer Ref: Extraction SIL 450-600 450 600 600 1D Positive side
SIL 450-600 450 600 1250 2D Negative side

The sound level at termination point will be a 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 dila SIL-50 - depending on the dimension of the outer casing

100 mm dila SIL-100 - depending on the dimension of the outer casing

Example identification

Product code:

SIL - iij - aaa - bbb

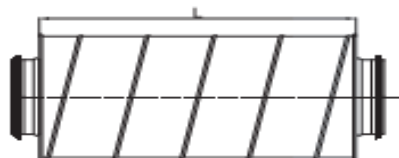
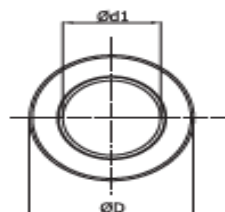
type

insulation thickness

$\varnothing d_1$

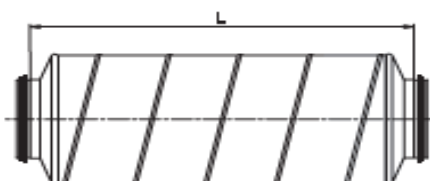
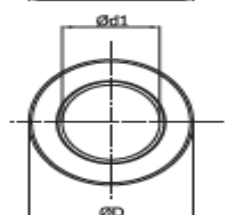
L

Dimensions



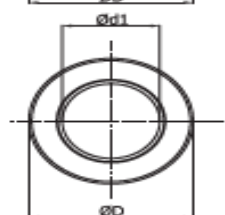
Cross-section for individual types: SIL, SIRC, $d_1 \leq 315$ mm.

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.

Circular silencers

SIL

[Download Wentyle](#)
[Download AlnorCAM](#)
[Buy via B2B](#)

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
Cleaning and filter replacement requirement.

Pre-filter 2 x 595 x 595 Mesh filter **Clean period once a month**

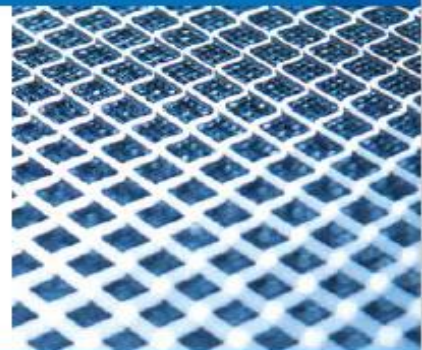
Pre- filter 2 x 595 x 595 G4 filter **Change once a month**

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

Please note that a Pizza takeaway produces very little grease and the extract system is predominately removing heat and gas combustion fumes, as the odour from the cooking process is low therefore carbon bag filters along with mesh filters is adequate to remove any smells.

The termination point will be at high level and over 20 metres away from any other property.

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.

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.

TECHNICAL SPECIFICATIONS

Tested to Eurovent 4/5

Fire rating = UL Class 2

100% relative humidity

Longair specifies the Grease Filter as height x width x thickness. The handles are fixed to the height and drain holes punched on the width.

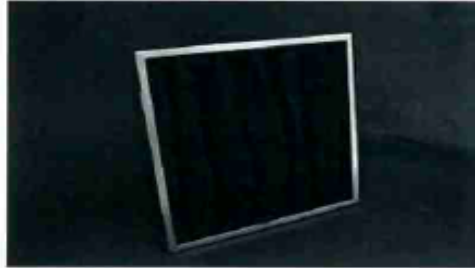
Please ensure correct orientation is given when ordering.





MIDLAND
filtration
L i m i t e d

TECHNICAL DATA SHEET



Carbon Bag 24x24x24 8 pocket

Description

Header frame of galvanised steel, polyester media impregnated with activated carbon powder

Suggested Applications

As an odour reducer in non-critical applications such as kitchen extraction

Technical Data

Nominal Air Volume	3400	m ³ /h
Initial Pressure Drop	25	Pa
Final Recommended Pressure Drop	250	Pa
Filter Classification (EN 779)	G4	Grade
Rating to ASHRAE 52.2	Merv 8	

☐ Head Office:

39 Moorbridge Road Industrial Estate
Bingham, Notts NG13 8GG
tel: 01949-485400
fax: 01949-485401
email: sales@midfilters.co.uk

☐ Scottish Branch:

28-30 Carron Place
East Kilbride G75 0YL
tel: 01355-267730
fax: 01355-267811
email: scotland@midfilters.co.uk

VAT Registered No. 416 3203 90
Registered in England No. 1936235



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 anti-vibration to the ceiling, stopping any vibration.

