

The NEVADA range of direct drive air handling units provide two types of framework construction, either 'Wraparound' or 'Pentapost' to form a rigid construction for the unit and its components.

Each type of unit is suitable for either internal or external mounting dependant upon application, with a selection of six standard models and a duty range of up to 1.4 m<sup>3</sup>/sec.

Each NEVADA unit comprises a direct driven centrifugal fan, a pleated panel filter and a L.P.H.W. Coil or Electric Heater Battery as standard components.



## NEVADA 'WRAPAROUND' Internal Mounted Direct Drive Air Handling Unit

# NEVADA PENTAPOST

NEVADA 'PENTAPOST' Internal Mounted Direct Drive Air Handling Unit



NEVADA units can be enhanced through a wide variety of optional equipment to cater for customer applications, including volume control dampers, silencers, manometers, heater control panels, speed regulators, pressure differential switches, washable filters and many more.

# NEVADA 'WRAPAROUND' Direct Drive Air Handling Unit FEATURES & BENEFITS

NEVADA Internal Mounted Unit



## FEATURES & BENEFITS

- \* Excellent performance characteristics with Air volumes of up to 1.4 m<sup>3</sup>/sec.
- \* A quality construction air handling unit, competitively priced, providing value and reliability.
- \* Standard components include forward curved double inlet fans, electric or hot water heaters and panel filters.
- \* Flexibility in design with internal or external mounting units and a comprehensive range of accessories.
- \* Slide rails allow installation and regular maintenance of standard components with minimal effort.
- \* Single Unlined, Lined and Double skinned casings to meet required noise criteria.
- \* Standard NEVADA 'Wraparound' units are available on a 48 Hr working day despatch. °
- \* Flexibility in performance with fully speed controllable fans.
- \* A wide range of electric heater outputs are available.
- \* Matching silencers are available to fit onto the outlet of the unit via a discharge spacer.
- \* Fan, filter and heater all within one casing, therefore easier to install.
- ° N.B. 48 Hr Despatch does not apply to Weatherproof or Non Standard Sizes

# NEVADA 'WRAPAROUND' Direct Drive Air Handling Unit COMPONENT SPECIFICATION

## CASING

### General

The standard range of NEVADA 'WRAPAROUND' units are manufactured from galvanised sheet steel, precision cut, then folded to standard sizes.

Although units are galvanised casings as standard, they can be supplied with plastisol coated steel outer skins upon request.

Panels are flush mounted into the unit framework rebates on a crush resistant closed cell neoprene sealing gasket, which provides an air seal between the panel and the component section. Gaskets are chemically and biologically inert and meet all requirements of DW 144

The NEVADA Wraparound can be used for external mounting, supplied with a weather louvre and fitted with water sheds over the top of the access panels to prevent water ingress, with plastisol coated steel outer skins as an option on the unit casing construction.



### Single Skinned

Casings are manufactured from 1.0mm thick pre hot dipped galvanised mild steel suitably braced for rigidity. Access to the fan and filter compartments is via lift off access doors with quick release fasteners. Panels are flush mounted into the unit framework rebates on a crush resistant closed cell neoprene sealing gasket, which provides an air seal between the panel and the component section. Gaskets are chemically and biologically inert and meet all requirements of DW 144.

### Single Skinned Lined

Casings are manufactured from 1.0mm thick pre hot dipped galvanised mild steel suitably braced for rigidity, internally lined with 25mm thick foam to building regulations class O fire propagation to BS 476 Part 6, spread of flame class 1 to BS 476 Part 7 and has a thermal transmittance U value of 1.92 W/m<sup>2</sup> K.

### Double Skinned

Casings are manufactured from 1.0mm thick pre hot dipped galvanised mild steel suitably braced for rigidity, with an inner skin of 0.9mm hot dipped galvanised mild steel, enclosing 25mm of 65kg/m<sup>3</sup> mineral wool.

**N.B. Fan access and filter removal is via side access panels.**

## FANS & MOTORS

The fans are mounted onto a diaphragm plate, are double inlet double width forward curved centrifugal, housed in a purpose designed scroll with integral deep drawn inlet cones to facilitate maximum efficiency.

All fans are suitable for 230V/1Ph/50Hz or 60Hz electrical supply.

The fans are suitable for operating temperatures of up to +40°C.

The Motors are isolated from the unit case and have anti-vibration mounts fitted between the motor mounting arm and the fan casing.

All wheels are dynamically balanced.



