

TECHNICAL DESIGN NOTE

3. KITCHEN EXTRACTION

The method of kitchen extract ventilation is to be via extract canopy arrangement, with local air capture canopy located above areas of cooking. Grease filters shall be integrated within the canopies.

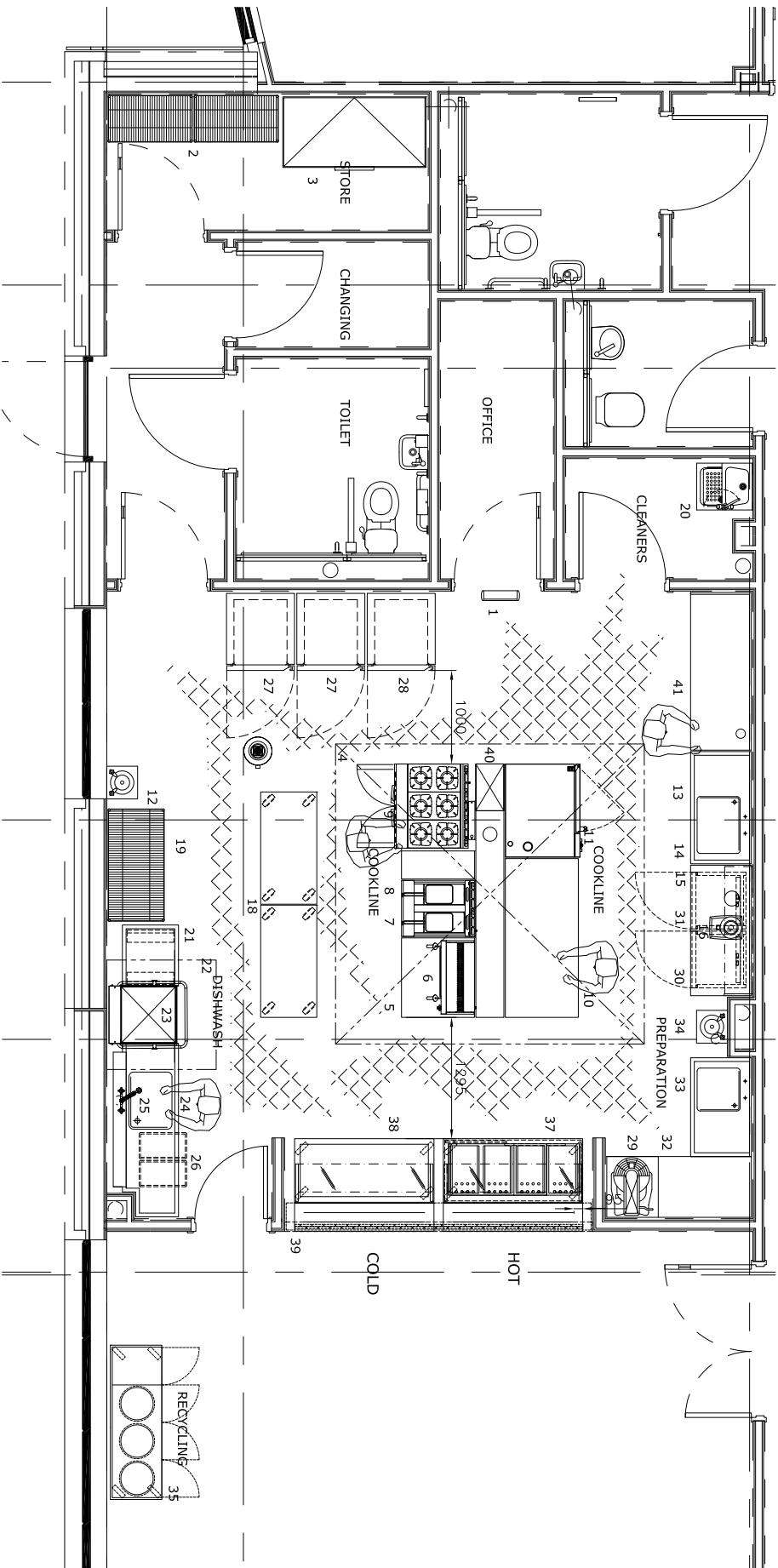
Kitchen exhaust ductwork shall discharge at roof level via high velocity outlets at least 1.0m above the nearest openable window.

