



DUNNAIR

Established 1961

WSR14

R410a Refrigerant

Water Cooled Split Ducted

TECHNICAL SPECIFICATION

Total Cooling Capacity	13.9 kW	Refrigerant	R410A
Electrical Input (Cooling)	3.82 kW	Refrigerant Charge	3.4 kg
E.E.R.(Cooling)	3.64	Minimum Water Flow	0.72 l/s
Running Amps (Total)	23.7A	Water Coil Pressure Drop	40 kPa
Fan Motor Full Load Amps	3.2A	Filter (Option)	EU1
Electrical Supply Required	1 Ph.240V.50Hz	Electric Heat (Option)	10.5 kW

COOLING CAPACITY (kW)

AIR FLOW RATE (L/S)			760		
COIL E.A.T.	DB °C		23	27	31
	WB °C		17	19	21
Entering Water Temperature (E.W.T) °C	20	T	14.8	15.5	16.3
		S	10.8	12.4	13.9
		FL	0.9	0.9	0.9
		HR	18.5	19.2	20.1
	25	T	14.0	14.9	16.4
		S	10.9	12.2	14.0
		FL	0.9	0.9	0.9
		HR	17.8	18.7	20.4
	30	T	13.2	13.9	15.5
		S	10.1	11.7	13.6
		FL	0.9	0.9	0.9
		HR	16.9	17.7	19.5
	35	T	12.3	13.0	13.5
		S	9.8	11.4	12.8
		FL	0.9	0.9	0.9
		HR	15.9	16.6	17.2
	40	T	11.8	12.1	12.7
		S	9.5	11.0	12.5
		FL	0.9	0.9	0.9
		HR	15.4	15.6	16.4

T = Total Capacity (kW)

S = Sensible Capacity (kW)

FL = Water Flow rate (l/s)

E.A.T.= Entering Air Temperature (°C)

— = Nominal Capacity (kW)

HR = Heat Rejection

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

HEATING CAPACITY (kW)

WSR Reverse Cycle Version

AIR FLOW RATE (L/S)			760		
WATE FLOW RATE (L/S)			0.90		
COIL E.A.T.	DB °C		18	21	25
Entering Water Temperature (E.W.T) °C	10	HC	12.6	12.4	11.9
		Hab	8.9	8.7	8.3
		LWT	5.6	6.7	6.8
		INPT	3.7	3.7	3.6
	15	HC	13.6	13.4	12.8
		Hab	9.9	9.7	9.3
		LWT	11.4	11.4	11.6
		INPT	3.7	3.7	2.6
	20	HC	14.4	14.3	13.6
		Hab	10.7	10.6	10.0
		LWT	16.2	16.2	16.4
		INPT	3.8	3.7	3.6
	25	HC	15.7	15.4	14.9
		Hab	11.8	11.5	10.9
		LWT	20.8	20.9	21.0
		INPT	3.8	3.9	4.0

HC = Heating Capacity (kW)

Hab = Heat Absorbed (kW)

L.W.T.= Leaving Water Temperature (°C)

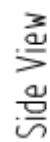
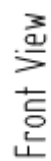
E.A.T.= Entering Air Temperature (°C)

INPT = Compressor Input Power (kW)

— = Nominal Capacity (kW)

Note: Units are available as cooling only, cooling only with electric heater and heat pump types.

CONDENSOR UNIT




Model	Total Cooling Cap.	Sensible Cooling Cap.	Heating Cap.	Rated Airflow	Static Pressure	Input Power	Max Current	Water Flow	Power
WQ318A-18ED	13.9kW	11.7kW	14.3kW	760 L/s	20 Pa	3.82kW	23.7A	0.0 L/s	974/240V/50Hz

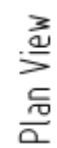
Note: Cooling capacity at temperature 77°F(25°C) indoor, 57°F(14°C) outdoor. Total cooling capacity at 240V, 50Hz.

