

Sound Level Enclosure Calculation

Created By:	Juhua Peng			Job Number #:	45-36474
Date:	6/6/2022	Outlet Face Velocity (fpm)	1000	Quote #:	839033-00
Enclosure Max. Velocity(fpm)	1000	Inlet Face Velocity (fpm)	1000	Customer:	Bay City Elc.
Genset Model	KOLR 600REOZVB 50C	"1"	1.04	Sales Person:	Greg Lampert
Number of Units	1	Elevation (ft)	1000		
Intake Opening Style	NONE	Min. Open Size	76 x 96	Intake Hood/Screen PD (in.wg)	0.08
Exhaust Opening Style	NONE	Max. Open Size	54 x 67	Discharge Damper PD (in.wg)	0.00
Enclosure Body Length(in)	253	Max. Genset (L)	166.5	Intake Damper PD (in.wg)	0.00
Enclosure Body Width(in)	88	Max. Genset (W)	72	Discharge Plenum/Screen PD (in.wg)	0.07
Enclosure Body Height(in)	115	Genset (H)	78.1	Load Bank PD (in.wg)	0
Radiator Width(in)	52.4	Genset Weight (lbs)	10770	Total PD (in.wg)	0.15
Radiator Height(in)	65.2			Excludes additional PD of internal obstructions	
Radiator Velocity (fpm)	1109	CFM at 1000 ft	29377	Engine/Alternator Heat Rejection(btu/min)	4437.00
Wall Insulation (in)	3	CFM at Sea Level	28247	Internal Silencer Heat Rejection (btu/min)	141.92
Discharge Plenum Length(in)	64	Designed (L)	69	Pipe Heat Rejection (btu/min)	656.00
Intake Hood Length(in)	70	Designed (L)	70	Other Heat Rejection (btu/min)	0.00
Radiator (cfm)	26310	Exhaust Flowrate (cfm)	4594.0	Total System Heat Rejection (btu/min)	5234.92
Combustion (cfm)	1937	Exhaust Temp. (F)	862.0	Required CFM (cfm)	25930
Sound Target dBA	76	Exhaust Back Pressure (in. Hg)	2.95	Temp. Rise (F)	12.00
Sound Data Source	Manufacturer Data Sheet	Exhaust Velocity (ft/s)	140.4	RAD Ambient (C)	50.00
Sound Data Format	Octave Bands	Silencer Size (in)	10.0	Max. Pag Ambient (f)	120
Factory Log/Average	93.8	0	122.4		
Sound Data Units	dBA	0	dBA	dBA	dBA
HZ	Genset	Radiator/Fan(if isolated)	Raw Exhaust	Silencer #2	Silencer #1
31	0.00	0.00	0.00	0	0
63	67.70	0.00	99.30	0	31
125	74.30	0.00	106.90	0	38
250	85.20	0.00	110.70	0	41
500	82.30	0.00	111.10	0	41
1000	86.40	0.00	113.60	0	39
2000	87.80	0.00	116.40	0	37
4000	85.00	0.00	115.30	0	36
8000	86.90	0.00	115.30	0	38
Sound data Measured distance [ft]	23	0	3.3		
Final Distance @ Required Sound Level	23	0	23	GPC 10" Slim Line	
Body Wall Treatment	2in Insulation	INCREASE FOAM		76.5	WALLS
		INCREASE FOAM			
PERF IN MAIN BODY	YES				
Intake Acoustical Louver	NONE	OK per Sound Target		78.5	INLET
Intake Silencer Bank	NONE	INCREASE SOUND BANK			
Intake Scoop Treatment	2in Insulation (Hood)	INCREASE FOAM			
Discharge Acoustical Louver	NONE	OK per Sound Target		78.5	OUTLET
Discharge Silencer Bank	NONE	INCREASE SOUND BANK			
Discharge Plenum Treatment	2in Insulation (Hood)	OK per Sound Target			
Silencer Type 1	Critical Race Track	OK per Sound Target		70.7	EXHAUST
Silencer Type 2	NONE	OK per Sound Target			
Log Addition Sound Level (Average)		78.7	dBA at 23 feet Free Field		

Global Power Components

Computed noise levels at each distance and frequency is based on a free field condition. Site conditions have not been taken into account in acoustic predictions.

The ambient sound level must be at least 10 dBA below the requested sound target. Sound Pressure Level estimates are +/- 2dB(A)