



Product Parameters and Specifications
Model: Legatia L831-3 Three-Way Component Set

Legatia™ L831-3

The Legatia™ L831-3 is an upgrade over the Legatia™ L631-3 component set, for those users with more room available to install a larger diameter and mounting depth midwoofer/subwoofer. The set begins with a pairing of the best small-format transducers Hybrid Audio manufactures, for the ultimate petite two-way component system above 200 Hz (the L31-2 two-way component system), paired with an extremely transient and detailed infinite baffle subwoofer. The L831-3 set is for those that want the ultimate small-format two-way front stage system, ideal for dashboard and a-pillar installation scenarios, with door or kick panel-mounted L8 infinite baffle subwoofers. The set begins with a pair of Legatia™ L1V2 tweeters, which accurately reproduce treble tones in the critical bandwidth of the set, in a small diameter 20mm soft-dome package. The L1V2 tweeter's small diameter ensures detail in the upper treble frequencies, and ensures easy installation with its nearly negligible mounting depth. The critical midrange bandwidth is effectively reproduced by the best 3-inch cone transducer on the planet, the Legatia™ L3. The L3 is the point-source driver in this set; the L3's frequency range covers more than five octaves in this component system for precise imaging and staging detail and placement, and vocal tonality unsurpassed with designs that filter the tweeter into the vocal bandwidth. The final component utilized in this incredible system is the Legatia™ L8 midwoofer/subwoofer driver. In this arrangement, the L8 is used strictly for midbass and subbass operation. The low moving mass, high Qts L8 ensures snappy attack and immediate decay of the frequencies below 200 Hz in infinite baffle operation, with extension into the *subsonic* bass frequencies. For virtually every user, this six-piece component system will be all you need for high-fidelity playback, without the need for a dedicated subwoofer, if installed properly.



Photo 1: L831-3 three-way component set. Tweeter is also available in brushed aluminum.



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Legatia™ L831-3 in more detail

The Legatia™ L831-3 is an exceptional three-way system that uses a combination of the Legatia™ L1V2 20mm soft dome tweeter, the Legatia™ L3, three-inch midrange, and the Legatia™ L8 large format 8.5-inch midwoofer/subwoofer. The L831-3 three-way system offers more robust bass performance over the L631-3 by virtue of the use of the L8 subwoofer, and represents a higher level of performance for those that can accommodate the larger midwoofer/subwoofer driver. Also, the L831-3 set provides improved power handling over the Legatia™ L61-2 set, and further offers a dedicated midrange driver for precise imaging, staging, and tonality. A very easy way to get a three-way system in your car using just a single 4-channel amplifier is detailed here: <http://hybrid-audio.com/White%20Paper%20-%203%20Way%20Quasi-Active%20Crossover%20System.pdf>. If you can accommodate the larger midwoofer, but still want the flexibility of the small midrange and tweeter pairing, this is the set for you.

Tweeter

The Legatia™ L1V2 is a 20mm (3/4-inch) dome-type tweeter which has a very good linear response and exceptional transient response. The design offers a wide dispersion pattern to make for flexible installation and speaker location, and the phase linearity of the design ensures phase coherent imaging and staging cues in the car audiophile system.

The L1V2 starts with an impregnated fine cloth silk dome diaphragm for a linear, smooth sound, with a treated silk surround to damp edge modes and resonances. The L1V2 is efficient, exhibits low distortion, and has a wide dispersion; the dome is of exceptionally low mass and has an extremely high power handling with the recommended filtering, or using the available two-way passive crossover system for the L31-2x component system. The L1V2 dome design is much less susceptible to mechanical deformation than other designs, and yet yields a smooth response over the extent of its range.

For more information about the L1V2 tweeter, please visit here: <http://hybrid-audio.com/Legatia%20L1V2.pdf>.

Midrange

The Legatia™ L3 has an outstanding extended frequency response; the usable frequency range of this driver exceeds six octaves. It is the ultimate small-diameter point-source midrange driver and reproduces the majority of the audible spectrum in this system.

The Legatia™ L3 is a 74mm (2.9-inch) cone-type wide-bandwidth midrange; the cone is an untreated pressed paper with extremely low moving mass. The cone design offers a wide dispersion pattern to make for flexible installation and speaker location, and the phase linearity of the design ensures phase coherent imaging and staging cues in the car audiophile system. You will find no composite or metal cone materials used in our upper-end designs, as our approach to point-sourcing is to allow the midrange or midbass driver to effectively play into treble frequencies. The paper cone is critical to tame unwanted cone modes, resonances, and the classic "cone breakup" associated with all composite and most polypropylene cones, but still be rigid enough for upper midbass attack. The "point source" design ensures stable stereo imaging across the fundamental frequencies which define image placement and definition. The paper cone is mated with just the right dust cap to ensure desired operation into the upper midrange and lower/mid treble frequencies; the dust cap is also an untreated black pressed paper. Rounding out the face of the driver is an inverted high-loss rubber surround that, in concert with the spider, provides the compliance needed for this 2.9-inch



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midrange to play upper midbass frequencies. You'll also know a higher-end Hybrid Audio midrange and midbass design by its inverted surround; this design feature allows for the use of a smaller height grille, and more flexibility in mounting options.

