Design Brief

for

Bakery Ventilation Systems

at

Arch 122 Woolam Place
Manchester M3 4JJ

for

Grano Santo Ltd
Arch 122 Woolam Place
Manchester M3 4JJ

by

SWAN Projects
38 Stanway Road
Whitefield
Manchester M45 8FX

1. Bakery Ventilation Systems Description

1.1 Bakery Ventilation System

The ground floor venue will have 2 off all electric baking ovens, so a stainless-steel canopy, complete with a bank of standard baffle type grease filters, at high level over the ovens, with a suitable overhang of minimum 300mm, will capture any baking fume.

The EMA Survey and report/RA for the extract ventilation systems, have indicated a high level of odour control required, so a Multi Filter Unit (MFU) manufactured by Purified Air Ltd, with 2 x standard G4 panel filters, 2 x standard bag filters and 6 x site safe carbon filters, have been designed into the system, as indicated on drawing number C914/1.

The extract fan would be a NFANS CBF/560-120C-43 model high temperature rated with the motor out of the airstream, and with an external pressure availability of 450pa, however, once the final ductwork route has been established/confirmed, the system pressure should be recalculated, if different from the design drawing layout.

The fan should have a high temperature rated sound attenuator in the exhaust duct and before exhaust at the wall louvre.

The fan should have a speed controller. Extract ventilation ductwork, would be manufactured and installed in accordance with the HVCA DW172 specification for commercial kitchens, with sufficient access and cleaning doors to facilitate a full TR-19 internal clean, and with all suitable flange cleats and supports.

The main extract ductwork would be 600mm x 600mm giving an extract velocity of approx. 5m/s.

The exhaust louvre would be 1000 x 1000mm giving an exhaust velocity of approx. 3.5 - 4 m/s.

As the ovens are on wheels, the height of the canopy would be 50mm above the tallest oven, allowing flexibility to move the ovens from under the canopies for cleaning and maintenance.

As no support can be taken from the (listed) arch, the canopy, ductwork and all plant equipment, will be mounted on a bespoke, purpose-built steel support frame, incorporating cantilever arm supports, all secured to the block wall behind the canopies, with the 2 x main legs, down to and secured to the floor.

Attention has been paid to ensure that all access doors are accessible for TR-19 cleans, and the fan is easily accessible for service and maintenance, whilst keeping the bakery floor area completely clear of any equipment, other than the ovens.

2. Extract Air rates calculations

The cooklines comprises:-

1 x Polin 5 deck Oven
1 x UNOX XEBC-10EU-EPRM Combi Oven

The calculations, using Thermal Convection method, produce an extract air volume of 1.841m^3/s which is rounded up to 1.8m^3/s as shown on the calculation sheet.

3.0 EMAQ report and RA

A site survey was carried out on 8th April 2026, and all items on the EMAQ risk assessment form were investigated and assessed.

Bakery Extract Ventilation

Dispersion will be at high level, via a wall mounted exhaust louvre, with an exhaust velocity of approx. 4m/s so scores 15.

Proximity of Receptors was assessed to be between 30 and 100m, receptors are both residential and commercial, it was subsequently scored 5.

Size of Kitchen falls into the small size of kitchen, more than 0 covers, so scores 1.

Cooking type is bread baking only, no frying, so was scored 1.

Total Score is 22 which just falls into the 'high' category of odour control, so odour control equipment, as manufactured by Purified Air Ltd, comprising Panel, Bag and Carbon filters is proposed.

4. Extract Ventilation and Odour Control equipment details

Bakery extract ventilation system

Bakery Extract Fan will be CBF 560/120CV-43 supplied by Northern Fans Ltd. Data sheet enclosed, however system pressure estimated at 450pa, and will be re-calculated once final installation drawing approved.

MFU (Multi Filter Unit) all supplied by Purified Air Ltd.

1 x Purified Air MFU comprising:-

2 x 595mm x 595mm x 45mm Pleated G4 panel filters
2 x 595mm x 595mm x 300mm bag filters
6 x 595mm x 595mm x 195mm Site safe carbon filter cassettes
1 x 630mm dia x 1260mm long sound attenuator

5.0 Recommended service and maintenance

Canopy and Ductwork

Internal clean to TR-19 specification, minimum once per year, monitored and possible increased to twice per year. Grease filters in the canopy should be removed and cleaned daily.

MFU module, containing panel, bag and carbon filters.

The 2 off panel filters should be replaced quarterly. The 2 off bag filters should be replaced quarterly.

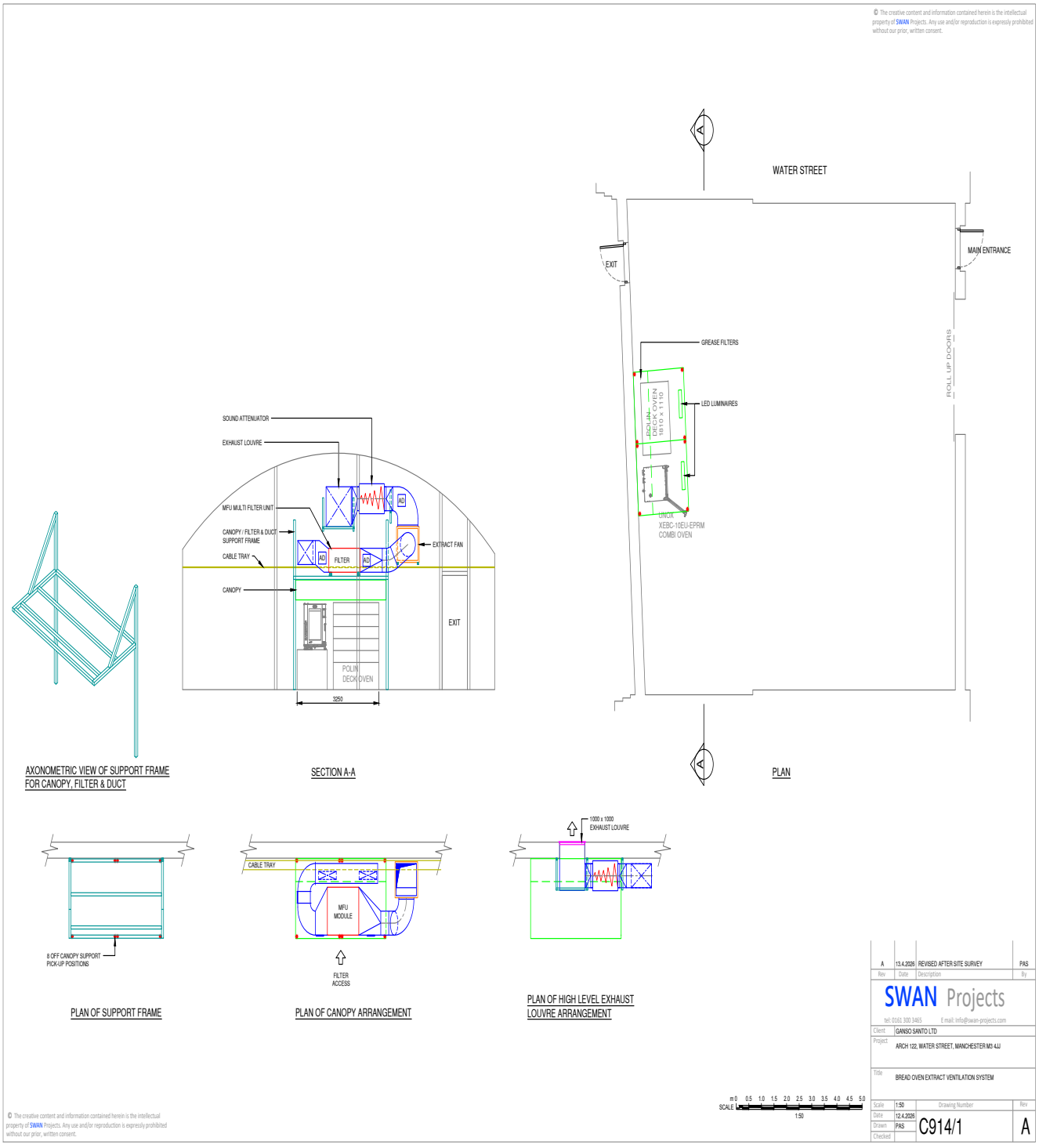
The carbon filters should be checked quarterly and replaced at least annually.