Kitchen ductwork installation shall be designed and installed and commissioned in accordance with DW 172 HVCA.

The following appendices detail the extraction design.

TECHNICAL DESIGN NOTE

Appendix A - Kitchen Layout



SCHEDULE OF EQUIPMENT

- 11::FLYKILLER

22::DRY STORE RACKING

33::CHEST FREEZER

4::VENTILATION HOOD

5::WORKTOP

6::GRILL

7::DOUBLE WELL FRYER

8::WORKTOP

9::SIX BURNER OVEN RANGE

10::WORKTOP

11::COMBINATION OVEN

12::WASH BASIN

13::SINK UNIT

14::WORKTOP

15::FOOD PROCESSOR

16::WALLSHELF

17::OMITTED

18::MOBILE WORKTOPS

19::CLEANS RACK

20::JANITORAIL SINK
- 21::CLEANS OUTLET

22::CONDENSE HOOD

23::PASS THRU DISHWASHER

24::DIRTIES TABLE/ PRE WASH

25::SPRAY ARM

26::BINS

27::UPRIGHT FRIDGES x2

28::UPRIGHT FREEZER

29::MIXER

30::U/C 1 DOOR FRIDGE

31::U/C 1 DOOR FREEZER

32::WORKTOP/DROP-DOWN FOR MIXER

33::SINK UNIT

34::WASH BASIN

35::RECYCLING UNIT

36::OMITTED

37::HOT BAIN MARIE COUNTER

38::CHILLED WELL COUNTER

39::ROLLER SHUTTER

40::SERVICES DISTRIBUTION UNIT

41::WORKTOP

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All dimensions must be checked on the prior to project commencement.

It is the clients responsibility to provide a minimum 600mm width for access of the output item if required.

Revisions	
A	14.03.20 CHANGED TO NEW CA
B	01.05.20 BOM CHANGED/ CLIENT COMMENTS
C	07.07.20 UPDATED FOR NEW DRAWINGS
E	12.09.20 CHANGED TO NEW CA
F	26.09.20 CHANGED TO NEW CA

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CATERING EQUIPMENT & DESIGN SERVICES