From the canopy the ducting will be in 300mm 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 roof. The ducting will 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 over the centre of the store, the air will be brought into the store through roof cowl mounted on the roof. The air will be distributed through 600mm x 600mm four-way ceiling grilles.

Makeup air system as shown on the below plans.

This system will give 80% volume of the extraction system, 85% 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 ColourGalvanised

CowlJet Cowl

Discharge velocity on the cowl 2.0 m³/s, (the fan is at 1.77 m³/s @200 Pa, with the cowl it will accelerate the air up to 2.00-2.20 m³/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



Extraction cowl

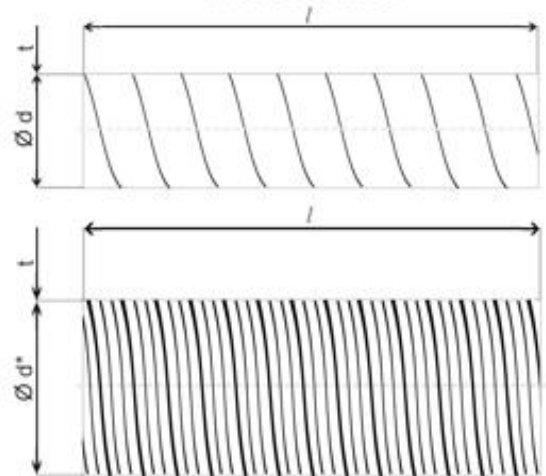


Spiral Tube

450mm will be used for the Extraction system in this store.



Dimensions



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:

Product SPT 150 3000

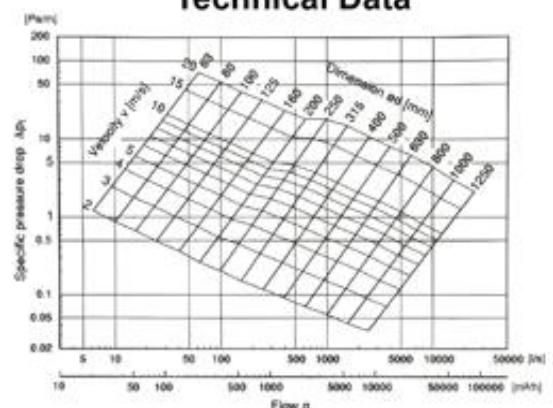
Dimension Ø d 150

Length 3000

Also available in custom lengths.
Manufactured to order.