Extract Air Fans

Quarterly check and a full service including a ‘drawn current’ test on the fan motor.

6. Design Drawing

C914/1 Bakery Ventilation Design



APPENDIX

A. Stratos 207. Operating Manual

2.1 TECHNICAL DESCRIPTION

General information

Oven with fixed chambers: with completely independent power, heated by electric heating elements installed in the ceiling and in the soleplate of each baking chamber.
These heating elements transmit the heat to the product to be baked which is placed directly on the baking decks or in the pans.

The oven is composed of:

Baking chamber: made of suitably reinforced buckle plate or asbestos-free fibrous cement. They are fitted with doors in heat-strengthened glass; as an optional, an insulated steel door with window in heat-strengthened glass is available; the front is in stainless steel.
The electric heating elements placed in the ceiling and in the soleplate inside the baking chamber are oversize for unlimited life.
The cladding is made of painted steel sheet (stainless steel for model 2STL) designed to contain the insulation required to keep exterior temperatures within the limits set by standards and also guarantee minimum heat dissipation.
They are controlled electronically by means of a push-button panel (one for every chamber) with a 24 V power supply.
Illumination consists of a 12 V. dichroic light bulb.
The whole equipment is supplied with all the necessary pre-requisites to ensure maximum safety according to current standards.

Prover: entirely made of stainless steel with heating and humidity control.
It is always coupled with the lower element.

Faired base: in stainless steel and fitted with doors.
It is also available on wheels.
It is always coupled with the lower element.

Base: made of stainless steel always combined with the lower element.
Available on feet or on wheels.

Pan rack: stainless steel, mounted inside the bases.

Lower element: for insulation of the lower chamber.

Upper element: for insulation of the upper chamber.

Hood without exhaust fan: consisting of a stainless steel front panel combined with the top but without the vapor exaust fan.

Property of Ing. POLIN e C. S.p.a. even partial reproduction without authorization is prohibited

Pan box: in stainless steel, assembled underneath the first chamber, already incorporates the lower element.

Hood with exhaust fan: includes upper insulation for the baking chambers and a suitable size exhaust fan that aspirates baking vapors into the front hood on the oven, including the vapors expelled by the vapor exhaust valve on the each chamber.
It consequently permits a single connection to the room's smokestack.

Wheels: (optional) rear wheels are fixed whereas front wheels are pivoting and equipped with a brake.
Only for faired cell and base.

Baking vapor condenser: (optional).
Connects to the oven's vapor exhaust fan and functions to condense the vapor generated during the baking process.
Functions with air.

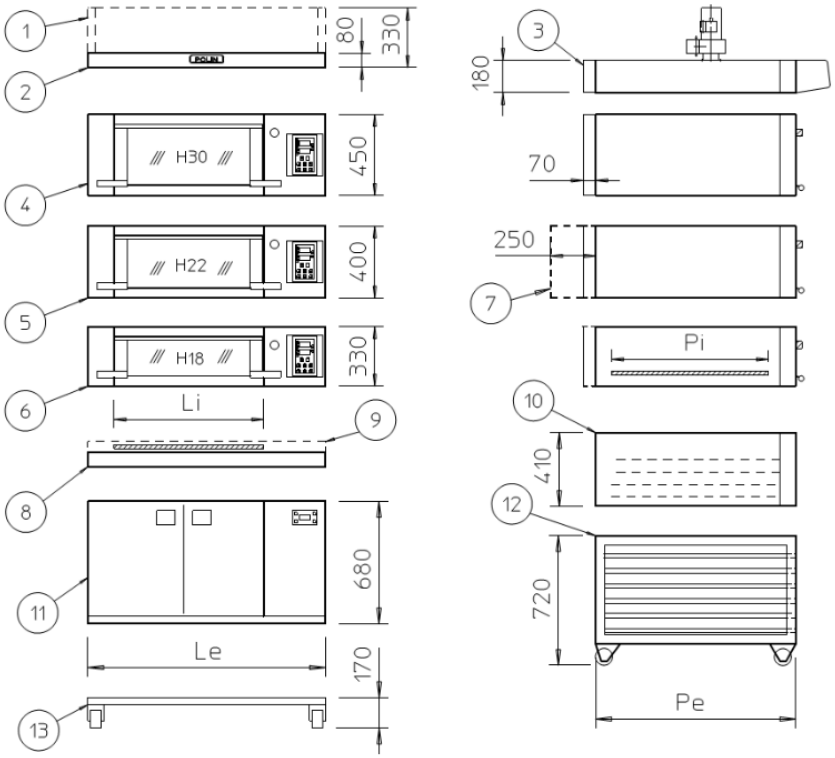
Steam generator: see the steam generator instruction booklet.

WARNING
For instructions on the product control panels and relative accessories, which are not included and/or different from those described in this manual, refer to the specific manuals provided.

Property of Ing. POLIN e C. S.p.a. even partial reproduction without authorization is prohibited

2.2 TECHNICAL DATA AND CONNECTIONS TO THE OVEN

2.2.1 Overall and working dimensions



1	Steam condenser	8	Lower element H8
2	Upper element	9	Lower element with removible plate H12
3	Hood with extractor fan	10	Pan box
4	Chamber H 30	11	Leavening cell or faired base
5	Chamber H 22	12	Simple base with wheels or feet
6	Chamber H 18	13	Wheels kit for faired cell or base
7	Steam generator		

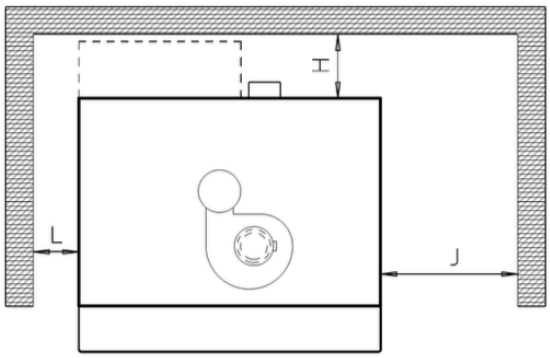
	A	B	L	P	C	D	E	F
2STL 6040	980	1110	620	840	320	280	190	180
2STA 4060	1320	910	830	640	250			
3STA 4060	1730	910	1240	640				
3STA 4676	1910	1070	1420	800				
4ST 4060	1320	1510	830	1240				
6ST 4060	1730	1510	1240	1240		330	280	250

Property of Ing. POLIN e C. S.p.a. even partial reproduction without authorization is prohibited

2.2.2 Minimum distances to comply with

WARNING

Provide at least 100 mm of free space on the right side of the oven to allow correct ventilation of the electrical switchboard.



