

Technical Submittal Sheet

Project No Belle Vue Academy
Project No 376948/001
Directed to: Sir Robert McAlpine



Form 49 (29.03.04)

Plant Item: Air Handling Units
Integral Ref: 009433-IUL-XX-ZZ-SB-M-TS2 - Air Handling Units

Date: 22/09/2021
Revision: C01
Status: S4

Information "Issued for Approval"

Please find attached technical information for the Air Handling Units, proposed manufacture
Air Handling Systems

All units are to be situated on the roof, on a big foot arrangement
Controls will be via the BMS specialist, each unit has a inbuilt appature for a BMS backplate to be mounted

Print Name : P Thompson - Operations Manager

Approval required By: 29/09/2021

Response:

Signed: _____

For: _____

Print Name : _____

Date _____

TECHNICAL SPECIFICATION

PROJECT DETAILS

Project Name	Belle Vue CO-OP Academy, Manchester	Quote No.	AHS 22446
Unit Reference	AHU/RF/01	Revision	2
Unit Model	AIR FLEX 58 F	Date	20 Sep 2021

MECHANICAL STANDARD (BS EN 1886)

CASING

Strength	D1
Air Leakage	L2

THERMAL

Transmittance	T3
Bridging	TB3

PERFORMANCE DATA

SUPPLY

Air Volume	2.540	m ³ /s
Ext. Stat. Pressure	260	Pa

EXTRACT

Air Volume	2.030	m ³ /s
Ext. Stat. Pressure	150	Pa

ERP Compliance

Internal SFP	599.65	W/m ³ /s
ERP Compliance	2018	

UNIT CONSTRUCTION

PANEL

Nom. Thickness	50	mm
Outer Material	Goosewing Grey Coated Steel	
Inner Material	Coated Steel	
Insulation Type	Polyurethane Foam	

GENERAL

Location	External
Roof Type	Pitched Roof
Base Type	Full
Base Material	150x75 P.F.C

UNIT DIMENSIONS

BOTTOM DECK

Width	1,650	mm
Height	1,080	mm
Length	3,050	mm
Base	150	mm

TOP DECK

Width	1,650	mm
Height	960	mm
Length	3,050	mm
Base		mm

O/ALL

Width	1,650	mm
Height	2,290	mm
Length	3,050	mm
Weight +/- 10%	1,362	kg

SPECIFIC FAN POWER

SUPPLY FAN

2.540	m ³ /s
Filter Condition	Clean
Absorbed Power	2.14 kW
Drive Efficiency	100 %
Inverter Efficiency	100 %
Motor Efficiency	100 %

EXTRACT FAN

2.030	m ³ /s
Filter Condition	Clean
Absorbed Power	1.18 kW
Drive Efficiency	100 %
Inverter Efficiency	100 %
Motor Efficiency	100 %

SFP_v

1.31 w/l/s

NOTES

AHU will be delivered to site in 1 sections. Should further splits be required additional costs and length will be incurred.

SUPPLY PATH

INLET SECTION						Component	001
Conn. Type	None		Damper	Yes	Face Velocity	1.990	m/s
Conn. Size	N/A	mm	Location	External	Actuator	By Others	
			Type	Low Loss			
			Size (WxH)	1450 x 880	mm		
			Material	Galvanised Steel			

FROST COIL SECTION						Component	002
AIR SIDE			WATER SIDE			CONSTRUCTION	
Air Volume	2.540	m ³ /s	Medium	Water		Tube Material	Cu - standard
Air on (db)	-5.00	°C	Inlet Temp.	80.00	°C	Fin Material	Al - Standard
Air off (db)	5.00	°C	Outlet Temp.	60.00	°C	Casing Material	Galv Steel
Total Duty	31.26	kW	Flow Rate	0.37	l/s	Header Material	Steel
Air Press. Drop	9	Pa	Fluid Press. Drop	18	kPa	Inlet Conn. Size	1" BSPM
Face Velocity	2.16	m/s	Internal Volume	7.78	l	Outlet Conn. Size	1" BSPM
						Dims (WxH)	1510x 960 mm
						Dims (D)	130 mm

FILTER SECTION						Component	003
AIR SIDE			SPECIFICATION			DETAILS	
Air Volume	2.540	m ³ /s	Type	Panel		Qty	2
Face Velocity	2.10	m/s	Grade	G4		Nom. Size (WxHxD)	610x610x50 mm
Air Pd (Clean)	40	Pa	Withdrawal	Side		Qty	1
Air Pd (Average)	70	Pa				Nom. Size (WxHxD)	305x610x50 mm
Air Pd (Dirty)	100	Pa				Qty	2
						Nom. Size (WxHxD)	610x305x50 mm
AIR SIDE			SPECIFICATION			DETAILS	
Air Volume	2.540	m ³ /s	Type	Bag		Qty	2
Face Velocity	2.10	m/s	Grade	F7		Nom. Size (WxHxD)	610x610x520 mm
Air Pd (Clean)	59	Pa	Withdrawal	Side		Qty	1
Air Pd (Average)	104	Pa				Nom. Size (WxHxD)	305x610x520 mm
Air Pd (Dirty)	150	Pa				Qty	2
						Nom. Size (WxHxD)	610x305x520 mm

INCLUDED OPTIONS / NOTES

Minihelic Gauge (0-250Pa)
 Minihelic Gauge (0-250Pa)
 LED Bulkhead Light c/w Switch
 Test Point

THERMAL WHEEL SECTION			TYPE : (Condensation)			Component 004	
WINTER (F/A)			WINTER (EXHAUST)			CONSTRUCTION	
Air Volume	2.540	m3/s	Air Volume	2.030	m3/s	Fin Material	Standard
Air on (db)	5.00	°C	Air on (db)	21.00	°C	Casing Material	Aluzinc
RH	50	%	RH	50	%	Control Unit	Modbus
Air off (db)	15.60	°C	Air off (db)	7.70	°C	Purge Sector	4: Yes
RH	29.7	%	RH	99	%		
Total Duty	37.2	kW	Total Duty	37.2	kW		
Air Press. Drop	163	Pa	Air Press. Drop	136	Pa		
Tot. Efficiency	66.5	%	Tot. Efficiency	66.5	%		
SUMMER (F/A)			SUMMER (EXHAUST)				
Air Volume	2.540	m3/s	Air Volume	2.030	m3/s		
Air on (db)	28.00	°C	Air on (db)	24.00	°C		
RH	48.1	%	RH	50	%		
Air off (db)	25.30	°C	Air off (db)	27.30	°C		
RH	56.3	%	RH	41	%		
Total Duty	8.5	kW	Total Duty	8.5	kW		
Air Press. Drop	177	Pa	Air Press. Drop	137	Pa		
Tot. Efficiency	66.5	%	Tot. Efficiency	66.5	%		

INCLUDED OPTIONS / NOTES

Lifting Points Fitted to AHU Base

SUPPLY FAN SECTION			Component 005	
DETAILS			FAN	
Air Volume	2.540	m3/s	Type	Plenum-EC
Ext. Static Pressure	260	Pa	Impellor	Backward Curved
Tot. Static Pressure	712	Pa	Qty	Single
Starting Method	Speed Controller		Operation	100 %
A. V. Type	N/A		Model	GR50I-ZID.GG.CR
			Speed	1771 RPM
			Max. Speed	1950 RPM
			Speed Set Value	91 %
			Absorbed Power	2.61 kW
			Total Efficiency	72 %
			MOTOR	
			Efficiency	1.00
			Qty	SINGLE
			Power	3.50 kW
			Speed	1950 RPM
			Pole	N/A
			Full Load Current	5.60 Amp
			Electrical Supply	380/3/50
			Efficiency Class	IE5
			Control	Modbus Module

Sound Power Lw	63 Hz	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz
Fan Inlet (dB)	84	82	77	72	69	66	63	63
Fan Outlet (dB)	85	88	80	81	79	76	73	70

Note : Fan manufacturer data used in accordance with DIN 463 Part 38 & 39, BS 848 Part 2 & ISO 5136. A correction of +6dB should be applied across all octave bands for unit casing adjustment

INCLUDED OPTIONS / NOTES

Door Guard
0-10V Speed Control Required
Pre-Wire to External Isolator c/w aux contacts
LED Bulkhead Light c/w Switch
Test Point

HEATING COIL SECTION Component 006

AIR SIDE			WATER SIDE			CONSTRUCTION		
Air Volume	2.540	m ³ /s	Medium	Water		Tube Material	Cu - standard	
Air on (db)	5.00	°C	Inlet Temp.	80.00	°C	Fin Material	Al - Standard	
Air off (db)	20.00	°C	Outlet Temp.	60.00	°C	Casing Material	Galv Steel	
Total Duty	46.89	kW	Flow Rate	0.56	l/s	Header Material	Steel	
Air Press. Drop	14	Pa	Fluid Press. Drop	14	kPa	Inlet Conn. Size	1"	BSPM
Face Velocity	2.16	m/s	Internal Volume	7.78	l	Outlet Conn. Size	1"	BSPM
						Dims (WxH)	1510x960	mm
						Dims (D)	130	mm

