



**DUNNAIR**  
(Aust) Pty Ltd

**WPR30**

**Packaged Horizontal Type**

**Ducted Water Cooled  
R410a Refrigerant**

**TECHNICAL SPECIFICATION**

Total Cooling Capacity	29.6 kW	Refrigerant	R410A
Electrical Input (Cooling)	7.1 kW	Refrigerant Charge	4.2 kg
E.E.R.(Cooling)	4.2	Minimum Water Flow	1.36l/s
Running Amps (Total)	24.6A	Water Coil Pressure Drop	48kPa
Fan Motor Full Load Amps	6.6 A	Filter (Option)	EU1
Electrical Supply Required	3 Ph/415V/50Hz	Electric Heater (Option)	21 kW

**COOLING CAPACITY (kW)**

AIR FLOW RATE (L/S)		1500				
COIL E.A.T.	DB °C	23	27	31		
	WB °C	17	19	21		
Entering Water Temperature (E.W.T) °C	20	T	31.4	33.1	34.7	
		S	22.4	25.6	28.6	
		FL	1.7	1.7	1.7	
		HR	38.5	40.1	41.9	
	25	T	29.9	31.8	35.0	
		S	22.6	25.0	28.7	
		FL	1.7	1.7	1.7	
		HR	37.1	38.9	42.5	
	30	T	28.1	<u>29.6</u>	33.1	
		S	20.9	<u>24.1</u>	27.9	
		FL	1.7	<u>1.7</u>	1.7	
		HR	35.2	<u>36.7</u>	40.5	
	35	T	26.3	27.7	28.8	
		S	20.1	23.3	26.2	
		FL	1.7	1.7	1.7	
		HR	33.4	34.9	36.1	
	40	T	25.1	25.7	27.0	
		S	19.6	22.5	25.5	
		FL	1.7	1.7	1.7	
		HR	32.3	32.8	34.5	

