



Ref: MDR/J2866a

27th March 2016

Powered Ventilation Ltd

Alexander House

60 Tenby Street North

Birmingham

B1 3EG

Dear Sirs

Re: 43 Felpham Way, Bognor Regis, PO22 8PT – Proposed Kitchen Supply & Extract Ventilation System External Noise Control

Further to the receipt of your ventilation system design information, we are pleased to forward our noise control advice for the kitchen supply intake & extract discharge as follows:-

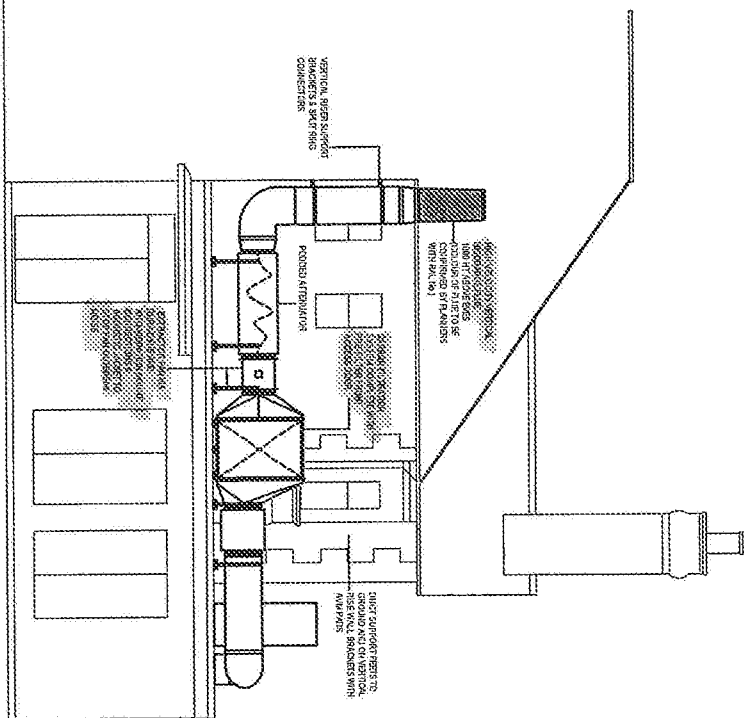
We visited the site on 21/3/16 to inspect the location and take noise measurements of the late evening background levels with the existing extract ventilation system switched off.

The location of the proposed ventilation systems is on a flat roof area to the rear of the building, adjacent to the site boundary with adjacent house windows overlooking the flat roof area. For noise design requirements the critical distances are:-

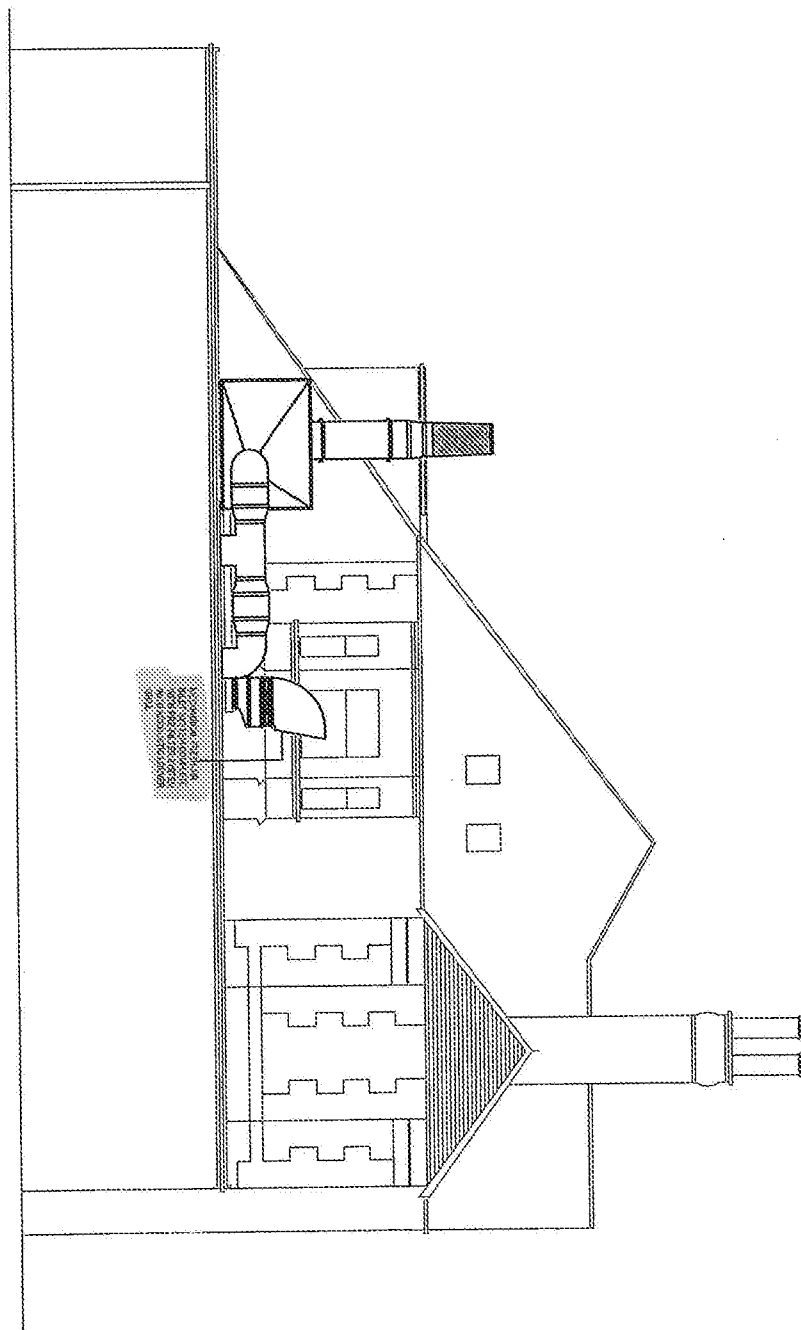
- Fresh air supply intake to house windows - 5m
- Extract air discharge to house windows - 11m
- Extract air fan to house windows - 8m

During our visit on the evening of 21/3/16, the site was closed with no plant operational, allowing a measurement of the background noise level to be taken at the site boundary fence on a direct line between the adjacent house and the flat roof area for the ventilation systems.

RandTech Consulting 90 Park Avenue North Northampton NN3 2JD



NORTH ELEVATION



WEST ELEVATION

POWERED VENTILATION LTD.
ALEXANDER HOUSE,
60 TENBY STREET NORTH,
BIRMINGHAM, B1 3EG EMAIL:
info@poweredventilation.co.uk

**Client: 43 FELPHAM WAY,
BOGNA REGIS,
PO22 8PT**

**Project: PROPOSED EXTRACTION
AND FRESH AIR PLANT & DUCT
PLAN VIEW**

Scale: 1/100

Drawing no:1

Job no:N/A

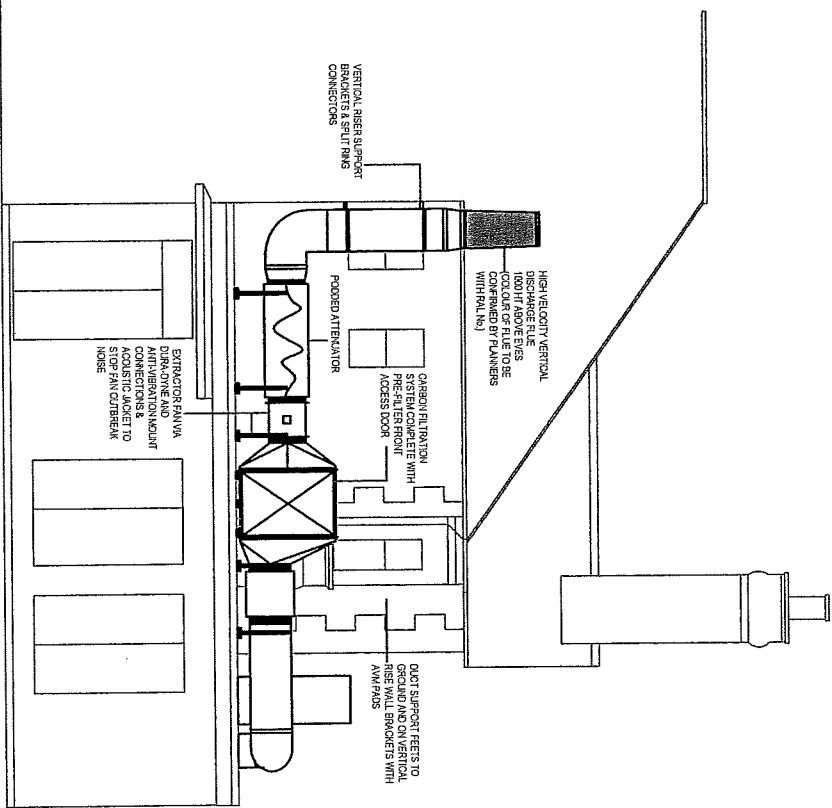
NOTES:

Council ref: FP /162 / 15/ PL

Officer:

Date: 19/03/16

Drawn: ABU TAHMID



NORTH ELEVATION

POWERED VENTILATION LTD.
ALEXANDER HOUSE,
60 TENBY STREET NORTH,
BIRMINGHAM, B1 3EG EMAIL:
info@poweredventilation.co.uk