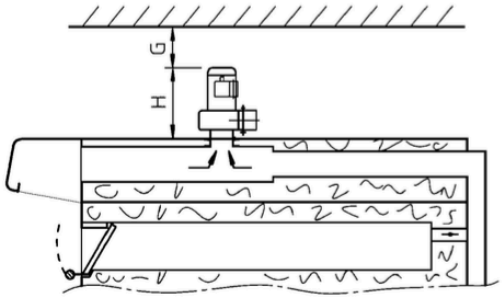
MINIMUM PERIMETER DISTANCE

	H	J	L
Oven without steam generators	100	100	80
Oven with steam generators	270	100	80
Oven 2STL 6040 with steam generators	340	100	80

MINIMUM PERIMETER DISTANCE FOR MAINTENANCE

	H	J	L
Oven without steam generators	100	600	300
Oven with steam generators	600	600	300

MINIMUM TOP DISTANCE FOR HOOD WITH EXTRACTOR FAN (OPTIONAL)

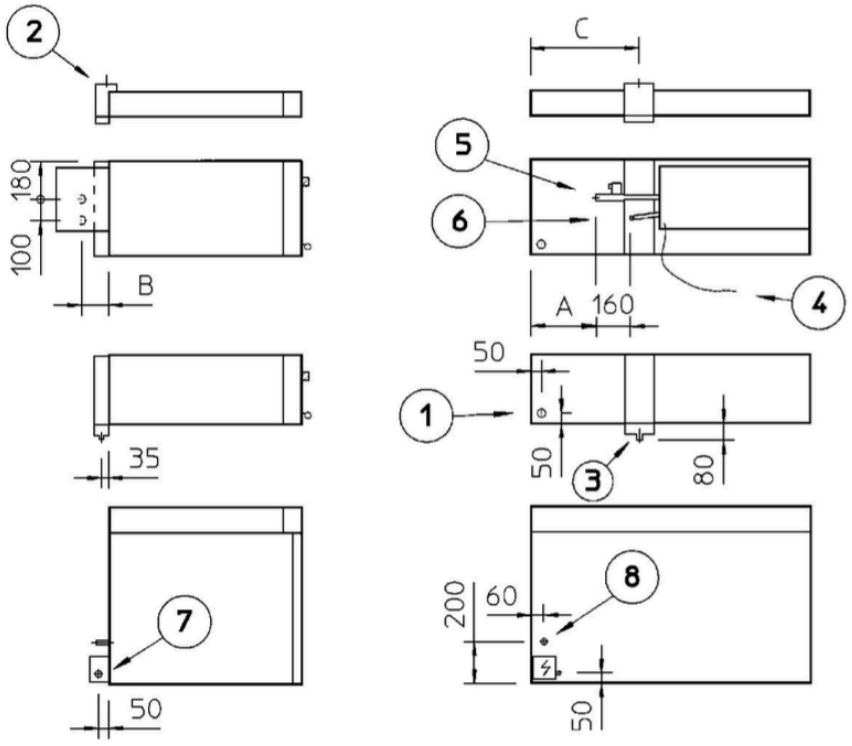


	H	G
2 - 3 - 4ST	280	100
6ST	330	130

Property of Ing. POLIN e C. S.p.a. even partial reproduction without authorization is prohibited

2.2.3 Oven diagram

SIDE VIEW **REAR VIEW**



POS.	DESIGNATION	PIPE Ø
1	Chamber electrical power line input	PG 21
2	Steam exhaust pipe for upper element	100 mm
3	Steam exaust pipe water trap	¾" Gas
4	Steam generator electrical power line cable L = 3 m	
5	Steam generator cold water piping arrival	½" Gas
6	Non-vaporized water discharge	½" Gas
7	Cell electrical power line input	PG 11
8	Cell cold water piping arrival	⅜" Gas

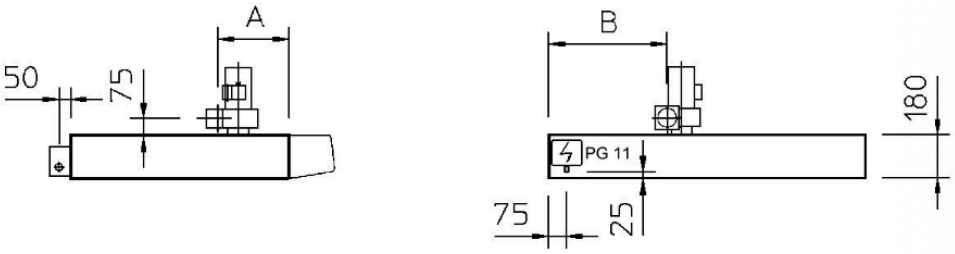
	A	B	C
2STL 6040	-30	200	400
2STA 4060	310	130	510
3STA 4060	590	130	790
3STA 4676	680	130	880
4ST 4060	310	130	510
6ST 4060	590	130	790

Property of Ing. POLIN e C. S.p.a. even partial reproduction without authorization is prohibited

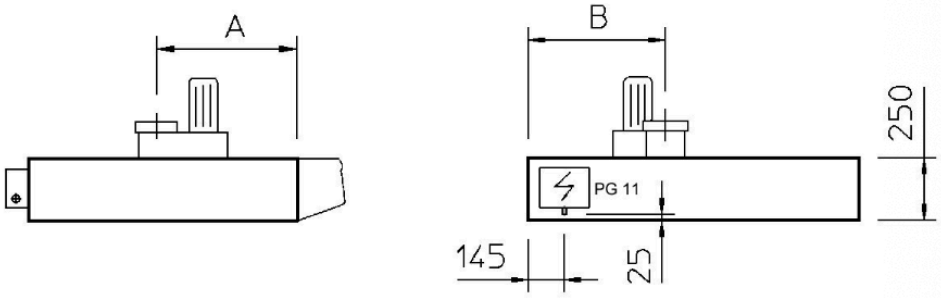
HOOD WITH EXTRACTOR FAN

SIDE VIEW **REAR VIEW**

Hood for ovens 2STA - 2STL - 3STA - 4ST



Hood for oven 6ST 4060



	PIPE Ø	A	B
2STL 6040	80	385	395
2STA 4060	80	350	380
3STA 4060	80	350	460
3STA 4676	80	350	550
4ST 4060	80	350	380
6ST 4060	150	500	670

Property of Ing. POLIN e C. S.p.a. even partial reproduction without authorization is prohibited

2.2.4 Technical data tables

COOKING CHAMBER TECHNICAL DATA (EACH)							
DESCRIPTION	**u.m.**	**2STL 6040**	**2STA 4060**	**3STA 4060**	**3STA 4676**	**4ST 4060**	**6ST 4060**
Weight	kg	120	130	160	180	180	230
Baking surface area	m²	0,52	0,53	0,79	1,14	1,03	1,54
N° pans 40x60 (pans 46x76 in model 3STA 4676)	nr	2	2	3	3	4	6
N° pizzas Ø 30 - maximum capacity	nr	5	5	8	10	11	16
Maximum hourly production with standard power	kg	6,0	6,0	9,5	13,5	12,5	18,5
Vapor exhaust temperature	° C	100	100	100	100	100	100
Installed electric power standard (400 V)	kW	4,2	4,4	6,5	9,2	7,2	8,5
Temperature rise gradient empty oven (with standard power)	° C/min.	6	6	6	6	6	6
Hourly consumption (approximate) (*)	kWh	2,5	2,6	3,9	5,5	4,3	5,1
Super Power installed power at 400 V (optional)	kW	7,3	7,4	11,0	16,2	13,1	15,0
(*) = The approximate hourly consumption is calculated taking into consideration the cooking of generic bread and pastry products with an hourly production of 6 kg per m². This value varies depending on the type of product, the dough and the working method used.							

