

XDGX-P116-H12-D1-5 Unit Performance

Design Conditions						
Elevation (ft)	Summer		Winter (°F)	Supply (CFM)	Outdoor Air (CFM)	Min Supply Airflow (CFM)
	DB (°F)	WB (°F)				
558	93.3	78.4	7.1	2,664	2,664	1,332

Unit Specifications					
Qty	Weight (lb)	Cooling Type	Heating Type	Unit Installation	Unit ETL Listing
1	1,322 (+/- 5%)	Packaged DX	Direct Gas-Fired	Outdoor/Indoor	ANSI Z83.4 / CSA 3.7

Configuration				
Unit Orientation	Unit Configuration	Outdoor Air Intake	Return Air Intake	Supply Air Discharge
Horizontal	Variable Volume	End	-	Bottom

Cooling Specifications								
Type	Refrigerant	Capacity (MBH)		Lead Compressor Type	EER		Performance (DB/WB)	
		Total	Sensible		Condensing Section	Design Condition	EAT (°F)	LAT (°F)
Packaged DX	R-454b	69.2	57.1	Standard Scroll	14.6	13.2	93.3 / 78.4	71.9 / 71.9

Heating Specifications								
Type	Gas Type	Gas Pressure		Capacity (MBH)		Temperature Rise (°F)	Performance	
		Min (in. wg)	Max (Psi)	Input	Output		EAT (°F)	LAT (°F)
Direct Gas	Natural	7	0.5	196.7	181.0	62.9	7.0	70.0

Air Performance									
Type	Total Volume (CFM)	External SP (in. wg)	Total SP (in. wg)	RPM	Operating Power (hp)	Fan			
						Qty	Type	Size (in.)	Drive-Type
Supply	2,664	0.5	1.477	1739	1.05	1	Plenum	16	Direct-Drive

Motor Specifications					
Motor	Qty	Size (HP)	Enclosure	Efficiency	RPM
Supply Fan Motor	1	1-1/2	ODP	NEMA Premium	1800

Electrical Specifications				
Power Supply	Rating (V/C/P)	MCA (A)	MOP (A)	SCCR
Unit	208/60/3	33.6	50	5kA

Unit Details
 Unit will be sent from factory with a turndown capability of 50% of the design cfm. Please consult factory if further turndown is required.



CONSTRUCTION FEATURES AND ACCESSORIES

Unit	
Unit Installation - Outdoor	Std
Unit Construction - Double Wall	X
Wall Insulation - 1in. fiberglass - Tempering on	X
Base Insulation - 1in. fiberglass - entire unit base pan	Std
Paneled Bottom - Sheet metal liner for base insulation	
Corrosion Resistant Fasteners	Std
Access and Connections - Right side when facing intake	X
Service Access - Hinged access doors	X
Unit Finish - G90 Galvanized	X
Finish Color	
Supply Fan - Direct-drive, backward-curved plenum	X
Supply Fan and Motor Vibration isolation - Neoprene	X
Controls	
Unit Controls - Microprocessor	X
Remote Panel	
BMS Communication - Monitoring and control	
BMS Protocol	
Temperature Control - Discharge control	X
Supply Fan VFD - VFD by factory	X
Supply Fan Control - External 0-10 VDC signal	X
Unoccupied Mode (Night Setback)	
Recirculation Control	
Control Accessories	
Touchscreen Mounting	
Heating Inlet Air Sensor	X
Cooling Inlet Air Sensor	X
Dirty Filter Switch	
Fire Stat Type III (Ships loose)	
120V/24V Smoke Detector (Ships loose)	
Inlet Damper End Switch	
External Cooling Lockout Relay	
Freeze Protection (Supply Air Low Limit)	X
Auxiliary Supply Starter Contacts	
Auxiliary Exhaust Starter Contacts	
Airflow Proving Monitoring Contact	

Accessories	
Factory Installed, Lockable, NEMA 3R Disconnect	Std
Weatherhood - Aluminum Mesh filtered	X
Supply Air Filters	
Outdoor Air Inlet Damper - Low leakage	X
Supply Air Outlet Damper	
Return Air Damper	
Diffuser	
Roof Curb - GPI	X
Combination Curb	
Electrofin Coil Coating	
Fan Bearing Extended Lube Lines	
Inlet Damper Module	
Spare Belts	
Spare Filters	
Motor with Shaft Grounding	
Service Outlet	
Service Lights	
Gas Heating Accessories	
Pilot Ignition	Std
Flame Sensing - Flame rod	X
Flame Safeguard Display	
Agency Approval - ETL	Std
FM Compliant	X
High Gas Pressure Switch	
Low Gas Pressure Switch	
Visual Indication Valves	
Proof of Closure Valve	
External Gas Pressure Regulator (Ships loose)	
Carbon Dioxide Sensor (Ships loose)	
Warranty Options	
Unit Warranty - 18 months (std.)	X
5 Year Compressor Warranty	
5 Year Burner Warranty	
10 Year Burner Warranty	

