



Paderborn, 2019-08-23
Contact: tech.support@malighting.com

Technical Bulletin

Noise Level grandMA3 full-size and grandMA3 light

At the table and chart below, the noise levels for grandMA3 full-size and light 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 chart shows that

- **grandMA3 full-size is lower than NC20 / NR25**
- **grandMA3 light is lower than NC20 / NR25**

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

grandMA3 full-size: CPU 59°C, GPU 72°C, 4576 Parameters, 3D on (high quality), > 1h

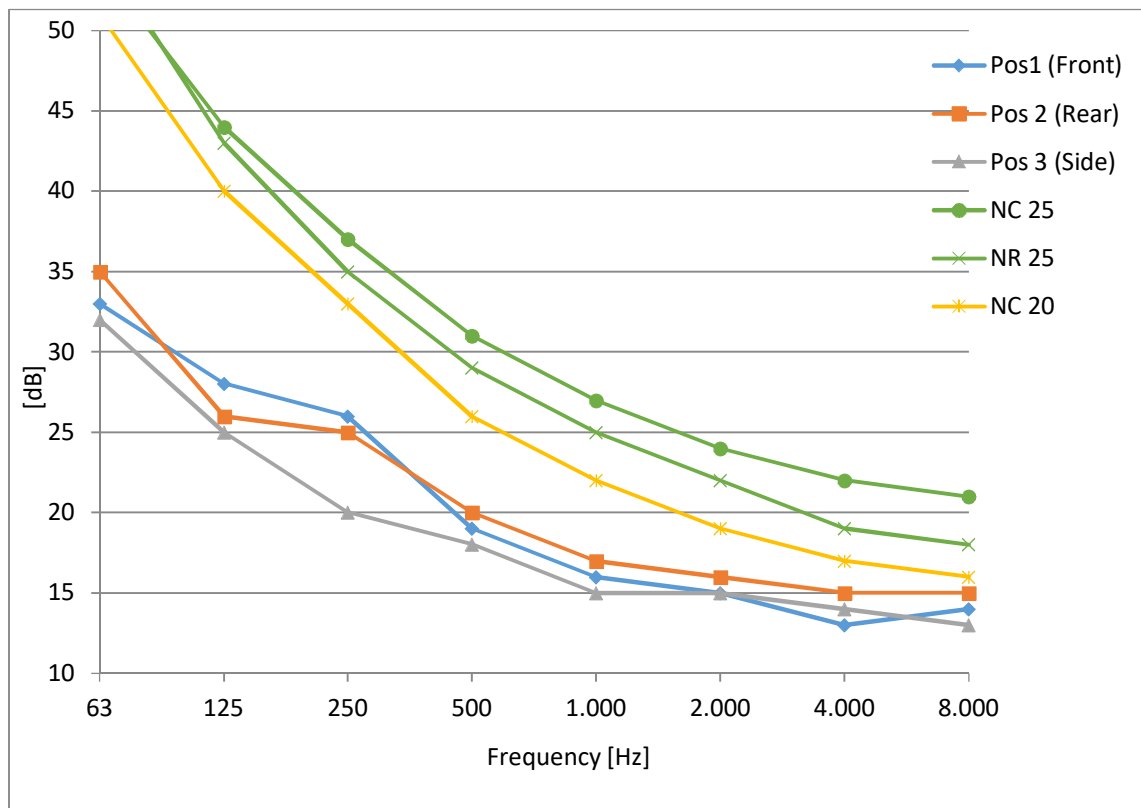
grandMA3 light: CPU 59°C, GPU 72°C, 4576 Parameters, 3D on (high quality), > 1h

At higher temperatures, the noise levels are correspondingly higher.



grandMA3 full-size and grandMA3 light

Frequency Hz	Pos1 (Front) dB	Pos 2 (Rear) dB	Pos 3 (Side) dB	NR 20 dB	NR 25 dB	NC 20 dB	NC 25 dB
63	33	35	32	51	55	51	54
125	28	26	25	39	43	40	44
250	26	25	20	31	35	33	37
500	19	20	18	24	29	26	31
1000	16	17	15	20	25	22	27
2000	15	16	15	17	22	19	24
4000	13	15	14	14	19	17	22
8000	14	15	13	13	18	16	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

Without having any written permission from the editor, it is not allowed to copy, reproduce or publish any part of this document, neither in printed form nor by photos or electronic media. All technical specifications are subject to change without notification. We do not assume liability for any incorrect information in this document.

MA Lighting, grandMA3, dot2, grandMA2 and grandMA are trademarks or registered trademarks of MA Lighting Technology GmbH. Microsoft® and Windows® are registered trademarks of Microsoft Corporation. Other brand names are trademarks or registered trademarks of their respective owners.

Product pictures in this document may show optional equipment and accessories.