OUTLET SECTION Component 007

Conn. Type	30mm Galv Flange		Damper	No		Face Velocity	1.670	m/s
Conn. Size	1550 x 980	mm	Location	N/A		Actuator	N/A	
			Type	N/A				
			Size (WxH)	N/A				
			Material	N/A				

EXTRACT PATH

INLET SECTION						Component	008
Conn. Type	30mm Galv Flange		Damper	No	Face Velocity	1.520	m/s
Conn. Size	1550 x 860	mm	Location	N/A	Actuator	N/A	
			Type	N/A			
			Size (WxH)	N/A			mm
			Material	N/A			

CONTROLS SECTION						Component	009
Controller Type	Space Only						
Controls Strategy -	N/A						

INCLUDED OPTIONS / NOTES

Recessed Enclosure (700mm Wide x 800mm High Available)

FILTER SECTION						Component	010
AIR SIDE			SPECIFICATION		DETAILS		
Air Volume	2.030	m ³ /s	Type	Panel	Qty	3	
Face Velocity	2.28	m/s	Grade	G4	Nom. Size (WxHxD)	508x610x50	mm
Air Pd (Clean)	49	Pa	Withdrawal	Side			
Air Pd (Average)	74	Pa					
Air Pd (Dirty)	100	Pa					

INCLUDED OPTIONS / NOTES

Minihelic Gauge (0-250Pa)
LED Bulkhead Light c/w Switch
Test Point

EXHAUST FAN SECTION						Component	011
DETAILS			FAN		MOTOR		
Air Volume	2.030	m ³ /s	Type	Plenum-EC	Efficiency	1.00	
Ext. Static Pressure	150	Pa	Impellor	Backward Curved	Qty	SINGLE	
Tot. Static Pressure	389	Pa	Qty	Single	Power	3.40	kW
Starting Method	Speed Controller		Operation	100 %	Speed	2300	RPM
A. V. Type	N/A		Model	GR45I-ZID.GG.CR	Pole	N/A	
			Speed	1710 RPM	Full Load Current	5.40	Amp
			Max. Speed	2300 RPM	Electrical Supply	380/3/50	
			Speed Set Value	74 %	Efficiency Class	IE5	
			Absorbed Power	1.31 kW	Control	Modbus Module	
			Total Efficiency	64 %			

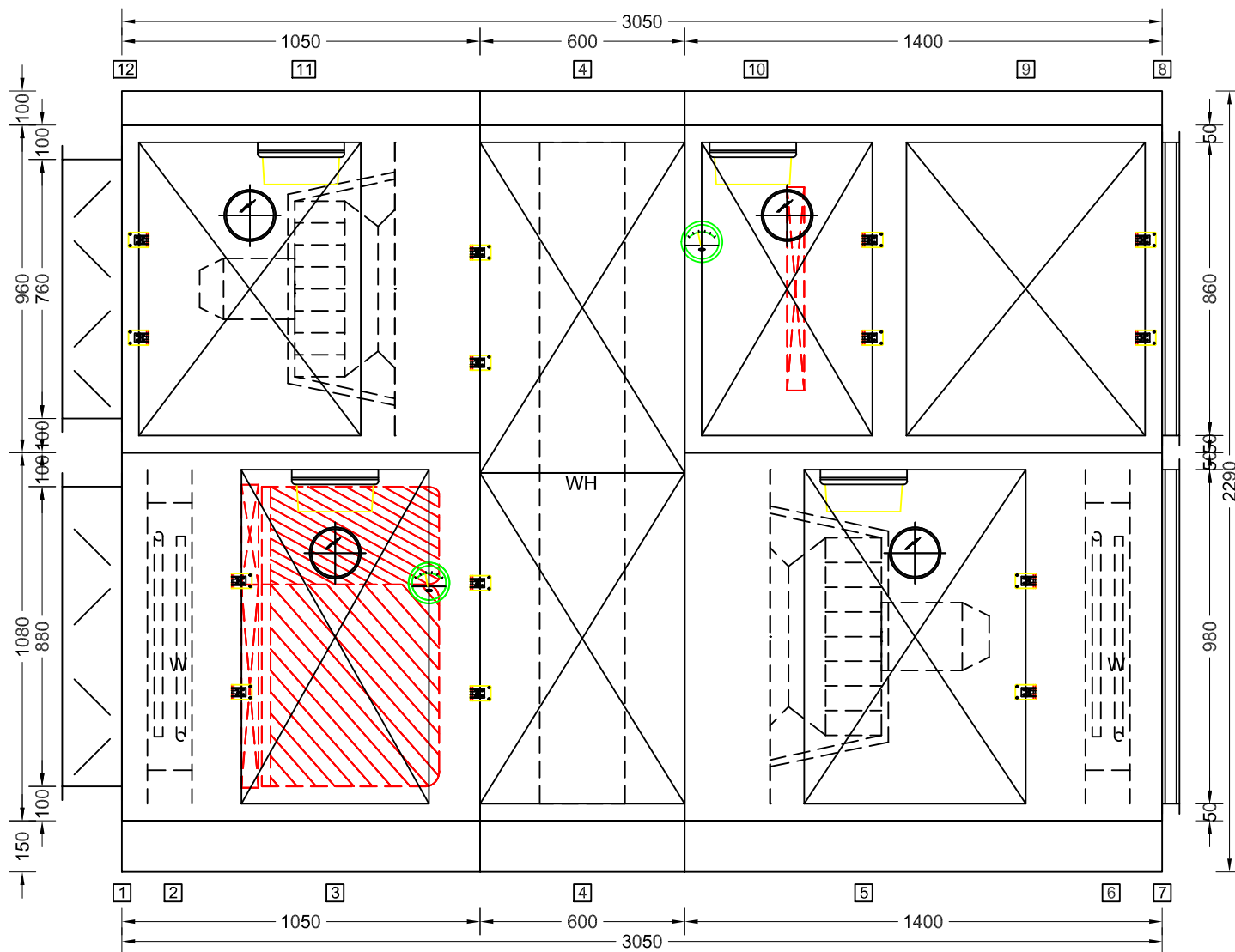
Sound Power Lw	63 Hz	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz
Fan Inlet (dB)	83	82	76	71	65	64	63	64
Fan Outlet (dB)	83	84	78	78	77	75	72	70

Note : Fan manufacturer data used in accordance with DIN 463 Part 38 & 39, BS 848 Part 2 & ISO 5136. A correction of +6dB should be applied across all octave bands for unit casing adjustment

INCLUDED OPTIONS / NOTES

Door Guard
0-10V Speed Control Required
Pre-Wire to External Isolator c/w aux contacts
LED Bulkhead Light c/w Switch
Test Point

OUTLET SECTION				Component 012	
Conn. Type	None	Damper	Yes	Face Velocity	1.840 m/s
Conn. Size	N/A	Location	External	Actuator	By Others
		Type	Low Loss		
		Size (WxH)	1450 x 760 mm		
		Material	Galvanised Steel		



