Precedent Packaged Rooftop

Unit Overview - YSK240A3S0H**00000000000000000000000000

Application	Unit Size	Supply Fan		External Dimensions (in.)			Operating Weight	Elevation
		Airflow	Total Static Pressure	Height	Width	Length		
DX Cooling / Gas Heat	20 Ton	8000. cfm	0.750 in H2O	4.92 ft	7.25 ft	10.25 ft	2256.0 lb	0.00 ft

Unit Features

Unit Efficiency	Standard Efficiency
Refrigerant	R-454B Refrigerant
EER @ AHRI	9.80 Number
IEER @ AHRI	13.00 Number

Unit Electrical

Voltage/phase/hertz	208-230/60/3
MCA	108.00 A
MOP	150.00 A
Condenser Fan FLA	4.30 A
Evaporator Fan FLA	8.80 A
Compressor 1 RLA	44.50 A
Compressor 2 RLA	25.90 A
Compressor Power	17.86 kW
System Power	25.22 kW

Controls

Unit Controls	Symbio 700

Cooling Section

		Capacity	
Entering Dry Bulb	80.00 F	**Gross Total**	249.03 MBh
Entering Wet Bulb	67.00 F	**Gross Latent**	62.20 MBh
Ambient Temp	95.00 F	**Gross Sensible**	186.83 MBh
Leaving Coil Dry Bulb	58.44 F	**Net Total**	240.38 MBh
Leaving Coil Wet Bulb	56.94 F	**Net Sensible**	178.17 MBh
Leaving Unit Dry Bulb	59.97 F	**Net Sensible Heat Ratio**	74.12 %
Leaving Unit Wet Bulb	57.56 F	**Fan Motor Heat**	3.45 MBh
Saturated Discharge Temperature	123.67 F	**Refrig Charge-Circuit 1**	14.0 lb
Saturated Suction Temperature	50.76 F		

Heating Section

Heating	High Gas Heat
Input Heating Capacity	400.00 MBh
Output Heating Capacity	324.00 MBh
Heating EAT	60.00 F
Heating LAT	97.18 F
Heating Temp Rise	37.18 F

Fan Section

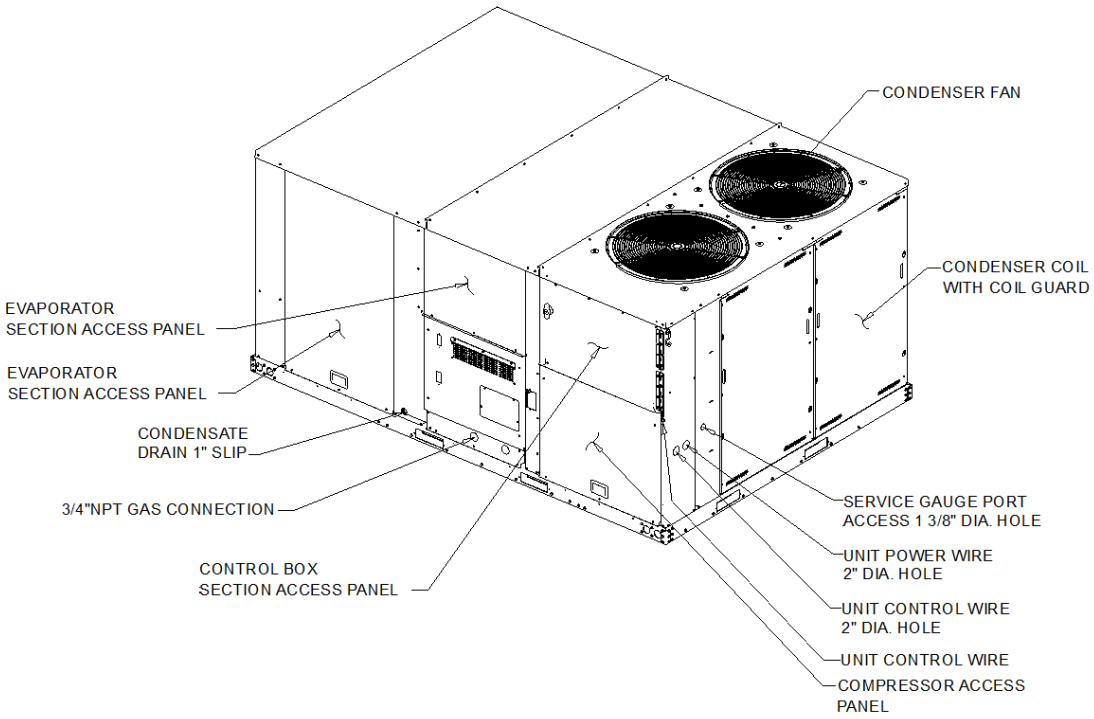
Indoor Fan Data		Indoor Fan Performance	
Airflow Application	Downflow	**Airflow**	8000. cfm
Design ESP	0.750 in H2O	**Supply Motor Horsepower**	3.000 hp
Component SP	0.000 in H2O	**Total Supply Motor Operating Power**	2.653 hp
Heat SP	0.000 in H2O	**Indoor RPM**	1279 rpm
Total SP	0.750 in H2O	**Outdoor Fan Data**	
Indoor Fan Drive Type	Variable Direct	**Outdoor Fan Drive Type**	Direct
Indoor Fan Quantity	2.00 Number	**Outdoor Fan Quantity**	2
Indoor Fan Type	BC Plenum	**Outdoor Fan Type**	Propeller
		Filters	
		1st Filter Size and Qty	8 - 20 x 24 x 2

