



**DUNNAIR**  
(Aust) Pty Ltd

**WPR19**

**Packaged Horizontal Type**

**Ducted Water Cooled  
R410a Refrigerant**

**TECHNICAL SPECIFICATION**

Total Cooling Capacity	18.9 kW	Refrigerant	R410A
Electrical Input (Cooling)	4.95 kW	Refrigerant Charge	2.6 kg
E.E.R.(Cooling)	3.8	Minimum Water Flow	0.88 l/s
Running Amps (Total)	15.8A	Water Coil Pressure Drop	40 kPa
Fan Motor Full Load Amps	6.0 A	Filter (Option)	EU1
Electrical Supply Required	3 Ph.415V.50Hz	Electric Heater (Option)	13.5 kW

**COOLING CAPACITY (kW)**

AIR FLOW RATE (L/S)		1000			
COIL E.A.T.	DB °C	23	27	31	
	WB °C	17	19	21	
Entering Water Temperature (E.W.T) °C	20	T	20.1	21.1	22.2
		S	14.5	16.7	18.6
		FL	1.1	1.1	1.1
		HR	25.0	26.0	27.1
	25	T	19.1	20.3	22.3
		S	14.6	16.3	18.7
		FL	1.1	1.1	1.1
		HR	24.1	25.3	27.5
	30	T	18.0	<u>18.9</u>	21.1
		S	13.6	<u>15.7</u>	18.2
		FL	1.1	<u>1.1</u>	1.1
		HR	22.8	<u>23.9</u>	26.3
	35	T	16.8	17.7	18.4
		S	13.1	15.2	17.1
		FL	1.1	1.1	1.1
		HR	21.6	22.6	23.4
40	T	16.0	16.4	17.3	
	S	12.7	14.7	16.7	
	FL	1.1	1.1	1.1	
	HR	21.0	21.3	22.3	

T = Total Capacity (kW)                      S = Sensible Capacity (kW)  
 FL = Water Flow (l/s)                        E.A.T.= Entering Air Temperature (°C)  
 \_\_\_ = Nominal Capacity (kW)                HR = Heat Rejection

**Note:** 1. Capacities are gross and do not include allowance for fan motor heat loss. For fan motor heat loss refers to Air Handling Performance.  
 2. Water flow and cooling capacity based on 5°C water temperature difference.

