

Customer Name	American Aldes
Project Name	Fire Station 22
Unit Tag	HRV-1
Created By	S.Turcotte
Date	2016-11-16
Ref Customer	410391
Project No	160926
Project Rev	nil
Unit No	160926-4
Unit Rev	1



☐ Approved  
☐ Refused

By : \_\_\_\_\_

Date : \_\_\_\_\_

Comments : \_\_\_\_\_

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\*\*\* This project spec must be signed and approved before the unit can be released to production\*\*\*



### Ventilation summary

#### Design Temperature - Winter

Outdoor temperature (DB)	24 °F
Outdoor air (WB)	24 °F
Indoor air (DB)	70 °F
Indoor air (WB)	58 °F

#### Design Temperature - Summer

Outdoor air (DB)	86,1 °F
Outdoor air (WB)	70 °F
Indoor air (DB)	75 °F
Indoor air (WB)	63 °F

#### Fresh Air Blower

Air flow	1215 CFM
External static Pressure	0,55 in H2O
Fan speed	1347 RPM

#### Exhaust Air Blower

Air flow	1115 CFM
External static Pressure	1 in H2O
Fan speed	1460 RPM

#### Heating Capacity

Recovered energy	54,5 MBH
Heating Capacity	15 kW
Sensible Efficiency	70,2 %
Latent Efficiency	53,4 %
Total Efficiency	64,6 %

#### Cooling Capacity

Recovered energy	1,4 Tons
Cooling Capacity	N/A
Sensible Efficiency	70,2 %
Latent Efficiency	49,4 %
Total Efficiency	59,9 %

#### Supply Temperature - Winter

New air (DB)	53,6 °F
New air (WB)	46,4 °F

#### Supply Temperature - Summer

New air (DB)	78,9 °F
New air (WB)	66,3 °F

### Electrical Load

#### Fresh Air Motor

Power	1 HP
Motor's Voltage	208/3/60
FLA	3,2 A
Rotational speed	1800 RPM
Starter	Magnetic

#### Exhaust Air Motor

Power	1 HP
Motor's Voltage	208/3/60
FLA	3,2 A
Rotational speed	1800 RPM
Starter	Magnetic

#### Unit's main Voltage

Voltage	208/3/60
FLA	48,4
MCA	60,5
MOP	70



### Cabinet

Cabinet type	Double-wall
Exterior Steel Gauge	22 ga prepaint steel
Interior Steel Gauge	22 ga galvanized steel
Access	Doors with quarter-turn handles
Insulation	1 in

### Installation

Mount	14 in Insulatd Roof Curb
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### Fresh Air Blower

Blower type	Forward-curved
Bearing	Permanently sealed and lubricated
Width	9 in
Diameter	9 in
Shaft diameter	0,75 in
Drive	Power transmission by adjustable pulleys and belts

### Fresh Air Motor

Power	1 HP
Type	ODP, Inverter Ready
Efficiency	PREMIUM
Frame	143T
Speed(s)	1
Mount	Cushings

### Fresh Air Filters

Type	MERV13
Quantity per circuit	2
Dimensions	18 x 20 x 2 in

### Recovery Core

Quantity	2
Type	Enthalpy Core 2.5 mm HE
Dimensions	21,1 x 21,1 x 19,375 in
Spacing	2,5 mm
Condensation pan	22 ga galvanized steel
Core pan drain plug	1 in NPT
Position	Under

### Exhaust Air Blower

Type	Forward-curved
Bearing	Permanently sealed and lubricated
Width	9 in
Diameter	9 in
Shaft diameter	0,75 in
Drive	Power transmission by adjustable pulleys and belts

### Exhaust Air Motor

Power	1 HP
Type	ODP, Inverter Ready
Efficiency	PREMIUM
Frame	143T
Speed(s)	1
Mount	Cushings