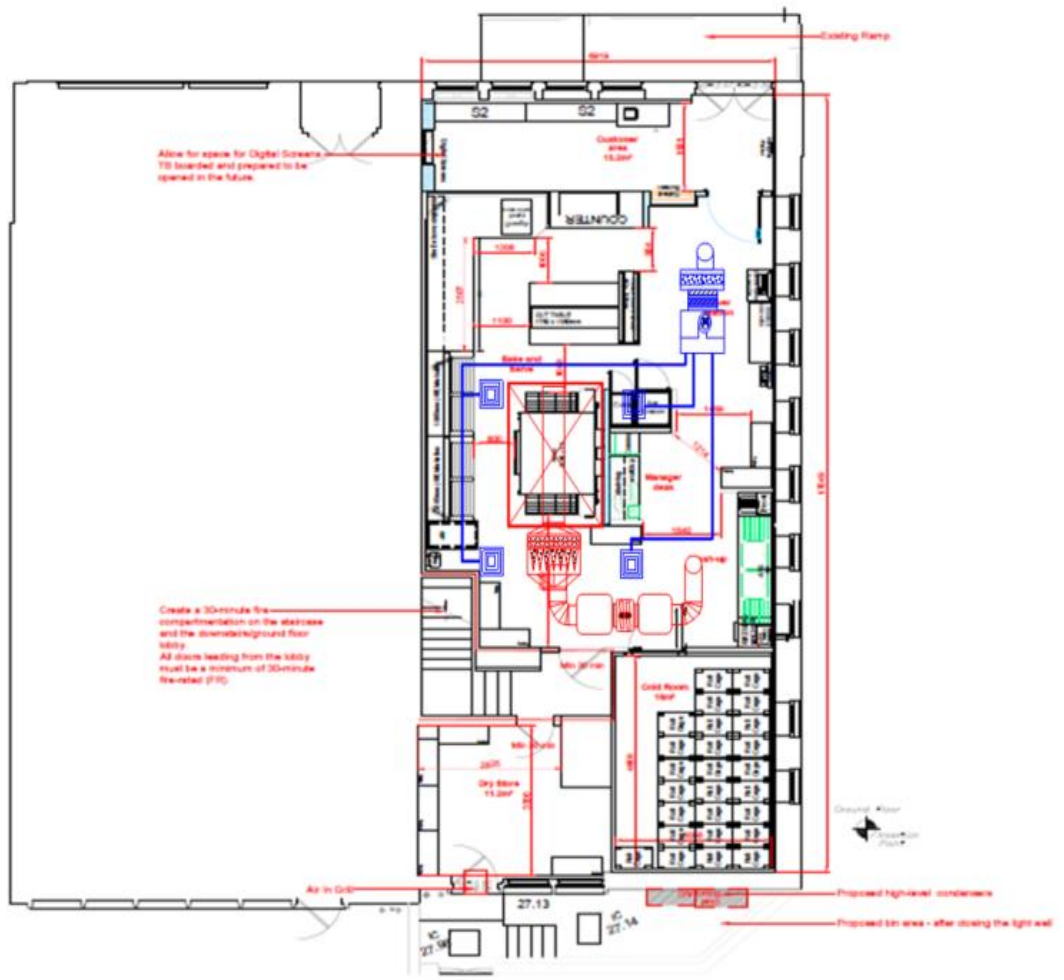
Nominal Diameter mm	Surface Area m ²	Cross Sectional Area m ²	Standard Gauge mm	Standard Length mm	Weight Kg/m
63	0.198	0.003	0.5	3000	1.01
80	0.251	0.005	0.5	3000	1.14
100	0.314	0.008	0.5	3000	1.42
112	0.352	0.010	0.5	3000	1.59
125	0.393	0.012	0.5	3000	1.78
140	0.440	0.015	0.5	3000	1.99
150	0.471	0.018	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

