Accurex Service

Model	Test and Balance
Service Description	Startup and TAB

XRT-70-15L-G-G0

Unit Performance

Design Conditions

Elevation (ft)	Summer		Winter DB (F)	Supply (CFM)	Outdoor Air (CFM)	Recirc Air (CFM)	Exhaust Air (CFM)
	DB (F)	WB (F)					
866	89.0	74.0	-11.0	6,150	1,750	4,400	-

Unit Specifications

Qty	Weight (lb)	Cooling Type	Heating Type	Unit Installation	Unit ETL Listing	Furnace ETL Listing
1	2,003 (+/- 5%)	Packaged DX	Indirect Gas	Outdoor	UL 60335-2-40	ANSI Z83.8 / CSA 2.6

Configuration

Outdoor Air		Exhaust Air	
Intake	Discharge	Intake	Discharge
End	Bottom	-	-

ASHRAE 90.1-2022 Compliance

	ASHRAE 90.1 Min. Efficiency	Calculated Efficiency	Compliance
EER	10.8	10.8	✓
IEER	14	20	✓

Cooling Specifications

Type	Total Capacity (MBH)	Sensible Capacity (MBH)	Lead Compressor Type	Condensing Ambient Temp (F)	Coil (DB/WB)		Reheat	
					EAT (F)	LAT (F)	Capacity (MBH)	LAT (F)
Packaged DX	189.1	145.7	Inverter Scroll	89.0	79.0 / 66.0	55.8 / 55.8	145.5	78.4

Heating Specifications

Type	Gas Type	Input (MBH)	Output (MBH)	Temperature Rise		Turndown	Performance	
				Min (F)	Max (F)		EAT (F)	LAT (F)
Indirect Gas	Natural	200.0	162.0	2.4	24.4	10:1	48.4	72.7

Motor Specifications

Motor	Qty	Operating Power (hp)	Size (hp)	Enclosure	Efficiency	RPM
Supply	1	4.22	5	OP	High	1800

Electrical Specifications

Power Supply	Rating (V/C/P)	MCA (A)	MOP (A)	FLA (A)
Unit	208/60/3	89.8	125.0	76.7

Construction Features And Accessories

Unit	
Unit Installation - Outdoor	Std
Unit Construction - Double Wall	Std
Insulation - 1 inch R-8 foam	Std
Corrosion Resistant Fasteners	Std
Hinged Access	Std
Factory Wired Non-Fused Disconnect Switch	Std
Direct Drive Plenum Blower & Motor Assemblies	Std
Factory Wired VFDs	Std
Unit Finish - Permatector, RAL7023	Std
Stainless Steel Condensate Drain Pan and Connection	Std
Condensate Drain Trap	Std
Short Circuit Current - 5 kA	Std
Controls	
Unit Controls - Microprocessor	Std
Internally Mounted Control Center with 24 VAC control transformer(s)	Std
BMS Protocol - None	
Supply Fan Control - Single Zone VAV	X
Exhaust Fan Control	
Web-Based User Interface	Std
Damper Control - Constant Position-Adj.Setpoint	X
Economizer Control Temp./Enthalpy	X
Space Interface - WithDisplay	X
Furnace Control - 10:1 Modulation	X
Unoccupied Recirc Mode	X
Control Accessories	
Dirty Filter Sensor(s)	
Airflow Monitor	
Room Thermostat - TempRH	X
Phase/Brownout Protection	Std
Economizer Fault Detection Diagnostics	

Accessories	
Recirc Air Damper - Low Leakage	Std
Outdoor Air Damper - LowLeakage	Std
Roof Curb	
Supply Air Filters - 2" Merv 13, 6-20x25x2	X
Service Outlet - Factory Mounted and Field Powered	X
Condensate Overflow Switch	X
Spare Filters	
Exhaust Discharge Gravity Backdraft Damper	
ElectroFin Coil Coating	
Motor Shaft Grounding	
Smoke Detector(s), Exhaust - Shipped Loose	X
Barometric Relief Damper	X
Power Venting	Std
Hail Guards	Std
Warranty Options	
Unit Warranty - 18 Months (Std.)	Std
Compressor Warranty - 5.5 Yrs. (4 Yrs. Extended)	X

Standard Option	Std
Not Included	
Included	X

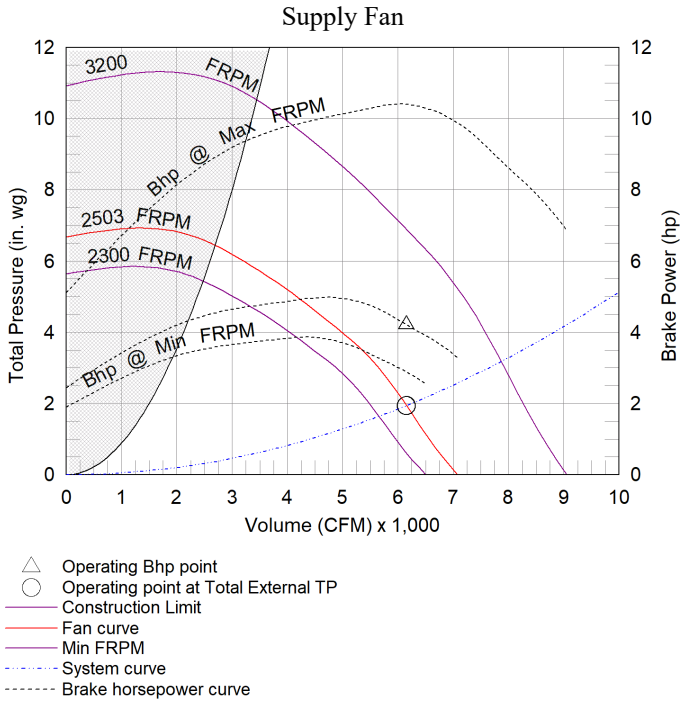
Notes
Outdoor Air Damper supplied is low leakage, motorized VCD-23 (leakage rate of 3 CFM/ft^2 @ 1 in. wg), Class 1A
Smoke Detector(s) - sampling tube included sized for duct widths of 1-2 ft.
** The equipment you've purchased MAY include a cellular communication gateway (the "Gateway") that allows Accurex and its affiliates to remotely monitor and log performance. The Gateway does not alter the performance of your equipment and we only use the Gateway to monitor and collect data related to the equipment's performance in the context of its operational environment. While the data we monitor and collect is specific to your equipment, we will only use that data to monitor your system; diagnose and make recommendations to you or your HVAC technicians to improve system performance; and, in the aggregate, without disclosing any personal or proprietary information, enhance the overall design and performance of our products. You may opt out of this process by calling our Service Group at 1-866-205-0521, but doing so may negatively impact our ability to enhance your product's performance.

Supply 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
6,150	0.75	1.943	2503	4.22	1	5	1	Plenum	Direct

Pressure Drop (in. wg)						
Weatherhood	Filter	Damper	Cooling	Heating	External	Total
-	0.292	0.172	0.414	0.183	0.75	1.943

Sound Performance in Accordance with AMCA										
Sound Power by Octave Band								Lwa	dBA	Sones
62.5	125	250	500	1000	2000	4000	8000			
92	87	99	92	87	82	81	79	94	83	40



Cooling Performance

Cooling Specifications								
Type	Total Capacity (MBH)	Sensible Capacity (MBH)	Lead Compressor Type	Condensing Ambient Temp (F)	Coil (DB/WB)		Reheat	
					EAT (F)	LAT (F)	Capacity (MBH)	LAT (F)
Packaged DX	189.1	145.7	Inverter Scroll	89.0	79.0 / 66.0	55.8 / 55.8	145.5	78.4

Coil Information								
PDX Coil Model	Fins Per Inch	Rows Deep	Face Vel. (ft/min)	Coil PD (in. wg)	Refrigerant	Refrig. Velocity (ft/min)	Face Area (ft2)	Suction Temp (F)
DR38S04S16-45x57	16	4	388	0.414	R-454B	1,958	15.83	48.9

Compressor Details					
Lead Compressor Type	Compressor Qty	Compressor RLA/MRC (A)		Compressor LRA (A)	
		Comp. #1	Comp. #2	Comp. #1	Comp. #2
InverterScroll	1	52.2	NA	NA	NA

A2L Installation Requirement - UL 60335-2-40		
Largest Circuit Charge	Minimum Circulation Airflow	Minimum Total Conditioned Room Area
27.9lb / 12.6kg	755	420
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 adjustment in the field
Hermetic scroll type compressors
Compressors mounted on neoprene vibration isolation
Stainless steel double sloped drain pan
Moisture-indicating sight glass
Service/charging valves
Refrigerant high pressure switch (manual reset)
Liquid-Line filter drier
Leak detection sensors
Multiple condensing fans to allow fan cycling for head pressure control
Inverter scroll compressor
Refrigerant low pressure switch (auto reset)
Electronic expansion valve
Unit cannot be mounted in an enclosed space.

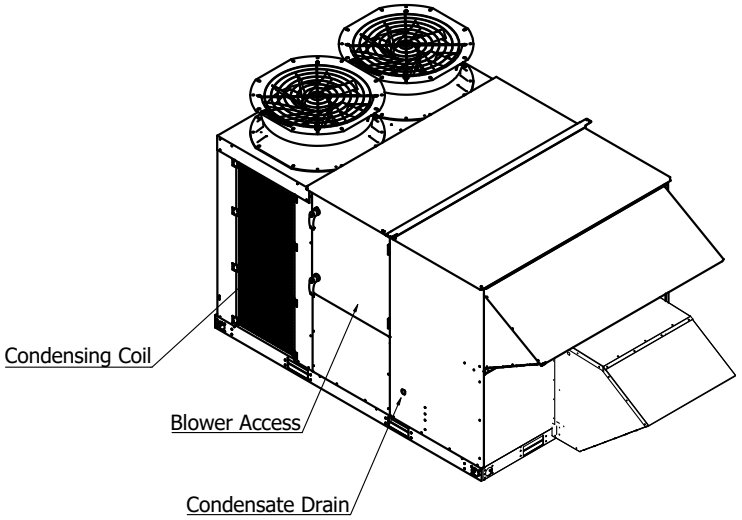
Important Notes:
Capacity is based on incoming voltage selected. If incoming power varies it may affect the capacity of your selection.

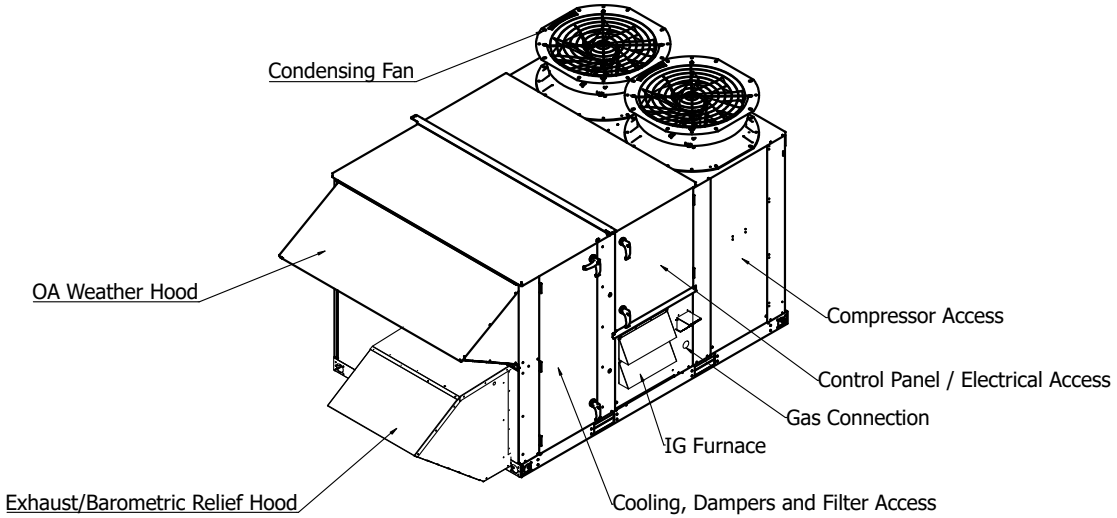
Heating Performance

Heating Specifications								
Type	Gas Type	Input (MBH)	Output (MBH)	Temperature Rise		Turndown	Performance	
				Min (F)	Max (F)		EAT (F)	LAT (F)
Indirect Gas	Natural	200.0	162.0	2.4	24.4	10:1	48.4	72.7