**HEATING CAPACITY (kW)**

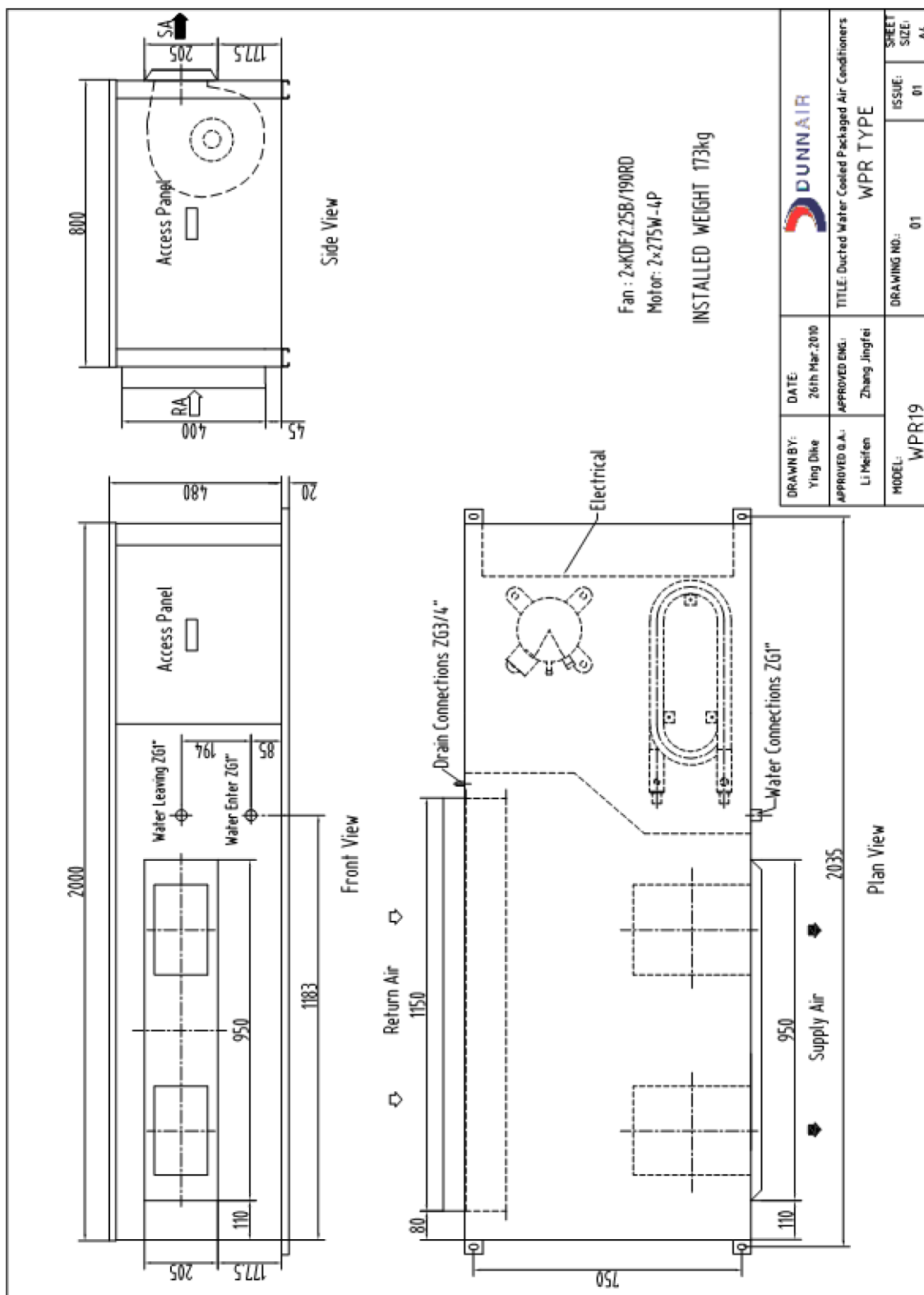
**WPR Reverse Cycle Version**

AIR FLOW RATE (L/S)		1000			
WATE FLOW RATE (L/S)		1.1			
COIL E.A.T.	DB °C	18	21	25	
Entering Water Temperature (E.W.T) °C	15	HC	19.0	18.8	18.0
		Hab	14.2	13.9	13.2
		LWT	10.9	10.9	11.1
		INPT	4.8	4.8	4.8
	20	HC	20.2	<u>20.0</u>	19.0
		Hab	15.2	<u>15.0</u>	14.2
		LWT	15.6	<u>15.7</u>	15.9
		INPT	5.0	<u>5.0</u>	4.8
	25	HC	21.9	21.6	20.8
		Hab	16.8	16.4	15.5
		LWT	20.2	20.3	20.5
		INPT	5.2	5.2	5.2

HC = Heating Capacity (kW)                      Hab = Heat Absorbed (kW)  
 L.W.T.= Leaving Water Temperature (°C)      E.A.T.= Entering Air Temperature (°C)  
 INPT = Compressor Input Power (kW)        \_\_\_ = Nominal Capacity (kW)