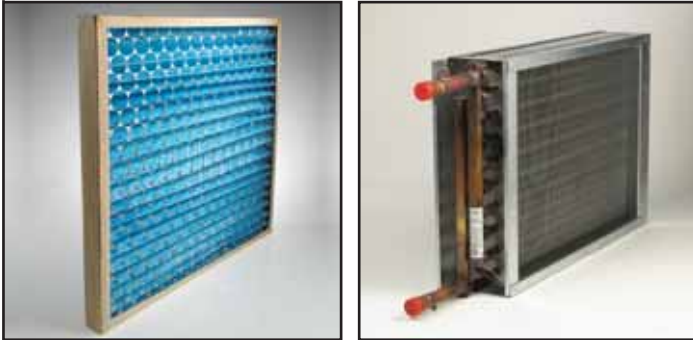
Double Inlet  
Double Width  
Centrifugal Fan

# NEVADA 'WRAPAROUND' Direct Drive Air Handling Unit COMPONENT SPECIFICATION Cont...

## FILTERS

Pleated Panel filters are 50 or 100mm deep disposable type to Grade G4, in accordance with BS EN 779: 2002. They are for side withdrawal, mounted into the unit on slide rails, which are manufactured from pre-galvanised sheet steel to enable filter replacement.

Pleated Panel filters are manufactured from pleated media which consists of reinforced non-woven fibres, with expanded diamond grid to provide maximum support. Pleating the media effectively increases the filtration area to more than three times that of the face area, providing high dust holding capacity and low pressure loss. The pleat pack is encased in a water resistant lattice cardboard frame.



## HEATERS

### Hot Water Heating Coils (L.P.H.W.)

Coils are constructed from seamless drawn copper tube to BS 2871 mechanically expanded into aluminium fins with die formed self spacing collars. The coil casing is formed from heavy gauge galvanised sheet to BS 2989 to make a rigid assembly, with BSP(M) pipe fittings on coil flow and return connections. Tube end plates have die formed collared holes to allow expansion and contraction of the tubes without damage.

All coils are subjected to an air under water test to 16 bar during manufacture.

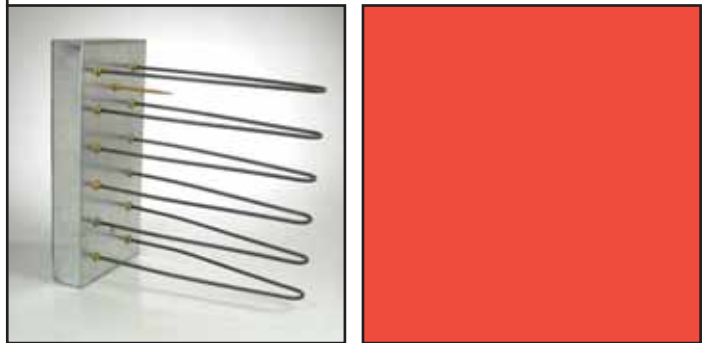
All coil sections are fitted into the units on pre-galvanised steel slide rails for ease of assembly and withdrawal.

## Electric Heater Batteries (E.H.B.)

Elements are constructed from Nichrome 5 spiral resistance wire surrounded by magnesium oxide powder and sheathed in stainless steel.

The elements are mounted on a galvanized sheet steel terminal housing. All electric heaters are fitted with high temperature thermal cut out protection for wiring into the control circuit and are generally available in the power and number of steps required.

A control system must be provided to ensure the heater is not activated when there is no airflow and the fan runs on after the heater has been switched off, to dissipate any residual heat. It is recommended that a fan run on timer be incorporated within the controls to prevent possible heat damage, as well as an airflow switch.



# NEVADA 'WRAPAROUND' Direct Drive Air Handling Unit PERFORMANCE & ELECTRICAL DATA

## Fan, Filter & Electric Heater Battery

Model	Speed r/min	Air Volume m <sup>3</sup> /sec @ Static Pressure Pa										Motor Rating		
		0	50	100	150	200	250	300	400	500	600	FL Amps	SC Amps	Output kW
NWE 10	1330	0.33	0.31	0.28	0.23							1.09	2.70	0.150
NWE 20	1120	0.56	0.50	0.44	0.37	0.28	0.13					3.20	8.00	0.373
NWE 30	1280	-	-	-	0.71	0.66	0.60	0.52				4.80	12.0	0.373
NWE 40	1190	1.09	1.04	0.98	0.92	0.85	0.77	0.65				6.30	15.8	0.55
NWE 50	1210	-	-	-	-	-	1.00	0.96	0.75	0.30		5.90	14.8	0.55
NWE 60	900	1.54	1.44	1.33	1.21	1.06	0.81					8.10	20.3	0.736