LEAVENING CELL TECHNICAL DATA (OPTIONAL)							
DESCRIPTION	**u.m.**	**2STL 6040**	**2STA 4060**	**3STA 4060**	**3STA 4676**	**4ST 4060**	**6ST 4060**
Weight	kg	80	80	90	95	90	100
N. pans 40x60	nr	16	24	24	24	24	24
Installed electric power standard (230 V)	kW	1,7	1,7	1,7	1,7	1,7	1,7
Hourly consumption (approximate)	kWh	0,9	0,9	0,9	0,9	0,9	0,9

HOOD WITH EXTRACTOR FAN TECHNICAL DATA (OPTIONAL)							
DESCRIPTION	**u.m.**	**2STL 6040**	**2STA 4060**	**3STA 4060**	**3STA 4676**	**4ST 4060**	**6ST 4060**
Weight	kg	60	60	70	80	80	100
Motor power	kW	0,11	0,11	0,11	0,11	0,11	0,25
Delivery rate	m³/h	200	200	200	200	200	470
Pressure	Pa	205	205	205	205	205	120
Noise	db (A)	60	60	60	60	60	58

HOOD STEAM CONDENSER (OPTIONAL)							
DESCRIPTION	**u.m.**	**2STL 6040**	**2STA 4060**	**3STA 4060**	**3STA 4676**	**4ST 4060**	**6ST 4060**
Weight	kg	50	50	50	50	50	50
Motor power	kW	0,36	0,36	0,36	0,36	0,36	0,36
Delivery rate	m³/h	950	950	950	950	950	950
Pressure	Pa	150	150	150	150	150	150
Noise	db (A)	66	66	66	66	66	66

For the technical data of the steam generator (optional), see the attached user and maintenance handbook of the steam generator.

WEIGHT OF OTHER ACCESSORIES							
DESCRIPTION	**u.m.**	**2STL 6040**	**2STA 4060**	**3STA 4060**	**3STA 4676**	**4ST 4060**	**6ST 4060**
Lower element	kg	30	30	40	50	50	65
Upper element	kg	30	30	40	50	50	65
Fibre-cement – refractory bed plate (*)	kg	16	16	24	34	31	46
Reinforced-concrete bed plate (*)	kg	24	24	36	52	47	70
Steam generator (*)	kg	55	50	50	50	50	50
(*) = each chamber							

Property of Ing. POLIN e C. S.p.a. even partial reproduction without authorization is prohibited

B. XEBC-10EU-EPRM Oven Specifications

XEBC-10EU-EPRM

Project
Item
Quantity
Date

Model
BAKERTOP MIND.Maps™ PLUS COUNTERTOP

Energy efficiency **17.5 kWh/day - 0 kg CO_2/day***

*More details on the last page.

Combi oven	Electric
10 trays 600x400	Hinge on the left side
9.5" Touch control panel	
Voltage: 380-415V 3N~ / 220-240V 3~	



Description

Technologically advanced combi oven for fresh or frozen baking processes and for gastronomy cooking processes (dehydrating, steaming, low temperature baking, sous vide cooking, roasting, grilling, pan frying, regeneration and plate regeneration) thanks to Unox Intensive Cooking and Intelligence Performance technologies which guarantee perfect results and repeatability for any load size. Automatic management of cooking processes (CHEFUNOX) for perfect results even without a trained staff.

Standard cooking features

Programs

- **1000+** Programs
- **CHEFUNOX:** choose something to cook from the library and the oven will automatically set all the parameters
- **MULTI.TIME:** manages up to 10 cooking processes at the same time
- **MISE.EN.PLACE:** synchronises the insertion of pans so that all the dishes are ready at the same time
- **MIND.Maps™:** draw the cooking processes directly on the display
- **READY.BAKE:** ready to use settings with infinite time for a quick start

Manual cooking

- **Temperature:** 30 °C – 260 °C
- Up to 9 cooking steps
- **CLIMA.Control:** humidity or dry air set by 10%
- Delta T cooking with core probe
- MULTI.Point core probe with 4 measuring points
- SOUS-VIDE core probe with 2 measuring points (optional accessory)

Advanced and automatic cooking features

Unox Intelligent Performance

- **ADAPTIVE.Cooking™:** automatically regulates the cooking parameters to ensure repeatable results
- **CLIMALUX™:** total control of the humidity in the cooking chamber
- **SMART.Preheating:** automatically sets the preheating temperature and duration
- **AUTO.Soft:** manages the heat rise to make it more delicate
- **SENSE.Klean:** estimates how dirty the oven is and suggests the appropriate automatic washing cycle

Unox Intensive Cooking

- **DRY.Maxi™:** rapidly extracts the humidity from the cooking chamber
- **STEAM.Maxi™:** produces saturated steam
- **AIR.Maxi™:** manage fans auto-reverse and pulse function
- **PRESSURE.Steam:** increases the steam saturation and temperature

XEBC-10EU-EPRM

Key features

- **ROTOR.Klean™:** automatic washing system
- Automatic special washing behind the fan guard
- Cooking chamber in high-resistance AISI 316L stainless steel with rounded edges
- Triple glass
- Cooking chamber lighting through LED lights embedded in the door
- Tray supports with anti-tip system
- Drip collection system Integrated in the door which works even when the door is open
- 4-speed fan system and high-performance heating elements
- Integrated DET&Rinse™ detergent container
- Integrated Wi-Fi
- **Wi-Fi data:** download/upload HACCP data
- **Wi-Fi data:** download/upload programs

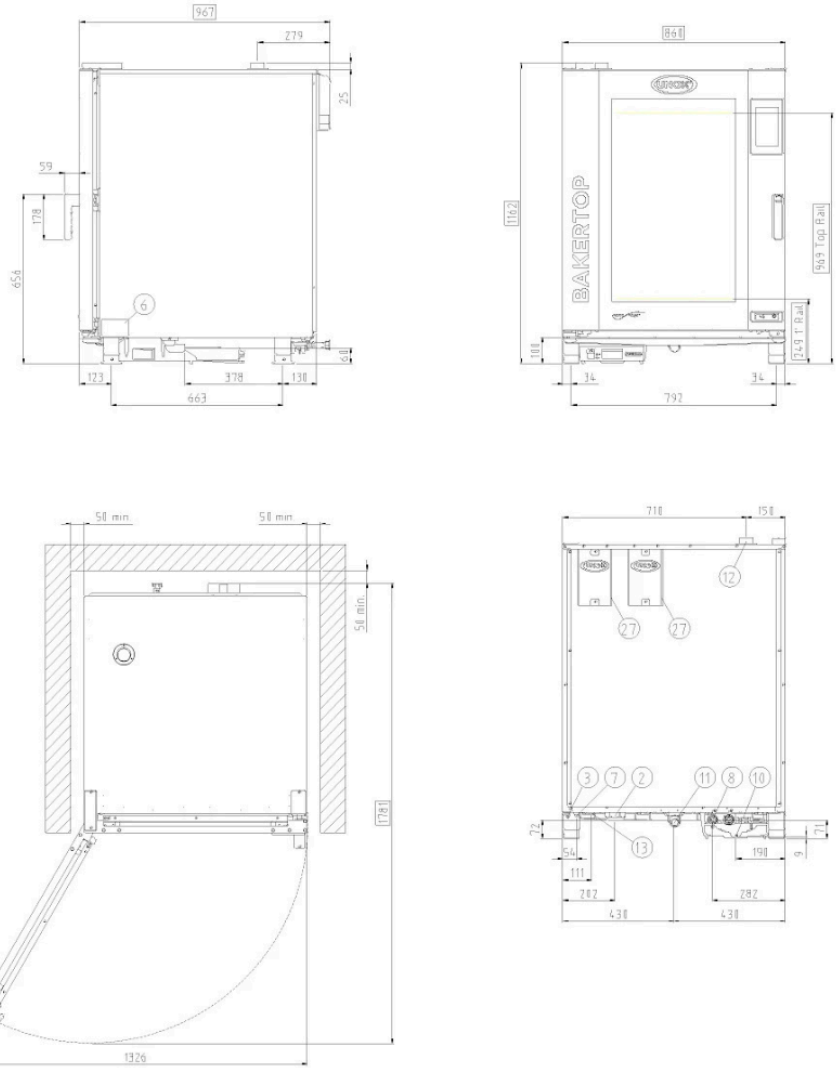
App and web services

- **Data Driven Cooking app & webapp:** check and monitor in real-time the operating conditions of your ovens, create and share new recipes. Artificial intelligence transforms consumption data into useful information and allows you to increase daily profits
- **Top Training app:** download the Unox Top.Training app and learn step by step all the secrets of your new oven's control panel

