



United Technologies
turn to the experts 



AIR HANDLING UNIT

39CQM [2,000~100,000 m³/h]



The New, Versatile and Flexibility in Commercial Air Conditioning System

- Units are certified in accordance to Eurovent EN1886:2015

Eurovent Specifications	Class					
Thermal Transmission		T5	T4	T3	T2	T1
Thermal Bridging		TB5	TB4	TB3	TB2	TB1
Filter Bypass Leakage	G1-G4	F5	F6	F7	F8	F9
Air Leakage				L3	L2	L1
Casing Strength				D3	D2	D1

Unit class specification marked in blue as per Eurovent standard.

- Double-skin casing with 50mm(2") 40kg/m³ CFC-Free PU insulation which isolates insulation exposure to the air stream.
- Wide range of coils offering:
 - Chilled Water - 1, 2, 3, 4, 5, 6, 7, 8 rows with 8, 10, 12, 14 fin per inch.
 - Hot Water - 1, 2, 3, 4, 5, 6, 7, 8 rows with 8, 10, 12, 14 fin per inch.
 - DX Coil - 4 and 6 rows with 8, 10, 12, 14 fin per inch.
- All coils are factory pressure tested at 400 psig under water as standard with Nitrogen (N₂).
- Coil tracks enable easy coil removal for complete cleaning and assurance of a dry unit interior.
- Powder painted sloped galvanized steel drain pan with side drainage as standard (optional stainless steel drain pan).
- Optimized fan impeller size to meet performance criteria:
 - Forward curved blade - sizes 160mm to 1000mm.
 - Backward curved / Air foil blade - sizes 225mm to 1000mm.
 - Plug fan - sizes 315mm to 1400mm.
- Low leak construction with hexagonal socket compression, latch type and nitrile gasket on mating panel parameter.
- Factory installed unit base of 100 mm height, constructed of 10 gauge galvanized steel (optional 125mm height for marine application).
- Optional factory supplied Heat Recovery Wheel (HRW) or Horizontal Heatpipe for energy management application.
- Optional factory installed UVC lamp.
- AHU selection software for easy unit selection (please refer to the Carrier's representative for more details).



Direct Expansion Coil (DX Coil)

Coils are aluminum/copper with belled collars and bonded 12.7mm OD copper tubes by mechanically expansion. The coils have galvanized steel casing and provided with brass distributors with sweat type connections.

Chilled Water Coil

Coils are of aluminum/copper plate fins with belled collars and bonded to 12.7mm OD copper tubes by mechanically expansion. The coils have galvanized steel frame and steel headers with male threaded connections.

Option: Copper header with brazing type connection.

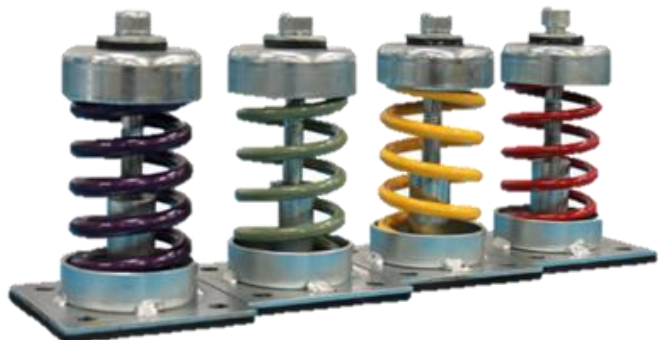


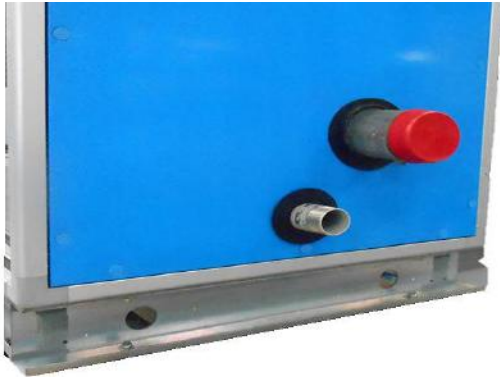
Assembly Fan Housing Motor and Base (FMB)

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

Spring Isolator

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





Drain Pan and Drain Outlet

New drain pan assembly for better drainage, side access drain and sloping for rapid water flow and better Internal Air Quality (IAQ). Ready to couple with male connection.

Bearing Arm

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

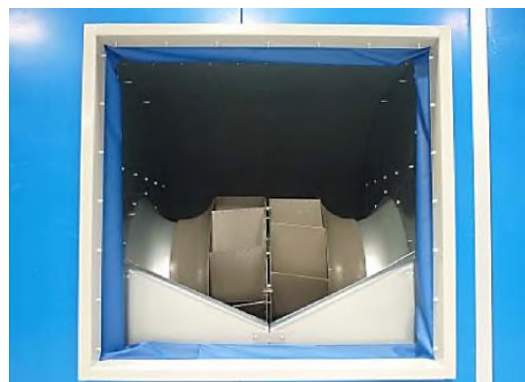


Taper Lock Pulley

Flexibility to change diameter of pulley according to fan shaft. Pulleys with taper lock bush allows for convenient dismantling and maintenance of drive package.

Fan Discharge Collar

Flanged discharge collar to provide easy duct connection.





Accessory High Velocity Filter (HVF) Frame

For fresh air 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 opposed blades interconnected outside with return air dampers.



Carrier offers you three easy quick selection steps for 39CQM:

- 1) Determine the unit size based on air flow or coil face area.
 - a. 1.5m/s minimum velocity (cooling or heating).
 - b. 2.65m/s maximum velocity for cooling coil without drift eliminator.
 - c. 4.5m/s maximum velocity for heating coil only.
- 2) Use estimated dimensions to find approximate size of base unit or necessary sections.
- 3) Quick selection of weights of base casing unit and motor drive package weight (if applicable).

STANDARD COIL

Unit Model	Coil Face Area (m ²)	Coil Tube Diameter (in)	Air Volume (ℓ/s) x 1000			
			2 m/s	2.5 m/s	3 m/s	3.5 m/s
39CQM0608	0.216	1/2"	0.43	0.54	0.65	0.76
	0.265	3/8"	0.53	0.66	0.80	0.93
39CQM0609	0.302	1/2"	0.60	0.76	0.91	1.06
	0.311	3/8"	0.62	0.78	0.93	1.09
39CQM0610	0.347	1/2"	0.69	0.87	1.04	1.21
	0.357	3/8"	0.71	0.89	1.07	1.25
39CQM0711	0.447	1/2"	0.89	1.12	1.34	1.56
	0.447	3/8"	0.89	1.12	1.34	1.56
39CQM0712	0.498	1/2"	1.00	1.24	1.49	1.74
	0.498	3/8"	1.00	1.24	1.49	1.74
39CQM0811	0.559	1/2"	1.12	1.40	1.68	1.96
	0.536	3/8"	1.07	1.34	1.61	1.88
39CQM0813	0.686	1/2"	1.37	1.71	2.06	2.40
	0.658	3/8"	1.32	1.65	1.98	2.30
39CQM0912	0.685	1/2"	1.37	1.71	2.05	2.40
	0.697	3/8"	1.39	1.74	2.09	2.44
39CQM0913	0.754	1/2"	1.51	1.89	2.26	2.64
	0.768	3/8"	1.54	1.92	2.30	2.69
39CQM0914	0.824	1/2"	1.65	2.06	2.47	2.88
	0.839	3/8"	1.68	2.10	2.52	2.94
39CQM1015	1.057	1/2"	2.11	2.64	3.17	3.70
	1.040	3/8"	2.08	2.60	3.12	3.64
39CQM1016	1.139	1/2"	2.28	2.85	3.42	3.99
	1.122	3/8"	2.24	2.80	3.36	3.93
39CQM1117	1.372	1/2"	2.74	3.43	4.11	4.80
	1.317	3/8"	2.63	3.29	3.95	4.61
39CQM1317	1.646	1/2"	3.29	4.11	4.94	5.76
	1.609	3/8"	3.22	4.02	4.83	5.63
39CQM1318	1.760	1/2"	3.52	4.40	5.28	6.16
	1.721	3/8"	3.44	4.30	5.16	6.02
39CQM1320	1.989	1/2"	3.98	4.97	5.97	6.96
	1.945	3/8"	3.89	4.86	5.83	6.81
39CQM1322	2.217	1/2"	4.43	5.54	6.65	7.76
	2.168	3/8"	4.34	5.42	6.50	7.59

Note:

For cooling application of face velocity more than 2.65m/s, drift eliminators is recommended to avoid moisture carry over under normal operating condition.