N.B. High Temperature Cut Out and Airflow Switch fitted as standard

## Fan, Filter & L.P.H.W. Heater Battery

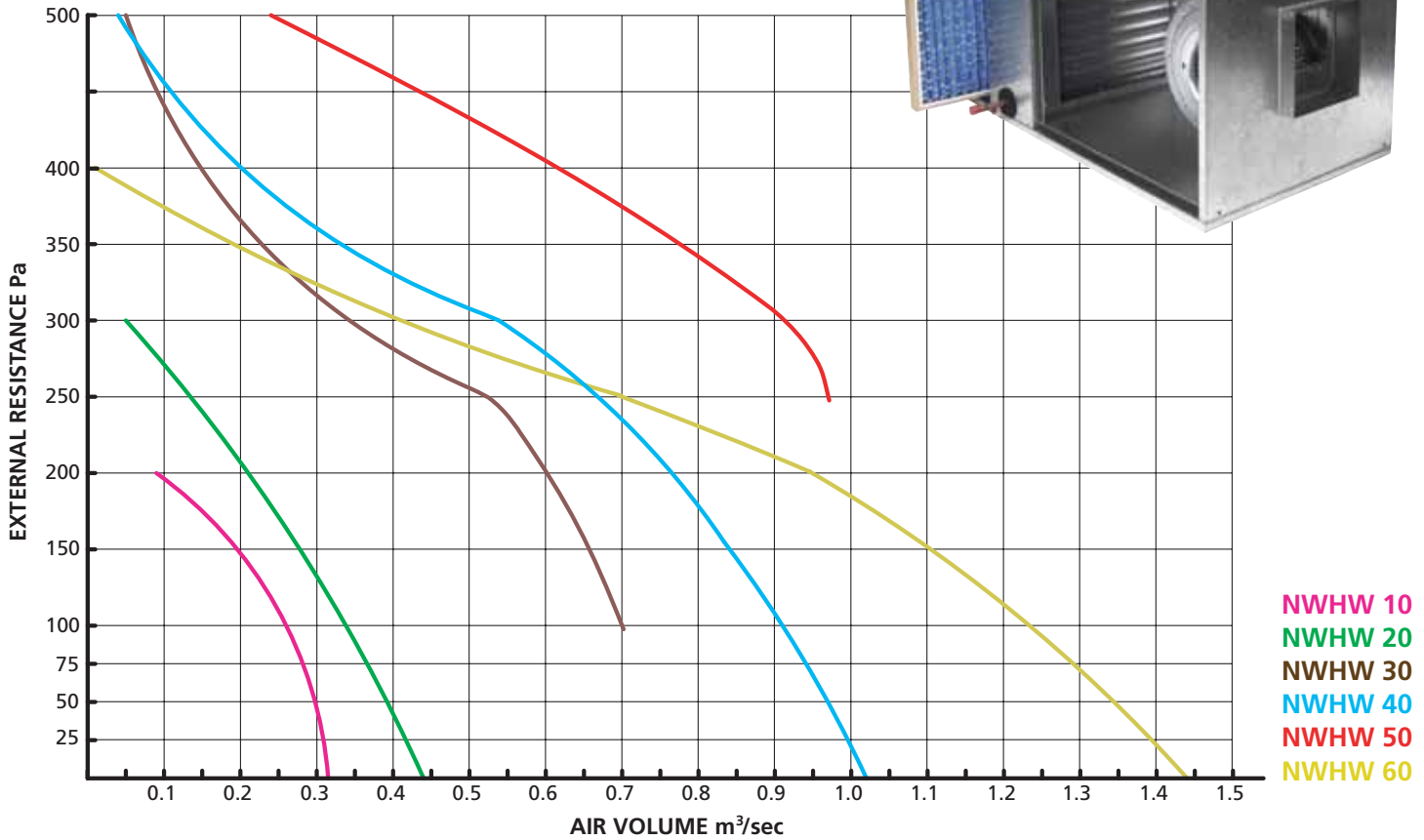
Model	Speed r/min	Air Volume m <sup>3</sup> /sec @ Static Pressure Pa										Motor Rating		
		0	50	100	150	200	250	300	400	500	600	FL Amps	SC Amps	Output kW
NWHW 10	1330	0.31	0.28	0.26	0.21	0.09						1.09	2.70	0.150
NWHW 20	1120	0.44	0.39	0.34	0.28	0.21	0.12					3.20	8.00	0.373
NWHW 30	1280	-	-	0.70	0.65	0.60	0.53	0.42	0.15			4.80	12.0	0.373
NWHW 40	1190	1.02	0.97	0.90	0.84	0.76	0.67	0.54	0.20			6.30	15.8	0.55
NWHW 50	1210	-	-	-	-	-	0.97	0.92	0.60	0.24		5.90	14.8	0.55
NWHW 60	900	1.44	1.34	1.23	1.11	0.95	0.70	0.42				8.10	20.3	0.736

