



Vertical Chassis panelwork is all 'In House' manufactured from nominally 1.2mm Galvanised steel. All flanges are formed inward facing to prevent exposure to bare metal edges. Sufficient forms and folds are incorporated to provide a vibration free, robust structure. The panel work is jointed throughout using 3/16" 'Polygrip' self adjusting 'air tight' rivets.

Access is provided through a single access panel. This covers the fan / motor sets, the coil and condensate tray. This access panel is retained by machine screws into "CaptiveNuts".

Fans are direct drive, double inlet, forward curved centrifugal type. Both the impellers & impeller housings are of galvanised steel. Fan & motor assemblies are mounted separately to the fan deck assembly using M6 Machine screws into captive "Nutserts" and can be removed individually for non routine servicing or replacement. Each fan is connected to the fan wiring loom by terminal strip. Motor & impeller assemblies are statically and dynamically balanced in twin planes.

Motors are totally enclosed, external rotor, permanent split capacitor type. Power factor shall be 0.9 or better. Bearings are sealed for life ball race type with a manufacturers minimum life expectancy of 50,000 hours under typical operating conditions. Overload protection is afforded to each individual motor by an auto resetting thermal contactor. Motor insulation is to class 'B' with the enclosure to IP44. Supply 230V 1Ph 50Hz.

Speed Control is by multi-tapped transformer. 18 speed outputs are available and 9 selected outputs are wired for on site adjustment. Controls are fed from an additional 50VA 24V output. More detail about our speed control method is given on the last page of this data sheet.

Coils are manufactured from seamless 3/8" copper tube, mechanically expanded onto aluminium fins. Fins are punched with die formed collars to afford maximum heat transfer surface area with the tubes. All coils are circuited contra flow and bottom to top, optimising output and ensuring free venting and draining. Vents and drains are slotted type. Coils are handed left hand or right hand and are not interchangeable. Handings notated against direction of airflow. Coil terminations are 15mm dia plain copper at 40mm centres through an aluminium support plate for rigidity. Every coil is leak tested using dry air under water to 30 bar. Pressure drop details are given on page 6 of this data sheet. Both 5 row and 4 row coils are used to optimise performance. The coil terminations shall be within the profile of the unit to prevent damage.

The Condensate Trays cover the entire coil and valve assembly area and has a positive (back to front) fall to the standard 15mm drain point. The pan is manufactured from galvanised steel, corners are brazed and the termination is silver soldered into position. Stainless steel pans are available as an option. The condensate drain pipe shall be within the profile of the unit to prevent damage.

Insulation is used throughout for both thermal and acoustic damping. Insulation is open cell, class 'O', CFC and HFC free expanded foam. Foam complies with CAA airport and London Borough flammability and toxicity requirements. Adhesive has light, ageing and temperature tolerance.

Discharge Spigot as standard is rectangular and manufactured from galvanised steel. This is located on either the top or the front of the chassis panelwork depending upon your requirement. Alternative spigot sizes to the standard shown on our fan coil layout drawing can be incorporated by special arrangement.

Controls Enclosure All controls are, as standard, fitted to a control back plate which is mounted into the electrical enclosure. The enclosure has dual access from both the front and the side. The whole electrical enclosure including all switches shall be within the overall profile of the unit to prevent damage.

Control Valves are modulating 4 port via a stand alone controller. Standard return air sensors are bead type for mounting in the return air path. Room sensor/temperature adjustment is optional. The standard valve assembly terminates in 15mm or 22mm copper compression fittings. The whole valve assembly shall be within the profile of the unit to prevent damage.

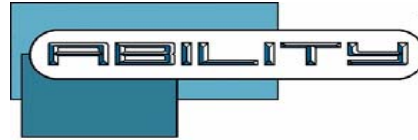
Filters are EU2 or EU3 media secured to a wire metal frame, easily removable for routine maintenance, cleaning or replacement. Other types are available.

Cased versions of the Neptune range are available. Please refer to the supplementary casing literature.