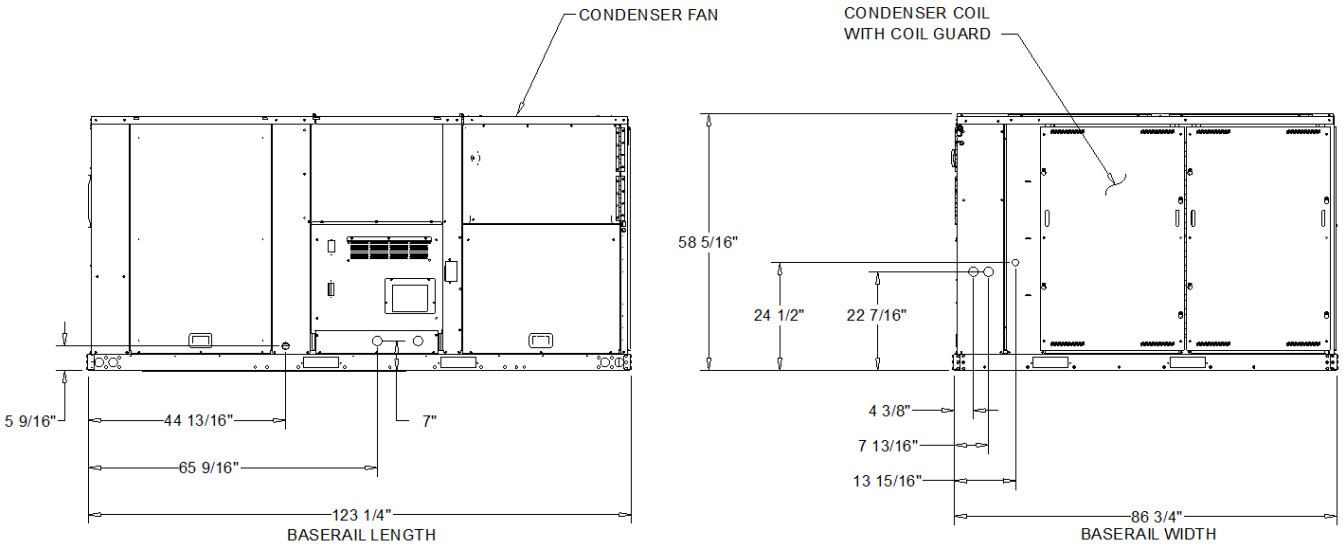
Acoustics

Sound Path	63 Hz	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz
Ducted Discharge	87 dB	92 dB	78 dB	73 dB	67 dB	64 dB	64 dB	62 dB
Ducted Inlet	78 dB	85 dB	72 dB	65 dB	61 dB	58 dB	58 dB	56 dB
Outdoor Noise	88 dB	89 dB	91 dB	89 dB	86 dB	82 dB	79 dB	73 dB