Accessories

- **Ventless hood:** steam condensing hood
- **Waterless hood:** filters odours and absorbs latent heat coming out of the cooking chamber without using water
- **Activated Carbon filter for waterless hoods:**
- **STEAM.Boost:** high capacity heat storage system that allows your oven to produce, if required, 50% more steam during the crucial minutes of the baking process
- **SMART.Drain:** its functioning is based on a special two-way valve that collects any fat and cooking liquids created during the cooking program and drains them into a tank
- **DECKTOP:** traditional baking on stone, convection baking and combi cooking
- **LIEVOX:** Proofer equipped with sensors capable to control and intervene automatically on the leavening process
- **Neutral cabinet:** recommended solution to optimize your kitchen layout and always have everything in the right place
- **Stand:** the multifunctional support ideal for storing trays safely and placing your oven at the perfect height to work
- QUICK.Load and trolley system
- **Baking Essentials:** special trays
- **DET&Rinse™ ECO:** eco formula for daily cleaning and the utmost respect for the environment. Ideal for mild level of dirt.
- **DET&Rinse™ ULTRAPLUS:** cleaning and rinse agents to combine maximum cleanliness with minimum consumption and long life for your oven
- **PURE / PURE.XL:** resin-based filtering system that eliminates from the water all substances that contribute to the formation of limescale inside the oven cooking chamber
- **PURE-RO:** Reverse osmosis system that eliminates Chlorides and limescale from water
- Ethernet connection kit

XEBC-10EU-EPRM



Dimensions and weight	
Width	860 mm
Depth	967 mm
Height	1162 mm
Net weight	148 kg
Tray pitch	80 mm

Connection positions	
2	Terminal board power supply
3	Unipotential terminal
6	Technical data plate
7	Safety thermostat
8	3/4" female NPT water inlet
10	Rotor.KLEAN™ inlet
11	Chamber drain pipe
12	Hot fumes exhaust chimney
13	Accessories connection
27	Cooling air outlet

XEBC-10EU-EPRM

Electrical power supply

OPTION A	
Voltage	380-415 V
Phase	~3PH+N+PE
Frequency	50 / 60 Hz
Total power	21.3 kW
Max Amp draw	34 A
Required breaker size	40 A
Power cable requirements*	5G x 6 mm^2
Plug	X | ✓
OPTION B	
Voltage	220-240 V**
Phase	~3PH+PE
Frequency	50 / 60 Hz
Total power	21.3 kW
Max Amp draw	55 A
Required breaker size	63 A
Power cable requirements*	4G x 10 mm^2
Plug	X | ✓
****Electric connection kit**	
Item	XUC128
Voltage	220-240 V
Phase	~3PH+PE

*Recommended size - observe local ordinance.

Energy efficiency

Consumption	17.5	kWh/day
CO_2 emission	0	CO_2/day**

**The estimate includes only direct emissions produced by the oven. Indirect emissions can be reduced to zero by choosing to purchase energy from renewable sources.

Estimate based on daily use of the oven (300 days/year):

8 half loads of croissant (loaded at 50%).

Estimated assuming the following weekly washing programs (42 weeks/year):

1 short wash per week.

Installation requirements

Unox products must be installed in facilities where all the systems (gas, electric, hydraulic, ventilations, aerations, etc.) comply with the current national standards. Combustion analysis must be performed in case of gas ovens.

Register to DDC Service to access data and product specifications.
www.ddc.unox.com

XEBC-10EU-EPRM

Water Supply

USING A WATER SUPPLY THAT DOES NOT MEET UNOX'S MINIMUM WATER QUALITY STANDARDS WILL VOID ANY WARRANTY.
It is the responsibility of the purchaser to ensure that the incoming water supply is compliant with the listed specifications through adequate treatment measures. One water tap per oven is required.

Line pressure:	Drinking water inlet: 3/4" NPT, line pressure: 1.5 to 6 Bar; 22 to 87 psi (2 Bar; 29 psi recommended)
Inflow water specifications	
Free chlorine	≤ 0.5 ppm
Chloramine	≤ 0.1 ppm
pH	7 - 8.5
Electrical conductivity	≤ 1000 µS/cm
Total hardness	≤ 30° dH
Chlorides	≤ 120 ppm
Steam circuit: inflow water specifications	
Total hardness	≤ 8 °dH*
Chlorides	≤ 25 ppm

*This value refers to daily steam cooking of 1-2 hours. In any case, if with a total hardness ≤ 8°dH there is still production of limescale, it is mandatory to treat the water in order to avoid limescale production. Unox recommends water treatment systems based on ion exchange resins. Water treatment systems based on polyphosphate are not allowed.

Water drain

Properties	Pvc drain (or similar according to market HACCP requirements) 40 mm positioned on the floor and behind the column

Only one drain is required per column solution

Register to DDC Service to access data and product specifications.
www.ddc.unox.com

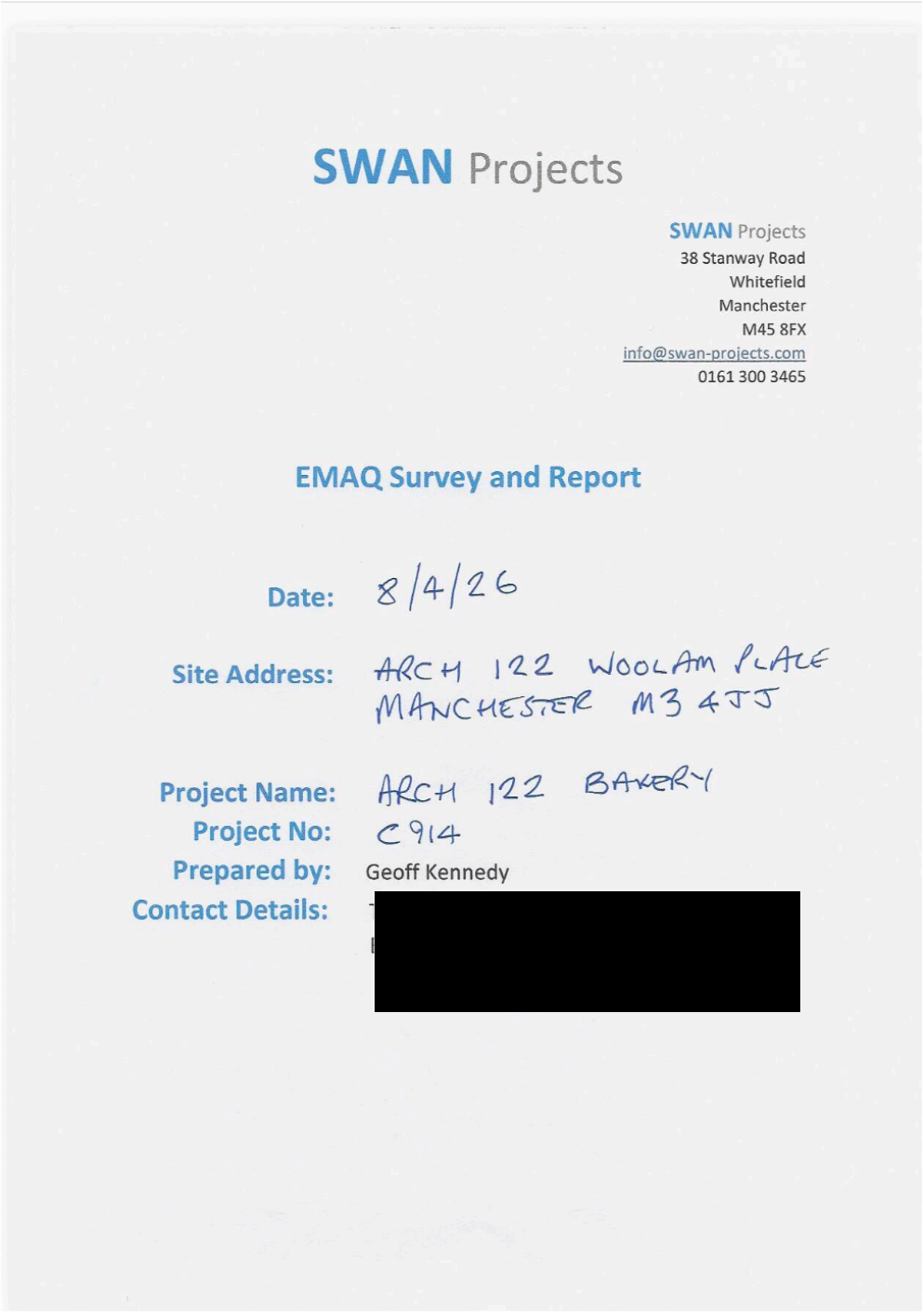
C. Bakery oven canopy flow rate – thermal.