### Exhaust Air Filters

Type	MERV8
Quantity per circuit	2
Dimensions	18 x 20 x 2 in

### Warranty

Core	10-year limited
Unit	2-year limited

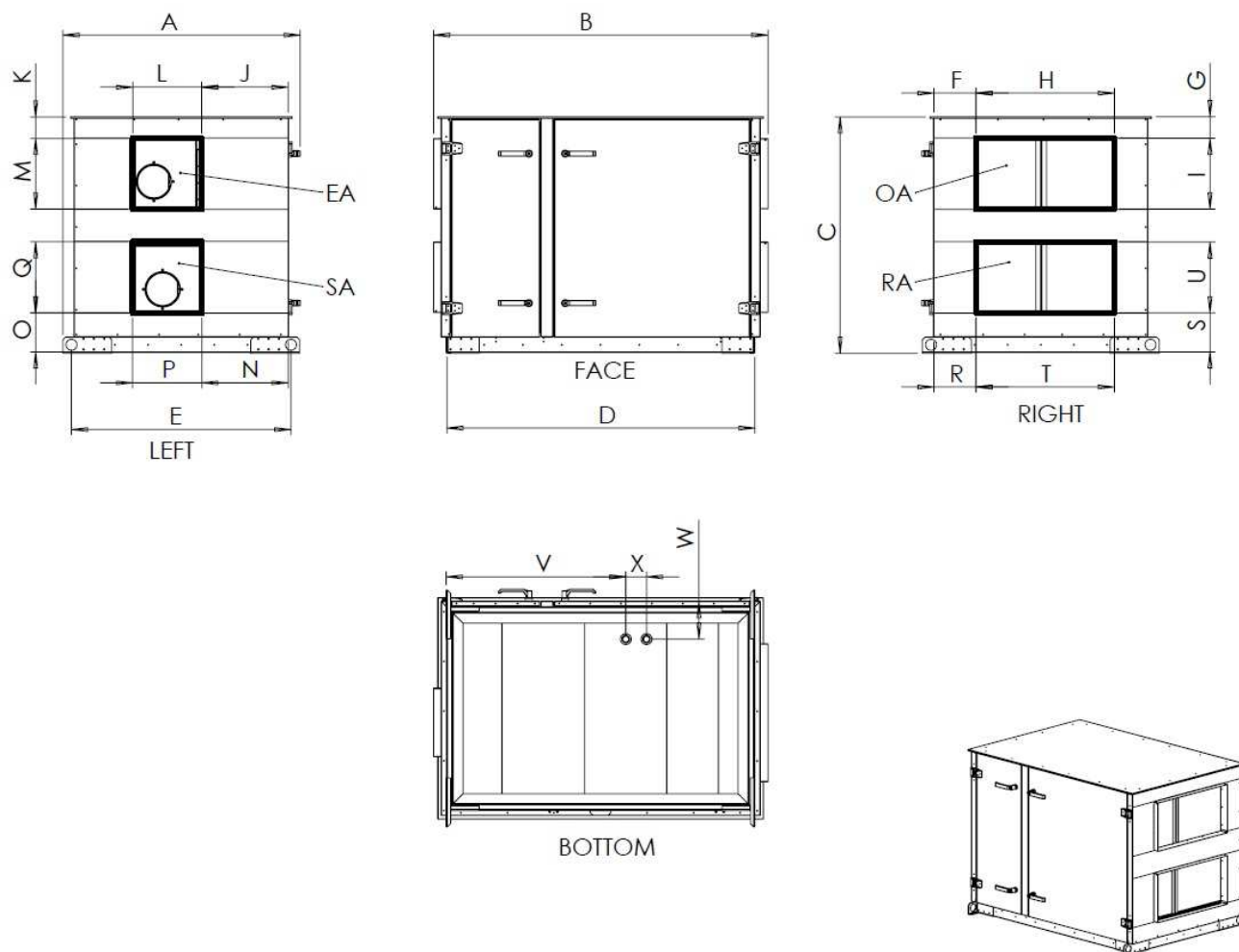
### Certification



CSA 22,2 No.236-11  
UL 1995



**Unit dimensions**



**Cabinet dimensions (in)**

A	B	C	D	E	F
45,80	109,00	46,60	104,00	39,48	9,25
G	H	I	J	K	L
4,20	26,50	13,50	9,25	4,20	26,50
M	N	O	P	Q	R
13,50	9,25	7,50	26,50	13,50	8,25
S	T	U	V	W	X
7,50	26,50	13,50	56,78	7,34	4,00