**Client: 43 FELPHAM WAY,
BOGNA REGIS,
PO22 8PT**

**Project: PROPOSED EXTRACTION
AND FRESH AIR PLANT & DUCT
PLAN VIEW**

Scale: 1/100

Drawing no:2

Job no:N/A

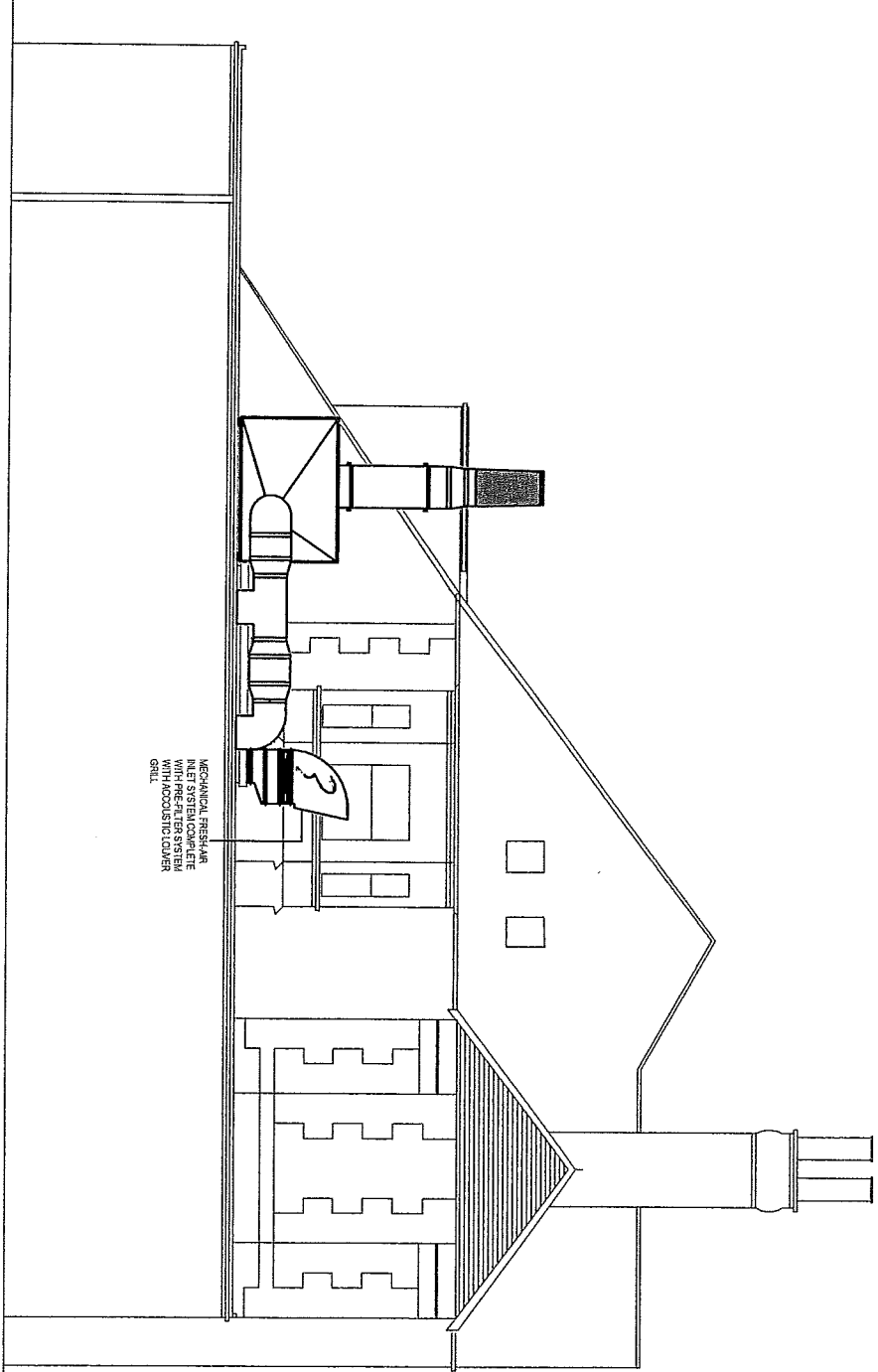
NOTES:

Council ref: FP /162 / 15/ PL

Officer:

Date: 19/03/16

Drawn: ABU TAHMID

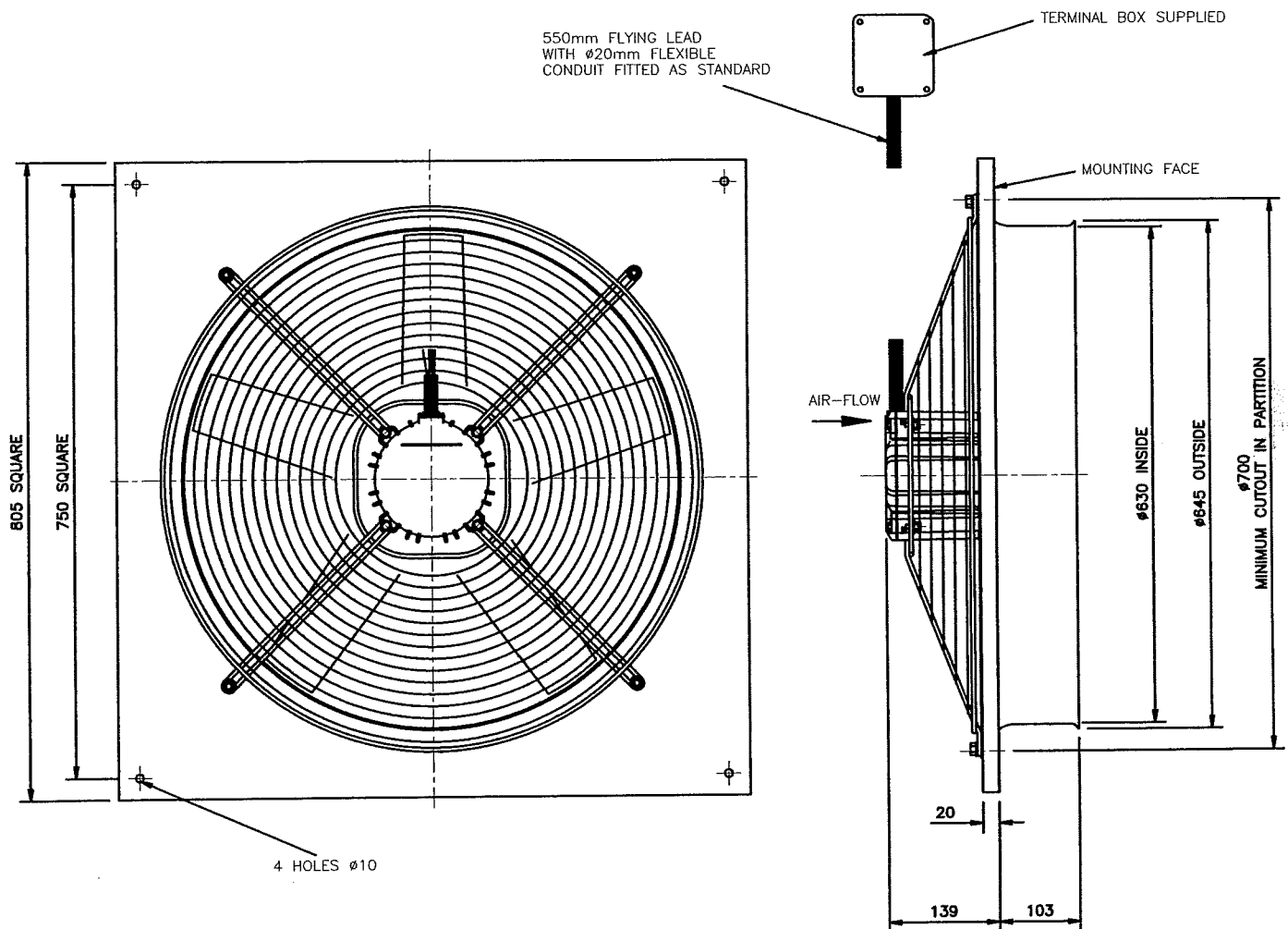


WEST ELEVATION

DRAWING FOR MODEL SCP630/4-1

Location: THE FELPHAM CLB Designation: FRESH AIR-INLET

Version 2 On-going product improvements may result in dimensional changes without notice.



© 2001 Elta Fans

Recommendation for Mechanical Air-Inlet System current extract system has no mechanical fresh air inlet into kitchen:

Proposed Mechanical Fresh Air-Inlet System:

Design Volume: $3.36\text{m}^3/\text{s}$ Kitchen Canopy Extract Hood $\times 3600 = 12,096\text{m}^3/\text{hr}$

Prep Kitchen area $8.2\text{m} \times 16.5\text{m} \times 2.5\text{m} = 338.25\text{m}^3$ recommended air change rate for commercial kitchen is 60 ach

The air change rate equates to $12,096\text{m}^3/\text{hr}$ divided by the room volume 338.25m^3 . This gives us an air change rate of 35.76ach. Minimum for commercial kitchen 30-60 ach, this figure can be brought down using the speed regulator.

Supply Volume Design:

With such a high air change the design would call for the maximum recommended replacement of 85%

This would be $3.36\text{m}^3/\text{s}$ ($12,096\text{m}^3/\text{hr}$) $\times 85\%$ requires $2.86\text{m}^3/\text{s}$ ($10,296\text{m}^3/\text{hr}$)

Pressure Lost in Air- Supply System

$30\text{ pa duct} / 100\text{pa pre-filter} / 80\text{ pa grille} = 210\text{pa @ } 2.86\text{m}^3/\text{s}$

Recommended Air Supply Fan Specification

SCP630/4-1 Compact Square Plate Axial Fan, 4 pole, Single phase, speed control via Auto Transformer regulator.

This fan runs at 1310rpms with a maximum operating noise of 68dBA and will handle air flow rate in excess of current design volume of $2.897\text{m}^3/\text{sec}$ @ 216pa.

above eves level via high Velocity Swedish Discharge cowl in order to give good dispersion of fumes.

The duct work connections off hood 400dia
 $3.36\text{m}^3/\text{s} / 0.12566 = 26.73\text{m}/\text{second}$ (air speed in duct)

Note: (ideal air speed 8-13m/s in accordance to dw regulation, as at the current air speed the extract fume is not being treated and filtered and being removed far to quick into duct causing noise and tuber lance. This also is causing build up fumes in condense section of extract hood even cause spillage before the next passing of fumes as the current mechanical fresh air system is under the design volume therefore the return of 85% air replace is not achievable to provide an air curtain to assist the fumes in towards the filter bank this will also be a further problem once the carbons and pre-filters are dropped installed in accordance to the correct cells.

Recommendation of external duct Alterations:

The duct work connections off Kitchen Extract Hood should be 450 dia spigots to the main header of duct being 560 dia or equivalent
 $3.36 / 0.2463 = 13.64\text{m}/\text{second}$ (air speed in duct)

The current efflux velocity of Discharge Flue is ($3.36\text{m}^3/\text{s} / 0.1964\text{m}^3$ (free area inside 500 diameter duct) = $17.10\text{m}/\text{s}$ velocity) this is ideal for fumes dispersion (minimum required 15-16m/s)

Current Pressure Lost in System

5 off, Linear Metres	@	5 pa =	25pa
3 off bends	@	10pa =	30pa
9 off, Stainless Baffle Filters		=	200pa
2 off Carbon filtration system		=	200pa
1 off Vertical Swedish Discharge cowl		=	800pa
Total		=	1,255pa

CURRENT FAN DUTY: $2.5\text{m}^3/\text{sec}$ @ 200pa.

Current Extractor Fan Specification

Located within the duct work is a Helios Giga Box 560/4-1 Acoustic Enclosed Extractor Fan, 4 pole, Single phase, speed control via Autotransformer regulator.

This fan runs at 1400rpms with a maximum operating noise of 73dBA and will handle air flow rate in excess of current design volume of $2.5\text{m}^3/\text{sec}$ @ 200pa (**Note: under pressure and volume at current stage so with changes this fan we will not be able to make use on the new extraction calculations.**)

NOTE: this is clearly under rated fan for this duty which is currently being used

Cooker hood:

Current Canopy Hoods Details

Front Service Counter Area Island Extract hood (a)

Dimensions of hood : 5.5 x 1.2 x 500 / 600

The canopy is manufactured from stainless steel grade 304, with a 500mm front and 600mm back design. The canopy hoods is supplied with 350*500*45 stainless steel baffle filters, with grease drain off taps on each end of the extraction hood.

Face velocity hood	= 6.6m/s
Design volume	= 3.36m ³ /sec

Total number of grease filters 9 / Dimensions 350*500*45

Design Volume 3.36m³/s / 9 = 0.37m³/s

3.36m³/s / 0.37m³/s = 9.08 (9)

9 off stainless steel baffle filters

Note: current hood holds 9 filters in the extract hood as calculations show 9 this has no effect on the pressure as loss so there is no need to drop a filter out from the current filter bank or insert additional filter.)

System operation:

Current Duct Work and Discharge Efflux Velocity from existing Extract Hood :

The duct work at present spigot off two points on top of the 5.5mtr Wall Canopy, the hood is hard fixed with complete stainless steel baffle grease filters. The duct which is running horizontal above the hoods before going onto the vertical riser connects onto the plant section above the rear part of the building above the kitchen on to a flat before connecting to the vertical riser and discharge flue which are all external. The extract hoods have a clearance of 2mtr to the front underside.