Bakery - extract flow rate - thermal convection method (BESA DW172)

Large canopy

No	Description	size	Power	Area	Coefficient	Flow Rate m^3/s
11	Polin deck oven 5 deck	1.81m x 1.11m	electric	$2.01m^2$	0.5	1.005
10	Mono Oven	1.87m x 0.84m	electric	$1.571m^2$	0.3	0.4713
		theoretical extract volume required				1.4763
		canopy factor - wall open both ends				x1.25
		specific extract flow rate required				**1.841**

D. EMAQ report 080426



SWAN Projects

SWAN Projects
38 Stanway Road
Whitefield
Manchester
M45 8FX
info@swan-projects.com
0161 300 3465

EMAQ Survey and Report

Date: 8/4/26

Site Address: ARCH 122 WOOLAM PLACE MANCHESTER M3 4JJ

Project Name: ARCH 122 BAKERY

Project No: C914

Prepared by: Geoff Kennedy

Contact Details: [redacted]

IMPACT RISK	ODOUR CONTROL REQUIREMENT	SIGNIFICANCE SCORE
Low to Medium	Low level Odour Control	Less than 20
High	High Level Odour Control	20 to 35
Very High	Very High Level Odour Control	More than 35
Based on the sum of contributions from dispersion, proximity of receptors, size of kitchen and type		

22

CRITERIA		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 below 10 m/s
	Moderate	10	Discharging 1m above eaves at 10-15 m/s
	Good	5	Discharging 1m above ridge at 15 m/s
Proximity of Receptor	Close	10	Closest sensitive receptor between 20m from kitchen discharge.
	Medium	5	Closest sensitive receptor between 20 and 100m from kitchen discharge.
	Far	1	Closest sensitive receptor more than 100m from kitchen discharge.
Size of Kitchen	Large	5	More than 100 covers or large sized take away.
	Medium	3	Between 30 and 100 covers or medium sized take away.
	Small	1	Less than 30 covers or small take away.
Cooking type (odour and grease loading)	Very High	10	Pub (high level of fried food), fried chicken, burgers or fish & chips. *Turkish, Middle Eastern or any other premises cooking with solid fuel*
	High	7	Vietnamese, Thai, Indian, *Japanese, Chinese, steakhouse.*
	Medium	4	Cantonese, *Italian, French, Pizza (gas fired)*
	Low	1	Most pubs *(no fried food, mainly reheating and sandwiches etc.), Tea rooms.*

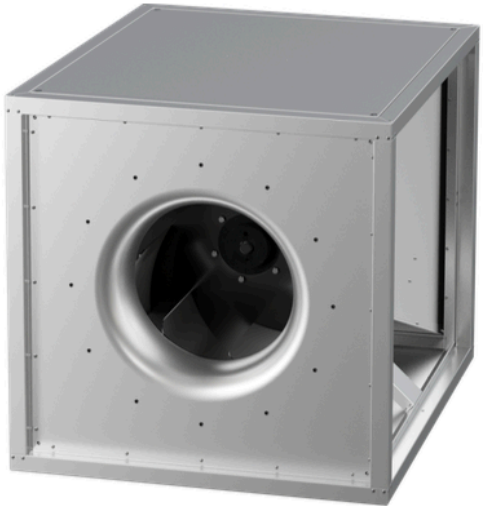
Risk	Score
Dispersions	15
Proximity Of Receptors	5
Size Of Kitchen	1
Cooking Type	1
TOTAL SCORE	22

E. Ventilation equipment data.

CBF 560/120C-43

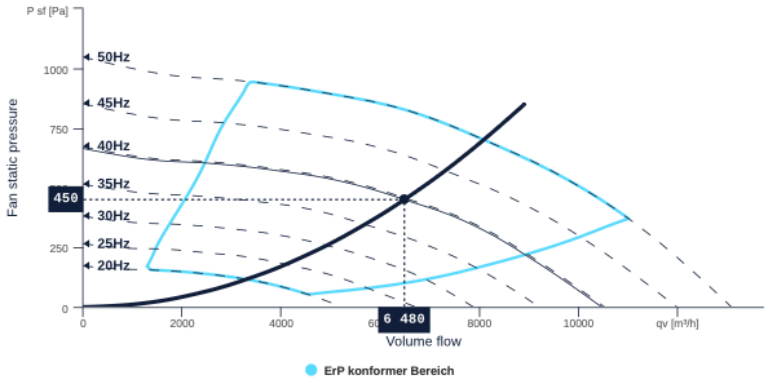
157587

- Backward curved centrifugal impeller
- Removable side walls, variable discharge direction
- Sheet steel housing double-walled, 30 mm mineral wool
- IE3 motor outside the airflow, frequency controllable
- Conveyed medium temperature up to 120 °C in continuous operation
- Housing bottom designed with integrated drain



FAN CURVES

Name	Value	Unit
Volume flow	6480	m³/h
Pressure	450	Pa



CBF 560/120C-43

157587

TECHNICAL SPECIFICATIONS

Name	Value	Unit	Formula symbol
Volume flow	6480	m³/h	qv_{calc}
Pressure	450	Pa	psf_{calc}
Fan pressure	455	Pa	pf
Fan static pressure	450	Pa	psf
Current consumption Motor	3.6	A	Ie
Current consumption Electric	2	A	Ied
Electrical power consumption	1394	W	P_{eK}
Electrical power consumption	1472	W	P_{edK}
Frequency	39	Hz	frq
Rotation speed	1140	1/min	N
Total static efficiency	58	%	etaFaPeK
Total speed controlled static efficiency	55	%	etaFaPedK
Total efficiency	58	%	etatPeK
Total speed controlled efficiency	55	%	etatPedK
SFP (entire device)	774	W/(m³/s)	sfp_{device}
Sound power level inlet	85	dB(A)	LwA5
Sound power level outlet	87	dB(A)	LwA6
Sound power level housing radiation	80	dB(A)	LwA2

SOUND DATA

Sound power	mid-frequency tape										Unit	Formula symbol
	∑	63	125	250	500	1000	2000	4000	8000	16000		
suction	86	46	75	72	85	74	74	68	62	55	dB(A)	LwA5
blowout	88	45	67	71	86	78	74	69	62	52	dB(A)	LwA6
Casing break out	81	42	62	68	81	64	57	51	45	53	dB(A)	LwA2

SOUND PRESSURE LEVEL CALCULATOR

Name	Value	Unit
Enveloping surface	Halphsphere	
Distance	3	m

Sound pressure	NR	mid-frequency tape										Unit	Formula symbol
		∑	63	125	250	500	1000	2000	4000	8000	16000		
suction	67	68	28	58	55	67	57	56	50	44	37	dB(A)	LwA5
blowout	69	70	28	50	54	69	61	57	52	44	35	dB(A)	LwA6
Casing break out	63	63	25	44	50	63	47	40	34	27	36	dB(A)	LwA2