Note:Ducted Discharge/Ducted Inlet prediction data conform to AHRI 260

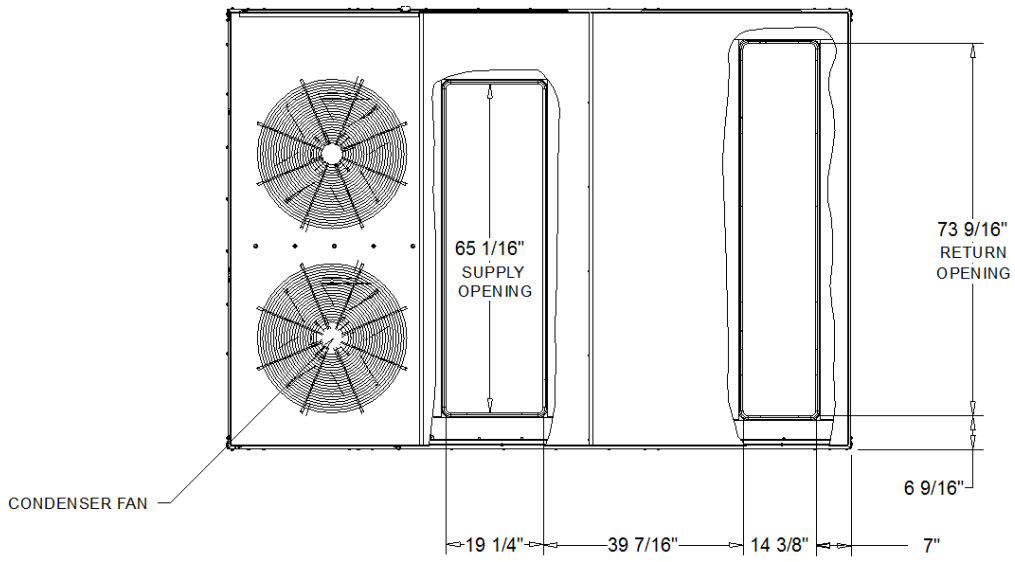
NOTES:
1. THRU -THE -BASE ELECTRICAL IS NOT STANDARD ON ALL UNITS.
2. VERIFY WEIGHTS, CONNECTIONS, AND ALL DIMENSIONS WITH INSTALLER DOCUMENTS BEFORE INSTALLATION



