



UNITED TECHNOLOGIES CARRIER CORPORATION

39G Galaxy Air Handling Unit



Carrier

MAXIMIZING PERFORMANCE, ENERGY SAVINGS & COMFORT

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CISB 39G offers...

- Units are designed in accordance to
 - ARI Standard for coils (ARI 410)
 - ASHRAE Standard for drain pan (ASHRAE 62-89)
- Double wall with 1" & 2" 40kg/m³ CFC-Free PU Insulation (HCFC 141b). Isolates insulation exposure to the air stream.
- Wide range of coils offering – 4, 5, 6, 7, 8 rows and 8, 10, 12, 14 FPI for chilled water. Optimized coil circuiting. DX Coil (4, 6 rows) and Hot Water Coil (1, 2 rows) are also available.
- All chilled water, DX and Hot Water coils are factory pressure tested at 400 psig as standard.
- Coil tracks enable easy coil removal for complete cleaning and assurance of a dry unit interior.
- Powder painted sloped galvanized steel drain pan with bottom drainage.
- Forward Curved, Backward Curved and Airfoil fan
 - Forward Curved - sizes 160 ~ 1000mm diameter
 - Backward Curved / Airfoil Blade – sizes 225 ~ 1000mm diameter
- Low leak construction with hex socket compression, type latch assemble and ribseals on mating panel perimeter.
- Factory installed unit base of 100mm height, constructed of 14 gauge galvanized steel.

50mm NTB Features :

- Composite Corner Piece (Trileg) - Nylon 6 + 30% Glass filled.
- Non Thermal Bridge (NTB) Aluminium Frame Extrusion.
- Non Thermal Bridge (NTB) sandwiched panels and access doors.
- Non Thermal Bridge (NTB) quality panel to frame fitting.
- No condensation problems in humid environments at low internal temperatures.
- Hygienic : due to smooth internal and external surface.
- Rigid construction with aluminium framework and machine injected rigid polyurethane foam panels.
- Spring-mounted fans for low vibration transmission.
- Dry, corrosion free construction.



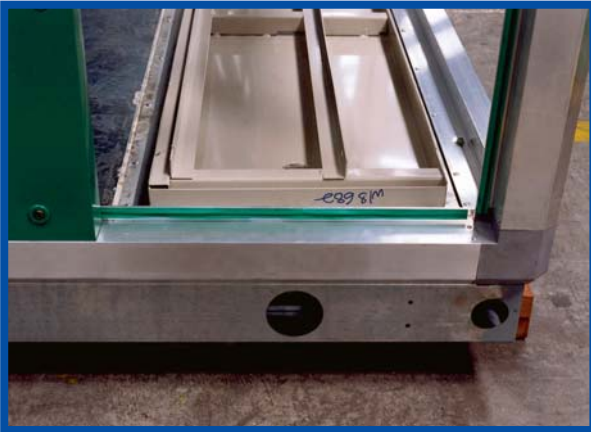
Compression Latch (Hex Socket)

Only requires the use of hexagon wrench to open / close the access door.



Chilled Water Coil With Steel Header (CU and Alum Fin)

Coils are of aluminium / copper plate fins with belled collars and bonded to 12.7mm OD copper tubes by mechanical expansion. The coils have galvanised steel casing and steel headers with male threaded connections.



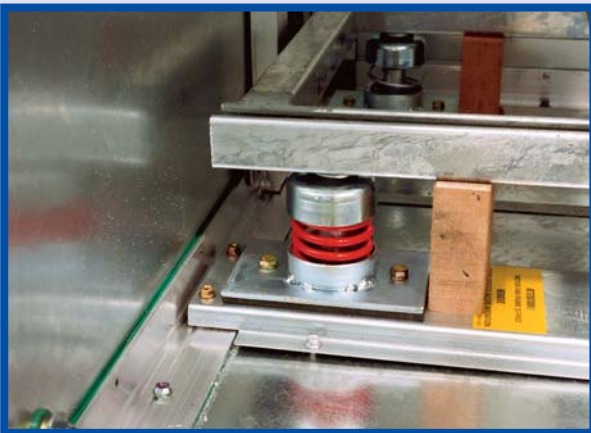
Sloping Drain Pan and Drain Outlet

New drain pan assembly for better drainage, bottom access drain and sloping for rapid waterflow and better Internal Air Quantity (IAQ). Ready to couple with female connection.



Direct Expansion Coil (DX Coil)

Coils are of aluminium / copper with belled collars and bonded 12.7mm OD copper tubes by mechanical expansion. Coils are provided with brass distributors with sweat type connections.



Isolator Spring

As standard from the factory, the fan and motor assembly are mounted on a common base with colour-coded internally mounted 2" deflection spring isolators, which saves site installation cost.



Assembly Fan Housing Motor and Base (FMB)

FMB are made of painted heavy gauge mild steel (for fan size 450) or power strut type (for fan size 160 to 400) to ensure proper and easy of installation fan housing and motor.



Bearing Arm

Self aligning double row ball bearings mounted within a cast iron housing supported on tubular bearing arm assembly.



Taper Lock Pulley

Ability to change diameter of pulley according to fan shaft. Pulleys with taper lock bush allows for convenient dismantling and maintenance of drive package, besides offering flexibility in interchanging for different shaft sizes.



Fan Discharge Collar

Flanged discharge collar to provide easy ducting connection.



Handle Grab

Large and Non-Conductive handles for easy panel removal.



Accessory High Velocity Filter (HVF) Frame

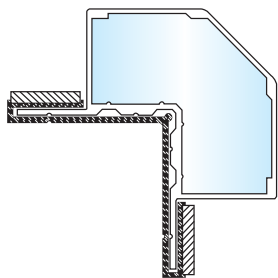
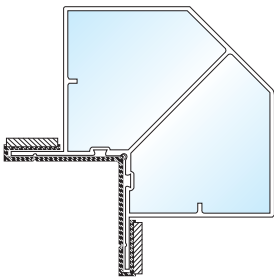
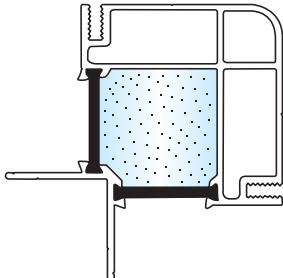
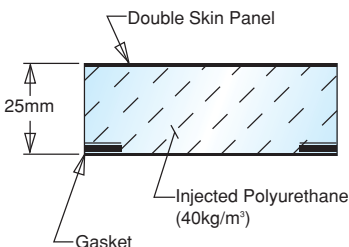
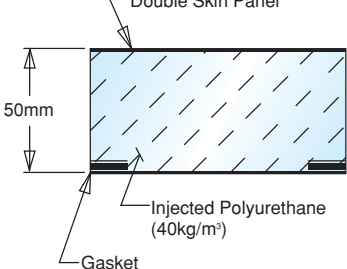
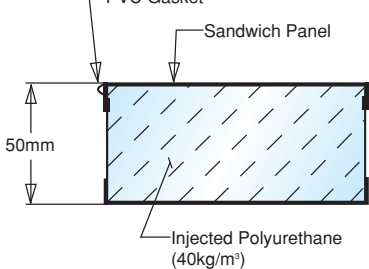
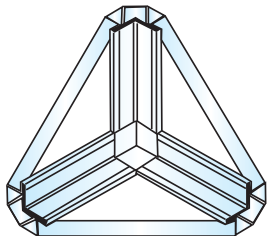
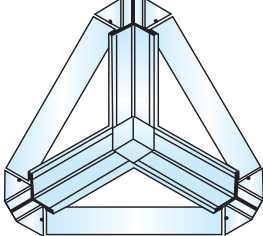
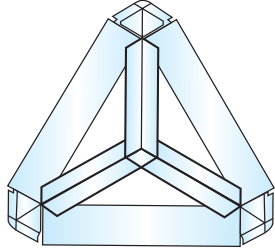
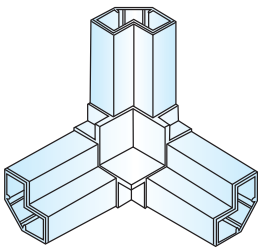
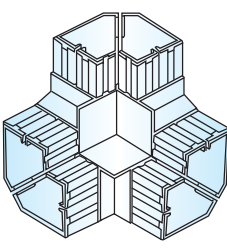
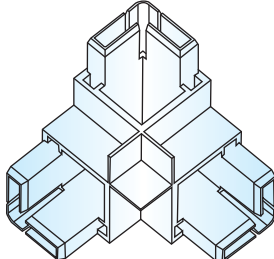
For "free air return" application, factory supplied 75mm HVF track is an option instead of one module casing resulting in shorter overall unit length.



Dampers

Mixing boxes are equipped with parallel / opposed blades interconnected outside with return air dampers.

Basic Construction

39G 25mm Frame Construction 	39G 50mm Frame Construction 	39GK 50mm NTB Frame Construction 
39G 25mm Panel (Double Skin) 	39G 50mm Panel (Double Skin) 	39GK 50mm NTB Panel (Sandwich) 
39G 25mm Frame-Panel Construction 	39G 50mm Frame-Panel Construction 	39GK 50mm NTB Frame-Panel Construction 
39G 25mm Trileg Construction 	39G 50mm Trileg Construction 	39GK 50mm NTB Trileg Construction 

Quick Selection

Carrier offers you 3 easy quick selection steps for 39G:

- 1.) Determine the unit size based on air flow or coil face area.
 - a. 1.5m/s minimum velocity (cooling or heating).
 - b. 2.5m/s maximum velocity for cooling coil without drift eliminator.
 - c. 4.5m/s maximum velocity for heating coil only.
- 2.) Use roughing-in dimensions (Pg 8 & 9) to find approximate size of base unit and it's accessory sections.
- 3.) Compute weights of base casing unit (Pg 16).
- 4.) To compute total of unit weight and respective fan, coil and motor drive package weight (if applicable) - refer to point 3.

Unit Size Selection

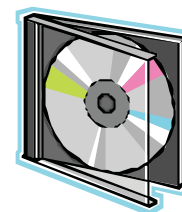
39G Unit Size	Coil Face area (m2)	Air volume (L/s) x 1000		
		1.5m/s	2.5m/s	4.5m/s
0608	0.170	0.25	0.42	0.76
0609	0.246	0.37	0.62	1.11
0610	0.340	0.51	0.85	1.53
0712	0.491	0.74	1.23	2.21
0813	0.699	1.05	1.75	3.15
0914	0.893	1.34	2.23	4.02
1015	1.045	1.57	2.61	4.70
1016	1.152	1.73	2.88	5.19
1117	1.437	2.16	3.59	6.47
1317	1.681	2.52	4.20	7.57
1518	2.078	3.12	5.20	9.35
1522	2.361	3.54	5.90	10.63
1622	2.550	3.82	6.37	11.47
1822	2.931	4.40	7.33	13.19
1824	3.301	4.95	8.25	14.86
1825	3.590	5.39	8.98	16.16
2025	3.964	5.95	9.91	17.84
2226	4.631	6.95	11.58	20.84
2330	5.492	8.24	13.73	24.71
2334	6.434	9.65	16.09	28.95
2434	6.987	10.48	17.47	31.44
2636	8.117	12.18	20.29	36.53

Note:

For application where face velocity exceed 2.5m/s (for cooling only), drift eliminators is recommended to avoid moisture carry over under normal operating condition.

Computer Selection

We have made available a computer program to finalize your selections. Please contact your Carrier representative for a computer selection based on your "Quick Selection" plus the design parameters of your application.



