Application & Performance Warranty Data

Project Information

Site Location:	UK
Project Name:	E2021-2216 Green Mountain East1
Application:	Standby Power
Number Of Engines:	5
Operating Hours per Year:	50

Engine Specifications

Engine Manufacturer:	MTU
Model Number:	20V4000 G94F
Rated Speed:	1500 RPM
Type of Fuel:	Ultra-Low Sulfur Diesel (ULSD)
Type of Lube Oil:	1 wt% sulfated ash or less
Lube Oil Consumption:	0,1 % Fuel Consumption
Number of Exhaust Manifolds:	2

Engine Cycle Data

Load	Speed	Power	Exhaust Flow	Exhaust Temp.	Fuel Cons.	NO_x	O_2	H_2O
%		*kW*	*kg/hr*	*° C*		*g/kW-hr*	*%*	*%*
100	Rated	3.088	18.500	453		7,11	10,3	12,5

Emission Data (100% Load)

Emission	Raw Engine Emissions						Target Outlet Emissions						Calculated Reduction
	g/bhp-hr	*g/kW-hr*	*kg/hr*	*ppmvd*	*mg/ Nm^3*	*mg/ Nm^3 @ 5% O_2*	*g/bhp-hr*	*g/kW-hr*	*kg/hr*	*ppmvd*	*mg/ Nm^3*	*mg/ Nm^3 @ 5% O_2*	
NO_x*	5,3	7,11	21,96	856	1.757	2.627	1,01	1,353	4,18	163	334	500	81%
NH_3							0,07	0,093	0,29	30	20	30	

* MW referenced as NO_2

System Specifications

SCR/Silencer System Specifications (NREZ-64-J-TBD, MA6EE2EZ-600A-2-23020046, ACIS-3, MS2Z-800B-3-TBD)

SCR Catalyst Space Velocity:	11,629 1/hr
Sound Target:	75 dBA @ 1 m
Reactant:	Urea
Percent Concentration:	32.5%
Design Exhaust Flow Rate:	18,500 kg/hr
Design Exhaust Temperature[1]:	455° C
Exhaust Temperature Limits:	300° C – 525° C
SCR Catalyst Volume:	1,302.6 L
System Dosing Capacity:	60 L/hr
System Pressure Loss:	37.4 mbar (Clean)
Total Catalyst Volume:	1,302.6 L
Estimated Reactant Consumption:	42.4 L/hr (11.1 gal/hr) / Per Engine

Sound Data

	Octave Band Center Frequency (OBCF)											Receiver	
	Hz	*31.5*	*63*	*125*	*250*	*500*	*1000*	*2000*	*4000*	*8000*	*dBA*	*Angle*	*Distance*
Raw Engine Exhaust Sound Levels													
Sound Pressure	dB	103,9	114,8	123,6	123,2	115,3	117,2	114,3	105,9	91,0	121,6	90°	1 m
Calculated Sound Power	dB	111,9	122,8	131,6	131,2	123,3	125,2	122,3	113,9	99,0	129,6		
Requested Sound Target													
Overall Sound Pressure											63,0	90°	1 m
Sound Performance Estimations (System Sound Attenuation)													
Estimated Sound Attenuation	dB	30,9	41,5	49,5	55,6	59,2	63,1	68,2	68,8	66,0	58,6		
Estimated Sound Power	dB	81,0	81,3	82,1	75,6	64,1	62,1	54,1	45,1	33,0	70,9		
Estimated Sound Pressure	dB	73,0	73,3	74,1	67,6	56,1	54,1	46,1	37,1	25,0	62,9	90°	1 m

- The stated values are based on the data given by the engine manufacturer (as referenced in table above) according to the unsilenced exhaust noise, exhaust gas flow, and temperature.
- The length of the exhaust piping before and after the silencer must be free of resonance in terms of the ignition frequency of the combustion engine.
- If the engine manufacturer sound data is missing any octave bands, it will affect the estimation calculation in the table above.
- Computed noise levels at each distance and frequency are based on a free field condition; site conditions have not been considered in acoustic predictions.
- For all distance noise propagation, free field dispersion rule of 6 dB is used every time distance is doubled.
- Product shall be installed in accordance with standard industry practices, local codes/standards, and manufacturer requirements.
- The acoustic performance shown is an estimate only; the performance is not guaranteed.