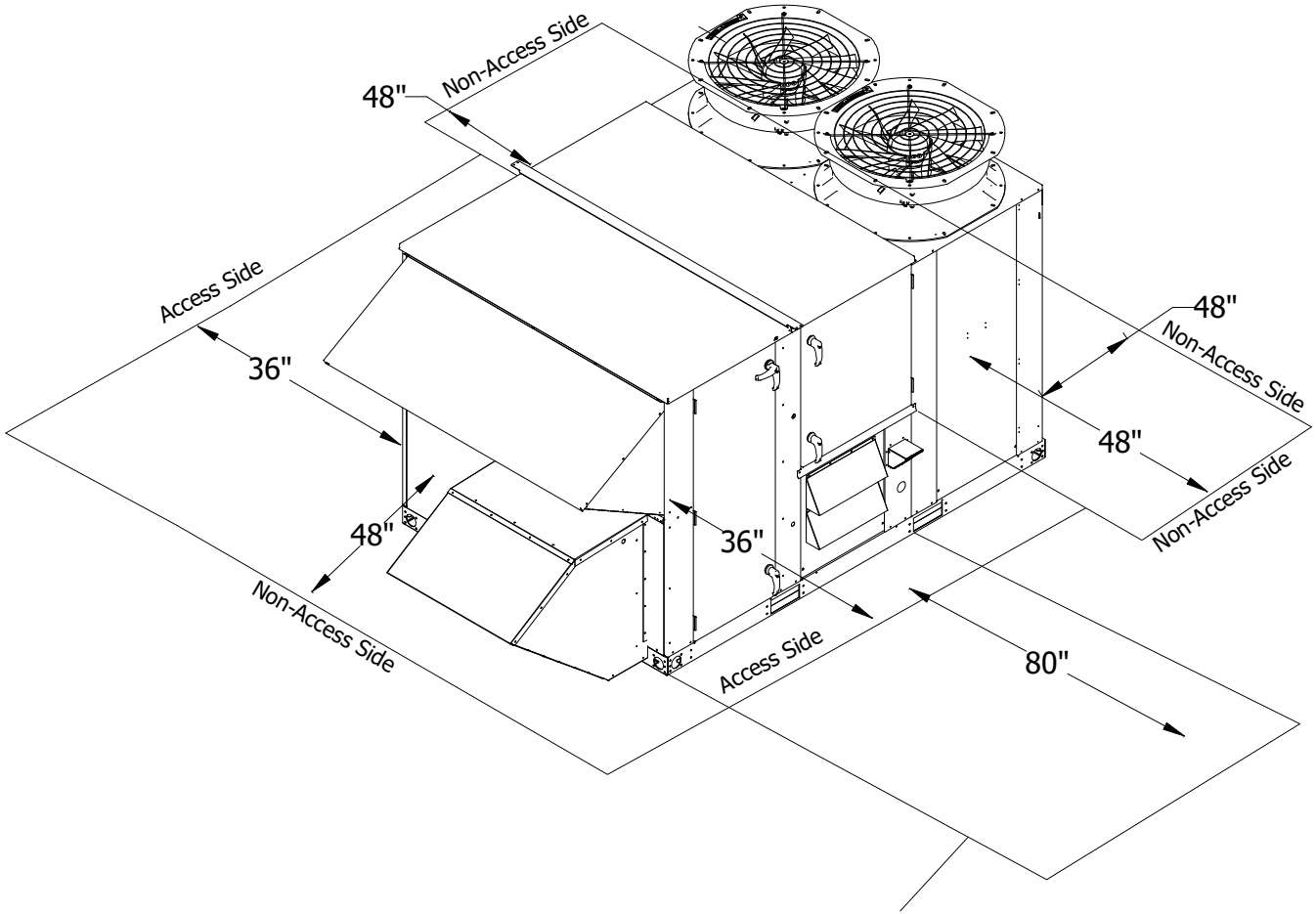
Unit Details
ANSI standard Z83.8 and CSA 2.6
High Thermal efficiency
Direct spark ignition
3/4" Gas Connection
At least 6 in. wg of natural gas pressure (11 in. wg for LP) is required at the units gas connection in order to achieve maximum performance
Power Venting
24 Volt Control Power
Stainless Steel heat exchange tubes
Unit controller maximum allowable supply discharge air set point is 100F (37.8C)

Isometric Layout



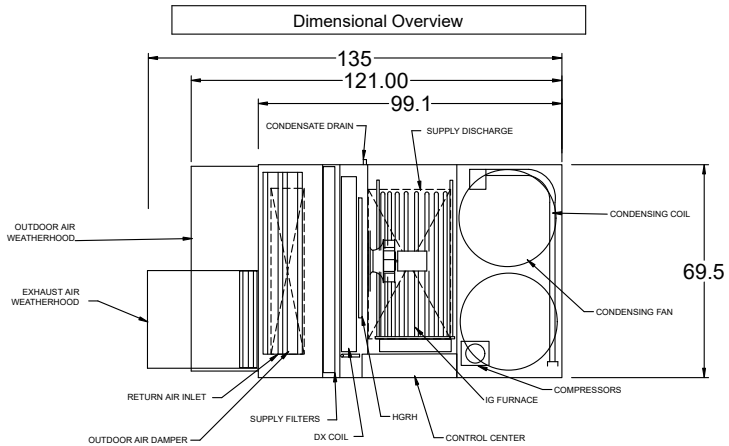


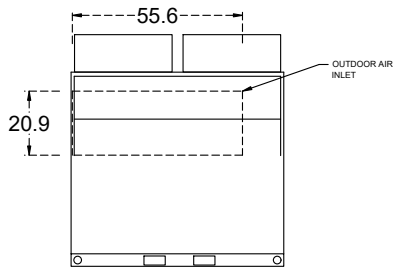
Isometric Clearances



Use if removal of Cooling Coil, Electric Heat or the IG furnace may be needed.

Overview





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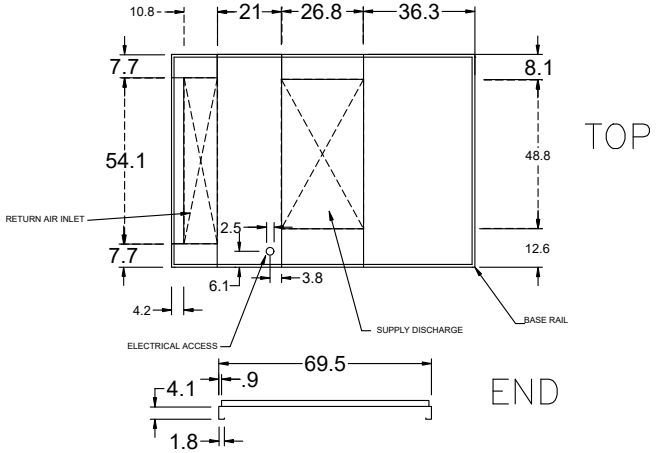
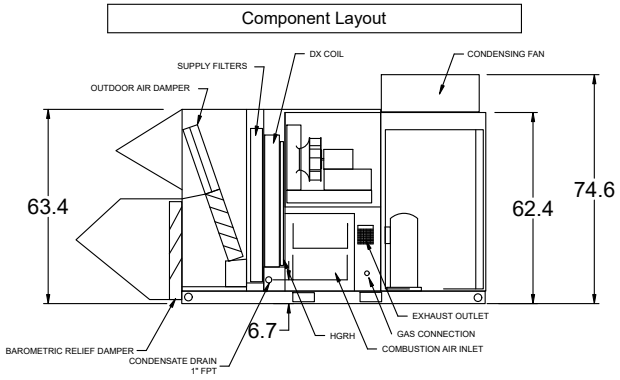
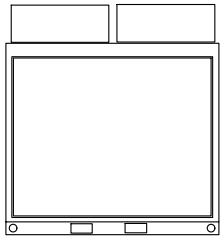


