



IOSONO immersive sound systems  
Application catalogue



## **Barco's IOSONO for visitor attractions**

Infoversum Dome Theater (Netherlands, 2014)

"Björk" at Museum of Modert Art (U.S., 2015)

Energy, Education and Experience Center (Germany, 2015)



## **Barco's IOSONO for events**

"Neither" Opera (Germany, 2012)

Mercedes-Benz Fashion Week Berlin (Germany, 2012)

Franz Liszt's "Via Crucis" by Robert Wilson (Germany, 2012)



## **Barco's IOSONO for live shows**

"Carmen" for Handa Opera on Sydney Harbour (Australia, 2013)

Kraftwerk "The Catalogie 12345678" (UK, 2013)

North Bund Opera "La Traviata" (China, 2015)

Esonic3 Minsheng Art Museum's concert series (China, 2015)



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# Barco's IOSONO sound solutions for visitor attractions



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# Infoversum Dome Theater

Groningen, Netherlands, 2014

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## About

June 18, 2013 saw the opening of Infoversum, the first full dome 3D theatre in the Netherlands. The heart of the attraction is a 360-degree dome theatre that is equipped with an IOSONO immersive sound system.

Visitors enjoy films taking them to space, to the bottom of the ocean or back in time and experience a new dimension of movies, getting immersed in the sounds, images and stories. The dome theatre was equipped by Sky-Skan.