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)**

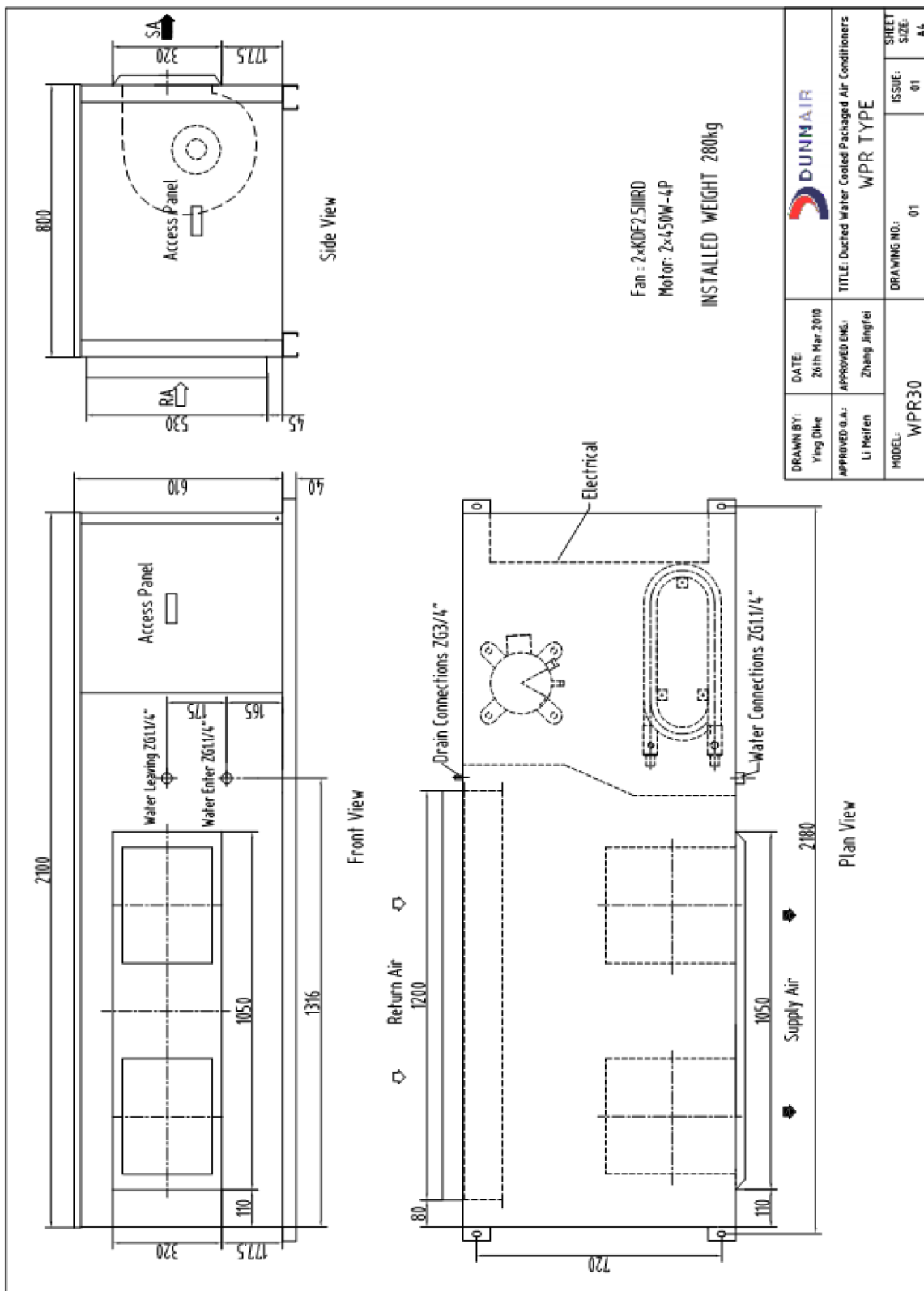
**WPR Reverse Cycle Version**

AIR FLOW RATE (L/S)		1500				
WATE FLOW RATE (L/S)		1.7				
COIL E.A.T.	DB °C	18	21	25		
Entering Water Temperature (E.W.T) °C	15	HC	29.1	28.8	27.5	
		Hab	21.7	21.4	20.2	
		LWT	10.9	11.0	11.1	
		INPT	7.4	7.3	7.3	
	20	HC	30.9	<u>30.6</u>	29.1	
		Hab	23.3	<u>23.0</u>	21.8	
		LWT	15.7	<u>15.7</u>	15.9	
		INPT	7.6	<u>7.6</u>	7.4	
	25	HC	33.5	33.0	31.9	
		Hab	25.6	25.1	23.9	
		LWT	20.3	20.4	20.5	
		INPT	8.0	8.0	8.0	

