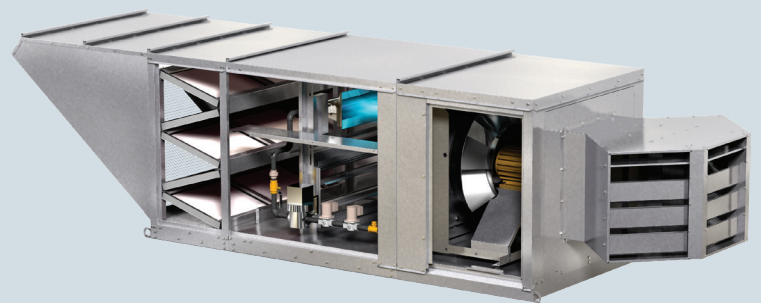
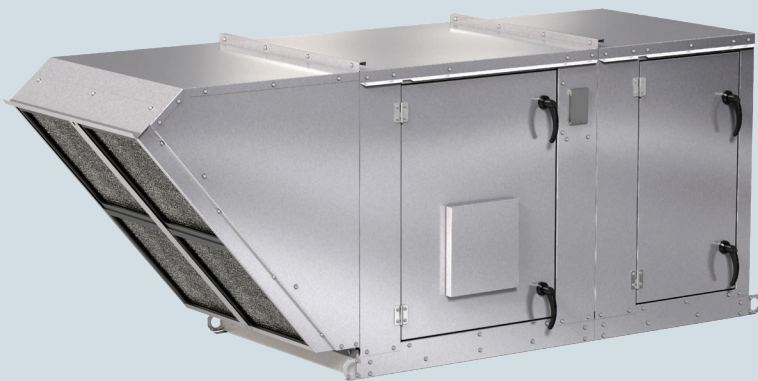