DIMENSION

30G Galaxy Unit Size	Fan Size	Internal Size		External Size				Internal size section												Discharge Section with Damper	Plenum Access	Diffuser Section
		Height (mm)	Width (mm)	25mm		50mm		Length (mm)				Length (mm)				Length (mm)	Height (mm)	Length (mm)				
				Height (mm)	Width (mm)	Length (mm)	Width (mm)	Length (mm)	Width (mm)	Length (mm)	Width (mm)	Length (mm)	Width (mm)									
0608	160	600	800	650	850	700	900	500	1000	500	600	300	300	600	1500	600	600	900	600	600	300	
0609	180	600	900	650	950	700	1000	500	1000	500	600	300	300	600	1500	600	600	900	600	600	300	
	180	600	1000	650	1050	700	1100	500	1000	500	600	300	300	600	1500	600	600	900	600	600	300	
	200	700	1200	750	1250	800	1300	500	1000	500	600	300	300	600	1500	600	600	900	600	600	300	
0712	225	700	1200	750	1250	800	1300	500	1000	500	600	300	300	600	1500	600	600	900	600	600	300	
0813	280	800	1300	850	1350	900	1400	500	1000	500	600	300	300	600	1500	600	600	900	600	600	300	
	315	900	1400	950	1450	1000	1500	600	1200	600	600	300	300	600	1500	600	600	900	600	600	300	
	355	1000	1500	1050	1550	1100	1600	600	1200	600	600	300	300	600	1500	600	600	900	600	600	300	
1015	355	1000	1500	1050	1550	1100	1600	600	1200	600	600	300	300	600	1500	600	600	900	600	600	300	
	400	1000	1600	1050	1650	1100	1700	600	1200	600	600	300	300	600	1500	600	600	900	600	600	300	
	355	1000	1600	1050	1650	1100	1700	600	1200	600	600	300	300	600	1500	600	600	900	600	600	300	
1016	400	1100	1700	1150	1750	1200	1800	600	1200	600	600	300	300	600	1500	600	600	900	600	600	300	
1117	400	1300	1700	1350	1750	1400	1800	600	1200	600	600	300	300	600	1500	600	600	900	600	600	300	
	400	1300	1700	1350	1750	1400	1800	600	1200	600	600	300	300	600	1500	600	600	900	600	600	300	
	450	1500	1800	1550	1850	1600	1900	600	1200	600	600	300	300	600	1500	600	600	900	600	600	300	
1317	400	1500	1800	1550	1850	1600	1900	600	1200	600	600	300	300	600	1500	600	600	900	600	600	300	
1518	400	1500	1800	1550	1850	1600	1900	600	1200	600	600	300	300	600	1500	600	600	900	600	600	300	
	450	1500	1800	1550	1850	1600	1900	600	1200	600	600	300	300	600	1500	600	600	900	600	600	300	
	500	1500	2200	1550	2250	1600	2300	600	1200	600	600	300	300	600	1500	600	600	900	600	600	300	
1522	500	1500	2200	1550	2250	1600	2300	600	1200	600	600	300	300	600	1500	600	600	900	600	600	300	
1622	560	1600	2200	1650	2250	1700	2300	600	1200	600	600	300	300	600	1500	600	600	900	600	600	300	
	560	1600	2200	1650	2250	1700	2300	600	1200	600	600	300	300	600	1500	600	600	900	600	600	300	
	630	1800	2200	1850	2250	1900	2300	600	1200	600	600	300	300	600	1500	600	600	900	600	600	300	
1822	630	1800	2200	1850	2250	1900	2300	600	1200	600	600	300	300	600	1500	600	600	900	600	600	300	
1824	630	1800	2400	1850	2450	1900	2500	600	1200	600	600	300	300	600	1500	600	600	900	600	600	300	
	710	1800	2400	1850	2450	1900	2500	600	1200	600	600	300	300	600	1500	600	600	900	600	600	300	
	710	1800	2400	1850	2450	1900	2500	600	1200	600	600	300	300	600	1500	600	600	900	600	600	300	
1825	630	1800	2500	1850	2550	1900	2600	600	1200	600	600	300	300	600	1500	600	600	900	600	600	300	
	630	1800	2500	1850	2550	1900	2600	600	1200	600	600	300	300	600	1500	600	600	900	600	600	300	
	710	1800	2500	1850	2550	1900	2600	600	1200	600	600	300	300	600	1500	600	600	900	600	600	300	

DIMENSION (cont')

																		Internal size section										Plenum Access			
																		Internal Size				External Size				Fan Section				Discharge Section with Damper	
																		Fan Size	Height (mm)	Width (mm)		Height (mm)	Width (mm)			Length (mm)	Height (mm)			Length (mm)	Length (mm)
39G Galaxy Unit Size	25mm		50mm																												
	2025	800	2000	2500	2050	2550	2100	2600	900	1800	600	300	600	300	300	1500	600	1500	600	600											
2226	710		2200		2600		2700																								
	800	800	2250	2650	2300	2650	600	300	600	300	300	300	600	300	300	1500	600	1500	600	600											
2330	800		2300		3000		3100																								
	900	900	2350	3050	2400	3050	600	300	600	300	300	300	600	300	300	1500	600	1500	600	600											
2334	800		2300		3400		3500																								
	900	900	2350	3450	2400	3450	600	300	600	300	300	300	600	300	300	1500	600	1500	600	600											
2434	1000		2400		3400		3500																								
	900	900	2450	3450	2500	3450	600	300	600	300	300	300	600	300	300	1500	600	1500	600	600											
2636	1000		2600		3600		3700																								
	900	900	2650	3650	2700	3650	600	300	600	300	300	300	600	300	300	1500	600	1500	600	600											

NOTE: A.) Vertical Fan + Coil unit shipping option:
For vertical unit, factory pre-join the fan & coil section for model 0914 and below.
For model 39G1015 and above, fan section and coil section will be delivered in separate packaging.
B.) Plenum Access offered at 300, 600 and 1200mm (Length) as option.

NOTES FOR DIMENSION CALCULATION

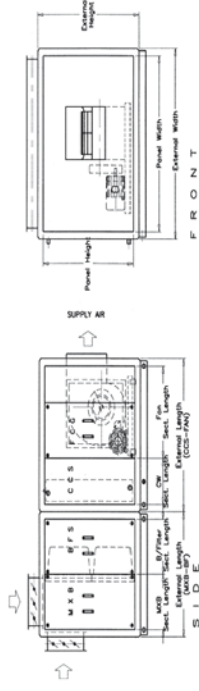
- External AHU Length = (Section Length + K) mm**
Where, K = 50mm (for 25mm casing thickness)
K = 100mm (for 50mm casing thickness)
If the AHU module length is more than 2000mm, section will be split into several casing for shipping purposes.
For Eg. A.) 39G1522, MXB-BF-CCS-FS, Fan Size 500, Horizontal AHU with 50mm casing thickness
Module Length is 800 + 600 + 600 + 1100mm, equals to 3100mm.
Unit will be split into two sections:
1. MXB-BF-CCS: 800 + 600 + 600 = 2000 + K(100) = 2100mm
2. FS: 1100 = 1100 + K(100) = 1200mm
Total AHU Length = 2100 + 1200 = 3300mm.
- 39G1522, MXB-BF-CCS-FS, Fan Size 500, Vertical AHU with 50mm casing thickness**
Module Length is 900 + 600 + 1100mm, equals to 2600mm.
Unit will be split into two sections:
1. MXB-BF: 800 + 600 = 1400 + K(100) = 1500mm
2. FS: 1100 = 1100 + K(100) = 1200mm
Total AHU Length = 1500 + 1200 = 2700mm

Note: The fan is on top of the coil section, just apply the fan section length for calculation.

- External AHU Width = (Module Width + K) mm**
Where, K = 50mm (25mm casing thickness)
K = 100mm (for 50mm casing thickness)
For Eg. A.) 39G1522, MXB-BF-CCS-FS, Fan Size 500, Horizontal AHU with 50mm casing thickness.
AHU Width = 2200mm + K(100mm) = 2300mm

III.) External AHU Height

- Horizontal AHU**
Where,
K = 50mm (for 25mm casing thickness)
K = 100mm (for 50mm casing thickness)
For Eg. 39G1522, MXB-BF-CCS-FS, Fan Size 500, Horizontal with 50mm casing thickness
AHU Height = (Module Height + K + 100)mm = 1700mm
Where,
K = 50mm (for 25mm casing thickness)
K = 100mm (for 50mm casing thickness)
For Eg. 39G1522, MXB-BF-CCS-FS, Fan Size 500, Horizontal AHU with 50mm casing thickness
AHU Height = (1500 + 100 + 100)mm = 1700mm
- Vertical AHU**
Where,
K = 50mm (for 25mm casing thickness)
K = 100mm (for 50mm casing thickness)
For Eg. 39G1522, MXB-BF-CCS-FS, Fan Size 500, Vertical AHU with 50mm casing thickness
AHU Height = (1500 + 1200 + 100 + 100)mm = 3000mm



