NOTES

Details of fume extraction:

- JM MaXfan
- 400mm - 600mm diameter
- Volume flow up to 7m3/S
- Static pressures up to 1100 Pa
- High pressure kitchen extract
- All casings are hot dipped galvanized
- Motor protection IP55
- Overheat protection fitted as standard
- Inverter controllable

Kitchen exhaust canopy to contain stainless steel baffle filters, sized to suit the main air volume.

Fan duty to be fully in accordance with the HVCA specification DW 172, also specifically, Tables 2 and 3 for the cooking appliances there under

Total calculated air volume =2.16 m3/S

Extract fan to be Max 56, inline fan complete with auto transformer fan speed controller

Kitchen replacement air to be provided at a minimum rate of 85% of the extract air volume, tempered, all in accordance with the HVCA specification DW 172.

Specifically, supply air to be delivered via, tile replacement, 4 way below ceiling mounted supply air diffusers, complete with rear obd's for air balancing.

Total calculated air volume = 1.84m3/S

Supply air handling unit to comprise, louvered fresh air inlet, EU7 Grade multi pleated air filter, electric air tempering heater and centrifugal supply air fan, also complete with auto transformer fan speed controller

Kitchen replacement air to be provided at a minimum rate of 85% of the extract air volume, tempered, all in accordance with the HVCA specification DW 172.

Specifically, supply air to be delivered via, tile replacement, 4 way below ceiling mounted supply air diffusers, complete with rear obd's for air balancing.

Total calculated air volume = 1.84m3/S

Supply air handling unit to comprise, louvered fresh air inlet, EU7 Grade multi pleated air filter, electric air tempering heater and centrifugal supply air fan, also complete with auto transformer fan speed controller

Public Areas to be provided with heating and cooling via, ceiling void mounted, heat pump fan coil units with ducted air to be delivered via, tile replacement, 4 way blow ceiling mounted supply air diffusers, complete with rear obd's for air balancing

Fresh air to be provided at a minimum rate of 12 litres per second per person, all works to be in accordance with the HVCA specification DW 144.

Total calculated air volumes = Ground floor, 0.43 m3/S

Refrigerant pipework would connect to two, remote external heat pump units, these to be A/A rated, with inverter driven controls.

Telephone: 01206 222 555 | Fax: 01206 222 035 | Email: fans.uk@flaktwoods.com | Express Website: www.flaktwoods.com/express | Fan Selector: www.flaktwoods.com/fanselector

Kitchen Fan Canopy

When selecting a suitable fan for kitchen extract the following factors should be considered:

Design criteria as set out in DW172
The "Thermal Convection Method". Basically, this is using the cooking equipment area in m^2 x the cooking equipment "coefficient" x canopy factors to give the required air volume.

However, it is considered acceptable at quote stage only to use the "Face Velocity Method", which is calculated for wall canopies by using the canopy length x the canopy width x loading.

1. **For Light Loading, 0.25m/s.**
   Examples of light loading include – steaming ovens – boiling pans – bians marie – and stock pot stoves
2. **For Medium Loading, 0.35m/s.**
   Examples of medium loading include – deep fat fryers – bratt pans – solid and open top ranges and griddles
3. **For Heavy Loading, 0.5m/s.**
   Examples of heavy loading includes – chargrills – mesquite and specialist boiler units.

Typical wall canopy example:

3m x 1.2m by medium loading which is 0.35m/s as shown above.
Therefore air volume would equal 1.26m^3/s

Once the air flow requirement is determined, the system pressure should be calculated. Factors that will need to be included in the pressure calculation are:

1. Number size and type of grease filters fitted in the canopy
2. Duct system layout including all bends
3. Odour control requirements
4. Noise control requirements

Odour control requirements as defined by DEFRA.

The main odour control options are:

- Fine or pre-filters
- Electrostatic precipitator
- Carbon filters
- UV ozone system

Depending on the type of cooking, will determine the type of odour control required and thus the pressure total the fan will have to overcome.

Kitchen Canopy

Complete Solutions

Noise Control as stated in BS8233
Internal noise level should not exceed 30dB (A) (good) or 35dB (A) (acceptable)
External noise level should not exceed 45dB (A) at the closest sensitive point.

Depending on the odour and fan selection the amount of noise control can be deter mined and thus the total pressure the fan will have to overcome.

There are no typical air volume or pressure requirements for wall or island canopies, it is however not unusual to see air volumes between 1m^3/s and 10m^3/s and pressure requirements between 100Pa and 1000Pa

Fläkt Woods fans below show a good cross section suited to kitchen ventilation.

JM Aerofoil
Are a cost effective solution suited to low – medium pressure systems with acceptable noise levels

JM Aerofoil MaXfan
Is a cost effective solution suited to medium – high pressure systems, but may require some form of noise control.

Axcent 3/PowerBox/Greasefighter
Are suited on anything from low – high pressure systems and will generally have a lower stating point noise level, when compared with the JM and JM Maxfan.
The Greasefighter also has the advantage of an externally located motor out of air stream with a maximum working temperature of 80°C.