INSTALLED WEIGHT 130kg

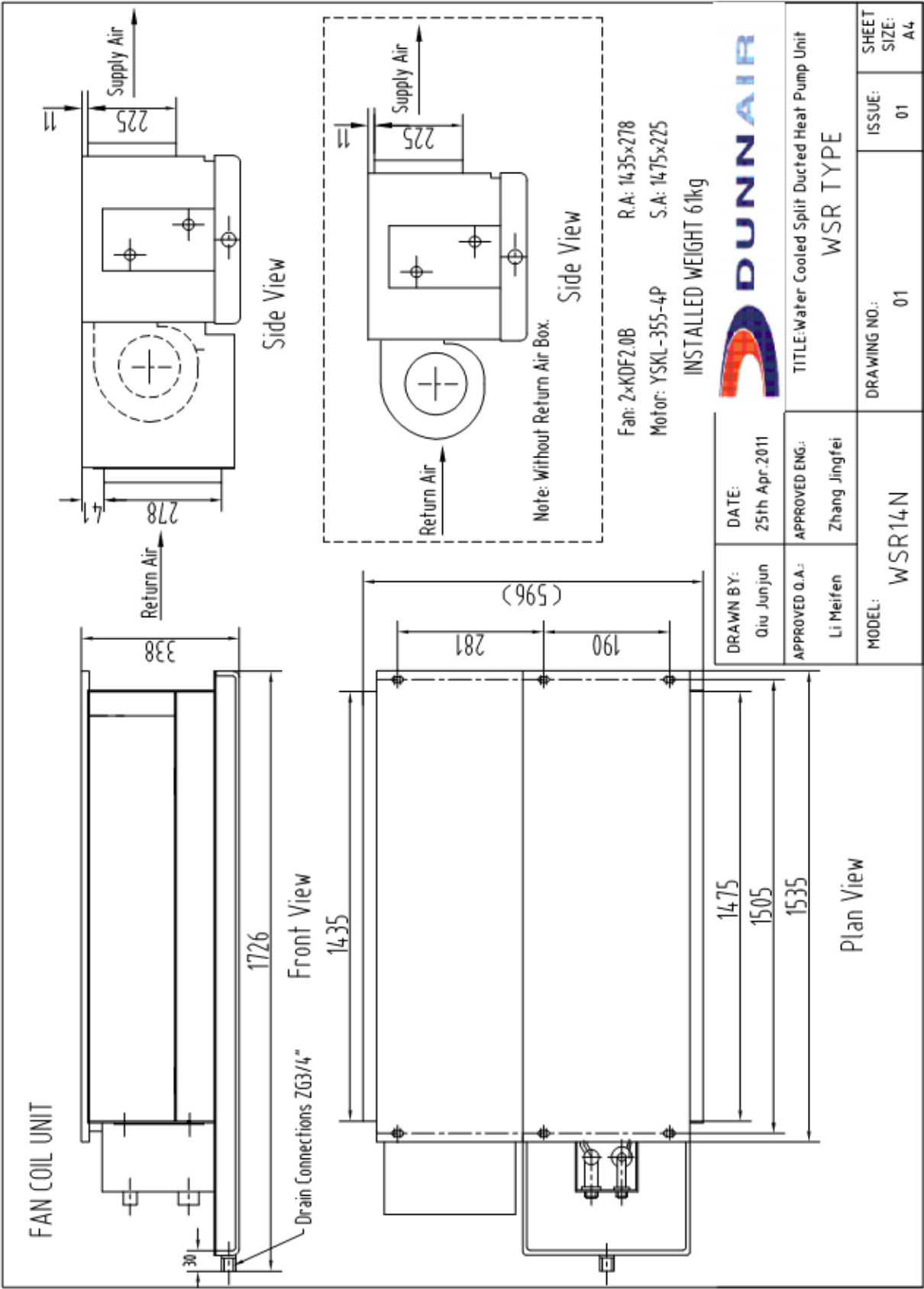


TITLE:Water Cooled Split Ducted Heat Pump Unit
WSR TYPE

DRAWN BY: Qiu Junjun	DATE: 10th Jan. 2012	 TITLE: Water Cooled Split Ducted Heat Pump Unit WSR TYPE	SHEET SIZE: A4
APPROVED O.A.: Li Meifen	APPROVED ENG.: Zhang Jingfei		
MODEL: WSR14W		DRAWING NO.: 01	ISSUE: 01