## Fan Outlet Sound Power Levels

Model	Octave band centre frequencies Hz							
	63	125	250	500	1K	2K	4K	8K
NW 10	71	73	72	72	74	76	72	68
NW 20	71	72	70	70	73	72	68	64
NW 30	70	74	70	72	73	71	70	65
NW 40	71	75	72	74	75	73	71	65
NW 50	76	78	75	76	77	74	73	67
NW 60	79	80	76	79	80	78	76	74

# NEVADA 'WRAPAROUND' Direct Drive Air Handling Unit PERFORMANCE CURVES

## Fan, Filter & L.P.H.W. Heater Battery



Performance curves are based upon a 'clean filter' condition, therefore, an additional 80Pa should be added to the external pressure of the unit for unit selection at a 'mean dirty' condition



**FAN**



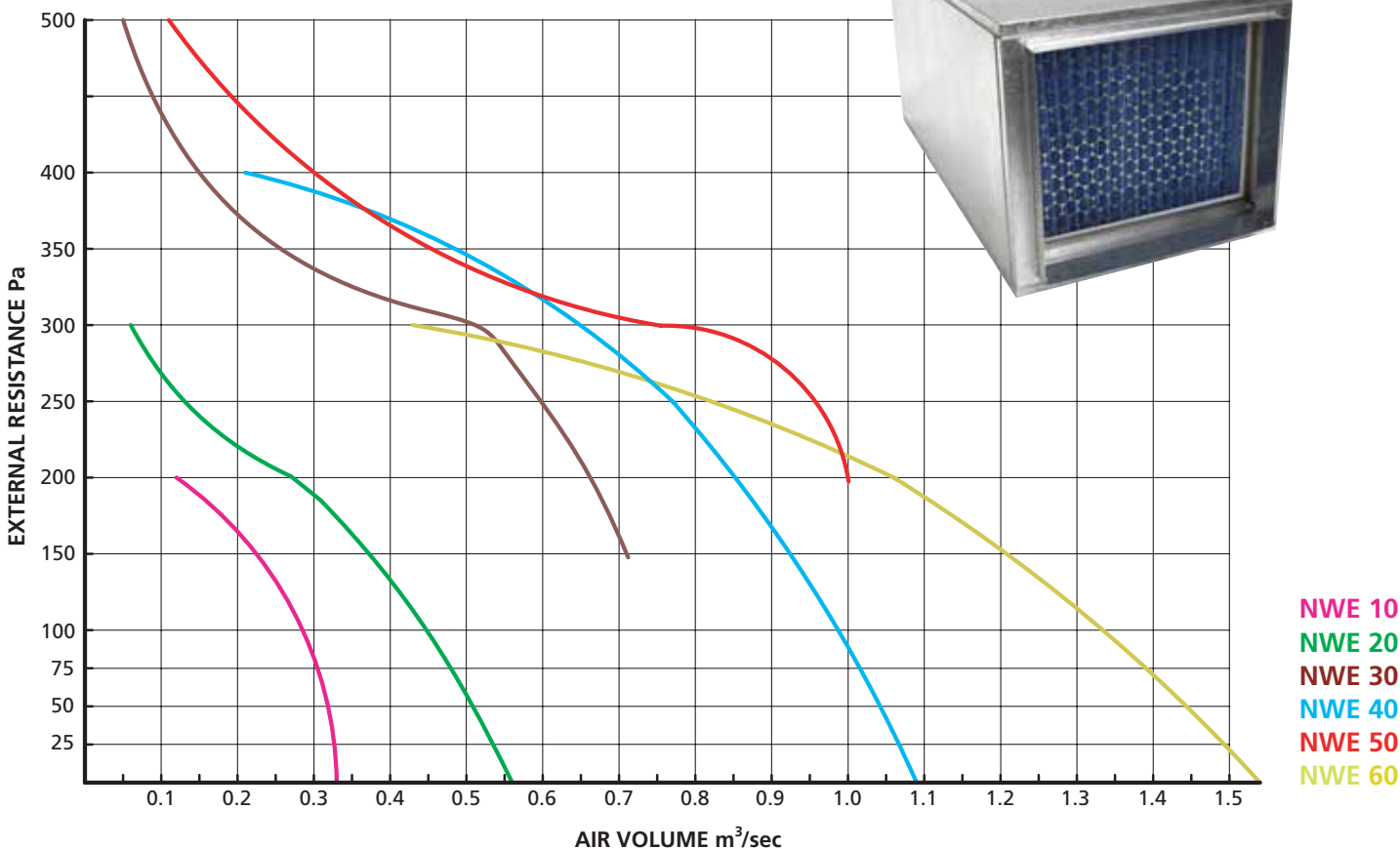
**FILTER**



**L.P.H.W.**

# NEVADA 'WRAPAROUND' Direct Drive Air Handling Unit PERFORMANCE CURVES

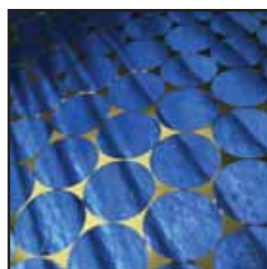
## Fan, Filter & Electric Heater Battery



