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| |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | |  | | The 3¼" transducers FR084WA01 (4 ohm) and FR084WA02 (8 ohm) were designed especially for high quality multimedia and lifestyle speakers, where sound reproduction without compromises is required while still keeping size small. | | | | |  | | | | | | |  | [Frequency resp.](http://www.wavecor.com/html/fr090wa01_02.html#Freq.resp) [Specifications](http://www.wavecor.com/html/fr090wa01_02.html#Specs) [Dimensions](http://www.wavecor.com/html/fr090wa01_02.html#Dims)[Ordering info](http://www.wavecor.com/html/fr090wa01_02.html#Order) | | |  | | |  | | | | | | |  | | | **FEATURES** | |  | | |  |  | | --- | --- | | http://www.wavecor.com/assets/images/autogen/clearpixel.gif |  | |  | Wavecor-FR084WA01_02-300px | |

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| http://www.wavecor.com/assets/images/autogen/clearpixel.gif | http://www.wavecor.com/assets/images/autogen/clearpixel.gif |
|  | * True full-range design with on-axis output to beyond 20 kHz * Copper cap on center pole to reduce voice coil inductance and to minimize variations in voice coil inductance as a function of voice coil position * Black anodized alu cone for better heat transfer * Vented polymer chassis for lower air flow speed reducing audible distortion * Vented voice coil former for reduced distortion and compression * Heavy-duty black fiber glass voice coil bobbin to reduce mechanical losses resulting in better dynamic performance and low-level details * Large motor with 22 mm voice coil diameter for better control and power handling * Low-loss suspension (high Qm) for better reproduction of details and dynamics * Black motor parts for better heat transfer to the surrounding air * Conex spider for better durability under extreme conditions * Gold plated terminals to ensure long-term trouble free connection * Delivered with foam gasket attached for hassle-free mounting and secure cabinet sealing |

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| http://www.wavecor.com/assets/images/autogen/clearpixel.gif | http://www.wavecor.com/assets/images/autogen/clearpixel.gif |
|  | **FREQUENCY RESPONSE** |

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|  | |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | |  | | --- | | FR084WA01-SPL-IMP-response |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | |  |  | | --- | --- | | http://www.wavecor.com/assets/images/autogen/clearpixel.gif | http://www.wavecor.com/assets/images/autogen/clearpixel.gif | |  | Measuring conditions, SPL Driver mounting: Flush in infinite      baffle, back side open  (no cabinet) Microphone distance: 1.0 m Input level: 2.83 VRMS Smoothing: 1/6 oct. | | |  |  | | --- | --- | | http://www.wavecor.com/assets/images/autogen/clearpixel.gif | http://www.wavecor.com/assets/images/autogen/clearpixel.gif | |  | Measuring conditions, impedance Driver mounting: Free air, no baffle,      back side open (no cabinet) Input signal: Semi-current-drive,       nominal current 2 mA Smoothing: None | | | |

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| http://www.wavecor.com/assets/images/autogen/clearpixel.gif | http://www.wavecor.com/assets/images/autogen/clearpixel.gif |
|  | |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | |  | | --- | | FR084WA02-SPL-IMP-response |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | |  |  | | --- | --- | | http://www.wavecor.com/assets/images/autogen/clearpixel.gif | http://www.wavecor.com/assets/images/autogen/clearpixel.gif | |  | Measuring conditions, SPL Driver mounting: Flush in infinite      baffle, back side open  (no cabinet) Microphone distance: 1.0 m Input level: 2.83 VRMS Smoothing: 1/6 oct. | | |  |  | | --- | --- | | http://www.wavecor.com/assets/images/autogen/clearpixel.gif | http://www.wavecor.com/assets/images/autogen/clearpixel.gif | |  | Measuring conditions, impedance Driver mounting: Free air, no baffle,      back side open (no cabinet) Input signal: Semi-current-drive,       nominal current 2 mA Smoothing: None | | | |

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| http://www.wavecor.com/assets/images/autogen/clearpixel.gif | http://www.wavecor.com/assets/images/autogen/clearpixel.gif |
|  | **NOMINAL SPECIFICATIONS** |