The plant section consists of a carbon filtration unit before the extractor fan it follows on with a 1D attenuator after the extract fan with anti-vibration mounts and Dura-dyne connections to help nullify any further transmitting noise and vibrations, the extractor fan is speed controlled via transformer regulator an inverter or Auto transformer regulator this helps cut out the electronic pitch frequency sounds when starting up the fan or when regulating the speed, as the extractor fan is External based this would have been a issue if operated via electronic regulator, to prevent noise outbreak an acoustic enclosed extract fan has been installed.

The vertical discharge flue has been fixed with duct support brackets discharging

Carbon filters (where proposed):

Before the fan there is a purpose built carbon filtration discarb unit which has 2 pre-filter (to prolong the life of the activated carbon cells) and 2 carbon bonded cells.

For 0.3 seconds contact time- Typically recommended for Spicy cuisine such as Thai and Indian, Fish & Chips, Grilling, Burgers, Fried Chicken
(1 single carbon panel @ 594 x 594 x 25mm framed will achieve a 0.3 second contact time at 0.029m³/s)

Recommendation of changes to odour abatement unit:

The current carbons are 2 No 600 cube which are not even at the minimum 0.12 seconds,

Therefore a minimum of 6 Extra Duty carbon cells must be used for 0.3 seconds contact time.

By rounding the number of carbon filters up from the calculations, it allows some room for any inefficiency in the odour control.

Recommendation of Cleaning and maintenance after Installation details:

The carbon cells should be inspected for carbon testing every 3 months for results in changing, again this will be done by Powered Ventilation Ltd. This will give us a result in whether the change of the Carbon Filters should take place every 3 to 6 months to maintain its optimum efficiency.

The canopy and the stainless steel baffle filters should be cleaned on a daily basis. The stainless steel baffle grease filters are of a 304 grade, the grease filters are to be cleaned on the regime and use of the kitchen, typically a grease filter is cleaned on a daily basis.

The inspection and service of the fan is required every 6 months which will have to be carried out by Powered Ventilation Ltd. This again will be inspected by the installers.

We recommend that the canopy and the duct work should receive a full deep clean 6 months after installations and then every 6 months thereafter by our recommend cleaning company, to maintain the maximum efficiency of the extraction system.

The carbon filter/pre-filters and system will be kept on a data base by the installers which will contact the user when inspection is due, the customer will have a inspection book which will be stamped after inspection and service by Powered Ventilation Ltd.

Odour counteract ant or neutralising system (where applied):N/A

The inspection and service of the fan is required every 6 months which will have to be carried out by Powered Ventilation ltd. This again will be inspected by the installers.

We recommend that the canopy and the duct work should receive a full deep clean 6 months after installations and then every 6 months thereafter by our recommend cleaning company, to maintain the maximum efficiency of the extraction system.

The carbon filter/pre-filters and system will be kept on a data base by the installers which will contact the user when inspection is due, the customer will have a inspection book which will be stamped after inspection and service by Powered Ventilation ltd.

Additional notes for guidance:

Recommendation for Mechanical Air-Inlet System current extract system has no mechanical fresh air inlet into kitchen:

Proposed Mechanical Fresh Air-Inlet System:

Design Volume: $3.36\text{m}^3/\text{s}$ Kitchen Canopy Extract Hood $\times 3600 = 12,096\text{m}^3/\text{hr}$

Prep Kitchen area $8.2\text{m} \times 16.5\text{m} \times 2.5\text{m} = 338.25\text{m}^3$ recommended air change rate for commercial kitchen is 60 ach

The air change rate equates to $12,096\text{m}^3/\text{hr}$ divided by the room volume 338.25m^3 This gives us an air change rate of 35.76ach. Minimum for commercial kitchen 30-60 ach, this figure can be brought down using the speed regulator.

Supply Volume Design:

With such a high air change the design would call for the maximum recommended replacement of 85%

This would be $3.36\text{m}^3/\text{s}$ ($12,096\text{m}^3/\text{hr}$) $\times 85\%$ requires $2.86\text{m}^3/\text{s}$ ($10,296\text{m}^3/\text{hr}$)

Pressure Lost in Air- Supply System

30 pa duct / 100pa pre-filter / 80 pa grille = **210pa @ $2.86\text{m}^3/\text{s}$**

Recommended Air Supply Fan Specification

SCP630/4-1 Compact Square Plate Axial Fan, 4 pole, Single phase, speed control via Auto Transformer regulator.

This fan runs at 1310rpms with a maximum operating noise of 68dBA and will handle air flow rate in excess of current design volume of $2.897\text{m}^3/\text{sec}$ @ 216pa.

**SPECIFICATION ON CURRENT EXTRACTION SYSTEM WITH
RECOMENDATIONS:**

**SITE REF: 43 FELPHAM WAY,
BOGNOR REGIS,
PO22 8PT**

PLANNING REF: FP/162/15/PL

Current Canopy Hoods Details

Front Service Counter Area Island Extract hood (a)

Dimensions of hood : 5.5 x 1.2 x 500 / 600

The canopy is manufactured from stainless steel grade 304, with a 500mm front and 600mm back design. The canopy hoods is supplied with 350*500*45 stainless steel baffle filters, with grease drain off taps on each end of the extraction hood.

Face velocity hood	= 6.6m2
Design volume	= 3.36m3/sec

Total number of grease filters 9 / Dimensions 350*500*45

Design Volume $3.36\text{m}^3/\text{s} / 9 = 0.37\text{m}^3/\text{s}$

$3.36\text{m}^3/\text{s} / 0.37\text{m}^3/\text{s} = 9.08$ (9)

9 off stainless steel baffle filters

Note: current hood holds 9 filters in the extract hood as calculations show 9 this has no effect on the pressure as loss so there is no need to drop a filter out from the current filter bank or insert additional filter.)

for and even after alterations as shown below on the new proposed chart it still under performance after modification due to it being under duty on volume and pressure.

Recommendation of Proposed Pressure Lost in New System Alterations:

5 off, Linear Metres	@	5 pa =	25pa
3 off bends	@	10pa =	30pa
9 off, Stainless Baffle Filters		=	200pa
6 off Carbon filtration system		=	125pa
1 off Vertical Discharge cowl		=	40pa
Total		=	420pa

Total = 420pa

REQUIRED DUTY: 3.36m³/s @ 420pa clean / 450-470pa dirty

Recommendation of Proposed Extractor Fan Specification after Alterations:

SLC500/2-3B EXTRACTER FAN, 2 pole, Three phase, speed control via Inverter regulator.

This fan runs at 2935rpms with a maximum operating noise of 71dBA and will handle air flow rate in excess of current design volume of 3.944m³/sec @ 578pa.

Noise:

Please see noise assessment for attenuator details and calculations provided by Randtech Consultants.

Maintenance:

The carbon cells should be inspected for carbon testing every 3 months for results in changing, again this will be done by Powered Ventilation Ltd. This will give us a result in whether the change of the Carbon Filters should take place every 3 to 6 months to maintain its optimum efficiency.

The canopy and the stainless steel baffle filters should be cleaned on a daily basis. The stainless steel baffle grease filters are of a 304 grade, the grease filters are to be cleaned on the regime and use of the kitchen, typically a grease filter is cleaned on a daily basis.

Current Duct Work and Discharge Efflux Velocity from existing Extract Hood :

The duct work at present spigot off two points on top of the 5.5mtr Wall Canopy, the hood is hard fixed with complete stainless steel baffle grease filters. The duct which is running horizontal above the hoods before going onto the vertical riser connects onto the plant section above the rear part of the building above the kitchen on to a flat before connecting to the vertical riser and discharge flue which are all external. The extract hoods have a clearance of 2mtr to the front underside.

The plant section consists of a carbon filtration unit before the extractor fan it follows on with a 1D attenuator after the extract fan with anti-vibration mounts and Dura-dyne connections to help nullify any further transmitting noise and vibrations, the extractor fan is speed controlled via transformer regulator an inverter or Auto transformer regulator this helps cut out the electronic pitch frequency sounds when starting up the fan or when regulating the speed, as the extractor fan is External based this would have been a issue if operated via electronic regulator, to prevent noise outbreak an acoustic enclosed extract fan has been installed.

The vertical discharge flue has been fixed with duct support brackets discharging above eaves level via high Velocity Swedish Discharge cowl in order to give good dispersion of fumes.

The duct work connections off hood 400dia
 $3.36\text{m}^3/\text{s} / 0.12566 = 26.73\text{m}/\text{second}$ (air speed in duct)

Note: (ideal air speed 8-13m/s in accordance to dw regulation, as at the current air speed the extract fume is not being treated and filtered and being removed far too quick into duct causing noise and tuber lance. This also is causing build up fumes in condense section of extract hood even cause spillage before the next passing of fumes as the current mechanical fresh air system is under the design volume therefore the return of 85% air replace is not achievable to provide an air curtain to assist the fumes in towards the filter bank this will also be a further problem once the carbons and pre-filters are dropped installed in accordance to the correct cells.

Recommendation of external duct Alterations:

The duct work connections off Kitchen Extract Hood should be 450 dia spigots to the main header of duct being 560 dia or equivalent
 $3.36 / 0.2463 = 13.64\text{m}/\text{second}$ (air speed in duct)

The current efflux velocity of Discharge Flue is ($3.36\text{m}^3/\text{s} / 0.1964\text{m}^3$ (free area inside 500 diameter duct) = **17.10m/s velocity**) this is ideal for fumes dispersion (minimum required 15-16m/s)

Current Pressure Lost in System

5 off, Linear Metres @ 5 pa = 25pa
3 off bends @ 10pa = 30pa
9 off, Stainless Baffle Filters = 200pa
2 off Carbon filtration system = 200pa
1 off Vertical Swedish Discharge cowl = 800pa
Total = 1,255pa

CURRENT FAN DUTY: 2.5m³/sec @ 200pa.

Current Extractor Fan Specification

Located within the duct work is a Helios Giga Box 560/4-1 Acoustic Enclosed Extractor Fan, 4 pole, Single phase, speed control via Autotransformer regulator.

This fan runs at 1400rpms with a maximum operating noise of 73dBA and will handle air flow rate in excess of current design volume of 2.5m³/sec @ 200pa (Note: under pressure and volume at current stage so with changes this fan we will not be able to make use on the new extraction calculations.)

NOTE: this is clearly under rated fan for this duty which is currently being used for and even after alterations as shown below on the new proposed chart it still under performance after modification due to it being under duty on volume and pressure.

Recommendation of Proposed Pressure Lost in New System Alterations:

5 off, Linear Metres @ 5 pa = 25pa
3 off bends @ 10pa = 30pa
9 off, Stainless Baffle Filters = 200pa
6 off Carbon filtration system = 125pa
1 off Vertical Discharge cowl = 40pa
Total = 420pa

Total = 420pa

REQUIRED DUTY: 3.36m³/s @ 420pa clean / 450-470pa dirty

Recommendation of Proposed Extractor Fan Specification after Alterations:

SLC500/2-3B EXTRACTER FAN, 2 pole, Three phase, speed control via Inverter regulator.

This fan runs at 2935rpms with a maximum operating noise of 71dBA and will handle air flow rate in excess of current design volume of 3.944m³/sec @ 578pa.

Silencer Details:

Please see Noise Assessment report regards to noise attenuations.

Current Odour Control Details:

Before the fan their a purpose built carbon filtration discarb unit which has 2 pre-filter (to prolong the life of the activated carbon cells) and 2 carbon bonded cells.