Standard Option	Std
Not Included	
Included	X

Notes

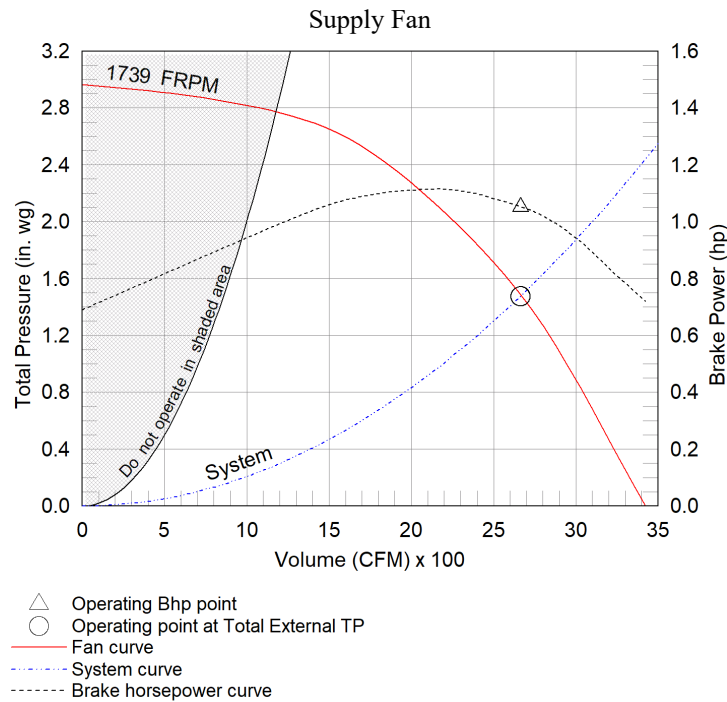
Damper(s) supplied are low leakage, motorized VCD-23 (leakage rate of 3 CFM/ft² @ 1 in.wg), Class 1A

Fan Charts And Performance

Supply Fan Performance									
Total Volume (CFM)	External SP (in. wg)	Total SP (in. wg)	RPM	Operating Power (hp)	Motor		Fan		
					Qty	Size (HP)	Qty	Type	Drive-Type
2,664	0.5	1.477	1739	1.05	1	1-1/2	1	Plenum	Direct

Pressure Drop (in. wg)							
Diffuser	Weatherhood	Filter	Damper	Cooling	Heating	External	Total
-	0.088	-	0.059	0.206	0.625	0.5	1.477

Sound Performance in Accordance with AMCA										
Sound Power by Octave Band								Lwa	dBA	Sones
62.5	125	250	500	1000	2000	4000	8000			
74	72	75	74	76	71	67	62	79	68	15.8



Cooling Specifications

Cooling Performance								
Type	Refrigerant	Capacity (MBH)		Lead Compressor Type	EER		Performance (DB/WB)	
		Total	Sensible		Condensing Section	Design Condition	EAT (°F)	LAT (°F)
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Coil Information						
PDX Coil Model	Fins Per Inch	Rows Deep	Suction Temp. (°F)	Face Velocity (ft/min)	Refrigerant Velocity (ft/min)	
DX38S02S10-30x30	10	2	56.0	426	1,422	

A2L Installation Requirement - UL 60335-2-40		
Largest Circuit Charge	Minimum Circulation Airflow	Minimum Total Conditioned Room Area
7.2lb / 3.27kg	217 CFM	130 ft ²

Local codes and standards may have requirements regarding the installation of A2L refrigerants in addition to manufacturing instructions provided for listed and labeled equipment.

Unit Details
Refrigerant charges provided by the factory are approximate and may require field adjustment
Refrigeration components servicable without affecting airflow
Hermetic scroll type compressor(s)
Compressor(s) mounted on neoprene vibration isolation
Crankcase heater on compressor(s)
Liquid-line filter drier
Moisture-indicating sight glass
Hot gas bypass

Thermal expansion valve
Refrigerant low pressure switch (auto reset)
Refrigerant high pressure switch (manual reset)
Service/charging valves
Low sound, direct drive condensing fans
Insulated, double sloped, stainless steel drain pan
Copper tube, aluminum fin coil construction

Heating Specifications

Heating Performance								
Type	Gas Type	Gas Pressure		Capacity (MBH)		Temperature Rise (°F)	Performance	
		Min (in. wg)	Max (Psi)	Input	Output		EAT (°F)	LAT (°F)
Direct Gas	Natural	7	0.5	196.7	181.0	62.9	7.0	70.0

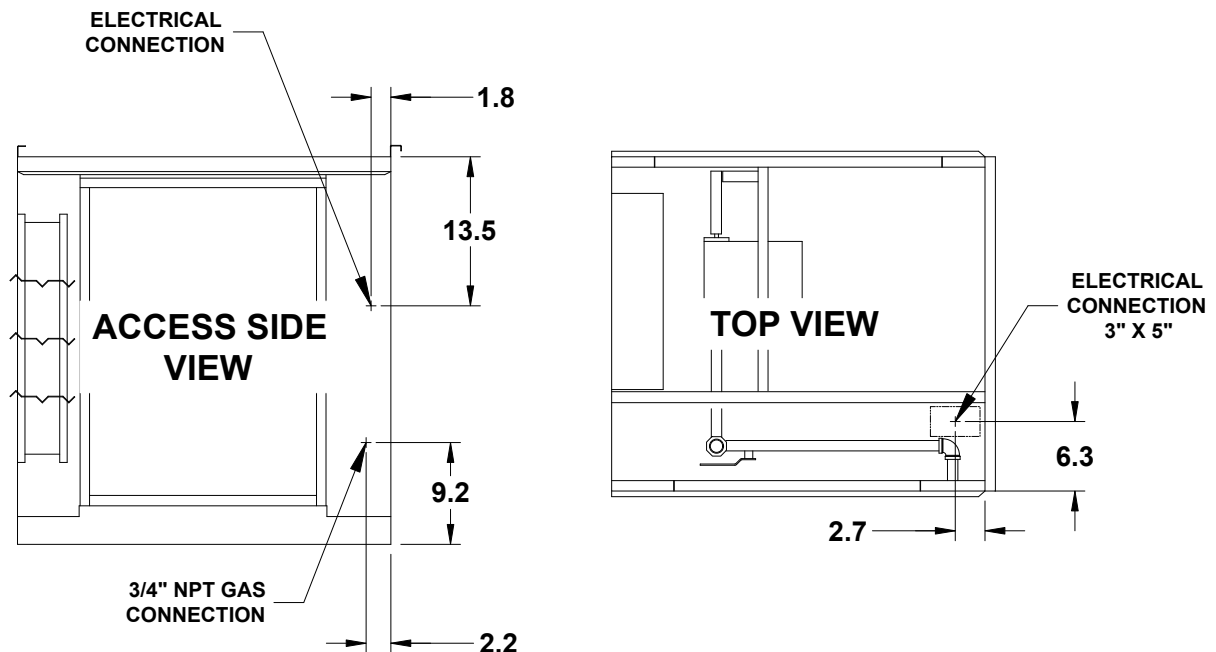
Gas Train Details							
Redundant Main Valves	Electronic Modulating Valve	Pilot Valve	Internal Regulator	Visual Indication Valve	Proof of Closure Valve	Gas Pressure Switch(es)	External Regulator
Std	Std	Std	Std	-	-	-	-

