PURIFI

4.0" Extended Woofer

PURE SOUND

Long Stroke driver with
Ultra Low Distortion

PTT4.0X04-NAC-03
DATA SHEET

- Negligible Force Factor Modulation and Surround Radiation Distortion
- Low Magnetic Hysteresis Distortion
- "Real" long-stroke Performance: Distortion remains low over full Excursion
- Uncompromised Midrange Performance
- Designed and Manufactured in Denmark

KEY SPECIFICATIONS

Driver size	4"
DC resistance, R_{DC}	3.8 Ω
Resonance freq., f_s	40 Hz
Total Q factor, Q_{ts}	0.31
Effective piston area	57 cm^2
Equivalent volume, V_{as}	5.5 L
SPL@2.83V_{rms}/1m	83.9 dB
Linear X_{max}	+/- 8.8 mm
Mechanical X_{max}	+/- 13.7 mm
IEC Power handling	200 W
Cone material	Black Anodized Aluminum

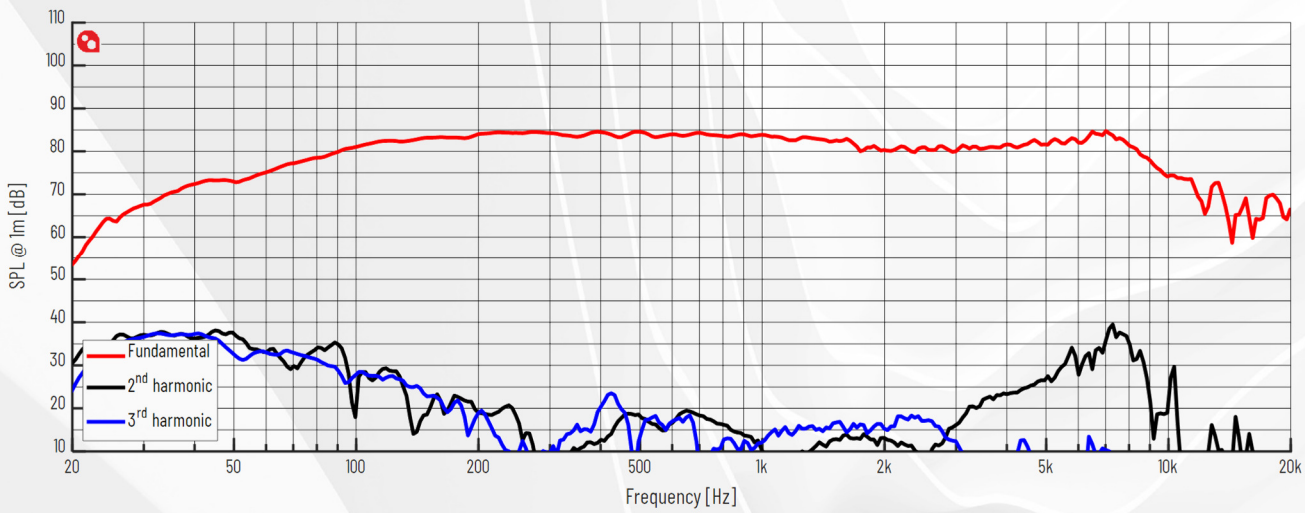

Figure 1 Frequency Response 2.83Vrms @1m

1 Specifications

1.1 Electrical & Acoustical Parameter

Parameter		Typ	Unit
Z_n	Nominal impedance	4	Ω
Z_{min}	Minimum impedance above resonance	4.4	Ω
f_{min}	Frequency for minimum impedance	256	Hz
Z_o	Maximum impedance	46	Ω
R_{DC}	DC resistance	3.8	Ω
L_e	Voice Coil inductance @ 1kHz 0mm	0.38	mH
SPL	SPL@2.83V_{rms}/1m, 300Hz-800Hz, ref. 20µPa (infinite baffle / 2pi)	83.9	dB
	SPL@1W(Z_{min})/1m, 300Hz-800Hz, ref. 20µPa (infinite baffle / 2pi)	81.3	dB