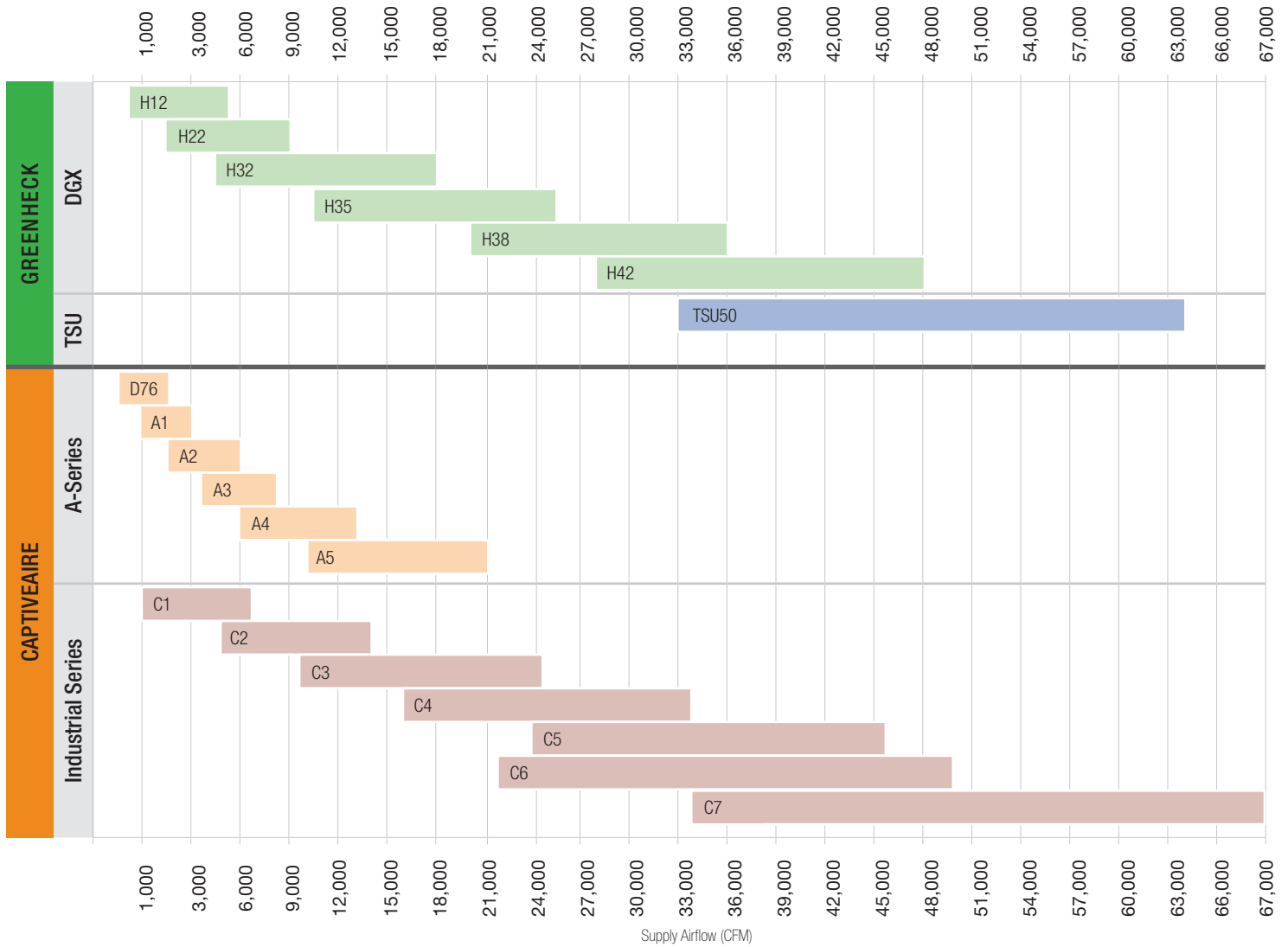
Comparison Guide

Make-Up Air *Direct Gas-Fired Units*



Model Comparison

DGX & TSU Supply Airflow Capacities Comparison



Model Comparison

		GREENHECK							
		DGX						TSU	
Cabinets		H12	H22	H32	H35	H38	H42	50	
Inches	Length Burner + MF Blower	64.6	88.4	96.5	116.9	129.6	133.5	100.1	
	Weatherhood	31.5	47.1	48.7	47.8	65.3	68.9	71.1	
	Base Width	33.7	44.1	53.1	78.5	95.5	100.3	156.1	
	Height	39	44.9	48.7	54.6	63.9	67.9	63.9	
lbs.	Weight	700	1100	1500	2300	3000	4000	4500	
	Optional Mod's In.	Filter Mod	21.5	24.1	25.8	27.7	30.8	31.1	29.8
	Damper	In Blower Module						In Blower Module	
Airflow	Min CFM	800	2,000	4,500	10,000	20,000	28,000	33,000	
	Max CFM	5,000	9,000	18,000	25,000	36,000	48,000	64,000	
Direct	Max Heat	400	800	2000	2800	4400	4800	7000	
Indirect	Max Heat	250	600	1200					
DX Tons	Min Cool	2.5	7	10					
	Max Cool	8	10	16					
DX CFM	Min CFM	800							
	Max CFM	8,100							

		CAPTIVEAIRE												
		A-Series					Industrial Series							
Cabinets		D76	A1	A2	A3	A4	A5	Cabinet - 1	Cabinet - 2	Cabinet - 3	Cabinet - 4	Cabinet - 5	Cabinet - 6	Cabinet - 7
Inches	Length Burner + MF Blower	54.3	74.4	82.4	87.4	118.5	128.5	70	82	100	100	112	100	100
	Weatherhood	29.2	44.4	53.6	51.6	76.4	71.4	48	69.5	69.5	95.3	91.3	69.5	64
	Base Width	22.5	27.4	37.4	41.4	48.4	59.2	46	60	79	88	98	146	156
	Height	22.1	29.8	36.8	43.4	51.4	58.4	38	54	58	66	76	58	66
lbs.	Weight*	335	597.5	810	975	1642.5	2167.5	-						
	Optional Mod's In.	Filter Module	Internal	32.3	32.3	38.3	35.4	35.4	28	28	28	28	28	28
	Damper	NA	Internal				10	10	10	10	10	10	10	10
Airflow	Min CFM	600	1000	2000	3500	6000	10000	1000	5000	10000	16000	24000	22200	34000
	Max CFM	1800	3000	6000	8000	13000	21000	7000	14000	24500	34000	46000	50000	67000
Direct	Max Heat	275	550	825	1100	1375	2750	825	1375	2280	3300	4400	3990	4950
Indirect**	Max Heat	N/A	320	640	960	1280								
DX Tons	Min Cool		2	5	10	10								
	Max Cool		5	10	15	15								
DX CFM	Min CFM		1000	2000	3500	6000								
	Max CFM		3000	5000	7000	9000								