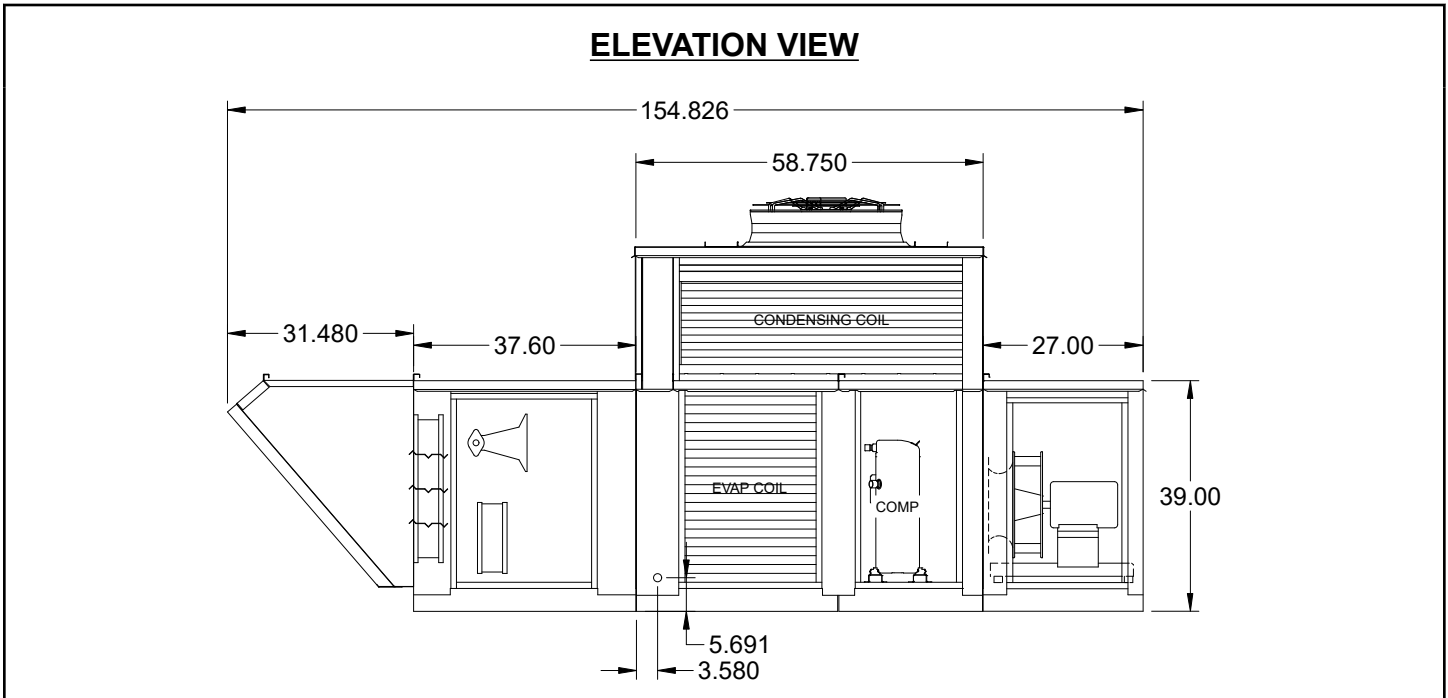
Additional Heating Information						
ETL Approved	FM Compliant	Temperature Control	Flame Sensing	Ignition Control	CO2 Sensor	Flame Safeguard Display
Std	Yes	Discharge	Flame Rod	Economy Pilot	-	-

Unit Details
92% thermal efficiency
Cast aluminum burner manifold with stainless steel mixing plates
Electronic modulation burner control