FCU SELECTIONS

DATE :	5-Oct-04
PROJECT :	St Andrews University
REF:	-

DESIGN CONDITIONS	
CHILLED WATER FLW	6 DEG C
CHILLED WATER RET.	12 DEG C
HOT WATER FLOW	82 DEG C
HOT WATER RETURN	71 DEG C
ENT. AIR SUMMER	23 DEG C
ENT. AIR WINTER	20 DEG C
EXT. RESISTANCE	30 PA
MAX NR LEVEL	35 NR
FRESH AIR TEMP	

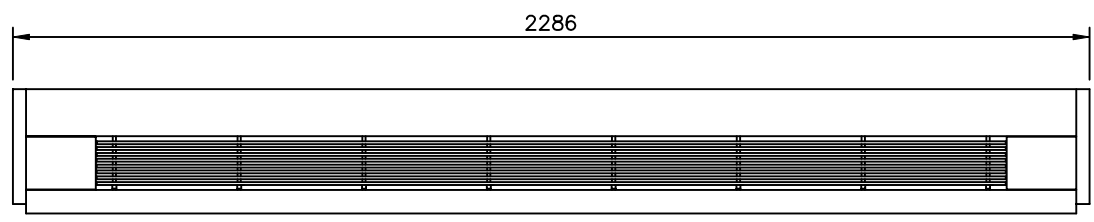
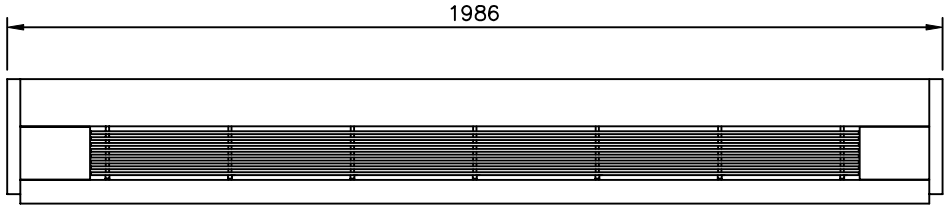
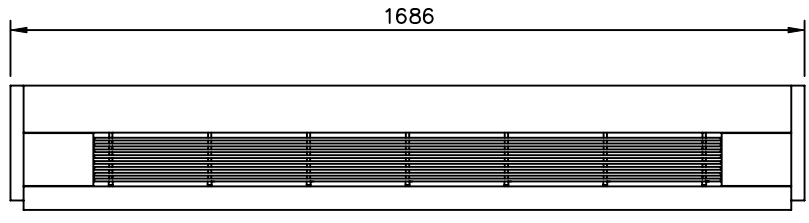
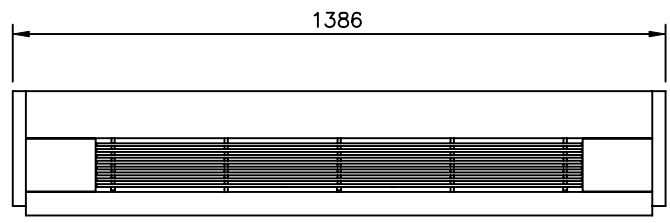
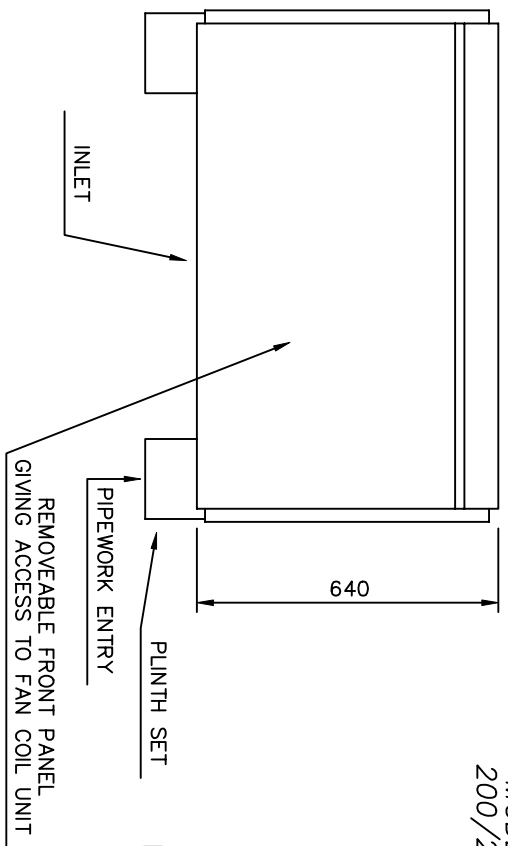
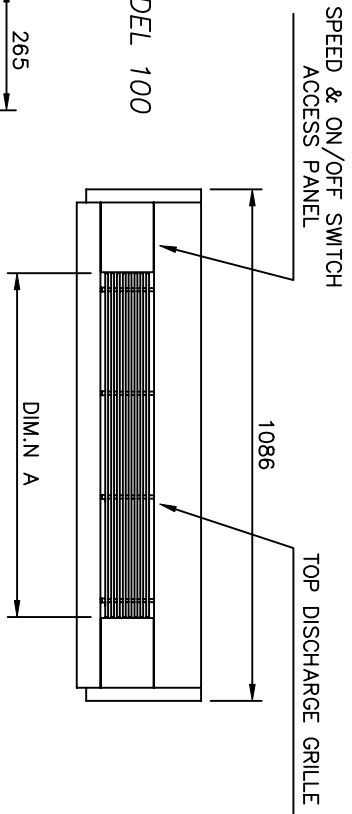
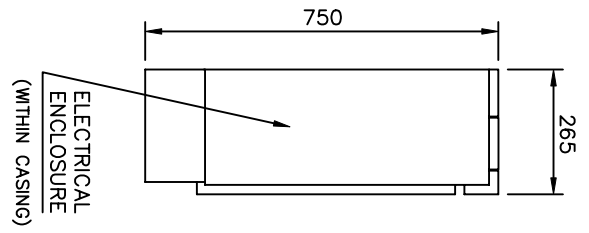