Table 1 Electrical & Acoustical Parameters

1.2 T/S & Lumped Parameters

Parameter		Typ	Unit
f_s	Resonance frequency	40	Hz
Q_{ms}	Mechanical Q factor	3.8	-
Q_{es}	Electrical Q factor	0.34	-
Q_{ts}	Total Q factor	0.31	-
V_{as}	Equivalent volume	5.5	L
S_d	Effective piston area	56.7	cm^2
D	Effective piston diameter	8.5	cm
Bl	Force factor	6.1	N/A
R_{ms}	Mechanical resistance	0.87	kg/s
M_{ms}	Moving mass	13.0	g
C_{ms}	Suspension compliance	1.22	mm/N

Table 2 T/S & Lumped Parameters

1.3 Mechanical Properties

Parameter		Typ	Unit
Excursion Properties			
X_{max}	Linear excursion = (Voice Coil length - Airgap height) / 2	+/-8.8	mm
	Mechanical excursion	+/-13.7	mm
Physical Dimensions			
	Basket diameter	125	mm
	Cutout diameter	101	mm
	Mounting hole pattern diameter	115	mm
	Mounting hole diameter	4.2	mm
	Magnet diameter	90	mm
	Outer flange height	3.2	mm
	Build-in depth	73.5	mm
	Weight	1.25	kg
Voice Coil Properties			
	Voice Coil diameter	30	mm
	Voice Coil length	21.6	mm
	Voice Coil layers	4	-
	Airgap height	4	mm
	Winding material	Alu	-

Table 3 Mechanical Properties

1.4 Power Handling

Parameter		Typ	Unit
	Long term maximum power (IEC268-5 18.2)	200	W
	Rated noise power, 100h (IEC268-5 18.4)	60	W