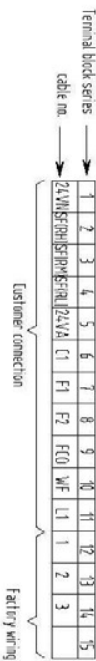
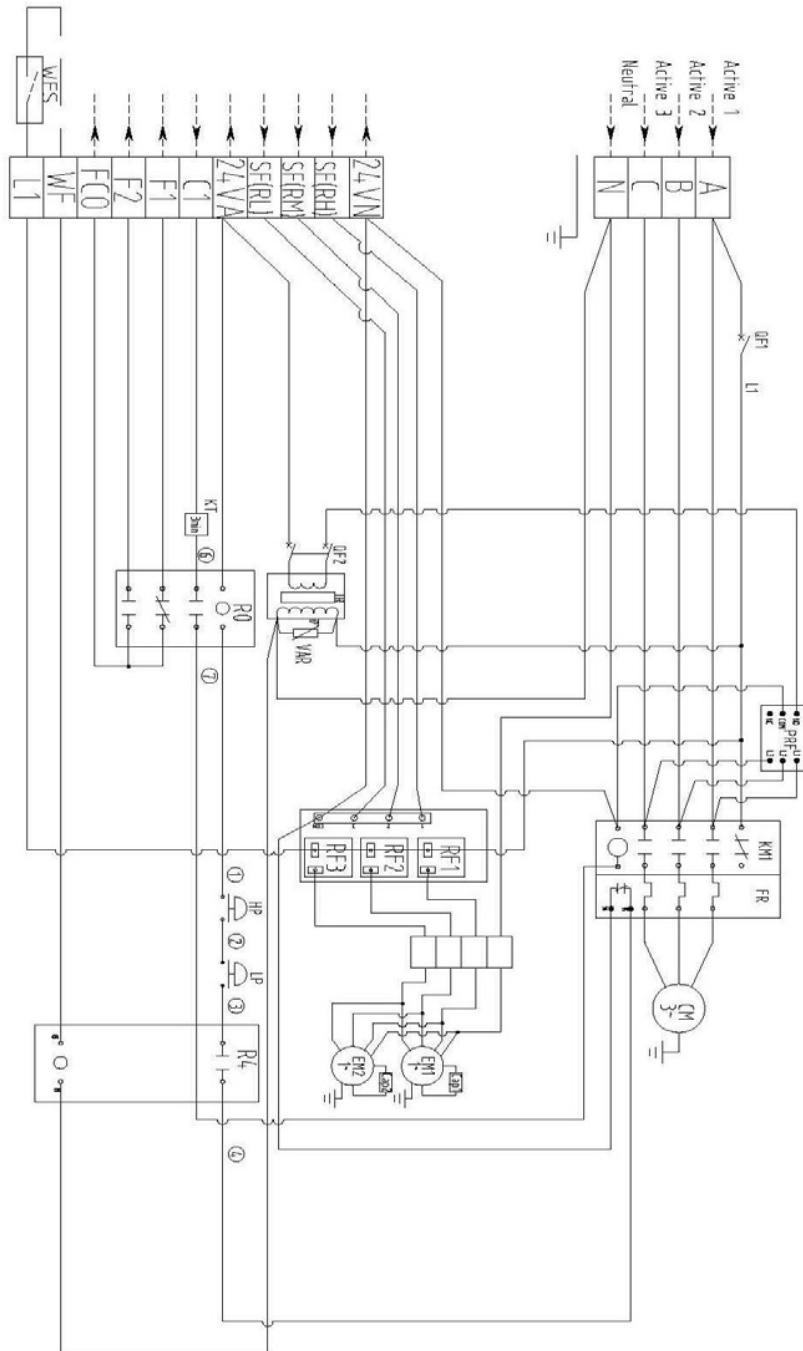
**Note:** All units are reverse cycle heat pump units. Models can also be provided as cooling only or cooling only with electric heater.

## DIMENSIONS (mm)



# WIRING DIAGRAMS – Cooling Only

Cooling Only  
 Power supply  
 415V 50HZ 3phase



Code instruction:

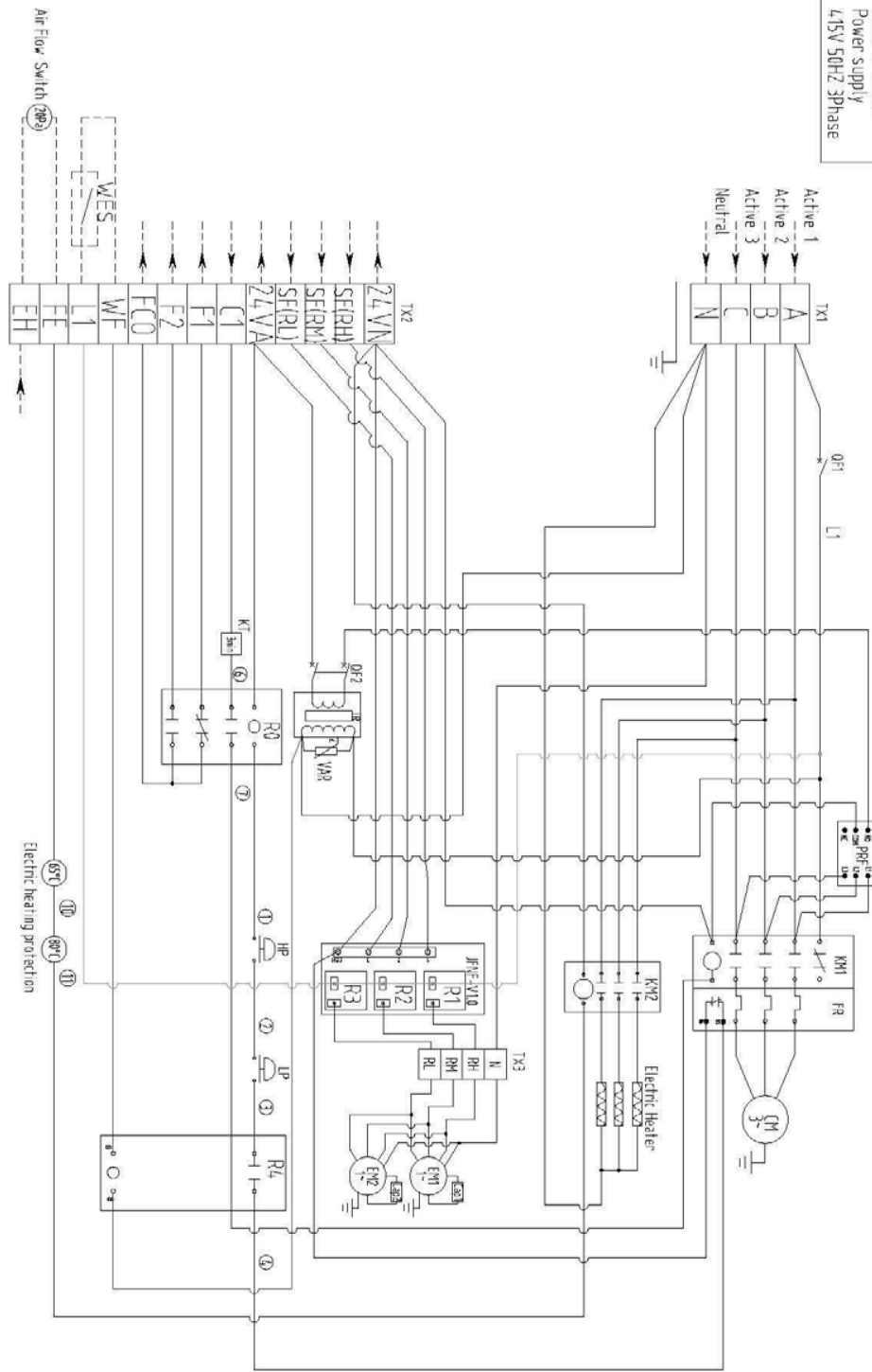
24VA	24VAC 4line	FC0	Alarm Signal/Hot-free control panel	DPF	Phase Protection	WFS	Water Flow Switch Contact
24VN	24VAC Neutral	FR	Thermal relay	QF	Control Panel Breakers	TR	Fuse Switch
C1	Compressor Signal	HP	HP switch	R	Hot/stop relay	VAR	Variable
Cap	Capacitor	JFNF	Relay group	TX	Terminal Blocks		
CM	Compressor fan	KM	Contact	SH	Stop heater		
EM	Alarm Signal/Hot-free control panel	KT	Time relay	SEFRL	Exhaustor fan signal		
F1	Alarm Signal/Hot-free control panel	LP	LP switch	SEFRL	Exhaustor fan signal		
F2	Alarm Signal/Hot-free control panel	N	Neutral	SEFRH	Exhaustor fan signal		

Notes  
 Water and air flow switches supplied by installer.

DRAWN BY	DATE	TITLE: Water Cooled Fan Coil Unit	
APPROVED BY	DATE	WPR TYPE	
MODEL	WPR19-CBB	DRAWING NO.	01
		ISSUE	01
		SHEET	01
		SIZE	A4

# WIRING DIAGRAMS – Cooling Only with Electric Heater

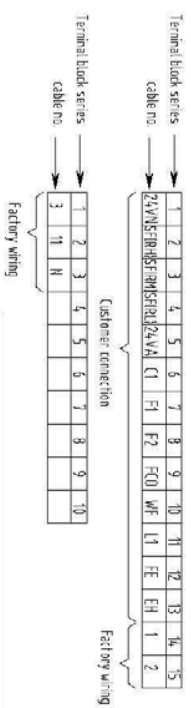
Cooling only with  
Electric heater  
Power supply  
415V 50Hz 3Phase



Code instruction:

24VVA	24VAC Active	FE	Air flow switch Contact	LP	LP switch	TR	Transformer
24VN	24VAC Neutral	F1	Alarm Signal(Volt-free contact) Closed	N	Neutral	VAR	Varistor
C1	Compressor Signal	F2	Alarm Signal(Volt-free contact) Open	QF	Air Switch	WF	Water flow switch Contact
C3D	Condenser	FCO	Alarm Signal(Volt-free contact) Contact	R	Relay	WFS	Flow Switch
CM	Compressor	HP	HP switch	SFR(L)	Separator fan signal	FR	Terminal relay
EH	Electric Heater Signal	KM	Contact	SFR(M)	Separator fan signal		
EM	Empower Fan	KT	Time relay	SFR(H)	Separator fan signal		

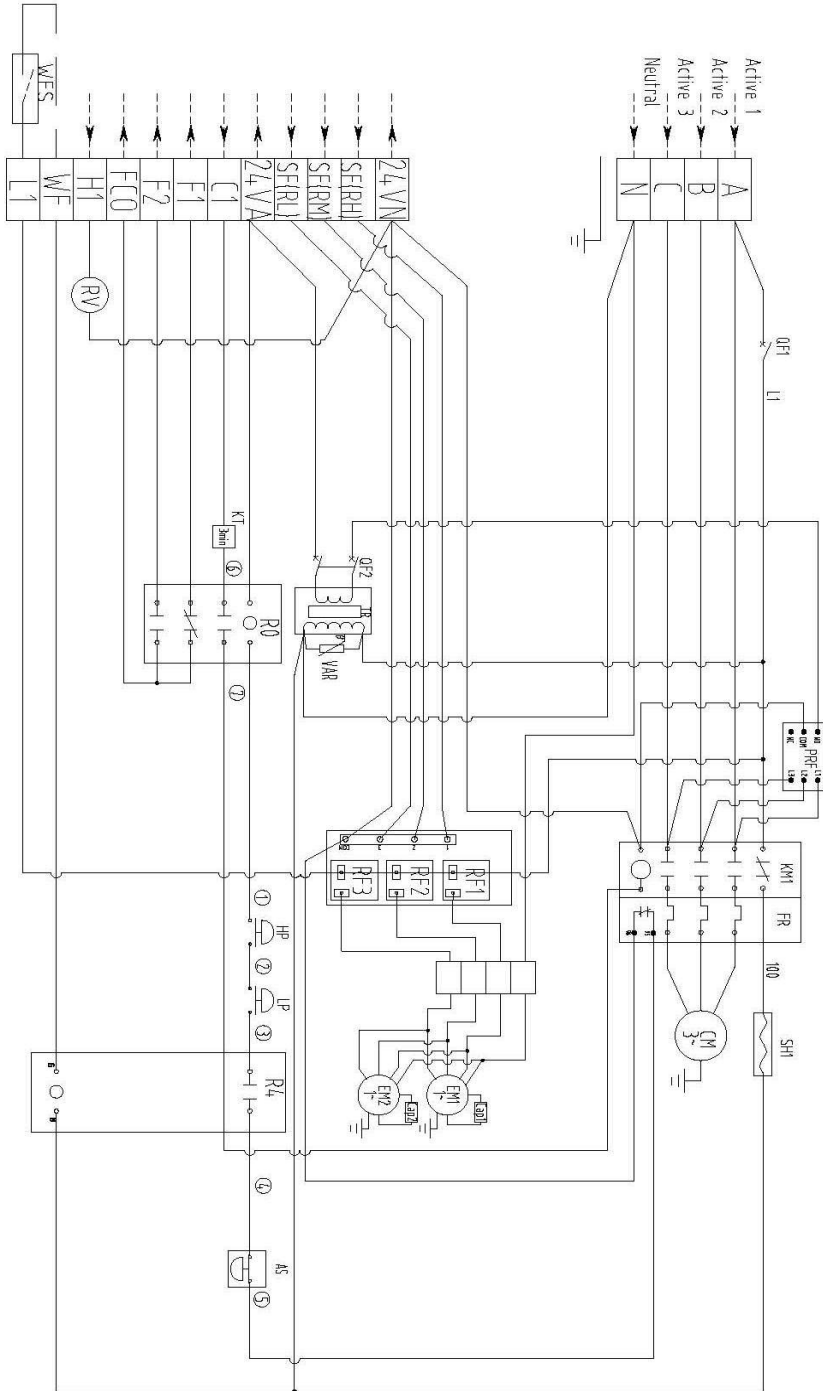
Notes  
Water and air flow switches supplied by installer.