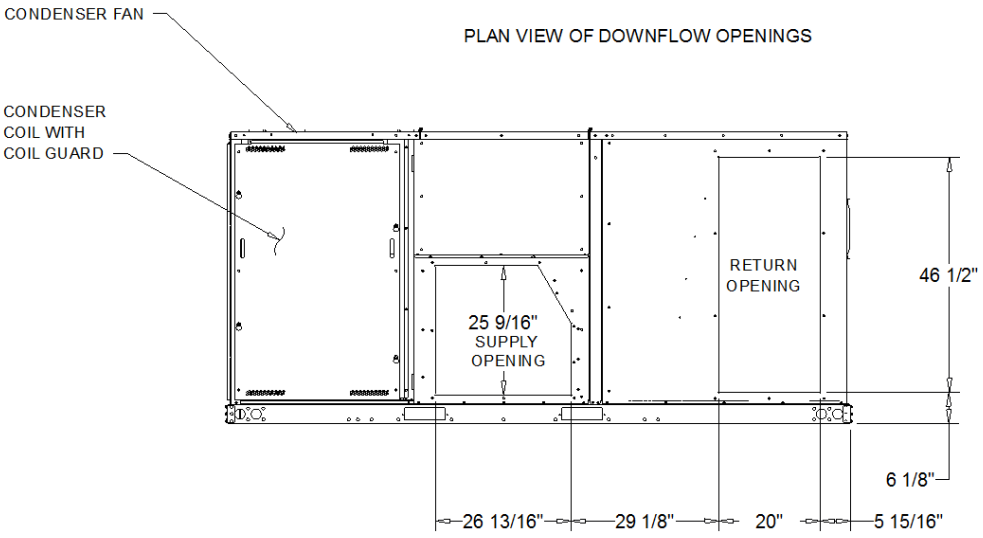


DX COOLING / GAS HEAT STANDARD EFFICIENCY

DIMENSION DRAWING



PLAN VIEW OF DOWNFLOW OPENINGS



HORIZONTAL AIR FLOW OPENING

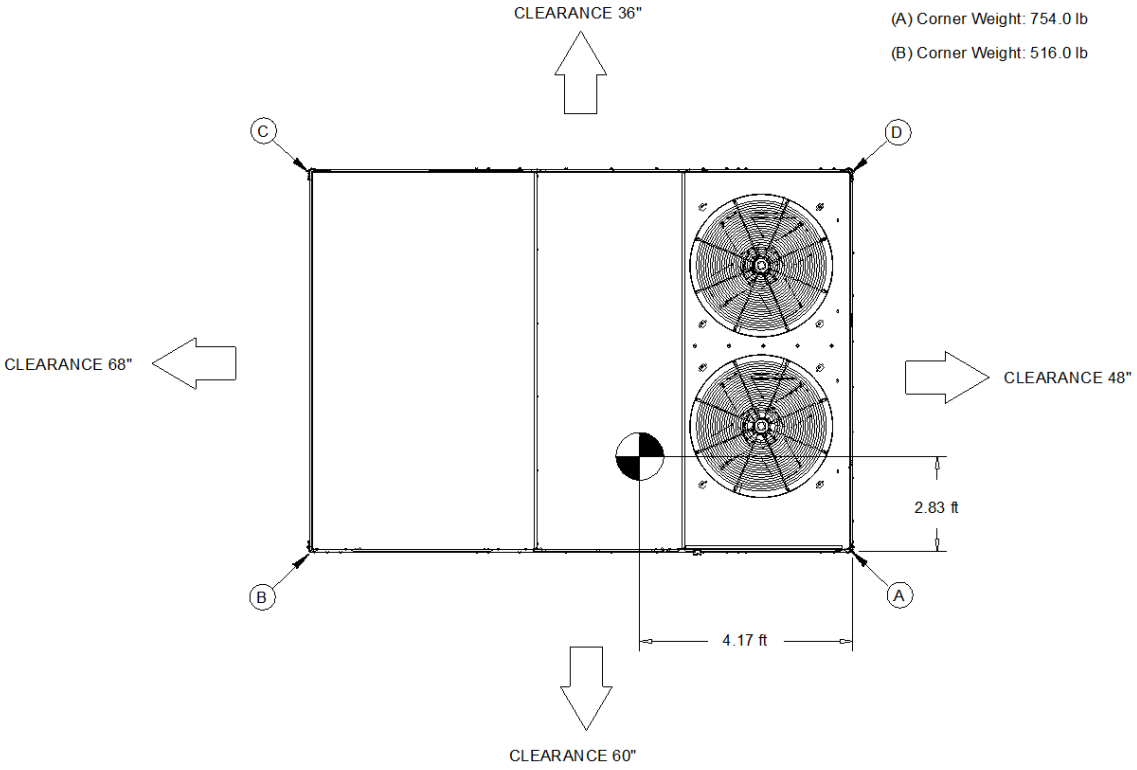
DX COOLING / GAS HEAT STANDARD EFFICIENCY

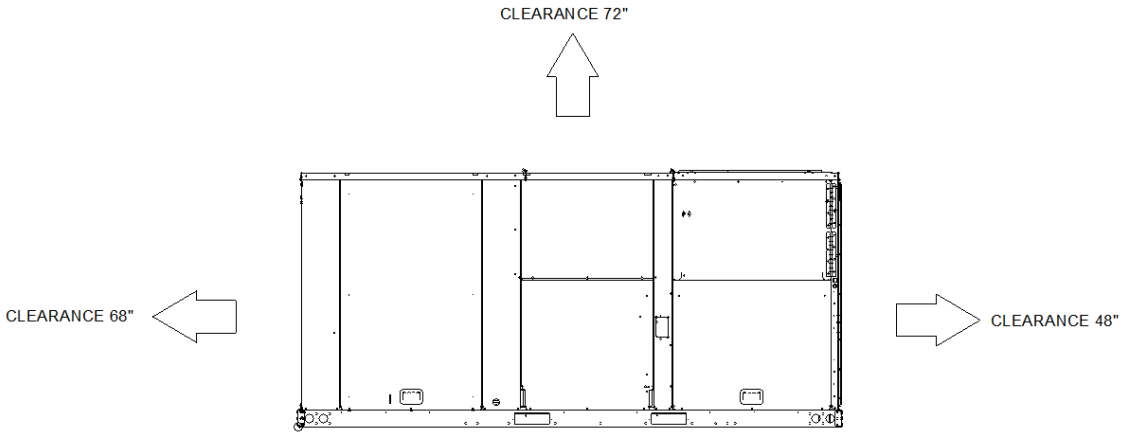
DIMENSION DRAWING

NOTES:
1. APPROX. INSTALLED WEIGHT INCLUDES ALL SELECTED OPTIONS AND ACCESSORIES.
2. CORNER WEIGHTS ARE FOR BASE UNIT ONLY AND DO NOT INCLUDE OPTIONS OR ACCESSORIES.
3. WEIGHT INCLUDES BOTH FACTORY AND FIELD INSTALLED ACCESSORY.