Section A: Weight +/- 10% = 301Kgs

Components

- 1 Inlet Section
- 2 Frost Coil
- 3 Panel & Bag Filter

Section B: Weight +/- 10% = 308Kgs

Components

- 4 Thermal Wheel

Section C: Weight +/- 10% = 346Kgs

Components

- 5 Plenum Fan
- 6 LPHW Heating Coil
- 7 Outlet Section

Section D: Weight +/- 10% = 173Kgs

Components

- 8 Inlet Section
- 9 Controls Section
- 10 Panel Filter

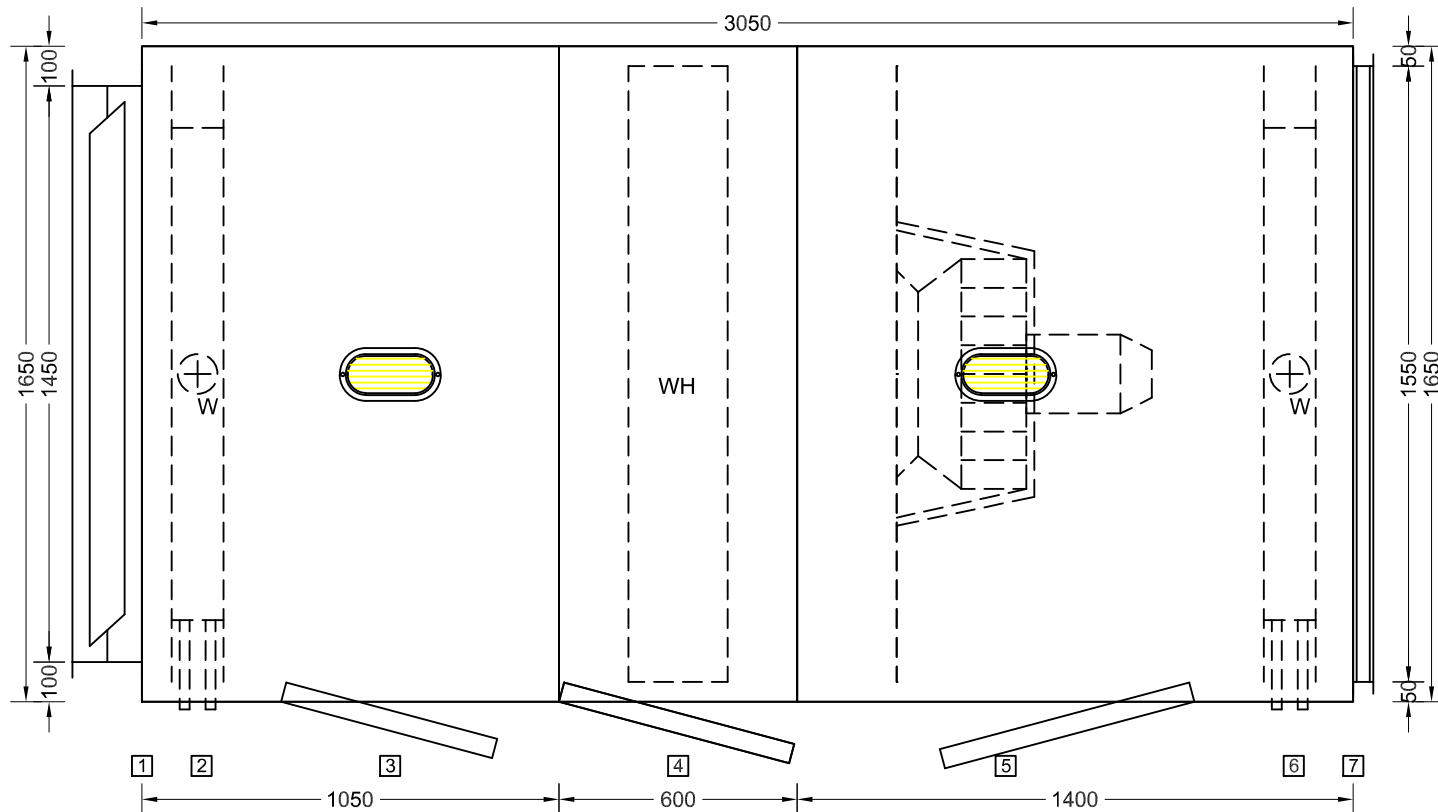
Section E: Weight +/- 10% = 234Kgs

Components

- 11 Plenum Fan
- 12 Outlet Section

ELEVATION

Customer	Integral UK Ltd	Air flow	2.54/2.03	m3/s	Not To Scale All Dimensions shown are in mm		This Drawing is property of AHS and should not be re-produced in any form		AIR HANDLING SYSTEMS LTD. 3 – 5 FURNACE INDUSTRIAL ESTATE SHILDON, COUNTY DURHAM. DL4 1QB	No.	Revision	Date
Project	Belle Vue CO-OP Academy, Manchester	Weight	1362	Kg	AHU No.							
Location	AHU/RF/01	E.S.P	260 / 150	Pa	Dwg No.	22446-1-1						
Model	AIR FLEX 58 F / AIR FLEX 57 F	Quantity	1	Nos.								



PLAN LOWER DECK

Section A: Weight +/- 10% = 301Kgs

Components

- 1 Inlet Section
- 2 Frost Coil
- 3 Panel & Bag Filter

Section B: Weight +/- 10% = 308Kgs

Components

- 4 Thermal Wheel

Section C: Weight +/- 10% = 346Kgs

Components

- 5 Plenum Fan
- 6 LPHW Heating Coil
- 7 Outlet Section

Section D: Weight +/- 10% = 173Kgs

Components

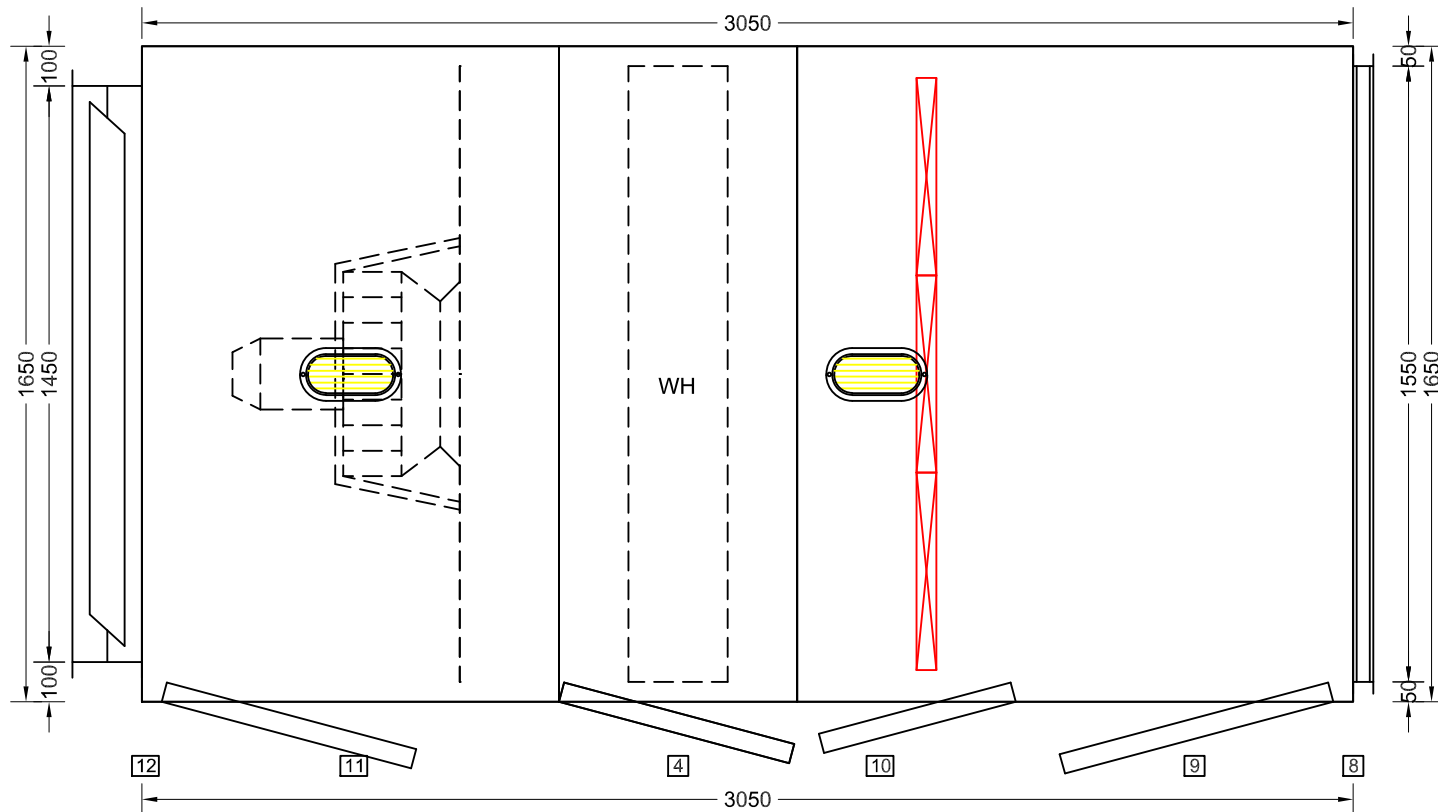
- 8 Inlet Section
- 9 Controls Section
- 10 Panel Filter

Section E: Weight +/- 10% = 234Kgs

Components

- 11 Plenum Fan
- 12 Outlet Section

Customer	Integral UK Ltd	Air flow	2.54/2.03	m3/s	Not To Scale All Dimensions shown are in mm		This Drawing is property of AHS and should not be re-produced in any form		AIR HANDLING SYSTEMS LTD. 3 – 5 FURNACE INDUSTRIAL ESTATE SHILDON, COUNTY DURHAM. DL4 1QB	No.	Revision	Date
Project	Belle Vue CO-OP Academy, Manchester	Weight	1362	Kg	AHU No.	1						
Location	AHU/RF/01	E.S.P	260 / 150	Pa	Dwg No.	22446-1-1						
Model	AIR FLEX 58 F / AIR FLEX 57 F	Quantity	1	Nos.								