**Roof Curb**

Picture not available

### **Unit Controls**

- Terminal boards for fresh air damper : Power and control (24VAC, 10VA) for the fresh air damper (internal or external to the unit).
- Terminal boards for exhaust air damper : Power and control (24VAC, 10VA) for the exhaust air damper (internal or external to the unit).
- 24VAC, 20 VA power : Power supply 24VAC 20VA for external accessories
- Start/Stop dry contact : The state of the unit (Start/stop) is controlled via a normally open (NO) dry contact.
- General Alarm dry contact : When the unit goes into alarm mode, a dry contact (NO) is closed.
- Occupancy control dry contact : The state of the unit (Start/stop) is controlled via a normally open (NO) dry contact.
- Fan interlock : Dry contact (NO) that closes when the fresh air motor is started.
- Non-fused disconnect : The unit will be equipped with a Non-fused disconnect.

### **Components**

- MERV 13 filters : Replacement of the MERV8 standard filters with MERV13 filters on the supply air circuit.
- Fresh air motorized and insulated dampers : Motorized and insulated damper on fresh air opening actuated with a two positions (spring return) actuator.
- Exhaust air motorized and insulated dampers : Motorized and insulated damper on exhaust air opening actuated with a two positions (spring return) actuator.
- Prepainted exterior wall : Exterior wall galvanized steel is replaced with prepainted steel.
- Electrical post-heating coil : Electrical coil of 15 kW installed inside the unit and powered by the unit. The integrated SSR controller control signal is provided by other and wired into the unit's control panel.
- Insulated Roof curb : of 14 in. high in 18 ga galvanized steel
- Recirculation damper : Motorized and insulated recirculation damper actuated with a two position (spring return) actuator.

### **Frost control**

- Fan exhaust defrost cycles : Supply air blower shuts down and outside air damper closes. Warm exhaust air defrosts the core for a predetermined duration.



### Core Performance

Model	Enthalpy Core 2.5 mm HE
Number of cores	2
Core size	21,1 x 21,1 x 19,375 in.
Spacing	2,5 mm

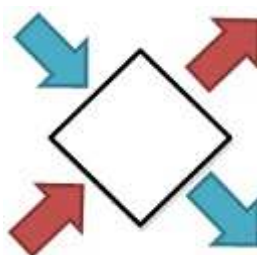
	Entering Fresh Air T1	
	Summer	Winter
Air Flow (CFM)	1215	1215
Temperature Dry Bulb (°F)	86,1	24
Temperature Wet Bulb (°F)	70	24
Relative humidity (%)	45,11	99,99
Enthalpy (BTU/lb)	33,9	8,7

	Entering Exhaust Air T3	
	Summer	Winter
Air Flow (CFM)	1115	1115
Temperature Dry Bulb (°F)	75	70
Temperature Wet Bulb (°F)	63	58
Relative humidity (%)	51,61	48,32
Enthalpy (BTU/lb)	28,4	25
Capacity		

\*\*\*Warning, frost may occur\*\*\*

	Leaving Exhaust Air T4	
	Summer	Winter
Air Flow (CFM)	1115	1115
Temperature Dry Bulb (°F)	82,8	37,9 *
Temperature Wet Bulb (°F)	67,3	37,9
Relative humidity (%)	44,9	100
Enthalpy (BTU/lb)	31,7	14,3

	Leaving Fresh Air T2	
	Summer	Winter
Air Flow (CFM)	1215	1215
Temperature Dry Bulb (°F)	78,9	53,6
Temperature Wet Bulb (°F)	66,3	46,4
Relative humidity (%)	51,6	57,6
Enthalpy (BTU/lb)	30,9	18,3



Post  
Heat  
0 90  
15  
kW

### Performance

	Summer	Winter
Fresh Air Pressure Drop (in H2O)	0,47	0,47
Exhaust Air Pressure Drop (in H2O)	0,43	0,43
Sensible Efficiency (%)	70,2	70,2
Latent Efficiency (%)	49,4	53,4
Total Efficiency (%)	59,9	64,6
Recovered energy (Tons)	1,4	
Recovered energy (MBH)		54,5