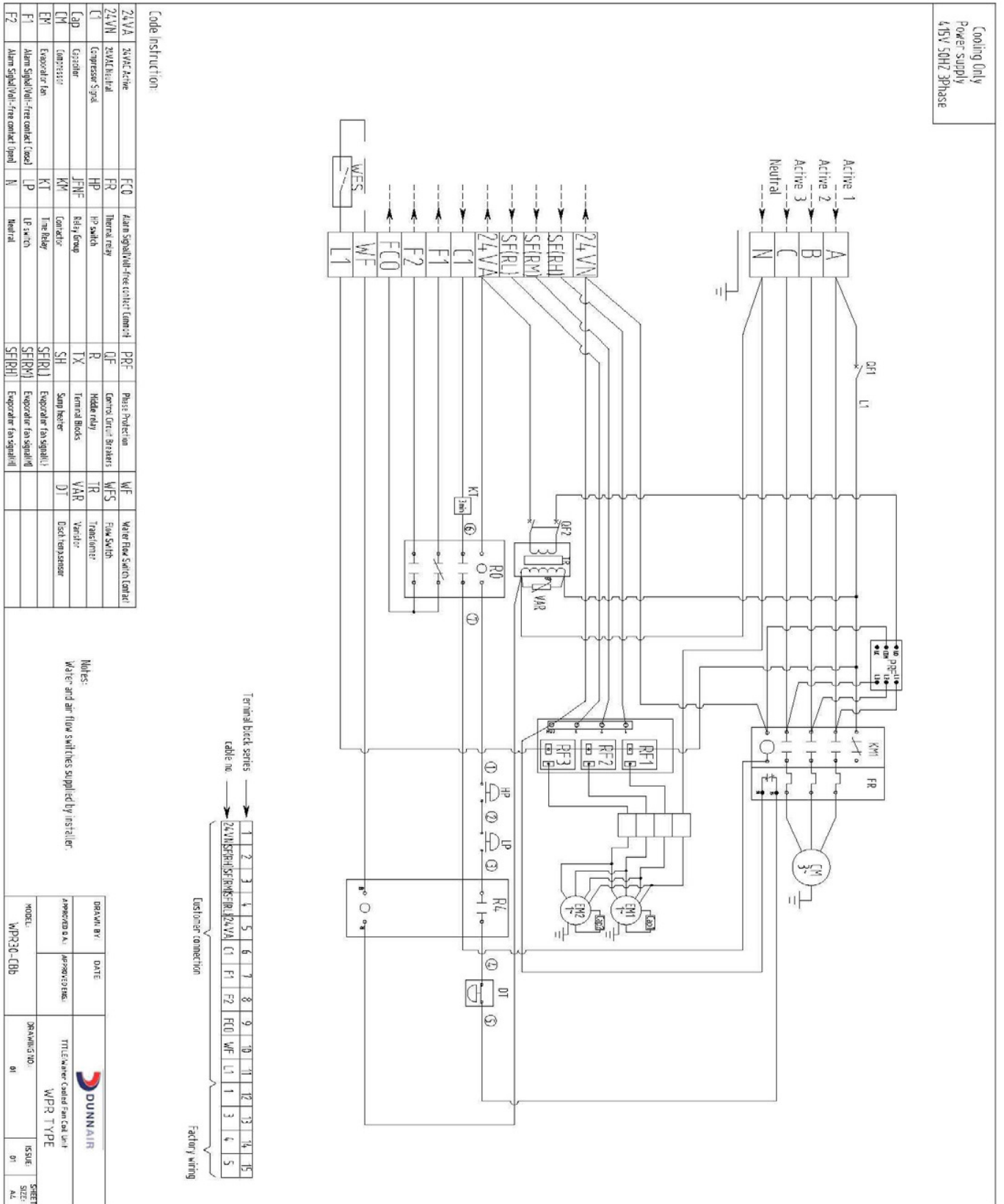
HC = Heating Capacity (kW)                      Hab = Heat Absorbed (kW)  
 L.W.T.= Leaving Water Temperature (°C)    E.A.T.= Entering Air Temperature (°C)  