Performance curves are based upon a 'clean filter' condition, therefore, an additional 80Pa should be added to the external pressure of the unit for unit selection at a 'mean dirty' condition



**FAN**



**FILTER**



**E.H.B.**

# NEVADA 'WRAPAROUND' Direct Drive Air Handling Unit ELECTRIC HEATER BATTERY DATA

## STANDARD ELECTRIC HEATER BATTERIES

You can calculate the Heater Battery Size using the following formula:

$$P = Q \times \rho \times \Delta t$$

Where:

P = Heater Output (kW)

Q = Volume Flow Rate (m<sup>3</sup>/sec)

$\rho$  = Air Density (kg/m<sup>3</sup>)

$\Delta t$  = Temperature Rise (°C)

UNIT SIZE	AIR VOL m <sup>3</sup> /sec	kW RATING	Single Phase Supply Steps				Three Phase Supply Steps		
			1	2	3	4	1	2	3
NWE 10	All	3.00	✓	✓	✓	✓			
NWE 10	All	4.50	✓	✓	✓				
NWE 10	All	6.00	✓	✓	✓				
NWE 10	All	7.50	✓						
NWE 10	0.28+	9.00	✓		✓				
NWE 10	0.31+	10.0	✓	✓					
NWE 10	0.33+	11.25	✓		✓				
NWE 20	All	3.0	✓	✓					
NWE 20	0.2+	4.50	✓		✓				
NWE 20	0.28+	6.00	✓	✓		✓			
NWE 20	0.28+	7.50	✓	✓	✓				
NWE 20	0.28+	9.00	✓	✓	✓				
NWE 20	0.37+	12.00	✓	✓		✓			
NWE 20	0.44+	13.50					✓		✓
NWE 20	0.5+	18.00					✓	✓	
NWE 30	All	9.00	✓	✓	✓				
NWE 30	All	12.00	✓	✓		✓			
NWE 30	All	18.00					✓	✓	
NWE 30	0.6+	22.50					✓		
NWE 30	0.66+	27.00					✓	✓	✓
NWE 40	All	9.00	✓	✓	✓				
NWE 40	All	12.00	✓	✓	✓	✓	✓	✓	
NWE 40	All	15.00					✓	✓	
NWE 40	All	18.00					✓	✓	✓
NWE 40	All	24.00					✓	✓	
NWE 40	0.85+	30.00					✓	✓	
NWE 40	0.98+	36.00					✓	✓	✓
NWE 50	All	9.00	✓	✓					
NWE 50	0.75+	12.00	✓	✓	✓	✓	✓	✓	
NWE 50	0.75+	15.00					✓	✓	
NWE 50	0.75+	18.00					✓	✓	✓
NWE 50	0.75+	24.00					✓	✓	
NWE 50	0.8+	30.00					✓	✓	
NWE 50	0.98+	36.00					✓	✓	✓
NWE 60	All	12.00	✓	✓	✓	✓	✓	✓	
NWE 60	All	15.00					✓	✓	
NWE 60	All	18.00					✓	✓	✓
NWE 60	All	24.00					✓	✓	
NWE 60	0.81+	30.00					✓	✓	
NWE 60	1.06+	36.00					✓	✓	
NWE 60	1.21+	40.00					✓	✓	
NWE 60	1.33+	45.00					✓	✓	✓

N.B. Please enquire for duty and steps not shown

# NEVADA 'WRAPAROUND' Direct Drive Air Handling Unit

## LOW PRESSURE HOT WATER DATA

### LOW PRESSURE HOT WATER HEATER

(82°C Flow/71°C Return)

