

BOSCH Climate 5000  
**Fan Coil Unit**



**BOSCH**  
Invented for life

## Introduction to Bosch Thermotechnology

Bosch Thermotechnik GmbH is a leading supplier of resource-efficient heating products and hot water solutions in Europe. In fiscal 2011, the company generated sales of 3.1 billion Euros (68% outside Germany) and employed approx. 13,900 people. Bosch Thermotechnology has strong international and regional brands and manufactures a diversified product range in 21 plants in 11 European, North American and Asian countries. In 2011, Bosch Thermotechnology invested 127 million Euros in research and development, roughly 10.4% more than in the previous year. Intelligent networks and local systems for heating, ventilation, air-conditioning and electricity generation are fundamental technologies for the future building standard, which will generate more energy than is used.

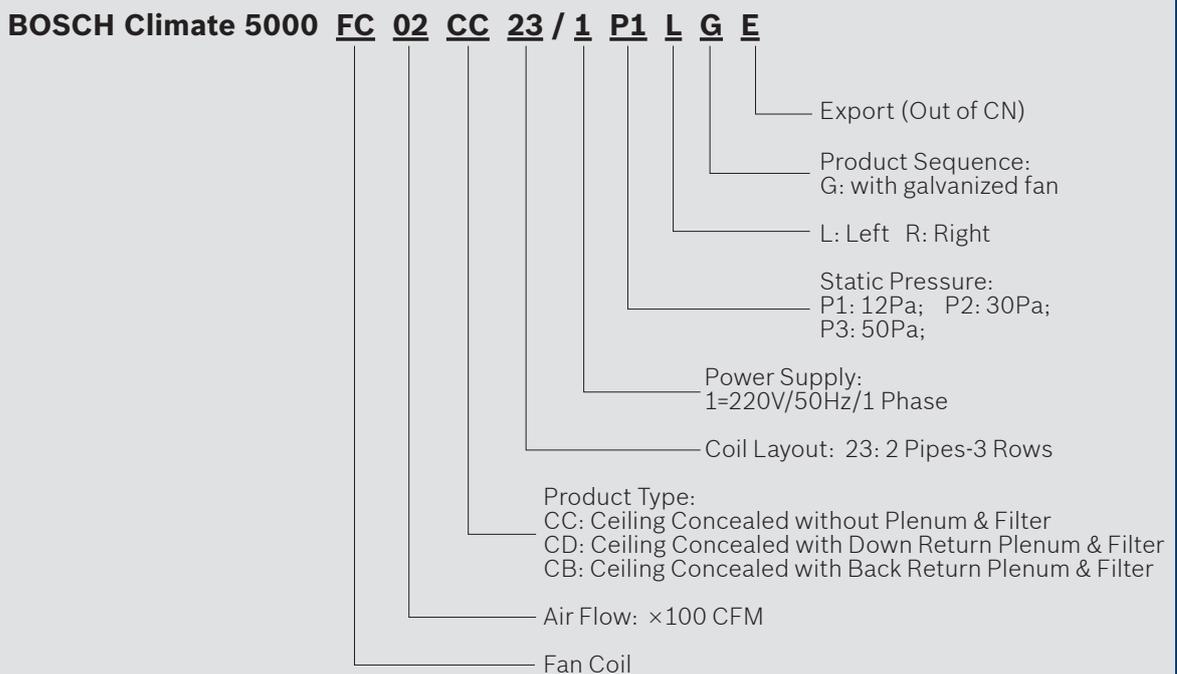
Bosch Thermotechnology (Shandong) Co. Ltd is a division of Bosch Thermotechnology with focus on providing energy efficient cooling, heating and comfort hot water equipment & solutions for commercial and industrial segments.

The division employs approx. 260 people with more than 40 engineers, and has a plant of 80000sqm with state-of-art manufacturing facility and high-demanding quality management system.

A comprehensive range of renewable heat pumps, chillers, fan coil units and air handling units meets almost all kinds of requirement from buildings like office, hospital, hotel, shopping mall or industrial plants.

Bosch Climate 5000 fan coil unit with galvanized fan is a product engineered with most advanced technology which brings you great energy savings, and an ultimate quiet and comfortable working/living environment.

## Nomenclature



## Explosive View

### 1) High Efficiency AC motor

High quality AC motor works with reliable bearings. Fan and motor are precisely adjusted for dynamic balance before leaving the factory.

### 2) Galvanized Fan & Volute

High efficiency large centrifugal fan ensures strong and constant air flow. Axes and bearings have been special treated for longer service life.

### 3) Heat Exchanger Complex

High quality hydrophilic fins and seamless copper tubes are made into state-of-art heat exchangers, ensuring a smooth and even energy transfer.

### 4) Drain Pan with Insulation

The enlarged drain pan has a two degree slope to ensure a smooth drainage and is covered with 5mm PE insulation to avoid external condensation.

### 5) Return Plenum and Washable Nylon Filter

Changeable air return plenum can be done easily at job-site with screw driver only.(backside to downside air return or downside to backside air return).

