

4.0" Extended Woofer

# PURE SOUND

Long Stroke driver with Ultra Low Distortion



## PTT4.0X08-NAC-03 DATA SHEET

### KEY SPECIFICATIONS

- ⊗ 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

Driver size	4"
DC resistance, $R_{DC}$	6.5 $\Omega$
Resonance freq., $f_s$	43 Hz
Total Q factor, $Q_{ts}$	0.39
Effective piston area	57 cm <sup>2</sup>
Equivalent volume, $V_{as}$	5.3 L
SPL@2.83V <sub>rms</sub> /1m	81.8 dB
Linear $X_{max}$	+/- 8.8 mm
Mechanical $X_{max}$	+/- 13.7 mm
IEC Power handling	200 W
Cone material	Black Anodized Aluminum

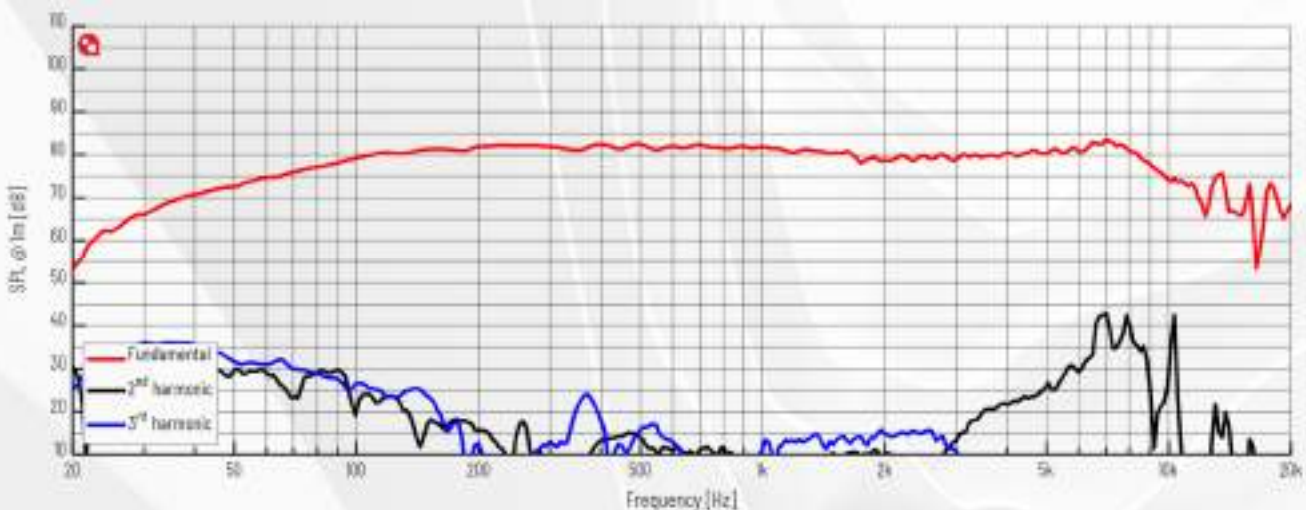


Figure 1 Frequency Response 2.83Vrms @1m

# 1 Specifications

## 1.1 Electrical & Acoustical Parameter

Parameter		Typ	Unit
$Z_n$	Nominal impedance	8	$\Omega$
$Z_{min}$	Minimum impedance above resonance	7.3	$\Omega$
$f_{min}$	Frequency for minimum impedance	256	Hz
$Z_o$	Maximum impedance	69	$\Omega$
$R_{DC}$	DC resistance	6.5	$\Omega$
$L_e$	Voice Coil inductance @ 1kHz 0mm	0.56	mH
SPL	SPL@2.83V <sub>rms</sub> /1m, 300Hz-800Hz, ref. 20 $\mu$ Pa (infinite baffle / 2pi)	81.8	dB
	SPL@1W( $Z_{min}$ )/1m, 300Hz-800Hz, ref. 20 $\mu$ Pa (infinite baffle / 2pi)	81.4	dB

Table 1 Electrical &amp; Acoustical Parameters

## 1.2 T/S & Lumped Parameters

Parameter		Typ	Unit
$f_s$	Resonance frequency	43	Hz
$Q_{ms}$	Mechanical Q factor	4.1	-
$Q_{es}$	Electrical Q factor	0.43	-
$Q_{ts}$	Total Q factor	0.39	-
$V_{as}$	Equivalent volume	5.3	L
$S_d$	Effective piston area	56.7	cm <sup>2</sup>
$D$	Effective piston diameter	8.5	cm
$Bl$	Force factor	7.0	N/A
$R_{ms}$	Mechanical resistance	0.79	kg/s
$M_{ms}$	Moving mass	11.9	g
$C_{ms}$	Suspension compliance	1.16	mm/N

