

ENVIRONMENTAL CHARTER

INNOVATION & SUSTAINABLE PERFORMANCE

Since 1984, L-Acoustics has joined innovation with efficiency and reliability - a philosophy that resists fads and trends, making it an environmentally conscious company by nature

V-DOSC was the first loudspeaker system based on L-Acoustics' Wavefront Sculpture Technology®. Manufactured for over 22 years and still used today, it pioneered the path for modern and ecological sound system solutions. It created a better musical experience with reduced noise pollution by focusing acoustic energy on the audience with laser-like accuracy. Less material was needed to achieve superior acoustic performance, which substantially decreased the weight and size of systems for packaging, transportation, and setup.

L-Acoustics introduced the first modern line array in 1992 with V-DOSC. This milestone ignited a pardagm shift: the "wall of sound" configurations, status quo for concerts at the time, disappeared as manufacturers adopted the new line array technology as the industry standard.

For over 30 years, L-Acoustics has continued to develop new innovative areas of expertise while creating efficient and environmentally friendly products.

ACOUSTICS



- **1992:** waveguides (DOSC) - increased the projection of acoustic energy and reduced system size and weight (-40%)
- **2008:** laminar vents on SB28 and subsequent subwoofers - reduced vent turbulence and increased subwoofer efficiency by 80%
- **2013:** Panflex - asymmetric acoustic pattern control - reduced noise pollution
- **2016:** Kiva II - loudspeaker power doubled for the same amount of material used - two times less loudspeakers needed for an equivalent sound quality
- **2017:** Syva - "colinear technology" - small footprint with wide coverage = reduces the number of loudspeakers by 4 for equivalent audience coverage

ELECTRONICS



- **2007:** amplified controllers LA4 and LA8 upgraded with Class D technology - higher efficiency (up to 90%), smaller volume (rack space) and less weight in trucks
- **2016:** PFC applied to LA12X - lower electrical consumption for similar power output

MECHANICS



- **2002 (since):** computer design of metal and wood rigging parts to minimize weight (initiated with Kudo and K1 products then widely used for K2 rigging parts design)
- **2008 (since):** 1st with K1 - optimized rigging, necessitating fewer operations
- **2013:** engineered wood panels since K2 - reduced enclosure weight by 50%
- **2015:** X-series - curved wooden unit enclosures - reduced enclosure weight by 33%
- **2019:** A-series - curved wooden unit enclosures - reduced enclosure weight by 35%

SOFTWARE AND SOUND DESIGN



- **2004:** launch of Soundvision, an advanced and proprietary 3D sound design tool that optimizes system deployment by maximizing results with minimum equipment
- **2007:** implementation of the policy to frequently update firmware and software - stretching the lifespan of electronics
- **2008:** L-Acoustics subwoofer configurations (K1/K1-SB throw modes) - increased efficiency and reduced noise pollution
- **2016:** new L-ISA technology, hyperrealism and optimized source localization – improve the acoustic experience while decreasing the spectator's sound pressure
- **2018:** Autosplay & Autofilter - optimize audience area coverage & sound design
- **2018:** Global implementation of Milan and AVB[1] protocols - ability to pass digital audio and control to amplifiers through a single ethernet cable - significant reduction in copper, cabling, weight and material. Combined with M1 software, the P1 AVB processor can measure acoustic configuration to optimize system performance and minimize noise pollution during the system calibration and throughout the show.

[1] AVB (Audio Video Bridging): a set of technical standards which provides improved synchronization, low-latency, and reliability for Ethernet networks. To ensure interoperability between AVB devices, the Avnu Alliance (L-Acoustics is a member) developed device certification. Professional audio devices become Milan-certified.

QUALITY PRODUCT LIFESPAN

L-Acoustics speakers and amplifiers are innovative, qualitative, robust, and reliable. They can reach an impressive lifespan of over 15 years with regular use and maintenance, diminishing the need for disposal

STRONG INTERNAL STANDARDS & POLICIES

Our performance relies on strong internal standards and policies, specific product design, long-term supply of spare parts, and regular updates to continuously improve product efficiency and lifespan.

QUALITY, RELIABILITY, & CONTINUOUS IMPROVEMENT

- Ensure **high durability** due to strong resistance to weather conditions and intensive use conditions: specifications tested in internal or external labs (IP rating, UV rating, corrosion protection, temperature, power tests, etc.)
- Offer regular **upgrades to improve product efficiency** and yield
- Perform frequent **upgrades to firmware and software** to stretch the lifespan of products (linked to regular reliability analyses)
- **Provide service for legacy products** no longer in production (products 10 years and younger)
- Favor **retro-compatibility** for **software** and **electronics** suitable for all loudspeakers, incl. legacy systems - e.g., LA8 amplified controller



The combination of Soundvision and LA Network Manager provides users with smart tools to optimize acoustic levels and limit the over-exposure of audiences.