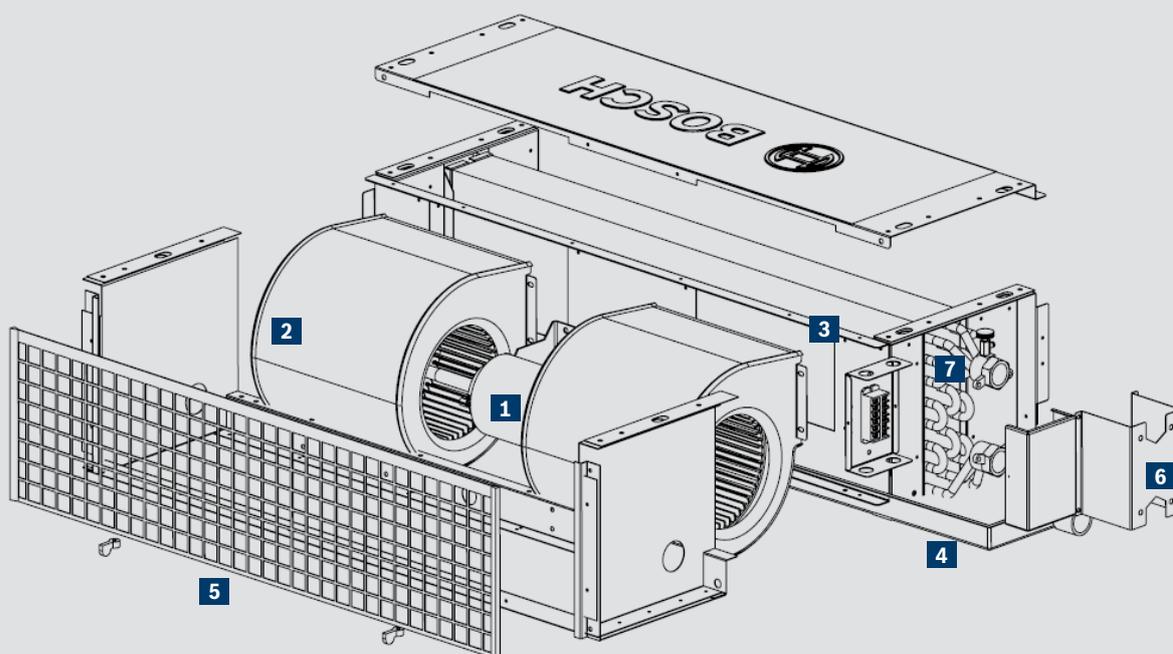
Product is equipped with washable nylon filter if with air return plenum, Aluminum filter is optional.

### 6) Removable End Panel

End panels on both sides can be removed; coil connection orientation can be easily changed on jobsite.

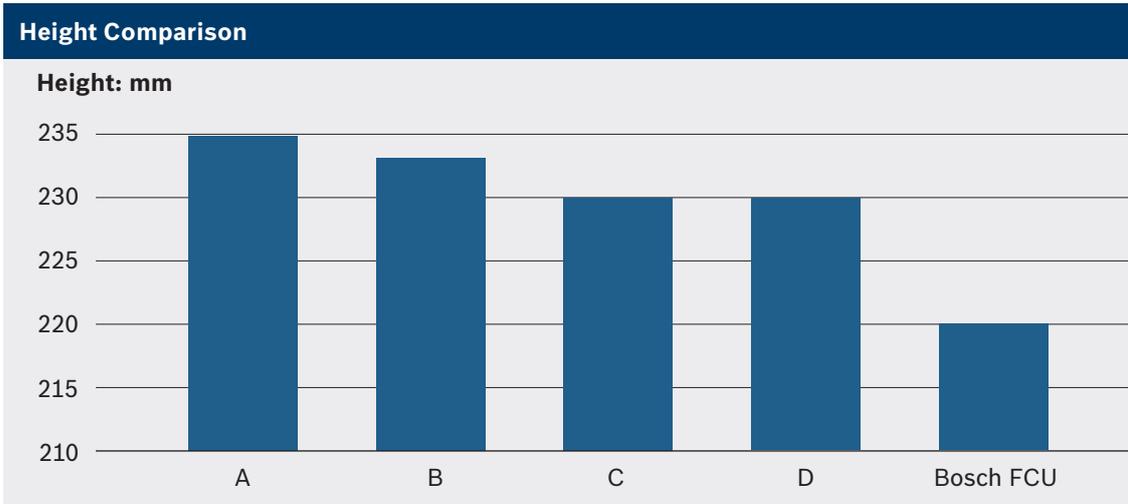
### 7) Leakage-tight Header

This safe and secure header structure is perfectly designed, aiming at totally leakage-free and durable operating performance.