Table 4 Power Handling

1.5 Typical Performance, Graphs

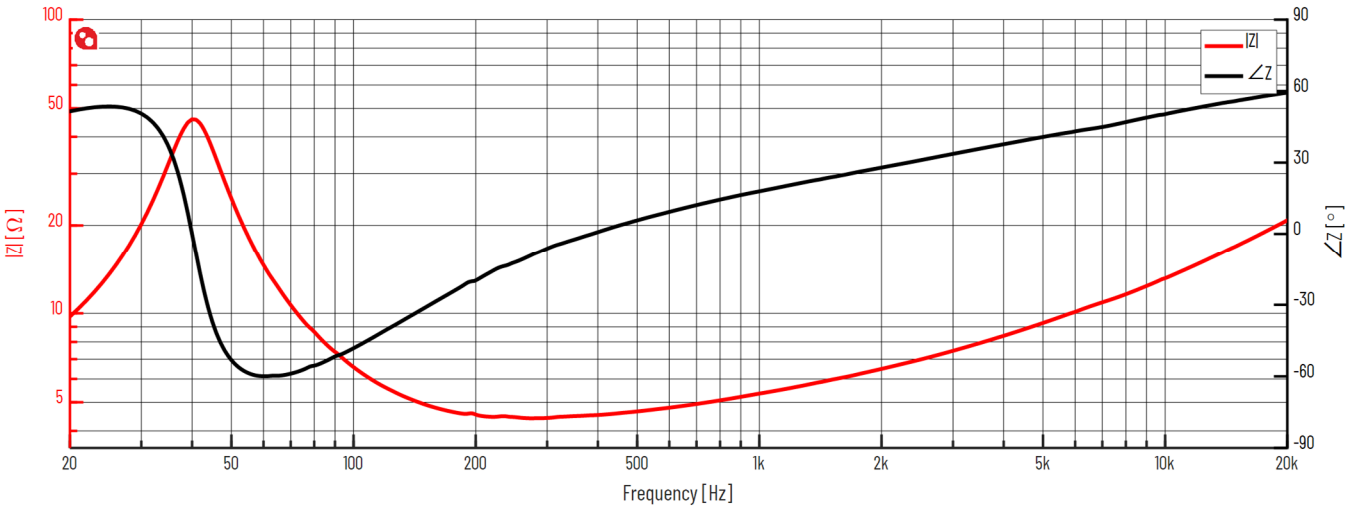

Figure 2 Impedance Response @ 2.83V

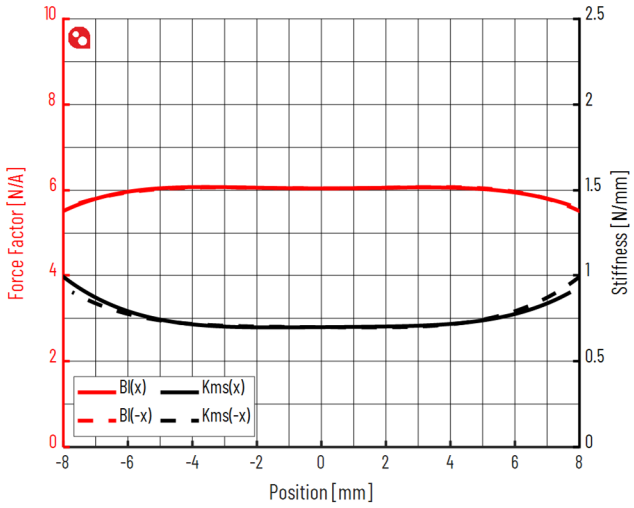

Figure 3 Force Factor and Stiffness vs Voice Coil Position

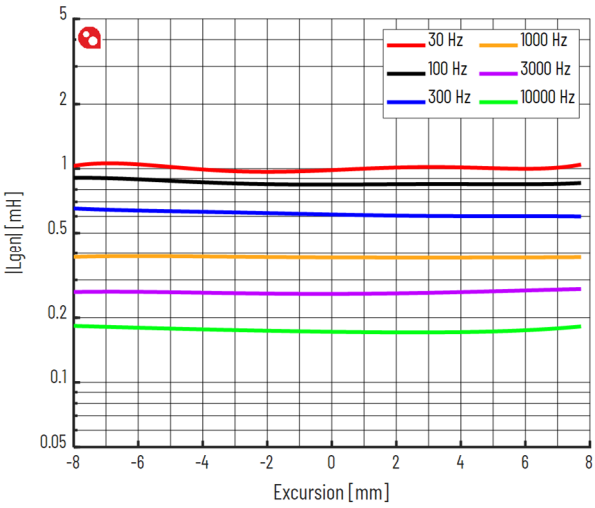

Figure 4 Inductance vs Voice Coil Position