50	% Relative Humidity
0	% Glycol Mix
Default Unit Range	NEPTUNE
Default Spigot Size	200
MIN SUPPLY AIR	11

UNIT DETAILS							COOLING					HEATING				FAN SPEED			CURRENT		
AREA	REF	NO	QTY	MODEL	SIZE	C H	SENS CLG KW	TOTL CLG KW	CHW FLOW L/S	COIL P/D KPA	SUPPLY AIR DEG C	HTG KW	HTG FLOW L/S	COIL P/D KPA	SUPPLY AIR DEG C	AIR VOL L/S	FAN SPEED	NR GUIDE	INLET PLENUM (Y/N)	FULL LOAD	START UP
MAXIMUM DUTIES																					
			1	NEPTUNE	100	4 1	1.659	1.951	0.0806	8.6	11.0	2.000	0.0433	1.8	34.5	112	LOW PLUS (1)	35		1.0	3.0
			1	NEPTUNE	200	4 1	2.473	2.910	0.1186	8.8	11.0	3.000	0.0649	5.1	34.6	167	MEDIUM	35		1.0	3.0
			1	NEPTUNE	250	4 1	3.036	3.572	0.1481	13.7	11.0	3.500	0.0758	7.0	33.9	205	STD LOW (3)	35		2.0	6.0
			1	NEPTUNE	300	4 1	3.658	4.304	0.1771	10.4	11.0	4.000	0.0866	11.3	33.2	247	LOW PLUS (1)	35		2.0	6.0
			1	NEPTUNE	400	4 1	4.394	5.169	0.2146	9.9	11.0	4.500	0.0974	17.0	32.3	297	STD LOW (2)	35		3.0	9.0
			1	NEPTUNE	500	4 2	4.478	5.268	0.2186	10.9	11.0	6.000	0.1299	10.1	36.2	302	STD LOW (1)	34		3.0	9.0
			1	NEPTUNE	550	4 2	4.887	5.750	0.2409	13.2	11.0	7.000	0.1515	13.8	37.3	330	EXTRA LOW (3)	34		4.0	12.0