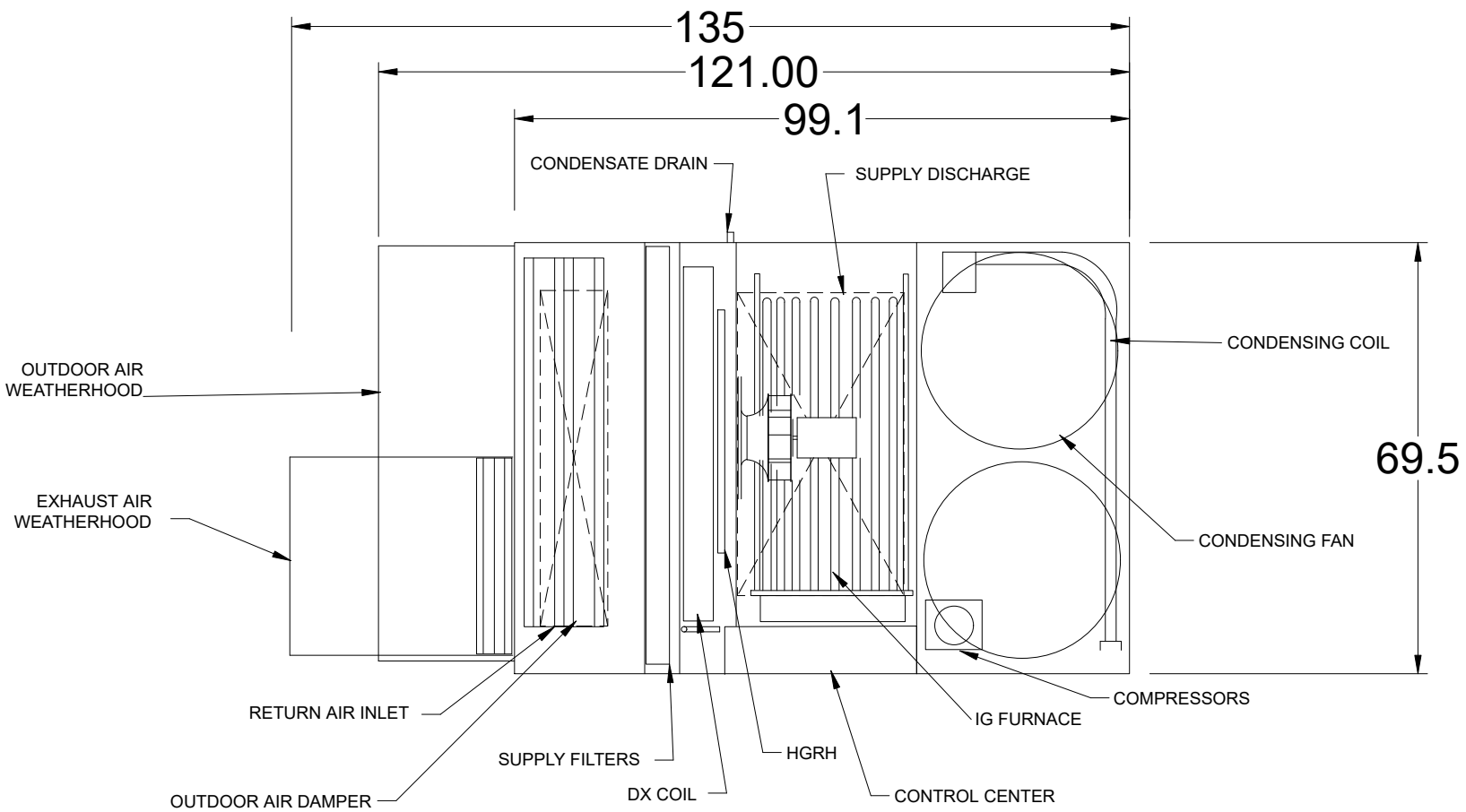


Elevation

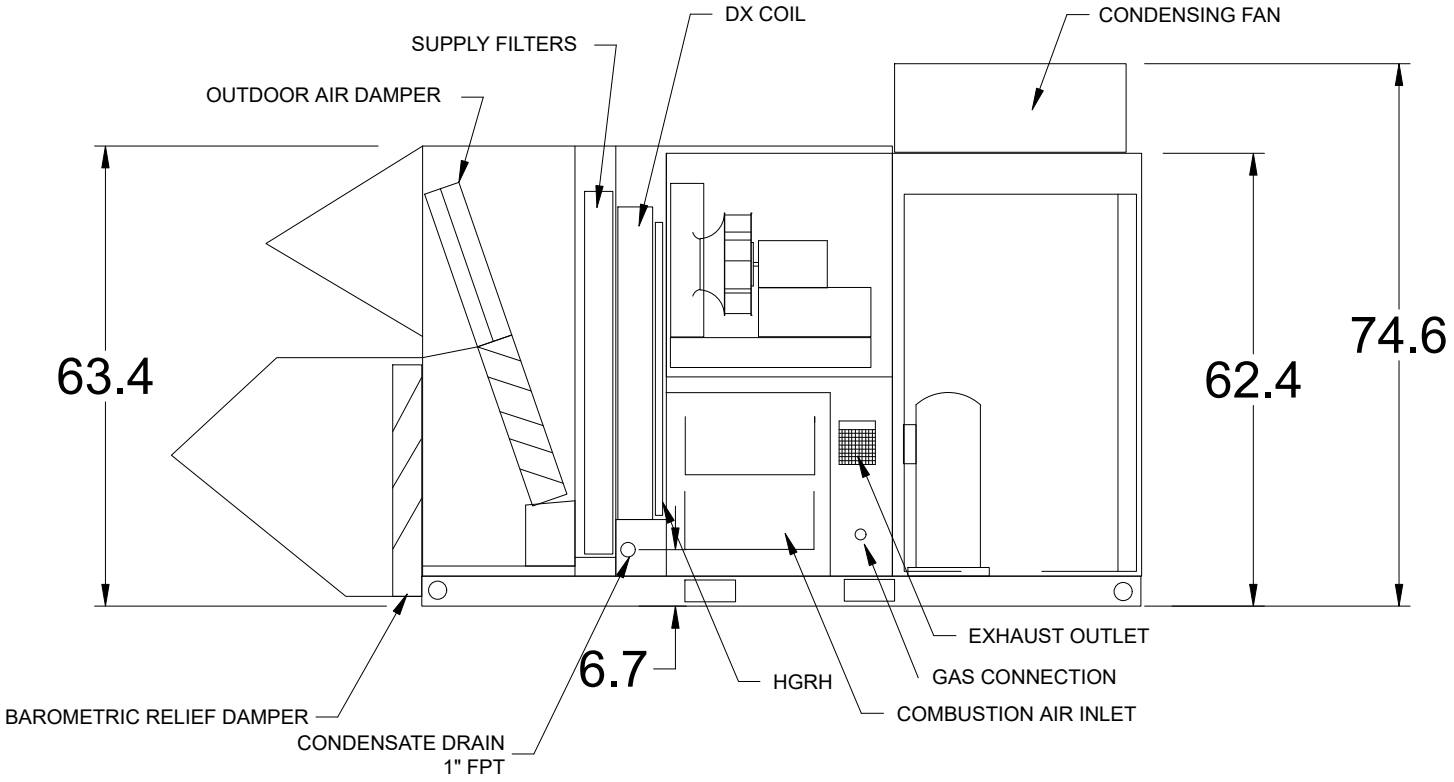


Right End

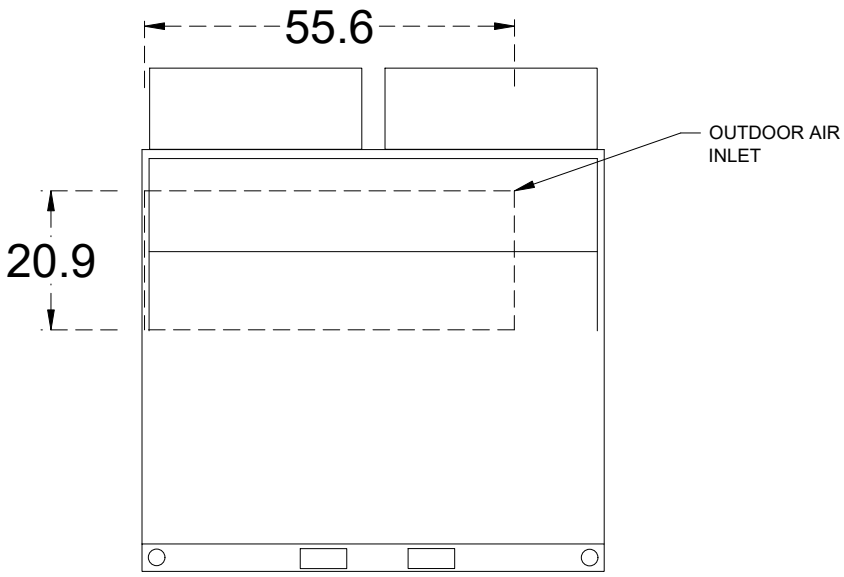
Dimensional Overview



Component Layout



Elevation



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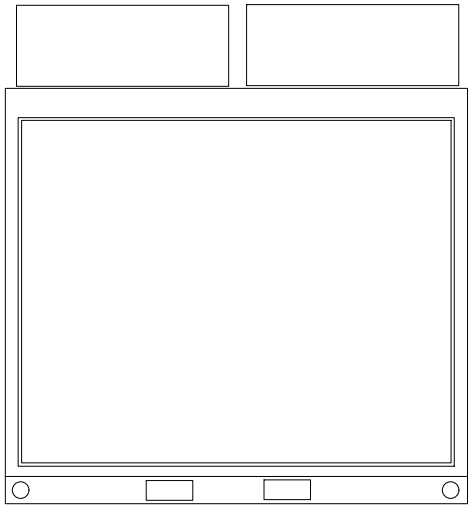
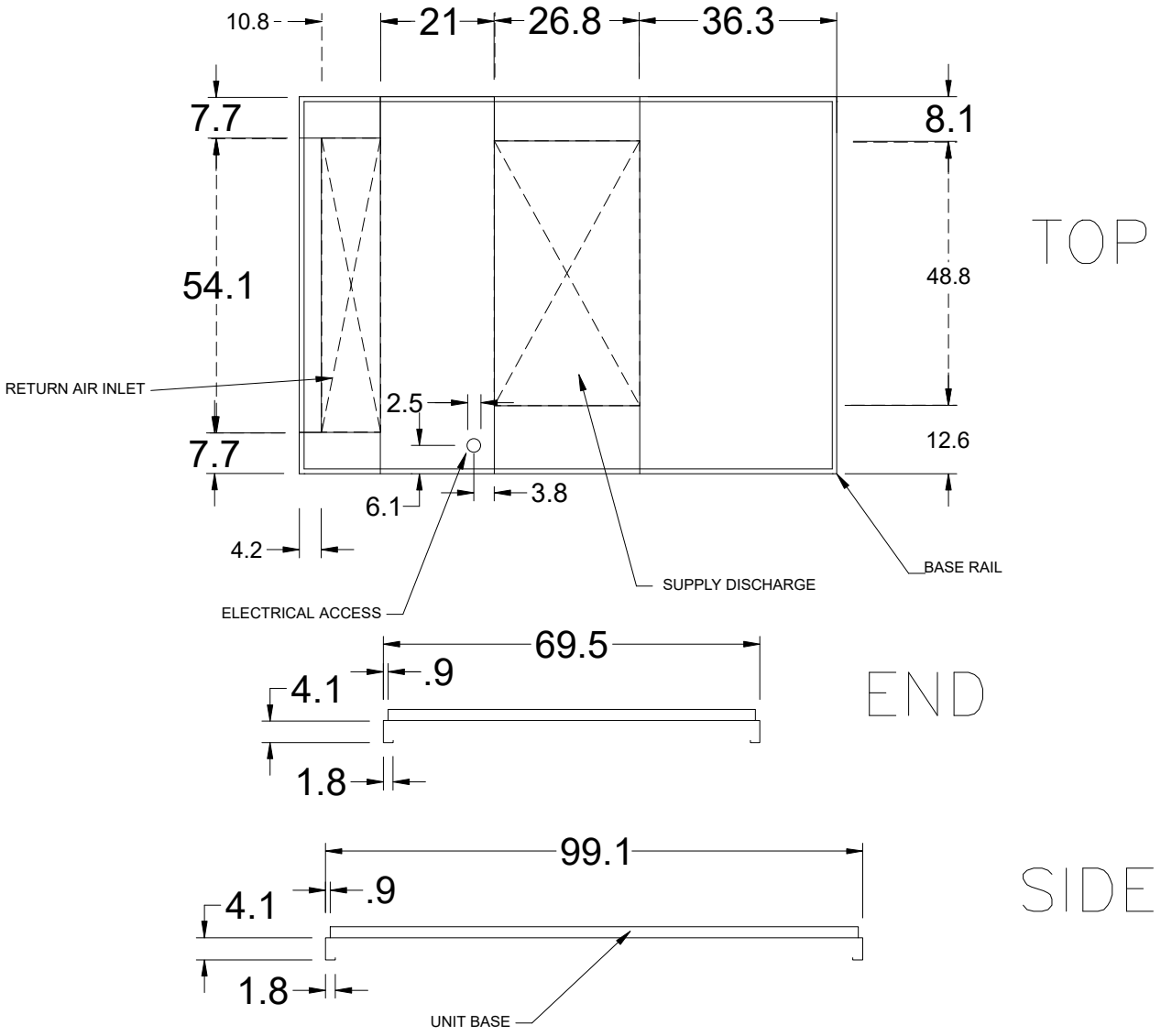
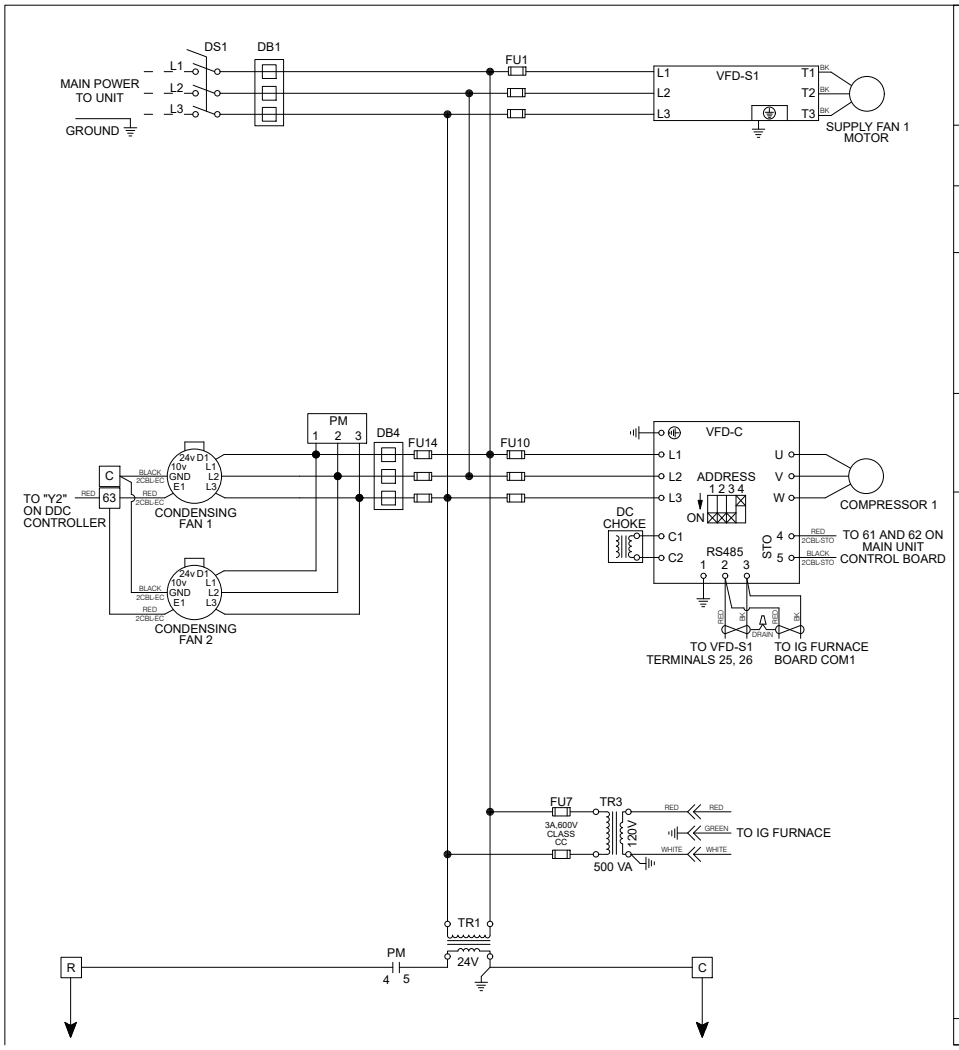


Right End


10.8
21
26.8
36.3
7.7
8.1
54.1
48.8
TOP
RETURN AIR INLET
2.5
7.7
12.6
6.1
3.8
4.2
BASE RAIL
SUPPLY DISCHARGE
ELECTRICAL ACCESS
69.5
.9
4.1
END
1.8
99.1
.9
4.1
SIDE
1.8
UNIT BASE

Wiring Diagram



ACCUREX

Wiring Diagram Code:

A43EBF0XA00C04X00HF33J0400XA05

CAUTION

UNIT SHALL BE GROUNDED IN ACCORDANCE WITH N.E.C.
POWER MUST BE OFF WHILE SERVICING.

NOTES

USE COPPER CONDUCTORS ONLY
60° C FOR TERMINALS RATED LESS THAN 100 AMPS.
75° C FOR TERMINALS RATED 100 AMPS OR MORE.

FIELD CONTROL WIRING RESISTANCE SHOULD NOT EXCEED 0.75 OHM.

FIELD WIRED – – – – –
FACTORY SUPPLIED AND WIRED ————

WIRE COLOR CODE

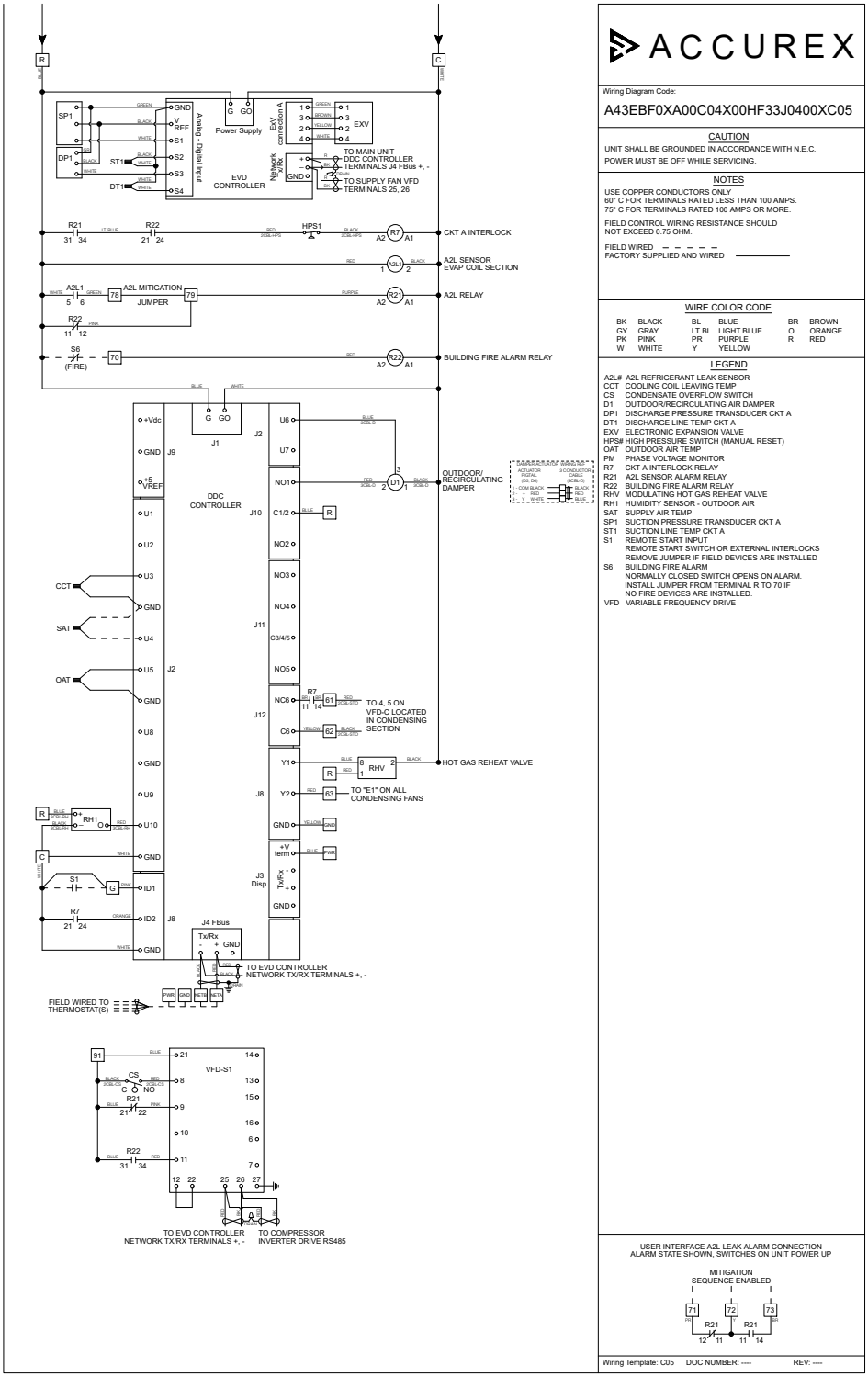
BK	BLACK	BL	BLUE	BR	BROWN
GY	GRAY	LT BL	LIGHT BLUE	O	ORANGE
PK	PINK	PR	PURPLE	R	RED
W	WHITE	Y	YELLOW		

LEGEND

DB#	POWER DISTRIBUTION BLOCK
DS	DISCONNECT SWITCH
FU#	FUSES
TR#	TRANSFORMER
VFD	VARIABLE FREQUENCY DRIVE

Wiring Template: A05 DOC NUMBER: ---- REV: ----

Wiring Diagram 2



Factory Controller Sequence of Operation

FACTORY CONTROLLER: Controller shall be provided with required sensors and programming for rooftop unit. Controller shall be factory programmed, mounted and tested. Controller shall have a LCD readout for changing set points and monitoring unit operation.