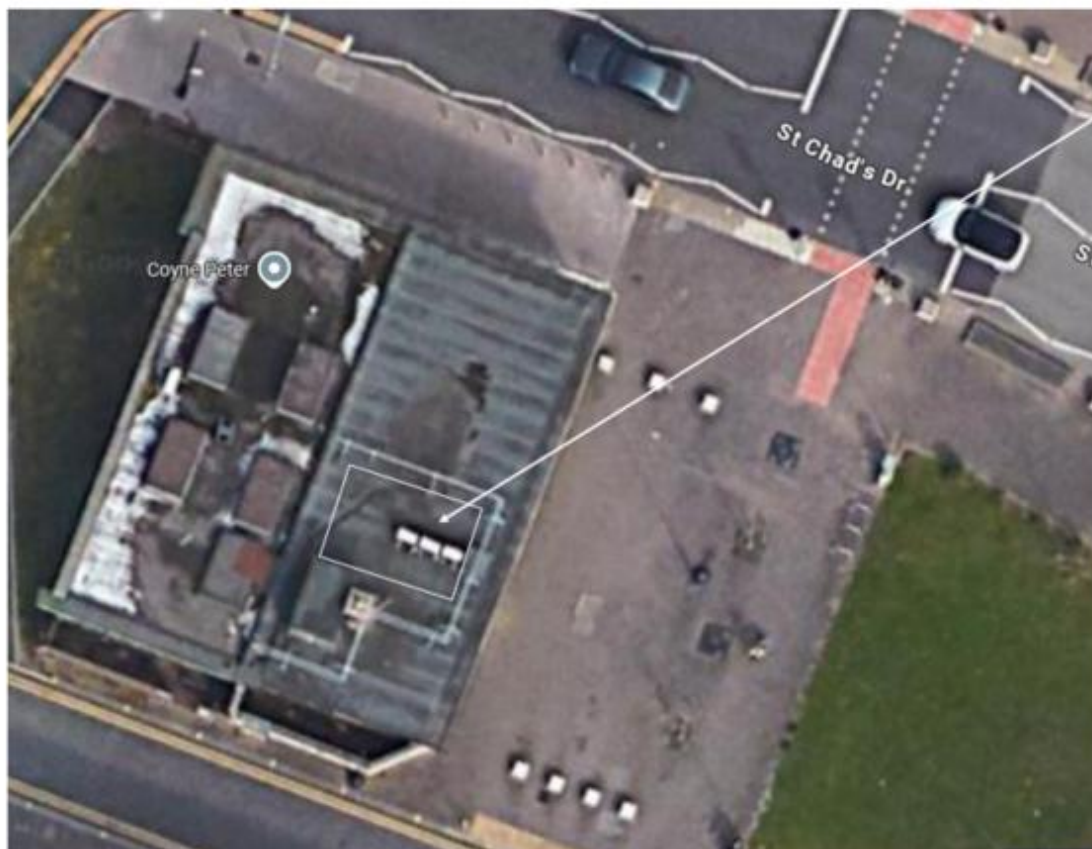
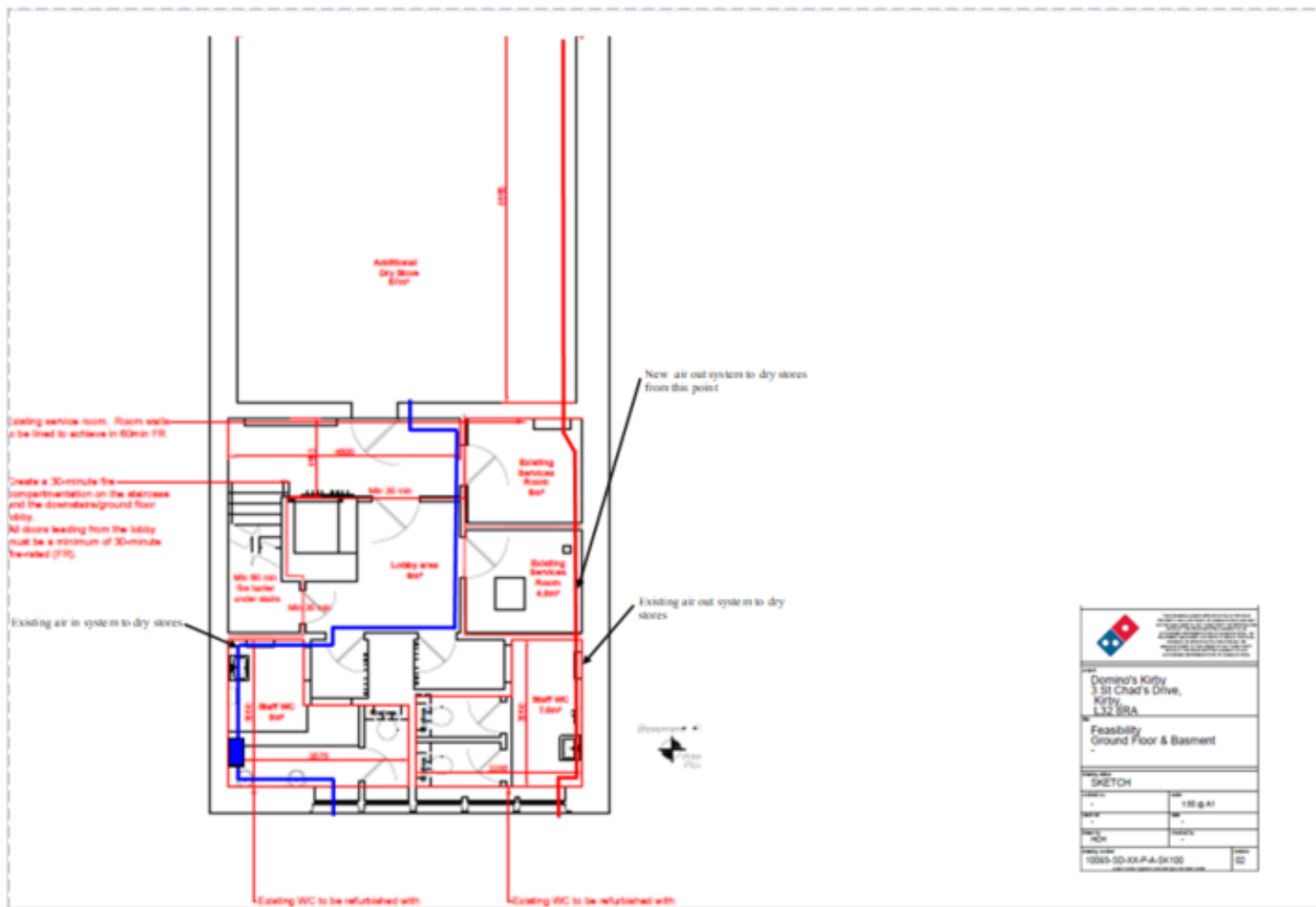