STANDARD COIL (Con't)

Unit Model	Coil Face Area (m ²)	Coil Tube Diameter (in)	Air Volume (ℓ/s) x 1000			
			2 m/s	2.5 m/s	3 m/s	3.5 m/s
39CQM1418	1.860	1/2"	3.72	4.65	5.58	6.51
39CQM1420	2.100	1/2"	4.20	5.25	6.30	7.35
39CQM1421	2.220	1/2"	4.44	5.55	6.66	7.77
39CQM1422	2.340	1/2"	4.68	5.85	7.02	8.19
39CQM1518	2.050	1/2"	4.10	5.13	6.15	7.18
39CQM1521	2.450	1/2"	4.90	6.13	7.35	8.58
39CQM1522	2.590	1/2"	5.18	6.48	7.77	9.07
39CQM1524	2.850	1/2"	5.70	7.13	8.55	9.98
39CQM1525	2.990	1/2"	5.98	7.48	8.97	10.47
39CQM1621	2.570	1/2"	5.14	6.43	7.71	9.00
39CQM1622	2.710	1/2"	5.42	6.78	8.13	9.49
39CQM1624	2.990	1/2"	5.98	7.48	8.97	10.47
39CQM1625	3.130	1/2"	6.26	7.83	9.39	10.96
39CQM1822	3.080	1/2"	6.16	7.70	9.24	10.78
39CQM1824	3.400	1/2"	6.80	8.50	10.20	11.90
39CQM1825	3.560	1/2"	7.12	8.90	10.68	12.46
39CQM2025	3.983	1/2"	7.97	9.96	11.95	13.94
39CQM2125	4.125	1/2"	8.25	10.31	12.37	14.44
39CQM2226	4.606	1/2"	9.21	11.52	13.82	16.12
39CQM2230	5.394	1/2"	10.79	13.48	16.18	18.88
39CQM2234	6.181	1/2"	12.36	15.45	18.54	21.63
39CQM2330	5.568	1/2"	11.14	13.92	16.70	19.49
39CQM2334	6.380	1/2"	12.76	15.95	19.14	22.33
39CQM2434	6.779	1/2"	13.56	16.95	20.34	23.73
39CQM2634	7.377	1/2"	14.75	18.44	22.13	25.82
39CQM2636	7.847	1/2"	15.69	19.62	23.54	27.47

Note:

For cooling application of face velocity more than 2.65m/s, drift eliminators is recommended to avoid moisture carry over under normal operating condition.

COIL WITH HEATPIPE

Unit Model	Coil Face Area (m ²)	Coil Tube Diameter (in)	Air Volume (ℓ/s) x 1000			
			2 m/s	2.5 m/s	3 m/s	3.5 m/s
39CQM0608	0.213	1/2"	0.43	0.53	0.64	0.75
	0.219	3/8"	0.44	0.55	0.66	0.77
39CQM0609	0.258	1/2"	0.52	0.64	0.77	0.90
	0.265	3/8"	0.53	0.66	0.80	0.93
39CQM0610	0.302	1/2"	0.60	0.76	0.91	1.06
	0.311	3/8"	0.62	0.78	0.93	1.09
39CQM0711	0.396	1/2"	0.79	0.99	1.19	1.39
	0.396	3/8"	0.79	0.99	1.19	1.39
39CQM0712	0.447	1/2"	0.89	1.12	1.34	1.56
	0.447	3/8"	0.89	1.12	1.34	1.56
39CQM0811	0.495	1/2"	0.99	1.24	1.49	1.73
	0.475	3/8"	0.95	1.19	1.43	1.66
39CQM0813	0.622	1/2"	1.24	1.56	1.87	2.18
	0.597	3/8"	1.19	1.49	1.79	2.09
39CQM0912	0.615	1/2"	1.23	1.54	1.84	2.15
	0.626	3/8"	1.25	1.56	1.88	2.19
39CQM0913	0.685	1/2"	1.37	1.71	2.05	2.40
	0.697	3/8"	1.39	1.74	2.09	2.44
39CQM0914	0.754	1/2"	1.51	1.89	2.26	2.64
	0.768	3/8"	1.54	1.92	2.30	2.69
39CQM1015	0.974	1/2"	1.95	2.44	2.92	3.41
	0.959	3/8"	1.92	2.40	2.88	3.36
39CQM1016	1.057	1/2"	2.11	2.64	3.17	3.70
	1.040	3/8"	2.08	2.60	3.12	3.64
39CQM1117	1.276	1/2"	2.55	3.19	3.83	4.47
	1.225	3/8"	2.45	3.06	3.68	4.29
39CQM1317	1.532	1/2"	3.06	3.83	4.59	5.36
	1.498	3/8"	3.00	3.74	4.49	5.24
39CQM1318	1.650	1/2"	3.30	4.13	4.95	5.78
	1.609	3/8"	3.22	4.02	4.83	5.63
39CQM1320	1.870	1/2"	3.74	4.68	5.61	6.55
	1.833	3/8"	3.67	4.58	5.50	6.42
39CQM1322	2.100	1/2"	4.20	5.25	6.30	7.35
	2.056	3/8"	4.11	5.14	6.17	7.20

Note:

For cooling application of face velocity more than 2.65m/s, drift eliminators is recommended to avoid moisture carry over under normal operating condition.

COIL WITH HEATPIPE (Con't)

Unit Model	Coil Face Area (m ²)	Coil Tube Diameter (in)	Air Volume (ℓ/s) x 1000			
			2 m/s	2.5 m/s	3 m/s	3.5 m/s
39CQM1418	1.740	1/2"	3.48	4.35	5.22	6.09
39CQM1420	1.980	1/2"	3.96	4.95	5.94	6.93
39CQM1421	2.100	1/2"	4.20	5.25	6.30	7.35
39CQM1422	2.220	1/2"	4.44	5.55	6.66	7.77
39CQM1518	1.920	1/2"	3.84	4.80	5.76	6.72
39CQM1521	2.320	1/2"	4.64	5.80	6.96	8.12
39CQM1522	2.450	1/2"	4.90	6.13	7.35	8.58
39CQM1524	2.720	1/2"	5.44	6.80	8.16	9.52
39CQM1525	2.850	1/2"	5.70	7.13	8.55	9.98
39CQM1621	2.430	1/2"	4.86	6.08	7.29	8.51
39CQM1622	2.570	1/2"	5.14	6.43	7.71	9.00
39CQM1624	2.850	1/2"	5.70	7.13	8.55	9.98
39CQM1625	2.990	1/2"	5.98	7.48	8.97	10.47
39CQM1822	2.920	1/2"	5.84	7.30	8.76	10.22
39CQM1824	3.240	1/2"	6.48	8.10	9.72	11.34
39CQM1825	3.400	1/2"	6.80	8.50	10.20	11.90
39CQM2025	3.805	1/2"	7.61	9.51	11.41	13.32
39CQM2125	3.941	1/2"	7.88	9.85	11.82	13.79
39CQM2226	4.409	1/2"	8.82	11.02	13.23	15.43
39CQM2230	5.197	1/2"	10.39	12.99	15.59	18.19
39CQM2234	5.984	1/2"	11.97	14.96	17.95	20.94
39CQM2330	5.364	1/2"	10.73	13.41	16.09	18.78
39CQM2334	6.177	1/2"	12.35	15.44	18.53	21.62
39CQM2434	6.563	1/2"	13.13	16.41	19.69	22.97
39CQM2634	7.142	1/2"	14.28	17.86	21.43	25.00
39CQM2636	7.612	1/2"	15.22	19.03	22.84	26.64

Note:

For cooling application of face velocity more than 2.65m/s, drift eliminators is recommended to avoid moisture carry over under normal operating condition.

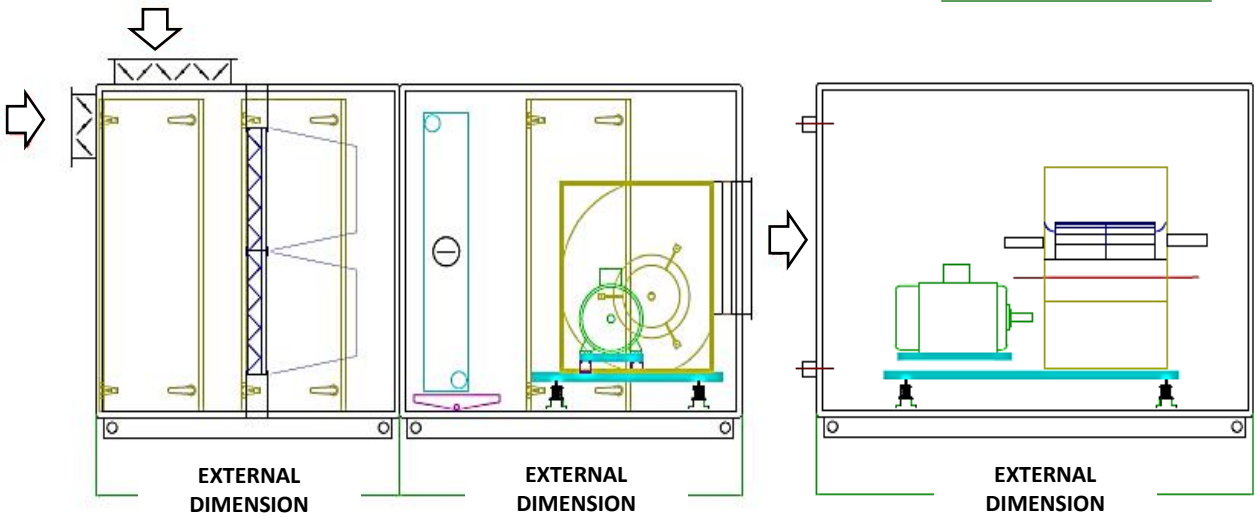
AHU SELECTION PROGRAM

We have made available a computer selection for your application program. Please contact your nearest Carrier Representative for a assistance. Selection based on your "Quick Selection" plus the design parameters on your application.



UNIT DIMENSION CALCULATION

Horizontal Schematic



External AHU Length

External AHU Length = (Section Length + K)
 where, K = 100mm (50mm casing thickness)

If the AHU module length is more than 2000mm, section will be split into several casing for shipping purpose .