For 0.3 seconds contact time- Typically recommended for Spicy cuisine such as Thai and Indian, Fish & Chips, Grilling, Burgers, Fried Chicken
(1 single carbon panel @ 594 x 594 x 25mm framed will achieve a 0.3 second contact time at 0.029m3/s)

Recommendation of changes to odour abatement unit:

The current carbons are 2 No 600 cube which are not even at the minimum 0.12 seconds,

Therefore a minimum of 6 Extra Duty carbon cells must be used for 0.3 seconds contact time.

By rounding the number of carbon filters up from the calculations, it allows some room for any inefficiency in the odour control.

Recommendation of Cleaning and maintenance after Installation details:

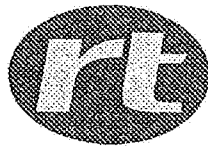
The carbon cells should be inspected for carbon testing every 3 months for results in changing, again this will be done by Powered Ventilation Ltd. This will give us a result in whether the change of the Carbon Filters should take place every 3 to 6 months to maintain its optimum efficiency.

The canopy and the stainless steel baffle filters should be cleaned on a daily basis. The stainless steel baffle grease filters are of a 304 grade, the grease filters are to be cleaned on the regime and use of the kitchen, typically a grease filter is cleaned on a daily basis.

The inspection and service of the fan is required every 6 months which will have to be carried out by Powered Ventilation ltd. This again will be inspected by the installers.

We recommend that the canopy and the duct work should receive a full deep clean 6 months after installations and then every 6 months thereafter by our recommend cleaning company, to maintain the maximum efficiency of the extraction system.

The carbon filter/pre-filters and system will be kept on a data base by the installers which will contact the user when inspection is due, the customer will have a inspection book which will be stamped after inspection and service by Powered Ventilation ltd.



Assessment Sheet (3)

43 FELPAGON WAY, BURNOR RESIS - Kitchen Ventilation System Noise

	LWA	63	125	250	500	1k	2k	4k	8k
(3) Kitchen Extract Fan									
Breakout Noise									
Fan FTD SPL 500/2-3B									
336m/s @ 420R SWL		84	81	88	85	88	86	83	79
Out/Casing SPL		3	8	14	20	26	32	38	44
'A' - Weighting		-26	-16	-9	-3	0	+1	+1	-1
Breakout SWLA		58	57	65	62	62	55	46	34
SWLA → SPLA @ 8m		22	26	26	26	26	26	26	26
Non-Spherical Radi									
SPLA @ 8m (No Silencing)		33	31	34	36	36	29	20	8
			35		41		37		20
				42			37		
						43dB(A)			
* Inlet Silencer CP500-10		3	6	10	18	26	24	21	16
		30	25	24	18	10	5	0	0
			21		29		11		0
				33				11	
* Silencer Break-out @ 8m						33dB(A)			
Plus Fit Fan Acoustic									
Jackst. Nominal Surface									
Direct ~ 10kg/m ²		8	14	20	26	32	38	46	50
		25	17	19	10	4	0	0	0
			26		20		4		0
				27				4	
* Fan Casing Break-out @ 8m					27dB(A)				

Ref: ARUN/J2866



Design Sheet (2)

LAB FELPHAM UNIT, BANGOR REAR - KITONGA VENTILATION SYSTEM No 186

	L/A	63	125	250	500	1k	2k	4k	8k
② KITONGA EXTRACT AIR DISCHARGE									
From BLTA SLC 500/2-3B									
336m ³ /s @ 420Pa SWL		84	81	88	95	88	86	83	79
'A'-Woolmat		-26	-16	-9	-3	0	+1	+1	-1
From SWLA		58	65	79	82	88	87	84	78
500φ duct 5m		0	0	0	0	0	0	0	0
500φ RAD Bore		0	0	0	1	2	3	3	3
DISCHARGE FR 0.2m ²		9	5	1	0	0	0	0	0
SWLA @ DISCHARGE		49	60	78	81	86	84	81	75
SWLA → SPLA @ 11m		32	32	32	32	32	32	32	32
SPPRICAL RADIATION									
SPLA @ 11m (NO SILENCE)		17	28	46	49	54	52	49	43
			28		51		56		50
				51				57	
						58 dBSA			
SILENCE CPS 500-20		5	10	17	23	30	30	28	23
500mm 1/2 x 1000mm tube		12	13	29	21	24	22	21	20
CYLINDRICAL PRODGO SILENCE			19		30		26		24
				30				28	
* SILENCE SPLA @ 11m						32 dBSA			*

Ref: M02/K2866



Design Sheet ①

43 PEEPHAM WAY, BURNOR ROAD - KITCHEN VENTILATION SYSTEM NOISE

	L/A	63	125	250	500	1k	2k	4k	8k
① KITCHEN FRESH AIR INTAKE									
FAN BETA SLP 630/L-1									
2.8m³/s @ 210Pa SWL		83	74	84	87	84	80	76	70
'A'-WEIGHTING		-26	-16	-9	-3	0	+1	+1	-1
FAN SWL A		57	63	75	84	84	81	77	69
FILTER		3	3	3	3	3	3	3	3
RA2 BOND 750		0	1	1	2	3	3	3	3
INTAKE GR 0.56m²		6	2	0	0	0	0	0	0
SWL A @ INTAKE		48	57	71	74	78	75	71	63
SWL A → SPL A @ 5m		22	22	22	22	22	22	22	22
HORN-SPACIAL ROOM									
SPL A @ 5m (NO SILG-CD)		26	35	44	57	56	53	49	41
			36		58		58		50
				58			59		
					62	62			
SILG-CD CPS 630-20		5	9	18	28	30	30	27	20
		21	26	31	29	26	23	22	21
			27		33		28		25
				34			30		
Too High →						35	35		
REVERSE SILG-CD									
CPS 630-30		6	13	26	37	33	37	34	25
630mm ID x 1890mm Long		20	22	23	20	23	16	15	16
CYLINDRICAL PODED SILG-CD			24		25		24		19
				28			25		
* SILG-CD SPL A @ 5m -						30	30		*

Ref: HND/J2866

**ELTA FANS LTD (BUILDING SERVICES)**

a member of the Elta Group

Tel: +44 (0)1384 275800 Fax: +44 (0)1384 275810 email: mailbox@eltafans.co.uk
46 Third Avenue, Pensnett Trading Estate, Kingswinford, West Midlands DY6 7US, UK

ELTA FAN DATA FOR MODEL SLC500/2-3B

Location: THE FELPHAM CLB

Designation: EXTRACT FAN

Fan Code: SLC500/2-3B

Requirements

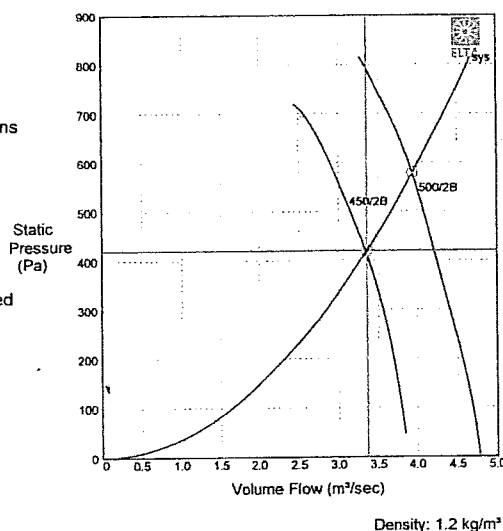
Volume: 3.36 m³/s
Static Pressure: 420 Pa
Selection Pressure: 420 Pa at std conditions
Operating Duty: 3.944 m³/s at 578 Pa
Temperature: 20 deg C
Altitude: 0 m

Fan Data (at STP)

Type: Revolution Long Cased
Axial Fan
Diameter: 500 mm
Speed: 2935 RPM
Weight: 52 kg

Motor Data (at STP)

Motor Power: 5.5 kW
Electrical Supply: 415V@50Hz
Motor Speed Poles: 2 Poles

**SOUND DATA**

Spectrum (Hz)	63	125	250	500	1K	2K	4K	8K	dBA @ 3m
Sound Power (dB)	84	81	88	85	88	86	83	79	71



Note: Levels are quoted as in-duct values. dBA values are average spherical free-field for comparative use only.

© 2001 Elta Fans

Ref: 1/102/152806

**ELTA FANS LTD (BUILDING SERVICES)**

a member of the Elta Group

Tel: +44 (0)1384 275800 Fax: +44 (0)1384 275810 email: mailbox@eltafans.co.uk
46 Third Avenue, Pensnett Trading Estate, Kingswinford, West Midlands DY6 7US, UK

**ELTA FAN DATA FOR MODEL SCP630/4-1**

Location: THE FELPHAM CLB Designation: FRESH AIR-INLET

Fan Code: SCP630/4-1

Requirements

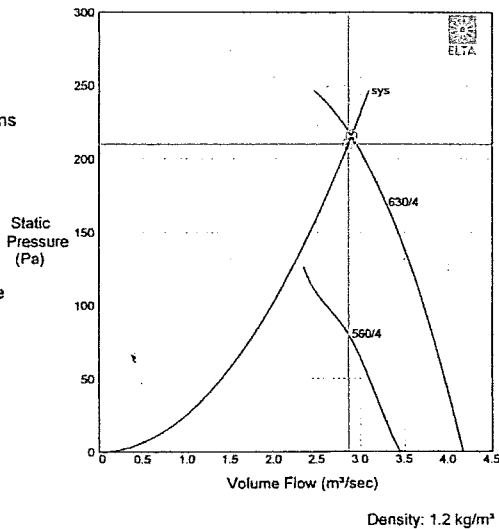
Volume: 2.86 m³/s
Static Pressure: 210 Pa
Selection Pressure: 210 Pa at std conditions
Operating Duty: 2.897 m³/s at 216 Pa
Temperature: 20 deg C
Altitude: 0 m

Fan Data (at STP)

Type: Compact Square Plate
Axial Fan
Diameter: 630 mm
Speed: 1310 RPM
Weight: 24 kg

Motor Data (at STP)

Motor Power: 1.1 kW
Electrical Supply: 240V@50Hz
Motor Speed Poles: 4 Poles

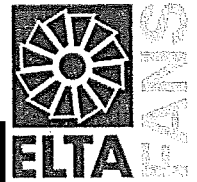
**SOUND DATA**

Spectrum (Hz)	63	125	250	500	1K	2K	4K	8K	dBA @ 3m
Sound Power (dB)	83	79	84	87	84	80	76	70	68

Note: Levels are quoted as in-duct values. dBA values are average spherical free-field for comparative use only.