UNIT SIZE	FAN SIZE	A						B						C&D	E DIMENSION																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
		T/BHF, UB/R			DBF/R			T/BHF, UB/R			DBF/R				ARR1. (THF)				ARR2. (BHF)				ARR3. (UBF)				ARR4. (UBR)				ARR5. (DBF)				ARR6. (DBR)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
		25	50	50	25	157	182	182	157	182	182	157	182		182	157	182	182	157	182	182	25	50	50	25	157	182	182	157	182	182	25	50	50	25	157	182	182	157	182	182	25	50	50	25	157	182	182	157	182	182	25	50	50	25	157	182	182	157	182	182	25	50	50	25	157	182	182	157	182	182	25	50	50	25	157	182	182	157	182	182	25	50	50	25	157	182	182	157	182	182	25	50	50	25	157	182	182	157	182	182	25	50	50	25	157	182	182	157	182	182	25	50	50	25	157	182	182	157	182	182	25	50	50	25	157	182	182	157	182	182	25	50	50	25	157	182	182	157	182	182	25	50	50	25	157	182	182	157	182	182	25	50	50	25	157	182	182	157	182	182	25	50	50	25	157	182	182	157	182	182	25	50	50	25	157	182	182	157	182	182	25	50	50	25	157	182	182	157	182	182	25	50	50	25	157	182	182	157	182	182	25	50	50	25	157	182	182	157	182	182	25	50	50	25	157	182	182	157	182	182	25	50	50	25	157	182	182	157	182	182	25	50	50	25	157	182	182	157	182	182	25	50	50	25	157	182	182	157	182	182	25	50	50	25	157	182	182	157	182	182	25	50	50	25	157	182	182	157	182	182	25	50	50	25	157	182	182	157	182	182	25	50	50	25	157	182	182	157	182	182	25	50	50	25	157	182	182	157	182	182	25	50	50	25	157	182	182	157	182	182	25	50	50	25	157	182	182	157	182	182	25	50	50	25	157	182	182	157	182	182	25	50	50	25	157	182	182	157	182	182	25	50	50	25	157	182	182	157	182	182	25	50	50	25	157	182	182	157	182	182	25	50	50	25	157	182	182	157	182	182	25	50	50	25	157	182	182	157	182	182	25	50	50	25	157	182	182	157	182	182	25	50	50	25	157	182	182	157	182	182	25	50	50	25	157	182	182	157	182	182	25	50	50	25	157	182	182	157	182	182	25	50	50	25	157	182	182	157	182	182	25	50	50	25	157	182	182	157	182	182	25	50	50	25	157	182	182	157	182	182	25	50	50	25	157	182	182	157	182	182	25	50	50	25	157	182	182	157	182	182	25	50	50	25	157	182	182	157	182	182	25	50	50	25	157	182	182	157	182	182	25	50	50	25	157	182	182	157	182	182	25	50	50	25	157	182	182	157	182	182	25	50	50	25	157	182	182	157	182	182	25	50	50	25	157	182	182	157	182	182	25	50	50	25	157	182	182	157	182	182	25	50	50	25	157	182	182	157	182	182	25	50	50	25	157	182	182	157	182	182	25	50	50	25	157	182	182	157	182	182	25	50	50	25	157	182	182	157	182	182	25	50	50	25	157	182	182	157	182	182	25	50	50	25	157	182	182	157	182	182	25	50	50	25	157	182	182	157	182	182	25	50	50	25	157	182	182	157	182	182	25	50	50	25	157	182	182	157	182	182	25	50	50	25	157	182	182	157	182	182	25	50	50	25	157	182	182	157	182	182	25	50	50	25	157	182	182	157	182	182	25	50	50	25	157	182	182	157	182	182	25	50	50	25	157	182	182	157	182	182	25	50	50	25	157	182	182	157	182	182	25	50	50	25	157	182	182	157	182	182	25	50	50	25	157	182	182	157	182	182	25	50	50	25	157	182	182	157	182	182	25	50	50	25	157	182	182	157	182	182	25	50	50	25	157	182	182	157	182	182	25	50	50	25	157	182	182	157	182	182	25	50	50	25	157	182	182	157	182	182	25	50	50	25	157	182	182	157	182	182	25	50	50	25	157	182	182	157	182	182	25	50	50	25	157	182	182	157	182	182	25	50	50	25	157	182	182	157	182	182	25	50	50	25	157	182	182	157	182	182	25	50	50	25	157	182	182	157	182	182	25	50	50	25	157	182	182	157	182	182	25	50	50	25	157	182	182	157	182	182	25	50	50	25	157	182	182	157	182	182	25	50	50	25	157	182	182	157	182	182	25	50	50	25	157	182	182	157	182	182	25	50	50	25	157	182	182	157	182	182	25	50	50	25	157	182	182	157	182	182	25	50	50	25	157	182	182	157	182	182	25	50	50	25	157	182	182	157	182	182	25	50	50	25	157	182	182	157	182	182	25	50	50	25	157	182	182	157	182	182	25	50	50	25	157	182	182	157	182	182	25	50	50	25	157	182	182	157	182	182	25	50	50	25	157	182	182	157	182	182	25	50	50	25	157	182	182	157	182	182	25	50	50	25	157	182	182	157	182	182	25	50	50	25	157	182	182	157	182	182	25	50	50	25	157	182	182	157	182	182	25	50	50	25	157	182	182	157	182	182	25	50	50	25	157

Mixing Box Section In Module

Unit Size	Damper Size							
	Parallel (H x W, mm)				Opposed (H x W, mm)			
	Top	Rear	Side	Bottom	Top	Rear	Side	Bottom
0608	448 x 748	448 x 748	548 x 448	248 x 448	460 x 748	460 x 748	560 x 448	260 x 448
0609	448 x 848	448 x 848	548 x 448	248 x 548	460 x 848	460 x 848	560 x 448	260 x 548
0610	448 x 948	448 x 948	548 x 448	248 x 648	460 x 948	460 x 948	560 x 448	260 x 648
0712	448 x 1148	448 x 1148	648 x 448	248 x 848	460 x 1148	460 x 1148	660 x 448	260 x 848
0813	448 x 1248	448 x 1248	748 x 448	248 x 948	460 x 1248	460 x 1248	760 x 448	260 x 948
0914	548 x 1348	548 x 1348	848 x 548	348 x 1048	560 x 1348	560 x 1348	860 x 548	360 x 1048
1015	548 x 1448	548 x 1448	948 x 548	348 x 1148	560 x 1448	560 x 1448	960 x 548	360 x 1148
1016	548 x 1548	548 x 1548	948 x 548	348 x 1248	560 x 1548	560 x 1548	960 x 548	360 x 1248
1117	548 x 1648	548 x 1648	1048 x 548	348 x 1348	560 x 1648	560 x 1648	1060 x 548	360 x 1348
1317	548 x 1648	548 x 1648	1248 x 548	348 x 1348	560 x 1648	560 x 1648	1260 x 548	360 x 1348
1518	748 x 1748	748 x 1748	1448 x 748	548 x 1448	760 x 1748	760 x 1748	1460 x 748	560 x 1448
1522	748 x 2148	748 x 2148	1448 x 748	548 x 1848	760 x 2148	760 x 2148	1460 x 748	560 x 1848
1622	748 x 2148	748 x 2148	1548 x 748	548 x 1848	760 x 2148	760 x 2148	1560 x 748	560 x 1848
1822	848 x 2148	848 x 2148	1748 x 848	648 x 1848	860 x 2148	860 x 2148	1760 x 848	660 x 1848
1824	848 x 2348	848 x 2348	1748 x 848	648 x 2048	860 x 2348	860 x 2348	1760 x 848	660 x 2048
1825	848 x 2448	848 x 2448	1748 x 848	648 x 2148	860 x 2448	860 x 2448	1760 x 848	660 x 2148
2025	848 x 2448	848 x 2448	1948 x 848	648 x 2148	860 x 2448	860 x 2448	1960 x 848	660 x 2148
2226	1048 x 2548	1048 x 2548	2148 x 1048	848 x 2248	1060 x 2548	1060 x 2548	2160 x 1048	660 x 2248
2330	1048 x 2948	1048 x 2948	2248 x 1048	848 x 2648	1060 x 2948	1060 x 2948	2260 x 1048	860 x 2648
2334	1048 x 3348	1048 x 3348	2248 x 1048	848 x 3048	1060 x 3348	1060 x 3348	2260 x 1048	860 x 3048
2434	1048 x 3348	1048 x 3348	2348 x 1048	848 x 3048	1060 x 3348	1060 x 3348	2360 x 1048	860 x 3048
2636	1048 x 3548	1048 x 3548	2548 x 1048	848 x 3248	1060 x 3548	1060 x 3348	2560 x 1048	860 x 3248

Unit Size	Damper Opening Size							
	Parallel (H x W, mm)				Opposed (H x W, mm)			
	Top	Rear	Side	Bottom	Top	Rear	Side	Bottom
0608	368 x 668	368 x 668	468 x 368	168 x 368	410 x 678	410 x 678	510 x 378	210 x 378
0609	368 x 768	368 x 768	468 x 368	168 x 468	410 x 778	410 x 778	510 x 378	210 x 478
0610	368 x 868	368 x 868	468 x 368	168 x 568	410 x 878	410 x 878	510 x 378	210 x 578
0712	368 x 1068	368 x 1068	568 x 368	168 x 768	410 x 1078	410 x 1078	610 x 378	210 x 778
0813	368 x 1168	368 x 1168	668 x 368	168 x 868	410 x 1178	410 x 1178	710 x 378	210 x 878
0914	468 x 1268	468 x 1268	768 x 468	268 x 968	510 x 1278	510 x 1278	810 x 478	310 x 978
1015	468 x 1368	468 x 1368	868 x 468	268 x 1068	510 x 1378	510 x 1378	910 x 478	310 x 1078
1016	468 x 1468	468 x 1468	868 x 468	268 x 1168	510 x 1478	510 x 1478	910 x 478	310 x 1178
1117	468 x 1568	468 x 1568	968 x 468	268 x 1268	510 x 1578	510 x 1578	1010 x 478	310 x 1278
1317	468 x 1568	468 x 1568	1168 x 468	268 x 1268	510 x 1578	510 x 1578	1210 x 478	310 x 1278
1518	668 x 1668	668 x 1668	1368 x 668	468 x 1368	710 x 1678	710 x 1678	1410 x 678	510 x 1378
1522	668 x 2068	668 x 2068	1368 x 668	468 x 1768	710 x 2078	710 x 2078	1410 x 678	510 x 1778
1622	668 x 2068	668 x 2068	1468 x 668	468 x 1768	710 x 2078	710 x 2078	1510 x 678	510 x 1778
1822	768 x 2068	768 x 2068	1668 x 768	568 x 1768	810 x 2078	810 x 2078	1710 x 778	610 x 1778
1824	768 x 2268	768 x 2268	1668 x 768	568 x 1968	810 x 2278	810 x 2278	1710 x 778	610 x 1978
1825	768 x 2368	768 x 2368	1668 x 768	568 x 2068	810 x 2378	810 x 2378	1710 x 778	610 x 2078
2025	768 x 2368	768 x 2368	1868 x 768	568 x 2068	810 x 2378	810 x 2378	1910 x 778	610 x 2078
2226	968 x 2468	968 x 2468	2068 x 968	768 x 2168	1010 x 2478	1010 x 2478	2110 x 978	810 x 2178
2330	968 x 2868	968 x 2868	2168 x 968	768 x 2568	1010 x 2878	1010 x 2878	2210 x 978	810 x 2578
2334	968 x 3268	968 x 3268	2168 x 968	768 x 2968	1010 x 3278	1010 x 3278	2210 x 978	810 x 2978
2434	968 x 3268	968 x 3268	2268 x 968	768 x 2968	1010 x 3278	1010 x 3278	2310 x 978	810 x 2978
2636	968 x 3468	968 x 3468	2468 x 968	768 x 3168	1010 x 3478	1010 x 3478	2510 x 978	810 x 3178

OPPOSED

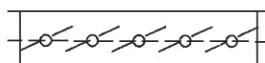


HALF CLOSE

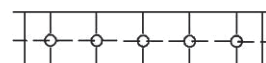


OPEN

PARALLEL

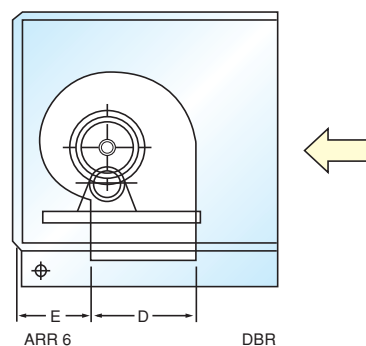
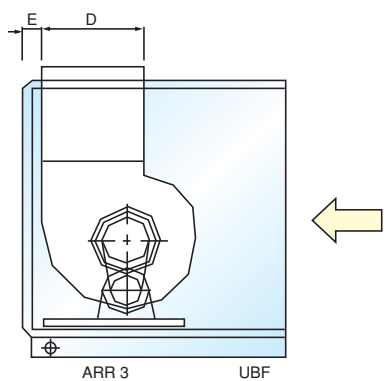
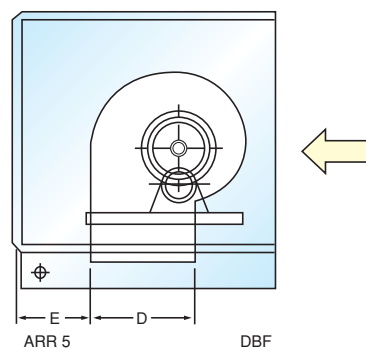
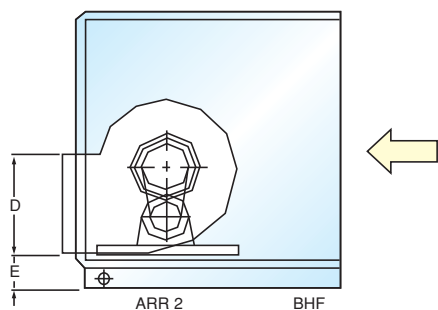
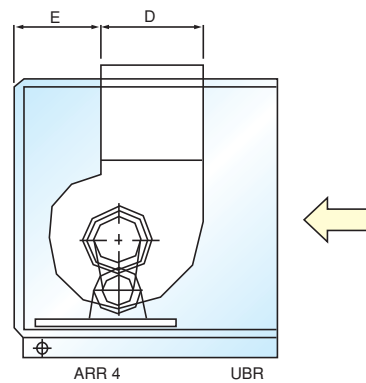
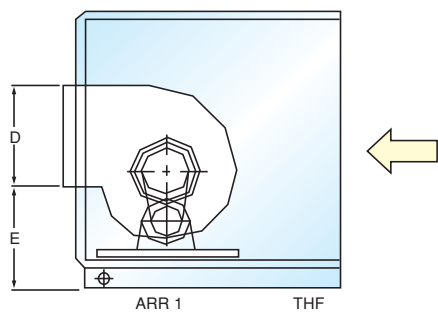


