



WFC - DISTRICT COOLING FCU - TECHNICAL BOOK





CONTENT

1. Introduction	01
2. Features	02
3. Nomenclature	04
4. Performance data	05
5. Air flow and static pressure	06
6. Capacity correction factors	07
7. Dimension data	08
8. Wiring diagram	09

1. Introduction

We thank you very much for your kind attention to Wolf International products.

Wolf International (Wolf International) is committed to provide high quality Air Condition and related products. The product range extends from as small as 0.5 Ton Window AC to 4000 Ton Centrifugal Chillers. This is possible in strategic alliances with many factories around the world, in addition to the WOLF GMBH setup in Germany.

In this Technical Data book we are introducing technical details for WFC range of WOLF District Cooling Fan Coil Units. WFC range units include many models and incorporate Nine sizes with air volumes between 400 to 3000 CFM also available versions for high static application up to 100 pa.

It comes with various optimizes such as wired control digital thermostat or with remote control, 2 way valve, 3 way valve with actuator and various control devices interpolated Building Management System (BMS).

This type of units has wide range of application such as residential villas, Hotels, apartments, offices, Hospitals, Meeting Halls, schools and other high rise Buildings Due to its low height the installation is much easier. The lowest sound levels are key features of Wolf International units.

Kindly utilize the information for your Air Conditioning System design from this Technical Data Book (TDB).

We look forward to doing business with you regularly

2. Feature

1. Unit Casing

Casing has a classic design and are made from heavy gauge galvanized sheet conforming to ASTM – A653 standards. The units are fabricated with 18 gauge thickness galvanized sheet steel for panels as a rigid of coil casing support x casing panels. Unit has option of back or below for the Air Intake.

Unit has option of Return air plenum box with variety of filter option.

2. Cooling Coil

Tubes are manufactured from 10 mm (3/5") OD. Copper and are staggered for greater heat transfer. The coils shall 3, 4 x 6 row, with high efficiency lowered aluminium fins are mechanical bonded into tubes. Manual drain Vents automatic air vents on prolonged units are supplied as standard (with proper connection on the left (right – optional) when reviewed from the front. The maximum work pressure is 24 bar and maximum water flow temperature 120° C.

3. Drain Trays

The drain trays are manufactured from galvanized sheet steel with an internal epoxy resin coating. It is insulated with 12 mm closed cell politeness foam.

Alternative insulation types and stainless steel drain trays also available as on optional.

4. Fan Decks

One or more centrifugal fans are fitted with scrolls and aluminium or plastic impellers, which provide a spark free application. High efficiency forward curved fans are directly couples with double shafted motors and ill statically and dynamically balanced for quiet operational fan decks can be easily removed for maintenance because mounted on slides and fixed only by two screws.

5. Electric Motor

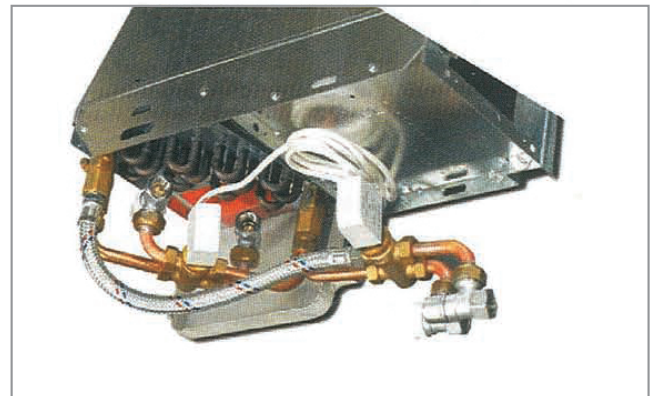
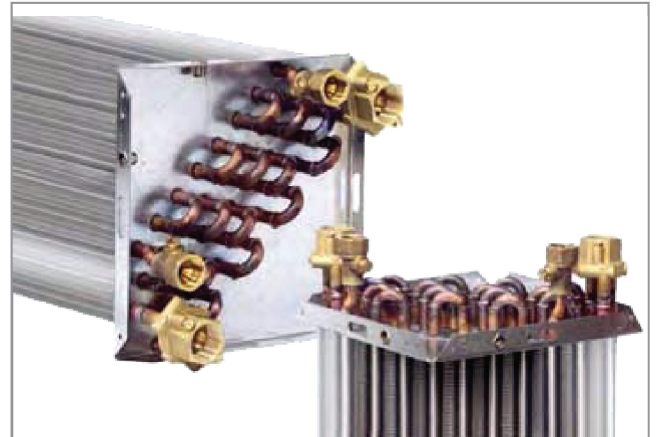
Standard motor are suitable for a V230/IPH/50-60 HZ supply and have a permanently coupled capacitor. They have sealed for life sleeve bearings and cast aluminium enclosure rated to IP42 with built in thermal overload protection. Insulation is rated to class 'F' C max 1550 CO allows the motor operate with very severe ambient condition. 3 speeds are available with built in thermal overload protection.