If Basis of Design in Specification

General Notes
Schedule note: Factory-mounted and wired VFDs. <i>CaptiveAire does not factory mount and wire VFDs on their large cabinets.</i>
Controls (if microprocessor selected)
Schedule note: Provide unit controller with LCD display for start-up and service. If hand-held device is required, one must be provided for each unit.
Controller must be able to operate stand-alone. <i>CaptiveAire requires BMS to operate.</i>
Material Gauge
Exterior cabinet to be minimum 18 gauge material. <i>CaptiveAire A-Series models are 20 gauge requiring them to use a more expensive model.</i>
Schedule note: Unit must be made of 18 gauge or better thickness material.
Finish
If adding a coating, use Permatector™. <i>CaptiveAire does not have pre-paint, would have to use post paint which drives up lead time and cost.</i>
Schedule note: Provide unit with exterior finish that exceeds 2,500 hr. salt spray rating per ASTM B117 testing condition requirements. <i>CaptiveAire does not advertise salt spray ratings for their coatings.</i>
Direct Drive
Schedule direct drive with lowest available HP. <i>CaptiveAire will likely need to use a larger cabinet size to match the scheduled HP.</i>
Cooling
Packaged DX Schedule note: Compressors and condensing section must be integral to the unit. <i>CaptiveAire uses externally mounted condensers that sit on top of the unit.</i>
Recirculation
Schedule note: Recirculated air shall not pass through the burner. <i>CaptiveAire's A-Series products recirculate air through the burner, which can represent a safety hazard.</i>
Schedule note: Filtered return air. <i>CaptiveAire's industrial series products do not filter the return air without an installed filter section in the return ductwork.</i>
Indirect Gas Specific
High Turndown Furnace
Schedule 16:1 electronic modulation per furnace.
Note: <i>CaptiveAire</i> requires condensation drain kits at low airflow. These shouldn't be necessary as the furnaces are "non condensing," hence we don't require drain kits.
Built-in Commissioning Guide
Schedule integral commissioning sequence.
Provides a built in step-by-step set-up procedure. Below are a few of the screens.

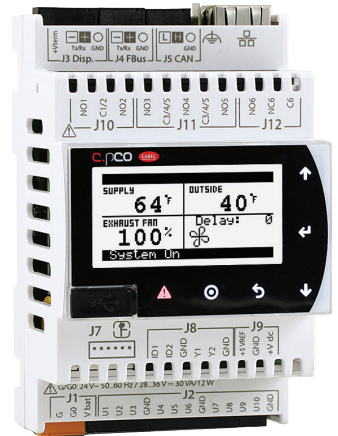
Microprocessor

Models DGX, TSU and VSU are available with an optional microprocessor controller that is factory programmed, wired and tested prior to shipment. The controller is the ideal solution for integrating with a building management system (BMS) but also can operate completely stand-alone.

- All controllers are provided with a built in backlit LCD and keypad to provide easy access to status, set points and settings
- Optional plug-and-play remote interface
- Optional BMS communication BACnet® MS/TP, BACnet IP, or Modbus RTU
- Optional sensors are available for room temperature control, building pressure fan or OA damper control, CO₂ fan or damper control, or duct pressure fan control

Pre-Configured and Field Adjustable

All microprocessor controls have a factory-programmed configuration code that configures the controller to match the order. If for any reason this needs to be changed, the code can be updated in the field for any configuration in minutes with just the built in LCD and keypad – No computer programming required!



Remote Display

The optional remote display provides flexibility to the end-user since every control point parameter can be accessed without the need to physically access the unit. Available with the microprocessor and monitoring interface.



Remote Panel

For applications that don't require Microprocessor or building management system integration, an optional remote panel is a simple, cost-effective way to control a make-up air unit. Remote panels are available with a variety of options to meet the needs of the application.

- Painted NEMA 1 enclosure or stainless steel NEMA 4X enclosure
- Basic switches to enable the fan, heating and cooling
- Indicating lights for basic unit status
- Discharge temperature dial, room thermostat, or room sensors
- Programmable thermostat for night setback operation
- Outdoor air damper or VAV control with a Photohelic® gauge for building pressure control, potentiometer dial or switch



Terminal Strip

Same electromechanical unit components as the remote panel option except the remote panel is not supplied.