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|  | |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | | **Notes** | **Parameter** | **FR084WA01** | | **FR084WA02** | | **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 | full range | | full range | | [kHz] | | *1, 4* | Sensitivity, 2.83V/1m (average SPL in range 200 - 8,000 Hz) | 87 | | 84 | | [dB] | | *2* | Power handling, short term, IEC 268-5, no additional filtering |  | |  | | [W] | | *2* | Power handling, long term, IEC 268-5, no additional filtering |  | |  | | [W] | | *2* | Power handling, continuous, IEC 268-5, no additional filtering |  | |  | | [W] | |  | Effective radiating area, Sd | 36 | | 36 | | [sq.cm] | | *3, 4, 6* | Resonance frequency (free air, no baffle), Fs | 113 | 109 | 114 | 110 | [Hz] | |  | Moving mass, incl. air (free air, no baffle), Mms | 3.45 | | 3.35 | | [g] | | *3* | Force factor, Bxl | 2.9 | | 3.65 | | [N/A] | | *3, 4, 6* | Suspension compliance, Cms | 0.58 | 0.62 | 0.58 | 0.62 | [mm/N] | | *3, 4, 6* | Equivalent air volume, Vas | 1.07 | 1.14 | 1.07 | 1.14 | [lit.] | | *3, 4, 6* | Mechanical resistance, Rms | 0.44 | 0.44 | 0.45 | 0.45 | [Ns/m] | | *3, 4, 6* | Mechanical Q, Qms | 5.6 | 5.4 | 5.3 | 5.2 | [-] | | *3, 4, 6* | Electrical Q, Qes | 0.96 | 0.93 | 1.10 | 1.06 | [-] | | *3, 4, 6* | Total Q, Qts | 0.82 | 0.79 | 0.92 | 0.88 | [-] | | *4* | Voice coil resistance, RDC | 3.3 | | 6.1 | | [ohm] | | *5* | Voice coil inductance, Le (measured at 10 kHz) |  | |  | | [μH] | |  | Voice coil inside diameter | 22 | | 22 | | [mm] | |  | Voice coil winding height | 7 | | 8 | | [mm] | |  | Air gap height | 3 | | 3 | | [mm] | |  | Theoretical linear motor stroke, Xmax | ±2 | | ±2.5 | | [mm] | |  | Magnet weight | 160 | | 160 | | [g] | |  | Total unit net weight excl. packaging | 0.37 | | 0.37 | | [kg] | | *3, 4, 5* | Krm |  | |  | | [mohm] | | *3, 4, 5* | Erm |  | |  | | [-] | | *3, 4, 5* | Kxm |  | |  | | [mH] | | *3, 4, 5* | Exm |  | |  | | [-] | |

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| http://www.wavecor.com/assets/images/autogen/clearpixel.gif |  |
|  | |  |  | | --- | --- | | *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), involving parameters Krm, Erm, Kxm, and Exm. This more accurate transducer model is described in a technical paper (PDF)* [*here*](http://www.wavecor.com/Transducer_equivalent_circuit.pdf)*.* | | *Note 6* | *After-burn-in specifications are measured at least 12 hours after exiting the transducer by a 20 Hz sine wave for 2 hours at level 2.83/4.0 VRMS (4/8 ohm version). Unit are not burned in before shipping.* | |

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| |  |  | | --- | --- | | http://www.wavecor.com/assets/images/autogen/clearpixel.gif | http://www.wavecor.com/assets/images/autogen/clearpixel.gif | |  | **OUTLINE DRAWING AND NOMINAL DIMENSIONS (mm)** | | |  |  | | --- | --- | | http://www.wavecor.com/assets/images/autogen/clearpixel.gif |  | |  | [FR084WA01/02 outline drawing](http://www.wavecor.com/FR084WA01_02_outline_drawing_PDF.pdf) | |

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| http://www.wavecor.com/assets/images/autogen/clearpixel.gif | FR084WA01-outline |

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|  | **TERMINAL NOMINAL DIMENSIONS (mm)** | | |  | |
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|  | | | FR084WA01_02-terminals | |  |