

ACOUSTIC DESIGN SUMMARY

Date: 21/01/2019
 TGC Ref: Client: Grand Lodge
 FAO: TGC
 Project Ref: Q35811

THE
Generator[®]
 COMPANY A DIVISION OF TGC INTERNATIONAL LTD

**DESIGN DATA**

Engine Make	Cummins	Model Ref	QSK 23 G3	KVA	800	Ambient Temp °C	35
Combustion Air Vol	1.09	M³/sec	Cooling Air Vol	13	M³/sec	@ Resistance (Pa)	186
Exhaust Gas Flow	2.77	M³/sec	Gas Temp °C	467	(Max) Exhaust Gas Resistance (pa)		7.6

Silenced Noise Criteria Req'd	65 dB(A) @	7	Meter/s	With	1	Sets Running
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NOISE SOURCE *(unless Stated all levels below relate to 1 meter distance)*

Frequency Hz	63	125	250	500	1000	2000	4000	8000	
Plant Noise Level dB	103	105	97	100	98	96	91	89	Lp dB
A' Weighting	-26	-16	-9	-3	0	1	1	-1	dB
Unsilenced Lp dB(A)	77	89	88	97	98	97	92	88	dB(A)

AIR INLET SYSTEM

Frequency Hz	63	125	250	500	1000	2000	4000	8000		
Unsilenced Lp dB(A)	77	89	88	97	98	97	92	88	dB(A)	
Multi Set Correction	0	0	0	0	0	0	0	0	dB(A)	
Combined Lp dB(A)	77	89	88	97	98	97	92	88	dB(A)	
Attenuation										
RVS										
Length										
100	2100	-11	-20	-35	-55	-55	-55	-55	-43	dB(A)
Acoustic Bend										
Other										
0	0	0	0	0	0	0	0	0	0	dB(A)
-6	-6	-6	-6	-6	-6	-6	-6	-6	-6	dB(A)
Silenced SPL dB(A)	60	63	47	36	37	36	31	39	dB(A)	
Resultant Silenced Noise Level	64.9	dB(A)	1	Sets Running	Attenuator	2400	(H) mm	2100	(W)mm	
					PV m/sec	8.39	BP	56.01	Pa	
					Resistance Through W/Louvre			19.54	Pa	

AIR OUTLET SYSTEM

Frequency Hz	63	125	250	500	1000	2000	4000	8000		
Unsilenced Lp dB(A)	77	89	88	97	98	97	92	88	Pa	
Multi Set Correction	0	0	0	0	0	0	0	0	dB(A)	
Combined Lp dB(A)	77	89	88	97	98	97	92	88	dB(A)	
Attenuation										
RVS										
Length										
100	2100	-11	-20	-35	-55	-55	-55	-55	-43	dB(A)
Acoustic Bend										
Other										
0	0	0	0	0	0	0	0	0	0	dB(A)
-6	-6	-6	-6	-6	-6	-6	-6	-6	-6	dB(A)
Silenced SPL dB(A)	60	63	47	36	37	36	31	39	dB(A)	
Resultant Silenced Noise Level	64.9	dB(A)	1	Sets Running	Attenuator	2400	(H) mm	2100	(W)mm	
					PV m/sec	7.74	BP	47.68	Pa	
					Resistance Through W/Louvre			24.95	Pa	

TOTAL SYSTEM RESISTANCE	148.17	Pa
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PANEL CONSTRUCTION

Frequency Hz	63	125	250	500	1000	2000	4000	8000		
Unsilenced Lp dB(A)	77	89	88	97	98	97	92	88	Pa	
Multi Set Correction	0	0	0	0	0	0	0	0	dB(A)	
Combined Lp dB(A)	77	89	88	97	98	97	92	88	dB(A)	
Attenuation										
Thickness										
100										
Density										
100kg	-28	-26	-34	-42	-48	-54	-58	-63	dB(A)	
Additional Panelwork	0	0	0	0	0	0	0	0	dB(A)	
Other	0	0	0	0	0	0	0	0	dB(A)	
Silenced SPL dB(A)	49	63	54	55	50	43	34	25	dB(A)	
Resultant Silenced Noise Level	64.4 dB(A)		Panel Type			SE F		Panel Notes Standard Build		

Please Note

The Plant Noise level data used in the calculations used to generate this document are taken from manufacturers data held on record for the engine / equipment in question. The Generator Company takes no responsibility for the accuracy of this data and we recommend the client checks the data used against any current information they may hold or as may be published by the engine manufacturer

All noise levels are based on 'Free Field Conditions'