 INPT = Compressor Input Power (kW)        \_\_\_ = Nominal Capacity (kW)

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

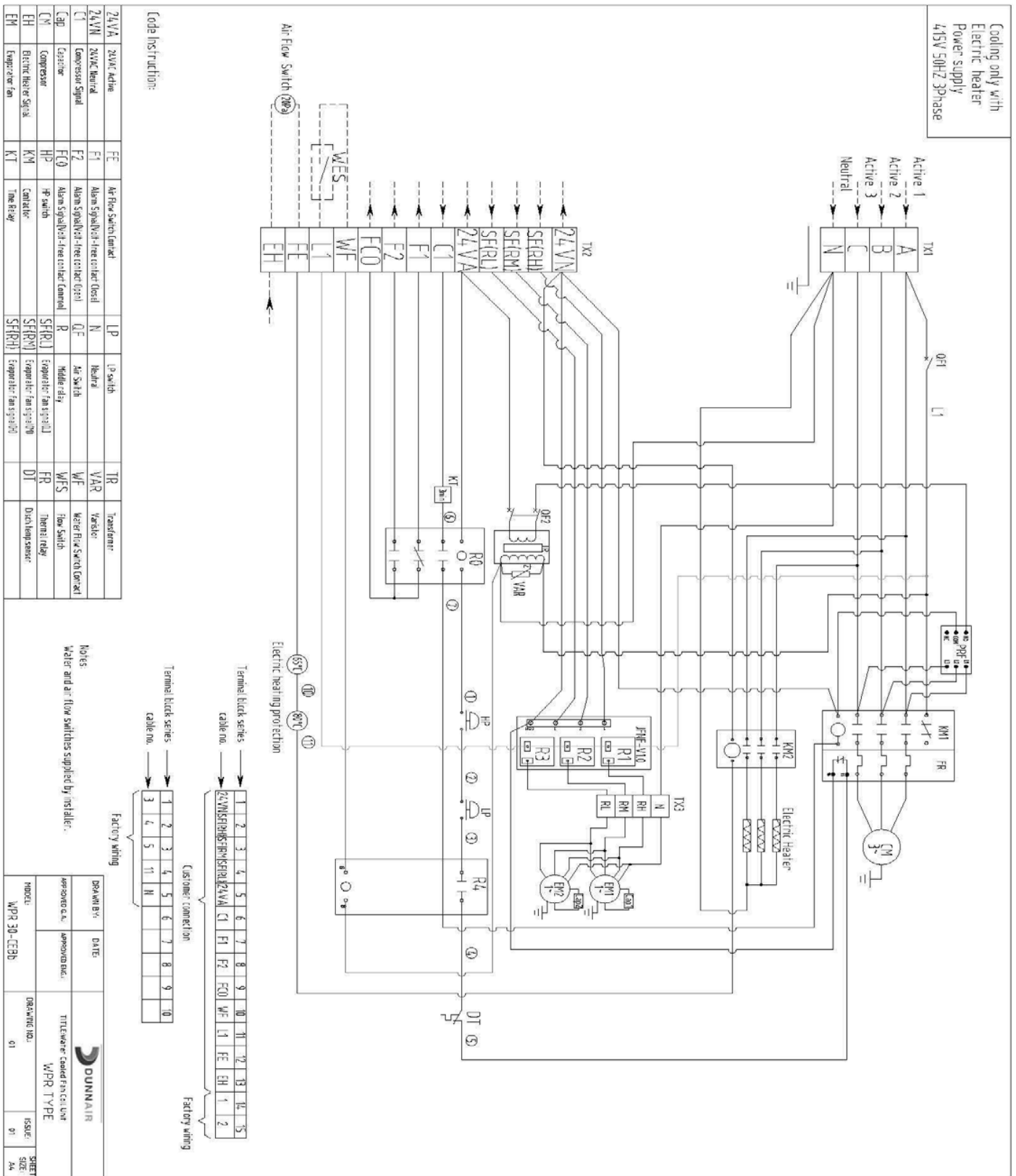
## DIMENSIONS (mm)