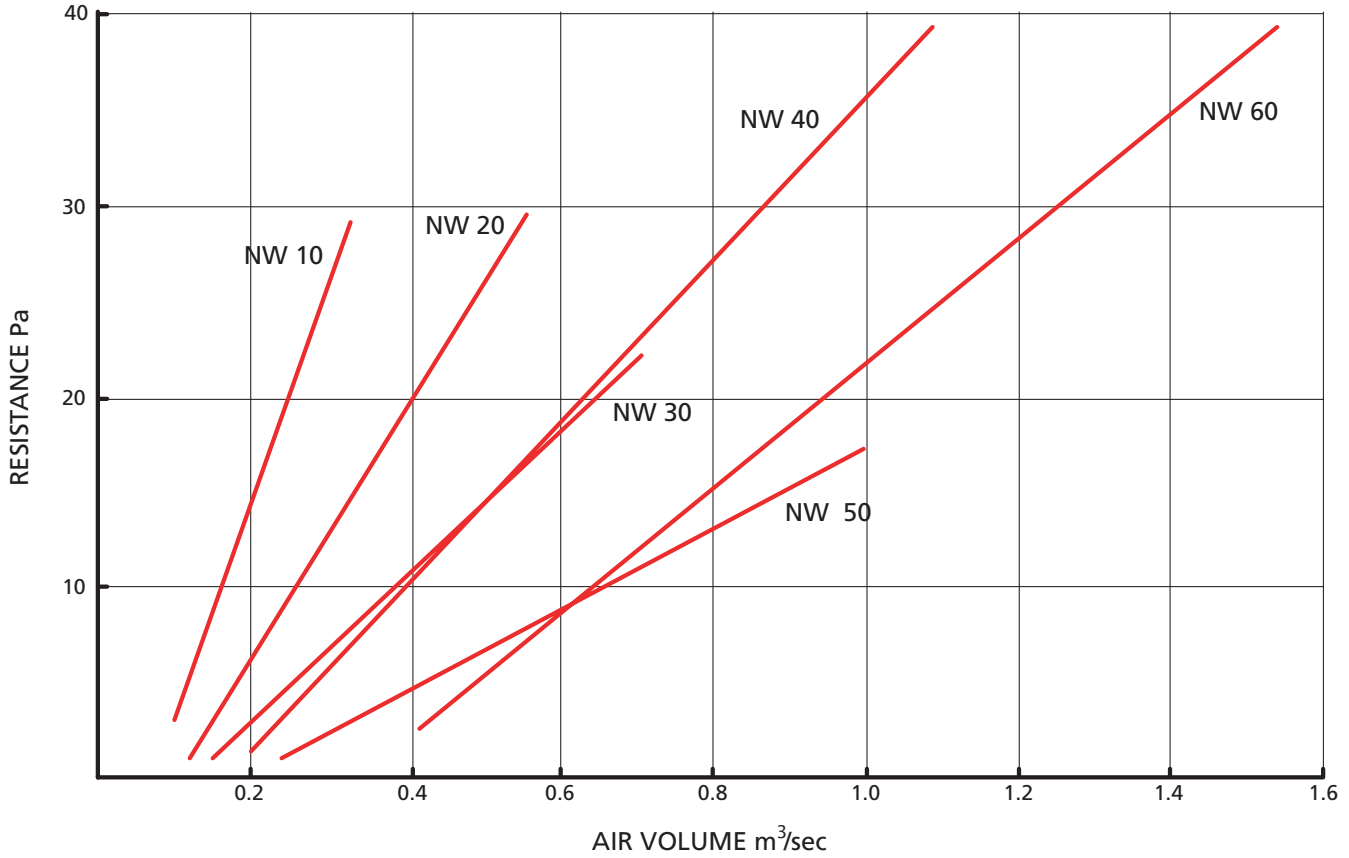
UNIT SIZE	Ext Pa	AirFlow m <sup>3</sup> /sec	Airside		Waterside	
			kW	ΔT(deg C)	F/R(l/s)	Pd(kPa)
NWHW 10	200	0.09	5.21	48.0	0.114	5.0
NWHW 10	150	0.21	7.86	31.0	0.171	8.0
NWHW 10	100	0.26	8.64	27.5	0.188	9.0
NWHW 10	50	0.28	8.96	26.5	0.195	10.0
NWHW 20*	250	0.12	-	-	-	-
NWHW 20	200	0.21	10.65	42.0	0.232	4.0
NWHW 20	150	0.28	12.17	36.0	0.265	5.0
NWHW 20	100	0.34	13.35	32.5	0.291	5.0
NWHW 20	50	0.39	14.13	30.0	0.308	5.0
NWHW 30*	400	0.15	-	-	-	-
NWHW 30	300	0.42	18.77	37.0	0.409	3.0
NWHW 30	250	0.53	20.81	32.5	0.453	4.0
NWHW 30	200	0.60	22.47	31.0	0.489	4.0
NWHW 30	150	0.65	23.17	29.5	0.505	4.0
NWHW 30	100	0.70	23.68	28.0	0.516	4.0
NWHW 40*	400	0.20	-	-	-	-
NWHW 40	300	0.54	22.83	35.0	0.497	3.0
NWHW 40	250	0.67	25.50	31.5	0.555	3.0
NWHW 40	200	0.76	26.63	29.0	0.580	4.0
NWHW 40	150	0.84	27.91	27.5	0.608	4.0
NWHW 40	100	0.90	28.82	26.5	0.628	4.0
NWHW 40	50	0.97	29.89	25.5	0.651	4.0
NWHW 50*	600	-	-	-	-	-
NWHW 50*	500	0.24	-	-	-	-
NWHW 50	400	0.60	28.62	39.5	0.623	4.0
NWHW 50	300	0.92	35.01	31.5	0.762	5.0
NWHW 50	250	0.97	35.74	30.5	0.778	5.0
NWHW 60*	300	0.42	-	-	-	-
NWHW 60	250	0.70	36.77	43.5	0.801	6.0
NWHW 60	200	0.95	43.03	37.5	0.937	7.0
NWHW 60	150	1.11	45.59	34.0	0.993	7.0
NWHW 60	100	1.23	48.29	32.5	1.052	8.0
NWHW 60	50	1.34	50.18	31.0	1.093	9.0