EUROPEAN PRODUCTION & SOURCING

95% of L-Acoustics suppliers are European with parts locally sourced to minimize the environmental impact by reducing fuel emissions, which guarantees product quality, contributes to the local economy, and promotes companies that utilize fair labor laws.

All L-Acoustics Group R&D, Production, and Assembly sites are located in Europe, minimizing the carbon footprint of the Production/Assembly process:

- **R&D Labs:** France, UK and Germany
- **Loudspeaker Assembly:** France
- **Joinery:** France
- **Fine Precision Sheet Metal:** France
- **Electronics Assembly:** Germany



L-Acoustics Key External Suppliers are also European:

- **Speaker Parts:** Europe
- **Birch Plywood:** Nordic countries
- **Printed Circuit Boards (PCB):** Europe

KEY CERTIFICATIONS

All materials and treatments of L-Acoustics loudspeakers and amplified controllers are fully compliant with the latest version of REACH (liquids, glue, paint) and current ROHS Directive.

Sourced wood is compliant with:

- **PEFC** (Program for the Endorsement of Forest Certification)[2]: L-Acoustics sources wood from 100% PEFC-certified suppliers (4500 trees replanted since 2010 to compensate for wood acquired), and participates in a reforestation program in France.
- Composite wood panels are compliant with **EPA TSCA Title VI** (Toxic Substances Control Act)
- Birch plywood suppliers are certified **ISO 14001**

[2] PEFC endorses national forest certification systems developed through multi-stakeholder processes and is tailored locally. It provides forest owners with a tool to demonstrate their responsible practices while empowering consumers and companies to buy sustainably.

RECYCLING & CARING FOR THE ENVIRONMENT

L-Acoustics promotes sustainable sourcing, energy savings and implements a firm recycling policy at every part of its organization and industrial processes, both internally and externally

ENERGY SAVINGS

- Modern and well-insulated buildings with motion-activated light sensors[3] and smart temperature control devices[4]
- 100% Green Electricity Suppliers: Solar/Hydro/Wind[4]
- Block Heat and Power Plant covering basic electrical power and heating and Gas Condensing Boiler (efficiency 90%)[4]
- Gradual replacement of hydraulic punching and folding machines with electric versions to reduce electrical consumption (20%) and avoid recycling (oil and filters)[5]
- Use of fiber lasers (vs. CO_2 lasers) minimizing power consumption by 20%[5]
- Car fleet exclusively composed of hybrid or electric vehicles[7]
- Electric chargers available in car parks for our employees' private electric cars[3,5]
- Paperless strategies (e.g., supply transactions mainly conducted through smartphones)[3]

RECYCLING & WASTE MANAGEMENT

- Recycled material incorporated in L-Acoustics products[8]
- Use of recycling material for one-way pallets
- Recycling: wooden pallets and waste, plastic, cardboard, paper management systems[7]
- All metallic parts recycled thanks to paint free of Volatile Organic Content (VOC)
- Powder coating booth equipped with recycling system: 30% less powder waste[5]
- Favor water-based paint products[6]
- Bucket with tracking and traceability for reprocessing empty paint drums[6]
- Installation of air recycling in machining & painting room (heating savings)[6]
- Green waste removal for compost production[6]
- Limited use of plastic film in product packaging[7]
- Use of reusable packing and containers from main subcontractors[7]
- Recycling/waste management of computer equipment, consumables, liquid products, discarded electronic boards and speakers from production and customer service[7]

L-Acoustics local customers and product users can also **benefit from our registration with the WEEE** (Waste Electrical and Electronic Equipment) program in 19 countries. WEEE equipment that is only used in other than private households or is not usually used in private households (so-called B2B equipment*) may not be disposed via municipal collection centers.

To ensure the reuse, recycling and environment-friendly disposal, Customers can recycle old B2B equipment at no charge by using the WEEE return form and send it completed to customer.service@l-acoustics.com with the subject "WEEE B2B take-back for L-Acoustics". The service provided by L-Acoustics is generally a standard service of pickup on site.

Those countries are Austria, Cyprus, Czech Republic, Finland, France (n° FR025163_05TZGC), Germany (n° DE 47687626), Greece, Ireland (n° IE02798W), Israel, Italy (n° IT190300000011192), Latvia, Lithuania, the Netherlands, Poland, Portugal (n° PT101485), Spain (n° RII_AEE 6699), Sweden, Switzerland, and United Kingdom (n° WEE/MM4876AA). Additional countries will be eligible in the coming year.

FUTURE FORWARD

At L-Acoustics, we build innovative products that enrich people's lives through acoustical sound art. We also maintain environmental consciousness through recycling opportunities and program initiatives to minimize our environmental impact, all while increasing product performance. We build the future of sound, and thus do everything we can to prolong the planet's life cycle, just as we do with our loudspeakers and amplifiers for our customers.

[3] Headquarters; [4] Electronic; [5] Fine precision sheet metal; [6] Joinery; [7] All locations; [8] On a case by case basis

* In case of B2C situation, please contact customer.service@l-acoustics.com.