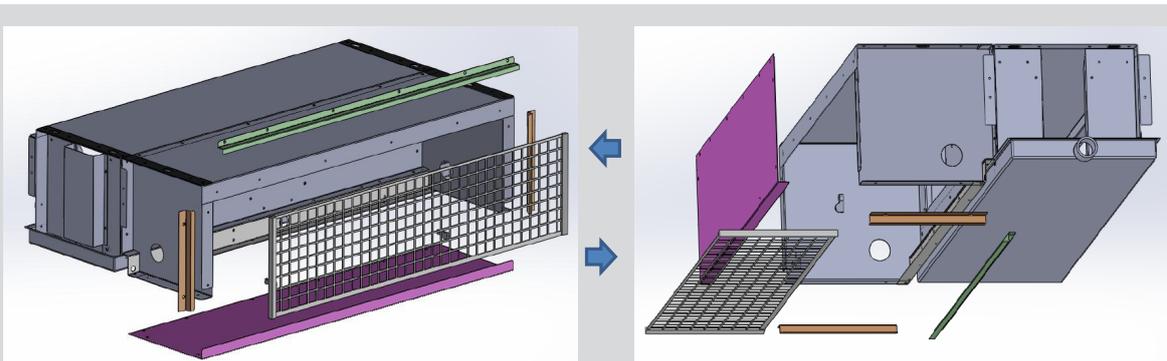


# Features

- 1 High energy efficiency**  
 Bosch Climate 5000 Fan Coil Unit is the new energy saving products engineered with most-advanced technology by Bosch Thermotechnology. High efficient heat coil is manufactured by mechanically expanded copper pipe with open-window hydrophilic aluminium fins with state-of-art techniques. The strengthened air supply of the large diameter impeller fan makes the maximum heat transfer efficiency of the unit.
- 2 Wide range choice**  
 Bosch Climate 5000 Fan Coil Unit has wide offering with airflow 170~2380m<sup>3</sup>/h, and cooling capacity 1.45~13.18kW, and product is available with configuration of with back return plenum, or with down return plenum, or without air return plenum. In order to meet all the possible applications, 12Pa, 30Pa, 50Pa esp. is also available. Extended drain pan, stainless steel drain pan is optional.
- 3 Low Noise**  
 The unit use the latest wide wheel and low speed forward-curved blades, dynamically balanced and adjusted with the motor, plus the high performance low noise bearing. The Unit casing is equipped with good noise eliminate insulation materials. Thus lead to a lower noise than the conventional products.
- 4 Most Compact Design**  
 The unit height is only 220mm the most compact thus saves lots of installation space and can meet all kinds of diverse applications. Which also makes the installation easier.



- 5 Flexible design**  
 The unit has been carefully designed with a changeable air return plenum, thus it can be easily changed as simply as with screw driver only. From backside to downside air return or from downside to backside air return



# Specifications

## Fan Coil Unit (Two-pipe Three Rows)

Model		FC02	FC03	FC04	FC05	FC06	FC08	FC10	FC12	FC14	
Air Flow m <sup>3</sup> /h	H	340	510	680	850	1020	1360	1700	2040	2380	
	M	260	380	510	640	770	1020	1280	1530	1790	
	L	170	260	340	430	510	680	850	1020	1190	
Total Cooling Capacity W	H	2370	3260	4100	4840	5630	7740	9400	11200	13180	
	M	1870	2450	2930	3740	4480	5920	7400	8940	10420	
	L	1450	1760	2120	2730	3240	4290	5370	6510	7580	
Sensible Cooling Capacity W	H	1570	2050	2530	3020	3490	4880	5970	7200	8250	
	M	1250	1530	1810	2320	2750	3730	4700	5720	6480	
	L	950	1110	1300	1680	2009	2690	3400	4180	4740	
Heating Capacity W	H	3980	5260	6850	7410	9470	12680	14410	17160	20190	
	M	3210	3950	4900	5740	7550	9690	11340	13700	15970	
	L	2600	2840	3550	4190	5450	7030	8230	9970	11610	
Power Input W	12Pa H	36	52	58	82	94	143	166	186	226	
	30Pa H	43	58	78	87	108	146	187	211	271	
	50Pa H	47	65	80	101	126	165	200	240	326	
Noise Level dB(A)	12Pa	36	38	40	42	44	45	47	49	51	
	30Pa	39	41	43	45	46	47	49	51	53	
	50Pa	41	43	45	46	48	49	51	53	54	
Fan	Galvanized Forward Curve Centrifugal Fan										
Motor	Type	AC Motor									
	Insulation Class	B									
	Power Supply	AC220V±10%, 1Ph/50Hz									
Coil	Type	Seamless copper mechanically expanded into aluminum fins									
	Max. Working Pressure	1.6MPa									
Inlet/Outlet Water Pipe	FPT 3/4"										
Condensate Water Pipe	20mm										
Water Flow kg/h	H	415	571	718	847	987	1356	1649	1962	2313	
Water Pressure Drop kPa	H	18	24	28	30	32	36	38	40	42	
Net Weight w/o plenum kg	13.2 16.2 16.2 16.2 18 23.3 28.8 28.8 33.6										
Net Weight c/w plenum kg	15.7 19.6 19.6 19.6 21.5 28.3 34.2 34.2 39.5										
Dimensions	W	880	1030	1030	1030	1180	1500	1660	1660	1930	
	D	466	466	466	466	466	466	466	466	466	
	H	220	220	220	220	220	220	220	220	220	

### Notes:

#### 1. Nominal Testing condition:

Cooling: entering air temp 27°C DB/19.5°C WB; entering water temp 7°C, leaving water temp 12°C;

Heating: entering air temp 21°C; entering water temp 60°C, the same water flow as in cooling;