Other **options** to be considered:
JMP Plate Fan
- 315-630mm 4 Pole 1ϕ (pages 102-105)
JM Aerofoil
- 315-1000mm 2 & 4 Pole 3ϕ (pages 9-23)
Bifurcated fans
- 150-630mm 2 & 4 Pole, 1 & 3 phase, featuring an externally located motor out of air stream and a maximum temperature rating of 200°C (pages 34-41)

The advantage of using Fläkt Woods for your **Kitchen Canopy Solutions** is the *Next Day availability* and product range flexibility to meet all possible requirements.

JM Aerofoil

31JM/18/4/S/...	1420	BT4	DX331468	40	0.095	0.5	1.5	CD1705	ME1.1	N/A	44	34	0.62	0.51					
35JM/18/4/S/...	1420	BT4	DX351468	40	0.13	1.0	1.8	CD1705	ME1.1	MT1.5	49	39	1.01	0.86	0.54				
40JM/18/4/S/...	1420	BT5	DX401452	40	0.36	2.2	5	CD1705	ME1.3	MT1.5	52	42	1.52	1.31	1.27				
45JM/18/4/S/...	1420	CT5	DX451466	40	0.39	2.6	5.6	CD1705	ME1.3	MT1.5	56	46	2.15	1.95	1.87				
50JM/20/4/S/...	1420	CT5	DX511466	38	0.52	3.9	7.8	CD1705	ME1.8	MT1.5	58	48	2.81	2.42	2.20	1.94	1.62		
56JM/18/4/S/...	1420	CT5	DX571456	38	0.87	5.7	13.5	CD1705	ME1.8	MT1.8	58	48	3.76	3.46	3.15	2.81	2.39		
56JM/20/4/S/...	1420	CT5	DX571459	38	0.87	5.7	13.5	CD1705	ME1.8	MT1.8	58	48	3.47	3.25	3.01	2.74	2.43		
63JM/20/4/S/...	1420	CT5	DX641453	16	0.97	6.7	13.5	CD1705	ME1.8	MT1.8	61	51	3.12	2.96	2.80	2.58	2.30	1.95	1.36



JM Aerofoil MaXfan

40 MaXfan	1410	BT5	DX411453	0.64	4.4	10	CD1705	ME1.8	67	57	1.54	1.38							
45 MaXfan	1410	CT5	DX451457	0.79	5.8	11.2	CD1705	ME1.8	65	55	1.80	1.56	1.27						
50 MaXfan	1380	CT5	DX511467	1.04	13.4	27	CD1708	ME1.12	75	65	2.91	2.67	2.40	2.09					
56 MaXfan	1380	CT5	DX571460	1.04	13.4	27	CD1708	ME1.12	75	65	3.26	3.03	2.77	2.38					
63 Maxfan	1380	CT5	DX641606	1.04	13.4	27	CD1708	ME1.12	76	58	3.82	3.54	3.26	2.54	2.09	1.08			
*63 MaXfan Plus	1420	PM112	DX641405	5.5	18.5	110	CD1343	FM07	79	56	7.26	6.98	6.69	6.51	6.28	6.05	5.52	4.82	

*Available in 3 phase only.



Roof Units

DBN330	1300	BT5	DX332163	0.81	1.85	3.3	CD2405	N/A	N/A	57	47	1.05	0.8	0.57	0.4	0.21		
DBN400	1380	CT5	DX402164	0.58	3.8	7.8	CD2405	ME1.8	MT1.5	61	51	1.8	1.65	1.45	1.2	1.05		
DBC330	1350	CT5	DL332163	0.45	4.2	6	CD2405	ME1.8	MT1.5	56	48	5.1	5	4.7	4.5	4.3	3.5	2.5
DBC400	1350	CT5	DL402163	1.2	7.8	18.7	CD2405	ME1.12	MT1.8	64	54	5.6	5.3	5.0	5.0	5.0	3.3	



Axcent 3

D4/409	1380	CT5	DZ342152	0.56	3.8	7.8	CD1605	MT1.5	61	51	1.55	1.5	1.47	1.43	1.35	1.13	0.98	0.54						
E4/909	1400	F2E	WZ272153	5.3	12.3	48	CD1605	MT1.10	71	61	3.63	3.6	3.55	3.5	3.4	3.2	2.9	2.5	2.3	1.85	1.47	0.8	0.2



PowerBox - GreaseFighter

Powerbox-GF400	1360	AX4604194	70°C	0.57	3.2	12.8	MT1.5	DA4203088	52	55	1.14	1.02	0.72	0.31			
Powerbox-GF450	1380	AX4504194	80°C	0.87	5.0	20.0	MT1.5	DA4203088	55	58	1.58	1.44	1.31	1.17	0.97	0.61	
Powerbox-GF500	1350	AX5004194	75°C	1.28	7.0	28.0	MT1.8	DA4203089	60	62	2.22	2.04	1.95	1.83	1.36	1.06	0.51



*Sound pressure levels quoted are average dBA at 3m distance over a sphere, under free field conditions and are presented for comparative purposes only.