## WIRING DIAGRAMS – Cooling Only

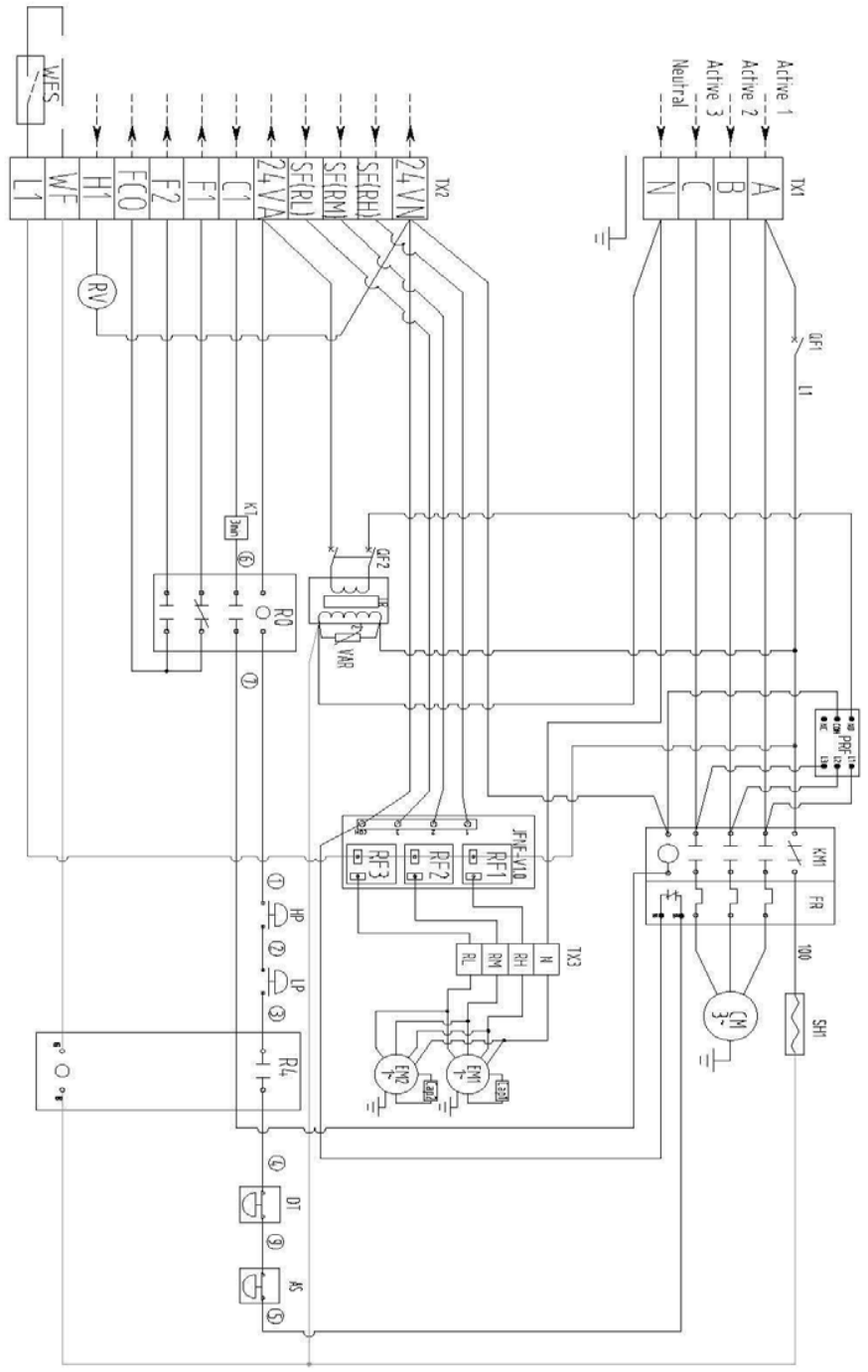


# WIRING DIAGRAMS – Cooling Only with Electric Heater



# WIRING DIAGRAMS – Reverse Cycle

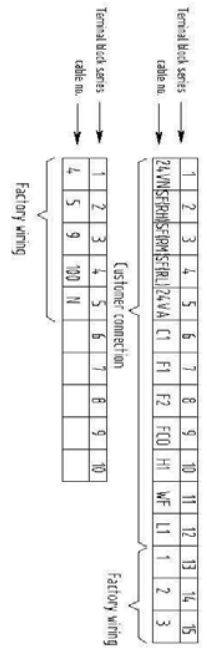
Heat Pump  
Power supply  
415V 50Hz 3Phase



Code instruction:

24VVA	24VAC Airline	F2	Alarm Signal/Volt-free contact (cool)	LP	LP switch	SF1 (RM)	Evaporator fan speed limit
24VVA	24VAC Neutral	FCO	Alarm Signal/Volt-free contact (normal)	N	Neutral	SF1 (RH)	Evaporator fan speed limit
AS	Anti-freeze Switch	FR	Thermal relay	PRF	Phase Protection	DT	Disc lock sensor
CI	Compressor Signal	HI	Warning Signal	OF	Control circuit breakers	TX	Terminal block
Cap	Capacitor	HP	HP switch	R	Relay	TR	Transformer
CM	Compressor	JNF	Reheat Group	RV	Reversing valve	VAR	Variable
EM	Evaporator fan	KM	Contact	SH	Sample heater	WFS	Water Flow Switch Contact
F1	Alarm Signal/Volt-free contact (cool)	KT	Time Relay	SF1 (RL)	Evaporator fan speed limit	WFS	Water Flow Switch Contact