Table 2 T/S &amp; Lumped Parameters

## 1.3 Mechanical Properties

Parameter		Typ	Unit
<b>Excursion Properties</b>			
$X_{max}$	Linear excursion = (Voice Coil length - Airgap height) / 2	+/-8.8	mm
	Mechanical excursion	+/-13.7	mm
<b>Physical Dimensions</b>			
	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
<b>Voice Coil Properties</b>			
	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

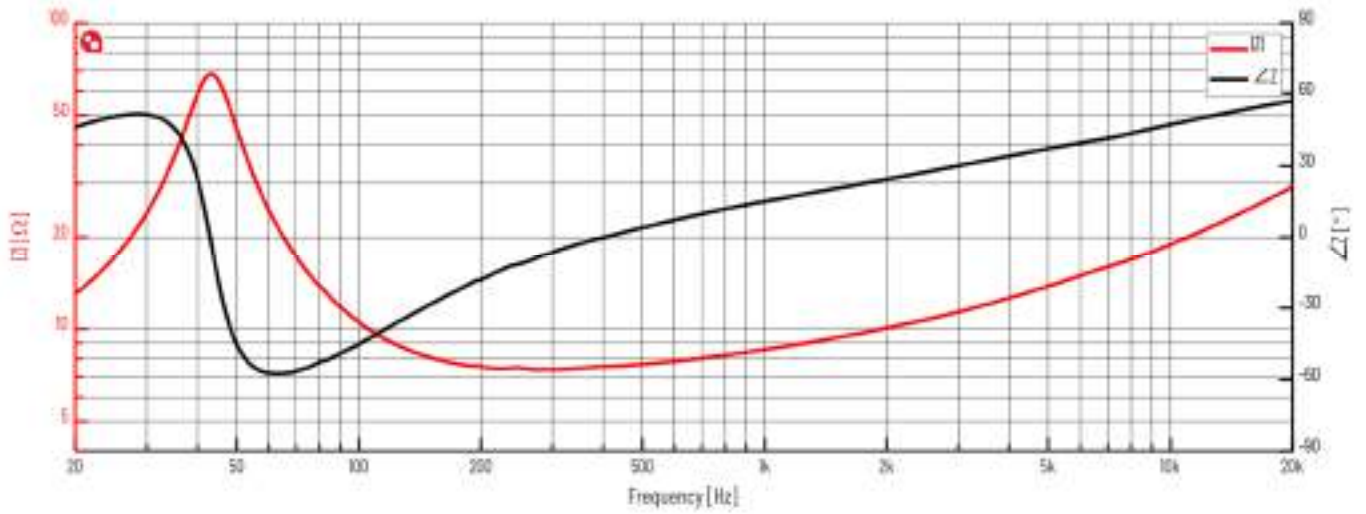


Figure 2 Impedance Response @ 2.83V

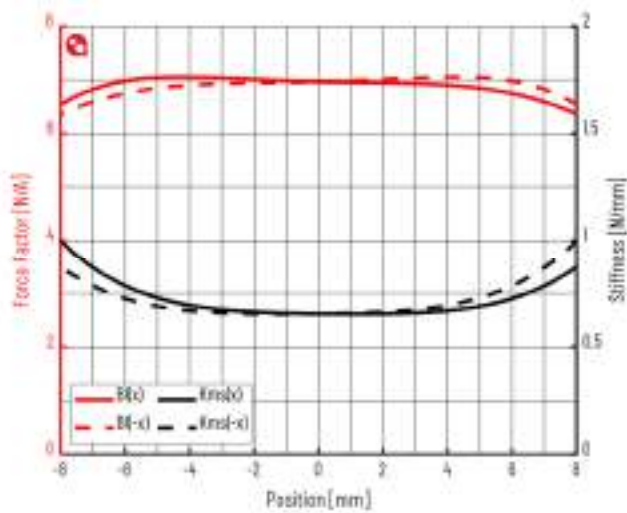


Figure 3 Force Factor and Stiffness vs Voice Coil Position

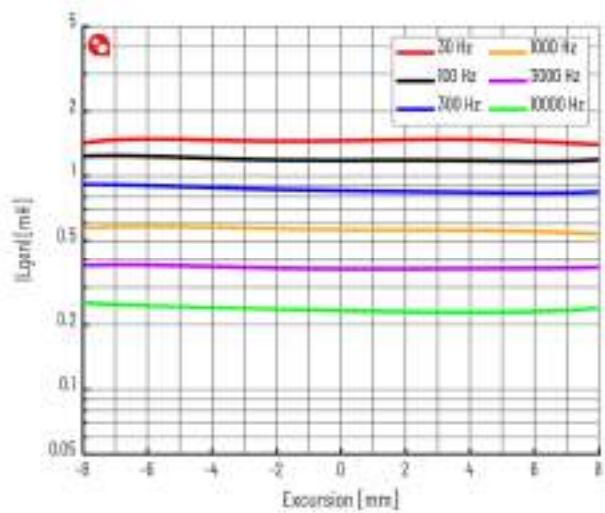


Figure 4 Inductance vs Voice Coil Position

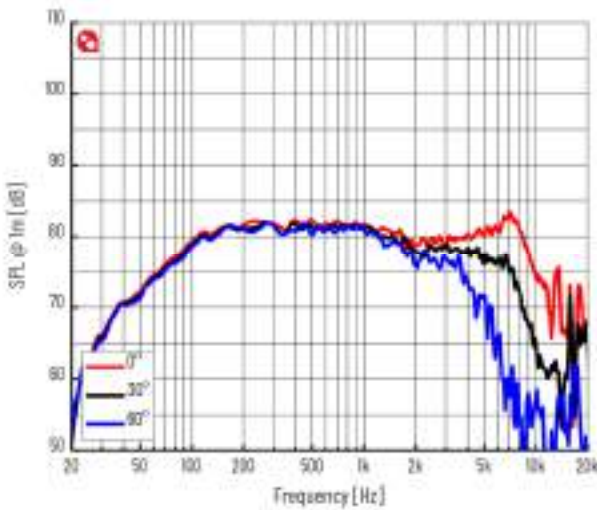


