

# SPECIFICATIONS

## SW084OM01/02 3¼" paper cone subwoofers, 4/8 ohm

The 3¼" transducers SW084OM01 (4 ohm) and SW084OM02 (8 ohm) were designed to provide real and undistorted bass from small enclosures. Examples of applications are high quality multimedia and lifestyle speakers and personal audio products, where bass reproduction without compromises is required.

Works well as dedicated subwoofer in combination with small 2-way designs. Another obvious application is as the woofer portion in a 2-way speaker in combination with a small fullrange unit (ideally like [FR040WA](#))

### FEATURES

- FEA optimized suspension for perfect symmetry, reducing even order harmonic distortion
- Balanced Drive motor with perfect force factor symmetry for reduced distortion
- Long linear stroke, ensuring low distortion at high output levels
- Rigid paper cones to ensure piston motion even at high levels - for reduced distortion
- Vented voice coil former and magnet center pole for reduced distortion and compression
- Vented chassis for lower air flow speed reducing audible distortion
- Heavy-duty black fiber glass voice coil bobbin to increase power handling and reduce mechanical losses resulting in better dynamic performance and low-level details
- Progressive suspension with optimized compromise between linearity and soft clipping
- New damper (spider) woven of a mix of polymers and natural fibers for improved durability
- Gold plated terminals to prevent oxidation for long-term reliable connection
- Delivered with foam gasket attached to the frame for hassle-free mounting and secure enclosure sealing



### NOMINAL SPECIFICATIONS

Notes	Parameter	SW084OM01		SW084OM02		Unit
		Before burn-in	After burn-in	Before burn-in	After burn-in	
	Nominal size	3¼		3¼		[inch.]
	Nominal impedance	4		8		[ohm]
	Recommended max. upper frequency limit	2		2		[kHz]
1, 4	Sensitivity, 2.83V/1m (average SPL in range 200 - 2,000 Hz)	86		83		[dB]
2, 4	Power handling, short term, IEC 268-5, no additional filtering					[W]
2, 4	Power handling, long term, IEC 268-5, no additional filtering					[W]
2, 4	Power handling, continuous, IEC 268-5, no additional filtering	40		40		[W]
	Effective radiating area, S <sub>d</sub>	33.5		33.5		[cm <sup>2</sup> ]
3, 4, 6	Resonance frequency (free air, no baffle), F <sub>s</sub>	74		77		[Hz]
	Moving mass, incl. air (free air, no baffle), M <sub>ms</sub>	4.35		4.05		[g]
3, 4	Force factor, B <sub>xl</sub>	3.56		4.58		[N/A]
3, 4, 6	Suspension compliance, C <sub>ms</sub>	1.07		1.07		[mm/N]
3, 4, 6	Equivalent air volume, V <sub>as</sub>	1.70		1.70		[lit.]
3, 4, 6	Mechanical resistance, R <sub>ms</sub>	0.22		0.22		[Ns/m]
3, 4, 6	Mechanical Q, Q <sub>ms</sub>	9.2		8.8		[-]
3, 4, 6	Electrical Q, Q <sub>es</sub>	0.46		0.57		[-]
3, 4, 6	Total Q, Q <sub>ts</sub>	0.44		0.53		[-]
4	Voice coil resistance, R <sub>DC</sub>	2.9		6.1		[ohm]
5	Voice coil inductance, L <sub>e</sub> (measured at 1 kHz)	0.40		0.72		[mH]
	Voice coil inside diameter	26		26		[mm]
	Voice coil winding height	12		12		[mm]
	Air gap height	3		3		[mm]
	Theoretical linear motor stroke, X <sub>max</sub>	±4.5		±4.5		[mm]
	Magnet weight					[g]
	Total unit net weight excl. packaging					[kg]
3, 4, 5	K <sub>rm</sub>	0.52		1.48		[mohm]
3, 4, 5	E <sub>rm</sub>	0.82		0.76		[-]
3, 4, 5	K <sub>xm</sub>	3.9		6.3		[mH]
3, 4, 5	E <sub>xm</sub>	0.71		0.71		[-]

Note 1 Measured in infinite baffle.

Note 2 Tested in free air (no cabinet).

Note 3 Measured using a semi-constant current source, nominal level 2 mA.