UNIT START COMMAND (Unit will be enabled to start once a jumper is placed between C to G):

- Factory mounted and wired outdoor air and recirculated air damper actuators are powered.
- Supply fan starts after after a (adj.) delay.
- Tempering options to function as described below.

UNIT STOP COMMAND (OR DE-ENERGIZED):

- Supply fan, exhaust fan and tempering options de-energized.
- Outdoor air damper actuator is spring return close, and the recirculated air damper actuator is spring open.

OCCUPIED/UNOCCUPIED MODES: Shall be based on a 7-day time clock internal to the controller. The schedule shall be set by the end user. When a user initiates an override input, the controller will switch from unoccupied to occupied mode. The controller will return to the scheduled occupied/unoccupied mode after the override time has expired. If internal time clock is disabled, a remote contact or a BMS can control the occupied/unoccupied mode.

Occupied Mode:

- Damper control per below.
- Supply fan ON.
- Heating per below.
- Cooling per below.

Unoccupied mode (Cycle on Room Temp): The unit will cycle to maintain unoccupied room set points if there is a call for unoccupied heating, cooling or dehumidification.

- Supply fan OFF
- Recirculation air damper open.
- Outdoor air damper closed.
- On a call for heating (room temp set point – differential) supply fan cycles ON, and the heating increases the room temperature. Unit cycles off when room temperature reaches the unoccupied set point (adj.).
- On a call for dehumidification (room relative humidity set point + differential) dehumidification is enabled.

MORNING WARMUP/COOL DOWN: Prior to occupancy, the unit will run using the warmup or cool down sequence until the occupied set point is achieved. The heating or cooling mode must not be locked out and the space temperature is below or above set point by the unoccupied hysteresis (adj.) (This Sequence must be field configured.)

SUPPLY BLOWER SEQUENCE: The supply blower is provided with a factory mounted variable frequency drive. The supply blower speed will be controlled with the following sequence. Minimum supply fan turndown is 50% of the design maximum operation.

Single Zone VAV: The controller will use a space mounted temperature sensor modulate the supply blower speed to maintain the room-air temperature set point.

OUTDOOR AIR AND RE-CIRCULATED (RECIRC) AIR DAMPER CONTROL: The outdoor and recirculated air dampers are factory mounted and wired. Outside air damper and recirculation damper will be inverse positions of each other. Example, when the outside air damper is set to 35% opening, the recirculation damper will be at 65% opening. The modulating actuator will be controlled to dictate position by the following sequence.

Constant Position - Adj. Setpoint: The unit is provided with a modulating damper for the outdoor and recirculated air dampers. The minimum position can be field adjusted (default) in the microprocessor controller. When the unit is powered off, the outdoor air damper will spring return close and the recirculated damper will spring return open.

COOLING SEQUENCE: The cooling is controlled to maintain the supply temperature set point. The mechanical cooling will be locked out when the outside air is < 55 F (adj.).

Packaged DX Cooling (Inverter Scroll): The controller will provide a modulating signal for cooling. From 0-100%, the inverter scroll will be controlled to maintain discharge temperature. The electronic expansion valve will modulate to maintain 8 of superheat.

Modulating Hot Gas Reheat Sequence: During dehumidification the modulating HGRH is controlled to maintain the supply temperature set point.

Modulating Head Pressure Control: All condenser fans will have EC motors and will modulate in sync to maintain a head pressure set point.

DEHUMIDIFICATION CONTROL SEQUENCE: Dehumidification to be enabled and once enabled the cooling coil will be controlled based on the following sequences. The mechanical cooling will be locked out when the outside air is < 55 F (adj.)

Space Set Point Control (Room RH): When in dehumidification mode the controller will adjust the cold coil leaving air temperature set point between the minimum (adj.) and the maximum (adj.) limits, to satisfy the desired room relative humidity set point. Adjustable locally or by BMS.

Dehumidification Enable: Dehumidification mode to be enabled based on the outside air dew point condition or space humidity. When the outside air dew point is greater or the space humidity is greater than the desired set point (adj.), the unit will operate in dehumidification mode.

REHEAT SEQUENCE: While the unit is in dehumidification mode the outdoor air will be reheated via Modulating Hot Gas Reheat for space neutral applications.

Modulating Hot Gas Reheat: The controller will modulate the hot gas reheat reheat valve with a 0-10 V signal to maintain the supply temperature set point (adj.).

HEATING SEQUENCE: The heating is controlled to maintain the supply temperature set point. The heating will be locked out when the outside air is > 80 F (adj.).

Indirect Gas Furnace: The controller will modulate the indirect gas furnace to maintain the supply temperature set point (adj.).

UNIT LEAK DETECTION AND MITIGATION: The unit will be equipped with refrigerant leak detection sensors. These sensors along with the following sequence of operation are required per UL60335-2-40.

Refrigerant Leak Detected In Air Tunnel: If a refrigerant leak is detected in the air tunnel, the supply fan will operate at minimum airflow requirement, recirculation damper to be fully open, outside air damper will be closed, and compressors are disabled to reduce leakage rate. This operation is required in order to move stagnant refrigerant from within the unit, duct, and space ensuring proper dilution of the refrigerant. This operation is required even if the unit is called to be off. After leak detection is cleared, the unit will go back to normal operation. Exception to this operation is when the unit is receiving an active fire alarm signal at the unit controller. If unit controller is receiving a fire alarm input, the unit will not operate the leak mitigation supply fan sequence.

Dry alarm contacts available to allow the building (by others) to perform external mitigation actions when necessary. These by other external actions include opening of zone dampers in the ductwork, disabling duct mounted electric resistance heaters, and/or enabling additional mechanical ventilation if required per ASHRAE 15.

Refrigerant Leak Detected In Compressor Compartment: If a refrigerant leak is detected in the compressor compartment and the unit is configured with an indirect gas furnace, the furnace will be disabled while leak detection is active. After leak detection is cleared, the unit will go back to normal operation.

TEMPERATURE CONTROL SEQUENCE: The unit will maintain the supply air discharge setpoint per the following. Adjustable locally or by BMS.

Space Setpoint Control: The supply setpoint will adjust between minimum (adj.) and maximum (adj.) limits, to satisfy the desired space temperature setpoint. Adjustable locally or by BMS.

Room Reset: The controller will reset the supply air temperature set point to maintain the room temperature set point (adj.).

BUILDING FREEZE PROTECTION: If the supply air temperature drops below 35 F (adj.) for 300s (adj.), the controller will de-energize the unit and activate the alarm output.

TEMPERATURE PROTECTION (Winter Ramp): The controller will enable the outdoor air and recirc. air dampers to modulate in order to help the unit keep up with heating demand in the event of the unit operating outside design conditions. (This can be enabled in the controller.)

ECONOMIZER SEQUENCE: When the application requires cooling, and the outdoor air conditions are suitable for free cooling, the controller will modulate the outdoor air and recirculated air dampers to maintain the discharge temperature set point. If the outdoor air damper modulates to the maximum economizer set point and the discharge temperature is not met, the controller will increase the call for cooling to meet the discharge temperature and could engage mechanical cooling.

Temp./Enthalpy: The economizer will be locked out when: the outdoor air is < 40 F DB (adj.) or > 75 F DB (adj.) or > 55 F dew point (adj.); the unit is operating in dehumidification mode; or there is a call for heating

ALARMS INDICATION: The controller will display alarms and have one digital output for remote indication of an alarm condition. Possible alarms include:

DX Alarm: The controller monitors the refrigerant pressure. In the case of low refrigerant pressure the compressors will shut down until refrigerant pressure returns to normal values and the controller will send an alarm. In the case of high refrigerant pressure the compressors will shut down, requiring a manual reset and the controller will send a alarm.

Temperature Sensor Alarm: The controller sends an alarm in the case of a failed air temperature sensor.

Humidity Sensor Alarm: The controller sends an alarm in the case of a failed humidity sensor.

ACCESSORIES: The following accessories will be included with the unit to expand the functionality or usability of the controller.

DDC Remote Interface: Factory provided, field mounted interface panel that will be wired to the main controller for monitoring and remote adjustments of set points.

Condensate Overflow Unit Shutdown: Factory mounted condensate overflow switch wired to the unit controller. The controller monitors the condensate overflow switch. If the water level in the drain pan reaches a certain level, the unit will shutdown and send an alarm.

120V/24V Photoelectric Smoke Detector: Duct smoke detector is shipped loose for field mounting and wiring in the exhaust air duct. Duct smoke detector contains 2 normally open and 2 normally closed contracts for alarm notification. (To disable unit based off smoke detection smoke detector contacts must be field wired between C and G)"

Warranty Statement for Rooftop Technology (RT)

Unit Warranty

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

Heat Exchanger Extended Warranty

Accurex warrants the stainless steel heat exchanger to be free from defects in material and workmanship for a period of 25 years from the shipment date.

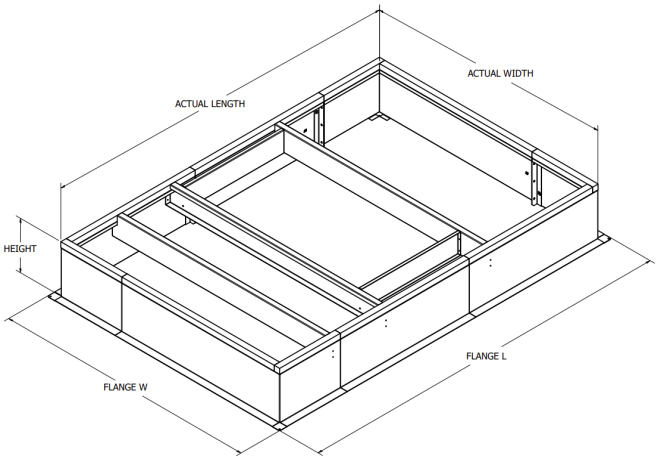
Compressor Extended Warranty

Accurex warrants the refrigerant compressor(s) to be free from defects in material and workmanship for a period of 5.5 years from the shipment date.

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: GRTC

Roof Curb

Standard Construction Features:

- Roof curb fits between the building roof and the unit mounted directly to the roof support structure - Constructed of 14 ga. galvanized steel - Straight sided without a cant - Single roof flashing flange (2 in. width) - Cross-members to locate duct drops NOTES: - This curb is designed to pair with Accurex model XRT. - This curb ships unassembled.

General

ID#	Tag	Qty	Model	Sizing Method	Weight (lb)	Shipped Assembled	Union Made
54-1	RTU-1 (Dining)	1	GRTC-64.9x94.5-G14	Actual	198	No	No Preference

Dimensions

ID#	Curb Height (in.)	Actual Outside Width (in.)	Actual Outside Length (in.)	Flange Width (in.)	Flange Length (in.)
54-1	14	64.9	94.5	68.9	98.5

Accessories

ID#	Material	Insulation (in.)	Insulation R Value	Wood Nailer
54-1	Galvanized	None	None	No

XRT-70-15L-G-G0

Unit Performance

Design Conditions

Elevation (ft)	Summer		Winter DB (F)	Supply (CFM)	Outdoor Air (CFM)	Recirc Air (CFM)	Exhaust Air (CFM)
	DB (F)	WB (F)					
866	87.0	74.0	-11.0	6,150	1,700	4,450	-

Unit Specifications

Qty	Weight (lb)	Cooling Type	Heating Type	Unit Installation	Unit ETL Listing	Furnace ETL Listing
1	2,003 (+/- 5%)	Packaged DX	Indirect Gas	Outdoor	UL 60335-2-40	ANSI Z83.8 / CSA 2.6

Configuration

Outdoor Air		Exhaust Air	
Intake	Discharge	Intake	Discharge
End	Bottom	-	-

ASHRAE 90.1-2022 Compliance

	ASHRAE 90.1 Min. Efficiency	Calculated Efficiency	Compliance
EER	10.8	10.8	✓
IEER	14	20	✓

Cooling Specifications

Type	Total Capacity (MBH)	Sensible Capacity (MBH)	Lead Compressor Type	Condensing Ambient Temp (F)	Coil (DB/WB)		Reheat	
					EAT (F)	LAT (F)	Capacity (MBH)	LAT (F)
Packaged DX	190.2	142.7	Inverter Scroll	87.0	78.3 / 65.9	55.6 / 55.6	140.6	77.5

Heating Specifications

Type	Gas Type	Input (MBH)	Output (MBH)	Temperature Rise		Turndown	Performance	
				Min (F)	Max (F)		EAT (F)	LAT (F)
Indirect Gas	Natural	200.0	162.0	2.4	24.4	10:1	49.1	73.4

Motor Specifications

Motor	Qty	Operating Power (hp)	Size (hp)	Enclosure	Efficiency	RPM
Supply	1	4.22	5	OP	High	1800

