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Technical Bulletin

Noise Level grandMA3 compact XT and grandMA3 compact

At the tables and charts below, the noise levels for grandMA3 compact XT and compact consoles are shown.

Usually, noise levels vary over the frequency range. As this occurs to nearly all technical equipment, the noise-criterion / noise-rating was established. Noise Criterion (NC) is the common standard in the United States. Noise Rating (NR) is the common standard in Europe.

As result, the charts show that

- **grandMA3 compact XT is lower than NC30 / NR30**
- **grandMA3 compact is lower than NC25 / NR25**

Both console types were measured at room temperature (23°C) and average load:

grandMA3 compact XT: CPU 51°C, GPU 72°C, 4576 Parameters, 3D on (high quality), > 1h

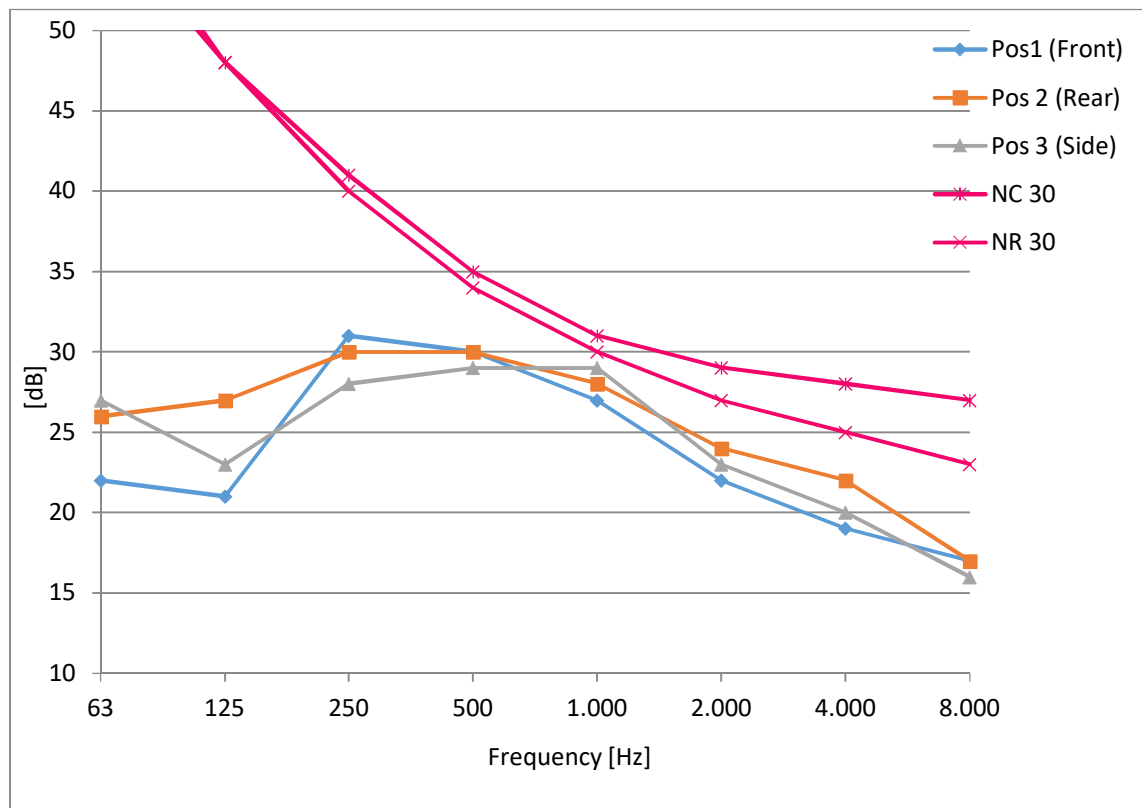
grandMA3 compact: CPU 60°C, 4576 Parameters, 3D on (high quality), > 1h

At higher temperatures, the noise levels are correspondingly higher.