DRAWN BY:	DATE:	DUNNAIR
APPROVED BY:	APPROVED DATE:	TITLE: Water Cooled Fan Coil Unit
MODEL:	WPR-19-CEBB	DRAWING NO. 01
ISSUE:	01	SHEET
SIZE:	A4	

# WIRING DIAGRAMS – Reverse Cycle

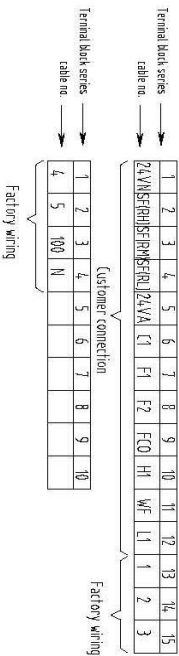
Heat Pump  
Power supply  
4.15V 50HZ 3Phase



Code Instruction:

24V/A	24VAC Active	F2	Alarm Signal(Volt-free contact Open)	LP	IP switch	SFRM1	Exhaustor fan signal(H)
24V/N	24VAC Neutral	FCO	Alarm Signal(Volt-free contact Common)	N	Neutral	SFRM1	Exhaustor fan signal(L)
AS	AntiFreeze Switch	FR	Thermal relay	PFE	Phase Protection	TX	Terminal Blocks
L1	Compressor Signal	H1	Heating Signal	QF	Control Circuit Breakers	TR	Transformer
CAD	Capacitor	HP	HP switch	R	Middle relay	VAR	Variable
CM	Compressor	JNF	Relay Group	RV	Reversing valve	WFS	Water/Flow Switch Contact
EM	Exhaustor fan	KM	Contact	SH	Shut heater		
F1	Alarm Signal(Volt-free contact Close)	KT	Time Relay	SFRM1	Exhaustor fan signal(O)		

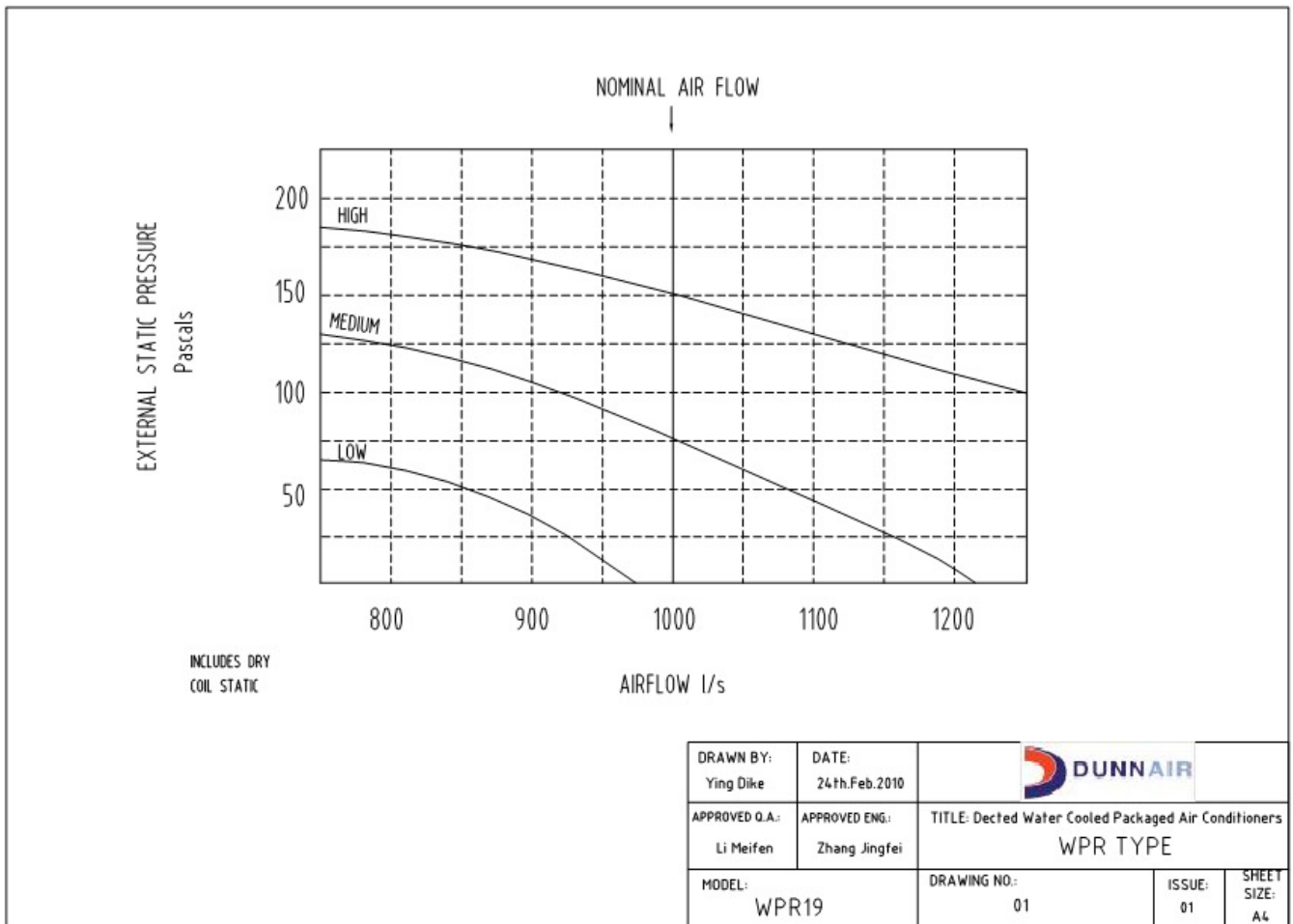
Notes:  
Water and air flow switches supplied by installer.



