

 SPRATBOOTH TECHNOLOGY LIMITED	Acoustic Information for Cyclone Booth with 900mm Impeller	
Site: 1 Touch Repair, Littlehampton	Project Ref: STL1389	
By : Paul Goold - B Eng (Hons) MICWCI	Booth Type : STL Cyclone	

The information given is to enable an evaluation of the calculated sound levels at the rear and front boundaries. The data from the spray booth extract ventilation system have been used as this is the predominant sound source.

Fan Impeller details

Impeller Type – Arerofoil
Fan Speed – 1440 rpm
Duty 35,500 m³/hr at 400Pa

Fan Acoustic Data

The fan curve shows a “A” decibel free outlet sound power level LW(A)8
Fan Sound Power Level = 101dB(A) LWA8

Sound Level calculated at Boundary

From the fan manufactures acoustic information the single level has been split across the octave band spectrum. Installation losses have been applied for the ducted system and terminal. Free field reduction has been applied for the different distances between the outlet with the front, rear boundaries and nearest house

	Octave Band Mid-Frequency (Hz)								Total
	63	125	250	500	1k	2k	4k	8k	
"A" Weighted Front Boundary	18.7	27.7	32.2	30.4	37.4	39.4	35.4	30.4	43
"A" Weighted Rear Boundary	20.7	29.7	34.2	32.4	39.4	41.4	37.4	32.4	45
"A" Weighted Nearest House	10.7	19.7	24.2	22.4	29.4	31.4	27.4	32.4	37

Resultant “A” Weighted Sound Level Free Field at Boundary

Front Boundary = 43 dB(A)
Rear Boundary = 45 dB(A)
Nearest House = 37 dB(A)

Sound Evaluation at Boundary

Using information from the Centre for Hearing and Communication the resultant dB(A) levels can be compared with levels as a point of reference

- 10 dB(A) normal breathing
- 20 dB(A) whispering at 5 feet
- 30 dB(A) soft whisper
- 40 dB(A) quiet residential Area
- 50 dB(A) rainfall
- 60 dB(A) normal conversation
- 70 dB(A) Freeway Traffic

The resultant sound levels at the boundary equates to a level that is similar to the background noise between quiet residential area and rainfall. The facility sits in a light industrial area that also

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has other businesses with extract ducts as shown in the photos below. The nearest residential property is 50m away with a predicted noise level below that of a quiet residential area. There is a scout ground to the rear of the building. The typical use of the scout ground would be outside the working hours of the ventilation system. It can be established that the resultant sound emitted from the booth ventilation system is below the background level of the area. As a result there will be no noise impact at the property's boundaries.

Extract Duct Systems within the Local Area



Extract Ducts within the Immediate Area

Green Dots - 1 Touch Ducts

Red Dots – Other Companies Ducts



Devil Developments

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