Figure 5 Axial Frequency Response @ 1m, 2.83Vrms

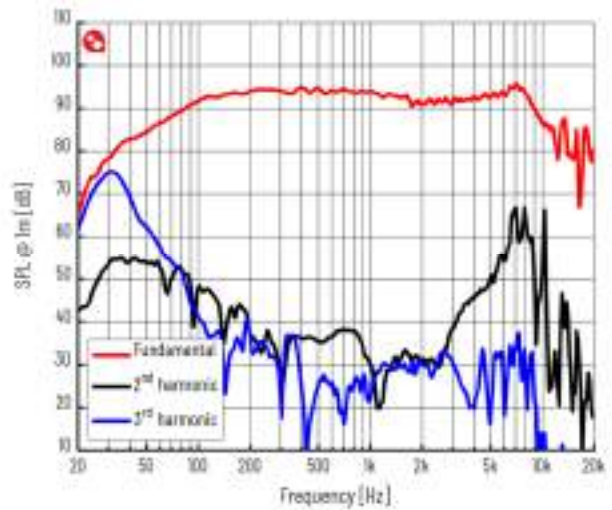


Figure 6 Frequency Response @ 1m, 94dB

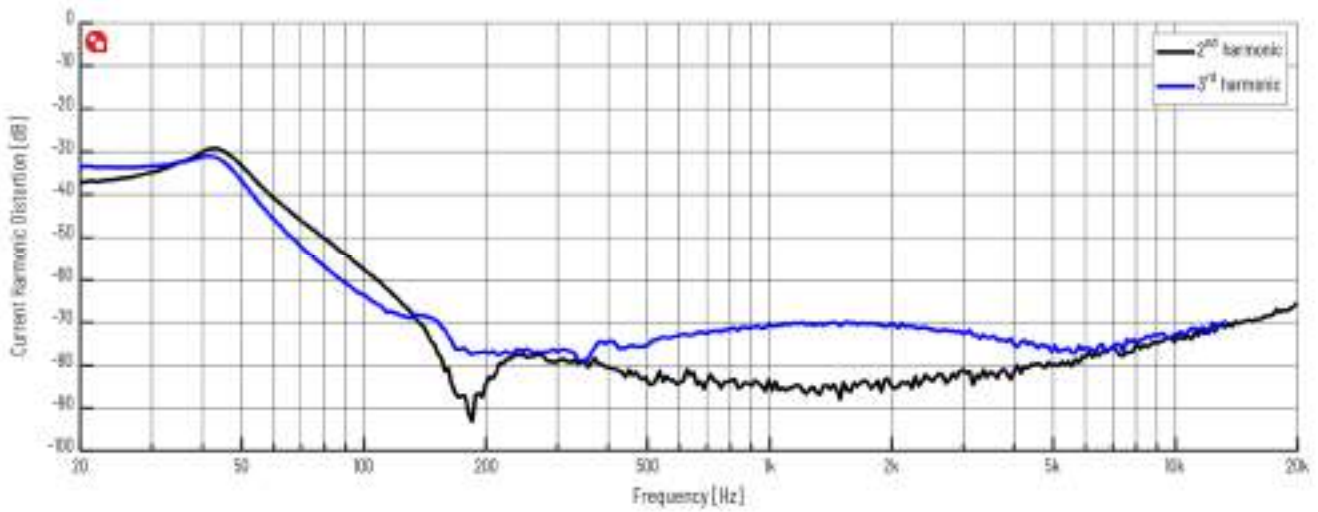


Figure 7 Current Harmonic Distortion @ 2.83Vrms

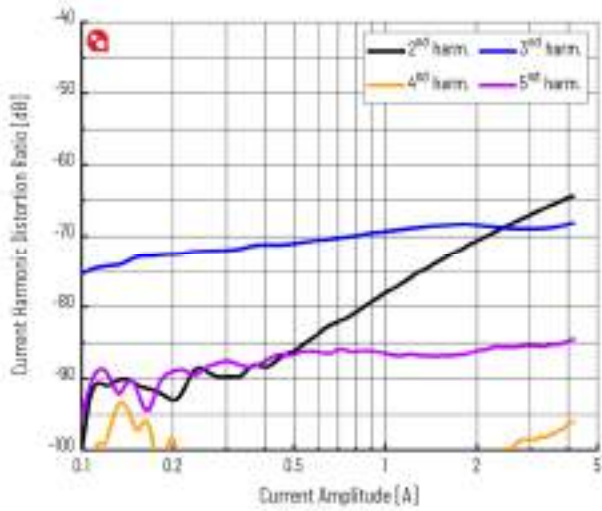


Figure 8 Current Harmonic Distortion @ 1kHz, 0-28.3Vrms

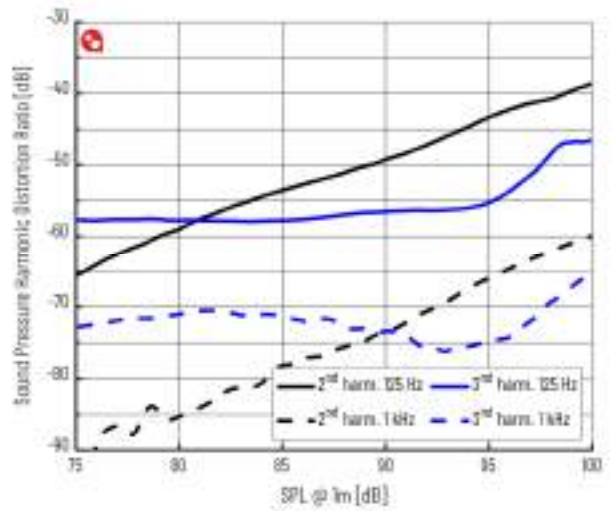


