

EQ Number:		EC9411 r1		Container				Date:		11/02/25			
Client Ref:		MRI											
Generator Set Details	Mitsubishi	S16R-PTAA2			6,082	2,280	3,090	LxWxH	13,699	kg			
	Cooling Air	41.67	m³/s	196.00	Pa								
	Combustion	2.91	m³/s										
	Exhaust	7.36	m³/s	565	°C								
										80	dBa @ 1m		
										1	set running		
Target SPL		80.0		dB(A)		Distance from enclosure to receiver:			1.0	m			
Length		Width	Height	Noise Source: Mitsubishi S16R-PTAA2									
Enclosure dimensions		11,225	3,480	3,350	Surface Directivity: 1 Surface								
Source dimensions		6,082	2,280	3,090									
Receiver In Free Field (Enclosure reverb and direct field contribution)													
Reverberant Field Contribution													
Source Sound Power Level		1	set/s	63	125	250	500	1K	2K	4K	8K		
				115	119	120	121	121	120	116	118		
S (Floor) m²				25.2	25.2	25.2	25.2	25.2	25.2	25.2	25.2		
Absorption coeff floor		Steel		0.064	0.016	0.005	0.001	0	0	0	0		
S (Source surface, steel) m²				65.54	65.54	65.54	65.54	65.54	65.54	65.54	65.54		
Absorption coeff Source surface, steel				0.064	0.016	0.005	0.001	0	0	0	0		
S (Walls) m²				98.5	98.5	98.5	98.5	98.5	98.5	98.5	98.5		
Absorption coeff walls				0.25	0.45	0.75	0.80	0.85	0.85	0.90	0.85		
S(Ceiling)m²				39.1	39.1	39.1	39.1	39.1	39.1	39.1	39.1		
Absorption coeff ceiling				0.25	0.45	0.75	0.80	0.85	0.85	0.90	0.85		
S total m²				228.3	228.3	228.3	228.3	228.3	228.3	228.3	228.3		
Average absorption coefficient				0.18	0.28	0.45	0.48	0.51	0.51	0.54	0.51		
Room constant				49	88	190	213	240	240	271	240		
Sound pressure level inside enclosure(reverberant)				104	105	103	103	103	102	97	100		
SRI of enclosure wall				13	19	25	31	37	43	49	55		
Area correction of side wall, 10 logA-6				10	10	10	10	10	10	10	10		
Enclosure SWL, SPLrev+10logA-6-SRI				100	96	88	82	76	68	58	54		
Lw: Resultant single figure dB		102.0											
A weighting correction				-26	-16	-9	-3	0	1	1	-1		
Enclosure LwA				74	80	79	79	76	69	59	53		
LwA: Resultant single figure dB		85.1											
Dist. Correction, Source to receiver (m)		2.7		-20	-20	-20	-20	-20	-20	-20	-20		
Surface directivity		1 Surface		3	3	3	3	3	3	3	3		
Enclosure near field correction				-5	-5	-5	-5	-5	-5	-5	-5		
Direct SPL at receiver due to rev. field				79	74	66	60	54	47	36	33		
Direct Field Contribution													
Source Sound Power Level		1	set/s	63	125	250	500	1K	2K	4K	8K		
				115	119	120	121	121	120	116	118		
SRI of enclosure wall				13	19	25	31	37	43	49	55		
Dist. Correction, Source to receiver (m)		2.7		-20	-20	-20	-20	-20	-20	-20	-20		
Surface directivity		1 Surface		3	3	3	3	3	3	3	3		
Source near field correction				-4	-4	-4	-4	-4	-4	-4	-4		
Direct SPL at receiver due to direct field				81	79	74	69	63	56	46	42		
Total SPL at receiver in free field				83	80	74	69	63	56	46	42		
Resultant single figure dB		85.26											
NR 75 Level Requirement				95	87	82	78	75	73	71	69		
NR 70 Level Requirement				91	83	77	73	70	68	66	64		
Resultant NR Level		NR 70											
A weighting correction				-26	-16	-9	-3	0	1	1	-1		
dBA				57	64	65	66	63	57	47	41		
Resultant single figure dBA		71.4											
Sound Pressure to Power Conversion													
Measurement Envelope				Length	Width	Height	Surface Area						
				17.63	5.75	4.80	325.74						
		63	125	250	500	1K	2K	4K	8K				
SWL dB		108.01	105.25	99.59	94.50	88.42	81.40	71.33	67.36				
SWL Single Figure dB		110.4											