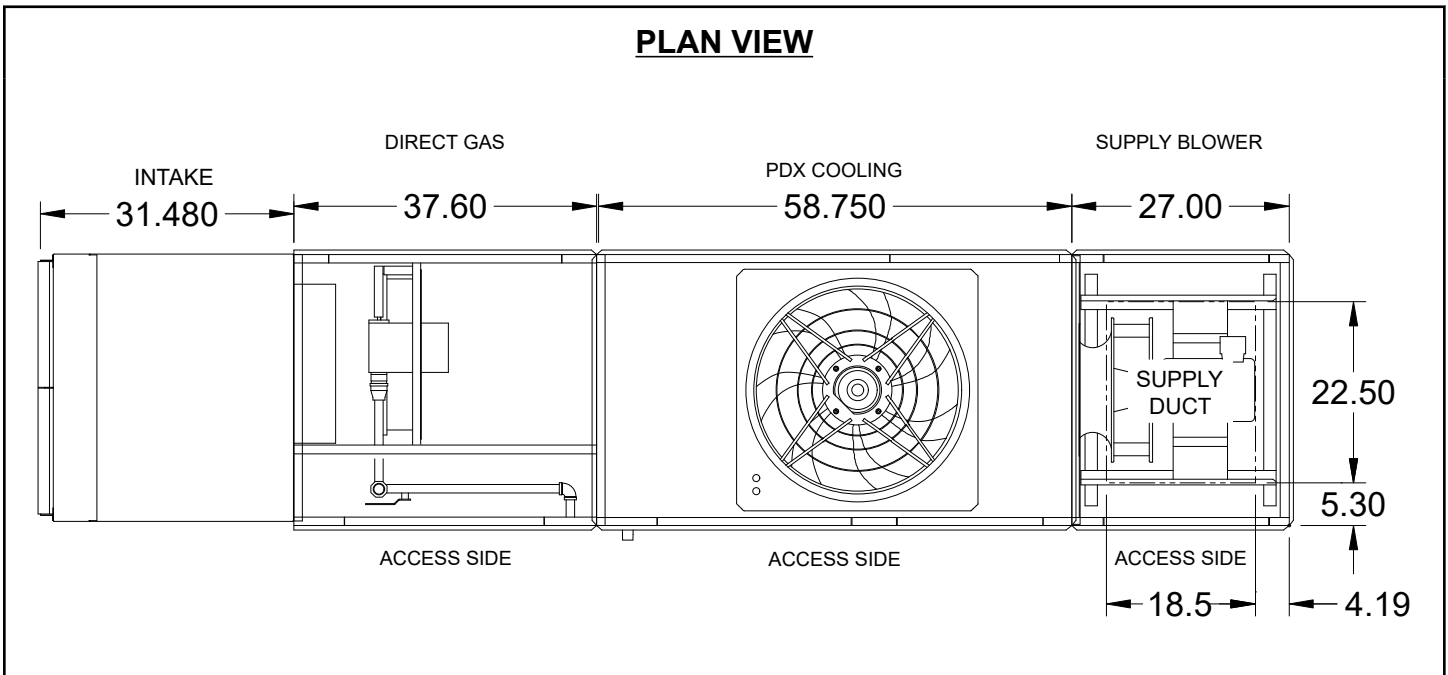
10 second pre-purge sequence
Low fire start

Gas and Electrical Connections



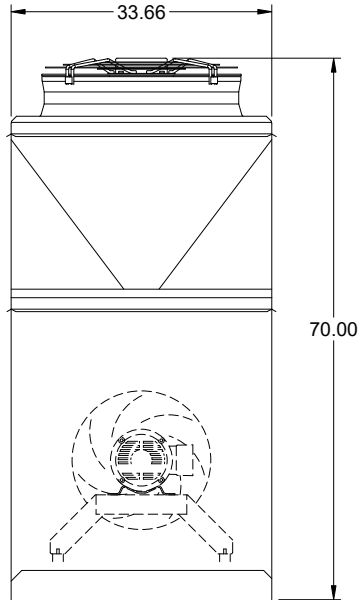


Notes - Elevation View
 Standard configuration for unit access is on the right-hand side, when looking into the unit intake in the direction of airflow.
 Order of unit sections is from intake of unit to discharge of unit.
 Sections included on this unit: Weatherhood Section, Heating Section, Cooling Section, Blower Section
 Insulation: Double Wall, from Burner Section through end of unit.



Notes - Plan View
 Standard configuration for unit access is on the right-hand side, when looking into the unit intake in the direction of airflow.

END VIEW

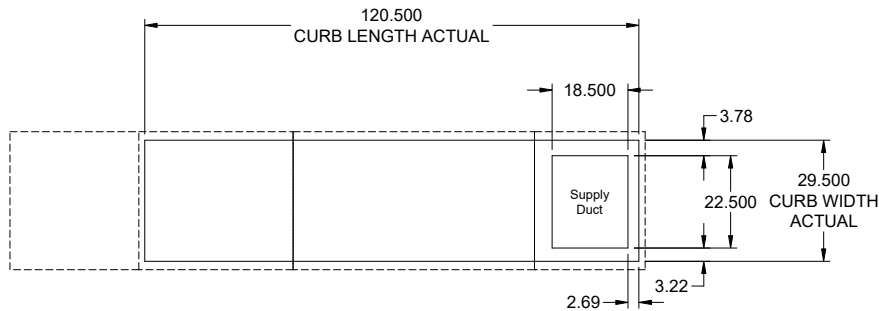


FOOTPRINT VIEW

NOTE: Roof Opening Requirements:

Minimum Roof Opening: The minimum roof opening size is the illustrated duct diameter plus 0.25 in. on all sides.
 For example: If the duct size is 14 x 14 in. square, the minimum roof opening size is 14.5 x 14.5 in. square.

Maximum Roof Opening: There must be a minimum perimeter of 1.75 in. between the roof opening and the roof curb.
 For example: If the roof curb is 75 x 30 in. square, the maximum roof opening is 71.5 x 26.5 in. inches square.



NOTE: The weatherhood and filter sections of the make-up air unit extend beyond the curb. This is by design, to prevent water infiltration.