The motor of the design is conventional dynamic and very complimentary, utilizing a 1-inch voice coil, ferrite magnet, and a unique T-yoke to improve the speaker's power handling. The basket is a high-quality cast aluminum design, and contains a 93mm wide flange providing for the mounting of the driver via four screw holes (the use of 3mm cap head screws is ideal). The overall dimensions of the driver are very amenable for use in the car audio environment, boasting a depth of just 46mm, for the ultimate in mounting flexibility. The terminations are standard spade terminals which have been gold plated to optimize contact, and give the end user flexibility in low-temperature soldered options and crimp terminations.

Mechanical and electrical parameters are amenable to a variety of different installations and speaker locations. The high Qts and low Mms of the driver will allow it to be used in a purely infinite baffle configuration. Hybrid Audio and select Team Hybrids competitors have also had great success using this driver in a dipole configuration, a.k.a. completely "free-air", in larger vented enclosures, arrays, and in folded horns and transmission lines. It is important to note that sealed enclosures are not required; in fact, the L3 works optimally in areas where a large volume of area is available, such as in kick panel, floor boards, or foot wells, underneath dashboards, etc. You do not have to build enclosures for these speakers to perform as intended; a simple baffle attached to the car's chassis with available airspace at the rear of the baffle is all that is required; this driver quickly solves the universal installation quandary of having to build enclosures for car stereo speakers. Finally, the size of the unit allows it to be mounted in locations previously unheard of with other speakers. This driver can be mounted on a-pillars, in dashboards or kick panels, or anywhere your imagination takes you, as long as there is adequate airspace behind the driver to allow it to maintain proper damping and acoustic suspension.

Midwoofer/Subwoofer

The Legatia™ L8 is a 215mm (8.5-inch) subwoofer/midwoofer driver to compliment this dedicated three-way front stage system design. The Legatia™ L8 is a cone-type driver consisting of a treated pressed paper diaphragm with low moving mass for fast, transient response. The cone design offers a wide dispersion pattern to make for flexible installation and speaker location. However, because of this driver's specific design function as a subwoofer and midwoofer in expanded three- and four-way designs, its bandwidth was purposely left more limited than that of its smaller siblings.

Like other Legatia™ midrange and midbass designs, you will find no composite or metal cone materials used on the L8. The purpose for this design philosophy is to ensure a light moving mass cone, and optimized Qms for door, floor-board, and kick panel mounting, to ensure subbass extension without the need for a sealed enclosure. The light cone further helps to make the L8 a transiently "fast" driver which accurately reproduces complex musical passages with ease.

Rounding out the face of the driver is an inverted high-loss rubber surround that, in concert with the spider, provides the compliance needed for the L8 subwoofer to adequately and authoritatively present a real sense of "bass up front" in three-way front stage systems, or the front-stage midbass reinforcement to a dedicated subwoofer system. Additionally, the L8 lends itself well in the role as the dedicated subwoofer for trunk mounting/rear deck, rear quarter panels, etc. in three- and four-way systems.



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The basket is a high-quality cast aluminum design, and contains a 215mm wide flange providing for the mounting of the driver via four screw holes (the use of 4mm cap head screws is ideal). The overall dimensions of the driver are very amenable for use in the car audio environment, boasting a depth of just 92mm for the ultimate in mounting flexibility. The terminations are 5-way binding posts which have been gold plated to optimize contact, and give the end user flexibility in tinned wire or binding post terminations.

Mechanical and electrical parameters are amenable to a variety of different installations and speaker locations. The high Qts and low Mms of the driver will allow it to be used in a purely infinite baffle configuration. Hybrid Audio and select Team Hybrids competitors have also had great success using this driver in larger vented enclosures, folded horns and transmission lines. It is important to note that sealed enclosures are not required; in fact, the L8 works optimally in areas where a large volume of area is available, such as in kick panel, floor boards, or foot wells, underneath dashboards, etc. You do not have to build enclosures for these speakers to perform as intended; a simple baffle attached to the car's chassis with available airspace at the rear of the baffle is all that is required; this driver quickly solves the universal installation quandary of having to build enclosures for car stereo speakers. Finally, the size of the unit allows it to be mounted in typical locations within a vehicle, including kick panels, floor boards, and door panels, as long as there is adequate airspace behind the driver to allow it to maintain proper damping and acoustic suspension.

The Legatia™ L8 is precisely what the car audiophile wants in a small format subwoofer driver, that is small enough to place virtually anywhere, but robust enough for the most discerning bass aficionados. At home in virtually any arrangement, the L8 is Hybrid Audio's flagship subwoofer driver, boasting exceptional performance and a design philosophy that goes hand in hand with true high-fidelity playback.

Summary

The Legatia™ 831-3 is an upgrade over the L631-3 for those that can accommodate the larger midwoofer. The small midrange allows it to be mounted infinite baffle virtually anywhere in a car environment. The treble is smooth and warm. And the midwoofer produces bass and subbass that satisfies even the most discerning low-frequency aficionados.