Electrical Specifications

Power Supply	Rating (V/C/P)	MCA (A)	MOP (A)	FLA (A)
Unit	208/60/3	89.8	125.0	76.7

Construction Features And Accessories

Unit	
Unit Installation - Outdoor	Std
Unit Construction - Double Wall	Std
Insulation - 1 inch R-8 foam	Std
Corrosion Resistant Fasteners	Std
Hinged Access	Std
Factory Wired Non-Fused Disconnect Switch	Std
Direct Drive Plenum Blower & Motor Assemblies	Std
Factory Wired VFDs	Std
Unit Finish - Permatector, RAL7023	Std
Stainless Steel Condensate Drain Pan and Connection	Std
Condensate Drain Trap	Std
Short Circuit Current - 5 kA	Std
Controls	
Unit Controls - Microprocessor	Std
Internally Mounted Control Center with 24 VAC control transformer(s)	Std
BMS Protocol - None	
Supply Fan Control - Single Zone VAV	X
Exhaust Fan Control	
Web-Based User Interface	Std
Damper Control - Constant Position-Adj.Setpoint	X
Economizer Control Temp./Enthalpy	X
Space Interface - WithDisplay	X
Furnace Control - 10:1 Modulation	X
Unoccupied Recirc Mode	X
Control Accessories	
Dirty Filter Sensor(s)	
Airflow Monitor	
Room Thermostat - TempRH	X
Phase/Brownout Protection	Std
Economizer Fault Detection Diagnostics	

Accessories	
Recirc Air Damper - Low Leakage	Std
Outdoor Air Damper - LowLeakage	Std
Roof Curb	
Supply Air Filters - 2" Merv 13, 6-20x25x2	X
Service Outlet - Factory Mounted and Field Powered	X
Condensate Overflow Switch	X
Spare Filters	
Exhaust Discharge Gravity Backdraft Damper	
ElectroFin Coil Coating	
Motor Shaft Grounding	
Smoke Detector(s), Exhaust - Shipped Loose	X
Barometric Relief Damper	X
Power Venting	Std
Hail Guards	Std
Warranty Options	
Unit Warranty - 18 Months (Std.)	Std
Compressor Warranty - 5.5 Yrs. (4 Yrs. Extended)	X

Standard Option	Std
Not Included	
Included	X

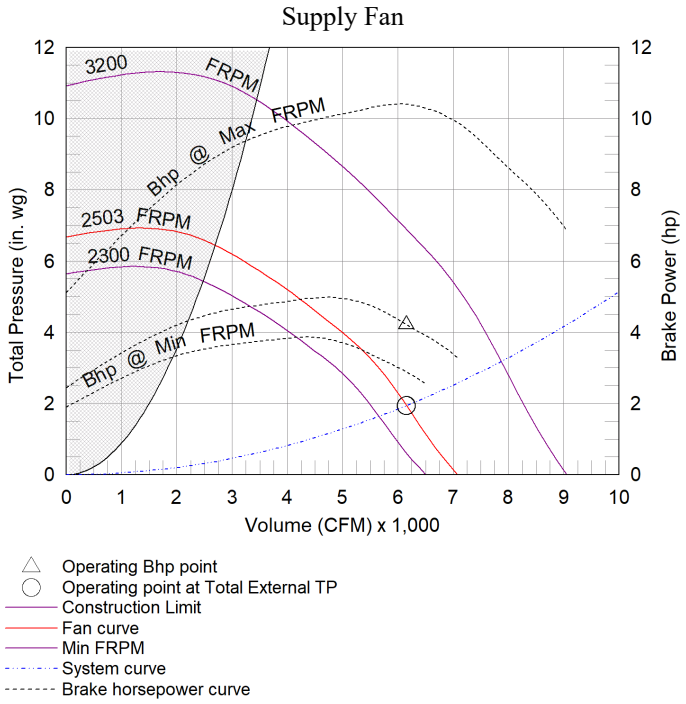
Notes
Outdoor Air Damper supplied is low leakage, motorized VCD-23 (leakage rate of 3 CFM/ft^2 @ 1 in. wg), Class 1A
Smoke Detector(s) - sampling tube included sized for duct widths of 1-2 ft.
** The equipment you've purchased MAY include a cellular communication gateway (the "Gateway") that allows Accurex and its affiliates to remotely monitor and log performance. The Gateway does not alter the performance of your equipment and we only use the Gateway to monitor and collect data related to the equipment's performance in the context of its operational environment. While the data we monitor and collect is specific to your equipment, we will only use that data to monitor your system; diagnose and make recommendations to you or your HVAC technicians to improve system performance; and, in the aggregate, without disclosing any personal or proprietary information, enhance the overall design and performance of our products. You may opt out of this process by calling our Service Group at 1-866-205-0521, but doing so may negatively impact our ability to enhance your product's performance.

Supply 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
6,150	0.75	1.944	2503	4.22	1	5	1	Plenum	Direct

Pressure Drop (in. wg)						
Weatherhood	Filter	Damper	Cooling	Heating	External	Total
-	0.292	0.172	0.415	0.183	0.75	1.944

Sound Performance in Accordance with AMCA										
Sound Power by Octave Band								Lwa	dBA	Sones
62.5	125	250	500	1000	2000	4000	8000			
92	87	99	92	87	82	81	79	94	83	40



Cooling Performance

Cooling Specifications

Type	Total Capacity (MBH)	Sensible Capacity (MBH)	Lead Compressor Type	Condensing Ambient Temp (F)	Coil (DB/WB)		Reheat	
					EAT (F)	LAT (F)	Capacity (MBH)	LAT (F)
Packaged DX	190.2	142.7	Inverter Scroll	87.0	78.3 / 65.9	55.6 / 55.6	140.6	77.5

Coil Information

PDX Coil Model	Fins Per Inch	Rows Deep	Face Vel. (ft/min)	Coil PD (in. wg)	Refrigerant	Refrig. Velocity (ft/min)	Face Area (ft2)	Suction Temp (F)
DR38S04S16-45x57	16	4	388	0.415	R-454B	1,956	15.83	48.7

Compressor Details

Lead Compressor Type	Compressor Qty	Compressor RLA/MRC (A)		Compressor LRA (A)	
		Comp. #1	Comp. #2	Comp. #1	Comp. #2
InverterScroll	1	52.2	NA	NA	NA

A2L Installation Requirement - UL 60335-2-40

Largest Circuit Charge	Minimum Circulation Airflow	Minimum Total Conditioned Room Area
27.9lb / 12.6kg	755	420

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 adjustment in the field
- Hermetic scroll type compressors
- Compressors mounted on neoprene vibration isolation
- Stainless steel double sloped drain pan
- Moisture-indicating sight glass
- Service/charging valves
- Refrigerant high pressure switch (manual reset)
- Liquid-Line filter drier
- Leak detection sensors
- Multiple condensing fans to allow fan cycling for head pressure control
- Inverter scroll compressor
- Refrigerant low pressure switch (auto reset)
- Electronic expansion valve
- Unit cannot be mounted in an enclosed space.

Important Notes:

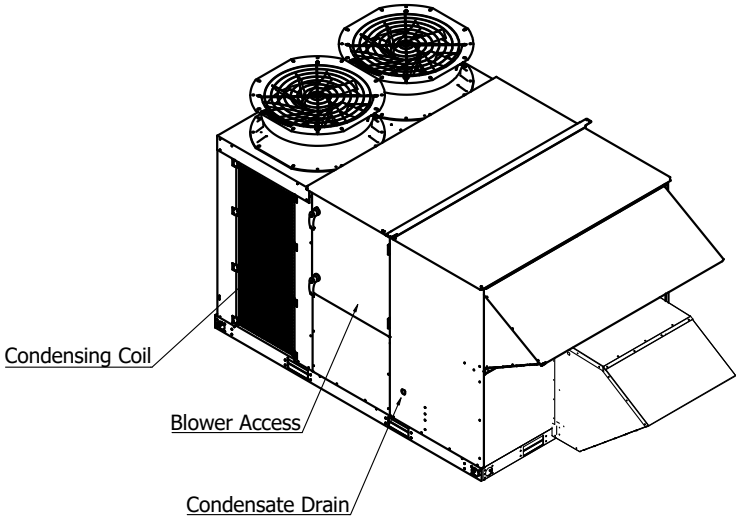
Capacity is based on incoming voltage selected. If incoming power varies it may affect the capacity of your selection.

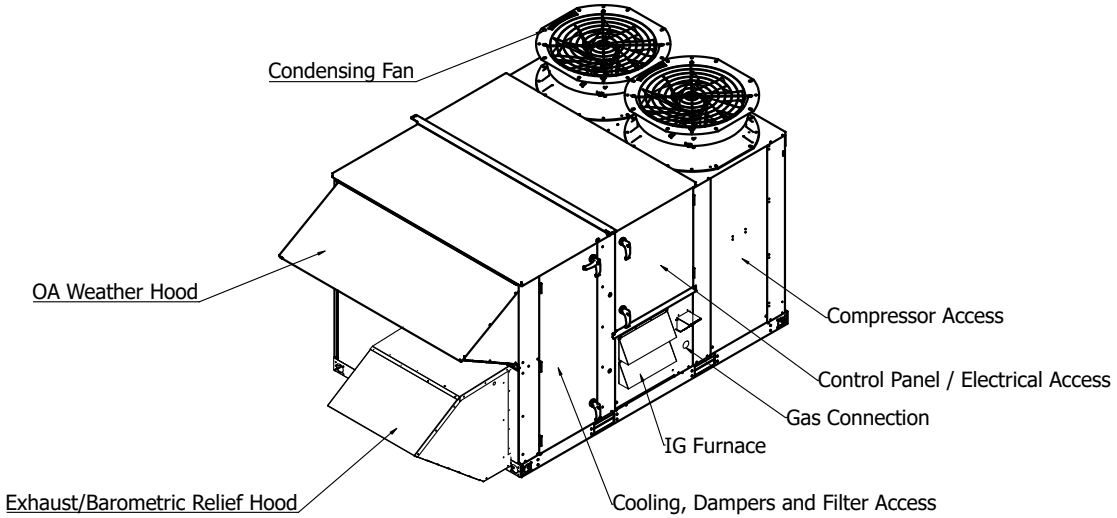
Heating Performance

Heating Specifications								
Type	Gas Type	Input (MBH)	Output (MBH)	Temperature Rise		Turndown	Performance	
				Min (F)	Max (F)		EAT (F)	LAT (F)
Indirect Gas	Natural	200.0	162.0	2.4	24.4	10:1	49.1	73.4

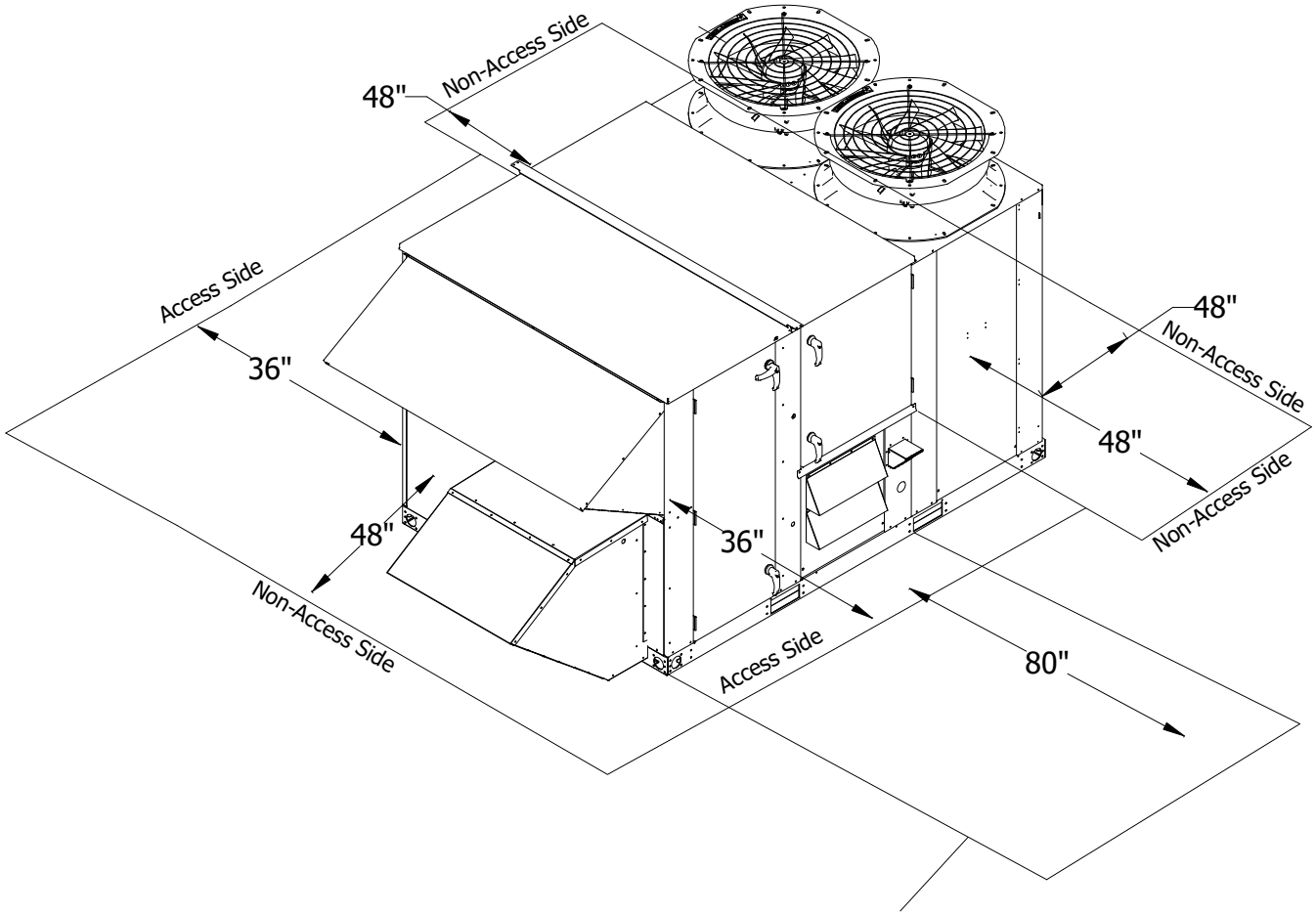
Unit Details
ANSI standard Z83.8 and CSA 2.6
High Thermal efficiency
Direct spark ignition
3/4" Gas Connection
At least 6 in. wg of natural gas pressure (11 in. wg for LP) is required at the units gas connection in order to achieve maximum performance
Power Venting
24 Volt Control Power
Stainless Steel heat exchange tubes
Unit controller maximum allowable supply discharge air set point is 100F (37.8C)