6. Fan Speed Control Switch

3 different speed and "OFF" position. It can be supplied on request and normally has to be wall mounted.

7. Fan Coil Chassis

Manufactured from heavy gauge galvanized steel, it supports the Fan Coil Components and is easily dismantled.



8. Top Valve Kit

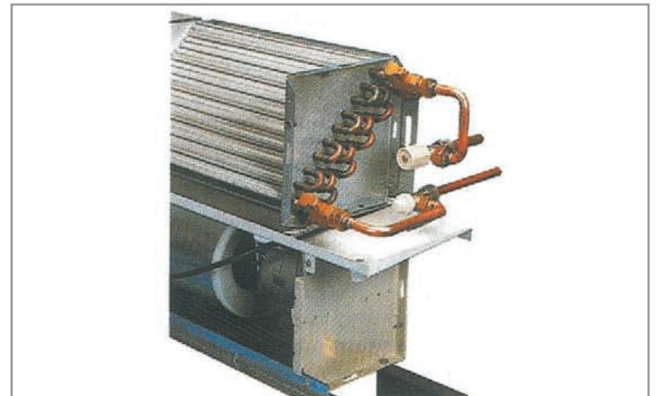
To simplify site installation a valve kit is available which includes copper pipes, a key operated regulating valve and a hand operated stop valve. In addition, two quick connectors for 14 mm OD pipes are supplied with rubber gaskets. They are suitable for a max working pressure of 10 bars. This system negates the need for brazing or soldering.


9. ON –OFF and Modulating Valve Kit

These kits are available 2 or 4 port valves (1/2" or 3/4:" Gas). They can be supplied loose or factory fitted, when they are wired and tested, it is also possible to fit factory fit any other leading brand of controls and these are normally free issued to us from client. All kits are assembled to allow ease of maintenance removal.

10. Thermostats

Wolf International Thermostats are available which will normally be wired to control the fan. There are bulb types in the return air and 2 stage bulb types. Wall mounted and units mounted with an S/W switch. The electronic (6 amps) includes a room thermostat S/W Switch and Speed Switch. A wide range of wiring diagrams (H..) is available for standard applications.

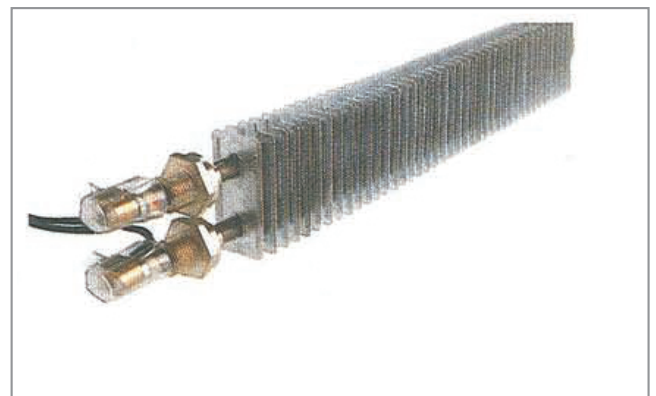

11. Supply and Return Air Plenum

Supply air plenum incorporates circular discharge spigots with a maximum diameter 200 mm. The plenum can be supplied as a monobloc assembly. The monobloc assembly adds strength to the unit and simplifies red site installation. Return air plenum can also be supplied for fitting on site. All plenum can also be supplied for fitting on site. All plenum can be internally insulated with closed cell adhesive politeness class "1" European standard fire proof insulation. For all models plenum provided as standard.

12. Electric Heaters

Elements are manufactured from stainless steel tubes with aluminized steel fins and come complete with a safety thermostat cut-out. Elements are wired to a terminal block and relays are also available.