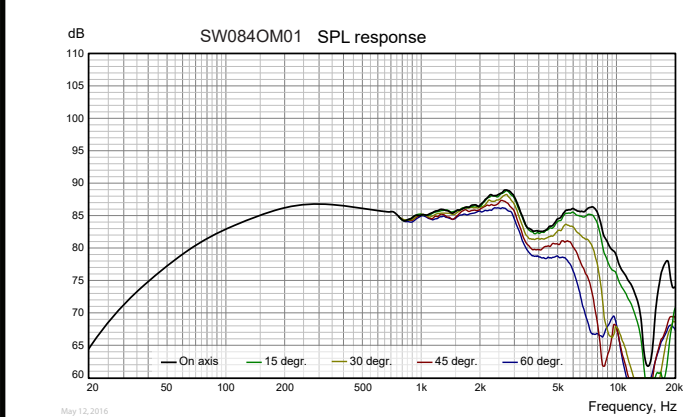
Note 4 Measured at 25 deg. C

Note 5 It is generally a rough simplification to assume that loudspeaker transducer voice coils exhibit the characteristics of an inductor. Instead it is a far more accurate approach to use the more advanced model often referred to as the "Wright empirical model", also used in LEAP-4 as the TSL model ([www.linearx.com](http://www.linearx.com)), involving parameters K<sub>rm</sub>, E<sub>rm</sub>, K<sub>xm</sub>, and E<sub>xm</sub>. This more accurate transducer model is described in a technical paper [here at our web site](#).

Note 6 After burn-in specifications are measured 12 hours after exciting the transducer by a 20 Hz sine wave for 2 hours at level 4.0/5.65 VRMS (4/8 ohm version). The unit is not burned in before shipping.

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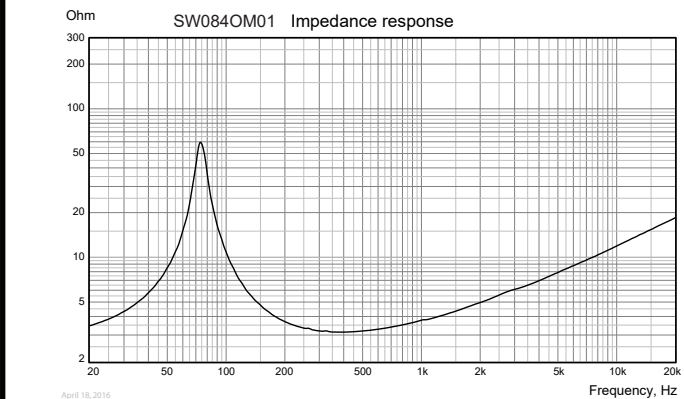
**Important!**  
Please observe that graphs on the left side of this page and the below text files for download are actual measurements of the drivers measured in infinite baffle and without any enclosure. Measuring the drivers in a finite baffle (like the baffle of most speaker cabinets) and in any size of enclosure will lead to different response curves.



Download SW084OM01 on-axis SPL response as .txt file

Measuring conditions, SPL

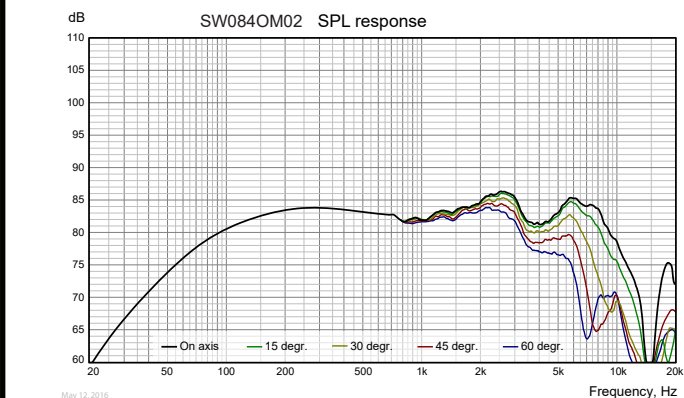
Driver mounting: Flush in infinite baffle, back side open (no cabinet)  
Microphone distance: 1.0 m  
Input signal: 2.83 V<sub>RMS</sub> stepped sine wave  
Smoothing: 1/6 oct.