\* Heating duties available on application.

Heating duties for 0Pa selections also available.

Water flow rates must be maintained between min and max values shown for each unit size.

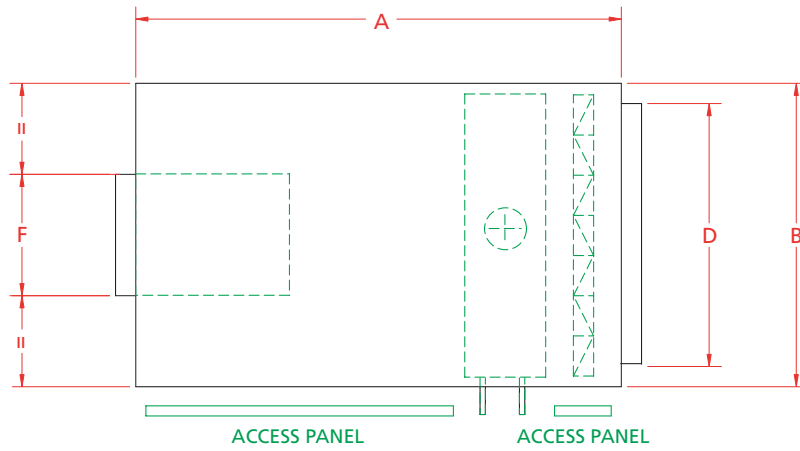
# NEVADA 'WRAPAROUND' Direct Drive Air Handling Unit SILENCER PRESSURE DROP DATA



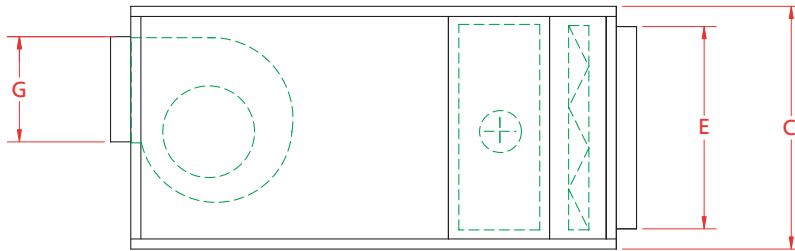
## Silencer Pressure Drop Performance Data

Model	Pressure Drop Pa @ Air Volume m³/sec														
	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1	1.1	1.2	1.3	1.4	1.5
NW 10	3	15	25	-	-	-	-	-	-	-	-	-	-	-	-
NW 20	-	6	13	19	25	-	-	-	-	-	-	-	-	-	-
NW 30	-	3	7	10	15	18	22	-	-	-	-	-	-	-	-
NW 40	-	2	6	10	15	18	23	27	32	36	39	-	-	-	-
NW 50	-	-	2	5	7	9	11	13	15	17	-	-	-	-	-
NW 60	-	-	-	2	5	8	12	15	18	22	25	28	32	35	38

# NEVADA 'WRAPAROUND' Direct Drive Air Handling Unit DIMENSIONS



Plan



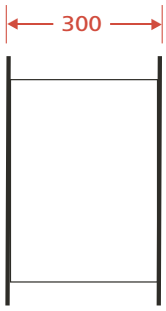
Side Elevation

Model	A	B	C	D	E	F	G	Weight kg*	
								L.P.H.W.	E.H.B.
NW 10	1000	550	350	450	250	225	125	70	68
NW 20	1100	675	420	575	320	275	210	85	82
NW 30	1200	675	600	575	500	235	260	115	116
NW 40	1200	750	600	650	500	300	260	130	138
NW 50	1250	820	600	720	500	325	285	160	170
NW 60	1400	960	660	850	560	315	345	175	190

N.B. All Dimensions in mm. Lengths exclude unit intake and discharge spigots.