HALF CLOSE

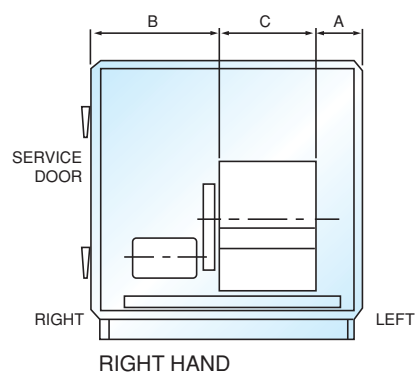
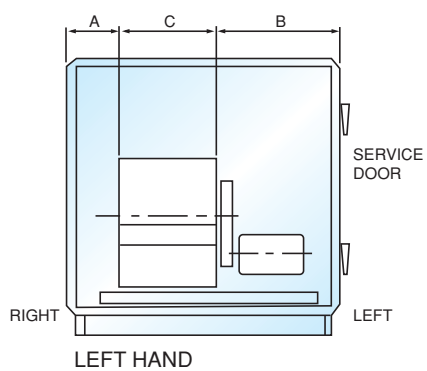


OPEN

Horizontal Fan Arrangements



Side Elevation



Front Elevation

Center to Center Distance for Fan & Motor Configuration

Unit Size	Fan Size	1 hp		1.5 - 2 hp		3 - 4 hp		5 - 5.5 hp		7.5 - 10 hp		15 - 20 hp		25 - 30 hp		40 hp		50 - 60 hp		75 hp		100 hp	
		CTCD _{min}	CTCD _{max}	CTCD _{min}	CTCD _{max}	CTCD _{min}	CTCD _{max}	CTCD _{min}	CTCD _{max}	CTCD _{min}	CTCD _{max}	CTCD _{min}	CTCD _{max}	CTCD _{min}	CTCD _{max}	CTCD _{min}	CTCD _{max}	CTCD _{min}	CTCD _{max}	CTCD _{min}	CTCD _{max}	CTCD _{min}	CTCD _{max}
0608	FG3 160	173	221	197	163	211	187	148	196	172	133	182	157	109	159	134	85	135	110	-	-	-	-
	FG3 180	168	212	190	156	202	179	141	186	163	124	170	147	98	146	122	67	117	92	-	-	-	-
0609	FG3 180	168	212	190	156	202	179	141	186	163	124	170	147	98	146	122	67	117	92	-	-	-	-
	FG3 190	168	212	190	156	202	179	141	186	163	124	170	147	98	146	122	67	117	92	-	-	-	-
0610	FG3 200	230	275	252	219	264	241	203	249	226	181	226	208	184	129	178	153	-	-	-	-	-	-
	FG3 225	254	288	276	242	286	264	226	271	249	210	255	232	183	228	206	148	196	172	-	-	-	-
0712	FG3 250	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	FG3 280	310	350	330	298	338	318	282	322	302	264	305	285	236	278	257	200	243	221	-	-	-	-
0813	FG3 315	361	401	381	349	389	369	333	373	353	316	356	336	288	328	308	251	292	271	-	-	-	-
	FG3 330	361	401	381	349	389	369	333	373	353	316	356	336	288	328	308	251	292	271	-	-	-	-
0914	FG3 355	376	412	394	364	400	382	348	384	366	330	366	348	302	338	320	265	301	283	-	-	-	-
	FG3 355	376	412	394	364	400	382	348	384	366	330	366	348	302	338	320	265	301	283	-	-	-	-
1015	FG3 400	432	467	450	420	455	437	404	439	422	387	422	404	359	393	376	321	356	339	-	-	-	-
	FG3 400	432	467	450	420	455	437	404	439	422	387	422	404	359	393	376	321	356	339	-	-	-	-
1016	FG3 400	432	467	450	420	455	437	404	439	422	387	422	404	359	393	376	321	356	339	-	-	-	-
	FG3 400	432	467	450	420	455	437	404	439	422	387	422	404	359	393	376	321	356	339	-	-	-	-
1117	FG3 450	423	462	442	410	449	430	396	435	416	378	416	397	354	392	373	320	359	340	-	-	-	-
	FG3 450	423	462	442	410	449	430	396	435	416	378	416	397	354	392	373	320	359	340	-	-	-	-
1317	FG3 500	432	467	450	420	455	437	404	439	422	387	422	404	359	393	376	321	356	339	-	-	-	-
	FG3 500	432	467	450	420	455	437	404	439	422	387	422	404	359	393	376	321	356	339	-	-	-	-
1518	FG3 550	423	462	442	410	449	430	396	435	416	378	416	397	354	392	373	320	359	340	-	-	-	-
	FG3 550	516	557	537	503	545	524	489	531	510	471	512	491	447	488	468	413	455	434	-	-	-	-
1522	FG3 600	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	FG3 600	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1622	FG3 630	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	FG3 630	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1822	FG3 710	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	FG3 710	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1824	FG3 710	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	FG3 710	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1825	FG3 710	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	FG3 710	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2025	FG3 710	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	FG3 710	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2226	FG3 800	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	FG3 800	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2330	FG3 800	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	FG3 900	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2334	FG3 800	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	FG3 900	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2434	FG3 1000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	FG3 1000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2636	FG3 1000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	FG3 1000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Center to Center Distance for Fan & Motor Configuration (cont')

Unit Size	Fan Size	1 hp			1.5 ~ 2 hp			3 ~ 4 hp			5 ~ 5.5 hp			7.5 ~ 10 hp			15 ~ 20 hp			25 ~ 30 hp			40 hp			50 ~ 60 hp			75 hp			100 hp		
		CTCD _{max}	CTCD _{min}	CTCD _{avg}	CTCD _{max}	CTCD _{min}	CTCD _{avg}	CTCD _{max}	CTCD _{min}	CTCD _{avg}	CTCD _{max}	CTCD _{min}	CTCD _{avg}	CTCD _{max}	CTCD _{min}	CTCD _{avg}	CTCD _{max}	CTCD _{min}	CTCD _{avg}	CTCD _{max}	CTCD _{min}	CTCD _{avg}	CTCD _{max}	CTCD _{min}	CTCD _{avg}	CTCD _{max}	CTCD _{min}	CTCD _{avg}	CTCD _{max}	CTCD _{min}	CTCD _{avg}			
0608	FCG 160	103	143	123	98	137	118	92	130	111	84	120	102	88	118	103	103	123	113	-	-	-	-	-	-	-	-	-	-	-	-			
	FCG 180	121	161	141	114	154	134	106	145	125	95	133	114	94	128	111	101	128	114	-	-	-	-	-	-	-	-	-	-	-	-			
	FCG 180	121	161	141	114	154	134	106	145	125	95	133	114	94	128	111	101	128	114	-	-	-	-	-	-	-	-	-	-	-	-			
0610	FCG 180	121	161	141	114	154	134	106	145	125	95	133	114	94	128	111	101	128	114	-	-	-	-	-	-	-	-	-	-	-	-			
	FCG 200	156	196	176	149	189	169	139	179	159	126	165	146	119	157	138	117	150	134	-	-	-	-	-	-	-	-	-	-	-	-			
0712	FCG BCG 225	191	231	211	183	222	203	172	212	192	157	197	177	147	186	167	137	175	156	-	-	-	-	-	-	-	-	-	-	-	-			
	FCG BCG 250	-	-	-	-	-	-	-	-	-	157	197	177	147	186	167	137	175	156	-	-	-	-	-	-	-	-	-	-	-	-			
0813	FCG BCG 280	253	292	273	244	283	263	232	272	252	216	255	235	201	241	221	183	223	203	-	-	-	-	-	-	-	-	-	-	-	-			
	FCG BCG 315	295	334	315	286	324	305	273	313	293	256	296	276	241	280	260	220	260	240	-	-	-	-	-	-	-	-	-	-	-	-			
0914	FCG BCG 315	295	334	315	286	324	305	273	313	293	256	296	276	241	280	260	220	260	240	-	-	-	-	-	-	-	-	-	-	-	-			
	FCG BCG 355	339	382	360	329	372	350	316	360	338	299	343	321	282	326	304	259	304	282	-	-	-	-	-	-	-	-	-	-	-	-			
1015	FCG BCG 355	339	382	360	329	372	350	316	360	338	299	343	321	282	326	304	259	304	282	-	-	-	-	-	-	-	-	-	-	-	-			
	FCG BCG 400	316	358	337	305	347	326	292	334	313	274	316	295	255	298	276	229	272	250	-	-	-	-	-	-	-	-	-	-	-	-			
1016	FCG BCG 400	316	358	337	305	347	326	292	334	313	274	316	295	255	298	276	229	272	250	-	-	-	-	-	-	-	-	-	-	-	-			
	FCG BCG 450	372	419	396	361	408	385	347	395	371	329	377	353	309	338	333	281	332	307	-	-	-	-	-	-	-	-	-	-	-	-			
1117	FCG BCG 400	316	358	337	305	347	326	292	334	313	274	316	295	255	298	276	229	272	250	-														

Center to Center Distance for Fan & Motor Configuration (cont.)