Download SW084OM01 impedance response as .txt file

Measuring conditions, impedance

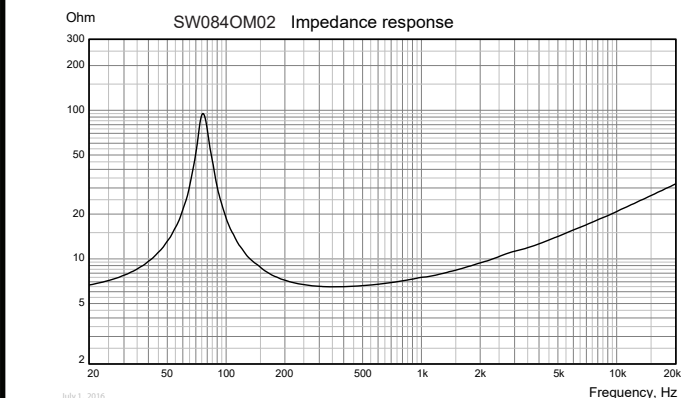
Driver mounting: Free air, no baffle, back side open (no cabinet)  
Input signal: Stepped sine wave, semi-current-drive, nominal current 2 mA  
Smoothing: None



Download SW084OM02 on-axis SPL response as .txt file

Measuring conditions, SPL

Driver mounting: Flush in infinite baffle, back side open (no cabinet)  
Microphone distance: 1.0 m  
Input signal: 2.83 V<sub>RMS</sub> stepped sine wave  
Smoothing: 1/6 oct.



Download SW084OM02 impedance response as .txt file

Measuring conditions, impedance

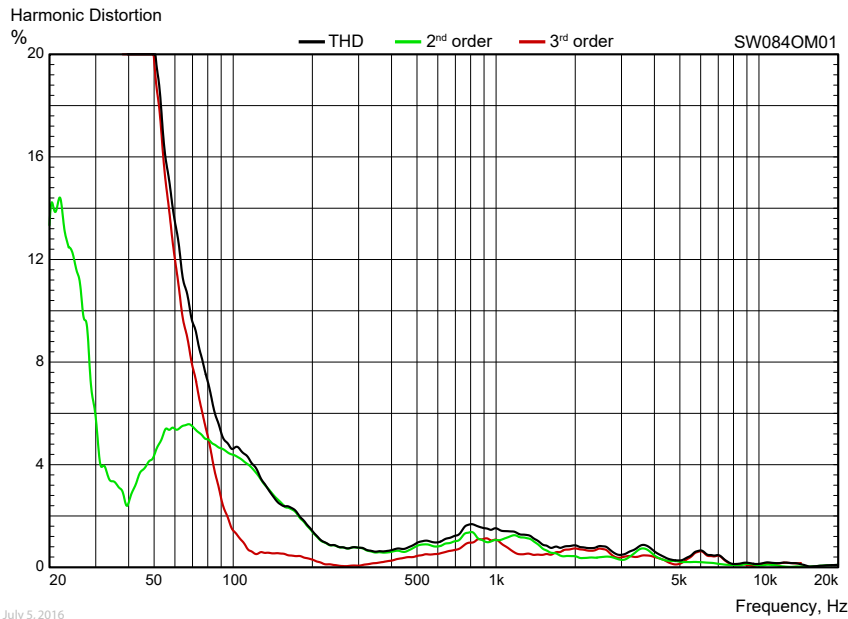
Driver mounting: Free air, no baffle, back side open (no cabinet)  
Input signal: Stepped sine wave, semi-current-drive, nominal current 2 mA  
Smoothing: None

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## HARMONIC DISTORTION



July 5, 2016

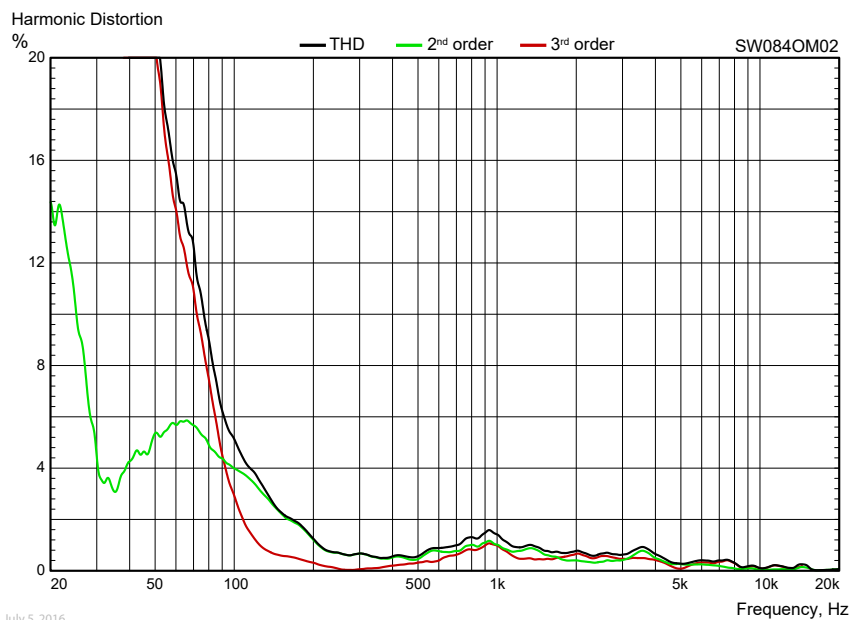
### Measuring conditions, Harmonic Distortion

