



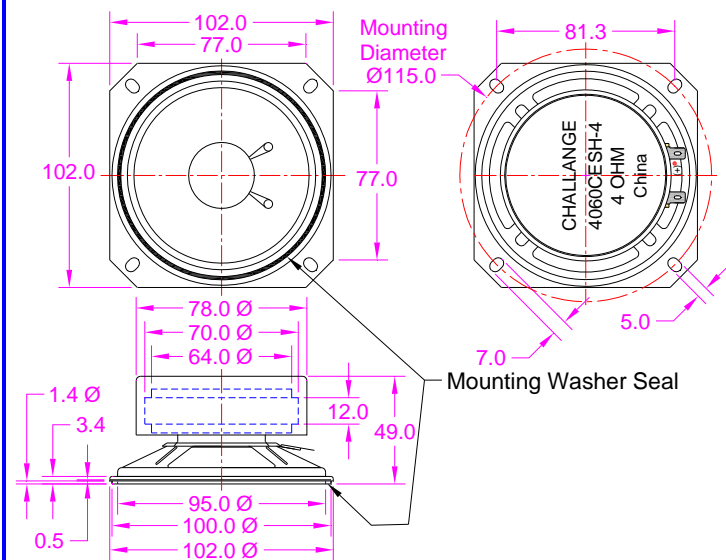
PRODUCT INFORMATION

PART #	4060CESHLF-4										Revision	0-2013				
	4" SQUARE SPEAKER															
DESCRIPTION: Challenge Electronics Speaker, 102 mm Long, Square shape, 102 mm Wide, 49 mm High, KA = 10 W maximum power, 4 Ohm, Fe Steel Frame, Paper Cone, NdFeB Ferrite magnet, 232 Hz. (Fo) Resonant Frequency, Terminal Lugs Termination, SH with Shielding, Lead Free, RoHS																
SPECIFICATIONS																
Shape	Square			Impedance	4 Ω ± 15%, at 1,000 Hz, 1.0 V				DC Resistance	3.6 Ω ± 15%						
Rated Power	Sine Wave	5 W	Square Wave	W	Maximum Power	Sine Wave	10 W	Square Wave								
Effective Frequency Band	180 Hz. to 18,000 Hz.				Resonant Frequency (Fo)	232 Hz. ± 20%, at 1.0 V										
Sound Pressure Level	89.1 ± 3.0 dB(A), at: 1 W, 1.0 m, Average 400, 600, 800, 1,000, and 1,500 (Hz), at 25°C, Baffle board (IEC)															
Operating Temperature	-20°C to + 60°C				Storage Temperature	-30°C to +70°C										
Physical Dimensions	Length or Diameter (L/D)	102.0 mm	Width (W)	102.0 mm	Height (H)			49.0 mm								
Baffle Opening	Length or Diameter (L/D)	mm Ø	Width (W)	mm	Minimum Opening Recessed			3.0 mm								
Mounting	Length or Diameter (L/D)	81.3 mm	Width (W)	81.3 mm	Holes size	5.0 Ø X 7.0 mm		Holes	4							
Distortion	Less than 5% at 1,000 Hz. at 1.0 W.															
Buzz & Rattle	Not be audible at 4 V sine wave between 20 Hz and 10,000 Hz.															
Polarity	When a positive DC Current is applied to the voice coil terminal marked +or red, the diaphragm shall move forward															
Material	Magnet	Y20 NdFeB Ferrite, OD 70 mm Ø, ID 32 mm Ø, H 8 mm Y20 NdFeB Ferrite, OD 45 mm Ø, ID 28 mm Ø, H 8 mm						Flux Density	± 10% Gauss							
	Frame	Plated Steel			Cone Material	Paper										
	Termination	Terminal Lugs for wire leads soldering. (Caution, overheating the terminal may damage connections of voice coil leads)														
	Optional Gasket	Yes, OD 100 mm Ø, ID 95 mm Ø, H 1.2 mm, Plastic														
Speaker Parameters	Qms		Qes		Qts	1.866	Vas	1.059	Cms		M		M/N		BL	1.98 T
Approximate Weight	1,100 grams		Shielding	Yes	Compliance	Lead Free, RoHS										
Options																
RELIABILITY																
Maximum Power Test	With program White-Noise source Maximum Power , 1 minute on, 2 minutes off, 10 cycles , per (EIA) *															
Thermal Operating Temperature Test	96 hours continuous operation at Rated Power , at Maximum Rated Operating Temperature *															
	96 hours continuous operation at Rated Power , at Minimum Rated Operating Temperature *															
Thermal Storage Temperature Test	96 hours at Maximum Rated Storage Temperatures *															
	96 hours at Minimum Rated Storage Temperatures *															
Thermal Shock Test	5 cycles of Minimum and Maximum Operating Temperature Each cycle shall be set per diagram below and is three (3) hours long *															
Humidity Test	96 Hours at +40°C±2°C. 90-95% RH *															
Insulation Test	A minimum of 1 MΩ, measured with 100 Vdc Insulation Resistance Meter, between the Electrical Terminals and the Transducer Case															
Vibration Test	15 minutes at 1.5 mm with 10 to 55 Hz. vibration frequency to each of 3 perpendicular directions *															
Termination Strength	Maximum of 9.8 N (1.0 Kg) load pull test, applied to each terminal in axial direction for 10 seconds															
Drop Test	Dropped naturally from 1 meter height onto the surface of 40 mm wooden board, 3 axes (X,Y,Z) directions, 3 times (9 times total) *															
Operation Life Test	Must perform normal with program White-Noise source at Rated Power for 100 Hours per (EIA) *															
* Reliability Test Performance	Parts should conform to original performance within ±5 dB tested with Rated Power, after 3 hours of recovery period.															
Warranty	For a period of one (1) year from date of shipping under normal operations conditions This warranty does not apply to products damaged through misuse, abuse, improper installation, alteration, rework, or attempt to repair															

The information contained herein is believed to be correct, but no guarantee or warranty, express or implied, with respect to accuracy, completeness or results is extended and no liability is assumed. Challenge Electronics reserves the right to make changes in any specification, data or material contained herein.