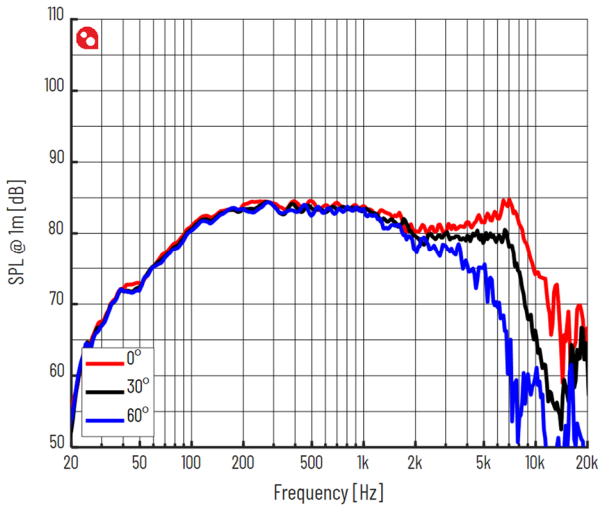

Figure 5 Axial Frequency Response @ 1m, 2.83Vrms

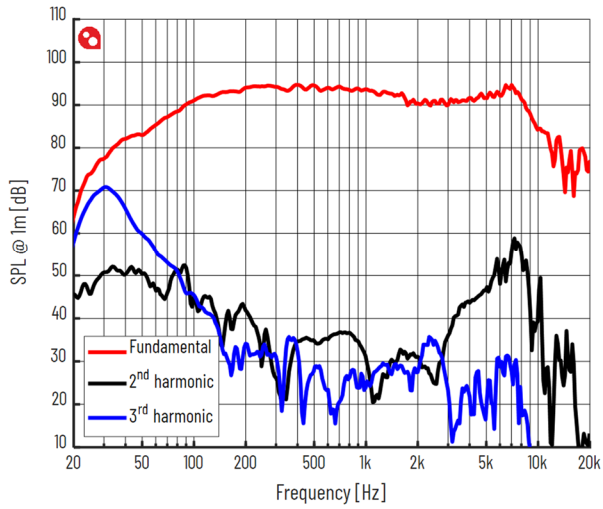

Figure 6 Frequency Response @ 1m, 94dB

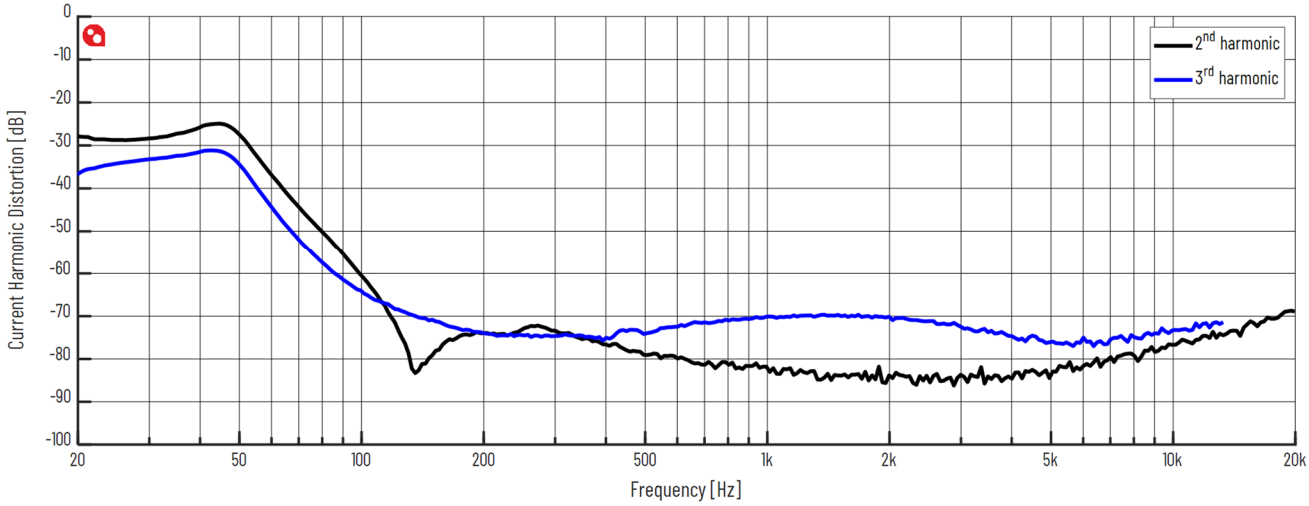

Figure 7 Current Harmonic Distortion @ 2.83Vrms

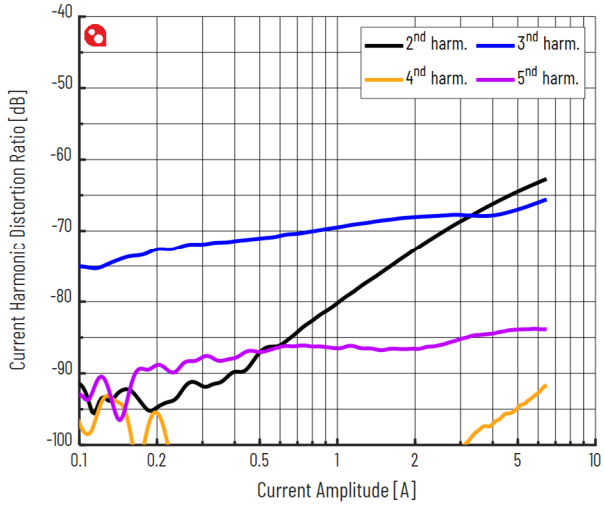

Figure 8 Current Harmonic Distortion @ 1kHz, 0-28.3Vrms

