

Auro-3D

Creating a new dimension in sound



Powered by Galaxy Studios & Barco



Get ready for a truly immersive sound experience

Auro-3D is the next-generation 3D sound format for the cinema industry. Developed by Galaxy Studios and powered by Barco, Auro-3D turns conventional cinema audio into a fully immersive 3D sound experience, with sounds coming from all around and above the listener.

Auro-3D at a glance

- Fully immersive 3D sound
- 100% backwards & forwards compatible
- Minimal hardware investment
- Commercially viable installation
- The perfect match for visual 3D

Fully immersive 3D sound

Auro-3D uses a 3D sound reproduction speaker layout, based on 3 axes (x=width, y=depth, z=height), to reproduce a stunning sound experience in 3D. Ambient sounds are truly coming from all around and above, providing moviegoers with the most true-to-life reproduction of sound. And there's more. In nature, listeners are surrounded by acoustic reflections: this acoustic information is essential in enabling the human brain to correctly position sound sources unconsciously. This is fundamentally different from (2D) surround sound, where speakers are positioned only in the horizontal plane – which does not allow sounds from objects or reflections to be reproduced in 3-dimensional space. To give the listener a fully immersive, completely natural sound experience, the height axes must be used in front, sides and back.

100% compatible with existing standards

Auro-3D improves the audio experience by making intelligent use of the headroom in today's audio standards. This means that the current formats and channels can still be used for content generation and distribution. No changes to SMPTE standards or the DCI specifications are required. As an exhibitor, you still receive 1 DCP containing the movie content. Your Auro-3D decoder will simply extract the extra sound information from the existing 5.1 or 7.1 track files, when present.

Easy, commercially viable installation

Auro-3D can easily be installed in new-built or existing theaters, in most cases utilizing components from your current audio system. According to your speaker layout, simply adding height speakers can bring real 3D audio to your theater. Moreover, Auro-3D sound processing is similar to, and compatible with, existing set-ups.



How to upgrade to Auro-3D

Find out what it takes to smoothly upgrade your theater's 2D sound architecture to the fully immersive Auro-3D sound technology on:

<http://www.barco.com/digitalcinema/Auro3dSurvey/>



Why Auro-3D?

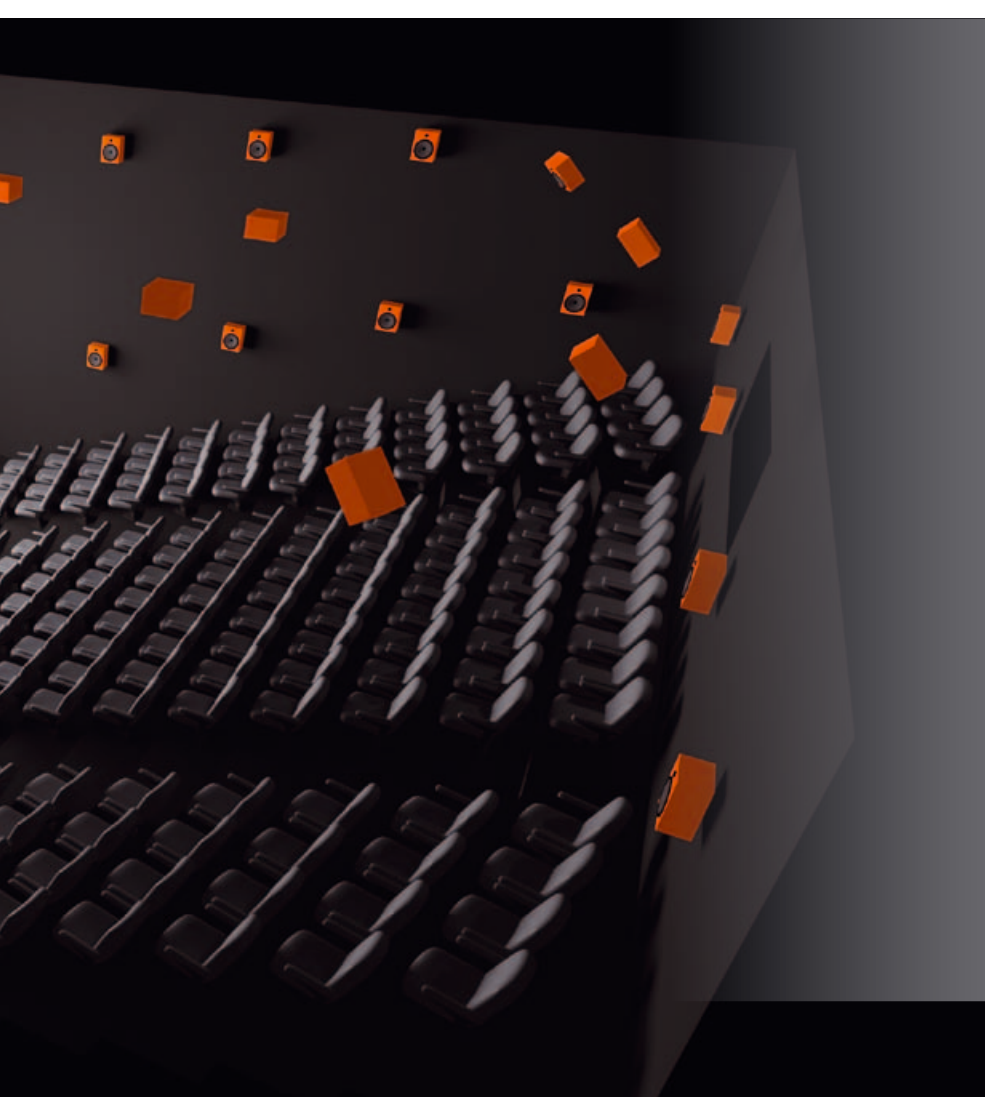
- Seamless integration and full compatibility with your current sound equipment
- Auro-3D is DCI-compliant, high quality equipment that meets security standards
- New capabilities in storytelling for producers
- Applicable for feature films and alternative content
- Ready to reproduce future audio