Figure 9 Sound Pressure Harmonic Distortion @ 1m, 0-28.3Vrms

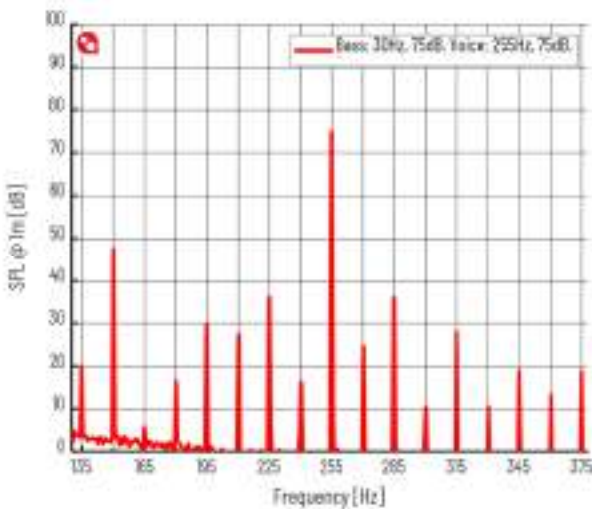


Figure 10 Intermodulation Distortion @ 30Hz 75dB, 255Hz 75dB

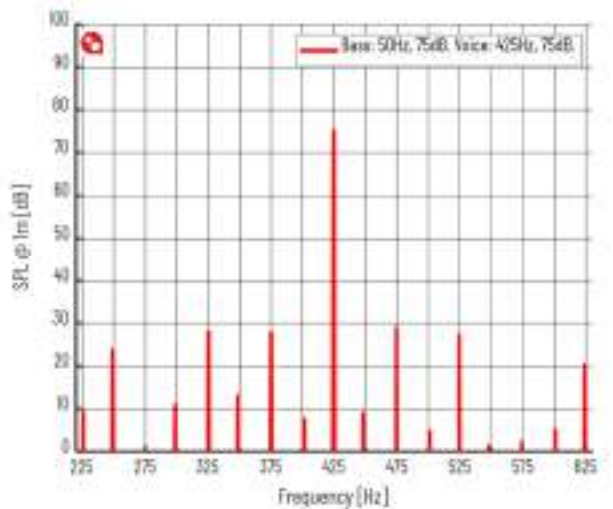
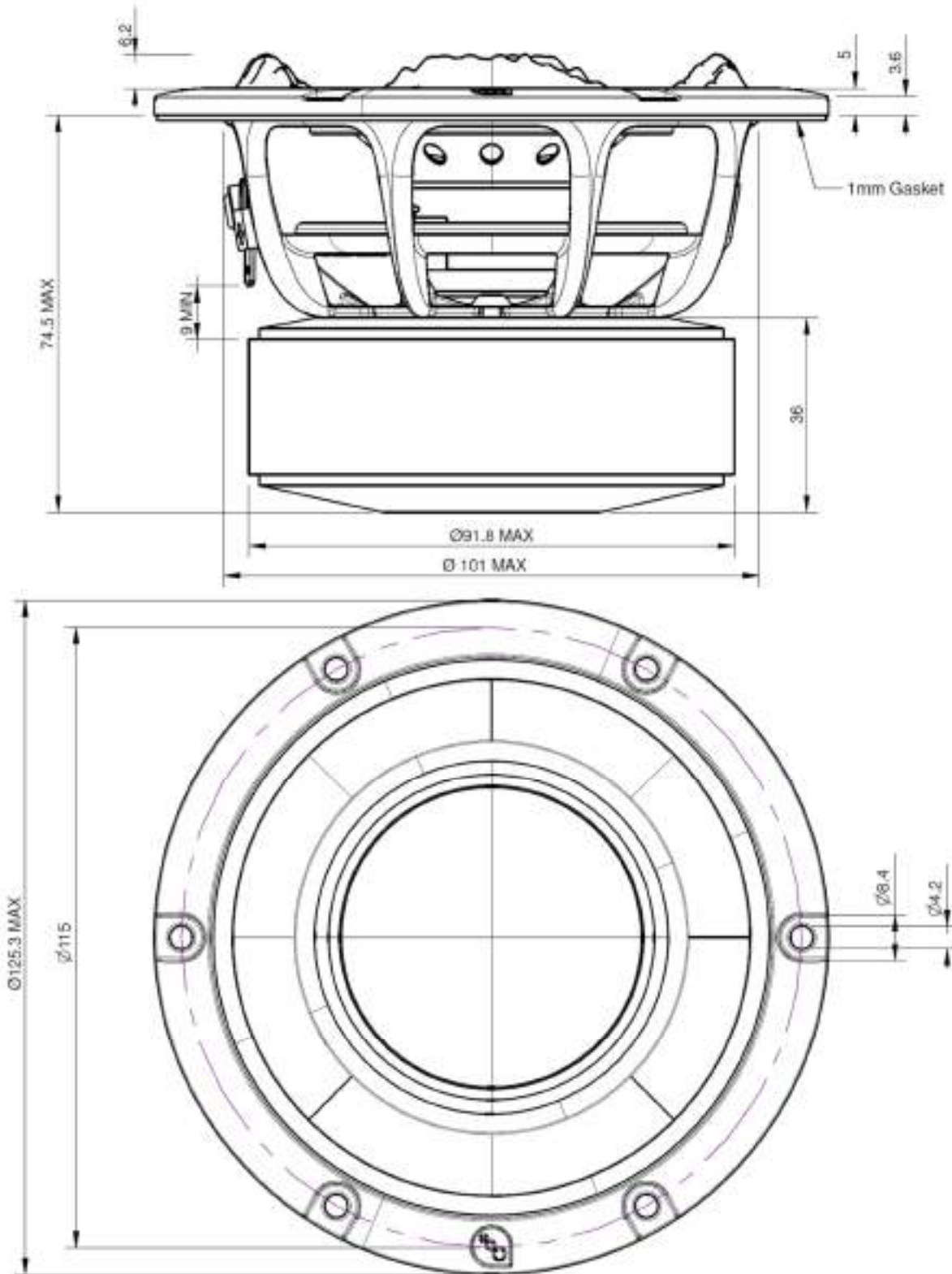


Figure 11 Intermodulation Distortion @ 50Hz 75dB, 425Hz 75dB

## 2 Drawings



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