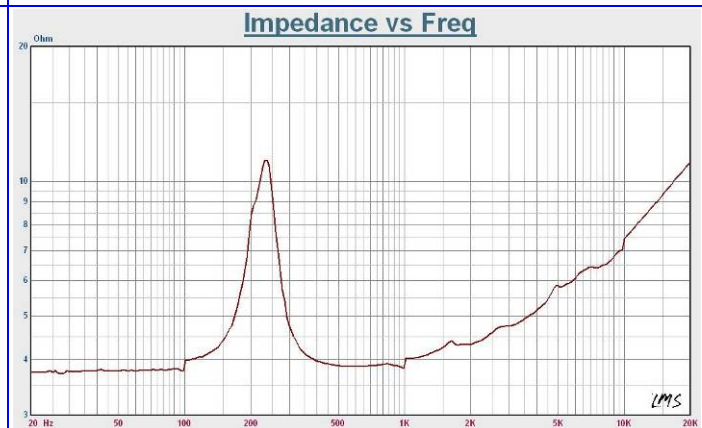
DIMENSIONS Units in: mm, Tolerance: ± 0.3 mm unless specified otherwise.



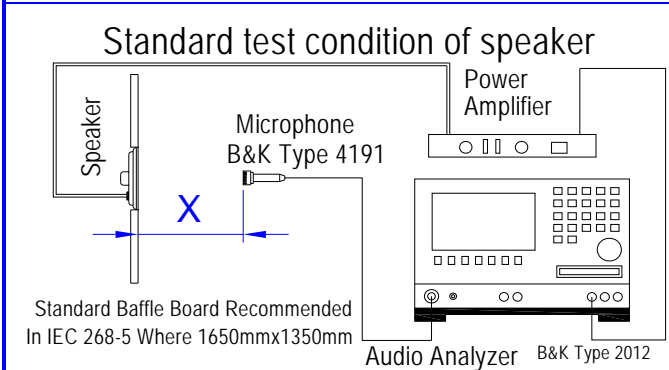
SPL vs. FREQUENCY RESPONSE



IMPEADANCE vs. FREQUENCY RESPONSE



TEST PROCESS

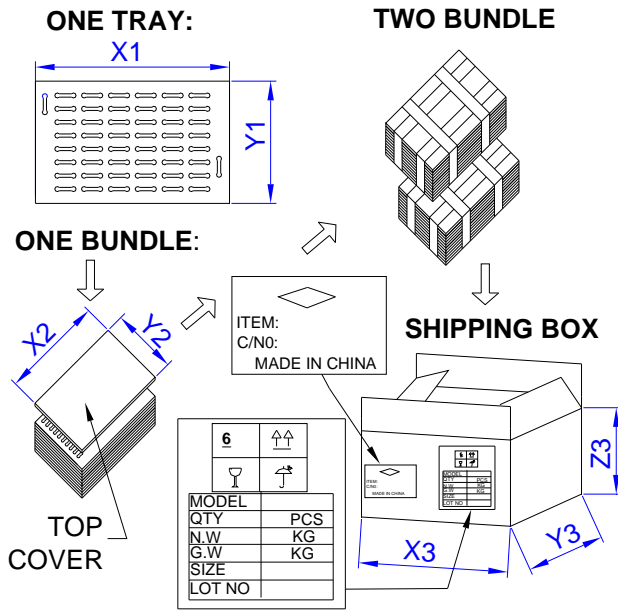


Test Condition	
STANDARD	
Temperature:	15 ~ 35°C
Relative humidity:	45% ~ 85%
Atmospheric pressure:	860 mbar to 1060mbar
JUDGEMENT	
Temperature :	20±3°C
Relative humidity:	60% ~ 70%
Atmospheric pressure:	860mbar to 1060mbar

Standard Test Fixture
Zero Level: -dB
Mode: TSR
potentiometer Range: 50dB
Sweep Time: 0.5sec
Input Power:
1 W
Microphone Distance:
X = 100 cm



PACKAGING



MARKING		TRAY	
Bundle	Dimensions	X1	cm
Customer PN		Y1	cm
Other PN if required		Z1	cm
Quantity	Quantity		
Lot and/or Date Code	BUNDLE		
Bundle Number	Dimensions	X2	cm
Shipping Box		Y2	cm
Customer Part Number		Z2	cm
Other PN (if required)	Quantity		
Quantity	SHIPPING BOX		
Lot and/or Date Code	Dimensions	X3	cm
PO Number		Y3	cm
Net Weight		Z3	cm
Gross Weighjt	Number of Bundles		
Box Number	Quantity		
of Number of Boxes	Approximate Weight		
Made in China			