Client
ROUNDWOOD SCHOOL

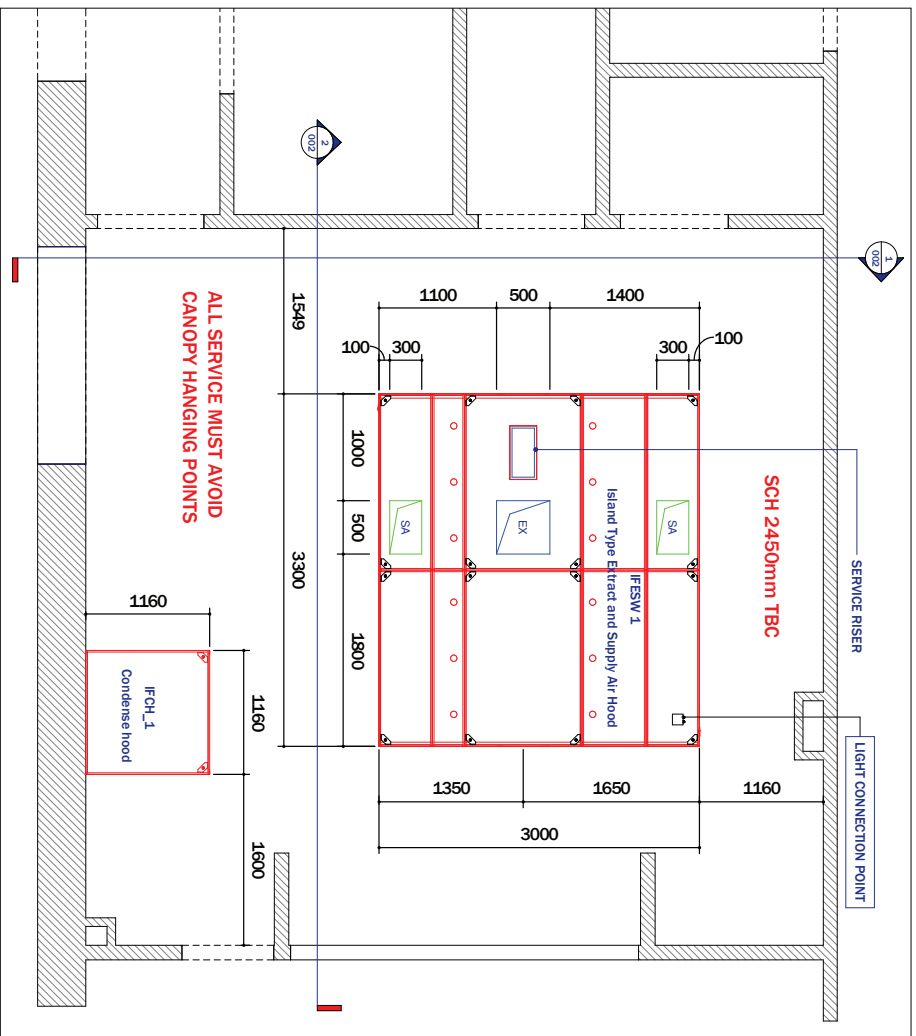
Project
ROUNDWOOD SCHOOL

Dwg Title
PROPOSED
FOODSERVICE LAYOUT

Date	Scale	Drawn By
14.03.2020	1:25	DH
Dwg No	Rev No	Rev No
KC/1563/RS	Issued	E

TECHNICAL DESIGN NOTE

Appendix B - Kitchen Hood



HOOD DETAILS									
Item Number	Manufacturer	Description		Number of Campy Sections	Hood Length	Hood Depth	Front Hood Height	Hood Floor Or	
IFESW 1	Innox	Island Type Extract and Supply Air Hood		2	3300	3000	480	2000	
IFCH 1	Innox	Condense hood			1160	1160	480	2000	
EXTRACT VOLUME									
Item Number	Extract Volume	Extract Pressure Drop	No of Extract Spigots	Extract Spigot Width	Extract Spigot Depth	Extract Spigot Velocity			
IFESW 1	1.447 m³/s	120.0 Pa	1	500	500	5.788 m/s			
SUPPLY AIR VOLUME									
Item Number	Supply Air Volume	Supply Air Pressure Drop	No of Supply Air Spigots	Supply Air Spigot Width	Supply Air Spigot Depth	Supply Air Spigot Velocity			
IFESW 1	1.230 m³/s	80.0 Pa	2	500	300	4.100 m/s			
LIGHTS									
Item	Light Manufacturer	Light Model	Number of Lights	Lights Volts	Lights Watts	Lights Amps	Lights Notes		
IFESW 1	Seconnone	Nano Inceptor	12	230 V	58 W	5.000 A	Pre-wired to single connection point		
SDU SCHEDULE									
Item Number	Description	Number of Service Risers	SDU Length	SDU Width	SDU Height	SDU Riser Height	SDU Top Height	Notes	
IFSDU	Service Spine 1		2700	250	890	2500	1200		

VENTILATION CANOPY FLOW RATE CALCULATION SHEET			
Project:	Roundwood School		JOS No.: 9947
Drawing Ref:	Kitchenquip 1983JSE Rev E	Date	01/02/2021

Item	Description	Width (mm)	Depth (mm)	Power Watts	Amb	TCC	Flow Rate l/s
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5	WORKTOP	850	780	N/A	0.65	0.03	0.0199
6	GRILL	775	380	Gas	0.28	0.75	0.1210
7	FRYER	600	785	Gas	0.47	0.5	0.2555
8	BENCH	300	780	N/A	0.23	0.03	0.0070
9	OPEN TOP PANACE	900	765	Gas	0.71	0.4	0.2826
40	SOU	250	2700	N/A	0.68	0.03	0.0203
11	10 GRID COMBINATION OVEN	995	800	Electric	0.80	0.32	0.2547
10	BENCH	1700	780	N/A	1.33	0.03	0.0988