ALL DIMENSIONS IN mm

FCU MODEL	DIMENSION A
100	730
200/250	1030
300	1330
400	1630
500/550	1930



PIPEWORK ENTRY, ELECTRICAL ENCLOSURE AND SWITCH ACCESS SHOWN FOR A RIGHT HAND UNIT. OPPOSITE FOR A LEFT HAND.

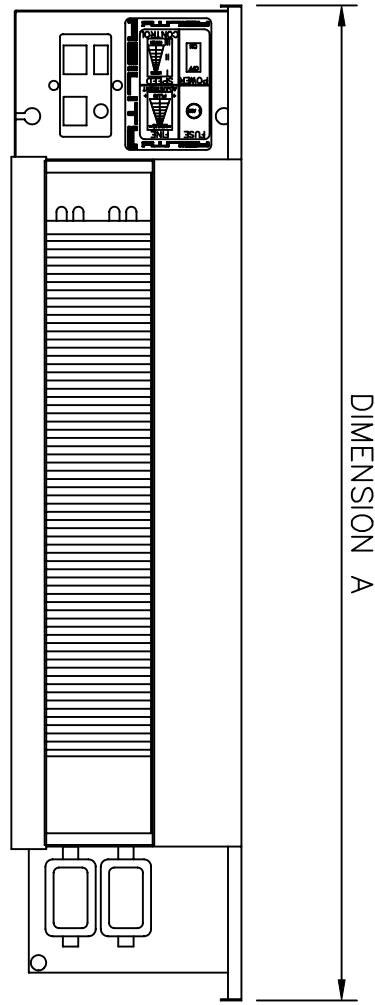
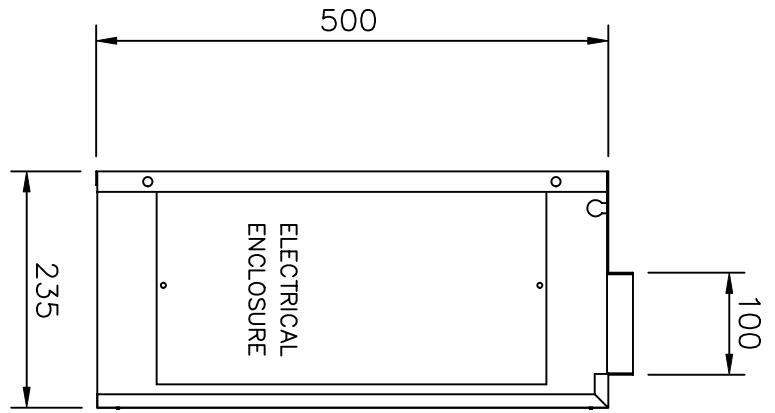
REV	DESCRIPTION	DATE	INIT
A			
B			
C			
D			
E			

ABILITIES		MATERIAL:	SCALE:	DRAWN BY:	DRAWN DATE:
TITLE: NEPTUNE CASING – 235 VERTICAL FAN COIL UNIT SERIES		VARIOUS	NTS	GEJ	26/08/04
				DRAWING NUMBER: GA1009	