Approximate Installed Weight: 2,256.0 lb

(A) Corner Weight: 754.0 lb
(B) Corner Weight: 516.0 lb
(C) Corner Weight: 337.0 lb
(D) Corner Weight: 493.0 lb

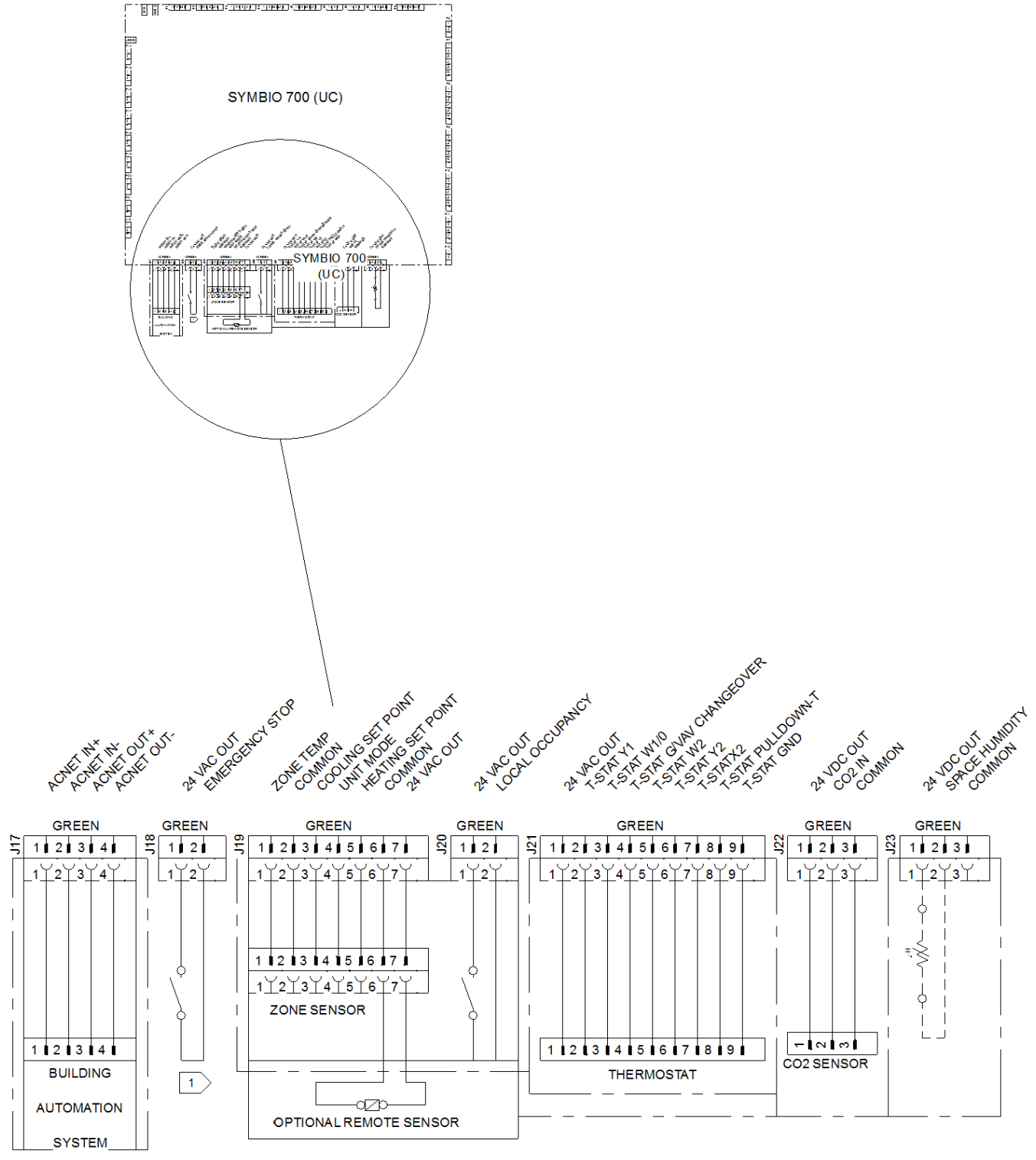




DX COOLING / GAS HEAT STANDARD EFFICIENCY

WEIGHTS AND CLEARANCES

NOTES:
1. VERIFY WEIGHT, CONNECTION, AND ALL DIMENSION WITH INSTALLER DOCUMENTS BEFORE INSTALLATION



SYMBIO 700 (J17, j18, J19, J20, J21, J22, AND J23)