Clearance Specifications

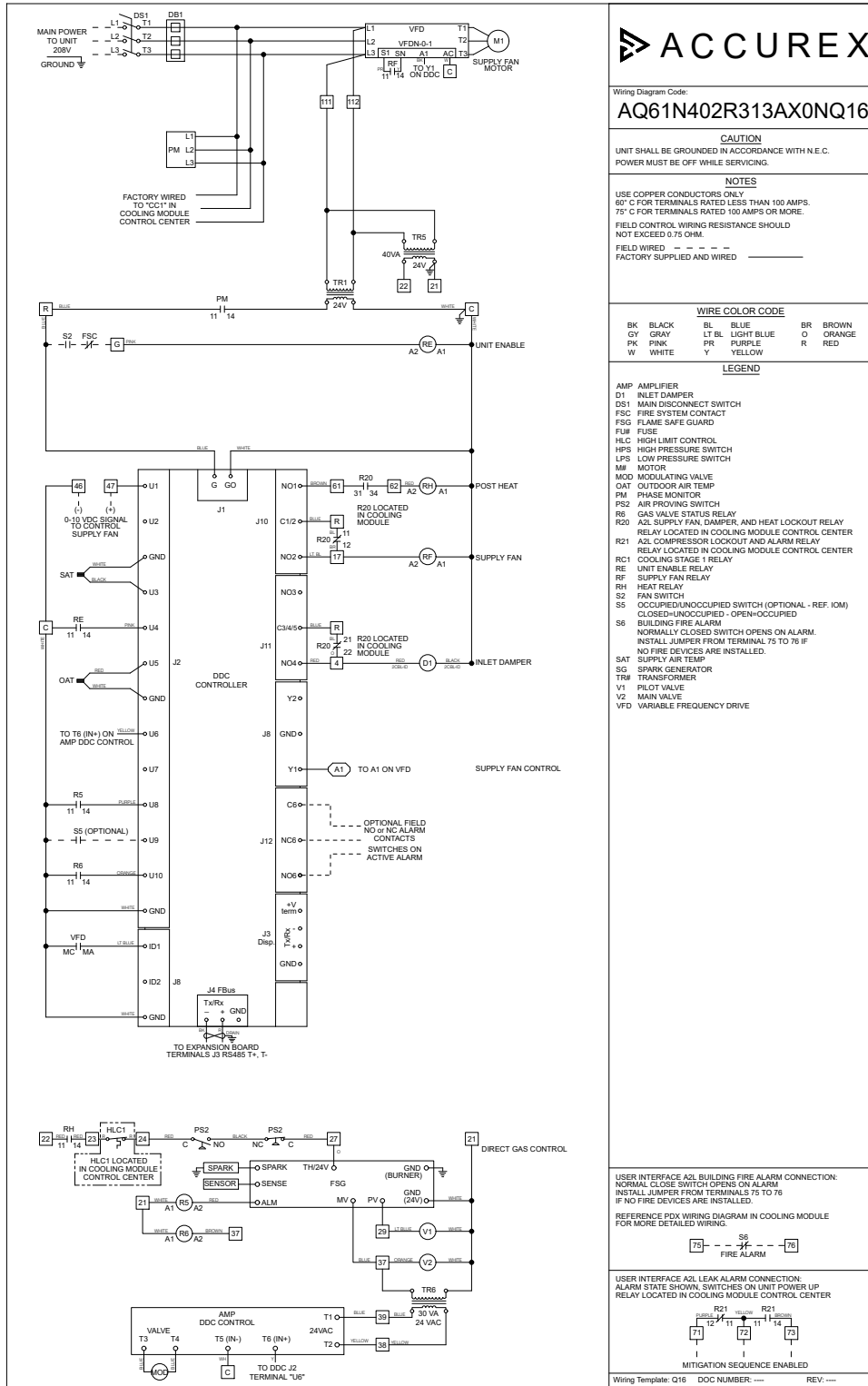
Recommended Minimum Combustible Clearances				
	Floor (in.)	Top (in.)	Sides (in.)	Ends (in.)
Insulated Units	0	0	0	0
Non-Insulated Units	0	6	6	6

Notes - Combustible Clearances
 Clearance to combustibles is defined as the minimum distance required between the heating source and the adjacent combustible surfaces to ensure the adjacent surface's temperature does not exceed 90 F above the ambient temperature.