3.13 Proposed Elevations

	
Domino's Kirby 3 St Chad's Drive, Kirby L32 8RA	
Feasibility Ground Floor & Basement	
SKETCH	
DRAWN BY 150 @ A1	DATE 15/01/2020
CHECKED BY 150 @ A1	DATE 15/01/2020
10003-SD-XX-PA-SK100	
02	



01 - Proposed Feasibility Ground Floor Plan
Scale: 1:100



Extraction cowl and air supply
Vents to beside the service area on the
roof as marked in white box

Domino's Kirby 1 St Chad's Drive, Kerry, L32 8RA	
Feasibility Ground Floor & Basement	
SKETCH	
Scale	1:50 @ A1
Author	
Check	
Rev	
Project No	1000-SD-KUPA-SK100
Sheet	02



Showing jet cowl on the roof

	
Domino's Kirby 3 St Chad's Drive, Kirby, L32 8SA	
Feasibility Ground Floor & Basement	
SKETCH	
DATE:	10/04/11
BY:	[Signature]
CHECKED:	[Signature]
10065-SD-03-P-A-SK105	02

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

This system work on using current monitoring instead of air flow switches.

MERLIN RANGE



KITCHEN EQUIPMENT

Merlin CT1250

The Merlin CT1250 ventilation interlock system, with built in current monitoring, is designed specifically for use in commercial kitchens to meet **BS6173: 2001**, which is now a much-recognised standard in the catering industry.

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 a built in power monitor which is a method used for interlocking a kitchen's gas supply with the ventilation system. As an alternative to pressure differential switches the CT1250 is designed to monitor the electrical current going to a ventilation fan. When the fan is turned "on" the CT1250 monitors the electrical current going to the fan motor, when there is sufficient current going to the fan motor our panel receives a signal to indicate the fans are operating. Turning the key to the "on" position will open the gas solenoid valve. If the fans should fail, the "fan fault" LED on the panel will illuminate and the gas solenoid valve will close.

When there is a "fan fault" the supply fan or extract fan led on the Merlin CT1250 panel fascia will flash. This informs the electrician or kitchen staff which fan has failed.

Operating the system in the above manner will ensure the requirements of **BS6173: 2001** are fully met where all the catering equipment has flame failure devices fitted. Installation for the Merlin CT1250 is easy as there is no calibration. Wiring of the system is straightforward using volt free connections for all BMS and remote emergency stops. A corgi-registered installer would be required to fit the gas solenoid valve. All panels and gas solenoid valves supplied by S&S Northern carry a full 3-year manufacturers warranty.