For Example:

39CQM1522, MXB-BF-CCS-FS, Fan Size 500, Horizontal AHU with 50mm casing thickness

Unit will be split into two section:-

- 1) MXB-BF: 800mm + 600mm = 1400mm + K(100) = 1500mm
- 2) CCS-FS: 600mm + 1100mm = 1700mm + K(100) = 1800mm

Total AHU Length = 3300mm

External AHU Width

External AHU Width = (Module Width + K)mm
 where, K = 100mm (50mm casing thickness)

For Example:

39CQM1522, MXB-BF-CCS-FS, Fan Size 500, Horizontal AHU with 50mm casing thickness

AHU Width = 2200mm + K(100mm) = 2300mm

External AHU Height

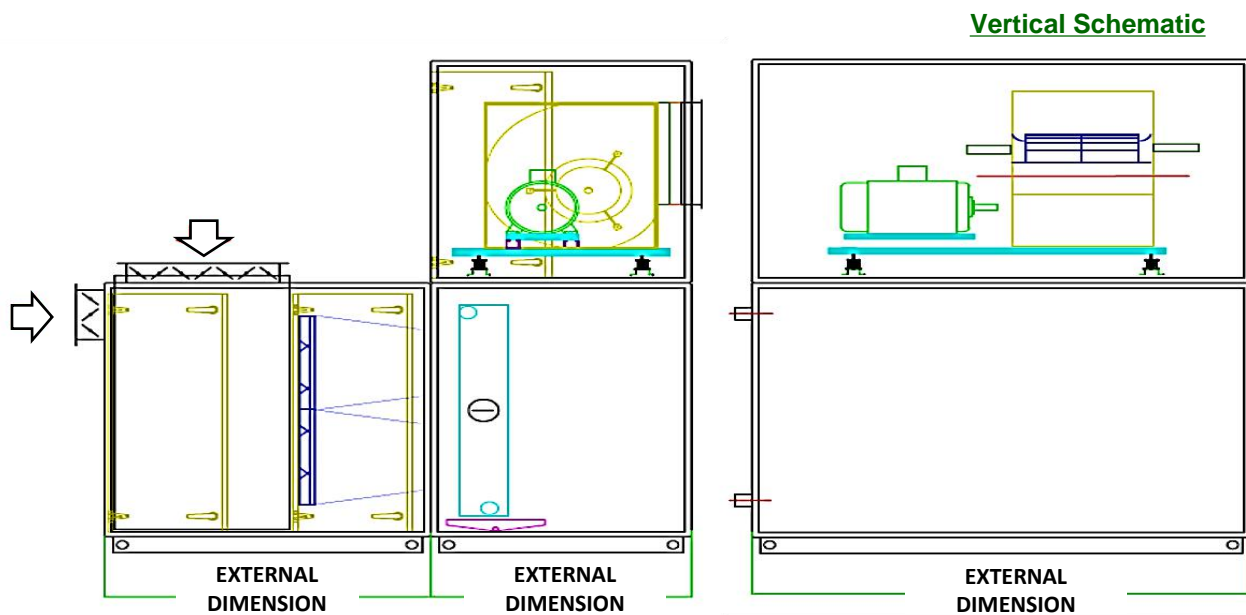
Horizontal AHU Height = (Module Height + K + 100)mm
 where, K = 100mm (50mm casing thickness)

For Example:

39CQM1522, MXB-BF-CCS-FS, Fan Size 500, Horizontal AHU with 50mm casing thickness

AHU Height = (1500mm + 100mm + 100mm) = 1700mm

UNIT DIMENSION CALCULATION



External AHU Length

External AHU Length = (Section Length + K)
 where, K = 100mm (50mm casing thickness)

If the AHU module length is more than 2000mm, section will be split into several casing for shipping purpose .

For Example:

39CQM1522, MXB-BF-CCS-FS, Fan Size 500, Vertical AHU with 50mm casing thickness

Unit will be split into two section:-

- 1) MXB-BF: 800mm + 600mm = 1400mm + K(100) = 1500mm
- 2) FS: 1100mm = 1100mm + K(100) = 1200mm

Total AHU Length = 2700mm

Note:

- 1) The fan is on top of the coil section, just apply the fan section length for calculation.
- 2) Add 100mm incase of external filter track.

External AHU Width

External AHU Width = (Module Width + K)mm
 where, K = 100mm (50mm casing thickness)

For Example:

39CQM1522, MXB-BF-CCS-FS, Fan Size 500, Horizontal AHU with 50mm casing thickness

AHU Width = 2200mm + K(100mm) = 2300mm

External AHU Height

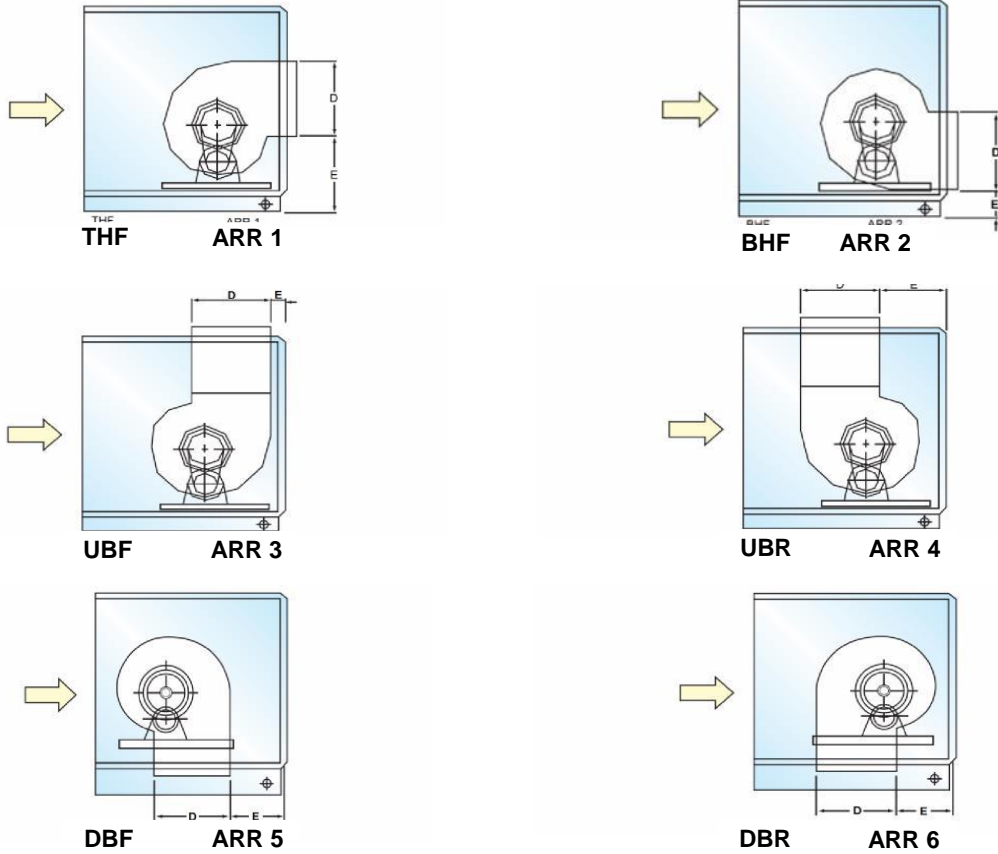
Vertical AHU = (Module Height + Fan Section Vertical Height + 2K + 100)mm
 where, K = 100mm (50mm casing thickness)

For Example:

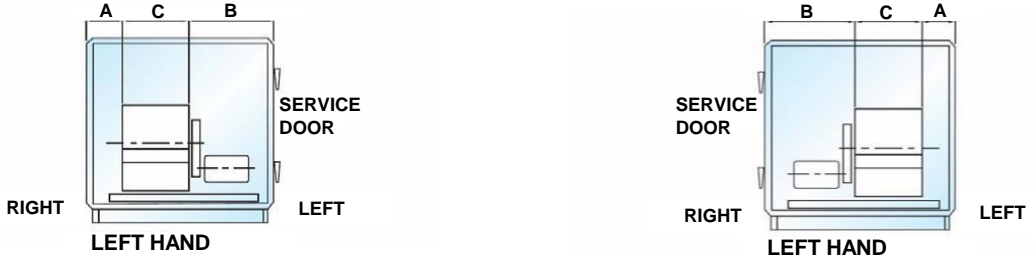
39CQM1522, MXB-BF-CCS-FS, Fan Size 500, Vertical AHU with 50mm casing thickness

AHU Height = (1500mm + 1200mm + 200mm + 100mm) = 3000mm

FAN ARRANGEMENT



SIDE ELEVATION



FRONT ELEVATION

BASE UNIT COIL WEIGHT (50mm SECTION WEIGHT)

