beyma
PROFESSIONAL LOUDSPEAKERS
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18PW1400/Fe

LOW FREQUENCY TRANSDUCER
PW Series

KEY FEATURES

maltcross TECHNOLOGY

- High power handling: 1400 W_{AES}
- Malt Cross® Cooling System
- Low power compression looses
- High sensitivity: 98 dB
- FEA optimized ferrite magnetic circuit
- Designed with MMSS technology for high control, linearity and low harmonic distortion
- Optimized nonlinear parameters
- Waterproof cone with treatment for both sides of the cone
- 4" DUO double layer inner/outer voice coil
- Aluminium demodulating ring
- Extended controlled displacement: X_{max} ± 10 mm
- Massive mechanical displacement capability: X_{damage} ± 55 mm

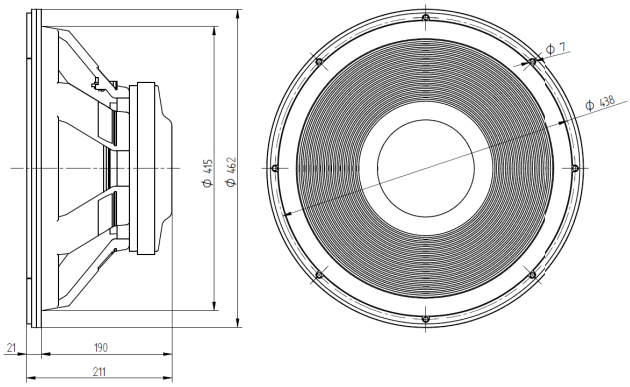
TECHNICAL SPECIFICATIONS

Nominal diameter	460 mm	18 in
Rated impedance		8 Ω
Minimum impedance		5,3 Ω
Power capacity*		1.400 W_{AES}
Program power		2.800 W
Sensitivity	98 dB	@ 1W @ Z_N
Frequency range		25 - 1.800 Hz
Recom. enclosure vol.	80 / 200 l	2,8 / 7 ft^3
Voice coil diameter	100 mm	4 in
Magnetic assembly weight	14,4 kg	31,8 lb
Bl factor		29,0 N/A
Moving mass		0,230 kg
Voice coil length		25 mm
Air gap height		12 mm
X_{damage} (peak to peak)		55 mm

THIELE-SMALL PARAMETERS**

Resonant frequency, f_s	32 Hz
D.C. Voice coil resistance, R_e	5,05 Ω
Mechanical Quality Factor, Q_{ms}	10,23
Electrical Quality Factor, Q_{es}	0,28
Total Quality Factor, Q_{ts}	0,27
Equivalent Air Volume to C_{ms}, V_{as}	228,9 l
Mechanical Compliance, C_{ms}	103 μm / N
Mechanical Resistance, R_{ms}	4,62 kg / s
Efficiency, η_0	2,71 %
Effective Surface Area, S_d	0,1255 m^2
Maximum Displacement, X_{max} * **	10 mm
Displacement Volume, V_d	1.251 cm^3
Voice Coil Inductance, L_e	1,2 mH

DIMENSION DRAWINGS



MOUNTING INFORMATION

Overall diameter	462 mm	18,2 in
Bolt circle diameter	438 mm	17,2 in
Baffle cutout diameter:		
- Front mount	415 mm	16,3 in
Depth	211 mm	8,3 in
Net weight	16,9 kg	37,3 lb
Shipping weight	18,1 kg	40 lb

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.

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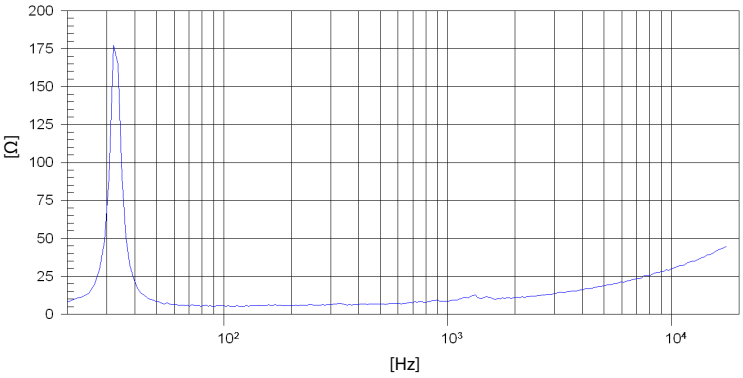
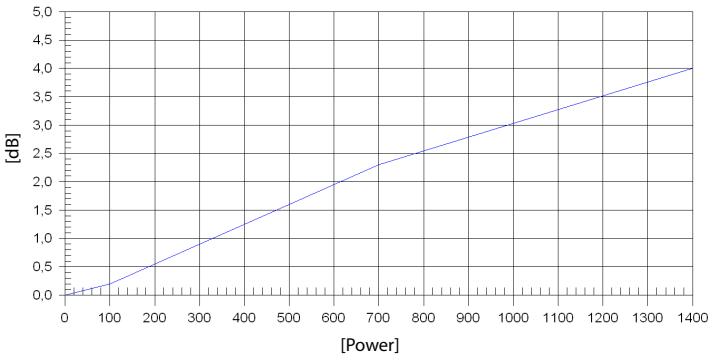
FREE AIR IMPEDANCE CURVE

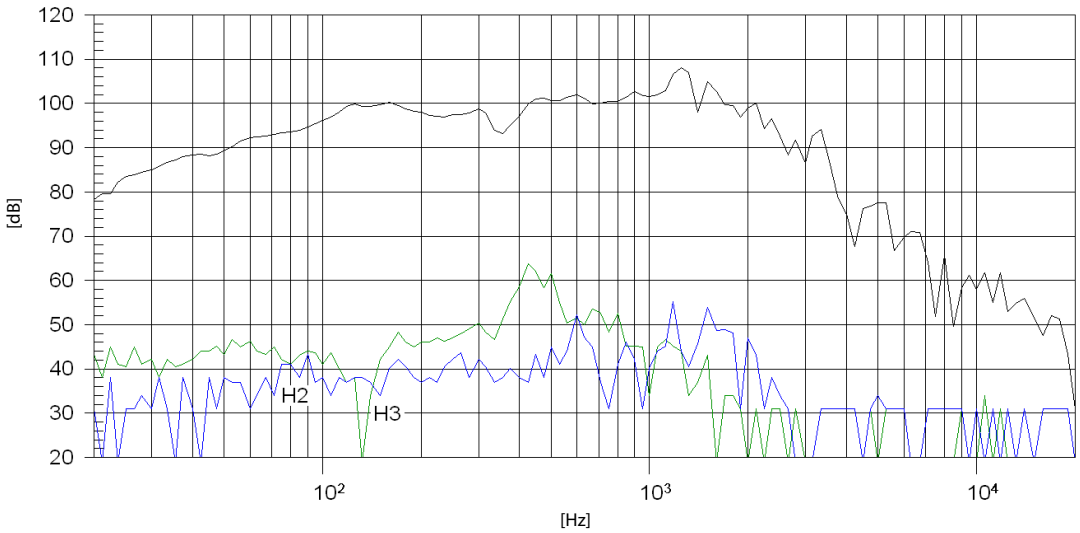


POWER COMPRESSION LOSSES



Note: Power compression losses were calculated after 5 minutes period applying a pink noise signal filtered between 25 and 200 Hz.

FREQUENCY RESPONSE AND DISTORTION



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

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