Isometric Layout



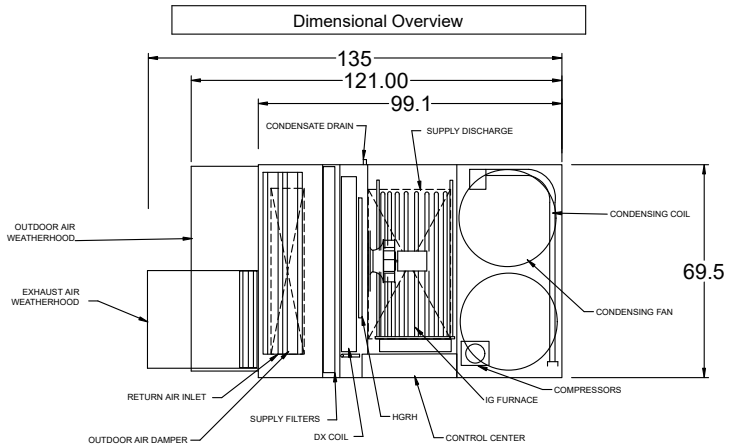


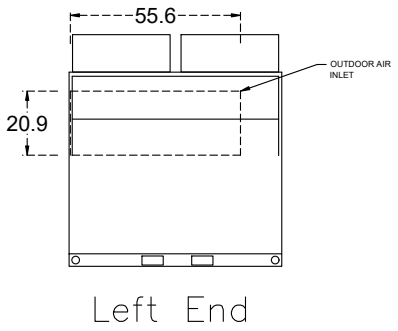
Isometric Clearances

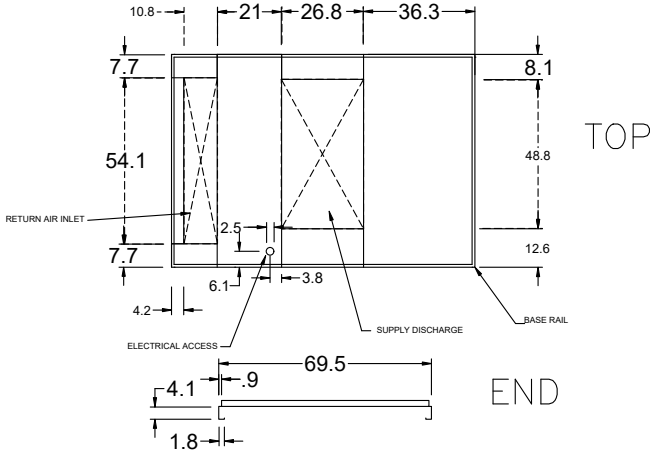


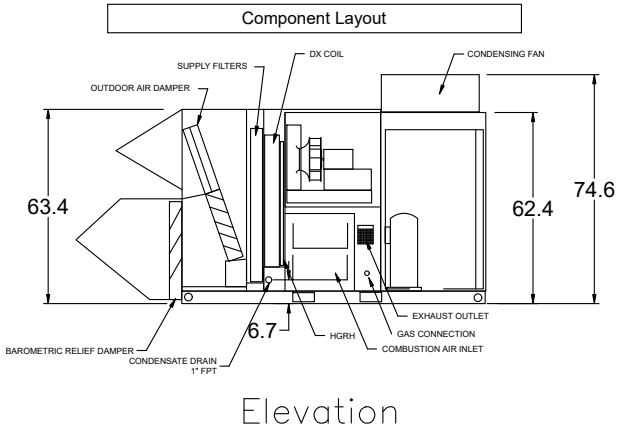
Use if removal of Cooling Coil, Electric Heat or the IG furnace may be needed.

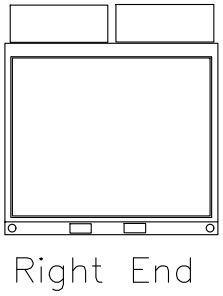
Overview

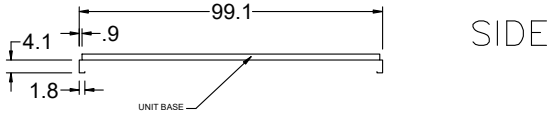

Dimensional Overview
135
121.00
99.1
CONDENSATE DRAIN
SUPPLY DISCHARGE
OUTDOOR AIR WEATHERHOOD
EXHAUST AIR WEATHERHOOD
CONDENSING COIL
CONDENSING FAN
69.5
RETURN AIR INLET
SUPPLY FILTERS
DX COIL
HGRH
IG FURNACE
COMPRESSORS
CONTROL CENTER
OUTDOOR AIR DAMPER


55.6
OUTDOOR AIR INLET
20.9
Left End

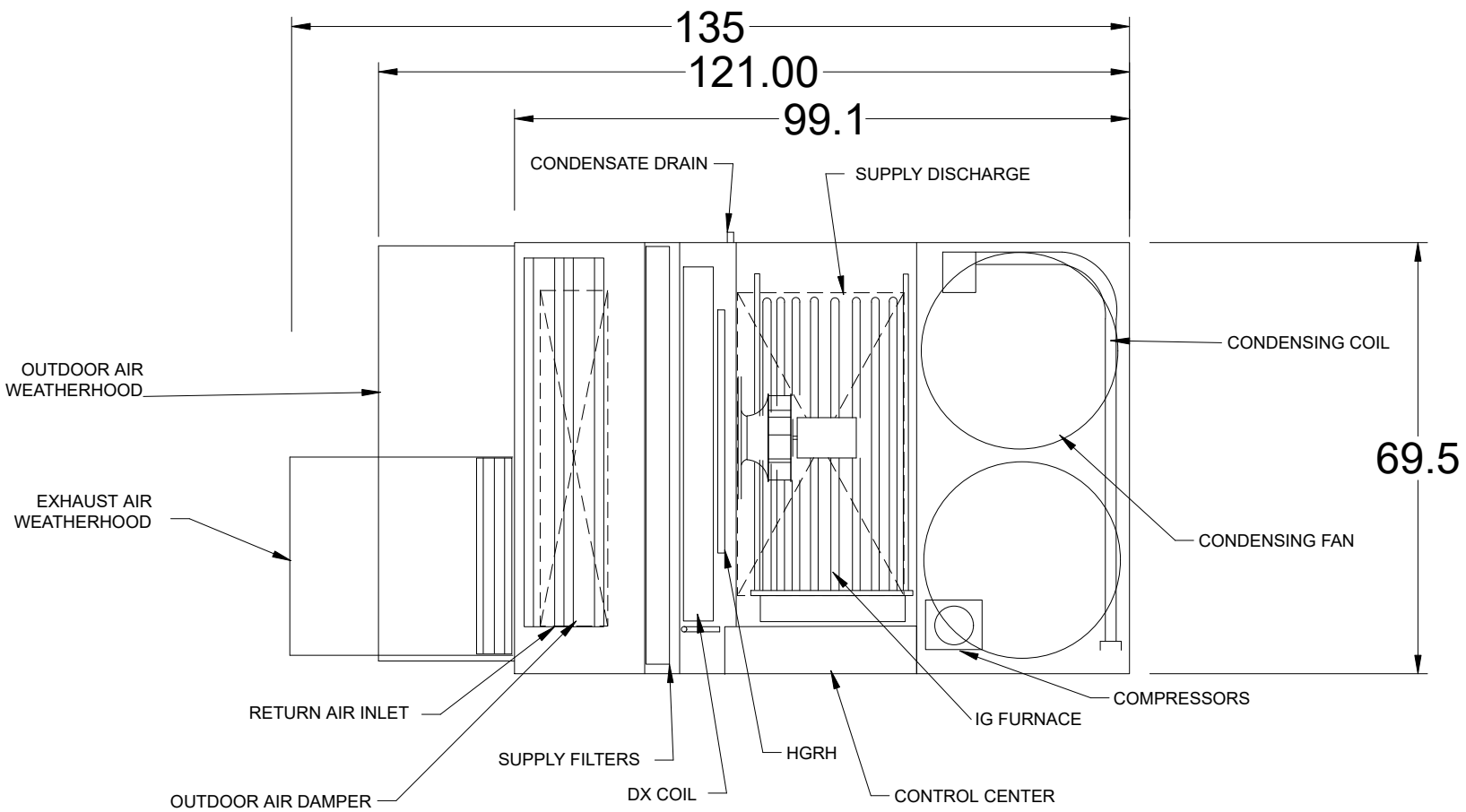

10.8
21
26.8
36.3
7.7
8.1
54.1
48.8
TOP
RETURN AIR INLET
2.5
12.6
7.7
6.1
3.8
4.2
ELECTRICAL ACCESS
SUPPLY DISCHARGE
BASE RAIL
69.5
4.1
.9
1.8
END


Component Layout
SUPPLY FILTERS
DX COIL
CONDENSING FAN
OUTDOOR AIR DAMPER
63.4
62.4
74.6
6.7
HGRH
EXHAUST OUTLET
GAS CONNECTION
COMBUSTION AIR INLET
BAROMETRIC RELIEF DAMPER
CONDENSATE DRAIN
1" FPT
Elevation