CBF 560/120C-43

157587

GENERAL DATA

Name	Value	Unit	Formula symbol
Labeling	CE, UKCA		
Duct size	-		WxH_{duct}
Pipe connection size (DN)	DN630		DN
Rated voltage (entire device)	400	v	U_{rated}
Phases (entire device)	3~		phase
Electrical protection (entire device)	6 A		fuse
Housing material	Galvanized steel		mat_{casing}
Impeller material	Coated steel		$mat_{impeller}$
Weight	127	kg	m
Nominal air flow rate, nominal point m³/h	7434	CmH	q_{Vnom}
Nominal external pressure, static	725.2	Pa	$p_{s,nom}$
Fan type	Radial		Fan_{type}
Category / Installation situation	A		cat

ERP DATA (LOT 6)

Name	Value	Unit	Formula symbol
Nominal air flow rate, nominal point m³/s	2.07	CmS	$q_{v,nom}$
Actual electrical input power, nominal point	2.52	kw	$P_{e,nom}$
Face velocity, nominal point	3.5	mps	v_{nom}
Nominal external pressure, static	725.2	Pa	$p_{s,nom}$
supply air fan static efficiency, nominal point	63.4	p	$\eta_{es,SUP}$
Highest external air leakage rate	0.03	p	
Enclosure sound level, nominal point	79	db	L_{WA2}
Rating	Product is compliant 2018		

MAXIMAL DATA

Name	Value	Unit	Formula symbol
Max. power consumption (device)	2661	w	$P_{ed,\ max}$
Max. operating current (device)	5	A	$I_{ed,\ max}$
Max. speed	1470	rpm	n_{max}
Max. stat. efficiency	55.9	p	η_{es}
Max. fan efficiency	56.6	p	η_{e}
Max. flowrate	13060	CmH	$q_{v,\ max}$
Max. stat pressure	1040	Pa	$p_{sf,\ max}$
Max. medium temperature	120	°C	$T_{m,\ max}$
Max. environment temperature	60	°C	$T_{amb,\ max}$
Min. environment temperature	-20	°C	$T_{amb,\ min}$

CBF 560/120C-43

157587

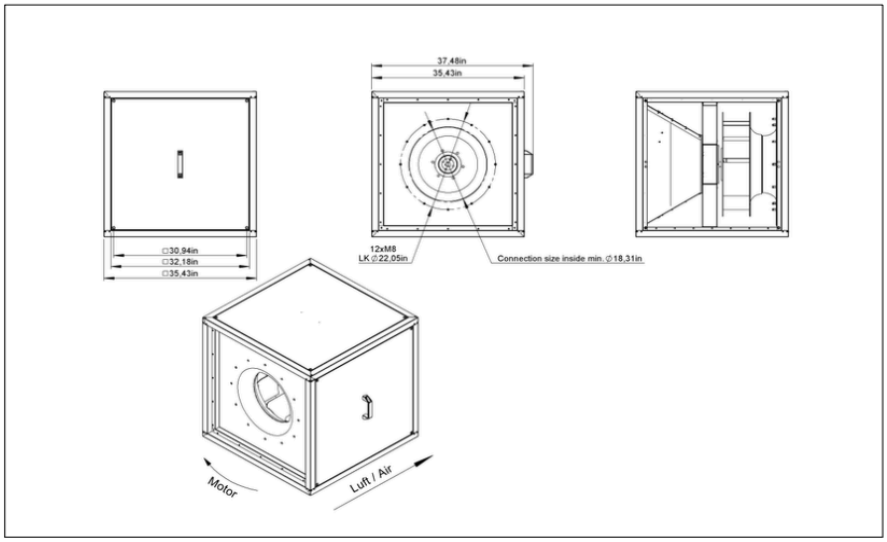
MOTOR DATA

Name	Value		Unit	Formula symbol
	50 Hz	60 Hz		
Rated frequency (device)		50		f
Motor type		AC 3~		phase
Control type		frequency-controlled		$ctrl_{type}$
Installation type		IRM (In)		install
Rotation direction		right		rotation
Isolation class		ISO F		ISO_{class}
Protection class		IP55		IP_{motor}
Is pole-changeable		No		polexch
Type of power supply		AC 3~		$pwrsup_{motor}$
Number of poles (1)		4.000000		$num\ poles_{w1}$
Connection	Δ			$wiring_{w1}$
Connection (wiring 2)	Y			$wiring_{w2}$
Rated voltage	230		v	$U_{rated,\ f1}$
Rated voltage (wiring 2)	400		v	$U_{rated,\ f2}$
Rated current	8.3		A	$I_{rated,\ f1}$
Rated current (wiring 2)	4.8		A	$I_{rated,\ f2}$
Nominal power	2200		w	P_a
Nominal power (wiring 2)	2200		w	$P_{out,\ f2}$
Speed	1447		rpm	n_{f1}
Speed (wiring 2)	1447		rpm	n_{f2}
Efficiency	86.7		p	$\eta_{m,\ f1}$
Efficiency (wiring 2)	86.7		p	$\eta_{m,\ f2}$
Efficiency class	IE3			IE_{motor}
Min. temperature	-30		°C	$T_{motor,\ min}$
Cos Phi	0.790000	0.000000		cos φ
UL-Certification motor		None		UL_{cert}