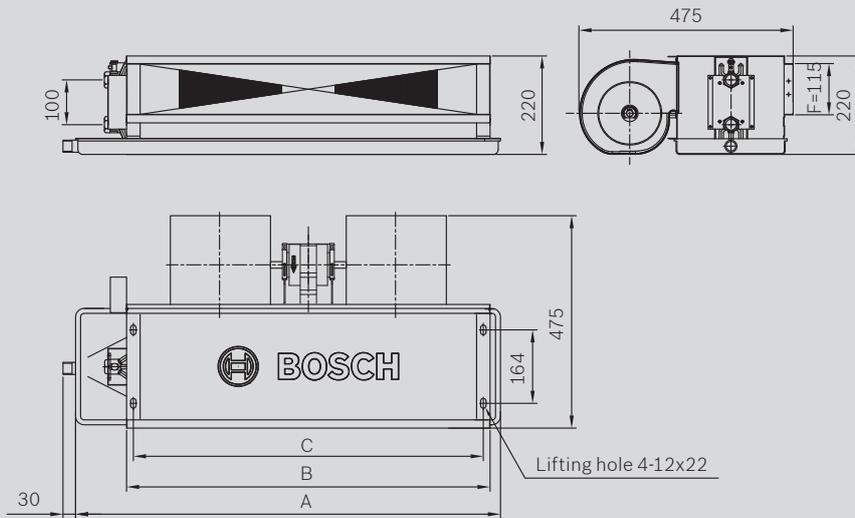
#### 2. H, M and L stand for high, medium and low speed;

3. Sound pressure level are measured in acoustic room, position of the measure point is 1m in the front and 1m below the vertical center line of the unit;

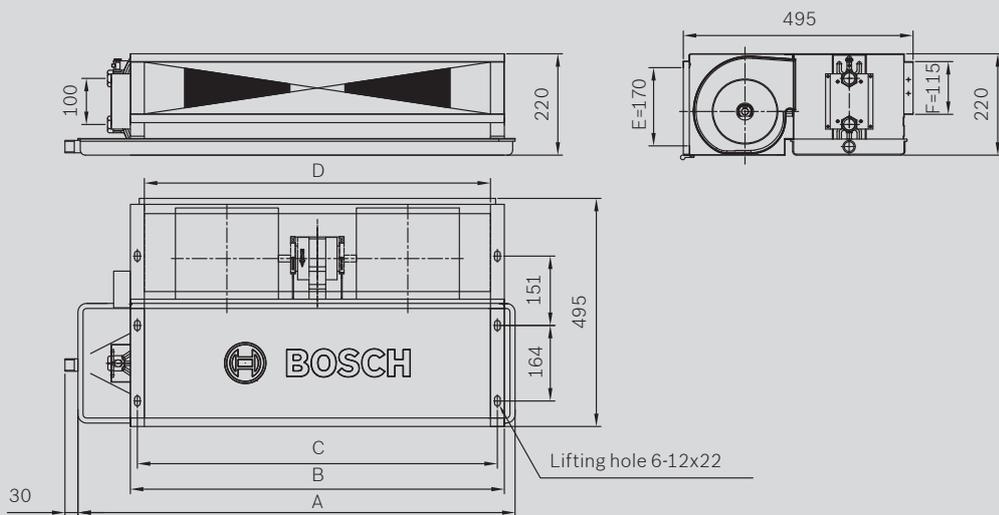
4. Static pressure is measured without filter and air outlet (no air return box).

# Dimensions

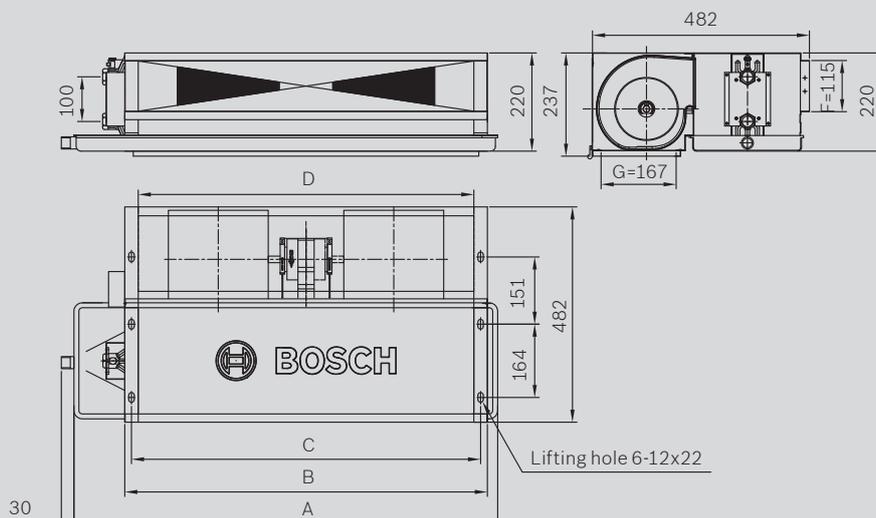
## Without Plenum



## With Back Return Plenum



## With Down Return Plenum



Model	Without Plenum				With Plenum				
	A(mm)	B(mm)	C(mm)	Weight(kg)	A(mm)	B(mm)	C(mm)	D(mm)	Weight(kg)
FC02	850	638	608	13.2	850	638	608	574	15.7
FC03	1000	808	778	16.2	1000	808	778	744	19.6
FC04	1000	808	778	16.2	1000	808	778	744	19.6
FC05	1000	808	778	16.2	1000	808	778	744	19.6
FC06	1150	938	908	18	1150	938	908	874	21.5
FC08	1470	1238	1208	23.3	1470	1238	1208	1174	28.3
FC10	1630	1498	1468	28.8	1630	1498	1468	1434	34.2
FC12	1630	1498	1468	28.8	1630	1498	1468	1434	34.2
FC14	1900	1758	1728	33.6	1900	1758	1728	1694	39.5

## Correction Factors

### Cooling Capacity Correction Factors

EWT (C)	5	6	7	8	9	10	11	12
Correction Factor	1.15	1.07	1	0.92	0.85	0.77	0.7	0.62

Note: air side condition, entering DB 27C, WB 19.5C.