© 2001 Elta Fans

Ref: M014/52806

**ELTA FAN DATA FOR MODEL SLC500/2-3B**

Location: THE FELPHAM CLB Designation: EXTRACT FAN

Fan Code: SLC500/2-3B

Requirements

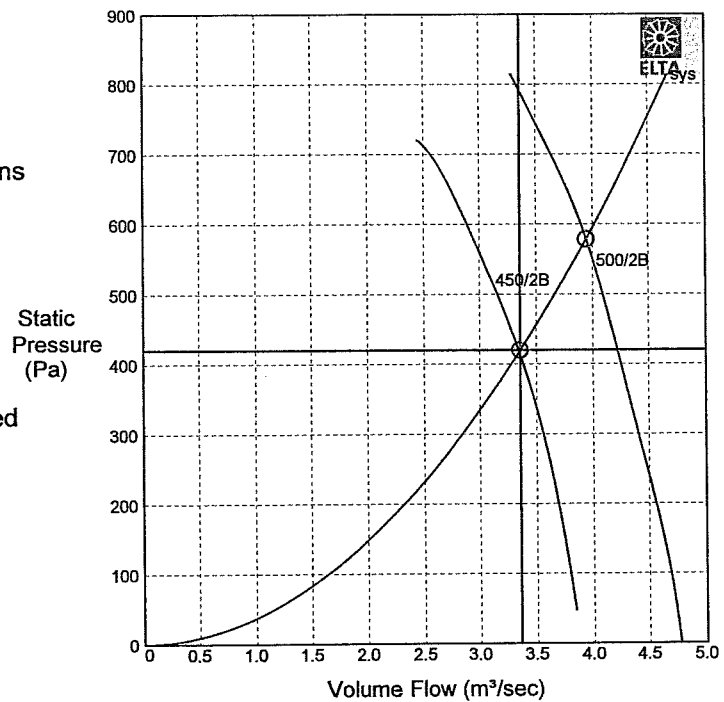
Volume: 3.36 m³/s
 Static Pressure: 420 Pa
 Selection Pressure: 420 Pa at std conditions
 Operating Duty: 3.944 m³/s at 578 Pa
 Temperature: 20 deg C
 Altitude: 0 m

Fan Data (at STP)

Type: Revolution Long Cased
 Axial Fan
 Diameter: 500 mm
 Speed: 2935 RPM
 Weight: 52 kg

Motor Data (at STP)

Motor Power 5.5 kW
 Electrical Supply: 415V@50Hz
 Motor Speed Poles: 2 Poles

Density: 1.2 kg/m³**SOUND DATA**

Spectrum (Hz)	63	125	250	500	1K	2K	4K	8K	dBA @ 3m
Sound Power (dB)	84	81	88	85	88	86	83	79	71

Note: Levels are quoted as in-duct values. dBA values are average spherical free-field for comparative use only.

© 2001 Elta Fans



ELTA FAN DATA FOR MODEL SCP630/4-1

Location: THE FELPHAM CLB

Designation: FRESH AIR-INLET

Fan Code: **SCP630/4-1**

Requirements

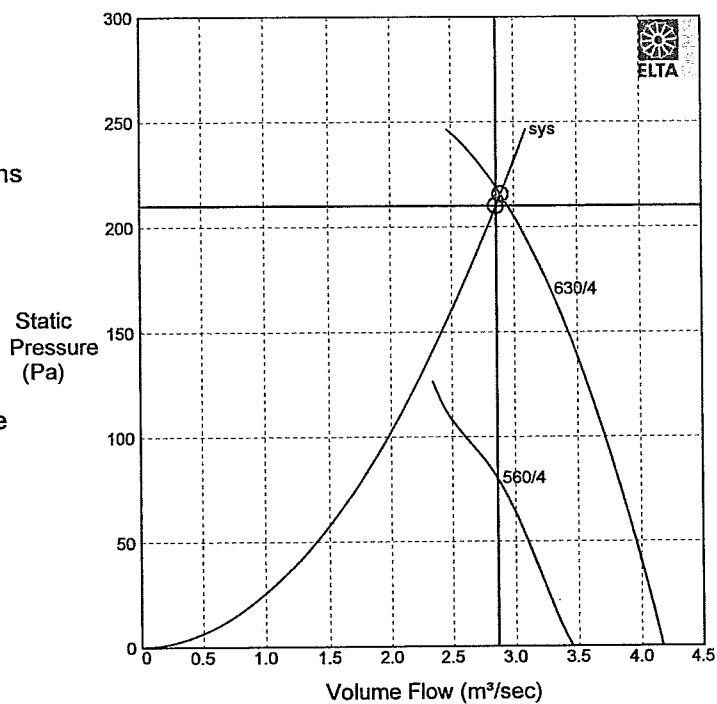
Volume: 2.86 m³/s
 Static Pressure: 210 Pa
 Selection Pressure: 210 Pa at std conditions
 Operating Duty: 2.897 m³/s at 216 Pa
 Temperature: 20 deg C
 Altitude: 0 m

Fan Data (at STP)

Type: Compact Square Plate
 Axial Fan
 Diameter: 630 mm
 Speed: 1310 RPM
 Weight: 24 kg

Motor Data (at STP)

Motor Power: 1.1 kW
 Electrical Supply: 240V@50Hz
 Motor Speed Poles: 4 Poles



SOUND DATA

Spectrum (Hz)	63	125	250	500	1K	2K	4K	8K	dBA @ 3m
Sound Power (dB)	83	79	84	87	84	80	76	70	68

Note: Levels are quoted as in-duct values. dBA values are average spherical free-field for comparative use only.

© 2001 Elta Fans

Panel Filters

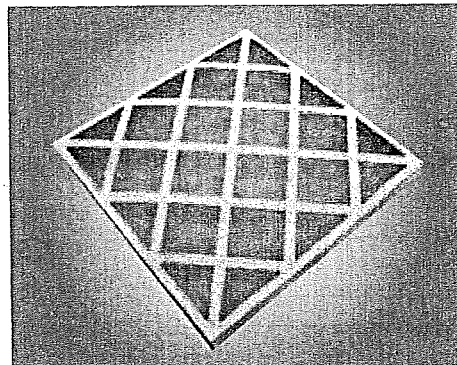
by Express-air

Glass Fibre Disposable Filter (Cardboard Frame)

Order Ref	Size Inches	Size mm			Filter Grade	Capacity m ³ /s *
	W x H x D	W	H	D		
EAAF10101	10 x 10 x 1	241	241	22	G3	0.12
EAAF10102	10 x 10 x 2	241	241	45	G3	0.13
EAAF12121	12 x 12 x 1	292	292	22	G3	0.16
EAAF12122	12 x 12 x 2	292	292	45	G3	0.18
EAAF15152	15 x 15 x 2	368	368	45	G3	0.28
EAAF16161	16 x 16 x 1	394	394	22	G3	0.31
EAAF16162	16 x 16 x 2	394	394	45	G3	0.35
EAAF18182	18 x 18 x 2	445	445	45	G3	0.41
EAAF20101	20 x 10 x 1	495	241	22	G3	0.22
EAAF20102	20 x 10 x 2	495	241	45	G3	0.25
EAAF20152	20 x 15 x 2	495	368	45	G3	0.38
EAAF20162	20 x 16 x 2	495	394	45	G3	0.41
EAAF20201	20 x 20 x 1	495	495	22	G3	0.47
EAAF20202	20 x 20 x 2	495	495	45	G3	0.52
EAAF24122	24 x 12 x 2	594	292	45	G3	0.37
EAAF24242	24 x 24 x 2	594	594	45	G3	0.73
EAAF25162	25 x 16 x 2	622	394	45	G3	0.52
EAAF25202	25 x 20 x 2	622	495	45	G3	0.64

* Capacity based on a face velocity of 2m/s giving initial resistance of 32Pa

Maximum velocity for Glass Fibre Filters 2.5m/s



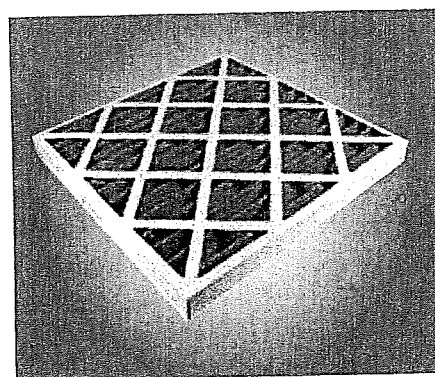
Synthetic Pleated Disposable Filters (Cardboard Frame)

Order Ref	Size Inches	Size mm			Filter Grade	Capacity m ³ /s *
	W x H x D	W	H	D		
EAPF10102	10 x 10 x 2	241	241	45	G4	0.12
EAPF12122	12 x 12 x 2	292	292	45	G4	0.18
EAPF15152	15 x 15 x 2	368	368	45	G4	0.27
EAPF16162	16 x 16 x 2	394	394	45	G4	0.35
EAPF18182	18 x 18 x 2	445	445	45	G4	0.41
EAPF20152	20 x 15 x 2	495	368	45	G4	0.37
EAPF20162	20 x 16 x 2	495	394	45	G4	0.40
EAPF20202	20 x 20 x 2	495	495	45	G4	0.48
EAPF24242	24 x 24 x 2	594	594	45	G4	0.72
EAPF25202	25 x 20 x 2	622	495	45	G4	0.63

* Capacity based on initial resistance of 40Pa, max capacity 25% above shown data.

Available as 20mm (1") & also 95mm (4") depths.

Made to order sizes available, please enquire.



AIRCLEAN

YOUR AIR FILTER MANUFACTURER

P.O. BOX 147,
MAIDSTONE, ME14 2LA.

155	PERCHLOROETHYLENE	A	
156	PERFUMES	A	
157	PETROL	A	
158	PHENOL ACID	A	CARBOLIC ACID, PLASTIC INGREDIENT
159	PHOSGENE	B	
160	PLASTIC	A	
161	POULTRY ODOURS	A	
168	PROPYL CHLORIDE	A	
169	PROPYL ETHER	A	
170	PROPYL MERCAPTAN	A	
171	PROPYLENE	B	COAL GAS
172	PURIFYING ODOURS	B	
173	PUTRESCINE	A	DECAYING FLESH
174	PYRIDINE	A	BURNING TOBACCO
175	RANCID OILS & FATS	A	
176	RESINS	A	
177	RUBBER	A	
178	SKATOLE	A	IN EXCRETA
179	STABLE ODOURS	A	
180	STALE ODOURS	A	
181	STYRENE MONOMER	A	
182	SULPHUR TRIOXIDE	B	HYDROLYZES TO SULPHURIC ACID
183	SULPHUR DIOXIDE	C	OXIDIZES TO SULPHUR TRIOXIDE, COMMON IN CITY ATMOSPHERES
184	SULPHURIC ACID	A	
185	TAR ODOURS	A	
186	TETRACHLORO ETHANE	A	
187	TETRACHLORO ETHYLENE	A	
188	TETRAHYDROTHIOPHENE	A	
189	TOBACCO SMOKE	C	
190	TOILET ODOURS	A	
191	TOLUENE	A	MANUFACTURE OF TNT
192	TOLUIDINE	A	

Code AC6/1f Ref 05/06

AIRCLEAN

YOUR AIR FILTER MANUFACTURER

P.O. BOX 147,
MAIDSTONE, ME14 2LA.

118	METHYL ACETATE	B	SOLVENT
119	METHYL ACRYLATE	A	
120	METHYL ALCOHOL	B	WOOD ALCOHOL
121	METHYL BROMIDE	B	
122	METHYL BUTYLKETONE	A	
123	METHYL CELLOSOLVE	Q	
124	METHYL CHLORIDE	B	REFRIGERANT
125	METHYL ETHER	A	
126	METHYL FORMATE	B	
127	METHYL ETHYLKETONE	A	SOLVENT
128	METHYL FORMATE	B	
129	METHYL ISOBUTYLKETONE	A	SOLVENT
130	METHYL MERCAPTAN	A	
131	METHYLENE CHLORIDE	A	
132	MONOCHLOROBENZENE	A	
133	MONOFLUOROTRICHORO METHANE	B	
134	n-DECANE	D	
135	n-HEPTANE	D	
136	n-NONANE	D	
137	n-OCTANE	D	
138	n-OCTYLENE	D	
139	NAPHTHALENE	A	REAGENT, MOTH BALLS
140	NICOTINE	A	TOBACCO
141	NITRIC ACID FUMES	B	
142	NITROBENZENE	A	OIL OF BITTER ALMONDS, OIL OF MIRBANE
143	NITROETHANE	A	
144	NITROGEN DIOXIDE	C	HYDROLYZES TO INCREASE RETENTIVITY
145	NITROGLYCERENE	A	
146	NITROMETHANE	A	
147	NITROPROPANE	A	
148	NITROTOLUENE	A	
149	NONANE	A	INGREDIENT OF KEROSENE
150	OCTANE	A	INGREDIENT OF GASOLINE
151	OZONE	A	GENERATED BY ELECTRICAL DISCHARGE
152	PALMITIC ACID	A	PALM OIL
153	PARADICHLOROBENZENE	A	
154	PENTANE	B	LIGHT NAPHTHA

Code AC6/1e Ref 05/06

AIRCLEAN

YOUR AIR FILTER MANUFACTURER

P.O. BOX 147,
MAIDSTONE, ME14 2LA.