grandMA3 compact XT

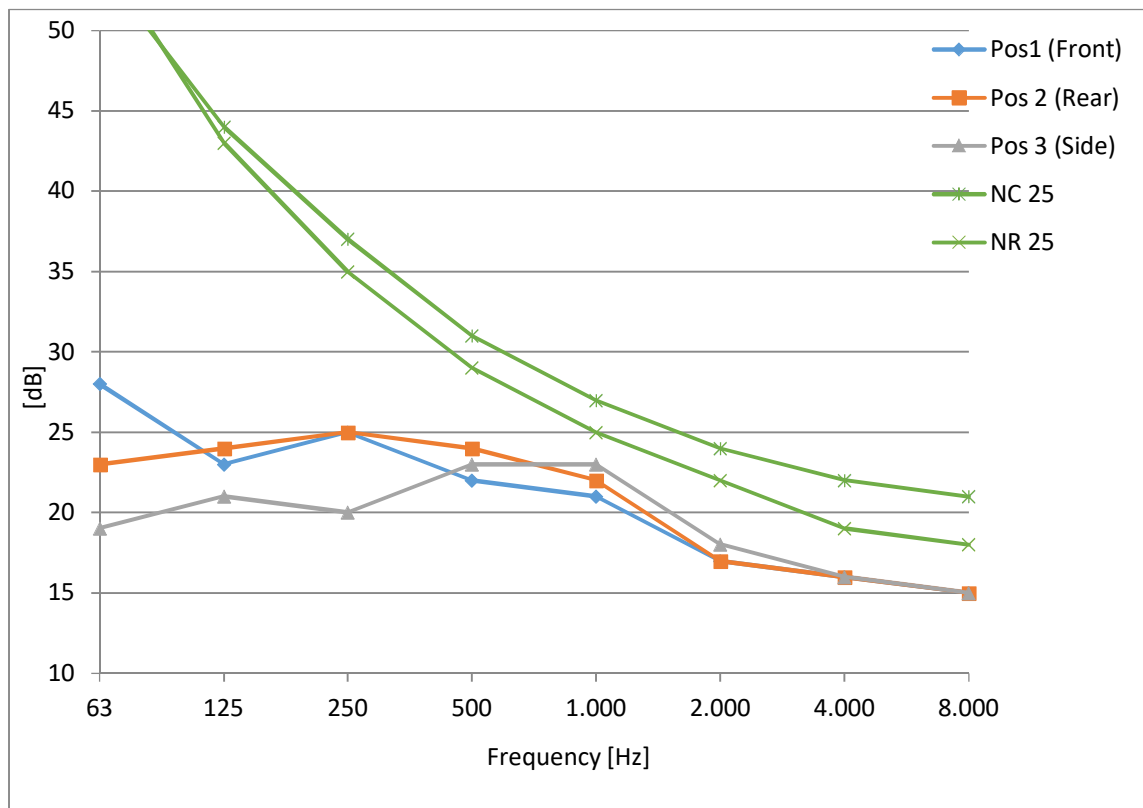
Frequency Hz	Pos1 (Front) dB	Pos 2 (Rear) dB	Pos 3 (Side) dB	NR 20 dB	NR 30 dB	NC 30 dB
63	22	26	27	51	59	57
125	21	27	23	39	48	48
250	31	30	28	31	40	41
500	30	30	29	24	34	35
1000	27	28	29	20	30	31
2000	22	24	23	17	27	29
4000	19	22	20	14	25	28
8000	17	17	16	13	23	27





grandMA3 compact

Frequency Hz	Pos1 (Front) dB	Pos 2 (Rear) dB	Pos 3 (Side) dB	NR 20 dB	NR 25 dB	NC 25 dB
63	28	23	19	51	55	54
125	23	24	21	39	43	44
250	25	25	20	31	35	37
500	22	24	23	24	29	31
1000	21	22	23	20	25	27
2000	17	17	18	17	22	24
4000	16	16	16	14	19	22
8000	15	15	15	13	18	21





Developed by the International Standards Organisation in 1971 to rate noisiness with the 1000 Hz octave band as reference point - at NR 70, for instance, the curve has a level of 70 dB at 1000 Hz. Compared to NC curves, the NR curves permit higher levels at lower frequencies and dictate lower levels at higher frequencies. For more detailed information see also: www.engineeringtoolbox.com.

Recommended maximum noise levels for different types of rooms and standards are indicated in the table below:

Type of Room - Occupancy		Noise Criterion - NC -	Noise Rating - NR -	dB (A)
Very quiet	Concert and opera halls, recording studios, theaters, etc.	10 - 20	20	25 - 30
	Private bedrooms, live theaters, television and radio studios, conference and lecture rooms, cathedrals and large churches, libraries, etc.	20 - 25	25	25 - 30
	Private living rooms, board rooms, conference and lecture rooms, hotel bedrooms	30 - 40	30	30 - 35
Quiet	Public rooms in hotels, small offices classrooms, courtrooms	30 - 40	35	40 - 45
Moderate noisy	Drawing offices, toilets, bathrooms, reception areas, lobbies, corridors, department stores, etc.	35 - 45	40	45 - 55
Noisy	Kitchens in hospitals and hotels, laundry rooms, computer rooms, canteens, supermakets, office landscape, etc.	40 - 50	45	45 - 55

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