### Heating Capacity Correction Factors

EWT (C)	35	40	45	50	55	60	65	70
Correction Factor	0.36	0.49	0.62	0.74	0.87	1	1.13	1.26

Note: air side condition, entering DB 21C.

### Cooling Capacity Correction Factors Based on Different Ambient Conditions

WB (C)	DB (C)	24	25	26	27	28	29	30
17		0.76						
18			0.85					
19				0.94				
19.5					1			
20						1.06		
21							1.15	
22								1.25

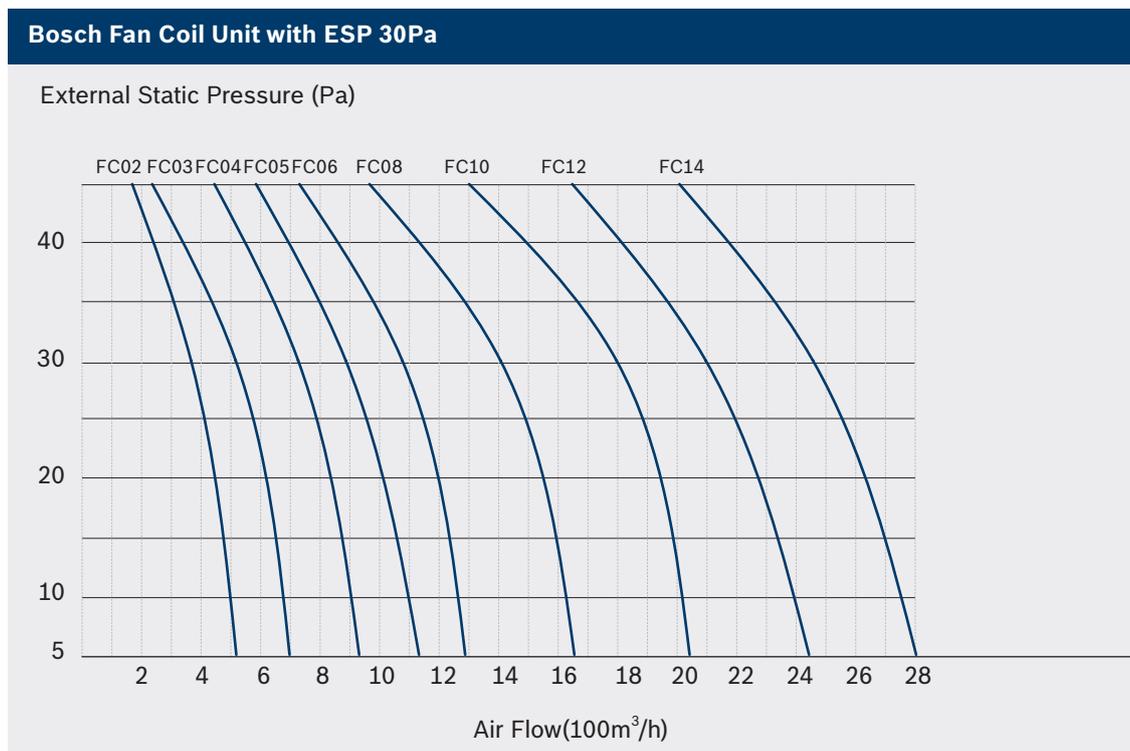
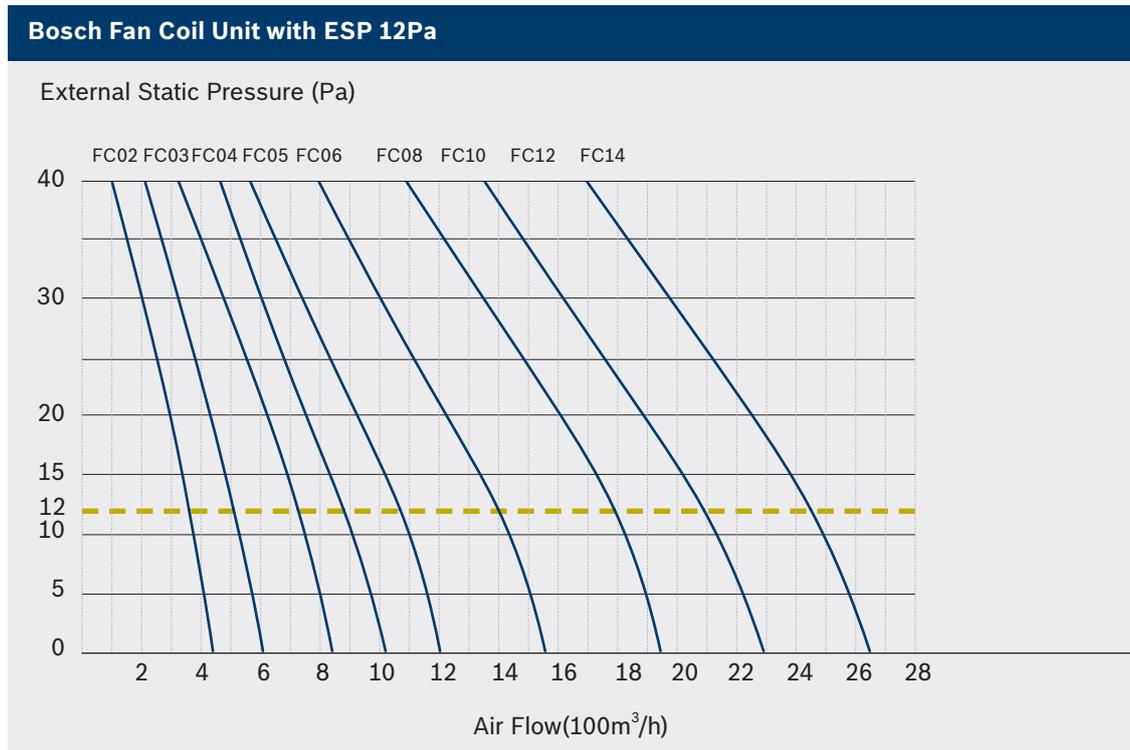
Note: entering cooling water temperature 7C.