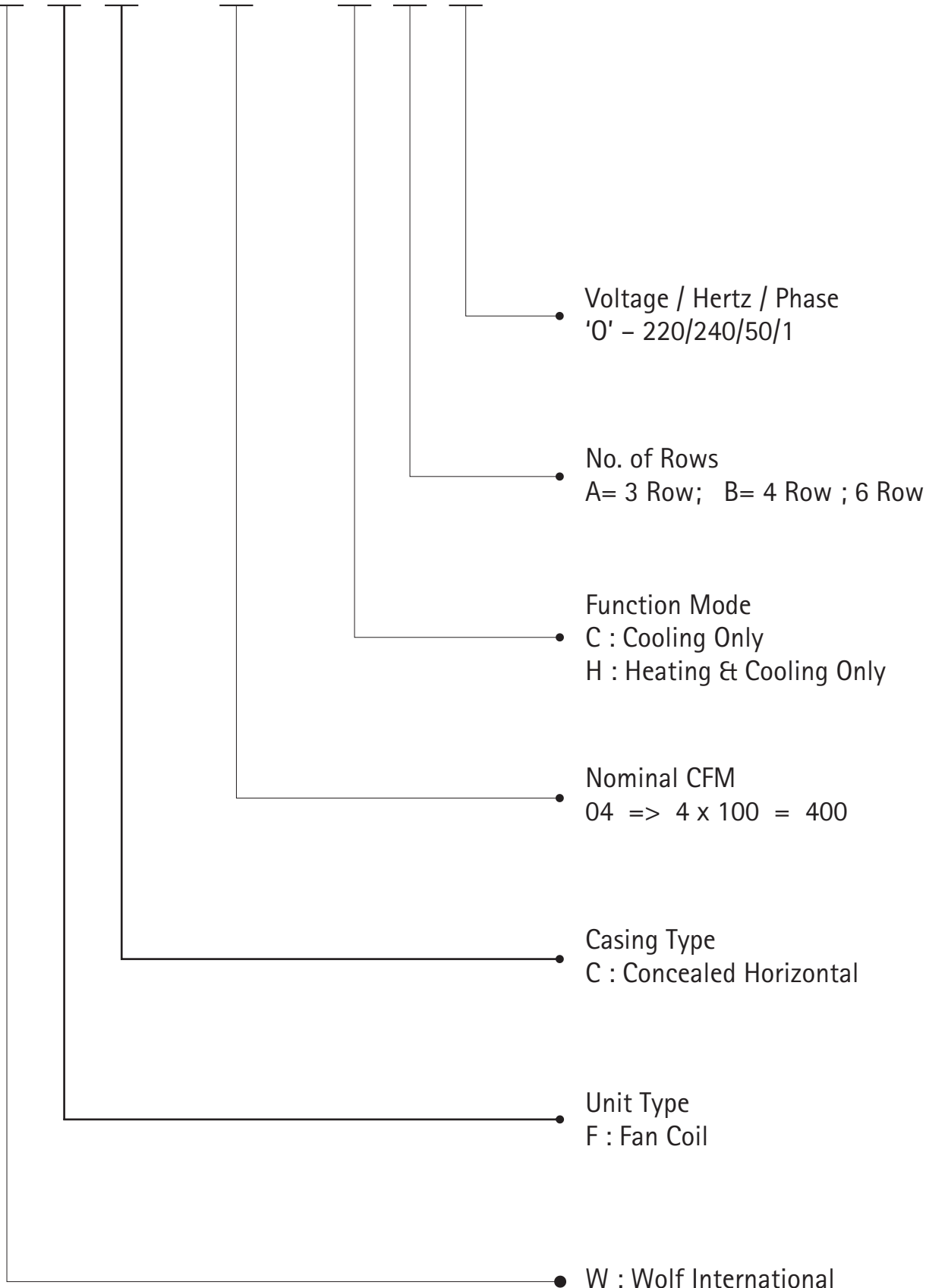
The technical and construction characteristics conform fully to European std. Many heater sizes are available and on concealed units it is possible to increase the heating output by wiring additional elements in parallel. (max 2 EE for vertical units)





