

Test Report No. S08MEC07161/EMK
dated 5 Dec 2008



PSB Singapore

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SUBJECT:

Sound level testing of Biosafety Cabinet submitted by Esco Micro Pte Ltd on 2 Dec 2008.

TESTED FOR:

Esco Micro Pte Ltd
21 Changi South Street 1
Singapore 486777

Attn : Mr Alexander Philip Atamdi

DATE OF TEST:

2 Dec 2008

LOCATION OF TEST:

10m chamber of EMC laboratory of TÜV SÜD PSB Pte Ltd.

Temperature : 23°C
Relative Humidity : 68%

DESCRIPTION OF SAMPLES:

1 unit of Biosafety Cabinet was received for testing.

Model No. : LA2-4L1
Serial No. : 2007-27111
Manufactured : October 2007
Power : 700W 220-240VAC 50Hz 1PH
Dimension : 1.415m (length) x 0.810m (width) x 2.250m (height)



Laboratory:
TÜV SÜD PSB Pte. Ltd.
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TEST EQUIPMENT:

The following instruments were used for the test.

- 1) A dual-channel real-time frequency analyser (B&K Type 2144)
- 2) 2 sets of ½” condenser microphones with preamplifier (B&K Type 4943)
- 3) A sound pressure level calibrator (Norsonic Type 1251)

EQUIPMENT SETUP:

Sound Pressure Level Measurement Setup (refer to Figures 1 to 3)

Bystander Positions (refer to Figure 6)

- height of 2 microphones : 0.92m
- distance between microphones and cabinet : 1m

OPERATING PROCESS:

The cabinet was set to operate with an inflow of 0.45m/s. The inflow velocity was measured using Airflow AV30 anemometer of serial no. A19690.

Calibration Details of Anemometer :

Calibration date : 19/06/08
Certificate no. : 0619081A
Due date for calibration: 19/06/09

RESULTS:

Table 1 : Airflow Measurement of Biosafety Cabinet

Airflow (m/s)				
0.43	0.48	0.45	0.44	0.45
0.45 (average)				



RESULTS (cont'd):

Table 2 : A-weighted Sound Pressure Level of Biosafety Cabinet

Frequency (Hz)	Sound Pressure Level (dBA)	
	Biosafety Cabinet	
	Model No. : LA2-4L1, Serial No.: 2007-27111	
	Operation Mode	
	Mic 1	Mic 2
50	22.22	22.00
63	22.78	22.39
80	29.56	29.83
100	32.84	33.35
125	31.90	32.01
160	30.59	29.53
200	33.53	35.76
250	39.23	40.33
315	38.63	38.77
400	41.80	36.98
500	34.28	35.25
630	39.58	40.50
800	39.69	39.79
1000	40.87	42.21
1250	39.62	40.19
1600	39.32	39.38
2000	37.31	37.86
2500	36.66	36.81
3150	34.47	34.98
4000	31.32	31.80
5000	28.58	29.00
6300	23.63	24.04
8000	18.33	19.04
10000	13.17	13.87
Overall A-weighted	50.2	50.4


Francis Ee Min Kuen
Testing Officer


Lem Chee Meng
Product Manager
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Testing Group