A perfect match for visual 3D

Since the introduction of 2-dimensional surround sound in the early 90s with the 5.1 format, the audio evolution in movie theaters has been virtually at a standstill. In the meantime, visualization has gone digital, enabling immersive visual 3D, while audio has stayed with an aging standard. Thanks to the introduction of Auro-3D things are changing. Combining standard 2D pictures with Auro-3D sound technology gives audiences a highly improved total film experience. This makes Auro-3D the perfect sound companion for visual 3D - creating a fully immersive '3D+3D' cinema experience.

A unique differentiator

Sound accounts for 50% of the movie experience. As moviegoers become more sophisticated and more demanding, they expect a truly unique experience when going to the movies. Auro-3D creates a unique differentiator - allowing you to maintain your premium 3D revenues and differentiate yourself from the competition.



Brought to you by Galaxy Studios

Auro-3D technology is brought to you under an exclusive co-partnership between Barco and Galaxy Studios. Driven by a passion for sound, Galaxy Studios has become the leading sound studio in Europe, with one of the first post-production facilities to support a full 4K workflow. Using the most advanced techniques in architectural design and post-production technologies, Galaxy works with the full range: from rock bands to symphonic orchestras and from feature films to advertising. The unique combination of Galaxy's history in sound with Barco's unrivalled expertise in digital cinema has produced the next-generation 3D sound format for the cinema industry.



Auro-3D technical specifications



Barco Auro-3D 11.1 audio system at Wangfujing Cineplex, China

Auro-3D decoder

The Auro-3D decoder is a 100% firmware based solution that is compatible with the most commonly used media block technologies on the market today. Once loaded onto the media block, the Auro-3D decoder is only activated when an Auro-3D codestream is present on the audio tracks of a DCP. If this is the case, the media block will automatically route the appropriate channels to the correct AES outputs and send them to the Barco audio processor. If a given DCP does not contain Auro-3D metadata, the media block will simply play back the standard 5.1 tracks.

Specifications	
Audio channels	11.1 or 13.1 decoding from a 5.1 or 7.1 DCP
Compression	Lossless

Auro-3D audio processor

The Auro-3D audio processor makes it possible to seamlessly switch from normal 5.1 playback to the Auro-3D 13.1 or 11.1 format, either automatically or at the push of a button. The audio processor is a co-development with existing industry leading providers of cinema audio processing technology. Due to the channel count and critical time alignment functions required for the calibrated playback of Auro-3D, existing audio processors are not compatible. The Auro-3D audio processor supports all existing interfaces required for a modern Digital Cinema B-chain, including 16 channels of AES inputs, non sync and a variety of alternative content sources including HDMI and SPDIF.

Auro-3D upmix processor

The Auro-3D upmix processor receives any audio source that has been identified by the user as alternative content and can be selectively upmixed to 11.1, regardless of how many channels or what the source is.

Leading exhibitors on three continents have already successfully installed Auro-3D.

For a demo at a site near you go to www.barco.com/Auro-3D

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The information and data given are typical for the equipment described. However any individual item is subject to change without any notice. The latest version of this brochure can be found on www.barco.com.

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