3. Nomenclature

W F C - 04 - C A O



FAN COIL UNITS



4. PERFORMANCE DATA

PERFORMANCE BASIC PARAMETERS												
MODEL		WFC-04-CBO	WFC-06-CBO	WFC-08-CBO	WFC-10-CBO	WFC-12-CBO	WFC-14-CBO	WFC-16-CBO	WFC-18-CBO	WFC-20-CBO	WFC-25-CBO	
Air Flow (CFM)	High	540	800	1060	1350	1600	1850	2150	2400	2670	3200	
	Medium	400	600	800	1000	1200	1400	1600	1800	2000	2400	
	Low	270	400	540	670	800	950	1070	1200	1350	1600	
Cooling Capacity (KW)	Total	H	3549	5364	7028	8764	10923	12659	14923	16093	17488	21256
		M	2978	4469	5958	7447	8936	10425	11916	13405	14894	17873
		L	2288	3534	4579	5723	6868	8012	9157	10302	11447	13736
	Sensible	H	3016	4533	6044	7555	9066	10577	12088	13599	15110	18132
		M	2472	3709	4945	6181	7417	8653	9890	11126	12362	14835
		L	1647	2972	3297	4121	4945	5769	6593	7417	8242	9890
ESP (Pa)		50	50	80	80	80	80	80	80	100	100	
Motor Power (Watts)	50 HZ	118	147	196	216	392	442	638	681	889	1064	
	60 HZ	130	163	217	238	433	483	705	752	982	1176	
Water Flow in GPM		1.27	1.91	2.54	3.18	3.81	4.45	5.08	5.72	6.35	7.62	
Medium Pressure Drop Kpa		14	19	21	23	24	24	25	26	28	30	
Sound level pressure in dB(A)		30.5	33	36.6	43.4	38.6	39.1	51.5	51.5	52.6	56	
Net Weight in KG		28	33	45	49	53	57	64	66	72	82	

1. The cooling condition : Air inlet Temperature DBT /WBT 24.0/17.2 °C
2. Chilled Water inlet / Outlet Temperature : 5.5 / 14.5 °C
3. The cooling capacity , Water Flow & Medium pressure drop based on medium fan speed.

5. Fan Air Flow and ESP

MODEL	ESP	FAN SPEED	CFM
WFC-04/CBO	50	H	532
		M	400
		L	266
WFC-06/CBO	50	H	800
		M	600
		L	400
WFC-08/CBO	80	H	1066
		M	800
		L	534
WFC-10/CBO	80	H	1334
		M	1000
		L	666
WFC-12/CBO	80	H	1600
		M	1200
		L	800

MODEL	ESP	FAN SPEED	CFM
WFC-14/CBO	80	H	1850
		M	1400
		L	950
WFC-16/CBO	80	H	2134
		M	1600
		L	1066
WFC-18/CBO	80	H	2400
		M	1800
		L	1200
WFC-20/CBO	100	H	2666
		M	2000
		L	1334
WFC-25/CBO	100	H	3200
		M	2400
		L	1600

Optional Component

2-Way Valve

Combine by motor and valve, motor can be connected to temperature controller, to keep the valve on/off and automatic temp. adjustment.



3-Way Valve

Adjust indoor temperature by changing water flow, for energy saving.