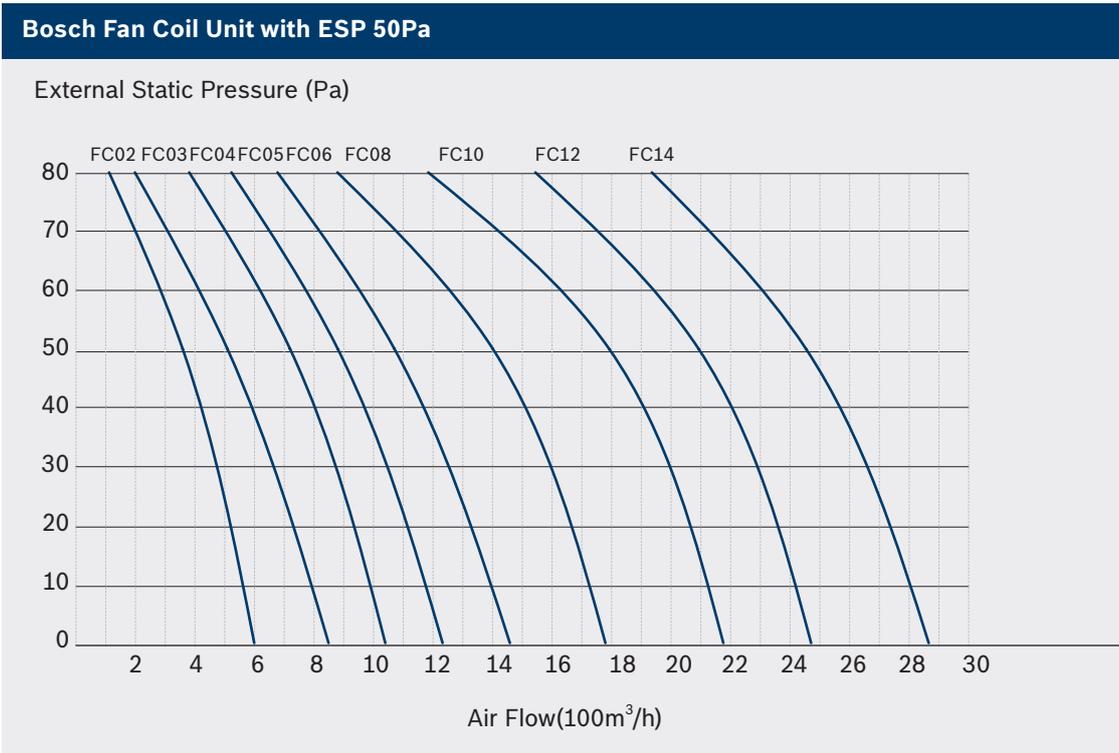
### Heating Capacity Correction Factors Based on Different Ambient Conditions

