# beyma //

**PROFESSIONAL LOUDSPEAKERS**
www.beyma.com

# 10MCS500
## LOW FREQUENCY TRANSDUCER
### Preliminary Data Sheet

## KEY FEATURES

- High power handling: 1000 W program power
- 2,5" copper wire voice coil
- Beyma's Malt Cross® ultimate Cooling System
- Low power compression losses
- High sensitivity: 96 dB
- Pressed steel frame
- FEA optimized magnetic circuit
- Designed with MMSS technology for high control, linearity and low harmonic distortion. LSI optimized parameters
- Waterproof cone with treatment for both sides of the cone
- Optimized for 2 or 3 way PA systems and line arrays for ultimate professional applications

## TECHNICAL SPECIFICATIONS

| | | |
|---|---|---|
| Nominal diameter | 250 mm | 10 in |
| Rated impedance | | 8 Ω |
| Minimum impedance | | 7,1 Ω |
| Power capacity* | | 500 $W_{AES}$ |
| Program power | | 1.000 W |
| Sensitivity | 96 dB | 1W / 1m @ $Z_N$ |
| Frequency range | | 65 - 5.000 Hz |
| Voice coil diameter | 63,5 mm | 2,5 in |
| Bl factor | | 17,9 N/A |
| Moving mass | | 0,048 kg |
| Voice coil length | | 19,5 mm |
| Air gap height | | 10 mm |
| $X_{damage}$ (peak to peak) | | 40 mm |

## THIELE-SMALL PARAMETERS**

| | |
|---|---|
| Resonant frequency, $f_s$ | 65 Hz |
| D.C. Voice coil resistance, $R_e$ | 5,4 Ω |
| Mechanical Quality Factor, $Q_{ms}$ | 5,9 |
| Electrical Quality Factor, $Q_{es}$ | 0,34 |
| Total Quality Factor, $Q_{ts}$ | 0,32 |
| Equivalent Air Volume to $C_{ms}$, $V_{as}$ | 21,5 l |
| Mechanical Compliance, $C_{ms}$ | 124 μm / N |
| Mechanical Resistance, $R_{ms}$ | 3,3 kg / s |
| Efficiency, $\eta_0$ | 1,7 % |
| Effective Surface Area, $S_d$ | 0,038 $m^2$ |
| Maximum Displacement, $X_{max}$ *** | 7,5 mm |
| Displacement Volume, $V_d$ | 285 $cm^3$ |
| Voice Coil Inductance, $L_e$ @ 1 kHz | 1 mH |

**Notes**:

* The power capaticty is determined according to AES2-1984 (r2003) standard. Program power is defined as the transducer's ability to handle normal music program material.

** T-S parameters are measured after an exercise period using a preconditioning power test. The measurements are carried out with a velocity-current laser transducer and will reflect the long term parameters (once the loudspeaker has been working for a short period of time).
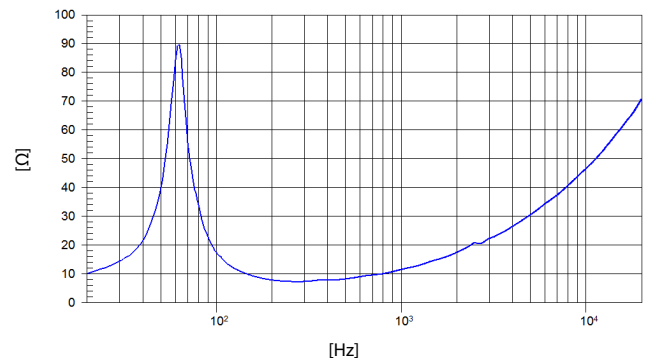
*** The $X_{max}$ is calculated as $(L_{vc} - H_{ag})/2 + (H_{ag}/3,5)$, where $L_{vc}$ is the voice coil length and $H_{ag}$ is the air gap height.
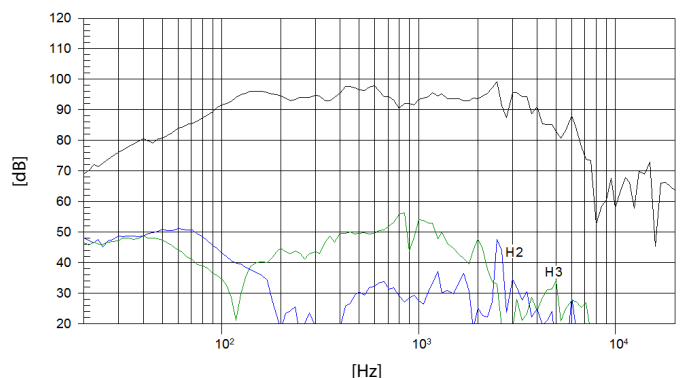


## MOUNTING INFORMATION

| | | |
|---|---|---|
| Overall diameter | 254 mm | 10 in |
| Bolt circle diameter | 241 mm | 9,49 in |
| Baffle cutout diameter: | | |
| - Front mount | 230 mm | 9,05 in |
| Depth | 124 mm | 4,88 in |
| Net weight | 5,7 kg | 12,56 lb |
| Shipping weight | 6,1 kg | 13,45 lb |

## FREE AIR IMPEDANCE CURVE



## FREQUENCY RESPONSE & DISTORTION



**Note:** On axis frequency response measured with loudspeaker standing on infinite baffle in anechoic chamber, 1W @ 1m