39CQM AHU Size	Mixing Box Section			Filter Section			Coil Section		Heater Section	Fan Section		Diffuser Section	Discharge Section with Damper	Plenum Access
	Mixing Box	Double Mixing Box	Economized Mixing Box	Bag Filter / LVF	HVF Filter	HEPA Filter	Cooling/ Dual (Horizontal)	Hot Water (Horizontal)		Horizontal	Vertical			
	MXB	DBL MXB	ECN MXB	BF / LVF	HVF	HEPA	CW	HW	FCF or BCF	FCF or BCF	DIF	DISC	ACS	
50mm Section weight (kg)														
0608	38	68	38	45	23	78	41	22	23	50	69	25	44	45
180	38	68	38	45	23	78	41	22	23	50	69	25	44	45
0609	41	71	41	47	24	82	44	22	24	54	72	26	46	47
200	41	71	41	47	24	82	44	22	24	54	72	26	46	47
0711	49	82	49	55	28	96	52	27	28	75	84	31	56	55
200	49	82	49	55	28	96	52	27	28	75	84	31	56	55
225	52	86	52	57	29	101	53	27	29	78	88	32	60	57
0811	250	86	52	57	29	101	53	27	29	78	88	32	60	57
250	57	92	57	62	31	107	57	29	31	86	93	34	67	62
0912	280	92	57	62	31	107	57	29	31	86	93	34	67	62
280	57	92	57	62	31	107	57	29	31	86	93	34	67	62
0913	69	95	69	64	33	112	60	31	33	101	97	36	80	64
280	69	95	69	64	33	112	60	31	33	101	97	36	80	64
315	71	113	71	66	34	115	61	31	34	104	99	37	82	66
0914	355	71	113	66	34	115	61	31	34	104	99	37	82	66
355	78	121	78	70	35	122	65	33	35	124	106	39	90	70
1015	400	78	121	70	35	122	65	33	35	124	106	39	90	70
400	89	133	89	76	39	137	70	36	39	143	118	43	104	76
1117	450	133	89	76	39	137	70	36	39	143	118	43	104	76
450	98	142	98	81	41	144	74	37	41	153	124	45	116	81
1317	450	98	142	81	41	144	74	37	41	153	124	45	116	81
450	131	148	131	85	43	151	77	39	43	189	156	47	154	85
1418	500	131	148	85	43	151	77	39	43	189	156	47	154	85
500	140	154	140	89	45	158	81	41	45	202	164	99	165	89
1420	560	140	154	89	45	158	81	41	45	202	164	99	165	89
560	157	169	157	97	49	172	89	45	49	229	191	99	185	97
1621	630	157	169	97	49	172	89	45	49	229	191	99	185	97
630	185	181	185	104	53	184	94	48	53	253	208	108	185	97
1822	630	185	181	104	53	184	94	48	53	253	208	108	185	97
630	202	194	202	111	56	201	102	51	56	269	224	108	185	97
1825	710	202	194	111	56	201	102	51	56	269	224	108	185	97
710	214	294	214	115	58	207	105	53	58	336	274	124	240	111
1825	630	214	294	115	58	207	105	53	58	336	274	124	240	111
2025	710	214	294	115	58	207	105	53	58	336	274	124	240	111
710	250	301	250	117	59	211	106	53	59	401	291	115	220	104
2125	800	250	301	117	59	211	106	53	59	401	291	115	220	104
800	263	312	263	122	62	219	110	56	62	377	274	124	240	111
2226	800	263	312	122	62	219	110	56	62	377	274	124	240	111
800	286	327	286	134	68	234	122	62	68	455	315	135	315	122
2230	900	286	327	134	68	234	122	62	68	455	315	135	315	122
900	315	359	315	148	74	258	137	69	74	504	344	149	344	134
2234	900	315	359	148	74	258	137	69	74	504	344	149	344	134
900	347	383	347	156	78	273	142	71	78	590	378	166	378	148
2634	1000	347	383	156	78	273	142	71	78	590	378	166	378	148
1000	347	383	347	156	78	273	142	71	78	590	378	166	378	148
347	347	383	347	156	78	273	142	71	78	590	378	166	378	148

Note: Estimated weight in kg.

POWER		2P				4P				6P				8P			
KW	HP	FRAME	RPM (50Hz)	EFF	WEIGHT (kg)	FRAME	RPM (50Hz)	EFF	WEIGHT (kg)	FRAME	RPM (50Hz)	EFF	WEIGHT (kg)	FRAME	RPM (50Hz)	EFF	WEIGHT (kg)
0.4	0.5	71	2810	75.0		71	1395	71.5		80	925	66.0		90S	710	64.5	
0.6	0.8	71	2755	75.0		80	1405	71.5		80	915	68.0		90L	695	70.0	
0.8	1.0	80	2805	78.0		80	1405	76.5		90S	940	74.0		100L	700	68.0	
1.1	1.5	80	2810	80.5		90S	1415	74.5		90L	940	75.0		100L	690	74.5	
1.5	2.0	90S	2825	81.0		90L	1400	77.0		100L	930	75.0		112M	705	75.5	
2.2	3.0	90L	2840	83.5		100L	1425	81.0		112M	950	81.0		132S	705	81.5	
3.0	4.0	100L	2865	85.0		100L	1435	83.5		132S	955	85.0		132M	715	82.5	
3.7	5.0	112M	2870	85.5		112M	1445	84.5		132M	955	83.0		160M	720	84.0	
4.0	5.5	112M	2870	86.0		112M	1445	86.0		132M	950	85.0		160M	720	84.5	
5.5	7.5	132S	2905	87.0		132S	1445	86.0		132M	960	87.5		160M	720	85.5	
7.5	10.0	132S	2880	88.0		132M	1450	88.5		160M	975	88.0		160L	720	86.0	
11.0	15.0	160M	2940	89.0		160M	1455	89.5		160L	970	89.0		180LC	730	89.0	
15.0	20.0	160M	2925	90.5		160L	1460	90.5		180LC	970	90.0		200LC	730	89.5	
18.5	25.0	160L	2930	91.5		180MC	1450	91.0		200LC	970	91.0		225SC	730	90.0	
22.0	30.0	180MA	2930	92.0		180LC	1460	91.5		200LC	975	92.5		225MC	730	91.0	
30.0	40.0	200LA	2960	92.0		200LC	1470	92.5		225MC	980	91.5		250SC	730	90.5	
37.0	50.0	200LA	2950	92.5		225SC	1470	92.5		250SC	980	92.5		250MC	730	91.0	
45.0	60.0	225MA	2950	93.0		225MC	1470	92.5		250MC	980	92.5		280SC	725	92.0	
55.0	75.0	250SA	2960	92.0		250SC	1480	93.4		280SC	970	92.4		280MC	730	92.4	
75.0	100.0	250MA	2950	94.0		250MC	1480	94.5		280MC	975	93.0		315SC	730	93.0	

Notes:

- Motor weight is based on 415V/3Ø/50Hz induction type TEFC foot-mounted motor.
- Motor is suitable for direct on-line / reduced voltage starting mechanism (except STAR-DELTA).
- Motors 3hp and smaller are STAR connected and motor 4hp and larger are DELTA connected.
- Standard motor shall be as per IEC standard IP55 enclosure with TEFC Class F insulation and B temperature rise complying with BS2757.
- Maximum ambient temperature 40°C.
- For derivation of motor kW from fan BkW use.
- Motor kW = Fan BkW x A, where A = 1.20 if BkW < 10kW
A = 1.15 if BkW > 10kW
- Please refer to your nearest Carrier representatives for special motor voltages or application.

MOTOR DATA

MAXIMUM HP AND MOUNTING POSITION

Access Plenum	Fan Model	Motor Frame Size	Height A (mm)	Length L (mm)	Fan Section Length
200	RLM56-2528	D71	390	486	6
		D80		514	7
		D90		551	7
		D100		584	8
		D80		534	7
200	RLM56-2831	D90	430	571	7
		D100		604	8
		D112		606	8
		D80		554	7
		D90		591	8
200	RLM56-3135	D100	470	624	8
		D112		643	8
		D80		694	8
		D90		621	8
200	RLM56-3540	D100	514	654	8
		D112		656	8
		D132		723	9
		D90		646	8
300	RLM56-4045	D100	582	679	8
		D132		748	9
		D90		673	9
		D100		706	9
300	RLM56-4550	D112	645	708	9
		D132		775	10
		D160		833	11
		D100		716	10
300	RLM56-5056	D112	715	718	10
		D132		785	10
		D160		880	11
		D112		759	11
400	RLM56-5663	D132	790	826	11
		D160		921	12
		D132		869	12
400	RLM56-6371	D160	875	964	12
		D180		993	12
		D132		914	13
400	RLM56-7180	D160	975	1,009	13
		D180		1,084	13
		D160		1,063	15
500	RLM56-8090	D180	1,095	1,138	15
		D200		1,194	15

Access Plenum	Fan Model	Motor Frame Size	Height A (mm)	Length L (mm)	Fan Section Length
500	RLM56-9010	D160		1,121	16
		D180		1,196	16
		D200	1,230	1,252	16
		D225		1,290	16
		D180		1,266	18
		D200		1,321	18
600	RLM56-1011	D225	1,360	1,360	18
		D250		1,453	18
		D280		1,530	19
		D200		1,462	20
		D225		1,488	20
700	RLM55-1112	D250	1,520	1,576	20
		D280		1,608	20
		D250		1,654	23
700	RLM55-1214	D250	1,700	1,736	23
		D71-D90		586	8
300	BNB315D	D100-D112	490	635	8
		D80-D100		643	8
400	BNB355D	D112-D132	530	740	10
		D90-D112		693	9
400	BNB400D	D132-D160	580	903	12
		D90-D112		743	10
500	BNB450D	D132-D160	630	953	12
		D90-D112		784	10
500	BNB500D	D132-D160	700	994	13
		D100-D132		900	11
600	BNB560D	D160-D180	790	1,088	14
		D100-D132		945	13
700	BNB630D	D160-D180	890	1,133	14
		D112-D132		1,008	14
700	BNB710D	D160-D200	1,000	1,256	16
		D132-D180		1,120	15
800	BNB800D	D200-D225	1,120	1,349	17
		D160-D200		1,240	17
900	BNB900D	D225-D250	1,240	1,496	18
		D160-D200		1,390	19
1,000	BNB1000D	D225-D250	1,390	1,583	19
		D180-D200		1,560	21
1,100	BNB1120D	D225-D280	1,550	1,852	22
		D180-D200		1,650	23
1,200	BNB1250D	D225-D280	1,700	1,942	23