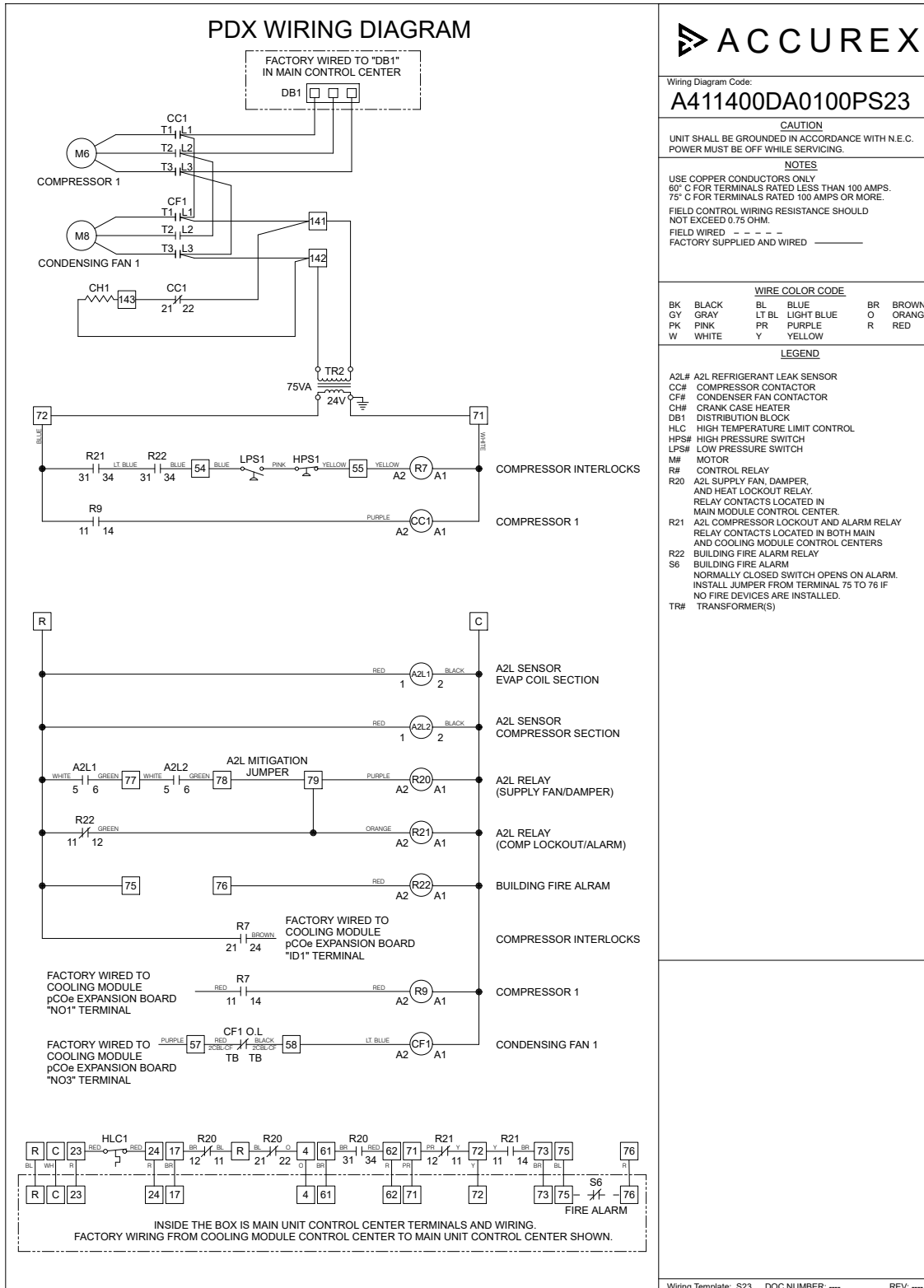
Recommended Minimum Service Clearances	
Housing 32 and less (in.)	Housing 35 and higher (in.)
42 on the controls side of the unit	48 on the controls side of the unit

Notes - Service Clearances
 To ensure ample space for component removal (evaporative cooling media, coils, filters, etc.), service clearances should be 6 in. wider than the width of the module itself.
 Reference the PDX Service Clearance guidelines (PDX IOM)

