

ALL 10-2



General & Commercial

SGT-700

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4. SOUND GUARANTEE

4.1. General

The measurements and verification of the sound levels will be evaluated according to ISO11204 "Acoustics- Noise emitted by machinery and equipment - Determination of emission sound pressure levels at workstation and at other specified positions applying accurate environmental correction".

4.2. Definitions

In general all definitions follows ISO 11204, some clarifications are made below.

- Working Area

Working area is defined as 1 m from the delivered equipment and 1.55 m above ground.

Areas inside the sound enclosures are excluded from the working area.

The areas within 3m of the exhaust bellows is excluded from the working area.

- Frequency of interest

The frequency range of interest includes octave bands with centre frequencies from 63 Hz to 8 kHz.

- Operation of the gas turbine under test

The sound level measurements will be done during normal operation conditions at base load.

- Free field

A field in which reflections at the boundaries are negligible over the frequency range of interest.

- Background noise

The sound level when equipment delivered by the contractor is shut down.

4.3. Near field sound

Sound pressure levels 1 m from equipment and 1.55 m above ground in the working area at free field conditions will fulfil the value(s) below. Measurement for verification will be according to ISO 11204. Only noise contribution from components and structures delivered by SIT AB are considered for guarantee.

The average sound pressure level (L_{pA}) during normal operation at base load will not exceed 80 dB(A) in contribution, in the near field around the GT package and auxiliary delivered by SIT AB and included in this delivery. Influence from the existing filter housing, existing steam generator including steam cycle, Steam turbine and also the existing GT package is not to be included in the guarantee. The sound pressure level should be determined using ISO 9614-2.

L_{pA} : The A- weighted time-averaged emission sound pressure level, energy-averaged over all used microphone positions in the working area, 1m from equipment and 1.55 m from ground.

In case of several gas turbines within the plant, all levels above refer to only one gas turbine in operation.



SGT-700
NOISE DATA SHEET
Sound pressure level ≤ 80 dB(A)

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The levels are measured on similar equipment and predicted for expected equipment. The values are for information only and are not guaranteed. The values according to the below table represent the sound power level generated by the turbine without influence of reverberation or any impact of modal behaviour of the adjacent exhaust or intake system (as measured according to ISO 10494).

Equipment:	Freq. [Hz]	Expected sound pressure/power levels [dB(A)]										
		31,5	63	125	250	500	1000	2000	4000	8000	Total	
1 Gas turbine package	SPL ¹ [dB(A)]											80
2 Compressor inlet with silencer	SWL [dB(A)]	62	72	89	85	90	96	107	120	112	121	
3 Unsilenced exhaust noise	SWL [dB(A)]	94	105	113	125	137	141	138	134	128	144	
4 Gas turbine enclosure and skid w/ skid skirt	SWL [dB(A)]	69	88	93	98	98	101	95	101	93	106	
5 Generator w/ walls and skid	SWL [dB(A)]	72	84	93	98	96	98	91	96	86	104	
6 Gas turbine enclosure ventilation inlet	SWL [dB(A)]	61	75	82	86	97	93	85	77	68	99	
7 Gas turbine enclosure ventilation outlet	SWL [dB(A)]		91	86	89	88	86	84	89	82	97	

Narrow band component, Yes No Frequency/octave band [Hz]: 4000 Hz

Description of implemented noise control measures / other information:
 Silencers in compressor air inlet, air inlet of enclosure ventilation in- and outlet.
 Enclosure over gas turbine and screens in front of generator and skid.

Special information:
 Sound power levels measured according to ISO 3746 for all major noise sources except stack outlet, which is measured according to ISO 10494.

Note 1 SPL. Sound pressure level in dB (re. 20 μ Pa) at 1 m distance.
 SWL. Sound power level in dB (re. 1 pW).