Access Plenum	Fan Model	Motor Frame Size	Height A (mm)	Length L (mm)	Fan Section Length
1,400	BNB1400D	D180-D200	1,900	1,740	26
		D225-D280		2,032	26
300	ANA/BNA 315D	D71-D80	539	611	7
		D90-D100	450	628	8
		D112		603	8
400	ANA/BNA 355D	D71-D90	490	652	9
		D100-D112		732	10
		D132		759	10
400	ANA/BNA 400D	D90-D112	530	889	11
		D132-D160		713	9
500	ANA/BNA 450D	D90-D112	580	923	12
		D132-D160		760	10
500	ANA/BNA 500D	D90-D112	630	970	12
		D132-D160		798	10
600	ANA/BNA 560D	D90-D112	700	1,008	13
		D132-D160		1,066	13
700	ANA/BNA 630D	D100-D132	790	928	12
		D160-D180		1,116	14
		D200		1,176	15
700	ANA/BNA 710D	D100-D132	890	974	12
		D160-D180		1,162	14
		D200		1,222	15
800	ANA/BNA 800D	D160-D200	1,000	1,276	16
		D225		1,317	16
900	ANA/BNA 900D	D132-D180	1,120	1,278	16
		D200-D225		1,379	17
1,000	ANA/BNA 1000D	D160-D200	1,240	1,406	17
		D225-D250		1,527	19
1,100	ANA/BNA 1120D	D160-D200	1,390	1,502	18
		D225-D250		1,623	20
1,200	ANA/BNA 1250D	D180-D200	1,550	1,571	19
		D225-D280		1,863	22
1,400	ANA/BNA 1400D	D180-D200	1,700	1,702	20
		D225-D280		1,994	24



Turn to the Experts™

FAN BLOWER SPECIFICATION

FORWARD CURVED TYPE

Fan Model	Weight (Kg)	Fan Max RPM	Shaft Dia (mm)	Width, W (mm)	Height, H (mm)	Length, L (mm)	Maximum BkW
ADH 160 R	6.6	4,200	20 h7	245	300	259	3.0
ADH 180 R	7.8	4,000	20 h7	269	336	294	3.0
ADH 200 R	9.1	3,800	20 h7	306	370	306	4.0
ADH 225 R	10.7	3,400	20 h7	338	415	345	4.0
ADH 250 R	13.0	2,800	20 h7	372	461	381	4.0
ADH 280 R	18.0	2,500	25 h7	421	518	429	5.5
ADH 315 R	22.0	2,100	25 h7	464	578	480	5.5
ADH 355 R	29.0	1,800	30 h7	533	655	544	7.5
ADH 400 R	38.0	1,600	30 h7	587	736	609	7.5
ADH 450 R	50.0	1,400	35 h7	649	827	679	11.0
ADH 500 R	65.0	1,200	35 h7	718	918	748	11.0
ADH 560 R	86.0	1,100	40 h7	815	1,030	839	15.0
ADH 630 R	106.0	900	40 h7	901	1,157	940	15.0
ADH 710 R	135.0	750	50 h7	998	1,303	1,050	18.5
ADH 200 K	12.6	3,800	20 h7	306	370	306	4.0
ADH 225 K	14.5	3,400	20 h7	338	415	345	4.0
ADH 250 K	18.0	3,000	25 h7	372	461	381	7.5
ADH 280 K	24.0	2,600	30 h7	421	518	429	11.0
ADH 315 K	29.0	2,300	30 h7	464	578	480	11.0
ADH 355 K	41.0	2,000	35 h7	531	655	544	15.0
ADH 400 K	52.0	1,800	35 h7	587	736	613	15.0
ADH 450 K	66.0	1,500	40 h7	649	827	679	15.0
ADH 500 K	85.0	1,300	40 h7	718	918	748	15.0
ADH 560 K	134.0	1,200	50 h7	815	1,030	839	18.5
ADH 630 K	170.0	1,000	50 h7	901	1,157	940	18.5
ADH 710 K	201.0	900	50 h7	998	1,303	1,050	22.0
ADH 800 K	249.0	800	50 h7	1,107	1,468	1,181	22.0
ADH 900 K	306.0	700	60 h7	1,230	1,648	1,319	30.0
ADH 1000 K	333.0	650	60 h7	1,367	1,810	1,451	37.0
ADH 315 K1	30.0	2,300	30 h7	464	578	480	18.5
ADH 355 K1	42.0	2,000	35 h7	531	655	544	22.0
ADH 400 K1	53.0	1,800	35 h7	587	736	613	22.0
ADH 450 K1	67.0	1,500	40 h7	649	827	679	30.0
ADH 500 K1	86.0	1,300	40 h7	718	918	748	30.0
ADH 560 K1	142.0	1,200	50 h7	815	1,030	839	30.0
ADH 630 K1	175.0	1,000	50 h7	901	1,157	940	30.0
ADH 710 K1	208.0	900	60 h7	998	1,303	1,050	37.0
ADH 800 K1	261.0	800	60 h7	1,107	1,468	1,181	37.0
ADH 900 K1	316.0	700	60 h7	1,230	1,648	1,319	45.0

Fan Model	Weight (Kg)	Fan Max RPM	Shaft Dia (mm)	Width, W (mm)	Height, H (mm)	Length, L (mm)	Maximum BkW
ADH 500 K2	105	1,300	50 h7	718	918	748	37.0
ADH 560 K2	150	1,200	50 h7	815	1,030	839	45.0
ADH 630 K2	180	1,000	50 h7	901	1,157	940	45.0
ADH 710 K2	225	900	60 h7	998	1,303	1,050	55.0
ADH 800 K2	278	800	60 h7	1,107	1,468	1,181	55.0
ADH 900 K2	320	700	60 h7	1,230	1,648	1,319	75.0
ADH 1000 K2	360	650	60 h7	1,367	1,810	1,451	75.0
FDA CM 180	9.5	3,700	20g6	268	336	294	2.0
FDA CM 200	10.5	3,300	20g6	306	370	306	2.5
FDA CM 225	12	2,900	20g6	338	415	348	3.0
FDA CM 250	15	2,700	20g6	372	460	383	3.0
FDA CM 280	20	2,400	25g6	420	518	432	4.0
FDA CM 315	24	2,100	25g6	464	578	480	5.5
FDA CM 355	32	1,800	30g6	532	654	548	5.5
FDA CM 400	41	1,600	30g6	586	736	612	7.5
FDA CM 450	51	1,400	35g6	648	827	681	7.5
FDA CM 500	74	1,200	35g6	718	918	750	11.0
FDA CM 560	93	1,100	40g6	814	1,030	844	11.0
FDA CM 630	104	900	45g6	900	1,157	945	15.0
FDA CM 710	127	800	50g6	998	1,302	1,057	18.5
FDA TM 250	21	3,000	25g6	372	460	383	7.5
FDA TM 280	27	2,700	30g6	420	518	432	11.0
FDA TM 315	30	2,200	30g6	464	578	480	11.0
FDA TM 355	45	2,000	35g6	532	654	548	15.0
FDA TM 400	55	1,800	35g6	586	736	612	15.0
FDA TM 450	61	1,600	40g6	648	827	681	18.5
FDA TM 500	81	1,300	45g6	718	918	750	18.5
FDA TM 560	110	1,200	45g6	814	1,030	844	22.0
FDA TM 630	140	1,000	50g6	900	1,157	945	22.0
FDA TM 710	192	900	55g6	998	1,302	1,057	25.0
FDA TM 800	240	750	55g6	1,106	1,468	1,180	30.0
FDA TM 900	293	650	60g6	1,230	1,648	1,319	37.0
FDA TM 1000	340	600	70g6	1,366	1,810	1,450	37.0
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-

FAN BLOWER SPECIFICATION

BACKWARD CURVED TYPE



Fan Model	Weight (Kg)	Fan Max RPM	Shaft Dia (mm)	Width, W (mm)	Height, H (mm)	Length, L (mm)	Maximum BkWh
RDH 180 R	7.1	6,800	20 h7	269	336	294	2.2
RDH 200 R	8.5	6,000	20 h7	306	370	306	3.0
RDH 225 R	9.9	5,800	20 h7	338	415	345	4.0
RDH 250 R	15.7	4,600	20 h7	372	461	381	4.0
RDH 280 R	21.0	4,000	25 h7	421	518	429	5.5
RDH 315 R	25.0	3,500	25 h7	464	578	480	5.5
RDH 355 R	34.0	3,300	30 h7	533	655	544	7.5
RDH 400 R	42.0	2,700	30 h7	587	736	609	7.5
RDH 450 R	57.0	2,500	35 h7	649	827	679	11.0
RDH 500 R	70.0	2,100	35 h7	718	918	748	11.0
RDH 560 R	92.0	1,950	40 h7	815	1,030	839	15.0
RDH 630 R	119.0	1,600	40 h7	901	1,157	940	15.0
RDH 710 R	165.0	1,300	50 h7	998	1,303	1,050	15.0
RDH 800 K	11.8	6,800	20 h7	306	370	306	3.0
RDH 225 K	13.6	6,000	20 h7	338	415	345	4.0
RDH 250 K	21.0	5,400	25 h7	372	461	381	5.5
RDH 280 K	28.0	4,700	30 h7	421	518	429	7.5
RDH 315 K	32.0	4,100	30 h7	464	578	480	7.5
RDH 355 K	46.0	3,800	35 h7	531	655	544	11.0
RDH 400 K	57.0	3,100	35 h7	587	736	613	15.0
RDH 450 K	73.0	2,800	40 h7	649	827	679	15.0
RDH 500 K	90.0	2,350	40 h7	718	918	748	15.0
RDH 560 K	141.0	2,100	50 h7	815	1,030	839	18.5
RDH 630 K	173.0	1,700	50 h7	901	1,157	940	18.5
RDH 710 K	270.0	1,500	50 h7	998	1,303	1,050	22.0
RDH 800 K	270.0	1,200	50 h7	1,107	1,468	1,181	22.0
RDH 900 K	343.0	1,100	60 h7	1,230	1,648	1,319	30.0
RDH 1000 K	415.0	1,000	60 h7	1,367	1,810	1,451	37.0
RDH 315 K1	34.0	4,500	30 h7	464	578	480	11.0
RDH 355 K1	47.0	4,000	35 h7	531	655	544	15.0
RDH 400 K1	58.0	3,500	35 h7	587	736	613	22.0
RDH 450 K1	75.0	3,200	40 h7	649	827	679	30.0
RDH 500 K1	92.0	2,650	40 h7	718	918	748	30.0
RDH 560 K1	148.0	2,400	50 h7	815	1,030	839	30.0
RDH 630 K1	180.0	2,000	50 h7	901	1,157	940	30.0
RDH 710 K1	240.0	1,700	60 h7	998	1,303	1,050	37.0
RDH 800 K1	297.0	1,400	60 h7	1,107	1,468	1,181	37.0
RDH 900 K1	355.0	1,250	60 h7	1,230	1,648	1,319	45.0
RDH 500 K2	90.0	2,350	50 h7	718	918	748	37.0
RDH 560 K2	141.0	2,100	50 h7	815	1,030	839	37.0
RDH 630 K2	173.0	1,700	50 h7	901	1,157	940	45.0
RDH 710 K2	220.0	1,500	60 h7	998	1,303	1,050	55.0
RDH 800 K2	270.0	1,200	60 h7	1,107	1,468	1,181	55.0
RDH 900 K2	343.0	1,100	60 h7	1,230	1,648	1,319	75.0
RDH 1000 K2	415.0	1,000	60 h7	1,367	1,810	1,451	75.0

