

Credo Audio Switzerland - Cinema LTM Pressemitteilung



Product launch: 12.04.2019, AXPONA, "Nirvana B".

Our latest loudspeaker model (Cinema LTM) will be presented for the first time at **Axpona 2019**. Together with **Van den Hul, VPI Industries, EMM Labs, Kimber Kabel** and **FalkenOhr** we show a system of superlatives in a large listening room (**Nirvana B**). The **European premiere** of this new loudspeaker will take place in May at the **high-end in Munich**. (further information will follow).

Naming:

LTM - behind such a designation for a loudspeaker one expects mostly some technical terms, creative creations of the marketing department. Not in this case.

LTM stands for "La Tour Maubourg". This was the project name for a very special job that we were allowed to carry out in Paris. For a gigantic audio system that meets the highest sound requirements, it was necessary to develop and build loudspeaker systems that can be described as uncompromising in every aspect.

Origin:

Over a period of two and a half years, the process of development and production took place. We had the opportunity to fundamentally investigate problems and develop unique solutions. The perfect basis for creating a completely new speaker as a spin-off.

Our goal:

Big listening room = big speakers = big sound? Well, unfortunately not with most large speaker systems currently available. The acoustic influences and the large hearing distance speak clearly against the use of classical point sound sources.

What we want to achieve:

- An extreme dynamic range
- Very low harmonic and modulation distortions
- A broad and homogeneous horizontal dispersion behavior
- A vertical cylindrical radiation behavior
- A correct acoustic perspective of the "sound-stage"
- A clean step and impulse response
- A linear frequency-response over the entire frequency range
- A linear and uniform impedance
- An ideal directivity-index „DI“

Technical overview:

The "Cinema LTM" is a passive filtered 3-way floor-standing speaker, with line-array technology. Each speaker comes with 32 ring radiator tweeters. A textile membrane with a diameter of 22 mm was installed in a special, extremely compact housing with neodymium drive. This allowed us to mount the tweeters extremely close to each other, which is absolutely essential for a high-performance line array. The distance is only 0.7 mm.

The fourteen high-end mid-woofers feature a 4" Kevlar diaphragm and a low-loss drive with neodymium magnets. We use our proprietary high-pass filters, so they play at very low-distortion even at high SPL and down to 100 Hz.

In addition, four passive 12" subwoofers with almost 60 mm stroke are installed per loudspeaker.

Thanks to our proprietary crossovers, the unique 4" mid-woofer and the special tweeter design, we were able to create a loudspeaker with incredible dynamic range, whose distortion values are extremely low.

Incidentally, unlike similar systems, it is easily possible to use virtually any high-end amplifier. Since the speaker is quite efficient and the impedance curve extremely linear, less powerful high-end amplifiers can be used.

The cabinet:

Especially the front, the assembly of the line-sources and their housing demanded our whole experience. The first prototypes were installed in aluminum fronts. Because the very small distances between the loudspeaker chassis and the high mechanical demands, aluminum seemed to be a good choice. But the strong resonances in the material turned out to be a no-go. Now we install a 12 mm (1/2") thick polymer plate, which is pore-free - since it is cast. The main component is bauxite, together with the other ingredients results in a very low-resonance material. The speaker chassis are clamped on to the back and additionally stabilized and stiffened with milled aluminum holders.

The cabinet is milled from 120 mm (4.7") hardwood. A well-known expression for this material also is "Panzerholz". The block is pressed from a total of 93 layers of sanded beech wood. The achieved strength is enormous and the volume weight is around 800 kg per m³ (1'764 lb. per ft³).

Technical specifications (further technical explanations below):

- Three way floor-standing speakers
- Line Array Enclosures: Sealed, mid-woofer & tweeter separated (optimized for low-compression)
- Subwoofer: Sealed (optimized for low-compression)
- Vibration-decoupled to the ground
- Tweeter: 32 x 22 mm coated textile dome, neodymium magnet
- Midwoofer: 14 x 4" fiber-glass cone (coated), neodymium magnet, low-loss suspension & drive
- Subwoofer: 4 x 12 "aluminum cone, double ferrite magnet, 60 mm stroke
- Crossover: Passive proprietary 3-way filters, coils: Mundorf CFC air-core, capacitors: Mundorf MCap Supreme EVO
- Crossovers are mounted vibration-decoupled
- Handmade by Credo Audio Switzerland
- Tuning: Closed (optimized for low-compression)
- Frequency response: 16 Hz - 20 kHz, +/- 2.5dB
- Bass roll-off: 20 Hz @ 0dB / 15 Hz @ -2.5dB / 14 Hz @ -10dB
- Efficiency: 85.5 dB @ 2.83V @ 1kHz @ 1m
- Linear impedance: nominal 8 ohms, minimum 3.8 ohms at 10 kHz, max 9.1 ohms @ 200 Hz
- Recommended amplifier power: For 95 dB at 1 m distance: 18 W
- Recommended amplifier power: For 95 dB at 4 m distance: 100 - 300 W RMS
- Weight: 155 kg (342 lb.) p.p. without packing
- Size: (H x D x W): 187 cm x 70 cm x 27 cm (73.6 x 27.5 x 10.6") incl. isolation feet

Includes brushed stainless-steel feet. Custom finishes available.

About us:

Credo Audio Switzerland is a family-owned company, based in Basel - Switzerland. We have specialized in designing high-performance loudspeakers, which are hand-made in-house in our manufactory.