Unit Size	Fan Size	1 hp		1.5 - 2 hp		3 - 4 hp		5 - 5.5 hp		7.5 - 10 hp		15 - 20 hp		25 - 30 hp		40 hp		50 - 60 hp		75 hp		100 hp																
		CTCD _{min}	CTCD _{max}	CTCD _{min}	CTCD _{max}	CTCD _{min}	CTCD _{max}	CTCD _{min}	CTCD _{max}	CTCD _{min}	CTCD _{max}	CTCD _{min}	CTCD _{max}	CTCD _{min}	CTCD _{max}	CTCD _{min}	CTCD _{max}	CTCD _{min}	CTCD _{max}	CTCD _{min}	CTCD _{max}	CTCD _{min}	CTCD _{max}															
		mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in															
0608	FCG 160	162	211	187	154	204	179	142	192	167	131	180	156	117	165	141	110	152	131	-	-	-	-															
		146	198	171	137	187	162	124	174	149	112	182	137	96	145	120	87	130	109	-	-	-	-															
0609	FCG 180	146	196	171	137	187	162	124	174	149	112	182	137	96	145	120	87	130	109	-	-	-	-															
		146	196	171	137	187	162	124	174	149	112	182	137	96	145	120	87	130	109	-	-	-	-															
0610	FCG 200	207	256	232	198	248	223	184	234	209	171	221	196	162	201	177	133	181	167	-	-	-	-															
		223	272	247	213	262	238	199	249	224	185	235	210	163	213	188	140	190	165	-	-	-	-															
0712	FCG BCG 225																			-	-	-	-															
																				-	-	-	-															
0813	FCG BCG 250	261	308	284	250	298	274	235	283	259	220	268	244	195	244	219	166	215	191	-	-	-	-															
		304	360	327	293	340	316	278	324	301	262	309	285	236	284	260	205	254	229	-	-	-	-															
0914	FCG BCG 315	304	360	327	293	340	316	278	324	301	262	309	285	236	284	260	205	254	229	-	-	-	-															
		300	344	322	288	332	310	272	317	295	256	301	278	229	274	252	194	242	218	-	-	-	-															
1015	FCG BCG 355	300	344	322	288	332	310	272	317	295	256	301	278	229	274	252	194	242	218	-	-	-	-															
		342	385	363	330	374	352	314	358	336	297	341	319	270	315	292	235	281	258	-	-	-	-															
1016	FCG BCG 400	300	344	322	288	332	310	272	317	295	256	301	278	229	274	252	194	242	218	-	-	-	-															
		342	385	363	330	374	352	314	358	336	297	341	319	270	315	292	235	281	258	-	-	-	-															
1117	FCG BCG 450	312	363	338	300	351	326	286	338	312	267	341	319	270	315	292	235	281	258	-	-	-	-															
		342	385	363	330	374	352	314	358	336	297	341	319	270	315	292	235	281	258	-	-	-	-															
1317	FCG BCG 450	312	363	338	300	351	326	286	338	312	267	341	319	270	315	292	235	281	258	-	-	-	-															
		312	363	338	300	351	326	286	338	312	267	341	319	270	315	292	235	281	258	-	-	-	-															
1518	FCG BCG 500	401	453	427	390	442	416	376	428	402	357	409	383	335	389	362	305	360	332	-	-	-	-															
																				-	-	-	-															
1522	FCG BCG 500	-	-	-	-	-	-	-	-	-	-	-	-	-	355	359	332	275	330	302	255	311	283	229	285	257	202	260	231	170	229	200	170	229	200			
																365	417	391	334	387	361	313	367	340	287	341	314	258	314	286	225	282	254	282	254			
1622	FCG 560	-	-	-	-	-	-	-	-	-	-	-	-	-	430	485	457	400	456	428	381	437	409	355	411	383	328	385	356	296	354	325	296	354	325			
																400	485	457	400	456	428	381	437	409	355	411	383	328	385	356	296	354	325	296	354	325		
1822	FCG BCG 630	-	-	-	-	-	-	-	-	-	-	-	-	-	485	549	522	464	520	492	443	500	472	417	474	445	389	447	418	356	415	385	366	415	385			
																404	638	631	573	628	601	552	608	580	525	582	554	497	554	525	464	521	482	521	482	521	482	
1824	FCG BCG 630	-	-	-	-	-	-	-	-	-	-	-	-	-	629	684	666	598	654	626	578	634	606	551	608	580	523	580	552	490	548	519	490	548	519	490	548	519
																404	638	631	573	628	601	552	608	580	525	582	554	497	554	525	464	521	482	521	482	521	482	
1825	FCG BCG 630	-	-	-	-	-	-	-	-	-	-	-	-	-	629	684	666	598	654	626	578	634	606	551	608	580	523	580	552	490	548	519	490	548	519	490	548	519
																404	638	631	573	628	601	552	608	580	525	582	554	497	554	525	464	521	482	521	482	521	482	
2025	FCG 710	-	-	-	-	-	-	-	-	-	-	-	-	-	629	684	666	598	654	626	578	634	606	551	608	580	523	580	552	490	548	519	490	548	519	490	548	519
																753	810	781	722	780	751	702	760	731	675	734	704	647	706	676	613	643	613	643	613	643		
2226	FCG 710	-	-	-	-	-	-	-	-	-	-	-	-	-	629	684	666	598	654	626	578	634	606	551	608	580	523	580	552	490	548	519	490	548	519	490	548	519
																753	810	781	722	780	751	702	760	731	675	734	704	647	706	676	613	643	613	643	613	643		
2330	FCG BCG 800	-	-	-	-	-	-	-	-	-	-	-	-	-	886	953	925	866	923	885	845	903	874	819	877	848	790	849	819	756	815	786	766	815	786	766	815	786
																753	810	781	722	780	751	702	760	731	675	734	704	647	706	676	613	643	613	643	613	643		
2334	FCG BCG 900	-	-	-	-	-	-	-	-	-	-	-	-	-	886	953	925	866	923	885	845	903	874	819	877	848	790	849	819	756	815	786	766	815	786	766	815	786
																753	810	781	722	780	751	702	760	731	675	734	704	647	706	676	613	643	613	643	613	643		
2434	FCG 1000	-	-	-	-	-	-	-	-	-	-	-	-	-	886	953	925	866	923	885	845	903	874	819	877	848	790	849	819	756	815	786	766	815	786	766	815	786
																1041	1073	1057	1010	1043	1027	990	1023	1006	963	996	982	947	981	964	914	948	931	914	948	931	914	948
2636	FCG 1000	-	-	-	-	-	-	-	-	-	-	-	-	-	886	953	925	866	923	885	845	903	874	819	877	848	790	849	819	756	815	786	766	815	786	766	815	786
																1041	1073	1057	1010	1043	1027	990	1023	1006	963	996	982	947	981	964	914	948	931	914	948	931	914	948

Unit Size	Fan Size	1 hp			1.5 ~ 2 hp			3 ~ 4 hp			5 ~ 5.5 hp			7.5 ~ 10 hp			UBFUBR (CTCD in mm)			25 ~ 30 hp			40 hp			50 ~ 60 hp			75 hp			100 hp		
		CTCD _{min}	CTCD _{max}	CTCD _{avg}	CTCD _{min}	CTCD _{max}	CTCD _{avg}	CTCD _{min}	CTCD _{max}	CTCD _{avg}	CTCD _{min}	CTCD _{max}	CTCD _{avg}	CTCD _{min}	CTCD _{max}	CTCD _{avg}	CTCD _{min}	CTCD _{max}	CTCD _{avg}	CTCD _{min}	CTCD _{max}	CTCD _{avg}	CTCD _{min}	CTCD _{max}	CTCD _{avg}	CTCD _{min}	CTCD _{max}	CTCD _{avg}	CTCD _{min}	CTCD _{max}	CTCD _{avg}			
0608	FCG 160	172	222	197	163	213	188	150	200	175	187	162	118	188	143	103	149	126	-	-	-	-	-	-	-	-	-	-	-	-	-			
	FCG 180	161	209	185	151	199	175	136	185	161	122	171	147	100	150	125	81	129	105	-	-	-	-	-	-	-	-	-	-	-	-			
0609	FCG 160	161	209	185	151	199	175	136	185	161	122	171	147	100	150	125	81	129	105	-	-	-	-	-	-	-	-	-	-	-	-			
	FCG 180	161	209	185	151	199	175	136	185	161	122	171	147	100	150	125	81	129	105	-	-	-	-	-	-	-	-	-	-	-	-			
0610	FCG 200	222	270	246	212	261	236	198	246	222	183	232	207	160	210	185	134	184	159	-	-	-	-	-	-	-	-	-	-	-	-			
	FCGBOG 225	243	290	266	232	280	256	217	265	241	202	250	226	177	226	202	148	198	173	-	-	-	-	-	-	-	-	-	-	-	-			
0712	FCGBOG 250										202	250	226	177	226	202	148	198	173	-	-	-	-	-	-	-	-	-	-	-	-			
	FCGBOG 280	290	355	312	279	324	301	263	309	286	247	292	270	220	267	243	187	235	211	-	-	-	-	-	-	-	-	-	-	-	-			
0813	FCGBOG 315	337	381	359	326	370	348	310	354	332	338	316	266	312	289	232	278	255	-	-	-	-	-	-	-	-	-	-	-	-	-			
	FCGBOG 315	337	381	359	326	370	348	310	354	332	338	316	266	312	289	232	278	255	-	-	-	-	-	-	-	-	-	-	-	-	-			
0914	FCGBOG 355	341	382	362	329	371	350	313	355	334	296	338	317	268	311	289	232	275	254	-	-	-	-	-	-	-	-	-	-	-	-			
	FCGBOG 355	341	382	362	329	371	350	313	355	334	296	338	317	268	311	289	232	275	254	-	-	-	-	-	-	-	-	-	-	-	-			
1015	FCGBOG 400	392	432	412	380	421	400	364	405	384	347	388	367	319	360	339	282	324	303	-	-	-	-	-	-	-	-	-	-	-	-			
	FCGBOG 400	392	432	412	380	421	400	364	405	384	347	388	367	319	360	339	282	324	303	-	-	-	-	-	-	-	-	-	-	-	-			
1016	FCGBOG 355	341	382	362	329	371	350	313	355	334	296	338	317	268	311	289	232	275	254	-	-	-	-	-	-	-	-	-	-	-	-			
	FCGBOG 400	392	432	412	380	421	400	364	405	384	347	388	367	319	360	339	282	324	303	-	-	-	-	-	-	-	-	-	-	-	-			
1117	FCGBOG 400	392	432	412	380	421	400	364	405	384	347	388	367	319	360	339	282	324	303	-	-	-	-	-	-	-	-	-	-	-	-			
	FCGBOG 450	354	399	377	342	387	365	328	373	350	309	354	331	285	331	308	252	299	276	-	-	-	-	-	-	-	-	-	-	-	-			
1317	FCGBOG 450	354	399	377	342	387	365	328	373	350	309	354	331	285	331	308	252	299	276	-	-	-	-	-	-	-	-	-	-	-	-			
	FCGBOG 500	432	478	455	420	466	443	406	452	429	387	433	410	363	410	387	331	378	355	-	-	-	-	-	-	-	-	-	-	-	-			
1518	FCGBOG 500	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
	FCGBOG 500	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
1522	FCG 560	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
	FCG 560	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
1622	FCG 560	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
	FCGBOG 630	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
1822	FCGBOG 630	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
	FCG 710	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
1824	FCGBOG 630	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
	FCG 710	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
1824	FCG 710	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
	FCG 710	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
1824	FCGBOG 630	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
	FCG 710	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
1825	FCG 710	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
	FCG 710	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
2025	FCG 710	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-</							

Base Unit Casing Weight

Table below shows the base unit casing weight (approximation) for 25mm, 50mm and 50mm NTB casing.

UNIT SIZE	MXB		FAN		COIL		HVF		BF		LVF		ACC	
	25	50	25	50	25	50	25	50	25	50	25	50	25	50
0608	31	38	34	42	34	42	25	31	34	42	34	42	34	42
0609	34	41	37	45	37	45	27	34	37	45	37	45	37	45
0610	36	44	43	52	40	48	30	36	40	48	40	48	40	48
0712	45	54	52	63	48	58	37	45	48	58	48	58	48	58
0813	51	61	64	76	55	66	42	52	55	66	55	66	55	66
0914	62	74	76	90	62	74	48	58	62	74	62	74	62	74
1015	70	83	84	100	70	83	55	66	70	83	70	83	70	83
1016	73	87	88	105	73	87	57	69	73	87	73	87	73	87
1117	81	96	109	128	81	96	64	77	81	96	81	96	81	96
1317	90	107	120	141	90	107	72	87	90	107	90	107	90	107
1518	117	137	136	159	104	122	84	100	104	122	104	122	104	122
1522	135	158	171	199	121	142	99	117	121	142	121	142	121	142
1622	141	165	185	215	126	148	104	123	126	148	126	148	126	148
1822	161	187	199	231	137	161	114	135	137	161	137	161	137	161
1824	171	200	212	246	147	172	122	144	147	172	147	172	147	172
1825	177	206	227	262	152	178	127	149	152	178	152	178	152	178
2025	190	221	242	280	164	192	138	162	164	192	164	192	164	192
2226	228	264	283	327	182	212	154	180	182	212	182	212	182	212
2330	262	302	343	394	211	245	180	211	211	245	211	245	211	245
2334	288	333	376	431	234	271	201	235	234	271	234	271	234	271
2434	297	343	397	455	242	280	208	243	242	280	242	280	242	280
2636	329	379	435	498	270	312	234	272	270	312	270	312	270	312

Note: Weight in kg.