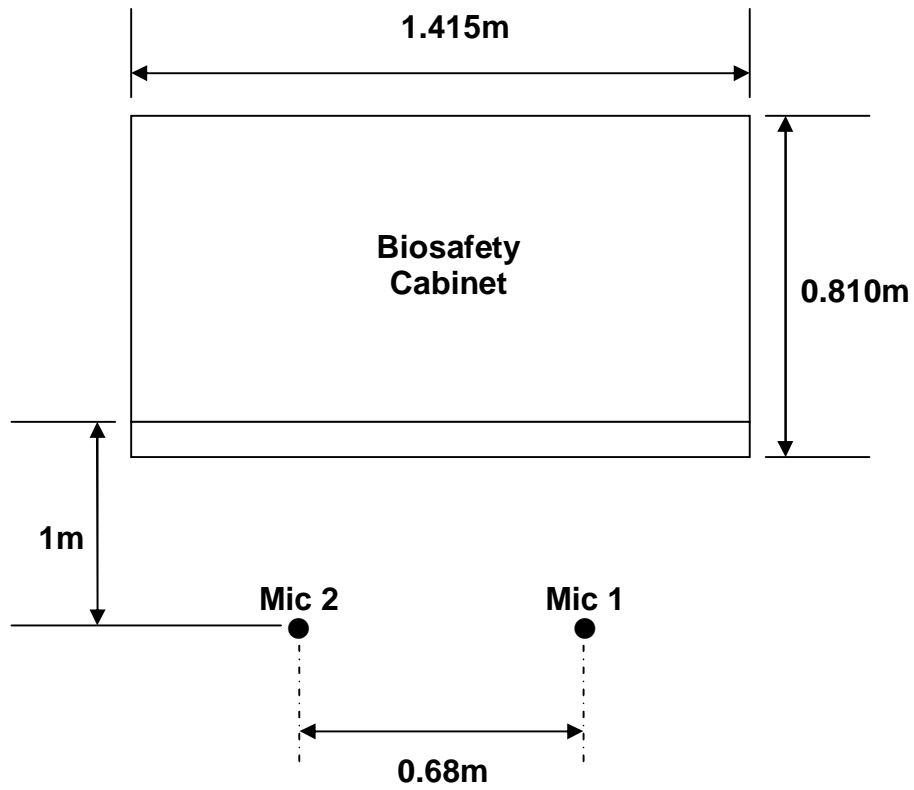


Figure 1 : Schematic Drawing for Sound Pressure Level Measurement (Plan View)

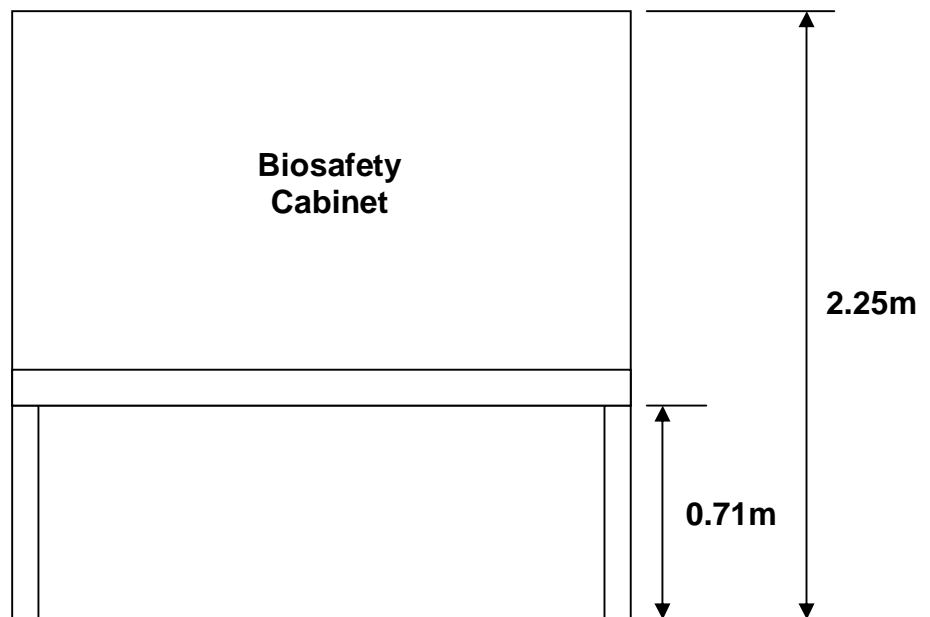
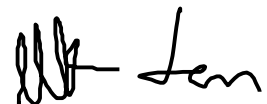


Figure 2 : Schematic Drawing for Sound Pressure Level Measurement (Front View)