		0.0000	0.00	0.00	0.00	0.00	0.0000
		0.0000	0.00	0.00	0.00	0.00	0.0000
		0.0000	0.00	0.00	0.00	0.00	0.0000
		0.0000	0.00	0.00	0.00	0.00	0.0000
		0.0000	0.00	0.00	0.00	0.00	0.0000
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		0.0000	0.00	0.00	0.00	0.00	0.0000
		0.0000	0.00	0.00	0.00	0.00	0.0000
		0.0000	0.00	0.00	0.00	0.00	0.0000
		0.0000	0.00	0.00	0.00	0.00	0.0000

Theoretical extract volume required 1.017171m³/s

Canopy Factor	1.38
Extract Flow Rate M3/SEC	1.4412
Supply Flow Rate (85% M3/SEC)	1.2249

The above calculation is to allow ventilation of equipment under the canopy only it does not take into account the flow rate of the kitchen hood or the flow rate of the exhaust fan. The flow rate of the exhaust fan is calculated as follows:
 Method 1.
 Method 2.

KEY		
IMAGE	DESCRIPTION	CODE
	CANOPY HANDING POINT	HP
	CANOPY LIGHT CONNECTION POINT	CP
	LED SPOT LIGHT	SL
	INTELL. PANEL	IP
	GALVANIZED STEEL EXTRACT DUCT	EX
	GALVANIZED STEEL SUPPLY AIR DUCT	SA
	SUSPENDED CEILING HEIGHT	

[illegible]