The passion and love for music is what motivates us and what defines the performance-goal of our products. But also the joy for demanding and exclusive design. We meet the request for speakers that are subtle and modest, that will blend in perfectly into your environment.

Design:

We offer modernism and simplicity in the the design of our products. With attention to detail we select materials and define textures.

In a Credo speaker you'll find several very unique features and designs, developed and implemented over many years. We always focused on the highest goal in speaker-design, to reproduce all kinds of music and genres, without compromise.

Sustainability, uncompromising sound quality and longevity play a role as well as our principle: "Less can be more".

Made in Switzerland:

We manufacture our products. And for us that does not mean to do the final assembly of purchased parts which were produced in Far East.

The manufacture of loudspeaker terminals and circuit boards for crossovers or CNC milling and engraving, and much more is done here at the manufactory. All boards are also equipped by hand.

Also large parts made of MDF for speakers or aluminum for amplifiers are manufactured on our CNC milling machine.

A small team is responsible for the entire process, from the design, programming, milling to the to final assembly and quality inspection.

Problems with "line arrays":

We have real solutions for the problems existing with line arrays, which were developed for PA purposes (eg for concerts), and make them usable for home use. Unlike existing high-end line-sources, we have addressed the known problems of this technique, which include:

- Strong side lobes at low frequencies (200 Hz - 2 kHz)
- Level drop of high frequencies (also on axis!)
- Wavy and non-linear frequency response (off-axis)
- Very narrow horizontal listening range at high frequencies (+/- 5 ° above 8 kHz)

Convince yourself at a demonstration.

Cylindrical Waveform

Basically, a line of sources will create a wavefront of sound pressure that is cylindrical at particular range of wavelengths (frequencies).

It's idealized shape is actually like a section of a cake, and the wavefront surface area, as it expands only in the horizontal plane, doubles in area for every doubling of distance. This equates to a 3 dB SPL loss of level for every doubling of distance.

While with spherical sound propagation a loss of -6 dB SPL occurs for each doubling of the distance.

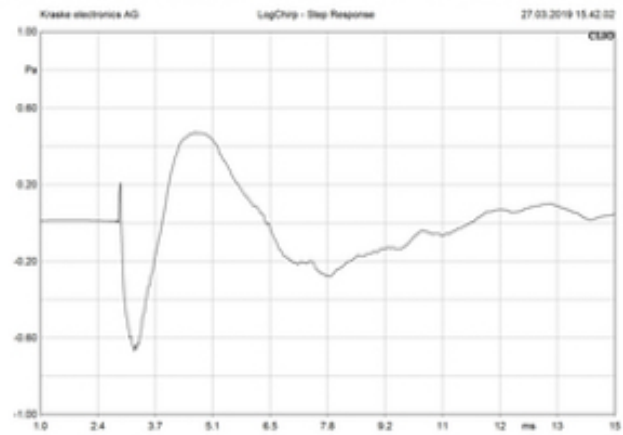
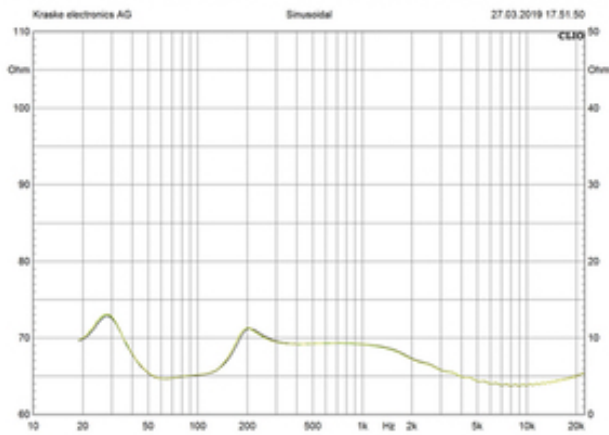
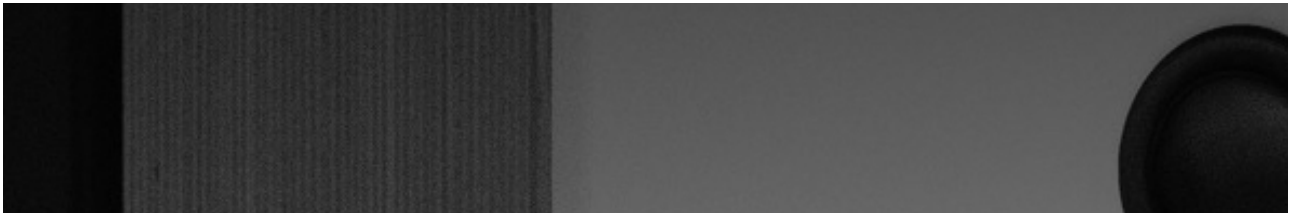
Line source vs. Point-source

To put it simple, the line-sound-source has a much better efficiency than the point-source with greater listening-distance. The drivers are stressed much less and you need less amplifier power.

A calculation example with our "Cinema LTM" yields the following result:

At a distance of four meters from the loudspeaker, 36 watts are required for 95 dB SPL (no headroom included).

A point-source with identical efficiency at one meter distance, but requires 143 watts at four meters to reach 95 dB SPL.



For more informations, come and visit us in **Nirvana B**. We'd be happy to talk to you. Or write to michael@credo-audio.ch to get more pictures or ask your questions. We'll have demo units available after the High-End 2019 in Munich. [Here you can load our logo and pictures.](#)