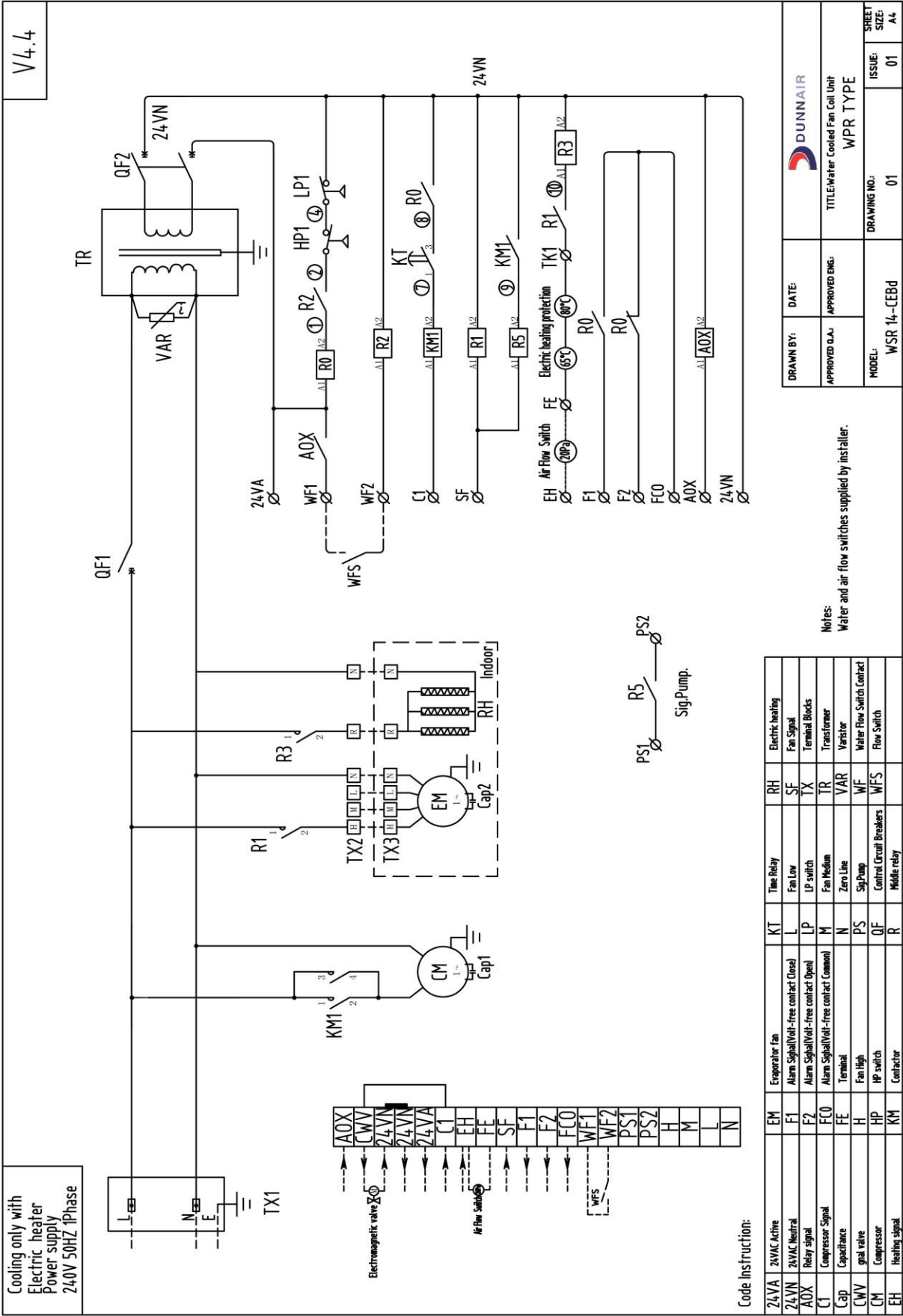


DIMENSIONS (mm) – Indoor Unit



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WIRING DIAGRAM - Cooling Only with Electric Heater Type



Heat Pump

Power supply

240V 50HZ 1Phase

V4.4

The diagram illustrates the electrical wiring for a heat pump system. It starts with a 240V 50Hz 1-phase power supply (TX1) connected to a main switch (QF1). The supply is then distributed to several components: a 24V line for the outdoor unit (OU), a 24V line for the indoor unit (IU), and a 24V line for the heat pump unit (HP). The outdoor unit is connected to the indoor unit via a 24V line. The indoor unit is connected to the heat pump unit via a 24V line. The heat pump unit is connected to the outdoor unit via a 24V line. The diagram also shows the connection of various control components like relays, switches, and sensors to the power supply and the heat pump unit.