Section A: Weight +/- 10% = 301Kgs

Components

- 1 Inlet Section
- 2 Frost Coil
- 3 Panel & Bag Filter

Section B: Weight +/- 10% = 308Kgs

Components

- 4 Thermal Wheel

Section C: Weight +/- 10% = 346Kgs

Components

- 5 Plenum Fan
- 6 LPHW Heating Coil
- 7 Outlet Section

Section D: Weight +/- 10% = 173Kgs

Components

- 8 Inlet Section
- 9 Controls Section
- 10 Panel Filter

Section E: Weight +/- 10% = 234Kgs

Components

- 11 Plenum Fan
- 12 Outlet Section

PLAN UPPER DECK

Customer	Integral UK Ltd	Air flow	2.54/2.03	m3/s	Not To Scale All Dimensions shown are in mm		This Drawing is property of AHS and should not be re-produced in any form		No.	Revision	Date
Project	Belle Vue CO-OP Academy, Manchester	Weight	1362	Kg	AHU No.	1	AIR HANDLING SYSTEMS LTD. 3 - 5 FURNACE INDUSTRIAL ESTATE SHILDON, COUNTY DURHAM. DL4 1QB				
Location	AHU/RF/01	E.S.P	260 / 150	Pa	Dwg No.	22446-1-1					
Model	AIR FLEX 58 F / AIR FLEX 57 F	Quantity	1	Nos.							

TECHNICAL SPECIFICATION

PROJECT DETAILS

Project Name	Belle Vue CO-OP Academy, Manchester	Quote No.	AHS 22446
Unit Reference	AHU/RF/02	Revision	2
Unit Model	AIR FLEX 47 F	Date	20 Sep 2021

MECHANICAL STANDARD (BS EN 1886)

CASING

Strength	D1
Air Leakage	L2

THERMAL

Transmittance	T3
Bridging	TB3

PERFORMANCE DATA

SUPPLY

Air Volume	1.760	m ³ /s
Ext. Stat. Pressure	280	Pa

EXTRACT

Air Volume	1.760	m ³ /s
Ext. Stat. Pressure	190	Pa

ERP Compliance

Internal SFP	537.06	W/m ³ /s
ERP Compliance	2018	

UNIT CONSTRUCTION

PANEL

Nom. Thickness	50	mm
Outer Material	Goosewing Grey Coated Steel	
Inner Material	Coated Steel	
Insulation Type	Polyurethane Foam	

GENERAL

Location	External
Roof Type	Pitched Roof
Base Type	Full
Base Material	150x75 P.F.C

UNIT DIMENSIONS

BOTTOM DECK

Width	1,500	mm
Height	960	mm
Length	2,950	mm
Base	150	mm

TOP DECK

Width	1,500	mm
Height	840	mm
Length	2,950	mm
Base		mm

O/ALL

Width	1,500	mm
Height	2,050	mm
Length	2,950	mm
Weight +/- 10%	1,158	kg

SPECIFIC FAN POWER

SUPPLY FAN

Filter Condition	Clean	
Absorbed Power	1.46	kW
Drive Efficiency	100	%
Inverter Efficiency	100	%
Motor Efficiency	100	%

EXTRACT FAN

Filter Condition	Clean	
Absorbed Power	1.15	kW
Drive Efficiency	100	%
Inverter Efficiency	100	%
Motor Efficiency	100	%

SFP_v

1.49 w/l/s

NOTES

AHU will be delivered to site in 1 sections. Should further splits be required additional costs and length will be incurred.

SUPPLY PATH

INLET SECTION						Component	001
Conn. Type	None		Damper	Yes	Face Velocity	1.780	m/s
Conn. Size	N/A	mm	Location	External	Actuator	By Others	
			Type	Low Loss			
			Size (WxH)	1300 x 760	mm		
			Material	Galvanised Steel			

FROST COIL SECTION						Component	002
AIR SIDE			WATER SIDE			CONSTRUCTION	
Air Volume	1.760	m ³ /s	Medium	Water		Tube Material	Cu - standard
Air on (db)	-5.00	°C	Inlet Temp.	80.00	°C	Fin Material	Al - Standard
Air off (db)	5.00	°C	Outlet Temp.	60.00	°C	Casing Material	Galv Steel
Total Duty	21.66	kW	Flow Rate	0.26	l/s	Header Material	Steel
Air Press. Drop	8	Pa	Fluid Press. Drop	8	kPa	Inlet Conn. Size	1" BSPM
Face Velocity	1.95	m/s	Internal Volume	6.19	l	Outlet Conn. Size	1" BSPM
						Dims (WxH)	1360x 840 mm
						Dims (D)	130 mm

FILTER SECTION						Component	003
AIR SIDE			SPECIFICATION			DETAILS	
Air Volume	1.760	m ³ /s	Type	Panel		Qty	2
Face Velocity	1.91	m/s	Grade	G4		Nom. Size (WxHxD)	610x508x50 mm
Air Pd (Clean)	36	Pa	Withdrawal	Side		Qty	2
Air Pd (Average)	68	Pa				Nom. Size (WxHxD)	610x305x50 mm
Air Pd (Dirty)	100	Pa					

AIR SIDE			SPECIFICATION			DETAILS	
Air Volume	1.760	m ³ /s	Type	Bag		Qty	2
Face Velocity	1.91	m/s	Grade	F7		Nom. Size (WxHxD)	610x508x520 mm
Air Pd (Clean)	54	Pa	Withdrawal	Side		Qty	2
Air Pd (Average)	102	Pa				Nom. Size (WxHxD)	610x305x520 mm
Air Pd (Dirty)	150	Pa					

INCLUDED OPTIONS / NOTES

Minihelic Gauge (0-250Pa)
 Minihelic Gauge (0-250Pa)
 LED Bulkhead Light c/w Switch
 Test Point

THERMAL WHEEL SECTION			TYPE : (Condensation)			Component 004	
WINTER (F/A)			WINTER (EXHAUST)			CONSTRUCTION	
Air Volume	1.760	m3/s	Air Volume	1.760	m3/s	Fin Material	Standard
Air on (db)	5.00	°C	Air on (db)	21.00	°C	Casing Material	Aluzinc
RH	50	%	RH	50	%	Control Unit	Modbus
Air off (db)	16.90	°C	Air off (db)	9.10	°C	Purge Sector	4: Yes
RH	24.1	%	RH	99	%		
Total Duty	26.6	kW	Total Duty	26.6	kW		
Air Press. Drop	125	Pa	Air Press. Drop	132	Pa		
Tot. Efficiency	74.6	%	Tot. Efficiency	74.6	%		
SUMMER (F/A)			SUMMER (EXHAUST)				
Air Volume	1.760	m3/s	Air Volume	1.760	m3/s		
Air on (db)	28.00	°C	Air on (db)	24.00	°C		
RH	48.1	%	RH	50	%		
Air off (db)	25.00	°C	Air off (db)	27.00	°C		
RH	57.4	%	RH	41.8	%		
Total Duty	6.5	kW	Total Duty	6.5	kW		
Air Press. Drop	136	Pa	Air Press. Drop	134	Pa		
Tot. Efficiency	74.6	%	Tot. Efficiency	74.6	%		

INCLUDED OPTIONS / NOTES

Lifting Points Fitted to AHU Base

SUPPLY FAN SECTION			Component 005	
DETAILS			FAN	
Air Volume	1.760	m3/s	Type	Plenum-EC
Ext. Static Pressure	280	Pa	Impellor	Backward Curved
Tot. Static Pressure	688	Pa	Qty	Single
Starting Method	Speed Controller		Operation	100 %
A. V. Type	N/A		Model	GR40I-ZID.DG.CR
			Speed	2290 RPM
			Max. Speed	2500 RPM
			Speed Set Value	92 %
			Absorbed Power	1.81 kW
			Total Efficiency	70 %
			MOTOR	
			Efficiency	1.00
			Qty	SINGLE
			Power	2.50 kW
			Speed	2500 RPM
			Pole	N/A
			Full Load Current	4.00 Amp
			Electrical Supply	380/3/50
			Efficiency Class	IE5
			Control	Modbus Module

Sound Power Lw	63 Hz	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz
Fan Inlet (dB)	82	78	77	75	69	66	65	67
Fan Outlet (dB)	83	82	83	82	79	75	71	72

Note : Fan manufacturer data used in accordance with DIN 463 Part 38 & 39, BS 848 Part 2 & ISO 5136. A correction of +6dB should be applied across all octave bands for unit casing adjustment

INCLUDED OPTIONS / NOTES

Door Guard
0-10V Speed Control Required
Pre-Wire to External Isolator c/w aux contacts
LED Bulkhead Light c/w Switch
Test Point

HEATING COIL SECTION						Component 006	
AIR SIDE			WATER SIDE			CONSTRUCTION	
Air Volume	1.760	m ³ /s	Medium	Water		Tube Material	Cu - standard
Air on (db)	5.00	°C	Inlet Temp.	80.00	°C	Fin Material	Al - Standard
Air off (db)	20.00	°C	Outlet Temp.	60.00	°C	Casing Material	Galv Steel
Total Duty	32.49	kW	Flow Rate	0.39	l/s	Header Material	Steel
Air Press. Drop	12	Pa	Fluid Press. Drop	16	kPa	Inlet Conn. Size	1" BSPM
Face Velocity	1.95	m/s	Internal Volume	6.19	l	Outlet Conn. Size	1" BSPM
						Dims (WxH)	1360x840 mm
						Dims (D)	130 mm
OUTLET SECTION						Component 007	
Conn. Type	30mm Galv Flange		Damper	No		Face Velocity	1.460 m/s
Conn. Size	1400 x 860	mm	Location	N/A		Actuator	N/A
			Type	N/A			
			Size (WxH)	N/A			
			Material	N/A			