78	ETHYL AMINE	B	
79	ETHYL BROMIDE	B	
80	ETHYL CHLORIDE	B	REFRIGERANT, ANESTHETIC
81	ETHYL ETHER	B	MEDICAL ETHER, REAGENT
82	ETHYL FORMATE	B	
83	ETHYL MERCAPTAN	A	GARLIC, ONION, SEWER
84	ETHYLENE	D	MORE RETENTIVITY BY REACTION,
85	ETHYLENE CHLOROHYDRIN	A	
86	ETHYLENE DICHLORIDE	A	
87	ETHYLENE OXIDE	B	
88	EXYLENE	A	
89	FLUOROTRICHLOROMETHANE	B	
90	FORMALDEHYDE	C	DISINFECTANT, PLASTIC INGREDIENT
91	FORMIC ACID	B	REAGENT
92	FREON	C	
93	GARLIC	A	
94	HEPTANE	A	INGREDIENT OF GASOLINE
95	HEPTYLENE	C	
96	HEXANE	B	INGREDIENT OF GASOLINE
97	HOSPITAL ODOURS	A	
98	HUMAN ODOURS	A	
99	HYDROGEN BROMIDE	C	
100	HYDROGEN CHLORIDE	C	
101	HYDROGEN CYANIDE	B	
102	HYDROGEN FLUORIDE	C	
103	HYDROGEN IODIDE	B	
104	HYDROGEN SULPHIDE	C	OXIDIZES TO INCREASE RETENTIVITY CONSIDERABLY
105	INDOLE	A	IN EXCRETIA
106	IODINE	A	
107	IODOFORM	A	ANTISEPTIC
108	ISO BUTANE	B	
109	ISOPROPYL ACETATE	A	LACQUER SOLVENT
110	ISOPROPYL ALCOHOL	A	SOLVENT
111	ISOPROPYL ETHER	A	SOLVENT
112	LACTIC ACID	A	
113	LEATHER	A	
114	MERCAPTANS	A	
115	MESITYL OXIDE	A	
116	METHANE	D	
117	METHANOL (METHYL)	B	

Code AC6/1d Ref 05/06

AIRCLEAN

YOUR AIR FILTER MANUFACTURER

P.O. BOX 147,
MAIDSTONE, ME14 2LA.

33	CARBOLIC ACID	A	
34	CARBON DIOXIDE	A	
35	CARBON DISULPHIDE	B	
36	CARBON MONOXIDE	D	
37	CARBON TETRACHLORIDE	A	SOLVENT,CLEANING FLUID,FIRE EXTINGUISHER
38	CELLOSOLVE ACETATE	A	
39	CELLOSOLVE ETHER	A	
40	CHLORINE	B	
41	CHLORO PICRIN	A	
42	CHLOROBENZINE	A	
43	CHLOROBUTADEINE	A	
44	CHLOROFORM	A	
45	CHLORONITROPROPANE	A	
46	CITRUS FRUITS	A	
47	COOKING ODOURS	A	
48	CRESOL	A	WOOD PRESERVATIVE
49	CRONTONALDEHYDE	A	SOLVENT,TEAR GAS
50	CYCLOHEXANE	A	
51	CYCLOHEXANOL	A	
52	DECANE	A	INGREDIENT OF KEROSENE
53	DEGREASING SOLVENTS	A	
54	DEODERISERS	B	
55	DETERGENTS	A	
56	DIBROMOETHANE	A	
57	DICHLOROBENZINE	A	
58	DICHLORODIFLUORO ETHANE	A	
59	DICHLORODIFLUORO METHANE	B	
60	DICHLOROETHANE	A	
61	DICHLOROETHYL ETHER	A	
62	DICHLOROETHYLENE	A	
63	DICHLROMETHANE	A	
64	DICHLROMONOFUORO METHANE	B	
65	DICHLOROPROPANE	A	
66	DICHLOROTETRAFLUORO ETHANE	B	
67	DIETHYL AMINE	B	
68	DIETHYL ANILINE	A	
69	DIETHYL KETONE	A	SOLVENT
70	DIMETHYL AMINE	B	
71	DIMETHYL SULPHATE	A	
72	DIOXAN ETHER	A	
73	DIPROPYL KETONE	A	
74	ETHANE	D	
75	ETHYL ACETATE	A	LACQUER SOLVENT
76	ETHYL ACRYLATE	A	
77	ETHYL ALCOHOL	A	GRAIN ALCOHOL Code AC6/1c Ref 05/06

AIRCLEAN

YOUR AIR FILTER MANUFACTURER

P.O. BOX 147,
MAIDSTONE, ME14 2LA.

Grade 50 Activity Carbons are rated 55% on their ability to 'adsorb' carbon tetrachloride (CTC) in testing; have a typical surface area per weight of between 1100-1200 m²/g by the BET N2 method (the area being a measure of the area of the walls of the cavern like structure of the activated carbon): Bulk density is between 0.49 - 0.53 g/cc

Guide to the Gaseous Adsorption Level for Grade 50 Activity Carbon

A = 20 - 50% adsorption
B = 10 - 20%

C = 1 - 10%
D = under 1%

	Chemical	Index	Common Source of Chemical
1	ACETALDEHYDE	C	REAGENT
2	ACETIC ACID	A	REAGENT, SOUR VINEGAR
3	ACETIC ANHYDRIDE ACID	A	
4	ACETONE	B	SOLVENT
5	ACETYLENE	D	WELDING AND CUTTING
6	ACROLEIN	B	
7	ACRYLALDEHYDE	B	AEROLEIN, BURNING FATS
8	ACRYLIC ACID	A	
9	ADHESIVES	A	
10	AMINES	C	
11	AMMONIA	D	
12	AMYL ACETATE	A	LACQUER SOLVENT
13	AMYL ALCOHOL	A	FUSEL OIL
14	AMYL ETHER	A	
15	ANILINE	A	
16	ANIMAL ODOURS	A	
17	BENZALDEHYDE	A	
18	BENZENE	A	BENZOL, PAINT SOLVENT & REMOVER
19	BROMINE	A	
20	BUTADIENE	C	
21	BUTANE	C	HEATING GAS
22	BUTYL ACETATE	A	LACQUER SOLVENT
23	BUTYL ALCOHOL	A	SOLVENT
24	BUTYL CHLORIDE	A	SOLVENT
25	BUTYL ETHER	A	SOLVENT
26	BUTYLENE	B	
27	BUTYRALDEHYDE	B	PRESENT IN INTERNAL COMBUSTION EXHAUST - DIESEL
28	BUTYRIC ACID	A	
29	BUTYRIC ACID	A	SWEAT, BODY ODOUR
30	CAMPOR	A	
31	CAPROALDEHYDE	A	
32	CAPRYLIC ACID	A	ANIMAL ODOUR

Code AC6/1b Ref 05/06

AIRCLEAN

YOUR AIR FILTER MANUFACTURER

P.O. BOX 147,
MAIDSTONE, ME14 2LA.

Activated Carbon Filters

Applications

- Odour removal through Adsorption
- Highly effective on organic odours
- Minimal contact times required
- Disposable
- Effective Ozone Removal

Construction

Three constructions of activated carbon filters are available as follows.

Discarbs - These filters have the highest carbon loading in our range, with carbon panels permanently sealed into a galvanised steel frame. These are capable of handling large air volumes, with no possibility of air leakage.

Bonded Carbon Panel - An aluminium frame surrounds the carbon panel, to create a manageable panel for installation where access is limited. Multiple panels need to be used to create the required contact times.

Loose Fill Carbon Panel - These galvanized steel panels constructed from expanded mesh are filled with pellets of activated carbon to offer a lower pressure differential, compared to bonded carbon panels. These can also allow the use of impregnated carbon for specific nuisance odours.

Technical

Activated Carbon Filters must be protected from contact with particulates, such as grease and smoke, and it is recommended that the air is filtered to a minimum grade of F5 to EN779, before passing through the Carbon. This can be achieved with an Airclean General Purpose Bag Filter.

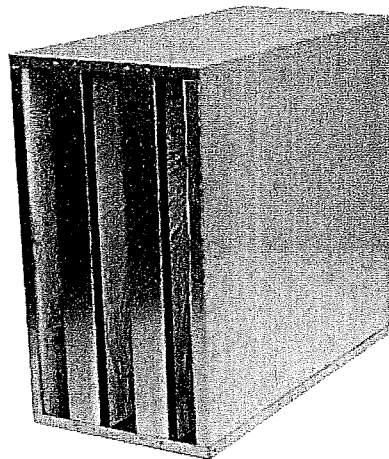
To ensure effective removal of odours, guidelines must be followed depending upon the type of cuisine that is being cooked. These guidelines are often advised by Environmental Health and therefore must be adhered to, but Airclean usually work on the following basis :-

0.1 Seconds Contact Time - Suitable for most odour removal in English and Chinese cuisine (Light Odours)

0.3 Seconds Contact Time - Suitable for Indian and Thai cuisine (Heavy Odours)

For Specific odour removal, please refer to our "Guide to Gaseous Adsorption" (Catalogue AC6/1b , Section 6), or contact our technical team.

Activated Carbon Filters will not operate effectively in temperatures above 40 Degrees Centigrade, or above 80% Room Humidity.



AIRCLEAN

YOUR AIR FILTER MANUFACTURER

P.O.Box 147, MAIDSTONE, ME14 2LA



O & M INSTRUCTION

PRODUCT GROUP 1130 - DISPOSABLE PLEATED PANELS (GRADE G4 TO EN779)

Safety

It is recommended that industrial gloves, overalls, eye protection and nuisance dust masks are utilised when changing filters which have been subjected to natural air, as opposed to air drawn from processes, where full risk assessments should be performed prior to changing. For some filters, an assessment regarding manual handling will need to be made.

Changing of filters should be carried out by experienced or trained personnel, in accordance with safety requirements as defined by the "Control of Substances Hazardous to Health (COSHH) Regulations. ie. Someone who fully understands the design, operation and implications of the product and its use.

General

Withdraw and dispose of the dirty filter and replace with a clean panel.

Recommended discard resistance is 0.5" w.g. (125 Pa) in excess of clean resistance for a 2" panel, for a 4" panel 0.60" w.g. (150 Pa).

Disposal of Air Filters Including Personal Protective Equipment

- Filters and PPE have been damaged prior to use can be disposed of as normal industrial waste.
- Filters and PPE soiled with exterior air can be disposed of as normal industrial waste.
- Filters and PPE soiled by process air, bacterial, toxic and/or radioactive matter must be disposed of as Hazardous Waste in accordance with local regulations of the site and Environmental Health. Legislation prohibits removal of this waste from the site location.