Current Monitoring

Calibration of the current monitor is easy, once wired set the fan speed controller to setting 1 (or low setting) for example.

Turn the blue rotary switches anti-clockwise until the green LED goes out, then slowly turn clockwise until the green LED is again illuminated. This will give you the minimum current requirement, if the fan is turned off the LED will go out, send a signal to the Merlin panel, which will in turn shut off the gas.

Key features of the Merlin CT1250

- Allows Compliance with BS6173: 2001 for commercial kitchens
- Clear LED display for system indications
- Complete all in one box
- Can be used when pressure differential switches cannot be used e.g. wall-mounted fans
- Reliable method of interlock, with no moving parts there's little to go wrong
- Straightforward to install and calibrate. The CT1250 can be easily adjusted to the users requirements
- This method is not recommended with belt driven fans
- Easy installation
- BMS Terminals Normally Closed or Normally open and common.
- Will accept remote emergency shut-off buttons
- Three year warranty
- All Merlin systems are designed to comply with the latest CE requirements and low voltage directives

Canopy UK - A guide to odour control

Odour control must be designed to prevent odour nuisance in each situation. The following diagram determines the odour control required using a risk assessment method. Please see below for considerations considered to calculate the level of odour control required.

Impact Risk	Odour control requirement	Significance score*
Low – medium	Low level odour control	Less Than 20
High	High level odour control	20-35
Very High	Very high-level odour control	35+

*Based on the sum of contributions from dispersion, proximity of receptors, size of kitchen & cooking type

Criteria	Score	Score	Details
Dispersion	Very Poor	20	Low level discharge, discharge into courtyard or restriction on stack.
	Poor	15	Not low level but below eaves, or discharge at below 10m/s
	Moderate	10	Discharging 1m above eaves at 10-15 m/s
	Good	5	Discharging 1m above the ridge at 15 m/s
Proximity of receptors	Close	10	Closest sensitive receptor less than 20m from kitchen discharge
	Medium	5	Closest sensitive receptor between 20 and 100m
	Far	1	Closest sensitive receptor more than 100m from kitchen discharge
Size of kitchen	Large	5	More than 100 covers or large size takeaway
	Medium	3	Between 30 and 100 covers or medium size takeaway
	Small	1	Less than 30 covers or a small takeaway
Cooking type (odour and grease loading)	Very high	10	High Level pub, fried chicken, burgers or fish & Chips
	High	7	Kebab, Vietnamese, Thai or Indian
	Medium	4	Cantonese, Japanese or Chinese
	Low	1	Most pubs, Italian, French, Pizza or steakhouse.

Example application of scoring procedure for four different cooking situations

Example	Dispersion	Proximity of receptors	Size of kitchen	Cooking type	Total score
1, Pub	15	1	5	1	22
2, Kebab	20	10	3	7	40
3, Medium Indian	15	5	5	7	32
4, French restaurant	5	10	1	1	17

Odour assessment of premises and surrounding areas.

Address

3 St Chad's Drive
Kirkby
Liverpool
L32 8RD

- Opening times.
MONDAY – SUNDAY 11:00AM – 11:00PM
- Cooking Appliance.
Pizza Oven
- Cooking type.
Pizza

Business	Dispersion	Proximity of receptors	Size of kitchen	Cooking type	Total score
Takeaway	10	5	5	1	21

With an impact risk of 31, this system will require a higher level of odour control, Canopy UK propose installing the following:

Fine filtration, with carbon bag filter unit. 0.2 second Dwell time will be achieved with the filter box sizing and filtration Required.

Assessed & Signed

Paul Spires

Canopy UK

26/06/25

Canopy UK, use Defra & DW/172 as a guidance for the calculations we carry out.