EXTRACT PATH

INLET SECTION Component 008

Conn. Type	30mm Galv Flange		Damper	No		Face Velocity	1.700	m/s
Conn. Size	1400 x 740	mm	Location	N/A		Actuator	N/A	
			Type	N/A				
			Size (WxH)	N/A	mm			
			Material	N/A				

CONTROLS SECTION Component 009

Controller Type	Space Only
Controls Strategy -	N/A

INCLUDED OPTIONS / NOTES

Recessed Enclosure (700mm Wide x 680mm High Available)

FILTER SECTION Component 010

AIR SIDE			SPECIFICATION		DETAILS		
Air Volume	1.760	m ³ /s	Type	Panel	Qty	2	
Face Velocity	2.48	m/s	Grade	G4	Nom. Size (WxHxD)	610x610x50	mm
Air Pd (Clean)	54	Pa	Withdrawal	Side			
Air Pd (Average)	77	Pa					
Air Pd (Dirty)	100	Pa					

INCLUDED OPTIONS / NOTES

Minihelic Gauge (0-250Pa)
LED Bulkhead Light c/w Switch
Test Point

EXHAUST FAN SECTION Component 011

DETAILS			FAN			MOTOR		
Air Volume	1.760	m ³ /s	Type	Plenum-EC		Efficiency	1.00	
Ext. Static Pressure	190	Pa	Impellor	Backward Curved		Qty	SINGLE	
Tot. Static Pressure	427	Pa	Qty	Single		Power	2.50	kW
Starting Method	Speed Controller		Operation	100	%	Speed	2500	RPM
A. V. Type	N/A		Model	GR40I-ZID.DG.CR		Pole	N/A	
			Speed	2067	RPM	Full Load Current	4.00	Amp
			Max. Speed	2500	RPM	Electrical Supply	380/3/50	
			Speed Set Value	83	%	Efficiency Class	IE5	
			Absorbed Power	1.25	kW	Control	Modbus Module	
			Total Efficiency	65	%			

Sound Power Lw	63 Hz	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz
Fan Inlet (dB)	81	81	76	73	67	65	65	68
Fan Outlet (dB)	81	86	79	80	78	73	70	72

Note : Fan manufacturer data used in accordance with DIN 463 Part 38 & 39, BS 848 Part 2 & ISO 5136. A correction of +6dB should be applied across all octave bands for unit casing adjustment

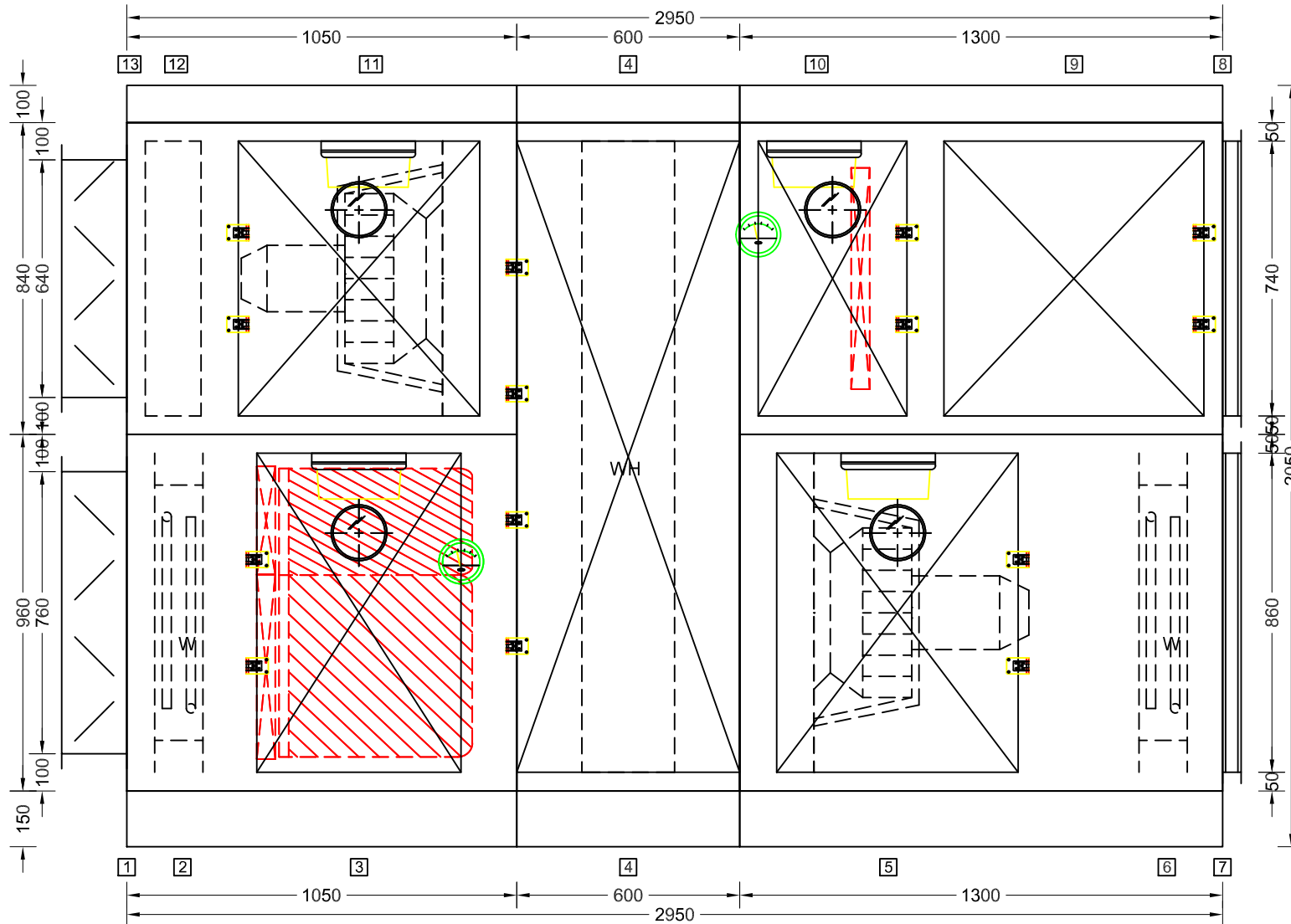
INCLUDED OPTIONS / NOTES

Door Guard
0-10V Speed Control Required
Pre-Wire to External Isolator c/w aux contacts
LED Bulkhead Light c/w Switch

PLENUM SECTION Component 012

Access Type	None
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OUTLET SECTION				Component 013	
Conn. Type	None	Damper	Yes	Face Velocity	2.120 m/s
Conn. Size	N/A	Location	External	Actuator	By Others
		Type	Low Loss		
		Size (WxH)	1300 x 640 mm		
		Material	Galvanised Steel		