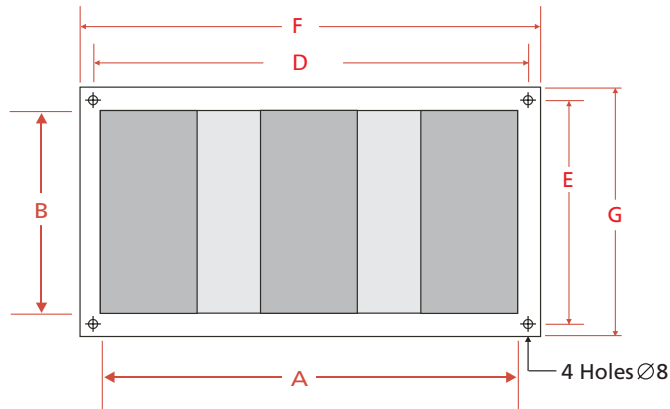
\*Specifies Weight with L.P.H.W or Electric Heater Battery Component

# NEVADA 'WRAPAROUND' Direct Drive Air Handling Unit SILENCER DIMENSIONS / PERFORMANCE



Discharge Spacer  
for fitting between  
unit discharge and  
silencer.

All dimensions as  
per silencer.



## CONSTRUCTION

1.0mm Galvanised sheet steel casing.

25mm Ductmate flanges.

Infill mineral wool with scrim facing and expanded mesh retainer.

Model	Code	A	B	Length	D	E	F	G	Airways	Silencer Weight kg	Spacer Section kg
NW 10	NWS-0600A	450	250	600	470	270	500	300	1	13	6
	NWS-0900A			900						19	
	NWS-1200A			1200						24	
NW 20	NWS-0600B	575	320	600	595	340	625	370	2	18	7
	NWS-0900B			900						25	
	NWS-1200B			1200						33	
NW 30	NWS-0600C	575	500	600	595	520	625	550	2	24	8
	NWS-0900C			900						34	
	NWS-1200C			1200						45	
NW 40	NWS-0600D	650	500	600	670	520	700	550	2	26	9
	NWS-0900D			900						38	
	NWS-1200D			1200						49	
NW 50	NWS-0600E	720	500	600	740	520	770	550	2	27	10
	NWS-0900E			900						39	
	NWS-1200E			1200						50	
NW 60	NWS-0600F	850	560	600	870	580	900	610	3	35	11
	NWS-0900F			900						50	
	NWS-1200F			1200						64	

## Static Insertion Loss For Silencers

Model	Code	Octave Band Centre Frequencies Hz							
		63	125	250	500	1000	2000	4000	8000
NW 10	NWS-0600A	-2	-5	-8	-12	-15	-15	-11	-11
	NWS-0900A	-3	-6	-11	-20	-25	-25	-15	-13
	NWS-1200A	-4	-7	-15	-26	-33	-33	-19	-14
NW 20	NWS-0600B	-3	-5	-7	-18	-27	-24	-18	-13
	NWS-0900B	-4	-7	-13	-26	-35	-35	-30	-20
	NWS-1200B	-5	-9	-18	-34	-45	-40	-34	-24
NW 30	NWS-0600C	-3	-5	-7	-18	-27	-24	-18	-13
	NWS-0900C	-4	-7	-13	-26	-35	-35	-30	-20
	NWS-1200C	-5	-9	-18	-34	-45	-40	-34	-24
NW 40	NWS-0600D	-3	-5	-7	-17	-23	-23	-16	-12
	NWS-0900D	-4	-7	-13	-25	-32	-32	-23	-15
	NWS-1200D	-5	-9	-19	-33	-42	-42	-30	-18
NW 50	NWS-0600E	-1	-4	-5	-12	-14	-14	-10	-6
	NWS-0900E	-2	-5	-10	-18	-23	-23	-14	-9
	NWS-1200E	-3	-6	-14	-24	-30	-30	-17	-13
NW 60	NWS-0600F	-2	-3	-6	-18	-27	-24	-18	-12
	NWS-0900F	-3	-5	-10	-26	-36	-34	-30	-20
	NWS-1200F	-4	-7	-15	-34	-47	-39	-32	-26



Fastlane provides more than just a great range of Air Handling Units - We provide a fully customised, completely integrated solution.

Our conviction to conceive innovative AHU's, with a dedication to implement them through strong product investment is based on delivering the best possible solution with originality.