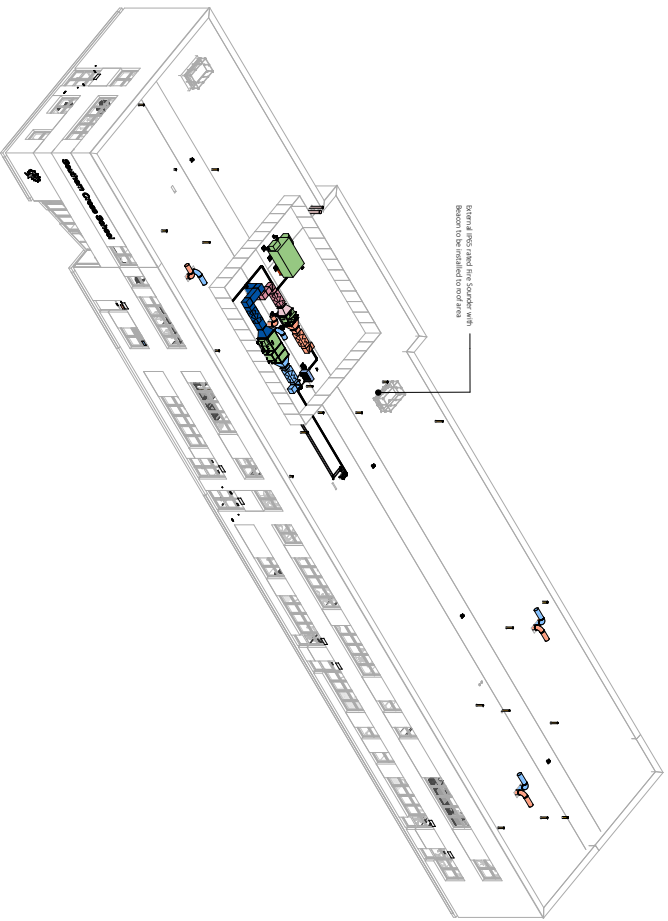
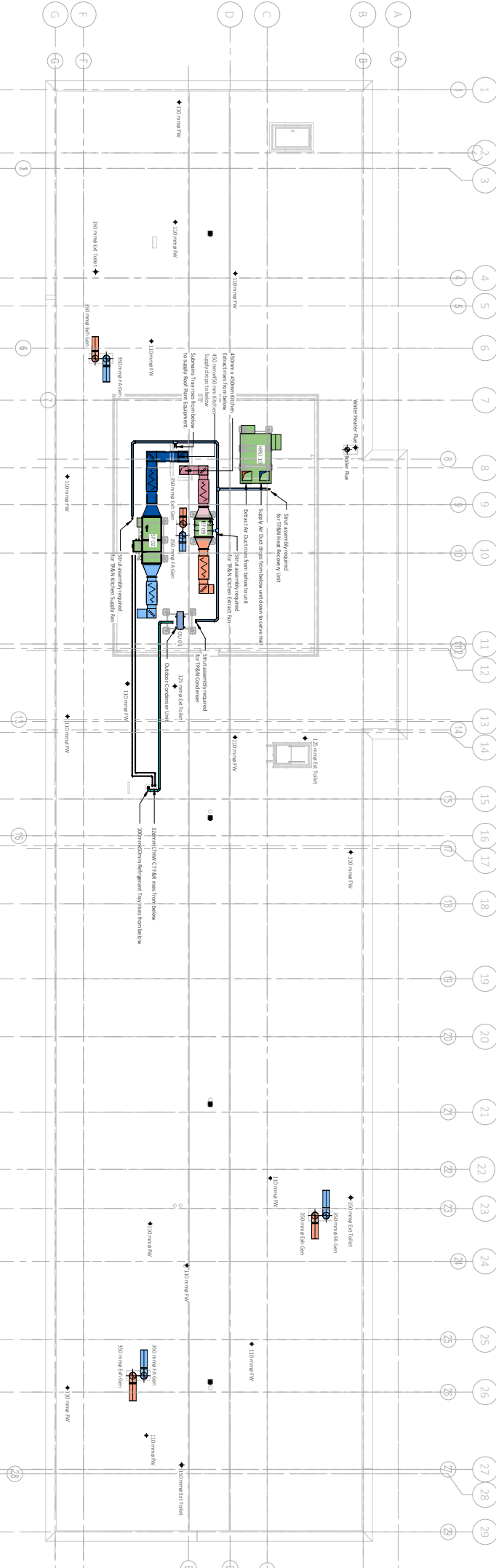
- NOTES
- ALL ELECTRICAL CONNECTIONS BY OTHERS.
- GAS SOLENOID VALVE BY OTHERS.
- ALL FANS AND DUCT WORK BY OTHERS.
- ALL SPROGTS WILL BE FIXED IN POSITION SHOWN READY FOR FINAL CONNECTION TO MAIN DRIFT BY OTHERS.
- HOOD IS MANUFACTURED TO SUIT A MAX SUSPENDED CEILING HEIGHT OF 2400MM HIGHER CEILINGS WILL REQUIRE VALANCE TO TOP OF HOOD AT EXTRA COST.
- ALL SERVICE MUST AVOID CANNOPY HANGING POINTS.
- ALL HOODS ARE SUPPORTED FROM STRUCTURAL CEILING.
- CONDENSE HOOD REQUIRES FINISHED WALL SURFACES PRIOR TO INSTALLATION.
- NO ALLOWANCE HAS BEEN MADE FOR ANY MECHANICAL OR ELECTRICAL WORKS WITHIN THE SOLI.
- NO ALLOWANCE HAS BEEN MADE FOR: CANNOP EMERGENCY LIGHTING, POWERED ACCESS EQUIPMENT, SECONDARY SUPPORT STEEL WORK, KITCHEN AERB LIGHTING, ODOUR CONTROL, ELECTRICAL WORKS.

The logos are arranged horizontally. From left to right: **inox** (blue diamond icon above the text), **ceda** (with a colorful arc above the text), **FEFA** (with the text "Foodservice Equipment Association" below it), and **cedabond** (with a colorful arc above the text).