Section A: Weight +/- 10% = 265Kgs

Components

- 1 Inlet Section
- 2 Frost Coil
- 3 Panel & Bag Filter

Section B: Weight +/- 10% = 267Kgs

Components

- 4 Thermal Wheel

Section C: Weight +/- 10% = 286Kgs

Components

- 5 Plenum Fan
- 6 LPHW Heating Coil
- 7 Outlet Section

Section D: Weight +/- 10% = 143Kgs

Components

- 8 Inlet Section
- 9 Controls Section
- 10 Panel Filter

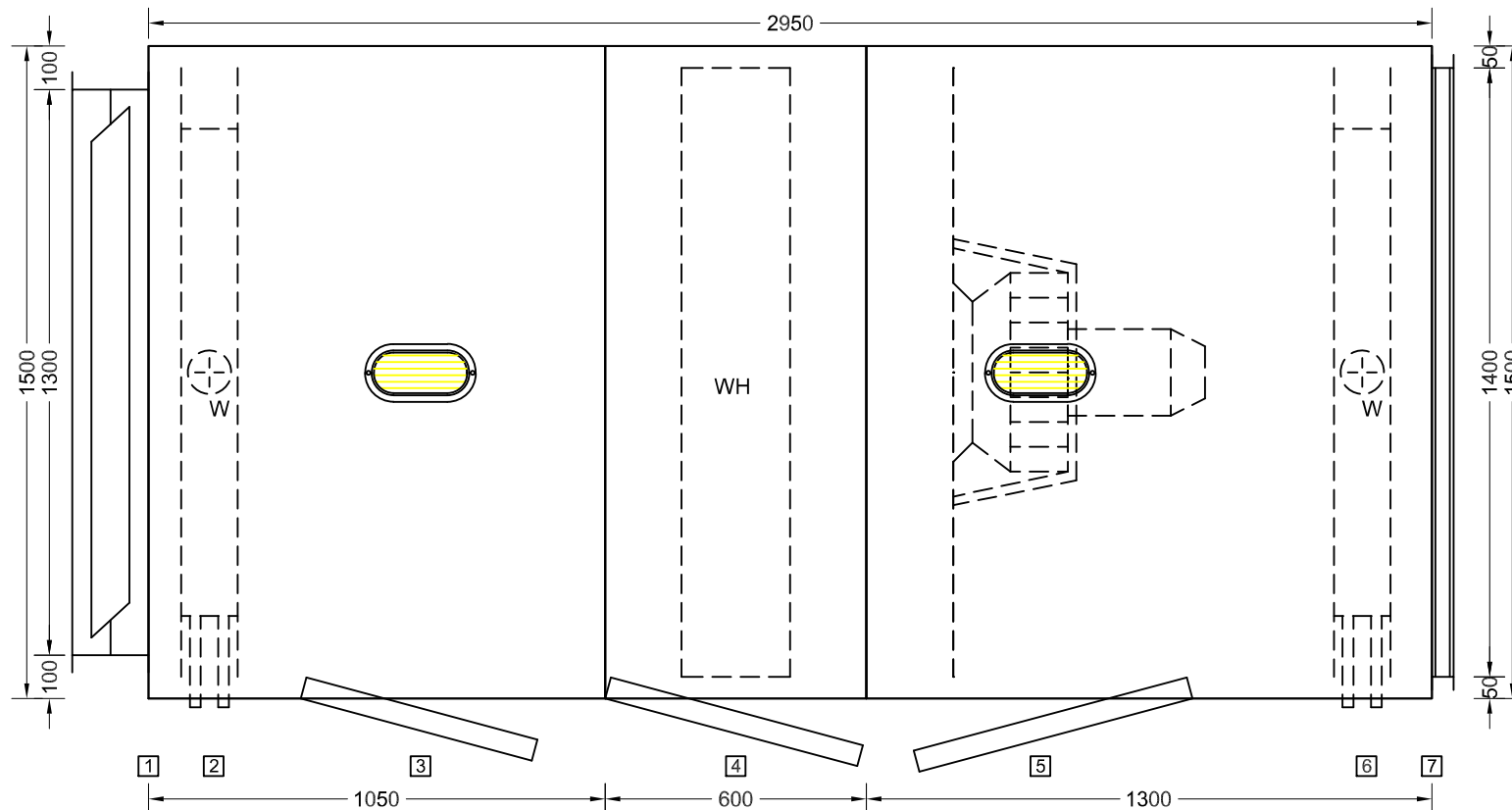
Section E: Weight +/- 10% = 198Kgs

Components

- 11 Plenum Fan
- 12 Plenum Section
- 13 Outlet Section

ELEVATION

Customer	Integral UK Ltd	Air flow	1.76/1.76	m3/s	Not To Scale All Dimensions shown are in mm		This Drawing is property of AHS and should not be re-produced in any form		AIR HANDLING SYSTEMS LTD. 3 - 5 FURNACE INDUSTRIAL ESTATE SHILDON, COUNTY DURHAM. DL4 1QB	No.	Revision	Date
Project	Belle Vue CO-OP Academy, Manchester	Weight	1158	Kg	AHU No.	2						
Location	AHU/RF/02	E.S.P	280 / 190	Pa	Dwg No.	22446-2-0						
Model	AIR FLEX 47 F / AIR FLEX 46 F	Quantity	1	Nos.								



PLAN LOWER DECK

Section A: Weight +/- 10% = 265Kgs

Components

- 1 Inlet Section
- 2 Frost Coil
- 3 Panel & Bag Filter

Section B: Weight +/- 10% = 267Kgs

Components

- 4 Thermal Wheel

Section C: Weight +/- 10% = 286Kgs

Components

- 5 Plenum Fan
- 6 LPHW Heating Coil
- 7 Outlet Section

Section D: Weight +/- 10% = 143Kgs

Components

- 8 Inlet Section
- 9 Controls Section
- 10 Panel Filter

Section E: Weight +/- 10% = 198Kgs

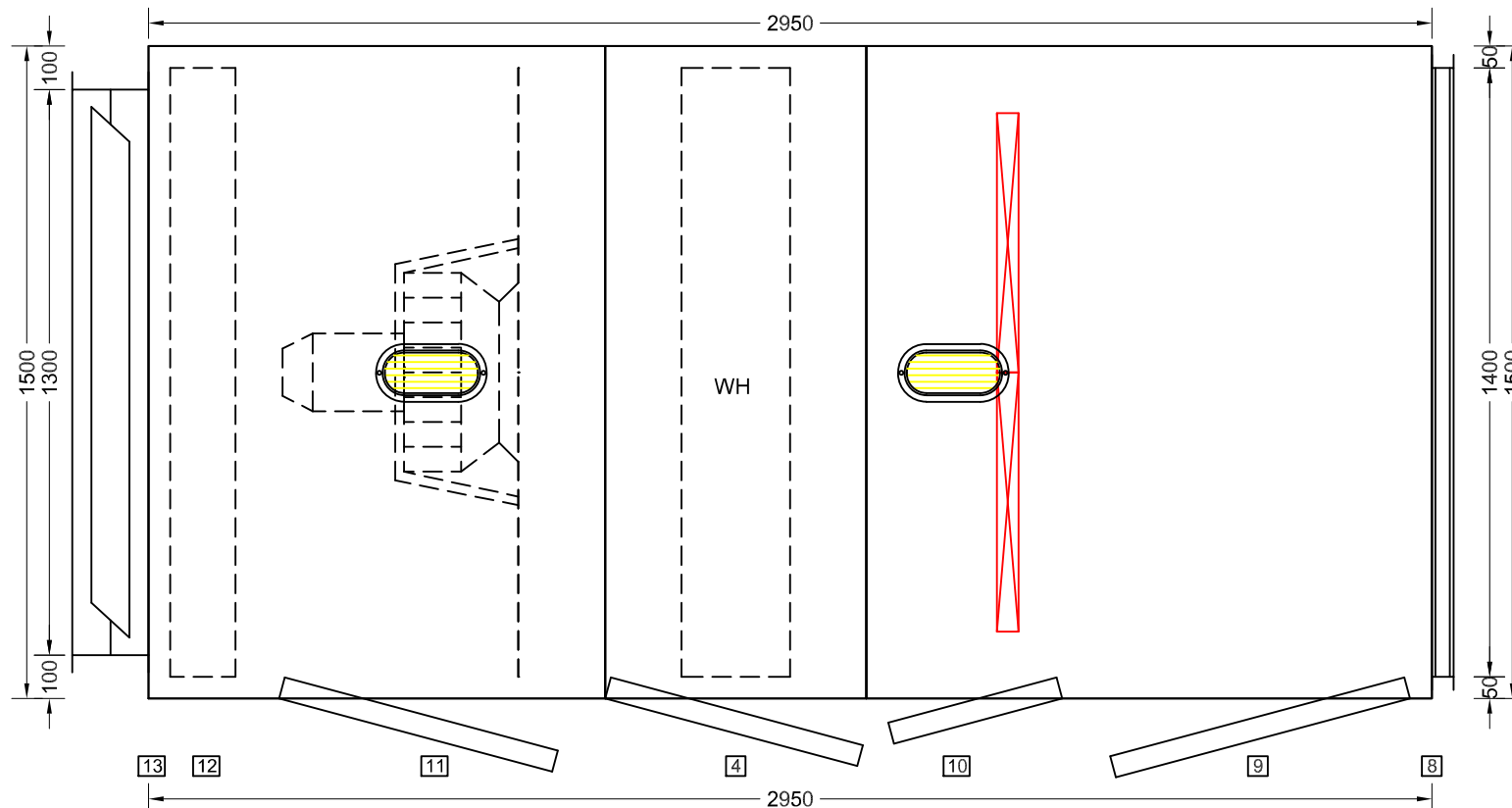
Components

- 11 Plenum Fan
- 12 Plenum Section
- 13 Outlet Section

Customer	Integral UK Ltd	Air flow	1.76/1.76	m3/s	Not To Scale All Dimensions shown are in mm		This Drawing is property of AHS and should not be re-produced in any form		No.	Revision	Date
Project	Belle Vue CO-OP Academy, Manchester	Weight	1158	Kg	AHU No.	2					
Location	AHU/RF/02	E.S.P	280 / 190	Pa	Dwg No.	22446-2-0					
Model	AIR FLEX 47 F / AIR FLEX 46 F	Quantity	1	Nos.							