Code Instruction:

24VA	24VAC Active	EM	Evaporator Fan	KT	Time Relay	RV	Reversing valve
24VN	24VAC Neutral	F1	Alarm Signal(Volt-free contact Closed)	L	Fan Low	SF	Fan Signal
AS	Anti-freeze Switch	F2	Alarm Signal(Volt-free contact Open)	LP	LP switch	SH	Sump heater
A0X	Relay signal	FC0	Alarm Signal(Volt-free contact Common)	M	Fan Medium	TX	Terminal Blocks
C1	Compressor Signal	H	Fan High	N	Zero Line	TR	Transformer
Cap0	Capacitance	H1	Heating Signal	PS	Sig.Pump	VAR	Varistor
CWV	gal valve	HP	HP switch	QF	Control Circuit Breakers	WF	Water Flow Switch Contact
CM	Compressor	KM	Contactor	R	Relay	WFS	Flow Switch

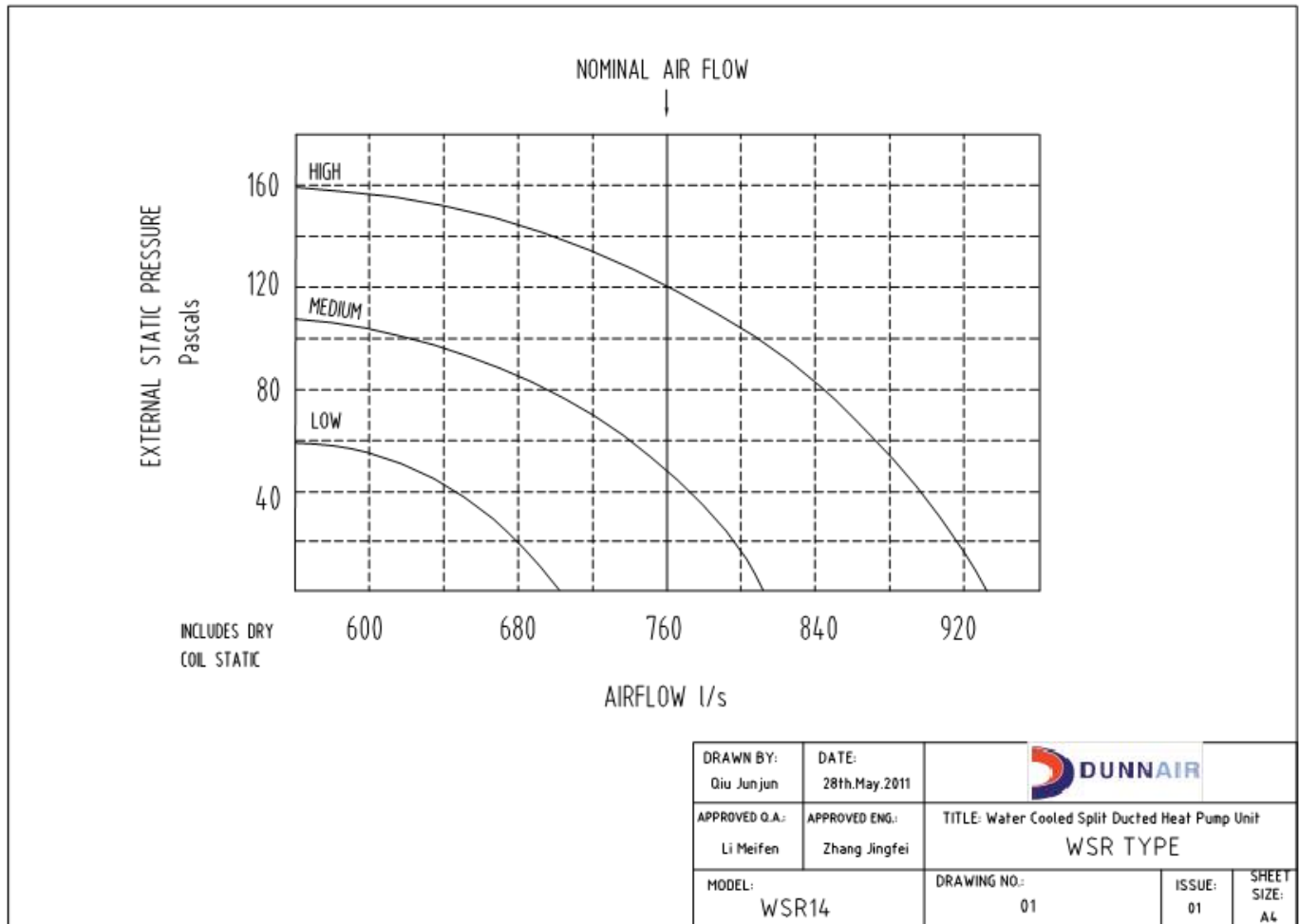
Notes:

Water and air flow switches supplied by installer.

DRAWN BY:	DATE:	DUNNAIR
APPROVED Q.A.:	APPROVED ENG.:	TITLE:Water Cooled Fan Coil Unit
MODEL:	DRAWING NO.:	WPR TYPE
WSR 14-HBD	01	
ISSUE:	01	SHEET
		A4

AIR HANDLING PERFORMANCE

Fan Curve (Without Filter)



Note:

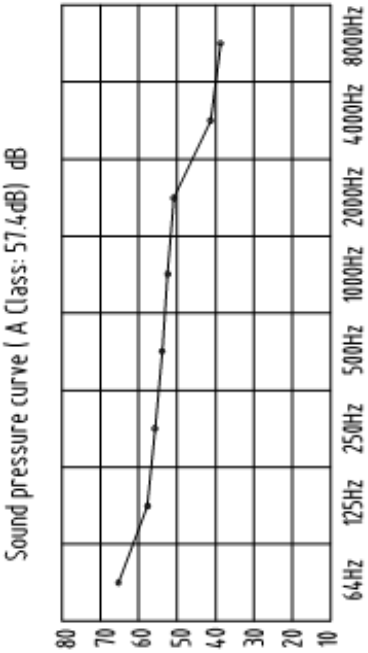
1. In tropical (high humidity) conditions, care must be taken to select an air flow which gives a suitable coil face air velocity, to prevent water carry over.
2. For applications with low resistance, be sure not to exceed the fan motor full load Amps.
3. Applications using full or high proportions of 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

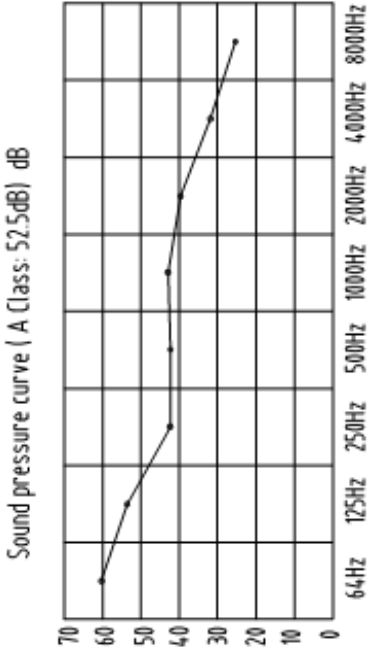
WSR14W Condenser unit sound pressure curve
A Class: 57.4dB

Hz	dB
64Hz	64.7
125Hz	58.4
250Hz	57.0
500Hz	54.6
1000Hz	52.4
2000Hz	51.0
4000Hz	41.2
8000Hz	39.0



WSR14N Fan coil unit sound pressure curve
A Class: 52.5dB

Hz	dB
64Hz	60.6
125Hz	54.7
250Hz	42.8
500Hz	42.9
1000Hz	43.5
2000Hz	39.8
4000Hz	32.5
8000Hz	26.1



Note: Occupant at least 1.0m from sound source.

DRAWN BY: Oiu Junjun		DATE: 28th May 2011			
APPROVED Q.A.: Li Meifen		APPROVED ENG.: Zhang Jingfei		TITLE: Water Cooled Split Ducted Heat Pump Unit	
MODEL: WSR14		DRAWING NO.: 01		WSR TYPE	
				SHEET SIZE: A4	
				ISSUE: 01	