Model DGX

- 800 – 48,000 cfm and up to 5 in. wg
- Flexible modular construction for increased design flexibility
- Optional variable air volume (VAV) arrangement with up to 65% airflow reduction
- Optional recirculation arrangement for 20 – 100% outside air
- Optional direct drive mixed flow or backward-curved plenum fans

Heating

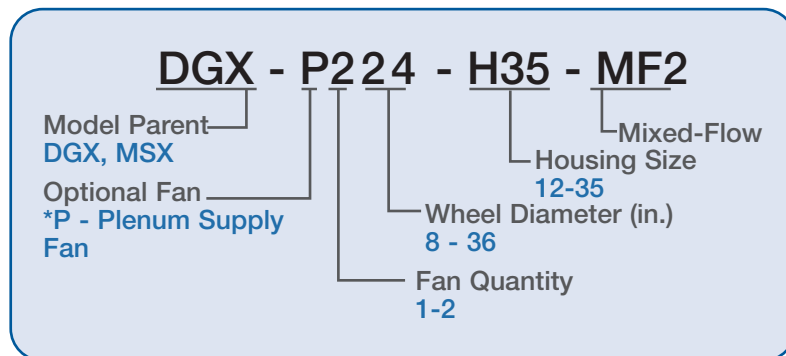
- Direct gas-fired heating technology with 92% thermal efficiency
- Up to 4800 mbh
- Up to 25:1 turndown ratio

Cooling

- Chilled water or split direct expansion coils up to 11,700 cfm
- Direct evaporative cooling up to 46,250 cfm
- Packaged direct expansion cooling up to 16 tons and 1,800 cfm
- Low sound condenser fans
- Optional digital or standard scroll compressor
- Optional electronically commutated (EC) motor on lead condenser fan



Model Number Code



**If no P is shown, then a forward-curved fan is provided.*

Model TSU

- 33,000 – 64,000 cfm and up to 2.5 in. wg
- Dual blower design for high air volumes
- Optional variable air volume (VAV) arrangement with up to 65% airflow reduction
- Optional recirculation arrangement for 20 – 100% outside air

Heating

- Direct gas-fired heating technology with 92% thermal efficiency
- Up to 7000 mbh
- Up to 25:1 turndown ratio

Cooling

- Direct evaporative cooling up to 60,000 cfm

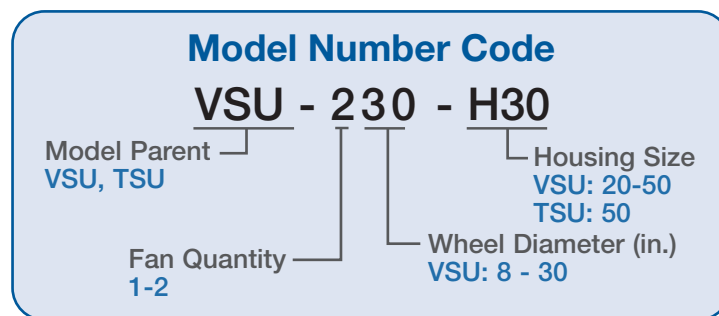
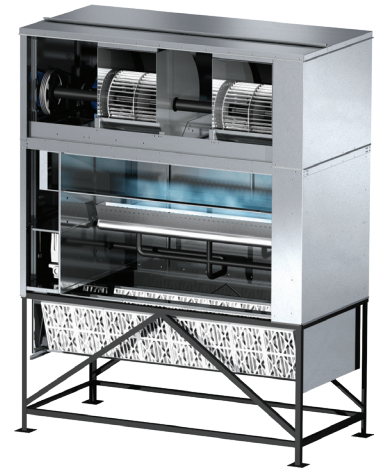


Model VSU *(not shown on comparison graph)*

- 800 – 64,000 cfm and up to 2.5 in. wg
- Vertical design for outdoor pad mounted applications
- Optional variable air volume (VAV) arrangement with up to 65% airflow reduction
- Optional recirculation arrangement for 20 – 100% outside air

Heating

- Direct gas-fired heating technology with 92% thermal efficiency
- Up to 7000 mbh
- Up to 25:1 turndown ratio



Product Certifications

Greenheck takes pride in offering a high quality, reliable product. We invest our resources into designing, testing and manufacturing products to ensure customer satisfaction.

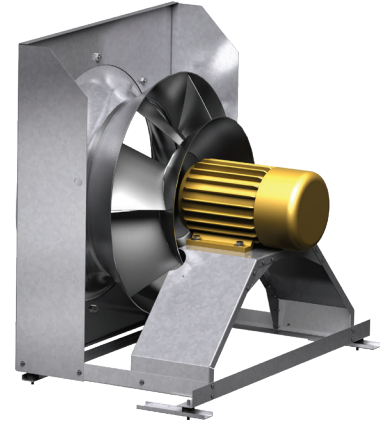


ETL Listed for electrical and overall unit safety. Every unit is tested at the factory before it is shipped to the jobsite.