FIELD WIRING DRAWING

General
Packaged rooftop unit cooling capacities, heating capacities, and efficiencies are certified to the following standards:
  - 3 to 5 ton units: AHRI Standard 210/240.
  - 6 to 25 ton units: AHRI Standard 340/360.
- Gas Heating Units: ANSI Z21.47 and 10 CFR Part 431 for Commercial Warm Air.
- Convertible airflow.
- Symbio? controls operating range between 40°F and 125°F in cooling mode standard from the factory. Field-installed low ambient kit extends operating range down to 0°F.
- Factory assembled, internally wired, fully charged, and 100 percent run tested to verify cooling operation, fan and blower rotation, and control sequence.
- Colored and numbered wiring internal to the unit for simplified identification.
- cULus listed and classified in accordance for Central Cooling Air Conditioners.
- Unit shall be furnished with a leak detection system from the fact

Casing
- Zinc coated, heavy gauge, galvanized steel.
- Weather resistant pre-painted metal with galvanized substrate.
- Meets ASTM B117, 672 hour salt spray test.
- Removable single side maintenance access panels.
- Lifting handles in maintenance access panels (can be removed and reinstalled by removing fasteners while providing a water and air tight seal).
- Exposed vertical panels and top covers in the indoor air section insulated with a cleanable foil-faced, fire-retardant permanent, odorless glass fiber material.
- Base pan shall have no penetrations within the perimeter of the curb other than the raised 1 inch high downflow supply/return openings to provide an added water integrity precaution, if the condensate drain backs up.
- Base of the unit insulated with 1/8 inch, foil-faced, closed-cell insulation.
- Unit base provisions for forklift and/or crane lifting on three sides of unit.

Hail Guards
- Provides condenser coil protection.

Microchannel Coils
- Optimal heat transfer performance due to flat, streamlined tubes with small ports, and metallurgical tube-to-fin bond.
- Reduce system refrigerant charge by up to 50% leading to better compressor reliability.
- Compact all-aluminum microchannel coils reduce the unit weight.
- Recyclable all aluminum coils All aluminium construction minimizes galvanic corrosion.
- Strong aluminum brazed structure provides better fin protection.
- Flat streamlined tubes more dust resistant and easy to clean.
- Coils leak tested at the factory to ensure the pressure integrity.

Compressors
- All units have direct-drive, hermetic, scroll type compressors with centrifugal type oil pumps.
- Suction gas-cooled motor with voltage utilization range of plus or minus 10 percent of unit nameplate voltage.
- Internal overloads standard with scroll compressors.
- All units have dual compressors.
-Three stages of cooling available on 6 to 17.5 tons units and four stages of cooling available on 20 and 25 tons units.

Filters
-Two inch standard filters shall be factory supplied on all units.

Frostat
- Utilized as a safety device.
- Opens to prevent freezing temperatures on evaporator coil.
- Temperature will need to rise to 50°F before closing.
- Utilized in low airflow or high outside air applications (cooling only).

Gas Heating Section

-The heating section shall have a progressive tubular heat exchanger with corrosion-resistant aluminized steel tubes and burners as standard on all models.
-Stainless steel heat exchanger with 409 stainless steel tubes and 439 stainless steel burners shall be optional.
- Induced draft combustion blower shall be used to pull the combustion products through the firing tubes.
- Heater shall use a direct spark ignition (DSI) system.
- On initial call for heat, the combustion blower shall purge the heat exchanger for 20 seconds before ignition.
- After three unsuccessful ignition attempts, entire heating system shall be locked out until manually reset at the thermostat/zone sensor.
- Units shall be suitable for use with natural gas or propane (field-installed kit).

Indoor Fan
- Direct drive plenum fan design - 6 to 25 tons units.
- Plenum fan design - backward-curved fan wheel along with an external rotor direct drive variable speed indoor motor.
- Supply fan speed adjustments can be made using the Symbio 700 or Mobile App.
- Motors are thermally protected.
- Variable speed direct drive motors are high efficiency - 6 to 25 tons.

Heat Exchanger
- Compact cabinet features a tubular heat exchanger in low, medium and high heat capacities.
- Corrosion-resistant aluminized steel tubes and burners are standard on all models.
- Induced draft blower to pull the gas mixture through the burner tubes.
- Direct spark ignition and a flame sensor as a safety device to validate the flame.