4.0 Cold-rooms and Airconditioning Compressor date sheets

Cold room 10-15sqm

TYPICAL AIR CONDITIONING AND COLD ROOM COMPRESSOR DETAILS

'19 • PAC-DB-308

Item			Model	FDT140VNAWVH	
Power source				Indoor unit: FDT140VH	Outdoor unit: FDC140VNA-W
Operation data	Nominal cooling capacity (range)		kW	1 Phase, 220 ~ 240V 50Hz / 220V 60Hz 13.6 [5.0(Min.) ~ 14.5(Max.)]	
	Nominal heating capacity (range)		kW	15.5 [4.0(Min.) ~ 16.5(Max.)]	
	Power consumption	Cooling	kW	4.79	
		Heating		4.18	
	Max power consumption			6.40	
	Running current	Cooling	A	21.5 / 22.4	
		Heating		18.5 / 19.4	
	Inrush current, max current			5, 24	
	Power factor	Cooling	%	97	
		Heating		98	
	EER	Cooling		2.84	
	COP	Heating		3.71	
	Sound power level	Cooling	dB(A)	63	
		Heating		64	
	Sound pressure level	Cooling		P-H: 48 H: 42 Me: 39 Lo: 32	
Heating		P-H: 48 H: 41 Me: 38 Lo: 31			
Silent mode sound pressure level			—		
Exterior dimensions (Height x Width x Depth)			mm	Unit: 298 x 840 x 840 Panel: 35 x 950 x 950	845x970x370
Exterior appearance (Munsell color) (RAL color)				Plaster white (S.5Y8.9/0.2) near equivalent (RAL 9003) near equivalent	Stucco white (4.2Y7.5/1.1) near equivalent (RAL 7046) near equivalent
Net weight			kg	Unit: 25 Panel: 5	77
Compressor type & Qty				—	RMT5126SWP3 x 1
Compressor motor (Starting method)			kW	—	Direct line start
Refrigerant oil (Amount, type)			L	—	0.9 (M-MB75)
Refrigerant (Type, amount, pre-charge length)			kg	R32 3.2 in outdoor unit (incl. the amount for the piping of 30m)	
Heat exchanger				Louver fin & inner grooved tubing	M shape fin & inner grooved tubing
Refrigerant control				Electronic expansion valve	
Fan type & Qty				Turbo fan x1	Propeller fan x1
Fan motor (Starting method)			W	140 < Direct line start >	88 < Direct line start >
Air flow	Cooling	m³/min	P-H: 38 H: 29 Me: 26 Lo: 19	75	
	Heating			73	
Available external static pressure			Pa	0	0
Outside air intake				Possible	—
Air filter, Quality / Quantity				Pocket plastic net x1 (Washable)	—
Shock & vibration absorber				Rubber sleeve (for fan motor)	Rubber sleeve (for fan motor & compressor)
Electric heater			W	—	20Crank case heater
Operation control	Remote control			(Option) Wired : RC-EX3A, RC-E5, RCH-E3 Wireless : RCN-T-SAW-E2	
	Room temperature control			Thermostat by electronics	
	Operation display			—	
Safety equipments				Overload protection for fan motor Frost protection thermostat Internal thermostat for fan motor Abnormal discharge temperature protection	
Installation data	Refrigerant piping size (O.D.)	Liquid line	mm	I/U φ 9.52 (3/8") Pipe φ 9.52 (3/8")x0.6 O/U φ 9.52 (3/8")	
		Gas line		φ 15.88 (5/8") Pipe φ 15.88 (5/8")x1.0 φ 15.88 (5/8")	
	Connecting method			Flare piping	Flare piping
	Attached length of piping		m	—	
	Insulation for piping			Necessary (both Liquid & Gas lines)	
	Refrigerant line (one way) length		m	Max.50	
	Vertical height diff. between O/U and I/U		m	Max.50 (Outdoor unit is higher)	
Drain hose				Hose connectable with VP25(CLD-32)	
Drain pump, max lift height			mm	Built-in drain pump, 850	
Recommended breaker size			A	—	
LRA/A _L (Locked rotor ampere)			A	50	
Interconnecting wires		Size x Core number	φ 1.6mmx 3 cores + earth cable / Terminal block (Screw fixing type)		
IP number				IPX0	IP24
Standard accessories				Mounting kit, Drain hose	—
Option parts				Motion sensor : LB-T-SW-E	
Notes (1) The data are measured at the following conditions. The pipe length is 7.5m.					
Operation	Item	Indoor air temperature		Outdoor air temperature	
		DB	WB	DB	WB
		Cooling	27°C	19°C	35°C
Heating		20°C	—	7°C	6°C
					Standards
					[S05151-T1
					[S05151-H1
(2) This air-conditioner is manufactured and tested in conformity with the ISO.					
(3) Sound level indicates the value in an anechoic chamber. During operation these values are somewhat higher due to ambient conditions.					
(4) Select the breaker size according to the own national standard.					
(5) The operation data indicate when the air-conditioner is operated at 230V 50Hz or 220V 60Hz.					