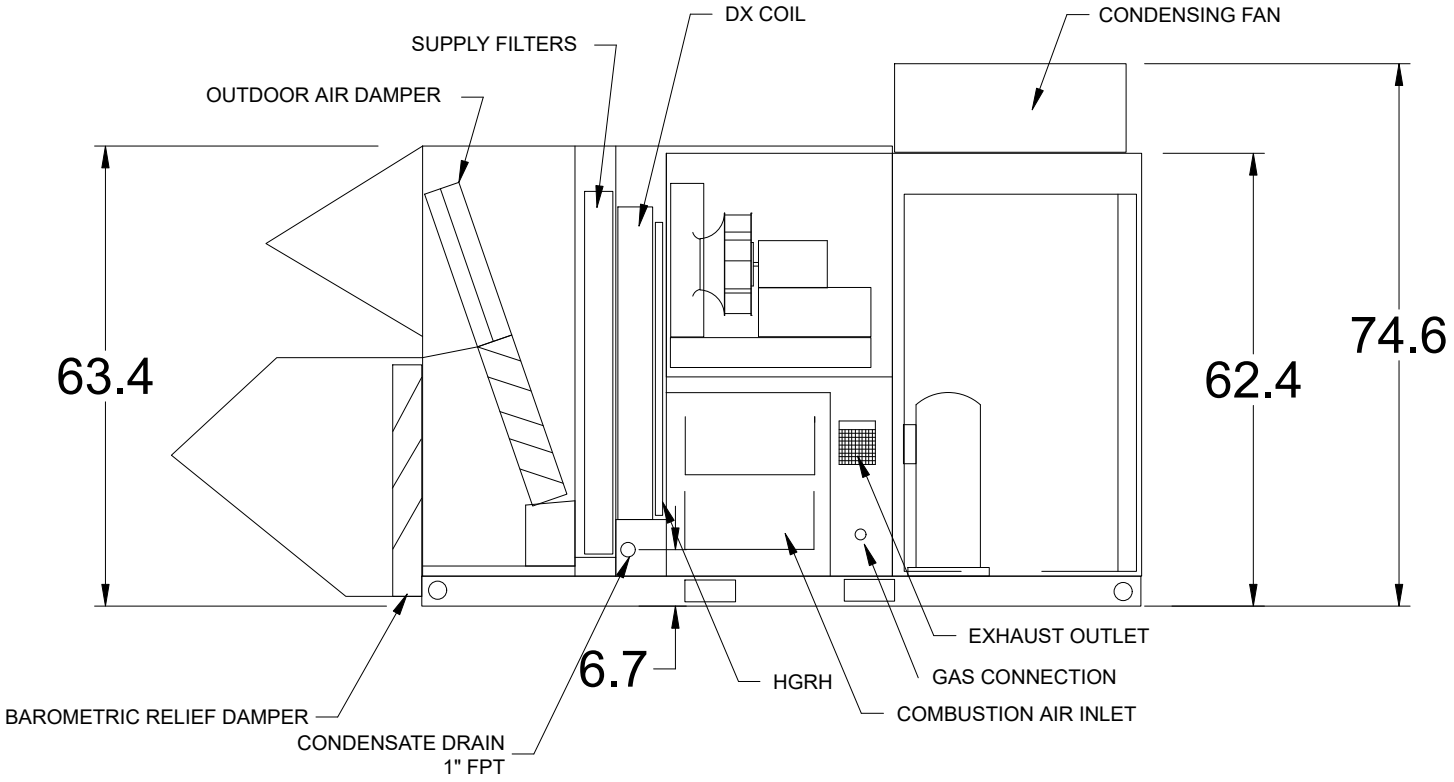

Right End


99.1
4.1
.9
1.8
UNIT BASE
SIDE

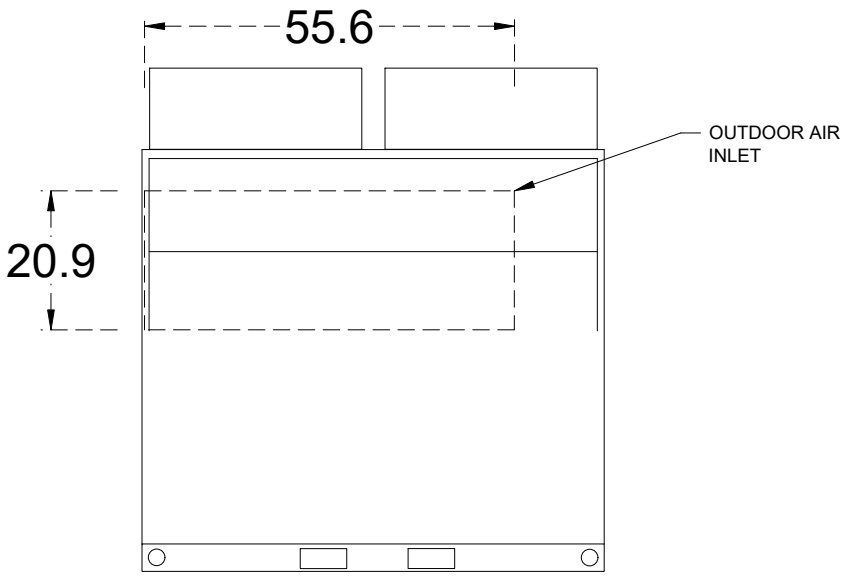
Dimensional Overview



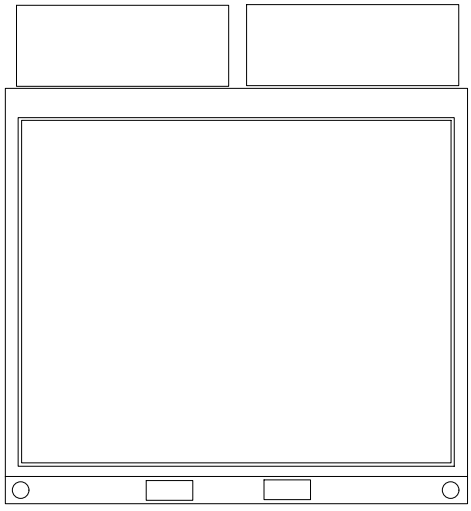
Component Layout



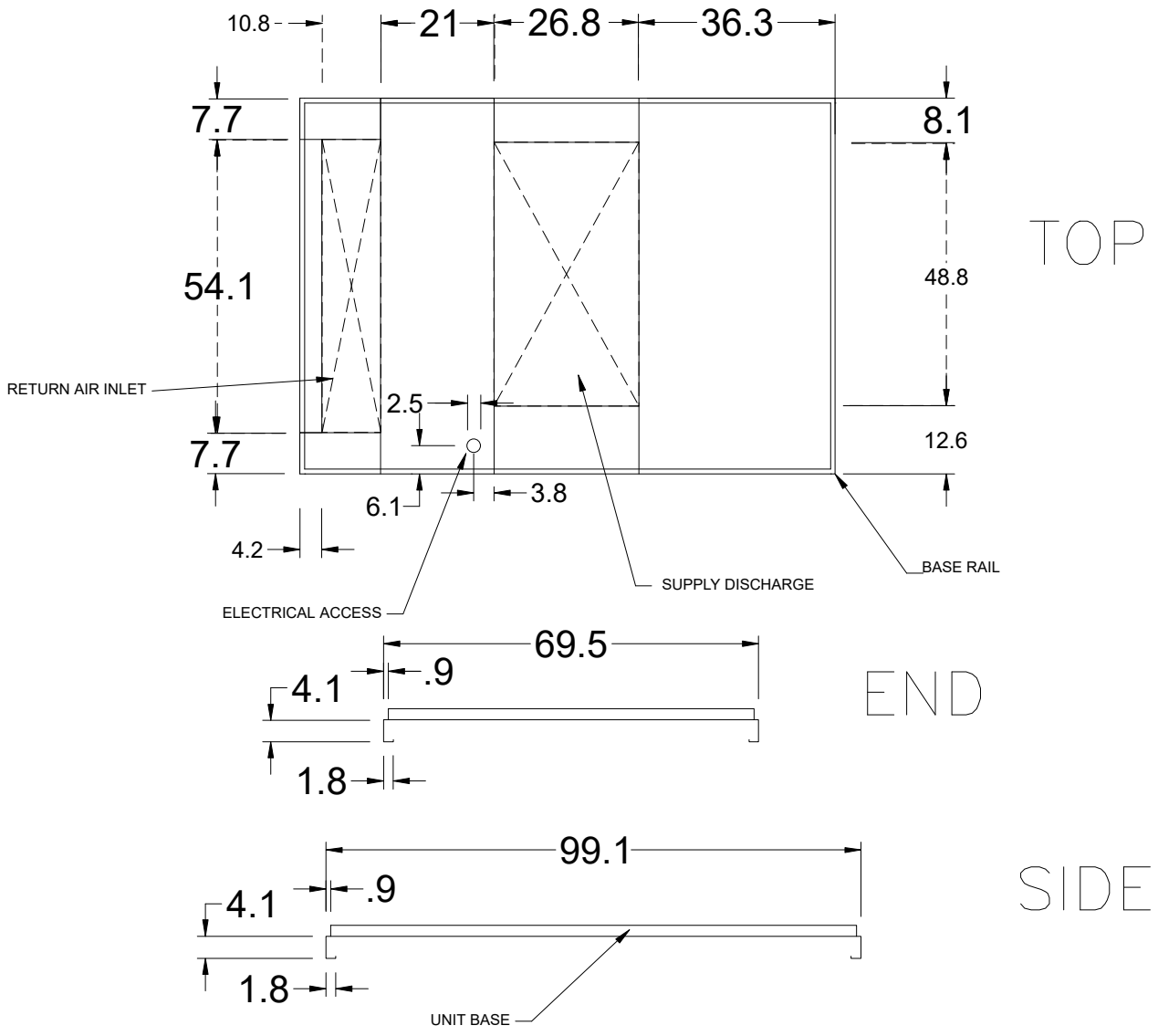
Elevation



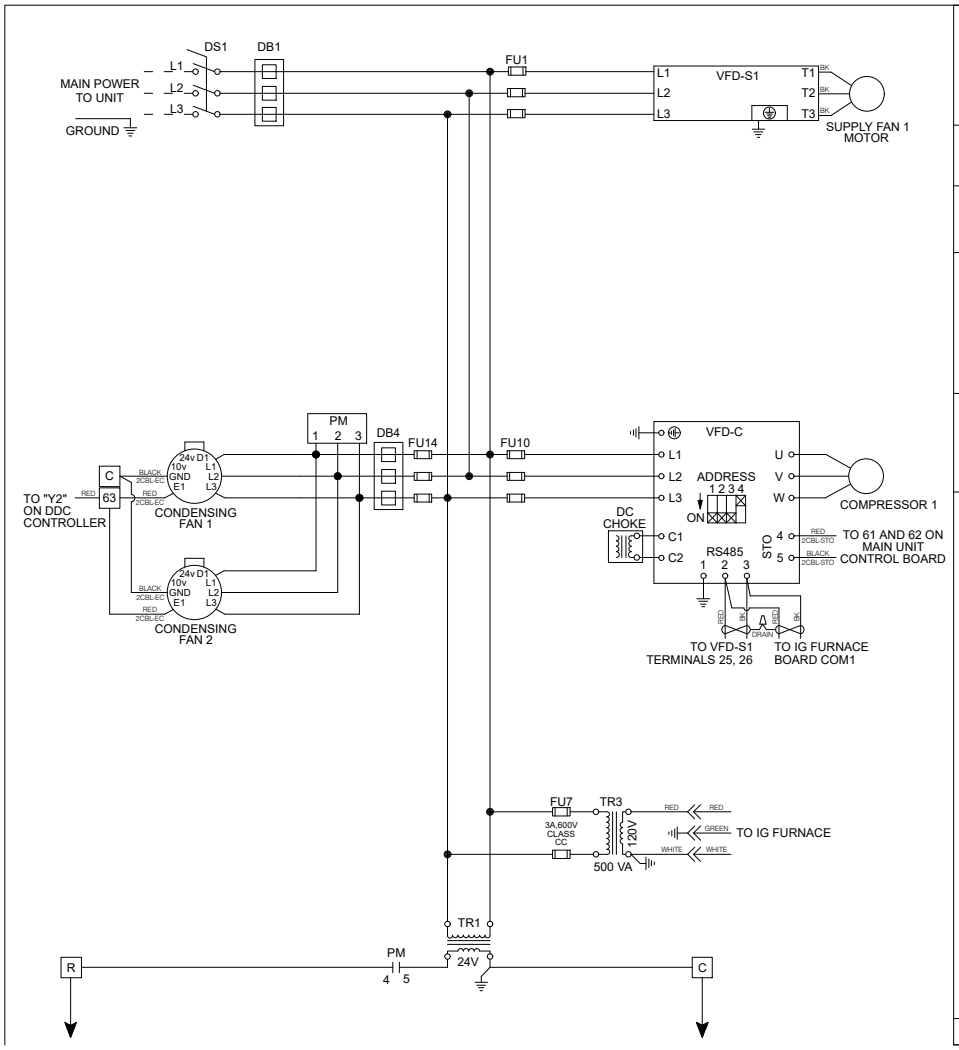
Left End



Right End


10.8
21
26.8
36.3
7.7
8.1
54.1
48.8
TOP
RETURN AIR INLET
2.5
7.7
12.6
6.1
3.8
4.2
BASE RAIL
SUPPLY DISCHARGE
ELECTRICAL ACCESS
69.5
.9
4.1
END
1.8
99.1
.9
4.1
SIDE
1.8
UNIT BASE

Wiring Diagram



ACCUREX

Wiring Diagram Code:

A43EBF0XA00C04X00HF33J0400XA05

CAUTION

UNIT SHALL BE GROUNDED IN ACCORDANCE WITH N.E.C.
POWER MUST BE OFF WHILE SERVICING.

NOTES

USE COPPER CONDUCTORS ONLY
60° C FOR TERMINALS RATED LESS THAN 100 AMPS.
75° C FOR TERMINALS RATED 100 AMPS OR MORE.

FIELD CONTROL WIRING RESISTANCE SHOULD NOT EXCEED 0.75 OHM.

FIELD WIRED – – – – –
FACTORY SUPPLIED AND WIRED ————

WIRE COLOR CODE

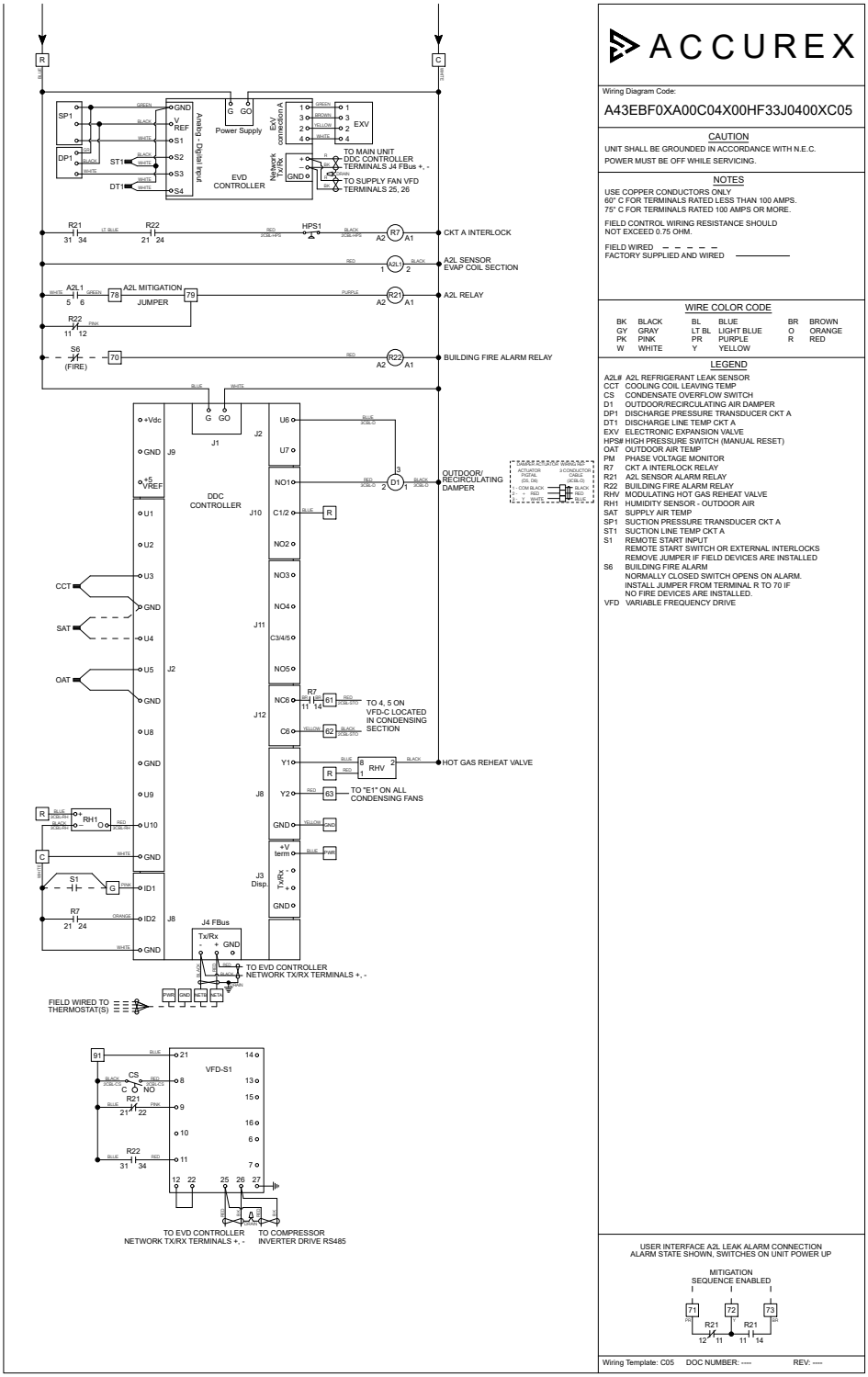
BK	BLACK	BL	BLUE	BR	BROWN
GY	GRAY	LT BL	LIGHT BLUE	O	ORANGE
PK	PINK	PR	PURPLE	R	RED
W	WHITE	Y	YELLOW		