DB (C)	18	19	20	21	22	23	24
Correction Factor	1.1	1.07	1.02	1	0.97	0.94	0.9

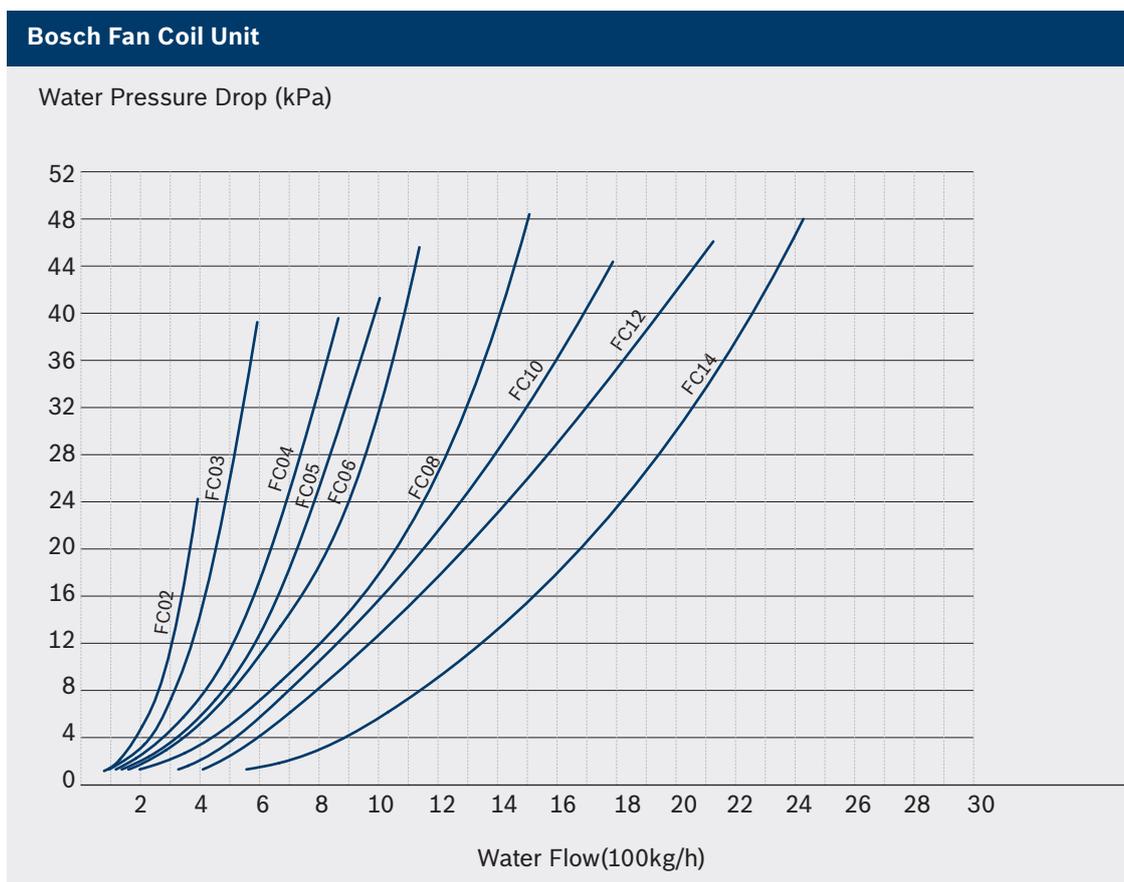
Note: entering heating water temperature 60C.