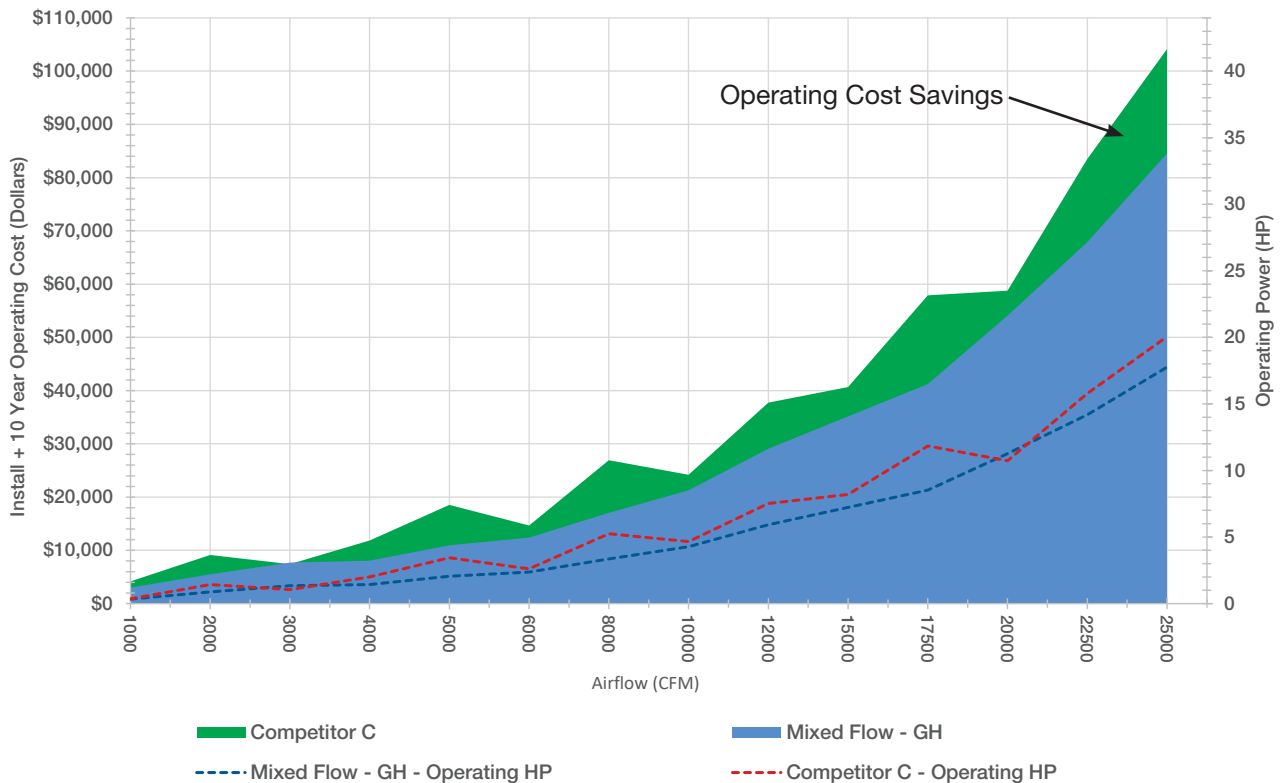
Direct Drive Mixed Flow Plenum Fans

Mixed flow fans are hybrid designs that incorporate the best features of axial and centrifugal fans. The unique mixed flow plenum fan is optimized for typical make-up air applications below 3 in. wg:

- Available on models DGX, IGX, and MSX
- 800—25,000 cfm
- Up to 50% reduction in operating horsepower
- 40% less energy usage than forward-curved fan
- VFD as a standard means push-button air balancing
- Soft-start providing less wear and tear on equipment
- No belt/bearing maintenance
- Easily change discharge location (except IGX)
- Non-overloading fan design
- 50% reduction in sones (6-8 decibels) compared to a forward-curved fan



DGX Series vs Competitor C
(Install + 10 Year Operating Cost)



Cost includes:

- Install: Labor and components (GH is single point power while Competitor C is dual point for control center and VFD/Motor) Note: Unit base price isn't shown, only install and operating cost.
- Operating Cost - Based on 24 hours, 5-days per week, 52 weeks per year operation, for 10 years at \$0.10/kWh electricity cost. Also includes belt replacement every year and sheave replacement every four years. Calculation includes supply fan only.