### Fresh Air Blower Performance

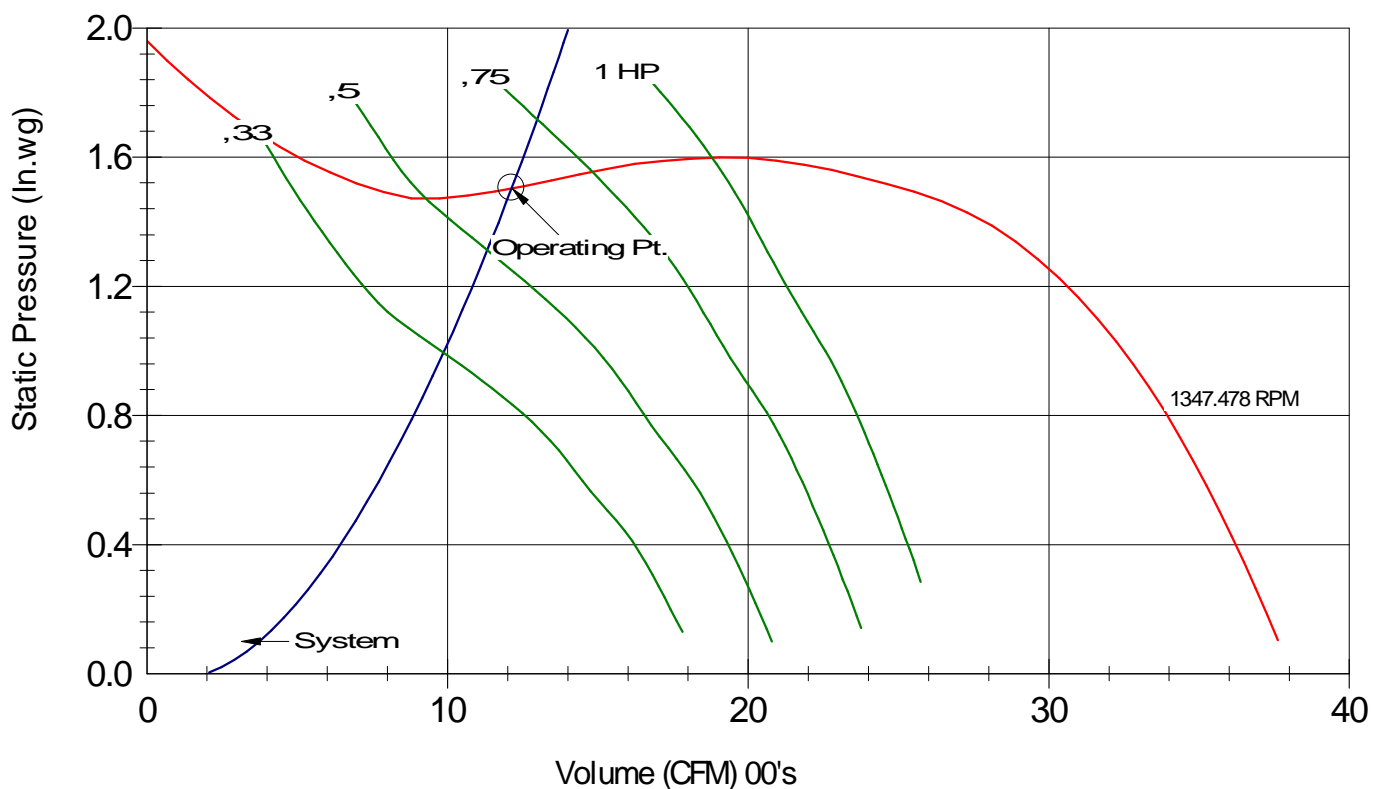
#### Information

Model	G9	No	9005021
Air flow	1215 CFM	Shaft Diameter	0,75 in
Total static pressure	1,5 in H <sub>2</sub> O	Static Efficiency	46,4 %
Rotation speed	1347 RPM	Elevation	14 ft
Power	0,62 HP	Temperature	70 °F

#### Sound data

Sound Power Level	63	125	250	500	1000	2000	4000	8000	(Hz)	LwA: 81
@ Frequency, re: 10 <sup>-12</sup> Watts	84	89	85	78	73	65	62	60	(dB)	Sones: 18