# Fan Curve



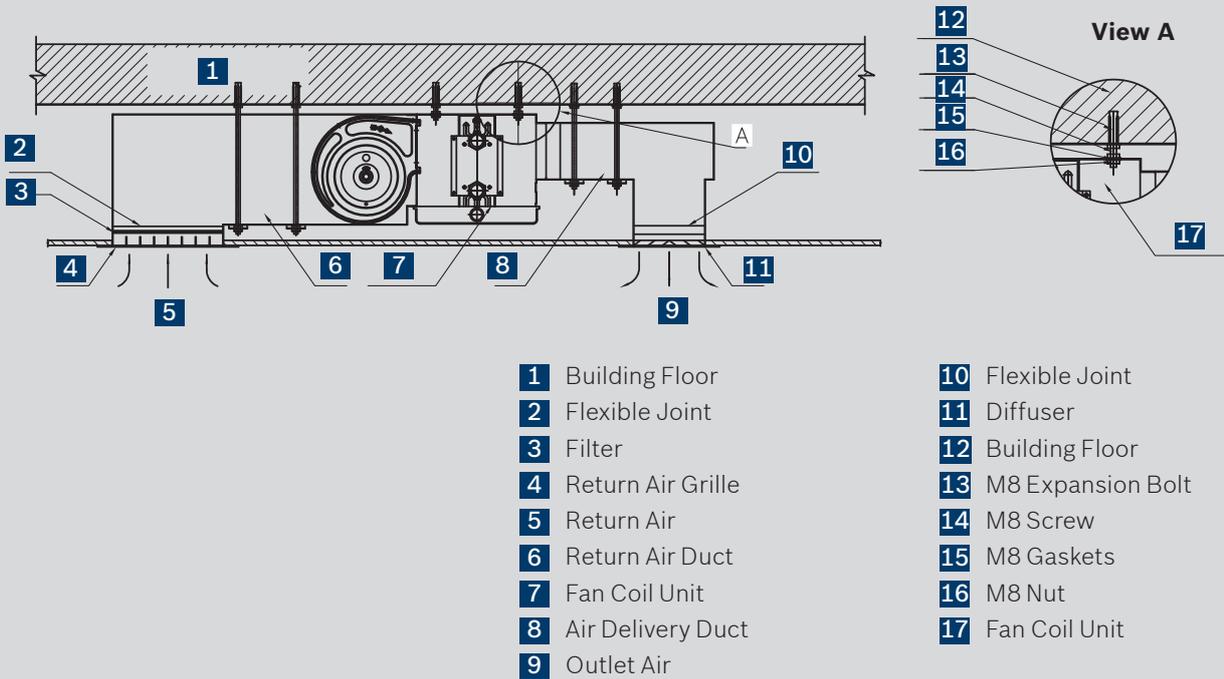


## Water Flow-Pressure Drop

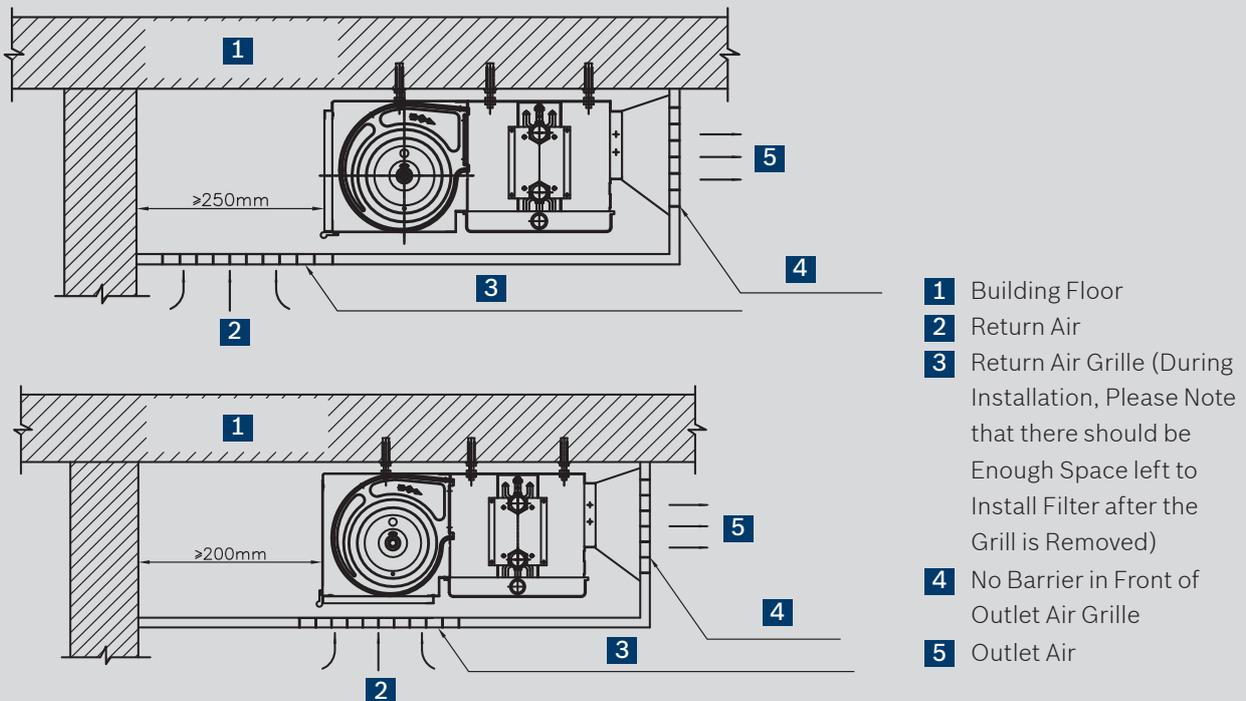


# Installation

## Installation of Fan Coil Unit without Plenum

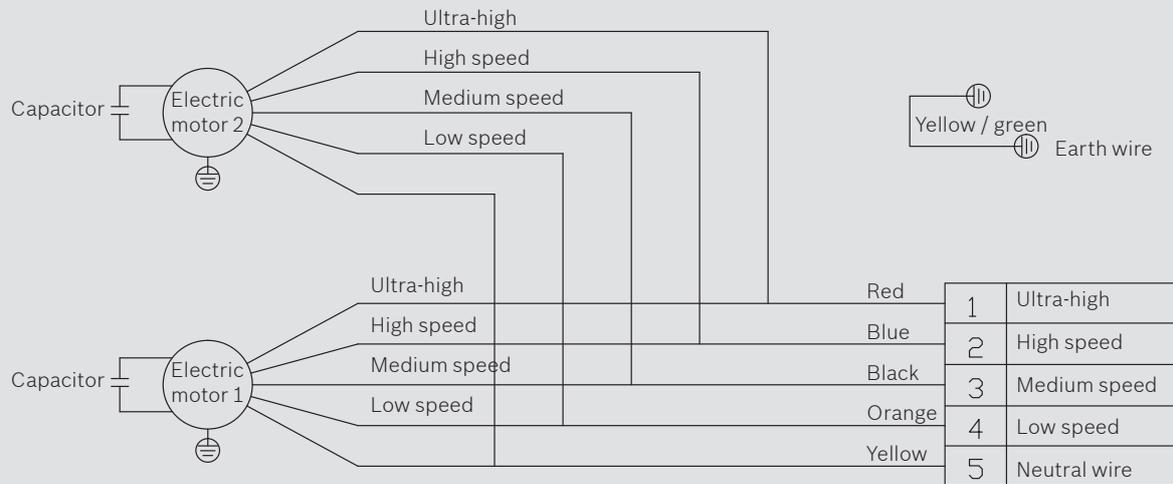


## With Back/Down Return Plenum



The above installation diagrams are for informational purpose only. Any changes may be made based on site conditions during installation so as to improve air-conditioning effects and facilitate maintenance.

## Wiring diagram



### Note:

1. Connect terminal block's low, medium, high and ultra-high speed to fan coil's controller (or three-speed switch).
2. When ESP is 0 or 12 Pa, the fan coil controller is wired to low, medium and high speed;
  - When ESP is 30 Pa, the fan coil controller is wired to medium, high speed and ultra-high speed;
  - When ESP is 50 Pa, the fan coil controller is wired to medium, high speed and ultra-high speed;
  - Also, users may make an on-site change on demand.
3. Single-motor fan coil has no electric motor 2 and corresponding wiring.



Bosch reserves the right to change any specification, design and information without any prior notice for further improvement on quality and performance. 201408A