For further information please contact Airclean Ltd

AIRCLEAN
YOUR AIR FILTER MANUFACTURER

P.O.Box 147, MAIDSTONE, ME14 2LA

O & M INSTRUCTION

PRODUCT GROUP 1620 ACTIVATED CARBON DISCARBS

Safety

It is recommended that industrial gloves, overalls, eye protection and nuisance dust masks are utilised when changing filters which have been subjected to natural air, as opposed to air drawn from processes, where full risk assessments should be performed prior to changing. For some filters, an assessment regarding manual handling will need to be made.

Changing of filters should be carried out by experienced or trained personnel, in accordance with safety requirements as defined by the "Control of Substances Hazardous to Health (COSHH) Regulations. ie. Someone who fully understands the design, operation and implications of the product and its use.

General

Withdraw and dispose of the filter to be replaced.

Replace with new filter.

Unlike a particulate filter the resistance will not vary as the carbon adsorbs the odours, and the time that a carbon filter will last before a new one is needed will vary according to the range and amount of odours.

A test sample filter can be supplied which you return to ourselves for analysis, which knowing how long it has been in service, we can then provide an approximate prediction as to when the filter will require replacement.

Disposal of Air Filters Including Personal Protective Equipment

- Filters and PPE have been damaged prior to use can be disposed of as normal industrial waste.
- Filters and PPE soiled with exterior air can be disposed of as normal industrial waste.
- Filters and PPE soiled by process air, bacterial, toxic and/or radioactive matter must be disposed of as Hazardous Waste in accordance with local regulations of the site and Environmental Health. Legislation prohibits removal of this waste from the site location.

For further information please contact Airclean Ltd



Ref: MDR/J2866a

The background noise level measured for 1 hour between 22.00hrs and 23.00hrs was 40.5dB L₉₀. This background level would be representative of the noise level outside the nearest 1st floor windows of the adjacent house, the noise level controlled by the passing road traffic on Felpham Way.

The noise measurement instrumentation used was a Casella CEL-63x precision grade real time analyser/sound level meter, serial number 1411352, calibration checked before and after the measurements using a Casella CEL -110 acoustic calibrator, serial number 021018. Please see attached the current calibration certificates for the instruments. The weather conditions during the noise measurement surveys were satisfactory with no appreciable wind or precipitation.

For noise control design purposes we would advise the radiated noise from the proposed supply and extract systems should be at least 5dBA below the measured background level of 40dBA outside the nearest house windows. With reference to BS4142:2014 the background noise level is 40dBA and the combined plant noise rating level for comparison should be controlled to be safely less than 40dBA. With noise control measures applied to the two proposed ventilation systems no tonal characteristic to the operating noise will be apparent and therefore no tonal correction will be applied.

We have selected a silencer for the extract system discharge, the silencer would be a cylindrical podded silencer design, 500mm i/d x 1000mm long. This silencer should reduce the radiated extract discharge noise to 32dBA @11m distance.

To control noise break-out from the extract system fan we would advise fitting an inlet side silencer, cylindrical podded design, 500mm i/d x 500mm long and an acoustic fan jacket nominal 10kg/m² surface density. This should control the noise break-out from the fan location to no more than 32dBA at a distance of 8m.

We have selected a silencer for the supply system intake, the silencer would be a podded cylindrical silencer 630mm i/d x 1890mm long, which should be located within the building, fitted to the inlet of the supply air fan. This silencer should reduce the supply intake noise to 30dBA @ 5m distance.

The summated noise from the extract discharge, extract fan break-out and supply intake, outside the nearest noise critical window at would be 37dBA, this would be the rating level for comparison against the measured background noise level.

We have attached our noise level design calculation sheets and supporting information for your reference.

AIRCLEAN

YOUR AIR FILTER MANUFACTURER

P.O. BOX 147,
MAIDSTONE, ME14 2LA.

193	TRICHLORO ETHYLENE	A	
194	TURPENTINE	A	SOLVENT
195	UREA	A	
196	URIC ACID	A	
197	VALERALDEHYDE	A	
198	VALERIC ACID	A	SWEAT, BODY ODOUR, CHEESE
199	VALERIC ALDEHYDE	A	
200	VARNISH	A	
201	VENTILATION SYSTEMS	A	
202	VINEGAR	A	
203	VINYL CHLORIDE	B	
204	WOOD ALCOHOL	B	
205	XYLENE	A	SOLVENT

Free Carbon Testing Service

It is extremely difficult to calculate in advance the life expectancy of an activated carbon filter.

Generally speaking, accurate information regarding concentration and details of all contaminants in the airstream are not available and in any case these are often constantly changing.

However, reasonably accurate life expectancy levels can be obtained by a method known as CTC testing.

Either a small sample of carbon from one of the cells, or a complete panel, should be returned to us together with the date of installation. From this information the contamination level will be assessed in the laboratory, which will indicate the likely remaining useful life of the carbon.

This testing service is totally free of charge to our customers.

The company reserves the right to change specifications without notice. E&OE

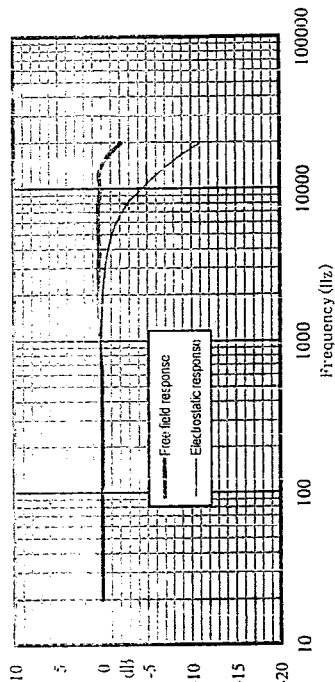
Code AC6/1g Ref 05/06



CASELLAE
CEL Calibration Chart for 1/2" Prepolarized
Condenser Microphone Type CEL 251

Serial No: 01071
Outside Diameter: 13.2mm with protecting grid
12.7mm without protecting grid
Mounting Thread: 11.7 mm, 60 UNS 2
Capacitance: 16.0 pF (nominal)
Ambient Pressure: -0.02 to +0.02 dB/kPa for $\pm 10\%$
pressure change at 250 Hz
Temperature Coefficient: -10°C to +50°C
Approx. -0.015 dB/K at 250 Hz
Dynamic Range: SPL below which
the total harmonic distortion
remains less than 3%: 146dB

Open Circuit Sensitivity Level:
-27.5 dB re 1 V/Pa
or 42.2 mV/Pa
Conditions of Test:
Frequency: 250 Hz
Barometric Pressure: 101.3 kPa
Relative Humidity: 50 %
Temperature: 23 °C
Signature: [Signature]
Date: 05/20/2015





CASELLA

Certificate of Conformity and Calibration

Instrument Model:- CEL-633C
Serial Number 1411352
Firmware revision V129-08
Microphone Type:- CEL-251
Serial Number 1074
Preamplifier Type:- CEL-495
Serial Number 001175

Instrument Class/Type:- 1

Applicable standards:-

IEC 61672: 2002 / EN 60651 (Electroacoustics - Sound Level Meters)
IEC 60651 1979 (Sound Level Meters), ANSI S1.4: 1983 (Specifications For Sound Level Meters)

Note:- The test sequences performed in this report are in accordance with the current Sound level meter Standard - IEC61672. The combination of tests performed are considered to confirm the products electro-acoustic performance to all applicable standards including superceeded Sound Level Meter Standards - IEC60651 and IEC60804.

Test Conditions:- 22.6 °C
47.1 %RH
1012.5 mBar
Test Engineer:- Mike Hill
Date of Issue:- July 30, 2015



Declaration of conformity:-

This test certificate confirms that the instrument specified above has been successfully tested to comply with the manufacturer's published specifications. Tests are performed using equipment traceable to national standards in accordance with Casella's ISO 9001:2008 quality procedures. This product is certified as being compliant to the requirements of the CE Directive.

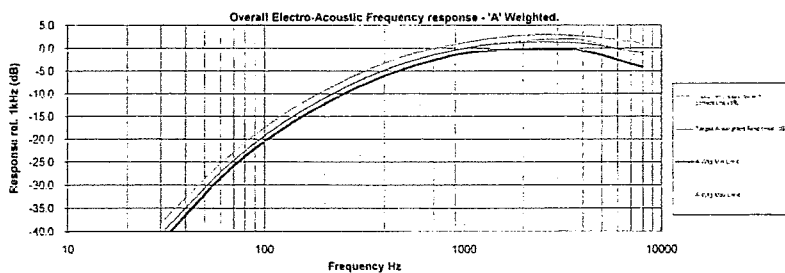
Test Summary:-

Self Generated Noise Test	All Tests Pass
Electrical Signal Test Of Frequency Weightings	All Tests Pass
Frequency & Time Weightings At 1 kHz	All Tests Pass
Level Linearity On The Reference Level Range	All Tests Pass
Toneburst Response Test	All Tests Pass
C-peak Sound Levels	All Tests Pass
Overload Indication	All Tests Pass
Acoustic Tests	All Tests Pass

Combined Electro-Acoustic Frequency Response - A Weighted

Combined Electro-Acoustic Frequency Response - A Weighted (IEC 61672-3:2006)

The following A-Weighted frequency response graph shows this instruments overall frequency response based upon the application of multi-frequency pressure field calibrations. The microphones Pressure to Free field correction coefficients are applied to pressure response. Reference level taken at 1kHz.



Casella CEL
Regent House, Vroeseley Road,
Kempston, Bedford
MK42 7JY
Phone: +44(0) 1234 844100
Fax: +44(0) 1234 841450
E-mail: info@casellameasurement.com
Web: www.casellameasurement.com

Casella CEL, Inc. a subsidiary of IDEAL Industries, Inc.
415 Lawrence Bell Drive
Unit 4
Buffalo NY 14221
Toll Free (800) 366-2965
Tel: (603) 672-0031 Fax: (603) 672-8053
E-mail: info@casellausa.com
Web: www.casellausa.com



CASELLA
CEL

Certificate of Conformity and Calibration

Customer: RandTech

Instrument: CEL-110/1

Serial Number: 021018

Job Number: 13560

Date of Issue: 29-Jul-2015

Engineer: M Hill

Traceable Equipment: Reference Calibrator EQ11084
DVM type Fluke 45 EQ00318

Test Conditions:

Ambient Temperature	24.0	°C
Ambient Humidity	40.0	%RH
Ambient Pressure	1008	mBar

Results:

	Level 1	Level 2	Frequency
Initial Reading	114.03 dB	94.04 dB	1.0001 kHz
Final Reading	114.03 dB	94.04 dB	1.0001 kHz

Uncertainty:

Level	±	0.15	dB
Frequency	±	0.5	Hz

This test certificate confirms that the instrument specified above has been successfully tested to comply with the manufacturer's published specifications.

Tests are performed using equipment traceable to national standards in accordance with Casella's ISO 9000:2008 quality procedures.

The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor $k=2$, providing a level of confidence of approximately 95%.

This certificate may not be reproduced other than in full, except with prior written approval of the issuing laboratory.

Casella CEL, Regent House, Wolseley Road, Kempston, Beds, MK42 7JY.



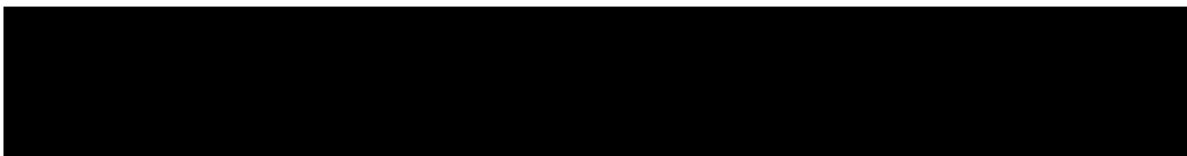
Ref: MDR/J2866a

We trust the design information meets with your approval and we remain.