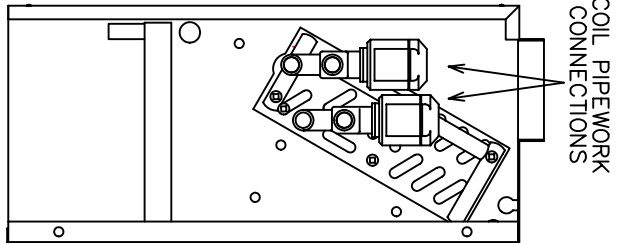
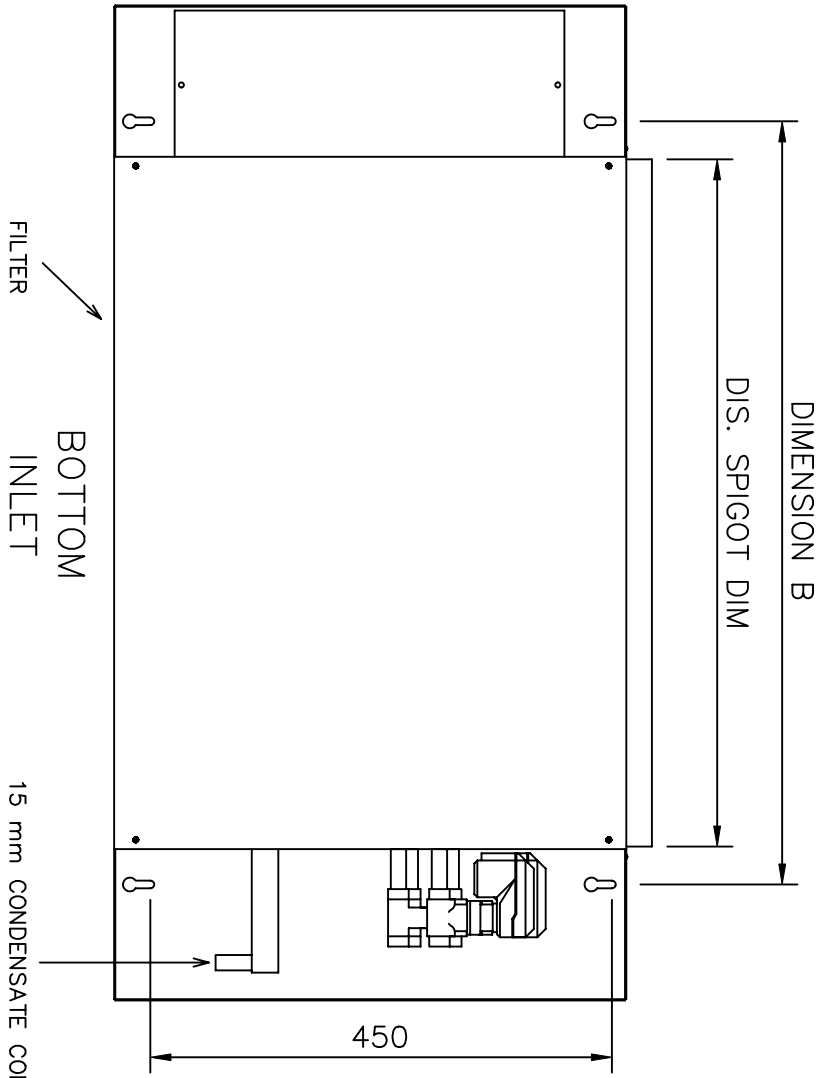
ALL DIMENSIONS IN mm

FAN COIL UNIT SIZE	SPIGOT DIM.S	UNIT LENGTH	FIXING POS.N
UNIT SIZE	WIDTH	DEPTH	DIMENSION A
MODEL 100	670	100	745
MODEL 200/250	970	100	1045
MODEL 300	1270	100	1345
MODEL 400	1570	100	1645
MODEL 500/550	1870	100	1945

RIGHT HAND UNIT SHOWN



GENERAL ARRANGEMENT DWG
500 HIGH VERTICAL
BOTTOM INLET
TOP DISCHARGE
FAN COIL UNIT



REV	DESCRIPTION	DATE	INIT	MATERIAL:	SCALE:	DRAWN BY:	DRAWN DATE:
E							
D							
C							
B							
A							

TITLE: **RAILWAYS** MATERIAL: VARIOUS SCALE: NTS DRAWN BY: GEJ DRAWN DATE: 10/12/02

RH VERTICAL FCU - BOTTOM INLET TOP DISCHARGE DRAWING NUMBER: HA1002R