Fan Model	Weight (Kg)	Fan Max RPM	Shaft Dia (mm)	Width, W (mm)	Height, H (mm)	Length, L (mm)	Maximum BkWh
BDB CM 200	13	5,200	20g6	306	370	306	2.0
BDB CM 225	16	4,500	20g6	338	415	348	2.2
BDB CM 250	20	4,000	20g6	372	460	383	2.5
BDB CM 280	24	3,500	25g6	420	518	432	3.0
BDB CM 315	27	3,100	25g6	464	578	480	4.0
BDB CM 355	41	2,700	30g6	532	654	548	5.0
BDB CM 400	45	3,200	30g6	586	736	612	6.0
BDB CM 450	62	2,900	35g6	648	827	681	8.0
BDB CM 500	81	2,500	35g6	718	918	750	10.0
BDB CM 560	110	2,200	40g6	814	1,030	844	12.0
BDB CM 630	141	2,000	45g6	900	1,157	945	14.0
BDB CM 710	199	1,800	50g6	998	1,302	1,057	18.0
BDB TM 315	40	4,100	30g6	464	578	480	8.0
BDB TM 355	53	3,500	35g6	532	654	548	11.0
BDB TM 400	67	3,200	35g6	586	736	612	14.0
BDB TM 450	89	2,900	40g6	648	827	681	18.0
BDB TM 500	118	2,500	45g6	718	918	750	20.0
BDB TM 560	158	2,200	45g6	814	1,030	844	25.0
BDB TM 630	197	2,000	50g6	900	1,157	945	30.0
BDB TM 710	251	1,800	55g6	998	1,302	1,057	40.0
BDB TM 800	239	1,200	55g6	1,106	1,468	1,180	22.0
BDB TM 900	368	1,050	60g6	1,230	1,648	1,319	30.0
BDB TM 1000	474	1,000	70g6	1,366	1,810	1,450	35.0
BDB XM 800	323	1,600	65g6	1,106	1,468	1,180	50.0
BDB XM 900	397	1,400	70g6	1,230	1,648	1,319	60.0
BDB XM 1000	512	1,300	80g6	1,366	1,810	1,450	80.0
AIRFOIL							
RZR 12-225	15	6,640	20K6	350	433	366	7.5
RZR 12-280	23	5,235	25K6	423	532	449	7.5
RZR 12-315	27	4,418	25K6	465	596	502	7.5
RZR 12-355	36	3,400	25K6	515	669	562	7.5
RZR 15-400	61	3,600	30K6	580	750	632	30.0
RZR 15-450	73	3,360	30K6	644	840	708	30.0
RZR 15-500	94	2,920	30K6	713	930	780	30.0
RZR 15-560	125	2,400	40K6	789	1,046	884	37.0
RZR 15-630	149	1,890	40K6	876	1,173	980	37.0
RZR 15-710	201	2,000	50K6	973	1,324	1,104	55.0
RZR 15-800G1	250	1,470	50K6	1,092	1,522	1,244	55.0
RZR 15-900G1	358	1,430	60K6	1,225	1,706	1,386	75.0
RZR 15-1000	416	1,140	60K6	1,362	1,869	1,510	75.0
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-

PLENUM/ PLUG FAN

Access Plenum	Fan Model	Motor Frame Size	Height A (mm)	Length L (mm)	Fan Section Length
1,400	BNB1400D	D180-D200	1,900	1,740	26
		D225-D280	1,900	2,032	26
300	ANA/BNB 315D	D71-D80	450	539	7
		D90-D100	450	611	8
		D112	450	628	8
400	ANA/BNB 355D	D71-D90	490	603	8
		D100-D112	490	652	9
		D132	490	732	10
400	ANA/BNB 400D	D90-D112	530	759	10
		D132-D160	530	889	11
500	ANA/BNB 450D	D90-D112	580	713	9
		D132-D160	580	923	12
500	ANA/BNB 500D	D90-D112	630	760	10
		D132-D160	630	970	12
600	ANA/BNB 560D	D90-D112	700	798	10
		D132-D160	700	1,008	13
		D180	700	1,066	13
700	ANA/BNB 630D	D100-D132	790	928	12
		D160-D180	790	1,116	14
		D200	790	1,176	15
700	ANA/BNB 710D	D100-D132	890	974	12
		D160-D180	890	1,162	14
		D225	890	1,222	15
800	ANA/BNB 800D	D160-D200	1,000	1,276	16
		D225	1,000	1,317	16
900	ANA/BNB 900D	D132-D180	1,120	1,278	16
		D200-D225	1,120	1,379	17
1,000	ANA/BNB 1000D	D160-D200	1,240	1,406	17
		D225-D250	1,240	1,527	19
1,100	ANA/BNB 1120D	D160-D200	1,390	1,502	18
		D225-D250	1,390	1,623	20
1,200	ANA/BNB 1250D	D180-D200	1,550	1,571	19
		D225-D280	1,550	1,863	22
1,400	ANA/BNB 1400D	D180-D200	1,700	1,702	20
		D225-D280	1,700	1,994	24



Access Plenum	Fan Model	Motor Frame Size	Height A (mm)	Length L (mm)	Fan Section Length
		D160		1,121	16
500	RLM56-9010	D180	1,230	1,196	16
		D200	1,230	1,252	16
		D225	1,230	1,290	16
		D180		1,266	18
600	RLM56-1011	D200	1,360	1,321	18
		D225	1,360	1,360	18
		D250	1,360	1,453	18
		D280	1,360	1,530	19
		D200		1,462	20
700	RLM55-1112	D225	1,520	1,488	20
		D250	1,520	1,576	20
		D280	1,520	1,608	20
700	RLM55-1214	D250	1,700	1,654	23
		D250	1,700	1,736	23
300	BNB315D	D71-D90	490	586	8
		D100-D112	490	635	8
400	BNB355D	D80-D100	530	643	8
		D112-D132	530	740	10
400	BNB400D	D90-D112	580	693	9
		D132-D160	580	903	12
500	BNB450D	D90-D112	630	743	10
		D132-D160	630	953	12
500	BNB500D	D90-D112	700	784	10
		D132-D160	700	994	13
600	BNB560D	D100-D132	790	900	11
		D160-D180	790	1,088	14
700	BNB630D	D100-D132	890	945	13
		D160-D180	890	1,133	14
700	BNB710D	D112-D132	1,000	1,008	14
		D160-D200	1,000	1,256	16
800	BNB800D	D132-D180	1,120	1,248	15
		D200-D225	1,120	1,349	17
900	BNB900D	D160-D200	1,240	1,375	17
		D225-D250	1,240	1,496	18
1,000	BNB1000D	D160-D200	1,390	1,462	19
		D225-D250	1,390	1,583	19
1,100	BNB1120D	D180-D200	1,550	1,560	21
		D225-D280	1,550	1,852	22
1,200	BNB1250D	D180-D200	1,700	1,650	23
		D225-D280	1,700	1,942	23

Access Plenum	Fan Model	Motor Frame Size	Height A (mm)	Length L (mm)	Fan Section Length
200	RLM56-2528	D71	390	486	6
		D80	390	514	7
		D90	390	551	7
		D100	390	584	8
200	RLM56-2831	D80	430	534	7
		D90	430	571	7
		D100	430	604	8
		D112	430	606	8
		D80		554	7
200	RLM56-3135	D90	470	591	8
		D100	470	624	8
		D112	470	643	8
200	RLM56-3540	D80	514	694	8
		D90	514	621	8
		D100	514	654	8
		D112	514	656	8
		D132	514	723	9
300	RLM56-4045	D90	582	646	8
		D100	582	679	8
		D132	582	748	9
300	RLM56-4550	D90	645	673	9
		D100	645	706	9
		D112	645	708	9
		D132	645	775	10
		D160	645	833	11
300	RLM56-5056	D100	715	716	10
		D112	715	718	10
		D132	715	785	10
		D160	715	880	11
400	RLM56-5663	D112	790	759	11
		D132	790	826	11
		D160	790	921	12
400	RLM56-6371	D132	875	869	12
		D160	875	964	12
		D180	875	993	12
400	RLM56-7180	D132	975	914	13
		D160	975	1,009	13
		D180	975	1,084	13
500	RLM56-8090	D160	1,095	1,063	15
		D180	1,095	1,138	15
		D200	1,095	1,194	15