Fan Motor Weight

Table below shows the approximate fan motor weight

Motor HP	Motor kW	Motor Shaft Diameter (mm)	Approx. Weight (kg)	Frame Number
1	0.75	19	15	D80
1.5	1.1	24	20	D90S
2	1.5	24	22	D90L
3 / 4	2.2 / 3.0	28	30	D100L
5 / 5.5	3.7 / 4.4	28	42	D112M
7.5	5.5	38	65	D132S
10	7.5	38	76	D132M
15	11	42	118	D160M
20	15	42	139	D160L
25	18.5	48	189	D180M
30	22	48	203	D180L
40	30	55	290	D200L
50	37	60	320	D225SC
60	45	60	355	D225MC
75	55	70	520	D2250SA

Notes :

- Motor weights based on 4 - pole, 415/3Ø/50Hz induction type TEFC foot mounted motor.
- Motor : suitable for direct-on-line/Reduced voltage starting mechanism.
- Standard motor shall be per IEC standard IP55 enclosure with Class F insulation and B Temperature rise complying with BS2757.
- Maximum ambient temperature 40°C.
- For derivation of motor kW from fan BkW use

$$\text{Motor kW} = \text{Fan BkW} \times A, \text{ where } A = 1.20 \text{ if BkW} < 10\text{kW}$$

$$A = 1.15 \text{ if BkW} > 10\text{kW}$$
- Please refer to your nearest Carrier representatives for special motor voltages or application.

Fan Blower Specifications

Gebhardt Fan

Fan Type	Fan Size	Maximum RPM	Maximum BkW	Fan Shaft Diameter (mm) end tolerance
Forward Curved	FCG 02-160	4250	3.5	20 _{k6}
	FCG 02-180	4000	3.5	20 _{k6}
	FCG 02-200	3800	4.0	20 _{k6}
	FCG 02-225	3400	5.0	20 _{k6}
	FCG 02-280	2730	6.3	25 _{k6}
	FCG 02-315	2400	6.3	25 _{k6}
	FCG 02-355	1900	9.0	25 _{k6}
	FCG 02-400	1900	9.0	30 _{k6}
	FCG 05-450	1700	16.0	30 _{k6}
	FCG 05-500	1500	16.0	30 _{k6}
	FCG 02-560	1200	13.5	40 _{k6}
	FCG 02-630	1000	13.5	40 _{k6}
	FCG 05-630	1000	26.0	40 _{k6}
	FCG 02-710	850	13.5	50 _{k6}
	FCG 05-710	850	38.0	50 _{k6}
	FCG 05-800	750	38.0	50 _{k6}
	FCG 05-800/G1	750	38.0	50 _{k6}
Backward Curved	FCG 05-900	670	47.0	60 _{k6}
	FCG 05-900/G1	670	47.0	60 _{k6}
	FCG 05-1000	600	47.0	60 _{k6}
	BCG 12-225	6640	6.5	20 _{k6}
	BCG 12-280	5235	6.5	25 _{k6}
	BCG 12-315	4418	6.5	25 _{k6}
	BCG 12-355	3200	6.5	25 _{k6}
	BCG 15-400	3600	26.6	30 _{k6}
	BCG 15-450	3360	26.6	30 _{k6}
	BCG 15-500	2920	26.6	30 _{k6}
	BCG 15-560	2400	32.8	40 _{k6}
	BCG 15-630	1880	32.8	40 _{k6}
	BCG 15-710	2000	49.9	50 _{k6}
	BCG 15-800	1470	49.9	50 _{k6}
	BCG 15-800/G1	1470	49.9	50 _{k6}
	BCG 15-900	1430	68.0	60 _{k6}
	BCG 15-900/G1	1430	68.0	60 _{k6}
	BCG 15-1000	1140	68.0	60 _{k6}

Kruger Fan

Fan Type	Fan Size	Maximum RPM	Maximum BkW	Fan Shaft Diameter (mm) end tolerance
Forward Curved	FDA 180 CL	3700	2.0	20 _{g6}
	FDA 200 CL	3300	2.5	20 _{g6}
	FDA 225 CL	2900	3.0	20 _{g6}
	FDA 250 CL	2700	3.0	20 _{g6}
	FDA 280 CL	2400	4.0	25 _{g6}
	FDA 315 CL	2100	5.5	25 _{g6}
	FDA 355 CL	1800	5.5	30 _{g6}
	FDA 400 TL	1800	15.0	35 _{g6}
	FDA 450 TL	1600	18.5	40 _{g6}
	FDA 500 TL	1300	18.5	45 _{g6}
	FDA 560 TL	1200	22.0	50 _{g6}
	FDA 630 TL	1000	22.0	50 _{g6}
Backward Curved	FDA 710 TL	900	25.0	60 _{g6}
	FDA 800 TM	750	25.0	60 _{g6}
	FDA 900 TM	650	30.0	65 _{g6}
	FDA 1000 TM	600	37.0	70 _{g6}
	BDB 225 CL	4500	2.2	20 _{g6}
	BDB 250 CL	4000	2.5	20 _{g6}
	BDB 280 CL	3500	3.0	25 _{g6}
	BDB 315 CL	3100	4.0	25 _{g6}
	BDB 355 CL	2700	5.0	30 _{g6}
	BDB 400 TL	3200	14.0	35 _{g6}
	BDB 450 TL	2900	18.0	40 _{g6}
	BDB 500 TL	2500	20.0	40 _{g6}
	BDB 560 TL	2200	25.0	45 _{g6}
	BDB 630 TL	2000	30.0	50 _{g6}
	BDB 710 TL	1800	40.0	50 _{g6}
	BDB 800 XM	1600	50.0	65 _{g6}
	BDB 900 XM	1400	60.0	70 _{g6}
	BDB 1000 XM	1300	80.0	80 _{g6}

Remark:

- A selection is valid provided if first reaches and not exceed either maximum limits (RPM of BkW).
- Fan motor selection must be within the range of maximum rpm and maximum BkW.
- Price may very depending on the fan options.

PART NAME			PART NO.		Unit Size																			
			0608	0609	0610	0712	0813	0914	1015	1016	1117	1317	1518	1522	1622	1822	1824	1825	2025	2226	2330	2334	2434	2636
a) HEPA filter EU13 Particle Board Frame (media Thickness 292mm)	(H289 X W595)mm	3GA509-903	-	-	-	-	-	2	2	2	2	-	-	-	3	-	-	-	-	4	-	5	-	-
	(H595 X W289)mm	3GA509-904	-	-	1	-	-	-	-	1	1	2	2	2	2	2	2	-	-	-	3	3	3	4
	(H442 X W595)mm	3GA509-905	1	1	1	-	-	2	-	-	-	-	-	-	-	3	3	4	-	-	4	-	5	-
	(H595 X W595)mm	3GA509-902	-	-	-	1	2	-	2	2	2	4	4	6	6	6	6	8	12	12	12	15	15	20
b) HEPA filter EU13 Aluminium Frame (media Thickness 292mm)	(H289 X W595)mm	3GA509-920	-	-	-	-	-	2	2	2	2	-	-	-	3	-	-	-	-	4	-	5	-	-
	(H595 X W289)mm	3GA509-919	-	-	1	-	-	-	-	1	1	2	2	2	2	2	2	-	-	-	3	3	3	4
	(H442 X W595)mm	3GA509-921	1	1	1	-	-	2	-	-	-	-	-	-	-	3	3	4	-	-	4	-	5	-
	(H595 X W595)mm	3GA509-918	-	-	-	1	2	-	2	2	2	4	4	6	6	6	6	8	12	12	12	15	15	20
c) 1" Bag Filter 529mm L (EU5)	(H289 X W595)mm	39GA509-373	-	-	-	3	-	2	2	3	-	2	-	2	5	5	2	4	-	4	7	8	8	4
	(H595 X W595)mm	39GA509-378	-	-	-	-	2	-	2	2	2	4	4	6	6	6	6	8	12	12	12	15	15	20
	(H391 X W495)mm	39GA509-375	-	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	(H391 X W595)mm	39GA509-376	1	-	-	-	-	2	-	-	3	-	2	-	-	-	3	-	-	-	-	-	-	-
d) 1" Bag Filter 529mm L (EU6)	(H289 X W595)mm	39GA509-230	-	-	-	3	-	2	2	3	-	2	-	2	5	5	2	4	-	4	7	8	8	4
	(H595 X W595)mm	39GA509-235	-	-	-	-	2	-	2	2	2	4	4	6	6	6	6	8	12	12	12	15	15	20
	(H391 X W495)mm	39GA509-232	-	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	(H391 X W595)mm	39GA509-233	1	-	-	-	-	2	-	-	3	-	2	-	-	-	3	-	-	-	-	-	-	-
e) 1" Bag Filter 529mm L (EU7)	(H289 X W595)mm	39GA509-208	-	-	-	3	-	2	2	3	-	2	-	2	5	5	2	4	-	4	7	8	8	4
	(H595 X W595)mm	39GA509-213	-	-	-	-	2	-	2	2	2	4	4	6	6	6	6	8	12	12	12	15	15	20
	(H391 X W495)mm	39GA509-210	-	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	(H391 X W595)mm	39GA509-211	1	-	-	-	-	2	-	-	3	-	2	-	-	-	3	-	-	-	-	-	-	-
f) 1" Bag Filter 529mm L (EU8)	(H289 X W595)mm	39GA509-240	-	-	-	3	-	2	2	3	-	2	-	2	5	5	2	4	-	4	7	8	8	4
	(H595 X W595)mm	39GA509-245	-	-	-	-	2	-	2	2	2	4	4	6	6	6	6	8	12	12	12	15	15	20
	(H391 X W495)mm	39GA509-242	-	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	(H391 X W595)mm	39GA509-243	1	-	-	-	-	2	-	-	3	-	2	-	-	-	3	-	-	-	-	-	-	-
g) 2" HVF Filter Washable (G3)	(H289 X W595)mm	39GA509-038	-	-	-	3	-	2	2	3	-	2	-	2	5	5	2	4	-	4	7	8	8	4
	(H595 X W595)mm	39GA509-043	-	-	-	-	2	-	2	2	2	4	4	6	6	6	6	8	12	12	12	15	15	20
	(H391 X W495)mm	39GA509-040	-	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	(H391 X W595)mm	39GA509-041	1	-	-	-	-	2	-	-	3	-	2	-	-	-	3	-	-	-	-	-	-	-
h) 2" HVF Filter Disposable (G4)	(H289 X W595)mm	39GA509-026	-	-	-	3	-	2	2	3	-	2	-	2	5	5	2	4	-	4	7	8	8	4
	(H595 X W595)mm	39GA509-031	-	-	-	-	2	-	2	2	2	4	4	6	6	6	6	8	12	12	12	15	15	20
	(H391 X W495)mm	39GA509-028	-	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	(H391 X W595)mm	39GA509-029	1	-	-	-	-	2	-	-	3	-	2	-	-	-	3	-	-	-	-	-	-	-