Inlet Attenuation									
Target SPL	80.0	dB(A)	Distance inlet to reciever:	1.0	m				
Inlet Atten Cross-Section (m²)		12.23	Distance correction		29.20				
Distance source to inlet aperture (m)		8.12	Distance, source to receiver		9.12				
Louvre/aperture location: Louvre in free space			Surface directivity 1 Surface						
Reverberant Field Contribution		63	125	250	500	1K	2K	4K	8K
Sound pressure level inside enclosure(reveberant)		104	105	103	103	103	102	97	100
Aperture SWL, SPLrev+10logA-6		109	110	108	108	108	107	102	105
Direct Field Contribution		115	119	120	121	121	120	116	118
Source SWL x 1		-29	-29	-29	-29	-29	-29	-29	-29
Dist. Correction, Source to aperture		85	89	90	91	91	90	86	88
SPL at aperture		96	100	101	102	102	101	97	99
Aperture SWL, SPLrev+10logA		109	111	109	109	109	108	103	106
Total Inlet Aperture SWL		6	12	23	40	50	50	40	28
Insertion Loss (Total Attenuation)		103	99	86	69	59	58	63	78
Inlet SWL		104.3							
Lw: Resultant single figure dB		-26	-16	-9	-3	0	1	1	-1
A weighting correction		77	83	77	66	59	59	64	77
Inlet LwA		85.2							
LwA: Resultant single figure dB		-11	-11	-11	-11	-11	-11	-11	-11
Distance from aperture to reciever (m)		5	5	5	5	5	5	5	5
Aperture directivity correction (deg)		3	3	3	3	3	3	3	3
Surface directivity: 1 Surface		-3	-3	-3	-3	-3	-3	-3	-3
Near field correction		103	105	103	103	103	102	97	100
SPL at receiver		-26	-16	-9	-3	0	1	1	-1
A weighting correction		77	89	94	100	103	103	98	99
Resultant single figure SPL		108.21							
SPL at receiver- no attenuation		103	105	103	103	103	102	97	100
Attenuator		6	12	23	40	50	50	40	28
Total Attenuation		6	12	23	40	50	50	40	28
Attenuated SPL at receiver		97	93	80	63	53	52	57	72
NR 90 Level Requirement		107	100	96	92	90	88	86	85
NR 85 Level Requirement		103	96	87	87	85	83	81	80
Resultant NR Level		NR 85							
A weighting correction		-26	-16	-9	-3	0	1	1	-1
		71	77	71	60	53	53	58	71
Resultant single figure dBA		79.2							
Sound Pressure to Power Conversion		Measurement Envelope		Length	Width	Height	Surface Area		
				17.63	5.75	4.80	325.74		
		63	125	250	500	1K	2K	4K	8K
SWL dB		121.99	117.63	104.74	88.34	77.93	76.93	82.53	96.93
SWL Single Figure dB		123.4							

Outlet Attenuation

Reverberant Field Contribution	63	125	250	500	1K	2K	4K	8K
Sound pressure level inside enclosure(reverberant)	104	105	103	103	103	102	97	100
Aperture SWL, SPLrev+10logA-6	109	110	108	108	108	107	102	105

Direct Field Contribution									
Source SWL x 1	115	119	120	121	121	120	116	118	
Dist. Correction, Source to aperture	-19	-19	-19	-19	-19	-19	-19	-19	
SPL at aperture	95	99	100	101	101	100	96	98	
Aperture SWL, SPLrev+10logA	106	110	111	112	112	111	107	109	
Total Outlet Aperture SWL	111	113	113	114	113	112	108	110	
Insertion Loss (Total Attenuation)	8	15	27	44	53	53	47	34	
Outlet SWL	103	98	86	70	60	59	61	76	
Lw: Resultant single figure dB	104.0								
A weighting correction	-26	-16	-9	-3	0	1	1	-1	
Outlet LwA	77	82	77	67	60	60	62	75	
LwA: Resultant single figure dB	84.7								
Distance from aperture to receiver (m)	1.0	-11	-11	-11	-11	-11	-11	-11	
Aperture directivity correction (deg)	0	5	5	5	5	5	5	5	
Surface directivity: 1 Surface	3	3	3	3	3	3	3	3	
Near field correction	-3	-3	-3	-3	-3	-3	-3	-3	
SPL at receiver	105	107	107	108	107	106	102	104	
A weighting correction	-26	-16	-9	-3	0	1	1	-1	
	79	91	98	105	107	107	103	103	
Resultant single figure SPL	112.80								
SPL at receiver- no attenuation	105	107	107	108	107	106	102	104	
Attenuator	8	15	27	44	53	53	47	34	
Total Attenuation	8	15	27	44	53	53	47	34	
Attenuated SPL at receiver	97	92	80	64	54	53	55	70	
NR 90 Level Requirement	107	100	96	92	90	88	86	85	
NR 85 Level Requirement	103	96	87	87	85	83	81	80	
Resultant NR Level	NR 85								
A weighting correction	-26	-16	-9	-3	0	1	1	-1	
	71	76	71	61	54	54	56	69	
Resultant single figure dBA	78.7								

Sound Pressure to Power Conversion		Measurement Envelope		Length	Width	Height	Surface Area		
				17.63	5.75	4.80	325.74		
		63	125	250	500	1K	2K	4K	8K
SWL dB		121.68	117.22	104.86	88.71	79.57	78.57	80.43	95.57
SWL Single Figure dB		123.1							