**AIR HANDLING
SYSTEMS LTD.**

3 - 5 FURNACE INDUSTRIAL ESTATE
SHILDON, COUNTY DURHAM. DL4 1QB



PLAN UPPER DECK

Section A: Weight +/- 10% = 265Kgs

Components

- 1 Inlet Section
- 2 Frost Coil
- 3 Panel & Bag Filter

Section B: Weight +/- 10% = 267Kgs

Components

- 4 Thermal Wheel

Section C: Weight +/- 10% = 286Kgs

Components

- 5 Plenum Fan
- 6 LPHW Heating Coil
- 7 Outlet Section

Section D: Weight +/- 10% = 143Kgs

Components

- 8 Inlet Section
- 9 Controls Section
- 10 Panel Filter

Section E: Weight +/- 10% = 198Kgs

Components

- 11 Plenum Fan
- 12 Plenum Section
- 13 Outlet Section

Customer	Integral UK Ltd	Air flow	1.76/1.76	m3/s	Not To Scale All Dimensions shown are in mm		This Drawing is property of AHS and should not be re-produced in any form		AIR HANDLING SYSTEMS LTD. 3 - 5 FURNACE INDUSTRIAL ESTATE SHILDON, COUNTY DURHAM. DL4 1QB	No.	Revision	Date
Project	Belle Vue CO-OP Academy, Manchester	Weight	1158	Kg	AHU No.							
Location	AHU/RF/02	E.S.P	280 / 190	Pa	Dwg No.	22446-2-0						
Model	AIR FLEX 47 F / AIR FLEX 46 F	Quantity	1	Nos.								

TECHNICAL SPECIFICATION

PROJECT DETAILS

Project Name	Belle Vue CO-OP Academy, Manchester	Quote No.	AHS 22446
Unit Reference	KSF/RF/01	Revision	3
Unit Model	AIR FLEX 40 F	Date	22 Sep 2021

MECHANICAL STANDARD (BS EN 1886)

CASING

Strength	D1
Air Leakage	L2

THERMAL

Transmittance	T3
Bridging	TB3

PERFORMANCE DATA

SUPPLY

Air Volume	2.450	m ³ /s
Ext. Stat. Pressure	250	Pa

EXTRACT

Air Volume	0.000	m ³ /s
Ext. Stat. Pressure	0	Pa

ERP Compliance

Internal SFP	125.38	W/m ³ /s
ERP Compliance	2018	

UNIT CONSTRUCTION

PANEL

Nom. Thickness	50	mm
Outer Material	Goosewing Grey Coated Steel	
Inner Material	Coated Steel	
Insulation Type	Polyurethane Foam	

GENERAL

Location	External
Roof Type	Pitched Roof
Base Type	Full
Base Material	150x75 P.F.C

UNIT DIMENSIONS

BOTTOM DECK

Width	1,350	mm
Height	1,120	mm
Length	3,250	mm
Base	150	mm

TOP DECK

Width	mm
Height	mm
Length	mm
Base	mm

O/ALL

Width	1,350	mm
Height	1,370	mm
Length	3,250	mm
Weight +/- 10%	675	kg

SPECIFIC FAN POWER

SUPPLY FAN

2.450	m ³ /s
Filter Condition	Clean
Absorbed Power	1.8 kW
Drive Efficiency	100 %
Inverter Efficiency	100 %
Motor Efficiency	100 %

EXTRACT FAN

Filter Condition	
Absorbed Power	kW
Drive Efficiency	%
Inverter Efficiency	%
Motor Efficiency	%

SFP_v

0.74 w/l/s

NOTES

AHU will be delivered to site in 1 sections. Should further splits be required additional costs and length will be incurred.

SUPPLY PATH

INLET SECTION						Component	001
Conn. Type	None		Damper	Yes	Face Velocity	2.320	m/s
Conn. Size	N/A	mm	Location	External	Actuator	By Others	
			Type	Low Loss			
			Size (WxH)	1150 x 920	mm		
			Material	Galvanised Steel			

FROST COIL SECTION						Component	002
AIR SIDE			WATER SIDE			CONSTRUCTION	
Air Volume	2.450	m ³ /s	Medium	Water		Tube Material	Cu - standard
Air on (db)	-5.00	°C	Inlet Temp.	80.00	°C	Fin Material	Al - Standard
Air off (db)	5.00	°C	Outlet Temp.	60.00	°C	Casing Material	Galv Steel
Total Duty	30.15	kW	Flow Rate	0.36	l/s	Header Material	Steel
Air Press. Drop	13	Pa	Fluid Press. Drop	15	kPa	Inlet Conn. Size	1" BSPM
Face Velocity	2.57	m/s	Internal Volume	6.8	l	Outlet Conn. Size	1" BSPM
						Dims (WxH)	1210x 1000 mm
						Dims (D)	130 mm

FILTER SECTION						Component	003
AIR SIDE			SPECIFICATION			DETAILS	
Air Volume	2.450	m ³ /s	Type	Panel		Qty	2
Face Velocity	2.35	m/s	Grade	G4		Nom. Size (WxHxD)	610x610x50 mm
Air Pd (Clean)	50	Pa	Withdrawal	Side		Qty	2
Air Pd (Average)	75	Pa				Nom. Size (WxHxD)	610x305x50 mm
Air Pd (Dirty)	100	Pa					

AIR SIDE			SPECIFICATION			DETAILS	
Air Volume	2.450	m ³ /s	Type	Bag		Qty	2
Face Velocity	2.35	m/s	Grade	F7		Nom. Size (WxHxD)	610x610x520 mm
Air Pd (Clean)	66	Pa	Withdrawal	Side		Qty	2
Air Pd (Average)	108	Pa				Nom. Size (WxHxD)	610x305x520 mm
Air Pd (Dirty)	150	Pa					

INCLUDED OPTIONS / NOTES

Minihelic Gauge (0-250Pa)
 Minihelic Gauge (0-250Pa)
 LED Bulkhead Light c/w Switch
 Lifting Points Fitted to AHU Base
 Test Point

SUPPLY FAN SECTION

Component 004

DETAILS			FAN			MOTOR		
Air Volume	2.450	m ³ /s	Type	Plenum-EC		Efficiency	1.00	
Ext. Static Pressure	250	Pa	Impellor	Backward Curved		Qty	SINGLE	
Tot. Static Pressure	539	Pa	Qty	Single		Power	3.40	kW
Starting Method	Speed Controller		Operation	100	%	Speed	2300	RPM
A. V. Type	N/A		Model	GR45I-ZID.GG.CR		Pole	N/A	
			Speed	2043	RPM	Full Load Current	5.40	Amp
			Max. Speed	2300	RPM	Electrical Supply	380/3/50	
			Speed Set Value	89	%	Efficiency Class	IE5	
			Absorbed Power	2.17	kW	Control	Modbus Module	
			Total Efficiency	65	%			

Sound Power Lw	63 Hz	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz
Fan Inlet (dB)	87	84	80	77	70	69	68	72
Fan Outlet (dB)	87	87	84	83	81	81	77	77

Note : Fan manufacturer data used in accordance with DIN 463 Part 38 & 39, BS 848 Part 2 & ISO 5136. A correction of +6dB should be applied across all octave bands for unit casing adjustment

INCLUDED OPTIONS / NOTES

Inlet Guard
Door Guard
0-10V Speed Control Required
Pre-Wire to External Isolator c/w aux contacts
LED Bulkhead Light c/w Switch
Test Point

HEATING COIL SECTION

Component 005

AIR SIDE			WATER SIDE			CONSTRUCTION		
Air Volume	2.450	m ³ /s	Medium	Water		Tube Material	Cu - standard	
Air on (db)	5.00	°C	Inlet Temp.	80.00	°C	Fin Material	Al - Standard	
Air off (db)	20.00	°C	Outlet Temp.	60.00	°C	Casing Material	Galv Steel	
Total Duty	45.23	kW	Flow Rate	0.54	l/s	Header Material	Steel	
Air Press. Drop	23	Pa	Fluid Press. Drop	12	kPa	Inlet Conn. Size	1"	BSPM
Face Velocity	2.57	m/s	Internal Volume	6.8	l	Outlet Conn. Size	1"	BSPM
						Dims (WxH)	1210x1000	mm
						Dims (D)	130	mm

CONTROLS SECTION

Component 006

Controller Type Space Only
Controls Strategy - N/A

INCLUDED OPTIONS / NOTES

Recessed Enclosure (700mm Wide x 1300mm High Available)