Coil Weight

Type of Coil		Hot Water								Chilled Water																Direct Expansion											
No of Row		1				2				4				5				6				7				8				4				6			
Fins/Inch		8	10	12	14	8	10	12	14	8	10	12	14	8	10	12	14	8	10	12	14	8	10	12	14	8	10	12	14	8	10	12	14				
Unit Size	Face Area (sq.m)	Estimated Dry Coil Weight (kg)																																			
0608	0.17	16	16	16	17	16	16.3	16.6	16.9	19.5	20.1	20.7	21.3	21.3	22	22.7	23.5	23	23.9	24.8	25.7	24.8	25.8	26.9	27.9	26.5	27.7	28.9	30.1	19.5	20.1	20.7	21.3	23	23.9	24.8	25.7
0609	0.25	21	22	22	22	21.3	21.7	22.1	22.6	26	26.9	27.7	28.6	28.4	29.5	30.5	31.6	30.8	32.1	33.3	34.6	33.1	34.6	36.1	37.6	35.5	37.2	38.9	40.7	26	26.9	27.7	28.6	30.8	32.1	33.3	34.6
0610	0.34	26	26	27	28	25.9	26.5	27.1	27.7	32.3	33.5	34.7	35.9	35.5	37	38.5	39.9	38.7	40.5	42.2	44	41.9	44	46	48.1	45.1	47.4	49.8	52.2	32.3	33.5	34.7	35.9	38.7	40.5	42.2	44
0712	0.49	33	34	35	36	33.2	34	34.9	35.7	42.1	43.8	45.6	47.3	46.6	48.8	50.9	53	51.1	53.7	56.2	58.8	55.6	58.6	61.6	64.6	60	63.5	66.9	70.4	42.1	43.8	45.6	47.3	51.1	53.7	56.2	58.8
0813	0.70	40	42	43	44	40.6	41.9	43.1	44.3	53.2	55.7	58.1	60.5	59.5	62.5	65.6	68.7	65.8	69.4	73.1	76.8	72.1	76.3	80.6	84.9	78.3	83.2	88.1	93	53.2	55.7	58.1	60.5	65.8	69.4	73.1	76.8
0914	0.89	48	49	51	53	48.1	49.6	51.2	52.8	63.9	67	70.2	73.3	71.8	75.7	79.6	83.5	79.7	84.4	89.1	93.8	87.7	93.1	98.6	104	95.6	102	108	114	63.9	67	70.2	73.3	79.7	84.4	89.1	93.8
1015	1.05	52	53	55	57	51.8	53.6	55.5	57.3	70.4	74	77.7	81.4	79.7	84.3	88.8	93.4	89	94.5	100	105	98.3	105	111	118	108	115	122	130	70.4	74	77.7	81.4	89	94.5	100	105
1016	1.15	56	58	60	62	56	58	60	62	76.2	80.3	84.3	88.3	86.4	91.4	96.4	101	96.5	103	109	115	107	114	121	128	117	125	133	141	76.2	80.3	84.3	88.3	96.5	103	109	115
1117	1.44	64	66	69	72	64.2	66.7	69.2	71.7	89.3	94.3	99.3	104	102	108	114	121	114	122	129	137	127	136	144	153	139	149	159	169	89.3	94.3	99.3	104	114	122	129	137
1317	1.68	69	72	75	78	69.6	72.5	75.5	78.4	99	105	111	117	114	121	128	136	128	137	146	155	143	153	164	174	158	170	181	193	99	105	111	117	128	137	146	155
1518	2.08	80	83	87	90	79.8	83.5	87.1	90.7	116	123	131	138	134	143	152	161	152	163	174	185	170	183	196	208	188	203	217	232	116	123	131	138	152	163	174	185
1522	2.36	88	93	97	101	88.7	92.8	96.9	101	129	138	146	154	150	160	170	181	170	183	195	207	191	205	219	234	211	227	244	260	129	138	146	154	170	183	195	207
1622	2.55	93	98	102	107	93.5	98	102	107	137	146	155	164	159	171	182	193	181	195	208	222	203	219	235	250	225	243	261	279	137	146	155	164	181	195	208	222
1822	2.93	102	107	112	117	102	107	112	118	153	163	173	183	178	191	203	216	203	218	234	249	228	246	264	282	254	274	295	315	153	163	173	183	203	218	234	249
1824	3.30	113	118	124	130	113	119	124	130	169	181	192	204	197	212	226	241	226	243	260	278	254	274	294	314	282	305	328	351	169	181	192	204	226	243	260	278
1825	3.59	121	127	133	140	121	128	134	140	182	195	207	220	213	228	244	260	243	262	281	300	274	296	318	340	304	329	355	380	182	195	207	220	243	262	281	300
2025	3.96	128	135	142	149	129	136	142	149	196	210	224	238	230	247	264	282	263	284	305	326	297	321	346	370	331	359	386	414	196	210	224	238	263	284	305	326
2226	4.63	144	152	160	168	144	152	160	168	223	239	255	271	262	282	302	323	301	325	350	374	341	369	397	425	380	412	445	477	223	239	255	271	301	325	350	374
2330	5.49	164	174	183	193	164	174	184	193	257	276	295	314	303	327	351	375	350	378	407	436	396	429	463	496	442	480	519	557	257	276	295	314	350	378	407	436
2334	6.43	188	199	211	222	189	200	211	222	296	319	341	364	350	378	406	434	404	438	471	505	458	497	536	576	512	557	601	646	296	319	341	364	404	438	471	505
2434	6.99	200	213	225	237	201	213	225	237	318	342	367	391	376	407	437	468	435	471	508	545	493	536	579	622	552	601	650	698	318	342	367	391	435	471	508	545
2636	8.12	225	239	253	268	226	240	254	268	361	390	418	446	429	465	500	535	497	539	582	625	565	614	664	714	632	689	746	803	361	390	418	446	497	539	582	625

Note:

1. All coils are of 12.7mm OD copper tubes with aluminium plated fin construction.
2. To estimate the weight of water content (kg) use: Face area (sq.m) x no of rows x 7.0kg/sq.m
3. To estimate dry coil weight (kg) for copper plate fin construction, use the above data (kg) x 3.3

Fan Housing Dimension And Weight

Table below shows full details of 39G fan housing dimension and weight.

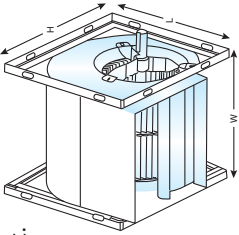
Gebhardt Fan

Fan Type	Fan Size	Length (mm)	Width (mm)	Height (mm)	Weight (kg)
Forward Curved	FCG 02-160	269	257	315	7
	FCG 02-180	299	282	352	9
	FCG 02-200	328	309	388	10
	FCG 02-225	366	350	433	12
	FCG 02-280	449	423	532	20
	FCG 02-315	502	465	596	23
	FCG 02-355	562	515	669	30
	FCG 02-400	632	578	750	45
	FCG 05-450	708	644	826	65
	FCG 05-500	827	713	952	80
	FCG 02-560	875	787	1046	97
	FCG 02-630	979	874	1173	115
	FCG 05-630	1028	876	1198	137
	FCG 02-710	1104	971	1324	175
	FCG 05-710	1152	973	1342	183
	FCG 05-800	1290	1092	1509	233
	FCG 05-800/G1	1290	1092	1509	233
Backward Curved	FCG 05-900	1448	1225	1697	316
	FCG 05-900/G1	1448	1225	1699	316
	FCG 05-1000	1573	1362	1889	376
	BCG 12-225	366	350	432	15
	BCG 12-280	449	423	532	23
	BCG 12-315	502	465	596	27
	BCG 12-355	562	515	699	36
	BCG 15-400	625	580	731	61
	BCG 15-450	708	644	826	73
	BCG 15-500	827	713	952	94
	BCG 15-560	921	789	1074	125
	BCG 15-630	1028	876	1198	149
	BCG 15-710	1152	973	1342	201
	BCG 15-800	1290	1092	1509	250
	BCG 15-800/G1	1290	1092	1509	250
	BCG 15-900	1448	1225	1697	358
	BCG 15-900/G1	1448	1225	1697	358
	BCG 15-1000	1573	1362	1889	416

Kruger Fan

Fan Type	Fan Size	Length (mm)	Width (mm)	Height (mm)	Weight (kg)
Forward Curved	FDA 180 CL	294	268	336	9.5
	FDA 200 CL	306	306	370	10.5
	FDA 225 CL	348	338	415	12
	FDA 250 CL	383	372	460	15
	FDA 280 CL	432	420	518	20
	FDA 315 CL	480	464	578	24
	FDA 355 CL	548	532	654	32
	FDA 400 TL	612	586	736	55
	FDA 450 TL	681	648	827	61
	FDA 500 TL	750	718	918	81
	FDA 560 TL	844	814	1030	110
	FDA 630 TL	945	900	1157	140
	FDA 710 TL	1057	998	1302	192
Backward Curved	FDA 800 TM	1180	1106	1468	281
	FDA 900 TM	1319	1230	1648	326
	FDA 1000 TM	1450	1366	1810	384
	BDB 225 CL	348	338	415	13
	BDB 250 CL	383	372	460	16
	BDB 280 CL	432	420	518	22
	BDB 315 CL	480	464	578	27
	BDB 355 CL	548	532	654	41
	BDB 400 TL	612	586	736	67
	BDB 450 TL	681	648	827	89
	BDB 500 TL	750	718	918	118
	BDB 560 TL	844	814	1030	158
	BDB 630 TL	945	900	1157	197
	BDB 710 TL	1057	998	1302	251
	BDB 800 XM	1180	1106	1468	323
	BDB 900 XM	1319	1230	1648	397
	BDB 1000 XM	1450	1366	1810	512

Note: Width does not include both end of shaft.



General

- 1.1 Furnish and install central station air handling units of the type, size and capacity shown on the equipment schedule.
- 1.2 Equipment schedules and specifications are based on Carrier 39G 'Galaxy' series. The design of the air-handling unit is based on the use of modular panels and extruded aluminium perimeter frames with composite material for corner piece.
- 1.3 Units shall be horizontal or vertical draw-through type as shown on the drawings and shall consist (in the direction of air flow) of a mixing box section, a filter section, a coil section and a fan section generally in accordance with the attached equipment schedules.
- 1.4 Unit shall be supplied with welded unit base with holes for rigging located to suit optimum hoisting stability. The use of slings and spreader bars are recommended for large section.

Casing Construction (25mm and 50mm)

- 2.1 The unit casing construction shall have double skin construction to allow access without damaging the insulation and isolating it from the air stream.
- 2.2 The casing shall have extruded aluminium perimeter frame, with modular panels and composite material corner piece. The panels shall be constructed such that they shall comprise of two layers of steel sheet with injected insitu CFC-Free Polyurethane insulation with thermal conductivity factor of 0.019 w/mk and density of 40kg/m³ in between. The assembly of fix panels to the perimeter frame shall be from inside the unit. The removable panels should be provided on the both sides of the units with hex socket compression type latch assembly and large & non-conductive handles. All external panels surface shall be pre-painted zinc allume. Internal panels shall be galvanized steel sheet.