Yours faithfully



M D Randall BSc(Eng) CEng MCIBSE MIOA



Annex A:

Information Required To Support Planning Application For Commercial Kitchen

Information on Premises:

The number of meals which will be served per day will be around 30-100.

The methods and preparation of cooking will take place during business hours only and not before or after. The cooking style involves using fresh produces with light touches of fresh ground spices.

The types of meal that will be served is INDIAN cuisine which involves use of standard spices which are often used in other establishment, the strongest of the odour to be found in INDIAN cooking is the use of garlic and onion, the other spices are lightly used and have a low level of odour.

Plans and drawings:

Please find the scaled drawing submitted with this form in the ventilation design scheme.

Pre-filters:

Disposable Synthetic Panel Filters Manufacturers AirClean ltd please see o&m instructions and technical supplied information see documents in ventilation report. To be used with the carbon filtrates system before the carbons which come after the stainless steel baffle filters which are installed on the canopy extract hood.
Dimensions 595*595*45

Electrostatic precipitators:

n/a



Google earth

feet
meters

70
20



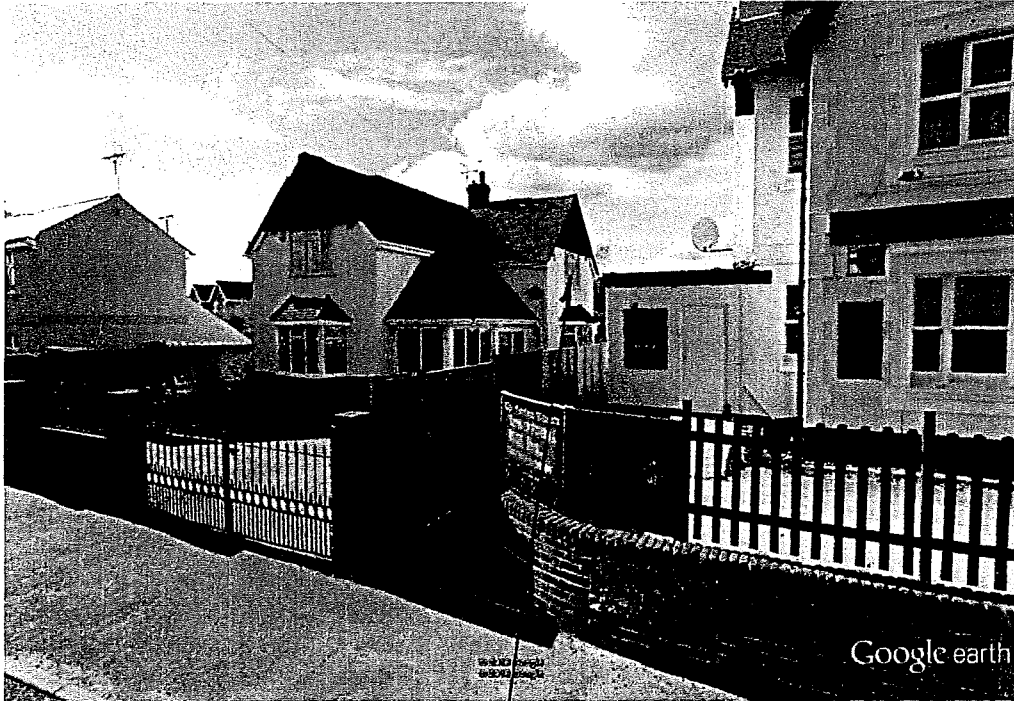
HOUSE WINDOWS

FLAT ROOF AREA FOR VENTILATION SYSTEMS

NOISE MEASUREMENT LOCATION
ON BOUNDARY FENCE

SITE PLAN

Res: 11/02/2016



Google earth

feet 10
meters 3

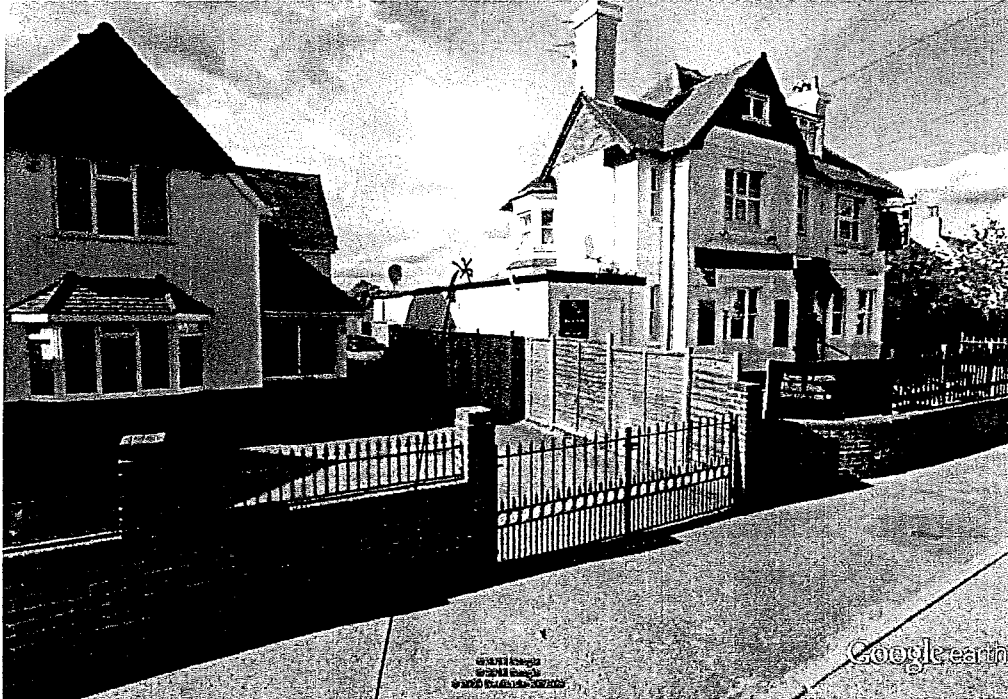


Nearest House Window Overlooking Feet Roof

View From Road

Ref: 1102/02866

Fa



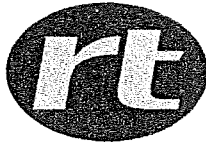
Google earth

feet 10
meters 3

FLAT ROOF AREA FOR VENTILATION PLANT

View From Road

Ref: W02/J2056



POWERED VENTILATION LTD [REDACTED]	
Client: 43 FELPHAM WAY, BOGNA REGIS, PO22 8PT	
Project: PROPOSED EXTRACTION AND FRESH AIR PLANT & DUCT PLAN VIEW	
Scale: 1/100	
Drawing no:1	
Job no:N/A	
NOTES:	
Council ref: FP /162 / 15/ PL	
Officer:	
Date: 19/03/16	
Drawn: ABU TAHMID	

* DISCHARGE SILG-COR CPS500-7-D
* INLET SILG-COR CPS500-1-D
* ACOUSTIC FAN JACKST ~ 10kg/m²

1652 MM12/02806



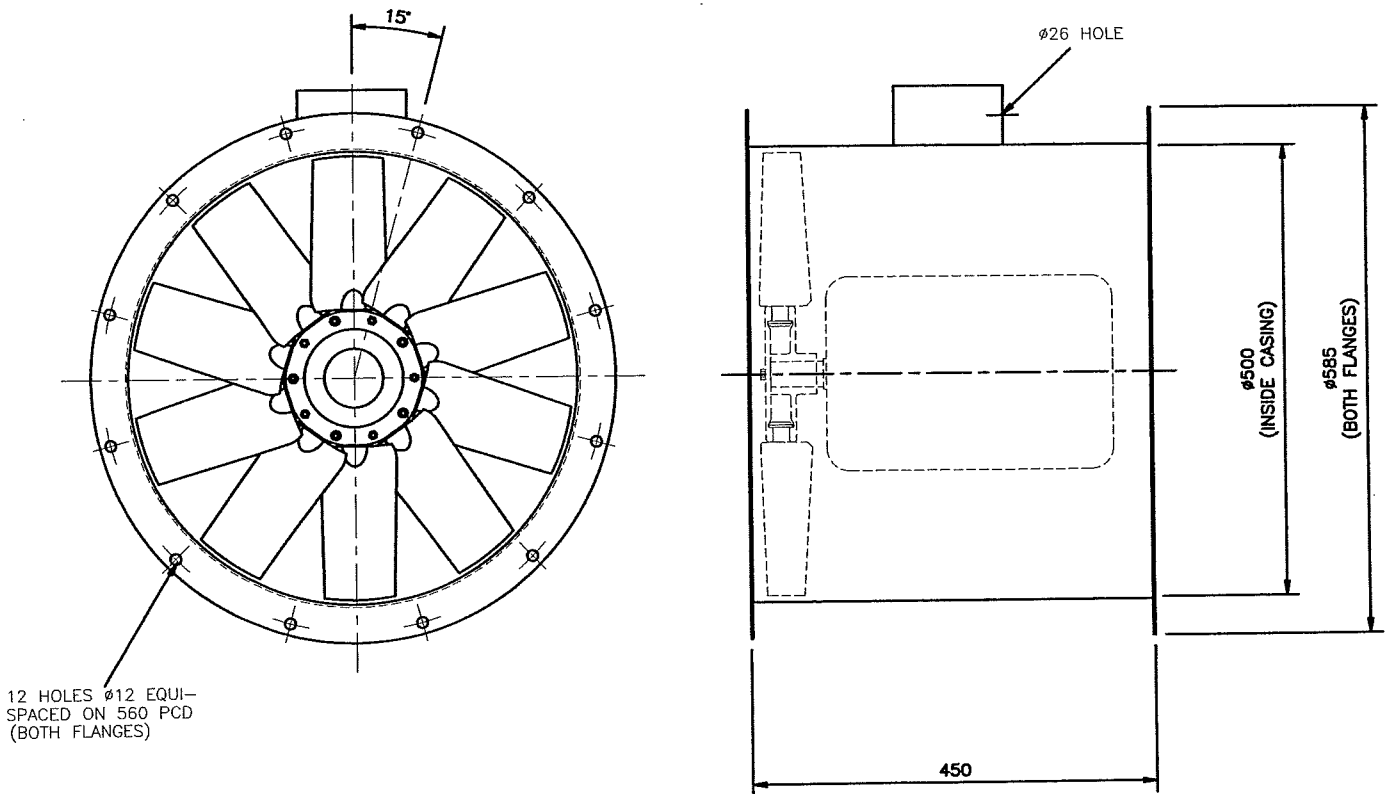
POWERED VENTILATION LTD. [REDACTED]	
Client: 43 FELPHAM WAY, BOGNA REGIS, PO22 8PT	
Project: PROPOSED EXTRACTION AND FRESH AIR PLANT & DUCT PLAN VIEW	
Scale: 1/100	
Drawing no:2	
Job no:N/A	
NOTES:	
Council ref: FP /162 / 15/ PL	
Officer:	
Date: 19/03/16	
Drawn: ABU TAHMID	



DRAWING FOR MODEL SLC500/2-3B

Location: THE FELPHAM CLB Designation: EXTRACT FAN

Version 2 On-going product improvements may result in dimensional changes without notice.



© 2001 Elta Fans