LEGEND

DB# POWER DISTRIBUTION BLOCK
DS DISCONNECT SWITCH
FU# FUSES
TR# TRANSFORMER
VFD VARIABLE FREQUENCY DRIVE

Wiring Template: A05 DOC NUMBER: ---- REV: ----

Wiring Diagram 2



ACCUREX

Wiring Diagram Code:

A43EBF0XA00C04X00HF33J0400XC05

CAUTION

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BK	BLACK	BL	BLUE	BR	BROWN
GY	GRAY	LT BL	LIGHT BLUE	O	ORANGE
PK	PINK	PR	PURPLE	R	RED
W	WHITE	Y	YELLOW		

LEGEND

A2L#	A2L REFRIGERANT LEAK SENSOR
CCT	COOLING COIL LEAVING TEMP
CS	CONDENSATE OVERFLOW SWITCH
D1	OUTDOOR/RECIRCULATING AIR DAMPER
DP1	DISCHARGE PRESSURE TRANSDUCER CKT A
DT1	DISCHARGE LINE TEMP CKT A
EXV	ELECTRONIC EXPANSION VALVE
HPS#	HIGH PRESSURE SWITCH (MANUAL RESET)
OAT	OUTDOOR AIR TEMP
PM	PHASE VOLTAGE MONITOR
R7	CKT A INTERLOCK RELAY
R21	A2L SENSOR ALARM RELAY
R22	BUILDING FIRE ALARM RELAY
RHV	MODULATING HOT GAS REHEAT VALVE
RH1	HUMIDITY SENSOR - OUTDOOR AIR
SAT	SUPPLY AIR TEMP
SP1	SUCTION PRESSURE TRANSDUCER CKT A
ST1	SUCTION LINE TEMP CKT A
S1	REMOTE START INPUT REMOTE START SWITCH OR EXTERNAL INTERLOCKS REMOVE JUMPER IF FIELD DEVICES ARE INSTALLED
S6	BUILDING FIRE ALARM NORMALLY CLOSED SWITCH OPENS ON ALARM. INSTALL JUMPER FROM TERMINAL R TO 70 IF NO FIRE DEVICES ARE INSTALLED.
VFD	VARIABLE FREQUENCY DRIVE

USER INTERFACE A2L LEAK ALARM CONNECTION
ALARM STATE SHOWN, SWITCHES ON UNIT POWER UP

Wiring Template: C05 DOC NUMBER: ----- REV: ----

Factory Controller Sequence of Operation

FACTORY CONTROLLER: Controller shall be provided with required sensors and programming for rooftop unit. Controller shall be factory programmed, mounted and tested. Controller shall have a LCD readout for changing set points and monitoring unit operation.

UNIT START COMMAND (Unit will be enabled to start once a jumper is placed between C to G):

- Factory mounted and wired outdoor air and recirculated air damper actuators are powered.
- Supply fan starts after after a (adj.) delay.
- Tempering options to function as described below.

UNIT STOP COMMAND (OR DE-ENERGIZED):

- Supply fan, exhaust fan and tempering options de-energized.
- Outdoor air damper actuator is spring return close, and the recirculated air damper actuator is spring open.

OCCUPIED/UNOCCUPIED MODES: Shall be based on a 7-day time clock internal to the controller. The schedule shall be set by the end user. When a user initiates an override input, the controller will switch from unoccupied to occupied mode. The controller will return to the scheduled occupied/unoccupied mode after the override time has expired. If internal time clock is disabled, a remote contact or a BMS can control the occupied/unoccupied mode.

Occupied Mode:

- Damper control per below.
- Supply fan ON.
- Heating per below.
- Cooling per below.

Unoccupied mode (Cycle on Room Temp): The unit will cycle to maintain unoccupied room set points if there is a call for unoccupied heating, cooling or dehumidification.

- Supply fan OFF
- Recirculation air damper open.
- Outdoor air damper closed.
- On a call for heating (room temp set point – differential) supply fan cycles ON, and the heating increases the room temperature. Unit cycles off when room temperature reaches the unoccupied set point (adj.).
- On a call for dehumidification (room relative humidity set point + differential) dehumidification is enabled.

MORNING WARMUP/COOL DOWN: Prior to occupancy, the unit will run using the warmup or cool down sequence until the occupied set point is achieved. The heating or cooling mode must not be locked out and the space temperature is below or above set point by the unoccupied hysteresis (adj.) (This Sequence must be field configured.)

SUPPLY BLOWER SEQUENCE: The supply blower is provided with a factory mounted variable frequency drive. The supply blower speed will be controlled with the following sequence. Minimum supply fan turndown is 50% of the design maximum operation.

Single Zone VAV: The controller will use a space mounted temperature sensor modulate the supply blower speed to maintain the room-air temperature set point.

OUTDOOR AIR AND RE-CIRCULATED (RECIRC) AIR DAMPER CONTROL: The outdoor and recirculated air dampers are factory mounted and wired. Outside air damper and recirculation damper will be inverse positions of each other. Example, when the outside air damper is set to 35% opening, the recirculation damper will be at 65% opening. The modulating actuator will be controlled to dictate position by the following sequence.

Constant Position - Adj. Setpoint: The unit is provided with a modulating damper for the outdoor and recirculated air dampers. The minimum position can be field adjusted (default) in the microprocessor controller. When the unit is powered off, the outdoor air damper will spring return close and the recirculated damper will spring return open.

COOLING SEQUENCE: The cooling is controlled to maintain the supply temperature set point. The mechanical cooling will be locked out when the outside air is < 55 F (adj.).

Packaged DX Cooling (Inverter Scroll): The controller will provide a modulating signal for cooling. From 0-100%, the inverter scroll will be controlled to maintain discharge temperature. The electronic expansion valve will modulate to maintain 8 of superheat.

Modulating Hot Gas Reheat Sequence: During dehumidification the modulating HGRH is controlled to maintain the supply temperature set point.

Modulating Head Pressure Control: All condenser fans will have EC motors and will modulate in sync to maintain a head pressure set point.

DEHUMIDIFICATION CONTROL SEQUENCE: Dehumidification to be enabled and once enabled the cooling coil will be controlled based on the following sequences. The mechanical cooling will be locked out when the outside air is < 55 F (adj.)

Space Set Point Control (Room RH): When in dehumidification mode the controller will adjust the cold coil leaving air temperature set point between the minimum (adj.) and the maximum (adj.) limits, to satisfy the desired room relative humidity set point. Adjustable locally or by BMS.

Dehumidification Enable: Dehumidification mode to be enabled based on the outside air dew point condition or space humidity. When the outside air dew point is greater or the space humidity is greater than the desired set point (adj.), the unit will operate in dehumidification mode.

REHEAT SEQUENCE: While the unit is in dehumidification mode the outdoor air will be reheated via Modulating Hot Gas Reheat for space neutral applications.

Modulating Hot Gas Reheat: The controller will modulate the hot gas reheat reheat valve with a 0-10 V signal to maintain the supply temperature set point (adj.).

HEATING SEQUENCE: The heating is controlled to maintain the supply temperature set point. The heating will be locked out when the outside air is > 80 F (adj.).

Indirect Gas Furnace: The controller will modulate the indirect gas furnace to maintain the supply temperature set point (adj.).

UNIT LEAK DETECTION AND MITIGATION: The unit will be equipped with refrigerant leak detection sensors. These sensors along with the following sequence of operation are required per UL60335-2-40.

Refrigerant Leak Detected In Air Tunnel: If a refrigerant leak is detected in the air tunnel, the supply fan will operate at minimum airflow requirement, recirculation damper to be fully open, outside air damper will be closed, and compressors are disabled to reduce leakage rate. This operation is required in order to move stagnant refrigerant from within the unit, duct, and space ensuring proper dilution of the refrigerant. This operation is required even if the unit is called to be off. After leak detection is cleared, the unit will go back to normal operation. Exception to this operation is when the unit is receiving an active fire alarm signal at the unit controller. If unit controller is receiving a fire alarm input, the unit will not operate the leak mitigation supply fan sequence.

Dry alarm contacts available to allow the building (by others) to perform external mitigation actions when necessary. These by other external actions include opening of zone dampers in the ductwork, disabling duct mounted electric resistance heaters, and/or enabling additional mechanical ventilation if required per ASHRAE 15.

Refrigerant Leak Detected In Compressor Compartment: If a refrigerant leak is detected in the compressor compartment and the unit is configured with an indirect gas furnace, the furnace will be disabled while leak detection is active. After leak detection is cleared, the unit will go back to normal operation.

TEMPERATURE CONTROL SEQUENCE: The unit will maintain the supply air discharge setpoint per the following. Adjustable locally or by BMS.

Space Setpoint Control: The supply setpoint will adjust between minimum (adj.) and maximum (adj.) limits, to satisfy the desired space temperature setpoint. Adjustable locally or by BMS.

Room Reset: The controller will reset the supply air temperature set point to maintain the room temperature set point (adj.).

BUILDING FREEZE PROTECTION: If the supply air temperature drops below 35 F (adj.) for 300s (adj.), the controller will de-energize the unit and activate the alarm output.

TEMPERATURE PROTECTION (Winter Ramp): The controller will enable the outdoor air and recirc. air dampers to modulate in order to help the unit keep up with heating demand in the event of the unit operating outside design conditions. (This can be enabled in the controller.)

ECONOMIZER SEQUENCE: When the application requires cooling, and the outdoor air conditions are suitable for free cooling, the controller will modulate the outdoor air and recirculated air dampers to maintain the discharge temperature set point. If the outdoor air damper modulates to the maximum economizer set point and the discharge temperature is not met, the controller will increase the call for cooling to meet the discharge temperature and could engage mechanical cooling.

Temp./Enthalpy: The economizer will be locked out when: the outdoor air is < 40 F DB (adj.) or > 75 F DB (adj.) or > 55 F dew point (adj.); the unit is operating in dehumidification mode; or there is a call for heating

ALARMS INDICATION: The controller will display alarms and have one digital output for remote indication of an alarm condition. Possible alarms include:

DX Alarm: The controller monitors the refrigerant pressure. In the case of low refrigerant pressure the compressors will shut down until refrigerant pressure returns to normal values and the controller will send an alarm. In the case of high refrigerant pressure the compressors will shut down, requiring a manual reset and the controller will send a alarm.

Temperature Sensor Alarm: The controller sends an alarm in the case of a failed air temperature sensor.

Humidity Sensor Alarm: The controller sends an alarm in the case of a failed humidity sensor.

ACCESSORIES: The following accessories will be included with the unit to expand the functionality or usability of the controller.

DDC Remote Interface: Factory provided, field mounted interface panel that will be wired to the main controller for monitoring and remote adjustments of set points.

Condensate Overflow Unit Shutdown: Factory mounted condensate overflow switch wired to the unit controller. The controller monitors the condensate overflow switch. If the water level in the drain pan reaches a certain level, the unit will shutdown and send an alarm.

120V/24V Photoelectric Smoke Detector: Duct smoke detector is shipped loose for field mounting and wiring in the exhaust air duct. Duct smoke detector contains 2 normally open and 2 normally closed contracts for alarm notification. (To disable unit based off smoke detection smoke detector contacts must be field wired between C and G)"

Warranty Statement for Rooftop Technology (RT)

Unit Warranty

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

Heat Exchanger Extended Warranty

Accurex warrants the stainless steel heat exchanger to be free from defects in material and workmanship for a period of 25 years from the shipment date.

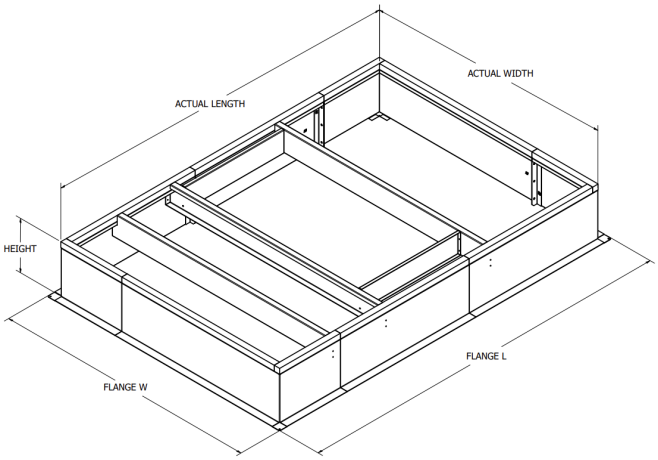
Compressor Extended Warranty

Accurex warrants the refrigerant compressor(s) to be free from defects in material and workmanship for a period of 5.5 years from the shipment date.

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: GRTC

Roof Curb

Standard Construction Features:

- Roof curb fits between the building roof and the unit mounted directly to the roof support structure - Constructed of 14 ga. galvanized steel - Straight sided without a cant - Single roof flashing flange (2 in. width) - Cross-members to locate duct drops NOTES: - This curb is designed to pair with Accurex model XRT. - This curb ships unassembled.

General

ID#	Tag	Qty	Model	Sizing Method	Weight (lb)	Shipped Assembled	Union Made
55-1	RTU-2 (Kitchen)	1	GRTC-64.9x94.5-G14	Actual	198	No	No Preference

Dimensions

ID#	Curb Height (in.)	Actual Outside Width (in.)	Actual Outside Length (in.)	Flange Width (in.)	Flange Length (in.)
55-1	14	64.9	94.5	68.9	98.5

Accessories

ID#	Material	Insulation (in.)	Insulation R Value	Wood Nailer
55-1	Galvanized	None	None	No