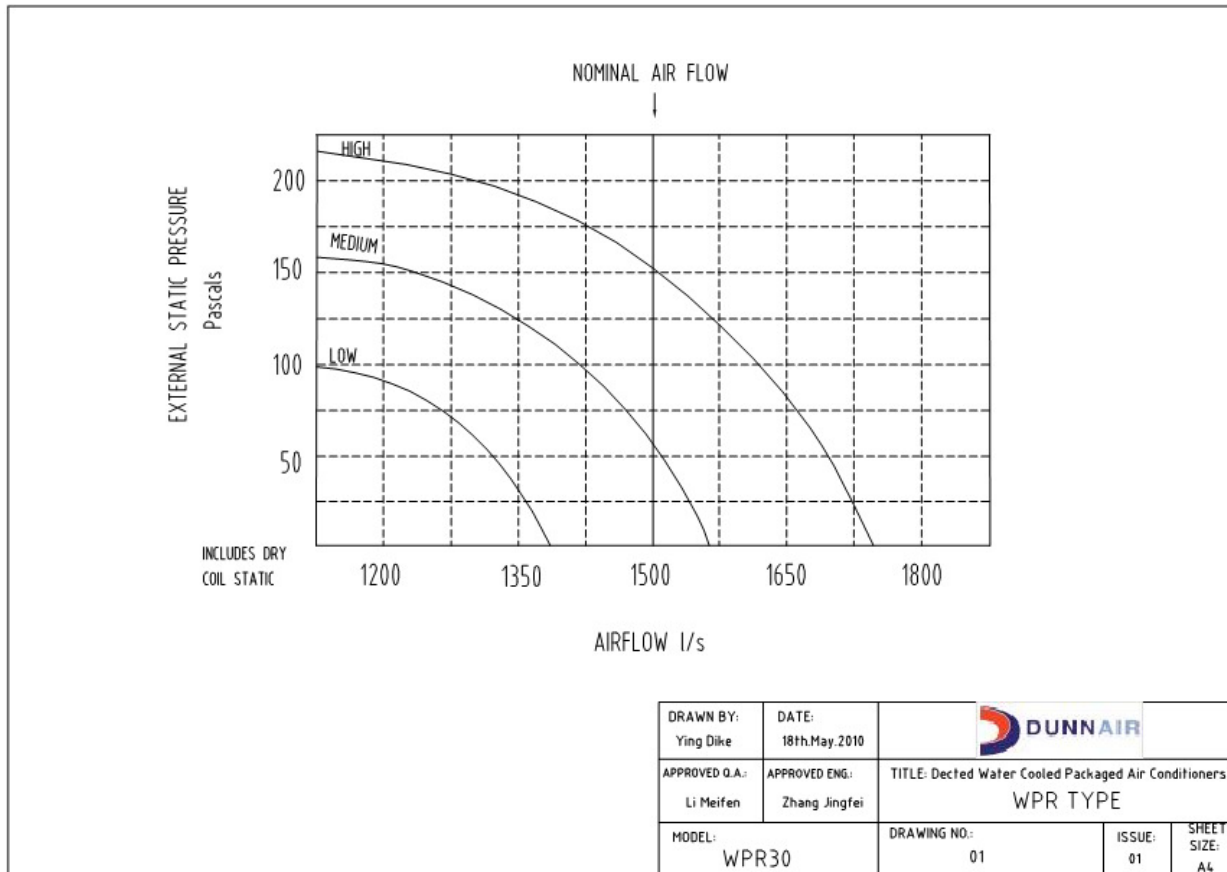
Notes  
Water and air flow switches supplied by installer.



DRAWN BY:	DATE:	TITLE: Ducted Water Cooled Fan Coil Unit
APPROVED BY:	APPROVED DATE:	WPR TYPE
MODEL: WPR 30-4BD	DRAWING NO.: 91	SHEET: 36

# AIR HANDLING PERFORMANCE

## Fan Curves



### 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

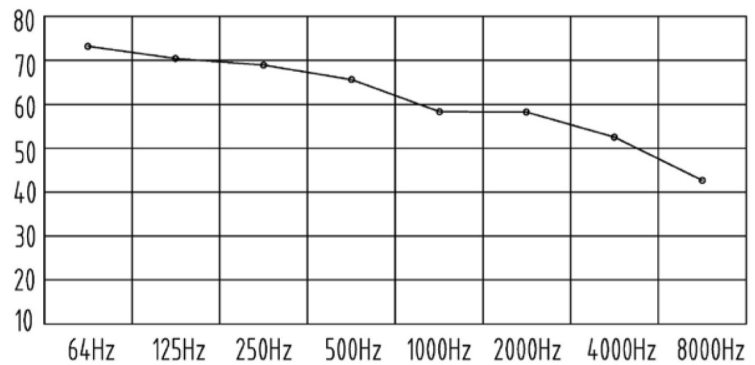
## Sound Levels

WPR30 Noise rate analysing chart


A Class: 67.2dB

Hz	dB
64Hz	73.7
125Hz	71.3
250Hz	68.4
500Hz	65.2
1000Hz	57.6
2000Hz	57.9
4000Hz	52.7
8000Hz	43.0

Noise rate analysing chart ( A Class: 67.2dB) 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: WPR30		DRAWING NO.: 01	ISSUE: 01	SHEET SIZE: A4