TITLE	
KITCHEN HOOD	
CLIENT	
KITCHENQUIP	
PROJECT NUMBER	REV
5947	P01
DRAWING NUMBER	SCALE (if A1)
001	As indicated
DRAWN BY	CHECKED BY
Author	Checker
	DATE
	06/05/20

TECHNICAL DESIGN NOTE

Appendix C - External Extract Fan Layout



Abbreviations for Equipment Served are as follows:	
LHW	Low Temperature Hot Water
F	Flow
R	Return
CT	Constant Temperature
VT	Variable Temperature
FA	Fresh Air
Eh	Exhaust
PW	Pot Water
F	Extraction Fan
SF	Supply Fan
OU	Outdoor Unit
HRU	Heat Recovery Unit

Reason: C2	Selected
CONFIRMATION	
Client:	955
Project:	Burnwood 5170d
Slack:	
External Portal Layout	
Root level	
team ME	
Services Ltd	
LAST REVISION: 10/10/2019 10:31:00 BURNWOOD 5170D 001.DWG www.team.me	
Drawn by:	
RWD-ME-01-RP-DR-ME-51001	
Scale:	
1:100 P/A1	
15/07/21	

TECHNICAL DESIGN NOTE

Appendix D - Kitchen Extract Fan Details



SUMMARY FAN DATA SHEET

Nuaire, Western Industrial Estate, Caerphilly, CF83 1NA, United Kingdom. email:info@nuaire.co.uk

UK Commercial enquiries T:029 2085 8200 UK Residential enquiries T:029 2085 8500 International enquiries T:+44.29 2085 8497

Whilst the information given on this data sheet is fan specific, it is in summary and reference to the product selection catalogue and installation & maintenance documents is recommended.

This data sheet produced on 11 Jan 2021 17:14 using software version 4.7.3785.0

Project Details

Location: EF09

Technical Data

SQF - Squif Single In-line Fans

Fan Code: **SQFA62ES**
Installation Manual Links: 671175

Required duty: 1.434 m³/s at 370 Pa
Actual duty: 1.441 m³/s at 374 Pa
Actual at required flow: 1.434 m³/s at 374 Pa

When speed controlled to required duty (99.52%):

Fan Input Power: **0.915 kW**
Motor Input Power: **1.269 kW**
Specific Fan Power: **0.9 W/(l/s)**
Velocity at required duty: 1.992 m/s
Fan Total Efficiency: 58%

At full speed:

Fan Input Power: 0.928 kW
Maximum Fan Input Power: 0.968 kW
Motor Input Power: 1.287 kW
Specific Fan Power: 0.9 W/(l/s)
Fan Total Efficiency: 58%

Maximum Fan Speed: 6 pole, 960 RPM
Electrical Supply: 400V 3 Phase 50 Hz
Nominal Motor Rating: 1.1 kW
Motor current (flc): 3 A
Motor starting current (sc): 3 A
Motor Efficiency: IE2 / High Efficiency

Max. operating temp: 90°C
Weight: 141 kg
Starting currents are nominal for D.O.L. starting.

Sound Data

Acoustic performance to ISO 13347 and AMCA 300.

Noise calculated speed controlled to required duty (99.52%)

Sound Power Levels re 1 pWatts (Hz):