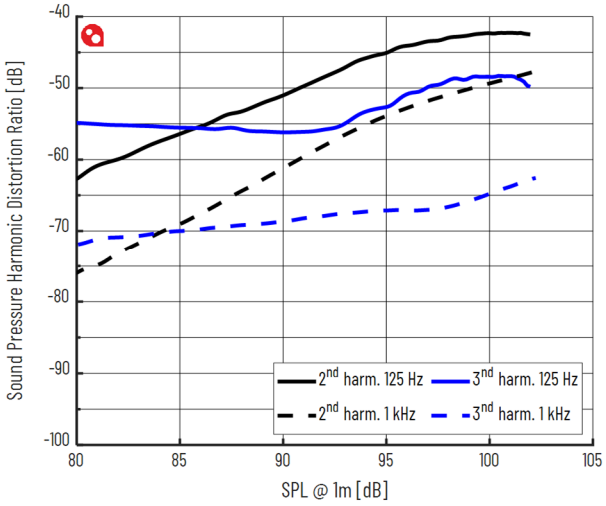

Figure 9 Sound Pressure Harmonic Distortion @ 1m, 0-28.3Vrms

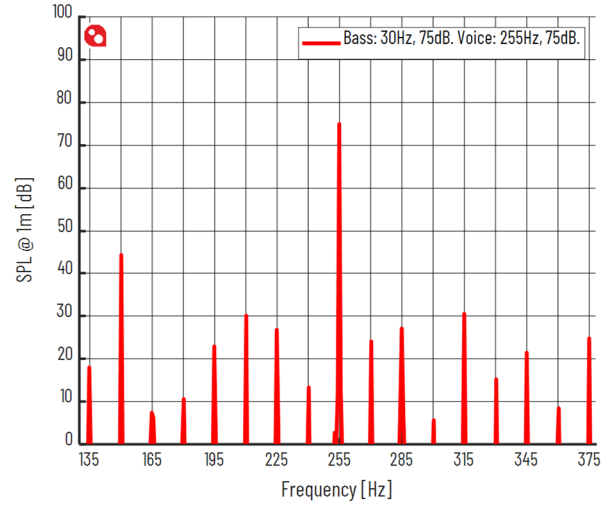

Figure 10 Intermodulation Distortion @ 30Hz 75dB, 255Hz 75dB

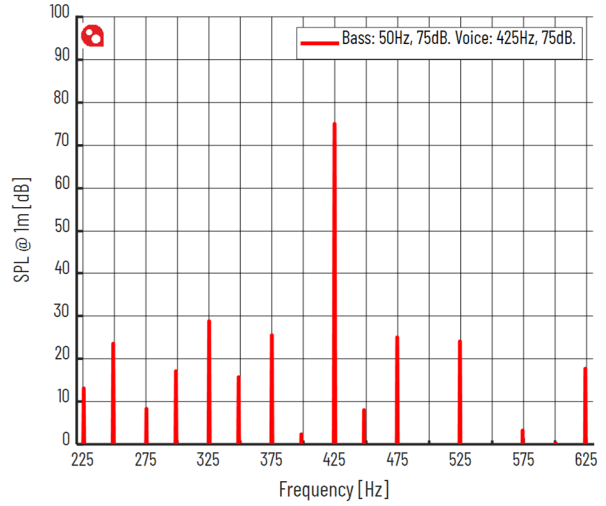

Figure 11 Intermodulation Distortion @ 50Hz 75dB, 425Hz 75dB

2 Drawings