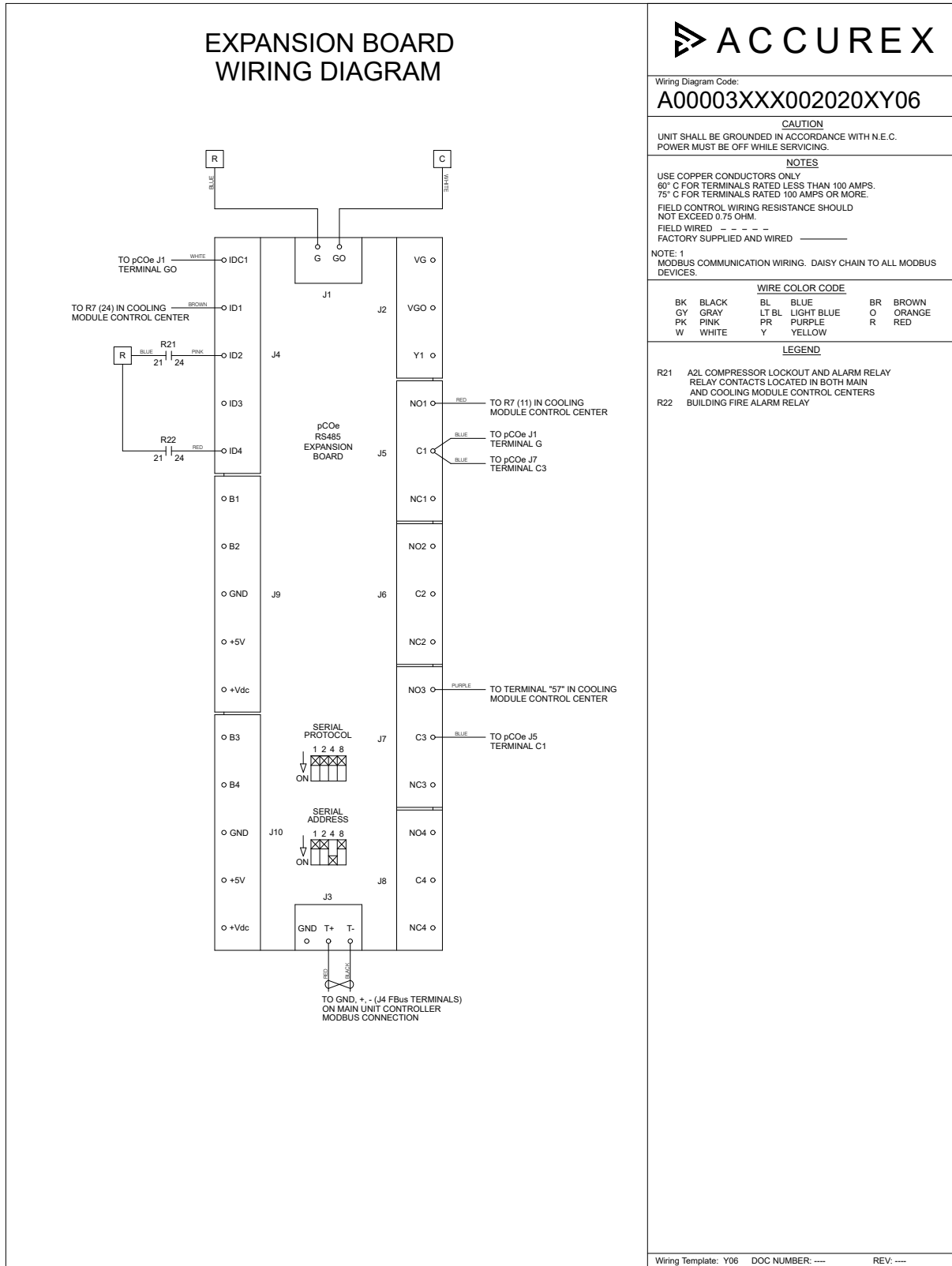
Wiring Diagram



Manufacturer reserves the right to change, modify, or improve this product at anytime

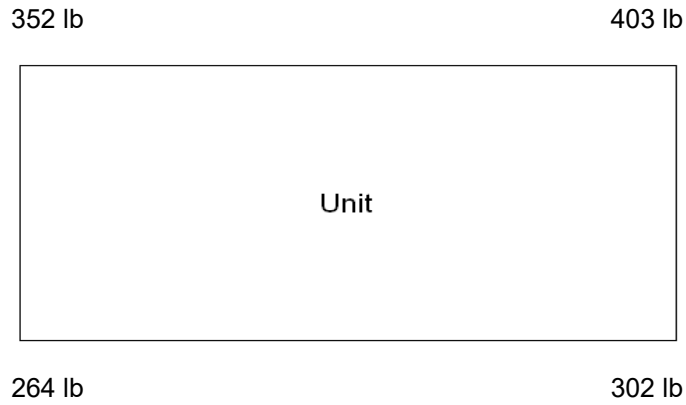


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Corner Weights



SEQUENCE OF OPERATIONS

Unit Controls

The unit shall be provided from the factory with:

- 24VAC Transformer
- Terminal Strip
- Supply Fan VFD
- Factory mounted and wired outdoor air inlet damper with actuator
- Phase Monitor

Microprocessor Controller

The microprocessor control shall be factory programmed, mounted, wired and tested. Controller shall have a lighted LCD display and keypad for changing set points and monitoring unit operation. The controller shall be equipped with the following sensors:

- Outdoor air temperature sensor
- Supply discharge temperature sensor

Unit Start Command

A contact closure or jumper wire must be field wired between terminals R and G to enable the unit. When terminal G is energized the unit shall operate as described below. When terminal G is de-energized the unit is disabled.

Internal Time Clock (Schedule)

The microprocessor controller is equipped with an internal 7-day programmable time clock, allowing the user to add up to seven different occupancy schedules.

Occupied/Unoccupied Modes

The microprocessor controller offers the following modes for determining occupancy:

- The internal time clock
- A remote contact (see wiring diagram for details)

The unit can be temporarily overridden to the occupied mode via a dry contact or the keypad display. After the override time has expired (1 hr, adj) the unit will return to the scheduled occupied/unoccupied mode.

Occupied Mode Unit Start-Up Sequence

- Unit enable input must be closed (contact closure between R and G).
- Initial delay, microprocessor controller initialization sequence.
- Factory mounted and wired outdoor air inlet damper actuator is powered open.
- Supply fan starts after adj. delay.
- Tempering operation begins (see modes below).

Supply Fan Sequence (Occupied)

The unit has been provided with a factory mounted variable frequency drive (VFD). The variable frequency drive shall control the supply fan speed as indicated by the following sequence:

External 0-10 VDC Signal By Others:

The supply fan speed is modulated by an external 0-10 VDC signal (field provided and wired) landed to the microprocessor controller. This signal shall modulate fan speed between the minimum and maximum fan speeds set in the controller.

Heating Control

The heating will be locked out when the outside air is above the heating lockout set point (65 F adj.). When enabled heating will be controlled as follows:

Direct Gas Fired Heating

The microprocessor controller will modulate the direct gas burner to maintain the active supply temperature set point.

Cooling Control

The cooling will be locked out when the outside air is below the cooling lockout set point (75 F adj.). When enabled cooling will be controlled as follows

Packaged DX Cooling (Standard Scroll)

The controller will enable cooling to maintain the active supply temperature set point.

- The packaged DX system contains a single stage of cooling.

Hot Gas Bypass

The hot gas bypass valve opens injecting hot refrigerant from the leaving side of the compressor into the liquid line. This assists in preventing frost from forming on the coil during part load conditions or low airflows. Hot gas bypass is used for system protection only and not for capacity control

A2L Refrigerant Leak Detection and Mitigation

The make-up air unit is equipped with two leak detection sensors—one in the airstream and the other in the compressor cabinet. In the event of a leak detected, the unit will go into ventilation mode. The damper will open and the fan will override to minimum speed. If the unit is equipped with direct gas heat, the heat will be disabled. This ventilation mode will run for at least 5 minutes or until the leak is cleared. The controller will ignore high and low supply air leaving temperature alarms as well as send a notification to the BMS via BACnet or Modbus.