DRAWN BY:	DATE:	
APPROVED D.A.:	APPROVED ENG.:	
MODEL:	WPR 19-4BD	TITLE: Water Cooled Fan Coil Unit WPR TYPE DRAWING NO: 01 ISSUE: 01 SHEET SIZE: A4

# AIR HANDLING PERFORMANCE

## Fan Curve (Without Filter)



**Note:**

1. In tropical (high humidity) conditions, care must be taken to select an air flow which gives a suitable coil face air velocity, to prevent water carry over.
2. For applications with low resistance, be sure not to exceed the fan motor full load Amps.
3. Applications using full or high proportions of fresh air should be referred to DUNNAIR engineering office to establish of unit model.
4. EU1 rate filter pressure loss 15Pa.

# AIR HANDLING PERFORMANCE

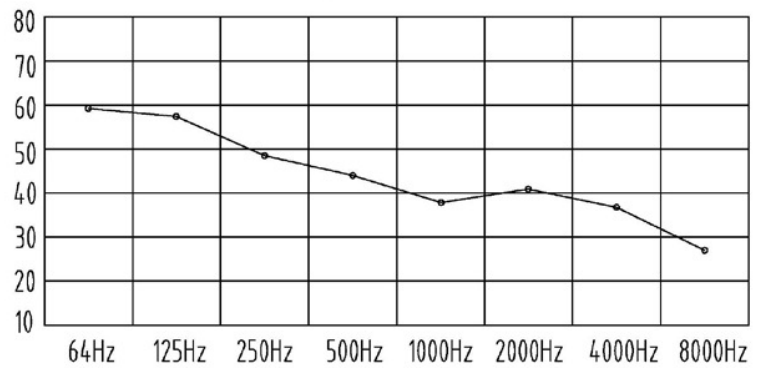
## Sound Levels

WPR19 Noise rate analysing chart


A Class: 49.2dB

Hz	dB
64Hz	59.2
125Hz	58.0
250Hz	48.7
500Hz	44.9
1000Hz	38.5
2000Hz	42.1
4000Hz	37.0
8000Hz	26.6

Noise rate analysing chart ( A Class: 49.2dB) dB



Note: 1m from source with 1m insulated duct and fully reflective surface surrounding unit.

DRAWN BY: Ying Dike	DATE: 10th.Dec.2010		
APPROVED Q.A.: Li Meifen	APPROVED ENG.: Zhang Jingfei	TITLE: Ducted Water Cooled Packaged Air Conditioners WPR TYPE	
MODEL: WPR19		DRAWING NO.: 01	ISSUE: 01 SHEET SIZE: A4