CBF 560/120C-43

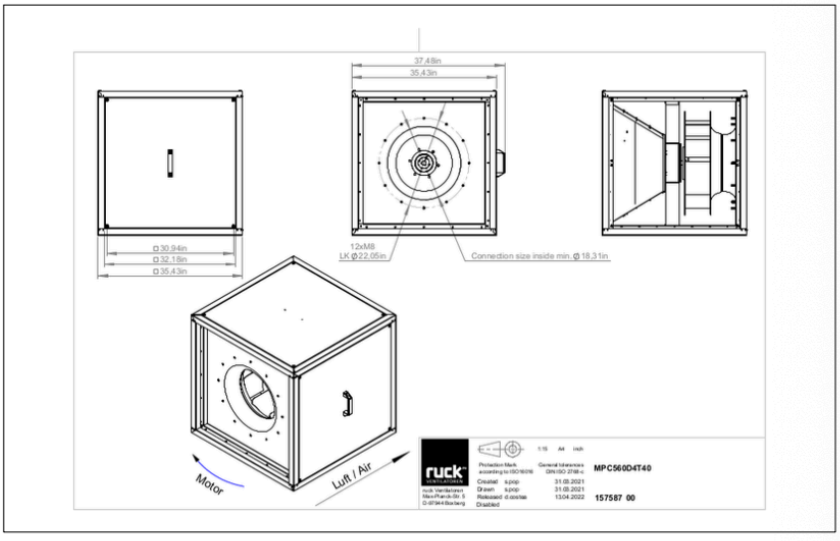
157587

CIRCUIT DIAGRAMS / DIMENSIONAL DRAWINGS

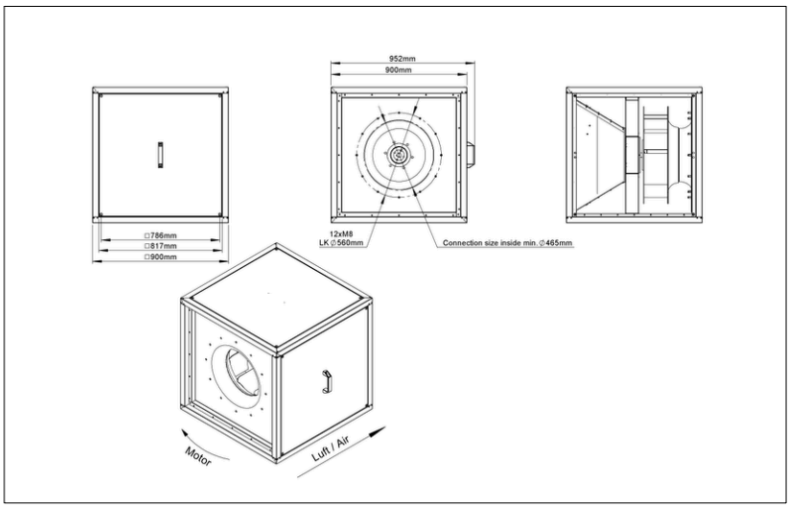


CBF 560/120C-43

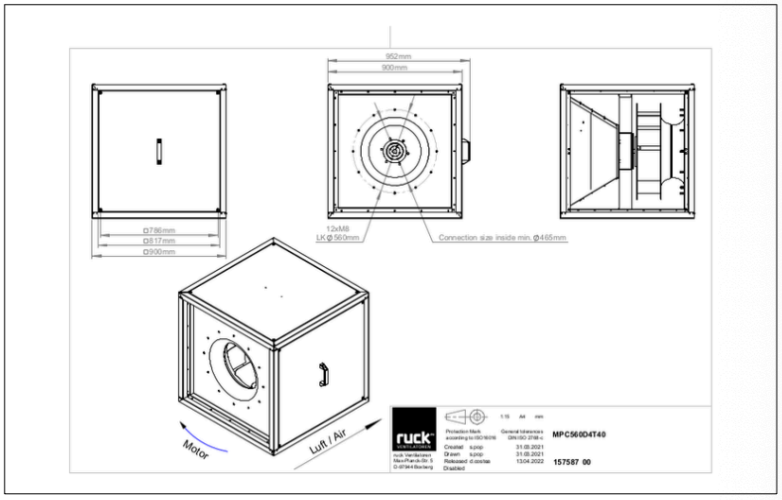
157587



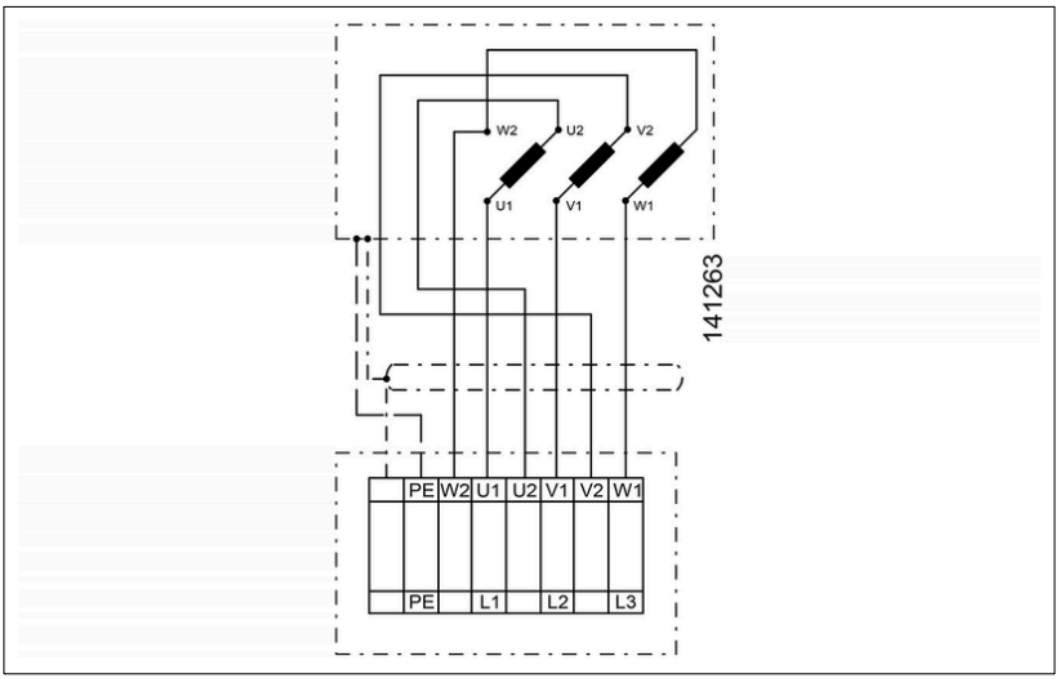
CBF 560/120C-43
157587



CBF 560/120C-43
157587



CBF 560/120C-43
157587



F. Purified Air Sitesafe Carbon Filter Specification

Sitesafe Carbon Filters

We manufacture Sitesafe carbon filters, these innovative carbon units measure 594x196x597mm, three combining to 594x594x597mm, directly replacing our original carbon blocks whilst providing exactly the same filter performance as an existing full size cell.

Their advantage is that they only weigh 18kg each against the 68kg of our original blocks. This takes the strain out of fitting and servicing, allowing only one engineer to complete the task where two had been previously required.

Our Sitesafe carbon filters use panels of activated carbon to remove the malodourous gases within the commercial kitchen extract duct through the process of chemical adsorption. By installing our ESP units before our Sitesafe filters, the carbon life span is greatly increased, allowing it to nullify malodours at optimum efficiency for much longer.

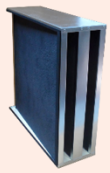
Will require two people plus lifting gear to carry and install.

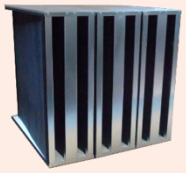


Carbon PA242424

Size	594x594x597
Gross Weight	68.20kg
Carbon Weight	50.00kg
Rated Airflow	3600m³/hr*
Pressure Drop	120Pa

Safe for one person to carry. No special lifting gear required.





Sitesafe PA240824

Size	594x196x597
Gross Weight	17.95kg
Carbon Weight	16.6kg
Rated Airflow	1200m³/hr*
Pressure Drop	120Pa

Sitesafe 3 x PA240824

Size	594x594x597
Gross Weight	53.85kg
Carbon Weight	50.00kg
Rated Airflow	3600m³/hr*
Pressure Drop	120Pa

Please see below for the recommended minimum dwell times required for different applications and scale up accordingly.

It should be noted that filtration performance will be improved by increasing the dwell times applied.

Application	Recommended Dwell Time	Grade
Cooking - Low Odour, Tea Shop, Canteens	0.1 to 0.2 Seconds	Carbon grade Enhanced for improved performance for light catering odours
Cooking - Moderate Odour. Pizza, Steak House, French, Italian, Pubs, Chinese, Japanese, Cantonese	0.2 to 0.4 Seconds	Enhanced Carbon grade suitable for many applications 65% Minimum CTC
Cooking High Odour, Indian, Thai, Vietnamese, Kebab	0.4-0.6 Seconds	Enhanced Carbon grade suitable for many applications 65% Minimum CTC
Cooking Very High Odour. Fried Chicken, Pubs with large fried food turnover, Fish and Chip Shops, Fast Food / Burgers	0.4-0.8 Seconds	Enhanced Carbon grade suitable for many applications 65% Minimum CTC
Reduction of Kerosene Exhaust fumes	0.1 to 0.2 Seconds	General Purpose Activated Carbon
Reduction of Ozone	0.1 to 0.2 Seconds	General Purpose Activated Carbon
Reduction of Diesel Fumes, including H_2S, SO_2, NOX, HCl	0.2 Seconds	Carbon Museum,Archive, Café Directive: SO2 SOX NO2 NOX Removal
Museum and Archives	0.2 Seconds	Carbon Museum,Archive, Café Directive: SO2 SOX NO2 NOX Removal

The cooking odour classes above are as classified by DEFRA in **Guidance on the Control of Odour and Noise from Commercial Kitchen Exhaust Systems, PB10527**