- The make-up air unit is also equipped with a Fire Shutdown Alarm input. This is a requirement for use with R-454B refrigerant per UL 60335-2-40. If the Fire Shutdown Alarm is triggered, it will prevent the override of the damper and supply fan from the A2L Leak Sensors. The controller will send a notification alarm to the BMA via BACnet or Modbus.

Supply Temperature Set Point Control (Occupied)

The active supply temperature set point shall be adjusted (field selectable):

- Locally at the controller.

Unoccupied Mode (Disabled)

- Supply Fan Is OFF
- Factory mounted and wired outdoor air inlet damper actuator is de-energized and spring returns to the closed position.

Supply Air Low Limit

If the supply air temperature drops below 35 F (adj.) for 300 seconds (adj.), the controller will de-energize the unit and generate an alarm.

Alarm Management

The microprocessor controller will monitor the unit status for alarm conditions. Upon detecting an alarm, the controller will record the alarm description, time, date, available temperatures, and unit status for user review. A digital output is reserved for remote alarm indication.

Possible Alarms Include:

- **Global Alarm**
Indication that one or more alarms are present.
- **Outdoor Air Inlet Temperature Sensor Alarm**
Outdoor Air Inlet Temperature Sensor Alarm: Failure of the outdoor air inlet temperature sensor.
- **Supply Air Discharge Temperature Sensor Alarm**
Failure of the supply air discharge temperature sensor. Unit is shut down.
- **Supply Air Low Limit Alarm**
Supply air has fallen below 35 F (adj.) for 300 seconds (adj.). Unit is shut down.

- **Direct Gas Burner Alarm**
Indicates an ignition controller flame failure alarm. Requires manual reset at the unit.
- **Refrigerant Pressure Alarm**
Indicates a high or low refrigerant pressure switch in the packaged DX system has tripped.
- **Supply Fan Alarm**
Indicates the supply fan failed to prove for a 30 second (adj.) period.

Warranty Statement for Make-Up Air

Unit Warranty

Accurex warrants the equipment to be free from defects in material and workmanship for a period of 18 months from the date of shipment. Initial startup must be completed within six months of the shipment date, and a startup report must be submitted to Accurex.

DG Burner Extended Warranty

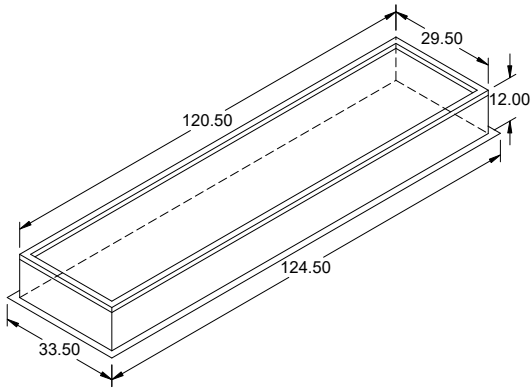
The warranty does not include items deemed as consumable components, including, but not limited to: Igniters, Spark rods, Spark generator, Flame rods, Flame wires, UV eye components, and associated components.

Note: Rust, discoloration of the burner material and cracks or holes smaller than .75 in. is not qualification for a defective burner.

Warranty Notes

Any component which proves defective during the warranty period will be repaired or replaced at Accurex's sole option when returned to our factory, transportation prepaid. All warranties do not include labor costs associated with troubleshooting, removal, or installation. Accurex will not be liable for any consequential, punitive, or incidental damages resulting from use, repair, or operation of any Accurex product. These warranties are exclusive and are in lieu of all other warranties, whether written, oral, or implied, including the warranty of merchantability and the warranty of fitness for a particular purpose. No person (including any agent or salesperson) has authority to expand Seller's obligation beyond the terms of this warranty, or to state that the performance of the product is other than that published by Seller.

As a result of our commitment to continuous improvement, Accurex reserves the right to change specifications without notice.



Model: GPI

Roof Curb

Standard Construction Features:

- Roof Curb fits between the building roof and the fan mounted directly to the roof support structure - Constructed of either 18 ga galvanized steel or 0.064 in. aluminum - Straight Sided without a cant - 2 in. mounting flange - 3 lb density insulation - Height - Available from 12 in. to 42 in. as specified in 0.5 in. increments. Notes: - The maximum roof opening dimension should not be greater than the "Actual" top outside dimension minus 2 in.. - The minimum roof opening dimension should be at least 2.5 in. more than the damper dimension or recommended duct size. - The Roof Opening Dimension may or may not be the same as the Structural Opening Dimension. - Damper Tray is optional and must be specified. Tray size is same as damper size. - Security bars are optional and must be specified. Frames and gridwork are all 12 ga steel.

General

Tag	Qty	Model	Sizing Method	Undersizing (in.)	Weight (lb)	Shipped Assembled	Union Label
	1	GPI-31 x 122	Nominal	1.5	86	No	No Preference

Dimensions

Curb Height (in.)	Nominal Outside Width (in.)	Nominal Outside Length (in.)	Actual Outside Width (in.)	Actual Outside Length (in.)	Flange Width (in.)	Flange Length (in.)
12	31	122	29.5	120.5	33.5	124.5

Accessories

Material	Security Bars	Liner	Insulation (in.)	Insulation R Value
Galvanized	No	No	1	R4.3