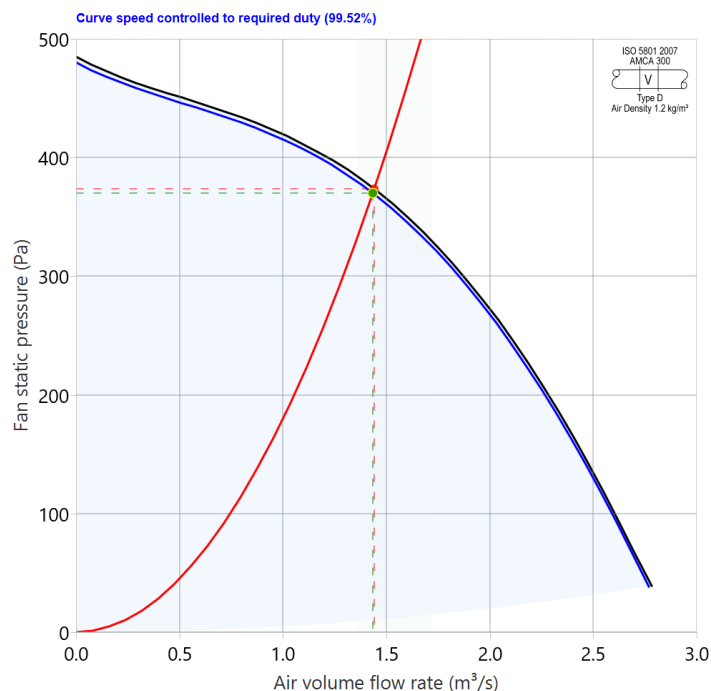
Hz	63	125	250	500	1k	2k	4k	8k	dBA
Induct Inlet	86	95	82	77	75	74	73	71	
Induct Outlet	83	96	77	75	79	78	74	73	
Breakout	80	89	73	69	66	65	58	49	55
For 100% speed:	+1	+1	+1	+1	+1	+1	+1	+1	

dBA is spherical at 3 metres. For hemi-spherical add 3 dBA.

Values shown are for inlet Lw, outlet Lw sound power & breakout levels for: Installation Type D: ducted inlet, ducted outlet. Ratings include the effects of duct end correction.

Please note that the noise data stated on this data sheet for the unit and/or silencer is tested in accordance with UK, European and International industry laboratory standards. However onsite conditions may vary and we would recommend that this information is verified by an acoustic specialist in order to ensure its suitability for the intended application.

Performance Chart



Additional Notes

Please note the SFP for this selection is 0.9w/l/s.

Selected Ancillaries

2 x SQFF5 Square flexible connector double flanged

Specification

In-line centrifugal fan suitable for both vertical & horizontal mounting. The unit casing shall be heavy gauge galvanised steel. The fans shall be of high efficiency backward curved centrifugal design, manufactured in galvanised steel. Fans shall be direct drive with IE2 high efficiency motors to BS5000 as standard, where appropriate. The unit motor shall be positioned outside the ventilation airflow path. The unit shall be capable of continuous operation at 90°C.

Unit fitted with full Ecosmart controls, BMS interfaces and commissioning controls. Ecosmart fans incorporate (in a convenient separate enclosure) a control package providing full Ecosmart functionality. The fan shall have the following energy saving functions integrally mounted within the fan unit on a purpose made PCB, all components pre-wired by the manufacturer: integral maximum and minimum speed adjustment/setting; integral adjustable run on timer; integral BMS interfaces, 0-10v and volt free failure indication.

SQFF5

Double flanged flexible connector manufactured from flame proof material. Heat resistant to 400°C with excellent resistance to chemicals, ozone, oil and grease. The connector is air-tight, waterproof and tested to BS476 Part 7.



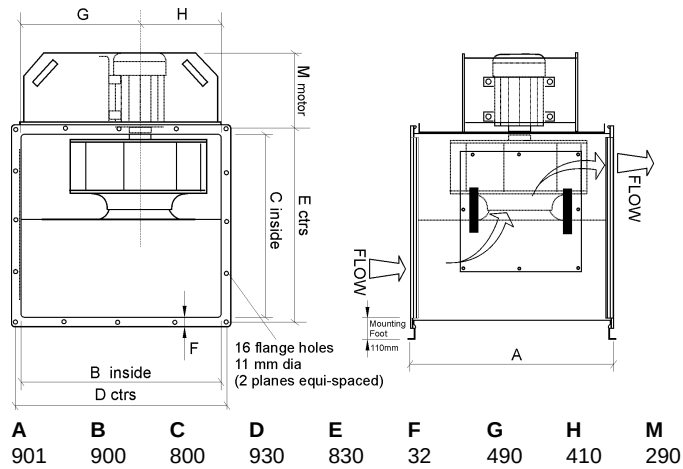
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Fan Dimensions



kg

141.0

Length: Width: Height:

901 930 1120

Drawing is for dimensional purposes only. Dimensions in mm.