OUTLET SECTION

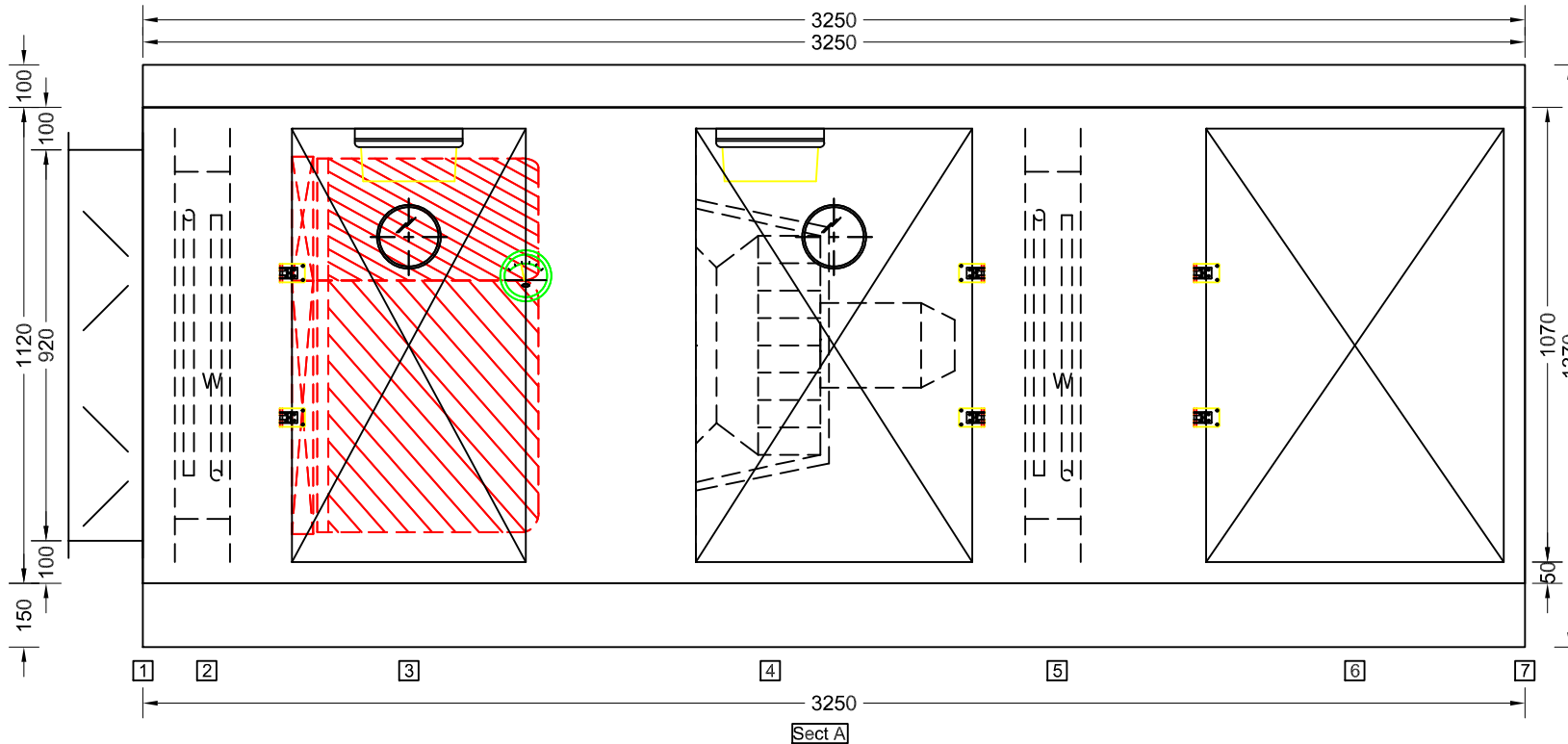
Component 007

Conn. Type	None	Damper	No	Face Velocity	0.000	m/s
Conn. Size	N/A	Location	N/A	Actuator	N/A	
		Type	N/A			
		Size (WxH)	N/A			
		Material	N/A			

Section A: Weight +/- 10% = 675Kgs

Components

- 1 Inlet Section
- 2 Frost Coil
- 3 Panel & Bag Filter
- 4 Plenum Fan
- 5 LPHW Heating Coil
- 6 Controls Section
- 7 Outlet Section



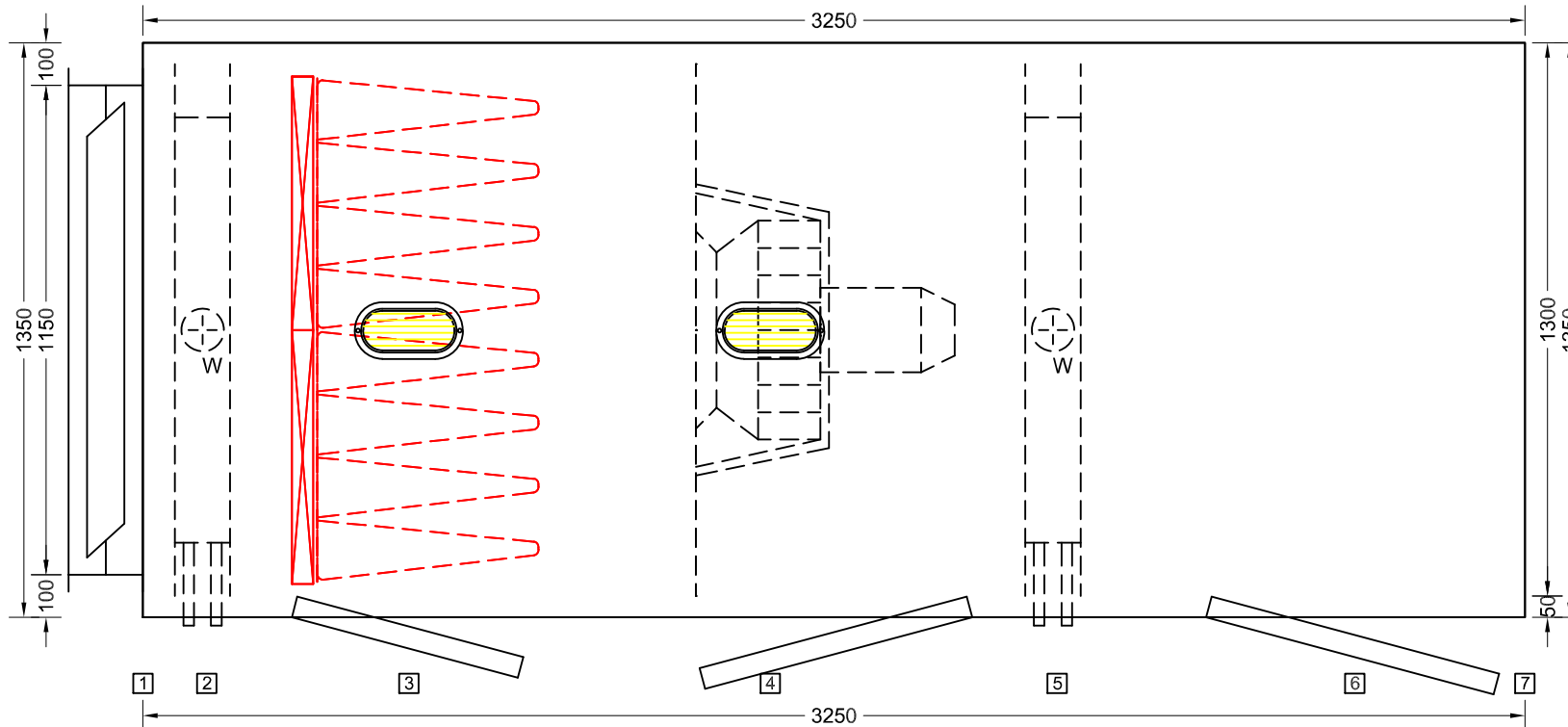
ELEVATION

Customer	Integral UK Ltd	Air flow	2.45	m3/s	Not To Scale All Dimensions shown are in mm		This Drawing is property of AHS and should not be re-produced in any form		No.	Revision	Date
Project	Belle Vue CO-OP Academy, Manchester	Weight	675	Kg	AHU No.	3	AIR HANDLING SYSTEMS LTD. 3 - 5 FURNACE INDUSTRIAL ESTATE SHILDON, COUNTY DURHAM. DL4 1QB				
Location	KSF/RF/01	E.S.P	250	Pa	Dwg No.	22446-3-1					
Model	AIR FLEX 40 F	Quantity	1	Nos.							

Section A: Weight +/- 10% = 675Kgs

Components

- 1 Inlet Section
- 2 Frost Coil
- 3 Panel & Bag Filter
- 4 Plenum Fan
- 5 LPHW Heating Coil
- 6 Controls Section
- 7 Outlet Section



PLAN DECK

Customer	Integral UK Ltd	Air flow	2.45	m3/s	Not To Scale All Dimensions shown are in mm		This Drawing is property of AHS and should not be re-produced in any form		AIR HANDLING SYSTEMS LTD. 3 – 5 FURNACE INDUSTRIAL ESTATE SHILDON, COUNTY DURHAM. DL4 1QB	No.	Revision	Date
Project	Belle Vue CO-OP Academy, Manchester	Weight	675	Kg	AHU No.	3						
Location	KSF/RF/01	E.S.P	250	Pa	Dwg No.	22446-3-1						
Model	AIR FLEX 40 F	Quantity	1	Nos.								