PJF000Z589



Condensing unit
Voltage Code : FZ

WINAJ4517Z-FZ

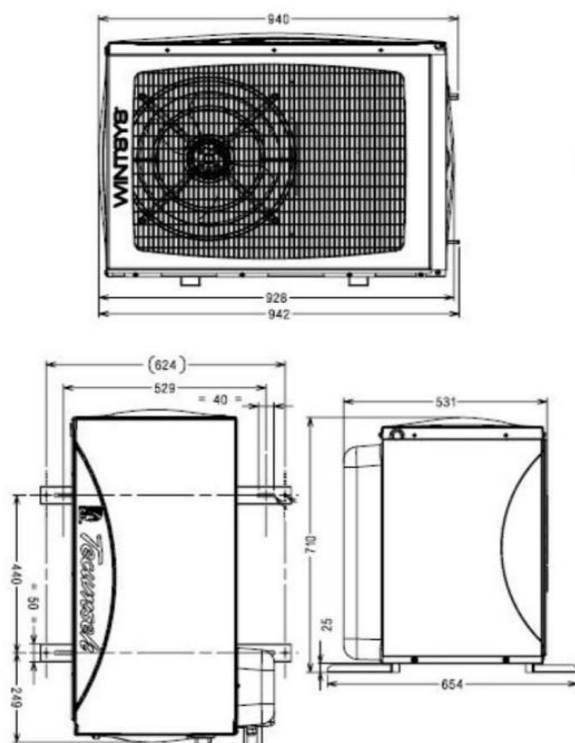
High Temp. Commercial (HP)

220 - 240V 1~ 50 Hz

R452A / R404A / R448A / R449A

WINAJ4517Z-FZ

Conditions	Frequency	Nominal Cooling Capacity		Sound Power ISO3745 / ISO 3743-1
		Watts	BTU/h	
EN13215 / R452A	50 Hz	2190	7470	61 dBA
EN13215 / R404A	50 Hz	2296	7830	61 dBA
EN13215 / R448A	50 Hz	2003	6831	61 dBA
EN13215 / R449A	50 Hz	2004	6835	61 dBA



* EN13215 : T°Ambient 32.0°C / T°Evap. -10.0°C / T°Return gas temp.. 20.0°C
T°Subcooling. 3.0K

Net Weight (Kg)	65.0
Expansion device	Expansion_Valve
Air Flow (m³/h)	1650
Compo Data Sheet	224LT-FZ
Elec Comp Type	CSR
Current (Amp)	
Load Rated Amp	7.6
Max Cont Current	13.2
Lock Rotor Amp	39
Fan	
Speed (rpm)	546
Power (W)	65.0
Diameter (mm)	360
Protection	Overload
IP Level	IP44
Condenser	360/14100
Liquid Receiver	
Capacity (L)	2.35
Maximum Pressure (Bars)	32.0
Suction Line	
Suction Type	Tube / Tube
For Tubing Out Diam	15.9 (5/8")
Suction Connection Type	Brased
Liquid Line	
Liquid Line Type	Tube
For Tubing Out Diam	9.5 (3/8")
Liquid Connecton Type	Brased
Connection Type	TT
Fan Guard	maille < à 8mm

Note : Tecumseh reserves the right to change information contained in this document without notification.

Selection program - V4.6_2020072 - 06/05/2020

For any more advice or support before placing the order please feel free to contact me
01733 7004