Driver mounting: In sealed, heavily stuffed enclosure, internal volume 1.0 lit., baffle dimensions 112 mm x 112 mm

Microphone distance: 0.5 m

Input signal: Stepped sine wave, 4.0 VRMS (SW084OM01) / 5.65 VRMS (SW084OM02)

Smoothing: 1/6 oct.



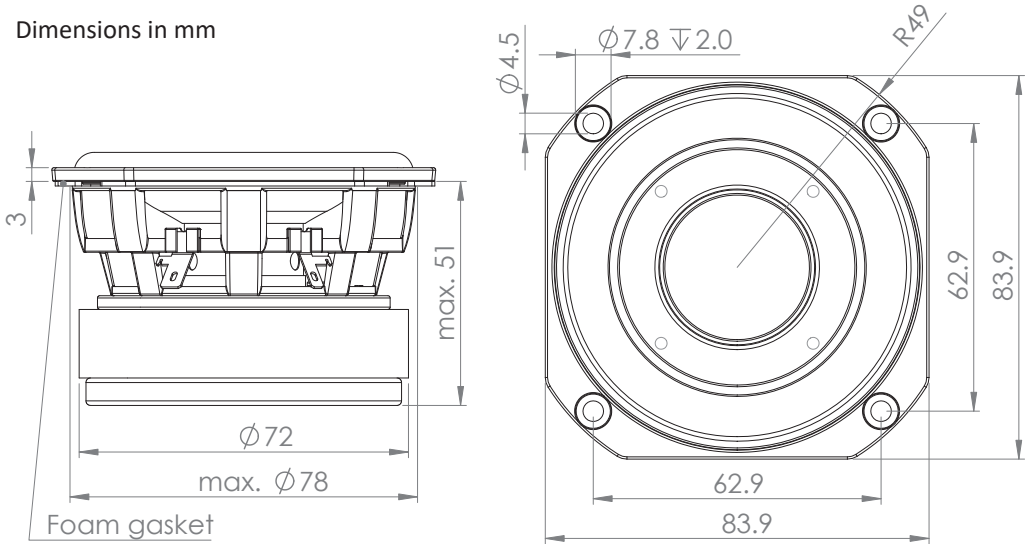
July 5, 2016

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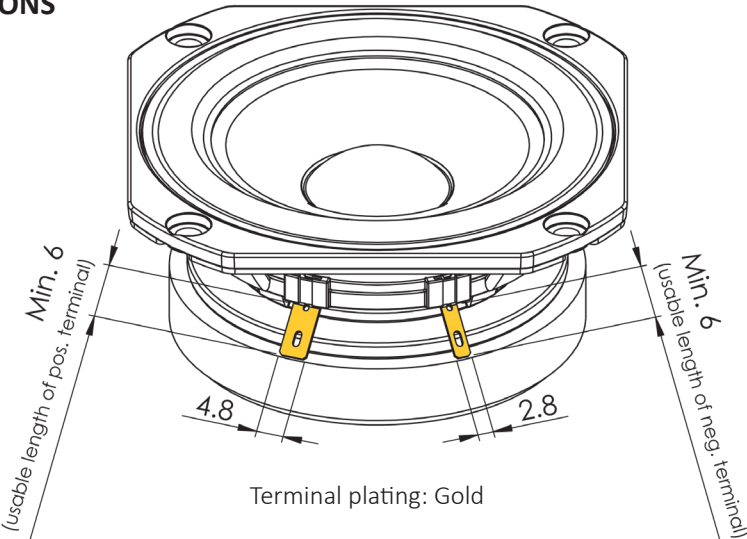
**SW084OM01/02 3¼" paper cone subwoofers, 4/8 ohm**

## OUTLINE DRAWING (nominal dimensions)

Dimensions in mm



## CONNECTIONS



## PACKAGING AND ORDERING INFORMATION

Part no. SW084OM01-01	4 ohm version, packed in bulk (industrial) packaging
Part no. SW084OM02-01	8 ohm version, packed in bulk (industrial) packaging

Latest update: March 1, 2024