HEAT WHEEL QUICK SELECTION

AHU Size	AHU Size (Top)	Section Length	Heatwheel Model
39CQM0608	39CQM0608	4	ECW244
39CQM0609	39CQM0609	4	ECW244
39CQM0610	39CQM0610	6	HRW700
39CQM0711	39CQM0711	4	HRW900/ECW324
39CQM0712	39CQM0712	4	HRW1000/ECW364
39CQM0811	39CQM0811	6	HRW900
39CQM0813	39CQM0813	4	HRW1100/ECW424
39CQM0912	39CQM0912	4	HRW1000/ECW364
39CQM0913	39CQM0913	6	HRW1100/ECW424
39CQM0914	39CQM0914	4	HRW1200/ECW424
39CQM1015	39CQM1015	5	HRW1300/ECW484
39CQM1016	39CQM1016	6	ECW486
39CQM1117	39CQM1117	5	HRW1400/ECM544
39CQM1317	39CQM1317	6	HRW1500/ECM544
39CQM1318	39CQM1318	5	HRW1500
39CQM1320	39CQM1320	6	HRW1600/ECW604
39CQM1322	39CQM1322	5	HRW1800/ECW664
39CQM1418	39CQM1318	5	HRW2000/ECW784
39CQM1420	39CQM1320	5	HRW1600/ECM604
39CQM1421	39CQM1421	5	HRW1800/ECW664
39CQM1422	39CQM1422	6	HRW1900/ECW724
39CQM1518	39CQM1318	5	HRW2000/ECW784
	39CQM1418	5	
	39CQM1518	5	
		6	

AHU Size	AHU Size (Top)	Section Length	Heatwheel Model
39CQM1521	39CQM1421	5	HRW1900/ECW724
39CQM1522	39CQM1521	6	
39CQM1524	39CQM1322	6	HRW2000/ECW786
39CQM1525	39CQM1422	6	
	39CQM1522	6	HRW2000/ECW844
	39CQM1524	6	HRW2000/ECW906
	39CQM1621	5	
	39CQM1421	6	
	39CQM1521	5	HRW1900/ECW726
	39CQM1621	6	
	39CQM1422	6	
	39CQM1522	6	HRW2000/ECW786
	39CQM1622	6	
	39CQM1524	6	HRW2000/ECW846
	39CQM1624	6	
	39CQM1525	6	HRW2200/ECW906
	39CQM1625	6	
	39CQM1422	7	
	39CQM1522	6	HRW2000/ECW786
	39CQM1622	6	
	39CQM1822	6	ECW846
	39CQM1524	6	
	39CQM1624	6	
	39CQM1824	6	
	39CQM1525	6	
	39CQM1625	7	
	39CQM1825	6	HRW2200/ECW906
	39CQM1525	7	
	39CQM1625	6	
	39CQM1825	6	
	39CQM1525	7	
	39CQM1625	6	HRW2200/ECW906
	39CQM1825	7	
	39CQM2025	6	
		7	



Note: Please refer to the nearest Carrier Representative for more details.

ELECTRICAL HEATER



Model Name	Total No of Stage	Max kW per Stage	Max kW for Section
39CQM1518	6	16.8	100.8
39CQM1521	6	19.5	117.0
39CQM1522	6	19.5	117.0
39CQM1524	6	19.5	117.0
39CQM1525	6	19.5	117.0
39CQM1621	7	19.5	136.5
39CQM1622	7	19.5	136.5
39CQM1624	7	19.5	136.5
39CQM1625	7	19.5	136.5
39CQM1822	8	19.5	156.0
39CQM1824	8	19.5	156.0
39CQM1825	8	19.5	156.0
39CQM2025	9	19.5	175.5
39CQM2125	9	19.5	175.5
39CQM2226	10	19.5	195.0
39CQM2230	10	19.5	195.0
39CQM2234	10	19.5	195.0
39CQM2330	11	19.5	214.5
39CQM2334	11	19.5	214.5
39CQM2434	11	19.5	214.5
39CQM2634	12	19.5	234.0
39CQM2636	12	19.5	234.0

Model Name	Total No of Stage	Max kW per Stage	Max kW for Section
39CQM0608	2	5.7	11.4
39CQM0609	2	6.8	13.5
39CQM0610	2	8.4	16.8
39CQM0711	2	9.0	18.0
39CQM0712	2	10.2	20.4
39CQM0811	3	9.0	27.0
39CQM0813	3	11.3	33.8
39CQM0912	3	10.2	30.6
39CQM0913	3	11.3	33.8
39CQM0914	3	12.3	36.9
39CQM1015	4	13.5	54.0
39CQM1016	4	14.7	58.8
39CQM1117	4	15.6	62.4
39CQM1317	5	15.6	78.0
39CQM1318	5	19.5	97.5
39CQM1320	5	19.5	97.5
39CQM1322	5	19.5	97.5
39CQM1418	6	16.8	100.8
39CQM1420	6	19.5	117.0
39CQM1421	6	19.5	117.0
39CQM1422	6	19.5	117.0
-	-	-	-

GENERAL

1. Furnish and install central air handling units of the type, size and capacity shown on the equipment schedule.
2. The design of the air handling unit is based on the use of modular panels and extruded aluminum perimeter frames with composite corner piece (based on Carrier 39CQM series).
3. Units shall be horizontal/vertical draw-through type or horizontal blow-through type as shown on the certified drawings. In general, the unit shall consists of:
 - Mixing box section
 - Filter section
 - Coil section
 - Access or Plenum section
 - Heater section
 - Fan section

CASING

1. Unit shall be constructed of a complete frame with easily removable panels. Removal of any panel shall not affect the structural integrity of the unit.
2. All 39CQM unit sections shall be supplied with 10-gage G60 galvanized (100mm height) steel structural unit baseframe (optional 125mm c-channel baseframe is available if required). Lifting holes are provided for rigging purposes and are positioned to suit optimum hoisting stability.
3. The casing panels shall be solid double wall of 50mm nominal construction with injection foam insulation in between. The outer panel shall be painted 0.5mm thick galvanized steel (sky blue color– RAL 5012) and inner panel shall be unpainted 0.5mm thick galvanized steel as standard. The panel coating shall meet ASTM B117 Standard for 500-hour salt spray test.
4. The casing panels shall be insulated with injected cast-in-situ CFC-Free Polyurethane insulation foam with thermal conductivity of 0.020W/mK and a density of 40kg/m³ in between. The insulation shall be sandwiched and encapsulated between the inner and outer panel. Exposed insulation is not acceptable.
5. Casing panels shall have no exterior exposed raw edges that could lead to rust formation. All casing corners shall be radiused or chamfered.
6. All panels shall seal against a full casing perimeter with nitrile gasket to ensure a tight seal.
7. Mixing Box section shall be solid double wall, insulated casing (as mentioned in clause 3) and complete with necessary dampers for return and fresh air mixing. Accessibility options shall be with hinged access door on hand side or hinged access doors on both sides.
 - a) Viewports shall be available as a factory-installed option on the door of this section.
 - b) Marine lights shall be available as a factory-installed option.
8. Filter section shall be solid double wall, insulated casing (as mentioned in clause 3) and complete with necessary tracks or filters installation. Accessibility options shall be with hinged access door on hand side or hinged access doors on both sides.
 - a) Pressure gages (or pressure switches) shall be available as a factory-installed option.
 - b) Filter sections shall be designed and constructed to contain one of the following filter types:
 - Face/side loading 25mm or 50mm pre-filters
 - Side loading 50mm angle filters
 - Face loading 529mm bag filters with 50mm pre-filters
 - Side loading 529mm bag filters
 - Face loading HEPA filters

CASING (cont'd)

9. Coil section shall have solid double wall, insulated casing (as mentioned in clause 3) and complete with necessary fittings for coil installation. Accessibility options shall be with hinged access door (applicable for vertical AHU) or removable access doors (applicable for Heatpipe option).
10. Access and Plenum section shall have solid double wall and insulated casing (as mentioned in clause 3). Accessibility options shall be hinged access door on hand side or hinged access doors on both sides.
 - a) Viewports shall be available as a factory-installed option on the door of this section.
 - b) Marine lights shall be available as a factory-installed option.
11. Heater section shall have solid double wall, insulated casing (as mentioned in clause 3) and complete with necessary fittings for heater installation. Accessibility option shall be with removable access door on the hand side.
12. Heat Recovery Wheel (HRW) section shall have solid double wall, insulated casing (as mentioned in clause 3) and complete with necessary fittings for HRW installation. Accessibility option shall be with removable access door on the hand side.
13. Fan section have solid double wall double, insulated casing (as mentioned in clause 3) and complete with necessary base for fan/motor installation. Accessibility options shall be with hinged access door on hand side or hinged access doors on both sides.
 - a) Viewports shall be available as a factory-installed option on the door of this section.
 - b) Marine lights shall be available as a factory-installed option.
 - c) Blow-thru sections shall have a diffuser plate as an integral part of the fan section if used immediately downstream of the fan section.
 - d) The fan discharge shall be square in area and isolated from the casing by flexible canvas connection.