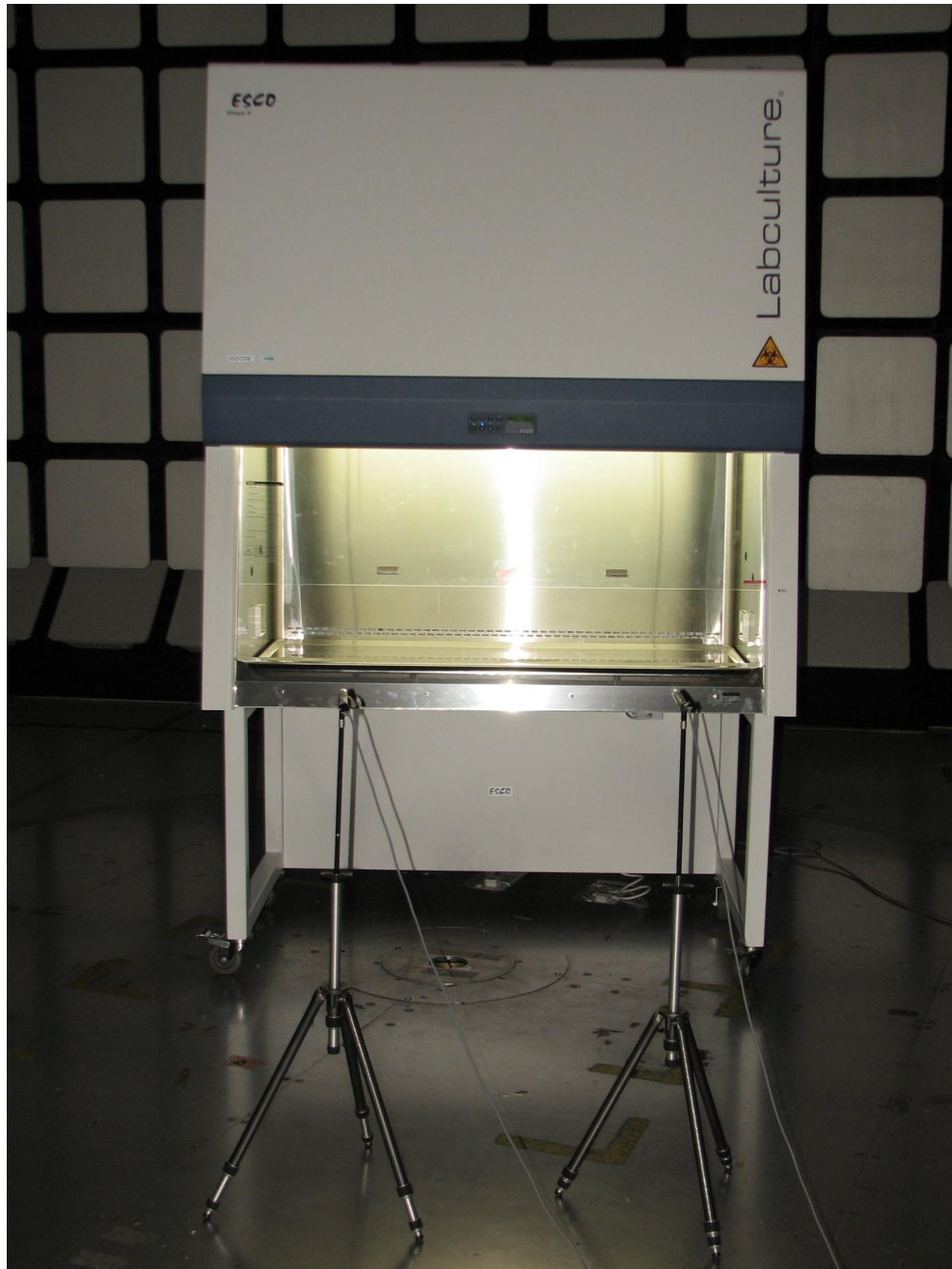
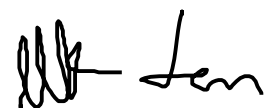


Figure 3 : Sound Pressure Level Measurement Test Setup



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January 2008