Fan & Silencer resultant inlet or outlet levels shown above are typical based on Flakt Woods 1D/standard length silencers bolted straight to fan (see relevant silencer section(s).)

FUJITSU

cassette



- Multi-directional air flow
- Detachable and washable intake grilles
- Cooling/heating
- Ultra-quiet
- Washable air filter
- Easy-to-use remote controller
- Quick and easy installation
- Slender fit feature
- Seven day timer
- Condensate lift pump



For AUY24L



For AUY30L/36L



For AUY45L/54L

Designed to be installed into most types of suspended ceiling, the standard cassette is ideal for businesses and commercial premises. Fresh air ventilation can be introduced through the controllable cassettes' louvres. There is also a branch duct facility for air distribution to adjacent areas. The combination of these features gives occupants total control over air movement within the room via an easy-to-use controller. The 4-way cassette is compact, can be concealed within most ceiling voids and is supplied with a long-life washable filter.



FUJITSU

cassette

www.fujitsu-general.co.uk

		Inverter Heat Pump - R410A				
	Indoor	AUY24L	AUY30L	AUY36L	AUY45L	AUY54L
	Outdoor	AOY24L	AOY30L	AOY36L	AOY45L	AOY54L
Up/Down Swing Flaps		✓	✓	✓	✓	✓
Auto Flaps		✓	✓	✓	✓	✓
Auto Shut Flaps		✓	✓	✓	✓	✓
Auto Air Flow Adjustment		✓	✓	✓	✓	✓
Auto Restart		✓	✓	✓	✓	✓
Program Timer		✓	✓	✓	✓	✓
Auto-Changeover		✓	✓	✓	✓	✓
Weekly Timer		✓	✓	✓	✓	✓
Weekly + Setback Timer		✓	✓	✓	✓	✓
Connectable Distributing Duct		✓	✓	✓	✓	✓
Connectable Fresh Air Duct		✓	✓	✓	✓	✓
Washable Panel		✓	✓	✓	✓	✓
Nominal Capacity (kW)	Cooling	7.10	8.50	10.00	12.50	13.30
	Heating	7.80	10.00	11.20	14.00	16.00
Moisture Removal	l/h	2.00	3.00	4.00	4.50	5.00
Dimensions (HxWxD) mm	Inner (Ex. Grille)*	246x830x830	296x830x830	296x830x830	296x830x830	296x830x830
	Outer	650x830x320	830x900x330	830x900x330	1290x900x330	1290x900x330
Net Weight (kg)	Inner (Inc. Grille)	34	37	37	40	40
	Outer	54	64	64	105	105
Room Air Circulation (high) m³/h	Inner	1250	1550	1550	1700	1700
	Outer	3200	3600	3800	6600	6600
Power Supply	V-PH-Hz	230 / 1 / 50	230 / 1 / 50	230 / 1 / 50	230 / 1 / 50	230 / 1 / 50
Power Supply To		Outdoor	Outdoor	Outdoor	Outdoor	Outdoor
Running Current (A)	Cooling	11.10	12.50	17.60	19.50	23.80
	Heating	10.50	12.40	15.20	17.30	21.60
Starting Current	A	10	15	15	15	15
Fuse Rating	A	25	30	30	30	30
Power Consumption (kW)	Cooling	2.53	2.86	4.01	4.45	5.45
	Heating	2.40	2.84	3.49	3.95	4.95
Interconnecting Cable		3 + E	3 + E	3 + E	3 + E	3 + E
Remote Control Type		Wired	Wired	Wired	Wired	Wired
Noise Levels (dB(A))	Indoor L/M/H	39 / 44 / 46	41 / 44 / 48	41 / 44 / 48	45 / 48 / 50	46 / 49 / 51
	Outdoor	52	53	53	54	54
Max Pipe Length	m	25	50	50	70	70
Max Height Difference	m	15	30	30	30	30
Refrigerant Charge	m	10	15	15	20	20
Pipe Size (inches)	Gas	5/8 (15.88mm)	5/8 (15.88mm)	5/8 (15.88mm)	5/8 (15.88mm)	5/8 (15.88mm)
	Liquid	3/8 (9.52mm)	3/8 (9.52mm)	3/8 (9.52mm)	3/8 (9.52mm)	3/8 (9.52mm)
Operating Range (°C)	Cooling	0 ~ 43	-10 ~ 43	-10 ~ 43	-15 ~ 43	-15 ~ 43
	Heating	-10 ~ 24	-10 ~ 24	-10 ~ 24	-15 ~ 24	-15 ~ 24
Refrigerant		R410A	R410A	R410A	R410A	R410A

*Exclusive Grille. Grille dimensions = 35x950x950mm

Cooling & Heating capacities are based on the following conditions:
Cooling: Indoor Temp.: 27°C DB/19°C WB, Outdoor Temp.: 35°C DB/24°C WB
Heating: Indoor Temp.: 20°C DB, Outdoor Temp.: 7°C DB
Note: Fuse ratings shown are only for information. Any fuse or MCB's installed remote should be sized in accordance with I.E.E. regulations.

For full installation details please contact your local distributor

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