FANS

A. General

1. Forward-curved fans shall have double width double inlet (DWDI) fan impeller and scroll. They shall be constructed of galvanized steel and shall be designed for continuous operation at the maximum rated fan speed and motor horsepower. Completed fan assembly shall be statically and dynamically balanced in accordance to ISO 1940.
2. Backward inclined fans shall have double width double inlet (DWDI) fan impeller and scroll. The fan assembly shall be cleaned, primed and painted with epoxy paint and shall be designed for continuous operation at the maximum rated fan speed and motor horse-power. Completed fan assembly shall be statically and dynamically balanced in accordance to ISO 1940.
3. Airfoil fan sections shall have one double width double inlet (DWDI) airfoil fan impeller and scroll. The fan assembly shall be cleaned, primed and painted with epoxy paint and shall be designed for continuous operation at the maximum rated fan speed and motor horse-power. Completed fan assembly shall be statically and dynamically balanced in accordance to ISO 1940.
4. Plenum/Plug fan sections shall have one single width single inlet (SWSI) fan impeller and scroll. The fan assembly shall be cleaned, primed and painted with epoxy paint. Completed fan assembly shall be statically and dynamically balanced in accordance to ISO 1940. Plug fan shall be direct driven.
5. Fan wheels shall be keyed to the shaft and shall be designed for continuous operation at maximum rated fan speed and motor horsepower. Fan wheels and shafts shall be selected with a maximum operating speed 25% below the first critical speed.
6. Fan shafts shall be solid carbon steel, turned, ground, polished and coated with protective paint. Hollow shafts are not acceptable.
7. Recommended fan discharge outlet velocity is between 10~12 m/s.
8. For variable air volume control, variable frequency drive (VFD) shall be supplied as indicated on the equipment schedule.

FANS (cont'd)

B. Performance Ratings

Air performance ratings of the fans shall be rated and certified in accordance with AMCA Standard 210.

C. Sound Ratings

Manufacturer shall publish first through eight octave sound power for fan inlet, fan discharge and airborne.

D. Mounting

Fan scroll, impeller, shaft, bearing, drives and motor shall be mounted on a common base assembly. The base assembly shall be isolated from the outer casing with factory-installed 2" helical spring deflector and flexible canvas connection.

E. Bearing

Fan bearings are with nominal 200,000hrs average life (L_{50}) as standard for all fans.

MOTOR

1. The motor size, type, speed and its electrical characteristics shall be as per the equipment schedule.
2. Fan motors shall be mounted within the fan section casing on slide rails to aid in belt tightening.
3. Fan motors shall be IP55 enclosure, totally enclosed fan cooled (TEFC) with class F insulation (optional with class H insulation) and class B temperature rise complying with BS2757.
4. Fan motors shall be standard efficiency (IE1) type. Optional high efficiency (IE2) or premium efficiency (IE3) motors shall be available, if specified. Motor efficiency class shall be based on IEC 60034-30:2008 Standard.
5. The motors shall be suitable for operation at ambient temperature of 40°C (max) with $\pm 10\%$ voltage utilization range and a 1.15 minimum service factor. For operation $> 40^\circ\text{C}$ please check with factory representative.

DRIVES

1. The drive assembly shall consist of V-belts and a set of fan and motor pulleys adequately sized to meet the specified performance.
2. The V-belts shall be SPZ, SPA, SPB or SPC grades, oil and heat resistance and having anti-static characteristic which prevent electrical discharge.

DRIVES (cont'd)

3. The motor and fan pulley dimension shall conform to ISO 4183 and shall be using taper-lock bush with set screws for easy and quick assemble and disassemble process. The pulley shall be phosphated and coated with a layer of rust prohibitive paint for protection against corrosion.
4. Drive shall be designed for a minimum 1.5 service factor as standard with a 2.0 service factor as option. Drives shall be fixed pitch with variable pitch as an option. All drives shall be factory mounted with sheaves properly aligned and balanced.

COILS

A. General

1. All cooling, heating and refrigerant (DX) coils shall be provided to meet the scheduled performance.
2. All coil performances shall be rated in accordance with AHRI 410 Standard and shall be tested at 400 psig air pressure while submerged under water.
3. All coils shall have minimum 12.7mm (1/2-in.) OD seamless copper tubes mechanically expanded into fins to ensure high thermal performance. Optional is with 9.5mm (3/8") OD copper tubes (applicable for cooling coil only).
4. All coils shall be with aluminum fin with belled collars. Optional copper fins or fins with protective coatings shall be supplied, if specified. Protective coatings shall be post coated and sprayed type only.
5. All aluminum fin coils shall be supplied with galvanized casing and steel tube sheets. Optional stainless steel or aluminum tube sheet shall be supplied, if specified. Copper fin coils shall be supplied with stainless steel casing and tube sheets.
6. All water coils shall be with 1 – 8 rows and 8,10,12,14 fin per inch (fpi) whereas refrigerant coils shall be with 4 ,6 rows and 8,10,12,14 fin per inch (fpi).
7. Moisture eliminator shall be provided, if specified on the equipment schedule to trap moisture droplets. The moisture eliminator material shall be aluminum, mesh aluminum or PVC type as specified.

B. Cooling and Heating

1. Headers shall be constructed of seamless steel pipe material with threaded (MPT) connections. Headers shall have drain and vent connections accessible from the exterior of the unit. Optional copper headers with sweat connection shall be supplied if specified.
2. Coils shall be drainable, with non-trapping circuits and without turbulence promoting devices. Coils will be suitable for a design working pressure of 300 psig at 93°C (cooling coils) or 175 psig at 205°C (heating coils).
3. Coil shall be designed for counter flow arrangements (chilled water/hot water flow against airflow direction).

C. Direct Expansion (DX)

1. Headers shall be constructed of seamless copper pipe material with brazed joints.
2. DX coil circuiting shall include dual distributors arrangement for all sizes (optional single distributor arrangement for 39CQM0608 – 39CQM0813). Brass nozzles and distributors are factory supplied to ensure uniform flow. Thermal expansion valves shall be provided if specified.
3. DX coils shall have full face active area with row-split intertwined circuits for equal loading (optional face-split if specified). Suction and thermal valve connection shall be on the same side.
4. DX coils shall be designed for counter flow arrangements (refrigerant flow against airflow direction).



COILS (cont'd)

D. Drain Pans

1. Drain pans shall be single wall, 1.5mm thick galvanized (and powder painted) or SS304 stainless steel construction as specified. The drain pan depth shall be 40mm with 500mm width and insulated with 3mm PE closed cell insulation underneath to prevent condensation.
2. The drain pan shall be sloped toward the drain fitting to ensure positive condensate drainage and shall extend downstream of the coil to provide sufficient amount of space to contain moisture carry-over. Drain pan shall allow no standing water and design in accordance to ASHRAE Standard 62.
3. Drain pan shall have a side drainage design with integral FPT elbow (43mm OD) for side discharge and trapping. One drain outlet shall be supplied for each cooling coil section unless otherwise indicated.
4. Where 2 or more coils are stacked in a coil bank, intermediate drain pans shall be provided and the condensate shall be piped to the bottom drain pan. The bottom coil shall not serve as a drain path for the upper coil.
5. The coil shall not sit in the drain pan and shall be removable via a coil track.

ELECTRICAL HEATERS

1. Electric heater capacity and steps shall be as indicated on the equipment schedule. See electrical table for details.
2. The electric heater element shall be constructed from 80/20 nickel chrome resistance wire which is connected to terminal pins and centered in SS304 stainless steel sheath tubes by compressed magnesium oxides.
3. The manufacturer shall furnish a control box (if required) containing contactor, thermostat and circuit breaker. Heater control box shall be mounted on the designated hand side of the unit.

FILTER

1. Provide the type and efficiency of the filters as per the equipment schedule.
2. High velocity filter sections shall accept 25mm or 50mm (G3 or G4) washable or throw-away filters.
3. Angle filter sections shall accept 50mm (G3) washable filters of standard flat filter sizes, arranged in a horizontal V formation.
4. Bag filter sections shall be capable of accepting (F5 - F9) bag filters with length up to 529mm with 22mm header.
5. Blow-thru HEPA filter sections shall contain a face loading filter frame and be capable of accepting standard size 300mm deep HEPA filters (H13-H14).
6. Optional Magnehelic/ Minihelic filter gages (or filter switches) complete with necessary tubing to measure the pressure drop across the filters shall be provided if specified.

European Efficiency Guide	Filter Details	Media	Frame Material	MERV rating
G3	Panel - Primary Filter	Pleated type : Synthetic fibre	Galvanize Iron / Aluminium	MERV 5
G4	Panel - Primary Filter	Pleated type : Synthetic fibre	Beverage Board / Aluminium	MERV 7
F5 - F9	Bag - Secondary Filter	Pocket type : Synthetic fibre	Galvanize Iron / Aluminium	MERV 10 - 15
H13 - H14	HEPA	Water resistance fiberglass	Particle Board	-

Arrestance and Dust Spot Efficiency ratings are based on the ASHRAE 52 test method.
 Minimum Efficiency Reporting Value (MERV) ratings are based on the ASHRAE 52 test method.
 European Efficiency Classes are based on European Standards EN 779 and EN 1882.

MXB DAMPERS

1. Provide factory installed opposed acting dampers as per the approved drawings.
2. Damper frame shall be made of extruded and anodized aluminum. Damper blades shall also be extruded and anodized aluminum airfoil shape to withstand high velocity and static pressure. Dampers shall be provided with flexible synthetic blade edge seals for low leakage application.
3. Damper shall be sectionalized to limit blade length to be less than 1800mm in order to prevent excessive blade warping. Outdoor air and return air damper size shall be of the same area for equal air mixing.

ACCESSORIES

A. Viewports

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 200mm and installed with screws that do not come into direct contact with the internal surface of the air handling unit.
2. The viewport shall be gasketed on the internal and external surface with thermoplastic elastomer (TPE) gaskets to ensure air-tightness. The viewport shall be capable of withstanding unit operating pressures.

B. Marine Lamp

1. Marine lamps shall be available as factory installed option on the mixing box, empty and fan sections of the air handling unit. The construction shall be vapor tight and rated to IP44.
2. The marine lamps shall consist of a structural light fitting base with aluminum reflector receptacle and structural glass globe protected by wire mesh.
3. The marine lamps shall come fitted with a light bulb complete with factory installed wiring and terminated with an IP55 rated switch located external to the unit.

NOTE



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NOTE





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