Y Water Filter



Temperature Controller

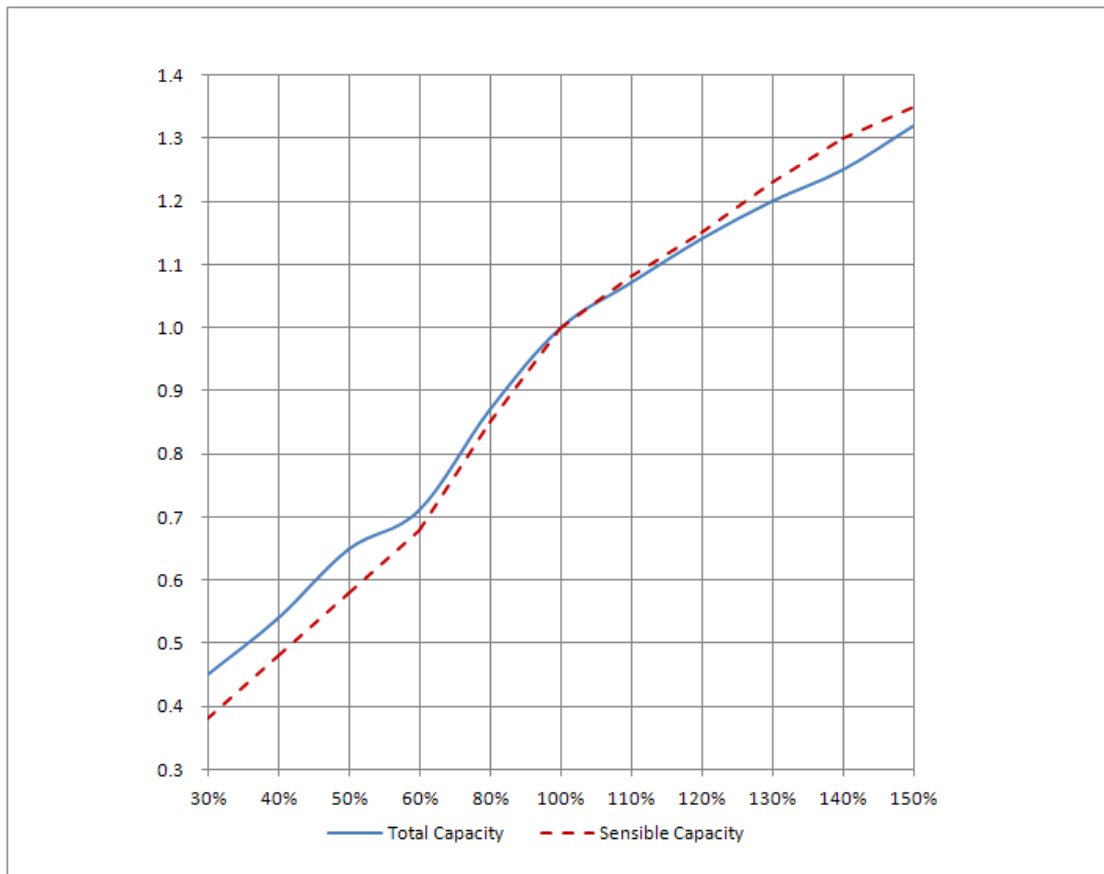




6. Capacity Correction Factor

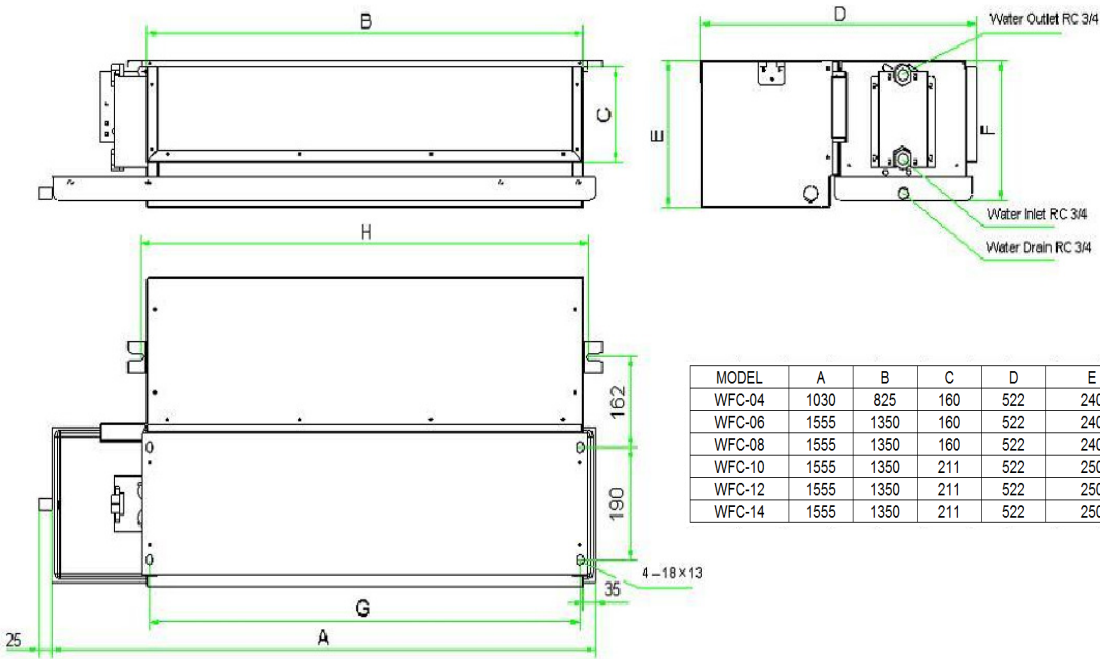
Cooling Capacity Correction

Actual Air Flow / Rated Air Flow	Total Cooling Capacity Correction	Sensible Cooling Capacity Correction
30%	0.45	0.38
40%	0.54	0.48
50%	0.65	0.58
60%	0.71	0.68
80%	0.87	0.85
100%	1.00	1.00
110%	1.07	1.08
120%	1.14	1.15
130%	1.20	1.23
140%	1.25	1.30
150%	1.32	1.35

