



Product Parameters and Specifications
Model: Legatia L841-3 Three-Way Component Set

Legatia™ L841-3

The Legatia™ L841-3 is the very best three-way large-format component system will build from a full-feature perspective, without the strict necessity of dedicated subwoofer(s). The Legatia™ L841-3 is an incredible three-way component system which pairs the Legatia™ L1V2 tweeter with an ultra wide-bandwidth and tonally correct midrange driver, known as the Legatia™ L4, and the transient L8 midwoofer/subwoofer. Like its smaller sibling the Legatia™ L641-3, the L841-3 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 that fits in the palm of your hand. The L1V2 tweeter is a small diameter impregnated silk soft-dome high frequency driver which can be listened to for hours without listener fatigue typical of metal dome drivers, and drivers with larger moving mass and larger diameter. The L1V2 tweeter reproduces treble in a way that must be heard to be believed. The dedicated midrange driver in this component system is the Legatia™ L4, one of the widest bandwidth, and best-sounding 4-inch midranges on the market today; our crowning achievement. The L4 was developed after two years of rigorous real-world testing, against designs costing up to six times as much as the L4 model. 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 configuration, with extension into the subbass frequencies. If you can accommodate the larger L4 midrange over the L3 midrange, and the larger L8 midwoofer over the L6 midbass, this component system is for you; it is the best large-format component system we make.



Photo 1: L841-3 three-way component set. Tweeter is also available in brushed aluminum.



Product Parameters and Specifications
Model: Legatia L841-3 Three-Way Component Set

Legatia™ L841-3 in more detail

The Legatia™ L841-3 is the best large-format three-way component system we build in this line. It takes the awesome L831-3 system and improves upon it with the more sensitive L4 midrange. This system utilizes a combination of the Legatia™ L1V2 20mm soft dome tweeter, the Legatia™ L4, 4.65-inch midrange, and the Legatia™ L8 large format 8.5-inch midwoofer/subwoofer. The L841-3 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 as well by virtue of the use of the L4 midrange. Also, the L841-3 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 and larger dedicated midrange, this is the ultimate three-way component system.

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™ L4 is a very unique driver that satisfies a need in the high-end car audio community for a small diameter, super wide-bandwidth midrange driver for the ultimate in point-source midrange applications. The Legatia™ L4 is a 118mm (4.65-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. What makes the L4 different than the L3 is the addition of a phase plug pole piece extension at the center of the cone. The highest frequencies of audio emanate from the area around the center of the cone and the lower frequencies are produced by the area of the cone that is farther from the center. Due to the shape of a conventional loudspeaker cone, the higher frequency sound waves tend to collide at a focal point, causing phase distortion. The phase plug pole piece extension improves the L4's performance and clarity by deflecting delicate midrange and treble tones forward of the driver, while minimizing distortion and improving the driver's ability to reproduce a wider bandwidth; this is the reason why the L4 has an extremely wide bandwidth into the upper treble frequencies.

You will find no composite or metal cone materials used on the L4, 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



Product Parameters and Specifications
Model: Legatia L841-3 Three-Way Component Set

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. 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 118mm midrange to play middle and 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 118mm wide flange providing for the mounting of the driver via four screw holes (the use of 3 - 4mm screws is ideal). The overall dimensions of the driver are very amenable for use in the car audio environment, boasting a depth of just 54mm, just 8mm more than the L3, 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 L4 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 in some cases a-pillars and dash pods, as long as there is adequate airspace behind the driver to allow it to maintain proper damping and acoustic suspension.

The Legatia™ L4 might be slightly larger than the famed L3, but its performance makes up for the larger footprint area. If you can fit the larger L4 midrange, it is well worth your time to utilize this driver. In our unabashed opinion, it is the best 4-inch car audio midrange on the market today. Our years of developing and refining drivers to win world championships can now be yours for your own vehicle!

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



Product Parameters and Specifications
Model: Legatia L841-3 Three-Way Component Set

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.

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 4-5mm 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™ 841-3 is an upgrade over the L831-3 for those that can accommodate the larger midrange. Make no mistake, this is our best large-format three-way component system. The treble is smooth and defined, the midrange is tonally correct and dynamic, and the subbass is refined, fast, and articulate. This set is an exceptional performer.