DELHI Model G9  
CFM=1215 SP=1,5 BHP=,6 S. Eff=,5% RPM=1347





### Exhaust Air Blower Performance

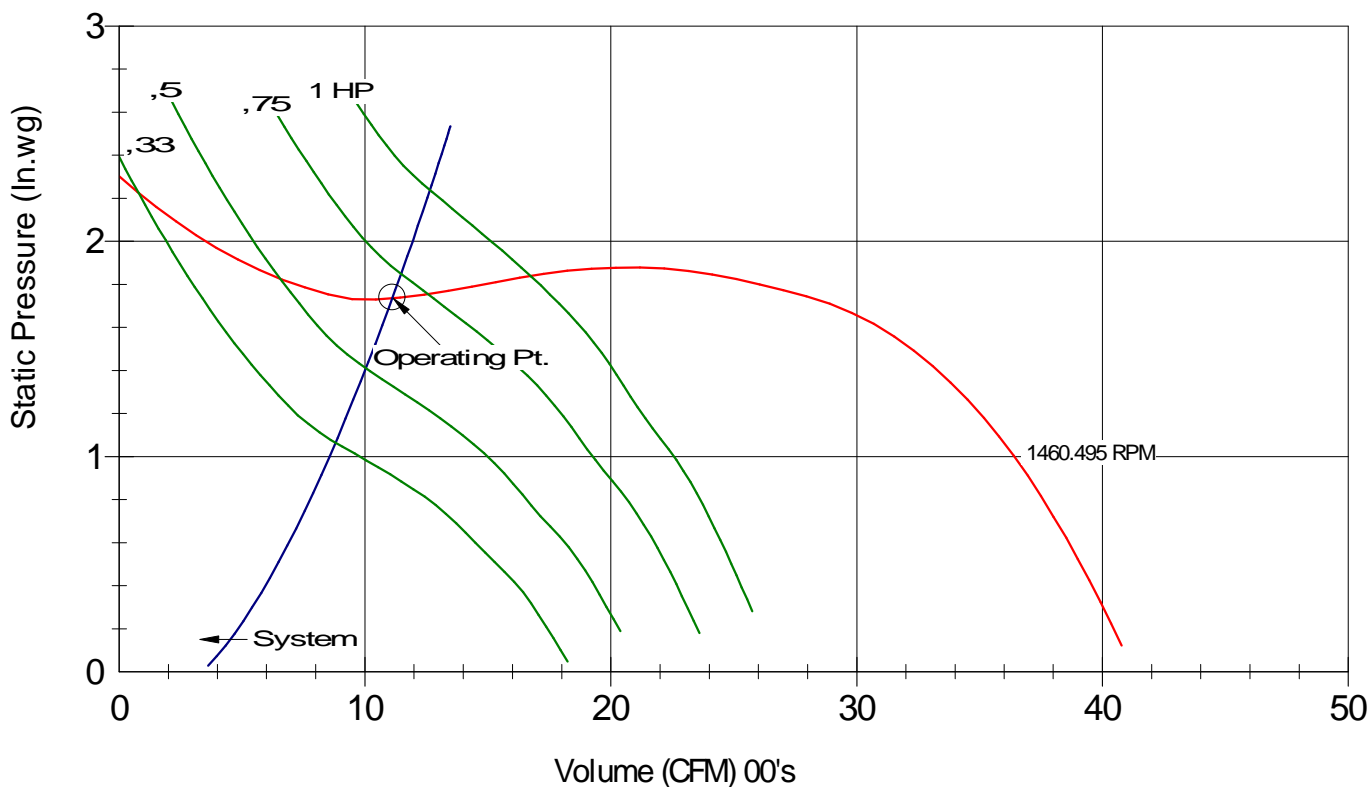
#### Information

Model	G9	No	9005021
Air flow	1115 CFM	Shaft Diameter	0,75 in
Total static pressure	1,74 in H2O	Static Efficiency	44,3 %
Rotation speed	1460 RPM	Elevation	14 ft
Power	0,69 HP	Temperature	70 °F

#### Sound data

Sound Power Level	63	125	250	500	1000	2000	4000	8000	(Hz)	LwA: 84
@ Frequency, re: 10 <sup>-12</sup> Watts	85	91	88	81	75	67	64	62	(dB)	Sones: 21

DELHI Model G9  
CFM=1115 SP=1,74 BHP=,7 S. Eff=,4% RPM=1460



**Coil Performance**

**Post-Heat Electric Coil**

Model	CIR017-GHPDD
Capacity	15 kW
Width	10 in
Height	30 in
Air Pressure Drop	0,1 in WG
FLA	41,64
Main disconnect	No
Fuse	Yes