MODEL #: 50X90-WB04-01

2 INCH X 3.5 INCH (50 X 90MM) WATERPROOF FULL RANGE SPEAKER, 4 OHM

PART #: 93016

The Oaktron 93016 is a race-track shaped speaker for full range audio in your game machines, kiosks, and other space conscious applications that produce energetic, performative audio.

- Full range wide band speaker
- 2" x 3.5" (50 mm x 90 mm) steel basket size
- 7 watts, 4 ohm, 88 dB SPL
- 0.8" copper voice coil, paper former
- Neodymium magnet, paper cone with natural rubber surround
- RoHS compliant

MISCO engineers test and analyze the performance of these speakers using the world's most sophisticated loudspeaker measurement systems including the Klippel Analyzer and the Klippel QC, which confirm the final design.



Primary Specifications

Size, Nominal (inch & mm)	2" Oval (50 mm)
Rated Impedance (Ω)	4
Sensitivity (dB SPL) [1]	88
Frequency Range (Hz)	160 - 20, 000
Resonant Frequency (Fs) (Hz) +/- 15%	208

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More Specifications

Application	Arcade Gaming, Casino Gaming, Drive-Thru / Kiosk
RoHS Compliant	Yes
DC Resistance (Re) (Ω)	3.8
Program Power (W)	14

Small Signal Parameters

Nominal Impedance (Z) (Ω)	4
DC Resistance (Re) (Ω)	3.8
Voice Coil Inductance (Le) (mH)	0.10
Resonant Frequency (Fs) (Hz) +/- 15%	208
Mechanical Q Factor (Qms)	3.84
Electrical Q Factor (Qes)	1.65
Total Q Factor (Qts)	1.15
Moving Mass (Mms) (gm)	1.55
Suspension Compliance (Cms) (mm/N)	0.25
Mechanical Resistance (Rms) (kg/s)	0.64
Surface Area of Diaphragm (Sd) (cm^2)	21.49
Compliance Equivalent Volume (Vas) (L)	0.17
Motor Force Factor (BL) (T•M)	2.4
Efficiency (η_0) (%)	0.16
Efficiency Bandwidth Product (EBP) (Fs/Qes)	154.64

Material Descriptions

Basket Type	Stamped Steel
Terminal Size (mm)	0.110 x 0.02 / 0.205 x 0.02
Voice Coil Diameter (mm)	20.3
Voice Coil Wire Material	Copper
Voice Coil Former Material	Paper
Magnet Material	Neodymium
Magnet Weight (g)	11
Cone Body Material	Paper
Cone Surround Material	Cloth
Dust Cap Material	Paper
Net Weight (kg)	100

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