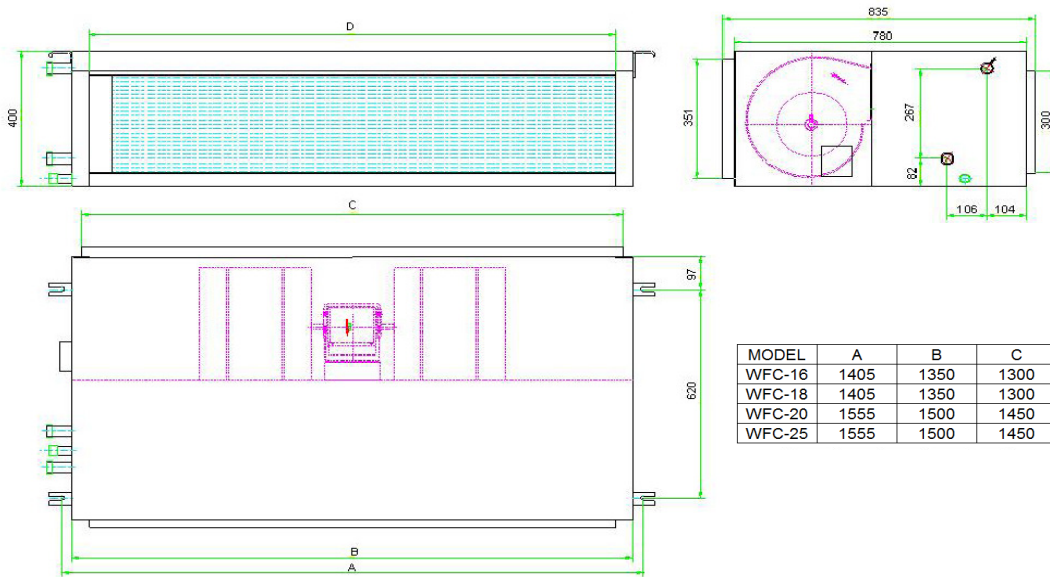


Actual Air Flow / Rated Air Flow

7. DIMENSIONAL DATA

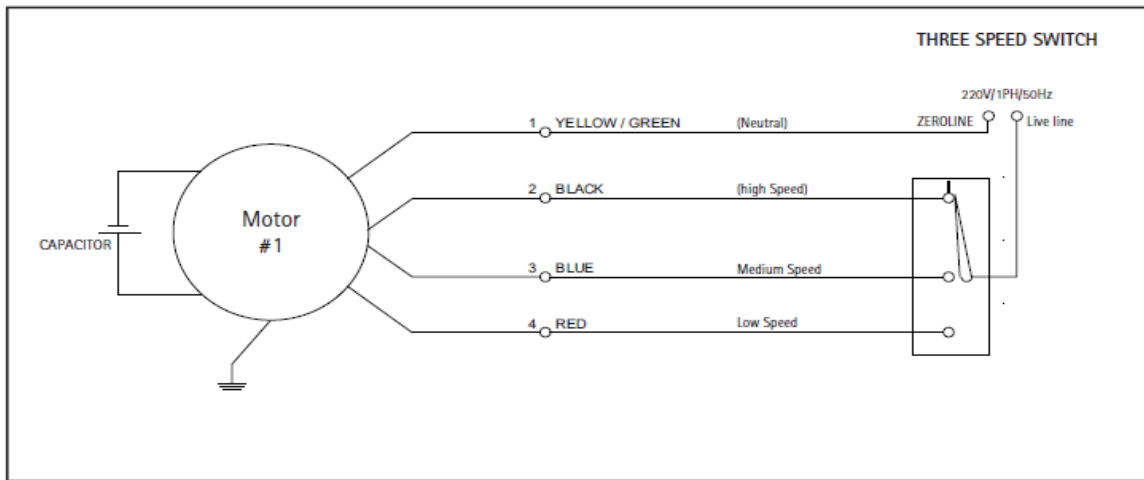


MODEL	A	B	C	D	E	F	G	H
WFC-04	1030	825	160	522	240	230	815	845
WFC-06	1555	1350	160	522	240	230	1340	1370
WFC-08	1555	1350	160	522	240	230	1340	1370
WFC-10	1555	1350	211	522	250	230	1340	1370
WFC-12	1555	1350	211	522	250	230	1340	1370
WFC-14	1555	1350	211	522	250	230	1340	1370

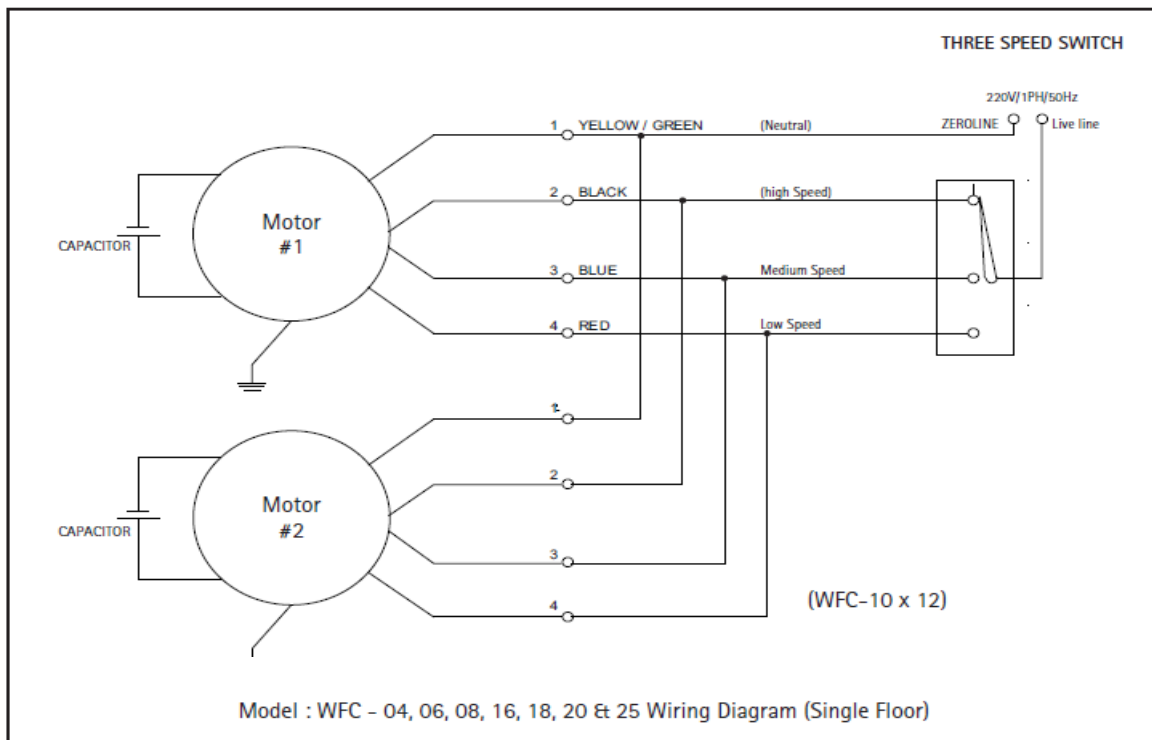


MODEL	A	B	C	D
WFC-16	1405	1350	1300	1260
WFC-18	1405	1350	1300	1260
WFC-20	1555	1500	1450	1410
WFC-25	1555	1500	1450	1410

8. Wiring Diagram



MODEL : WFC -04 TO WFC - 06



MODEL : WFC -08 TO WFC - 25

PRODUCT RANGE



CHILLED WATER AHU



CLOSE CONTROL UNITS



SMART AC-VRV SYSTEM



HEAT EXCHANGER



DECORATIVE A/C UNITS



DUCTED UNITARY PRODUCTS



SOLAR SYSTEM



FLOW DEVICES



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