Fan Section

- 3.1 The fan shall be of the forward curved or backward curved DIDW centrifugal type. The blade of forward curved wheels shall be galvanised steel. The blade of backward curved wheel shall be heavy gauge steel, treated and painted. The fan assembly shall be statically and dynamically balanced to the 80% of maximum fan speed as shown in the schedule.
- 3.2 Factory/field furnished and installed fan motors shall be mounted inside the fan section on the mounting base. The motors shall be of the totally enclosed fan cooled (TEFC) type (or open drip proof type) suitable for use with...Volts...Phase....Hz electrical supply. Motor speed shall be as per schedule.
- 3.3 The fan drive package shall consist of fixed pitch fan and motor pulleys and V-belts, adequately sized to accommodate the application service factor.

- 3.4 The fan and motor assembly shall be mounted on an adjustable mounting base with factory supplied spring anti-vibration mountings. The fan discharge shall be squared (for forward curved or backward curved fans) in area and flanged and isolated from the casing by a fire retardant grade flexible connection. Only on fan discharge shall be provided.

Coil

- 4.1 The coils shall be of the cartridge type, mounted over the condensate drain pan (for cooling coil). Coils shall be tested at 2760kPag air pressure while submerged in water. Coils performance shall be rated in accordance to ARI standard 410.
- 4.2 Chilled water coils shall have aluminium/copper fins with belled collars and bonded to 12.7mm OD copper tubes by mechanical expansion. Fins shall be of the "Dual Sinewave" form. Coil shall have galvanized steel casing and steel headers with male threaded connections. Working pressure shall be 2060kPag at 93°C. Coils shall be drainable and have non-air-trapping circuits. No turbulence promoting devices will be permitted inside the tubes. Headers shall have drain and vent connections. Note : copper header shall be sweat type connection (brazed).
- 4.3 Direct expansion coil shall have aluminium/copper fins with belled collars and bonded to 12.7mm OD copper tubes by mechanical expansion. Fins shall be of the "Dual Sinewave" form. Coils shall be provided with brass distributors with sweat type connections. Coils shall have full-face active area with intertwined circuits for equal loading on each circuit. Suction and metering valve connection shall be on the same end. After leak testing, coil shall be charged with dry air. Coils shall be designed and tested in accordance to ARI standard.
- 4.4 Hot Water coils shall be constructed similar to the chilled water coil as per Section 4.3 except that the maximum working pressure shall be 1200kPag at 205°C.
- 4.5 All coils shall have counter flow arrangement.
- 4.6 The condensate drain pan shall be constructed of 16-gauge powder painted galvanized steel with 40mm depth and 600mm in length. Slider shall be welded at drain pan for easier coil installation and removal. The condensate drain pan shall be constructed in slope with one female threaded pipe connection of 43mm OD routed through bottom for drainage in accordance to ASHRAE 62-89 Standard.

Filter Section (optional)

- 5.1 The filter section shall be supplied by the air handling unit manufacturer with the same casing construction as specified for the other unit sections. The type of filters to be housed within the filter section shall be the type and efficiency indicated on the equipment schedule.
- 5.2 High velocity filter section shall be capable of receiving 25mm or 50mm thick filters of standard size. Low velocity filter section shall be capable of receiving 50mm deep filters mounted in 50mm width holding frames.
- 5.3 Bag filter section shall be capable of accepting bag filters with length up to 529mm and 22mm-filter header thickness.

Access Section (optional)

- 6.1 Access section shall be supplied by the air handling unit manufacturer with the same casing construction as specified for the other sections. The access panels shall be ultra low leak construction with hex socket compression type latch assembly and large & non-conductive handles for easy removal of the access panel. The access panel shall be double skinned construction and internally insulated with injected insitu CFC-Free polyurethane insulation. The access panel perimeter shall be lined with ribseals.

ViewPorts (optional)

- 7.1 ViewPorts shall be available as factory installed option on access doors. The viewports shall be fabricated from round, double plane, clear and rigid polycarbonate with a minimum diameter of 200.0mm and installed with screws that do not come into direct contact with the internal surface of the air handling unit. The viewport shall be gasketed on the internal and external surfaces with thermoplastic elastomer (TPE) gaskets to ensure air-tightness. The viewport shall be capable of withstanding unit operating pressures.

Marine Lamp (for inspection purpose) (optional)

- 8.1 Marine lamps shall be available as factory-installed option on the fan and access sections of the air handling unit. The construction shall be vapour and weather tight rated to IP44. The marine lamp shall consist of a structural light fitting base with aluminium reflector and receptacle, and a structural glass globe protected by wire mesh. The marine lamp shall come fitted with a light bulb complete with factory installed wiring and conduits and terminated with an on/off switch located external to the unit and near to the access door.

Drain Pan

- 9.1 The drain pan shall be available fabricated in galvanized steel and powder painted to withstand ASTM B-117 Salt Spray Test at 500 hours. The drain pan shall have option of being fabricated in Stainless Steel SUS 304.
- 9.2 The drain pan shall be constructed to have full width, single sloped drain pan to ensure positive condensate drainage and shall extend downstream of the coil to provide sufficient amount of space to contain moisture carry-over. The coil shall not sit in the drain pan and shall be removable via coil tracks. The drain pan shall have an integral FPT elbow for side discharge and trapping.
- 9.3 The drain pan must be accessible for inspection and cleaning.

Mixing Box

10.1 Mixing boxes shall be parallel bladed, interconnected outside air and return air dampers. Damper blades shall be brake formed for stiffness and shall be mechanically secured to 13mm OD steel rods rotating in nylon bushings and mounted in rigid powder painted steel damper frames. Dampers shall be sectionalised to limit blade length to not more than 1480mm in order to prevent excessive blade warping and ensure tight closure.

10.2 Mixing box shall have parallel or opposed blades dampers.

10.2a Parallel Blade Damper

Dampers blades shall be brake formed for stiffness and shall be spot welded to 13mm O.D. steel rods rotating in nylon bushings press-seated in rigid damper frames. Damper shall be fabricated from 1.0mm (18 gauge) thick galvanized steel sheet and the damper frame of 1.0mm (18 gauge) thick with a finishing of oven cured polyester based powder paint.

10.2b Opposed Blade Damper

Damper blades are made from natural-anodized aluminium material and fasten to a shaft rotating in nylon bushings press-sealed in rigid damper frames. Seals are located at the blade tip to offer low-leak capability. Damper frames are made of natural anodized aluminium material as well

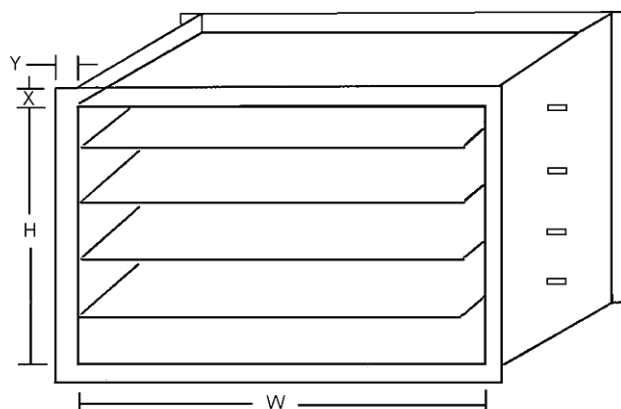
10.3 Damper shall be sectionalized to limit blade length to not more than 1250mm in order to prevent excessive blade warping and ensure tight closure. Outdoor air and return air dampers shall be of the same area (refer Table on the following page).

10.4 Air leakage using damper area ration and a perimeter gap of 3mm between blade and frame results in leakage rate of approximately 3% as a complete system when either one damper assembly is completely closed.

10.5 The damper are located on the outside of mixing boxes and the standard damper location shall be top and rear.

10.6 The damper frame is U-formed/flanged but not drilled which serves as a flange or duct work connection.

	Parallel	Opposed
W	2100	1250
X	40	25
Y	40	35



Guide Specifications for 39GK 50mm Non-Thermal Bridge (NTB) AHU

Panel Design

- Panels shall be formed to produce solid 50mm double walled thermal break design of modular dimensions. There shall be a thermal break between the exterior and internal panels. Exterior panels shall be fabricated from 0.50mm thickness pre-painted steel, in accordance to JIS G3312 SGC570 Z18 or equivalent. The coating shall meet or exceed ASTM B117 Standard for Salt Spray Resistance at 500 hours. Interior panels shall be fabricated from solid 1.00mm galvanized sheet steel, in accordance with JIS G3302 SGCC Z18 or equivalent [1.00mm SUS 304 Stainless Steel - optional]. Both exterior and interior panels shall be formed and reinforced to provide rigid construction.
- All panels to be insulated with machine-injected rigid polyurethane foam with a minimum density of 40kg/m³ and thermal conductivity K-factor of 0.019W/m.K in accordance with JIS A9514 (PU panel class 0).
- Panels shall be of one-piece design to facilitate removal. Panels shall be assembled with mechanical fasteners such that each panel is individually removable. The fasteners shall be zinc-chromate plated [SUS 304 stainless steel - optional].
- Panels shall have no exterior exposed raw edges that could lead to rust formation. The side perimeter of external panel shall include a built-in PVC gasket acting as air seal. Panels shall come with removable polyethylene protective sheet to protect external surfaces from scratches and allow for removal at job site.

Casing Construction

- Casing construction shall be Non-Thermal-Bridge (NTB) with no direct metal-to-metal contact between the internal and external surfaces. The unit frame construction shall consist of nylon glass-fiber reinforced corner-joints that connect extruded aluminium thermal break profiles. The extruded aluminium thermal break profiles shall consist of a complete structure fabricated from high strength engineering thermoplastic bars that separates the aluminium outer and inner profiles. The aluminium frames shall be gasketed along the perimeter with closed cell heavy duty neoprene rubber gasket located in between panels and the aluminium frames. The frame shall be constructed to permit removal of the panels without affecting the structural integrity of the unit.
- Corner pieces (Tri-leg) molded of composite material forms the final integral part of the casing instruction. The non-metallic construction of the corner pieces enhances the Non-Thermal-Bridge feature of the AHU casing.
- Unit casing construction shall be tested to conform to the following standard:
BS EN 1886:1998 or DIN EN 1886:1998 Ventilation for buildings – Air Handling Units – Mechanical performance

The construction shall satisfy the minimum requirements according to the classification in BS EN 1886:1998 or DIN EN 1886:1998 as shown below:

Mechanical Characteristics	Class
Casing strength	2
Casing air leakage under -400 Pa	B
Casing air leakage under +700 Pa	A/B *
Filter bypass leakage	F9
Thermal transmittance	T2
Thermal bridging factor	TB2

Note: Class B achievable upon request with special construction

Access Doors

- Access doors shall be constructed from double walled thermal break panels insulated with the same material as the casing panels. The four sides of the access door shall be covered permanently with extruded PVC to ensure non-metallic thermal break.
- Door frames shall be constructed of a single-piece fiberglass construction for Non-Thermal-Bridging (NTB). The internal flange of the door frame shall be sealed along the perimeter with replaceable closed cell neoprene gasket of minimum 5.0mm thickness for air tightness and thermal performance.
- The door latch shall consist of a single-piece construction consisting of a handle with opening and closing mechanism fabricated from nylon glass fiber reinforced thermoplastic with thermal break design. The locking of the access door shall be achieved via a single-piece graduated cam-lock with stopper for air-tightness.
- Door hinges shall be fabricated from nylon glass fiber reinforced thermoplastic and installed with no direct contact with the internal surface of the air handling unit. The hinges shall permit a complete 180° door swing.



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