|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|

|  |  |
| --- | --- |
|  | 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 |

 |

|  |  |
| --- | --- |
| 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
 |

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

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

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|

|  |
| --- |
| FR084WA01-SPL-IMP-response |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|

|  |  |
| --- | --- |
| http://www.wavecor.com/assets/images/autogen/clearpixel.gif | http://www.wavecor.com/assets/images/autogen/clearpixel.gif |
|  | Measuring conditions, SPLDriver mounting: Flush in infinite     baffle, back side open  (no cabinet)Microphone distance: 1.0 mInput level: 2.83 VRMSSmoothing: 1/6 oct. |

 |

|  |  |
| --- | --- |
| http://www.wavecor.com/assets/images/autogen/clearpixel.gif | http://www.wavecor.com/assets/images/autogen/clearpixel.gif |
|  | Measuring conditions, impedanceDriver mounting: Free air, no baffle,     back side open (no cabinet)Input signal: Semi-current-drive,      nominal current 2 mASmoothing: None |

 |

 |

 |

|  |  |
| --- | --- |
| 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, SPLDriver mounting: Flush in infinite     baffle, back side open  (no cabinet)Microphone distance: 1.0 mInput level: 2.83 VRMSSmoothing: 1/6 oct. |

 |

|  |  |
| --- | --- |
| http://www.wavecor.com/assets/images/autogen/clearpixel.gif | http://www.wavecor.com/assets/images/autogen/clearpixel.gif |
|  | Measuring conditions, impedanceDriver mounting: Free air, no baffle,     back side open (no cabinet)Input signal: Semi-current-drive,      nominal current 2 mASmoothing: None |

 |

 |

 |

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

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

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **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 |   |   | [-] |

 |

|  |  |
| --- | --- |
| 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.* |

 |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|

|  |  |
| --- | --- |
| 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/assets/images/autogen/clearpixel.gif | FR084WA01-outline |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| http://www.wavecor.com/assets/images/autogen/clearpixel.gif | http://www.wavecor.com/assets/images/autogen/clearpixel.gif | http://www.wavecor.com/assets/images/autogen/clearpixel.gif | http://www.wavecor.com/assets/images/autogen/clearpixel.gif | http://www.wavecor.com/assets/images/autogen/clearpixel.gif | http://www.wavecor.com/assets/images/autogen/clearpixel.gif |
|  | **TERMINAL NOMINAL DIMENSIONS (mm)** |  |
|  |
|  | FR084WA01_02-terminals |  |