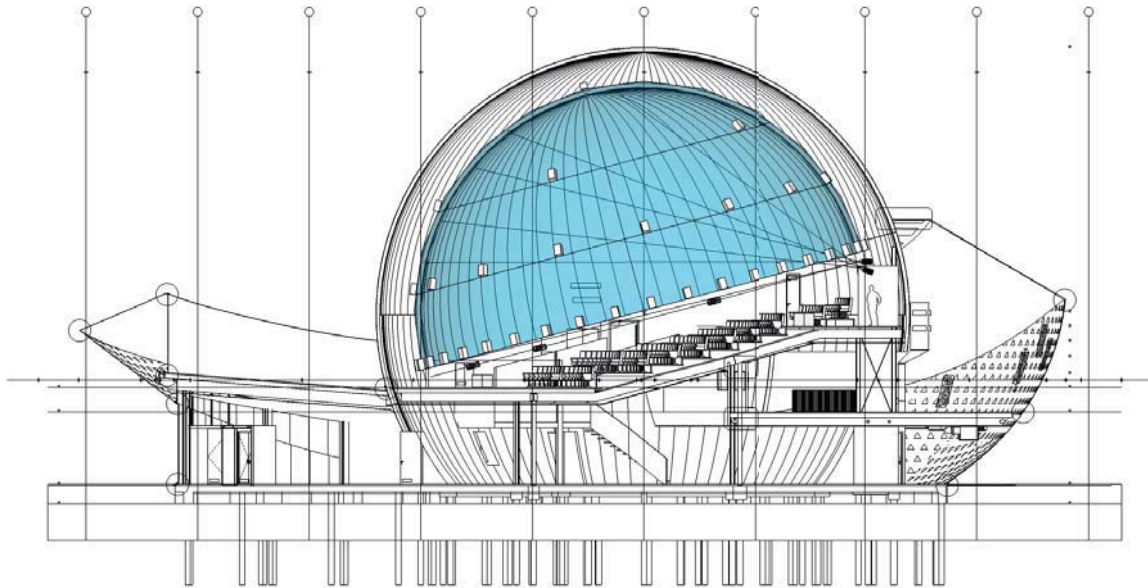
## Technical specification

**Processor:** IOSONO Spatial Audio Processor IPC100

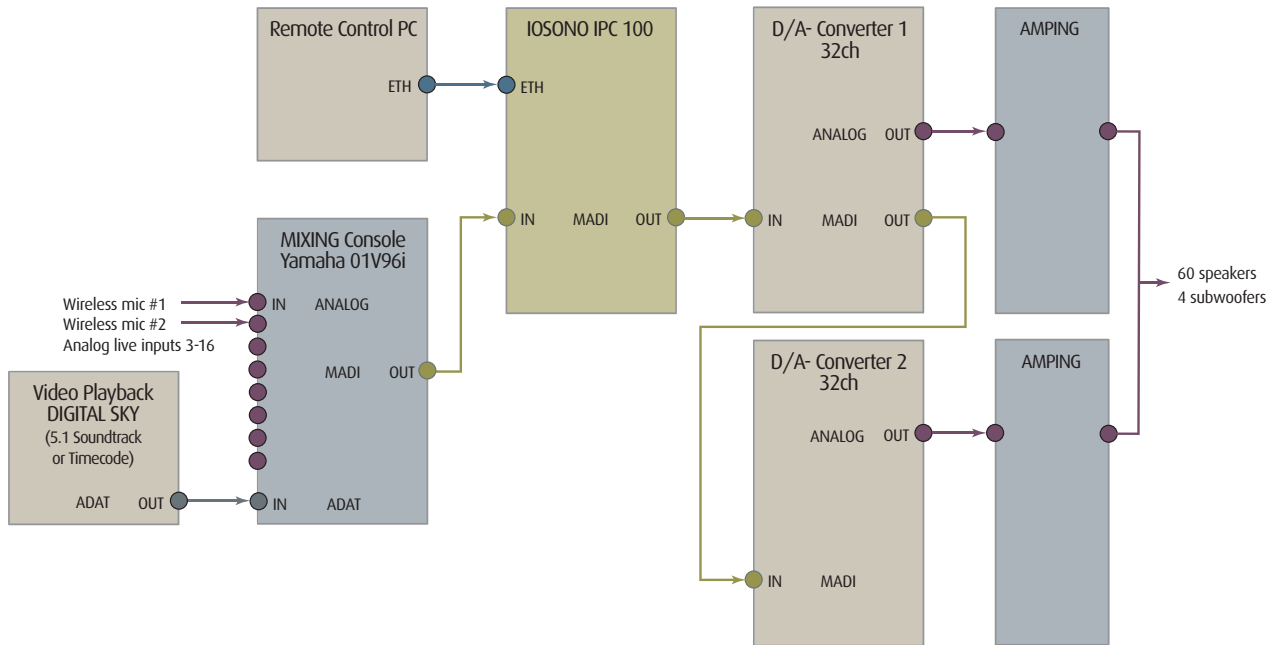
**60 speakers in a dome-shaped grid**  
type: QSC K8

**4 subwoofers**  
type: QSC KW 181

## System setup



## Signal flow chart



- TCP NETWORK (CAT5e)
- ADAT
- MADI OPTICAL (Fiber 50/125um)
- ANALOG

## Impressions



Find out more at <http://bit.ly/infoversum>

## Special feature

- dome theatre offers seating for an audience of more than 260
- system can also be used for live events (i.e. live band, speech)
- for receptions, concerts or other events, the seats can be removed to offer room for a standing audience of 400

“We have often used IOSONO sound systems for our high-end dome projects in the past. It’s an important addition to the visual technology we offer and guarantees a captivating visitor experience in all situations.”

Glenn Smith  
Managing Director, Sky-Skan Europe .



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# »Björk« at Museum of Modern Art

New York, U.S., March 2015

Barco's IOSONO sound solutions visitor attractions



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## About

Barco provided its IOSONO sound technology to create an immersive film and music experience for the Björk retrospective at MoMA. The show proceeded through Björk's career, concluding with a video for the song „Black Lake“, directed by Andrew Huang and played on two screens in a specially built room.

Vivid soundscapes plunged visitors into an immersive experience of Björk's work. The room's walls were covered with organic shapes by design studio The Living, matching the nature motifs from the Black Lake video. The sound was specially mixed for the IOSONO system by Marco Perry for Immersive Audio, Ltd.

## Technical specification

Processor: IOSONO CORE

### 25 ring speakers

type: Bowers & Wilkins CT8.2 and CT8.4

### 18 ceiling speakers

type: Bowers & Wilkins AM-1

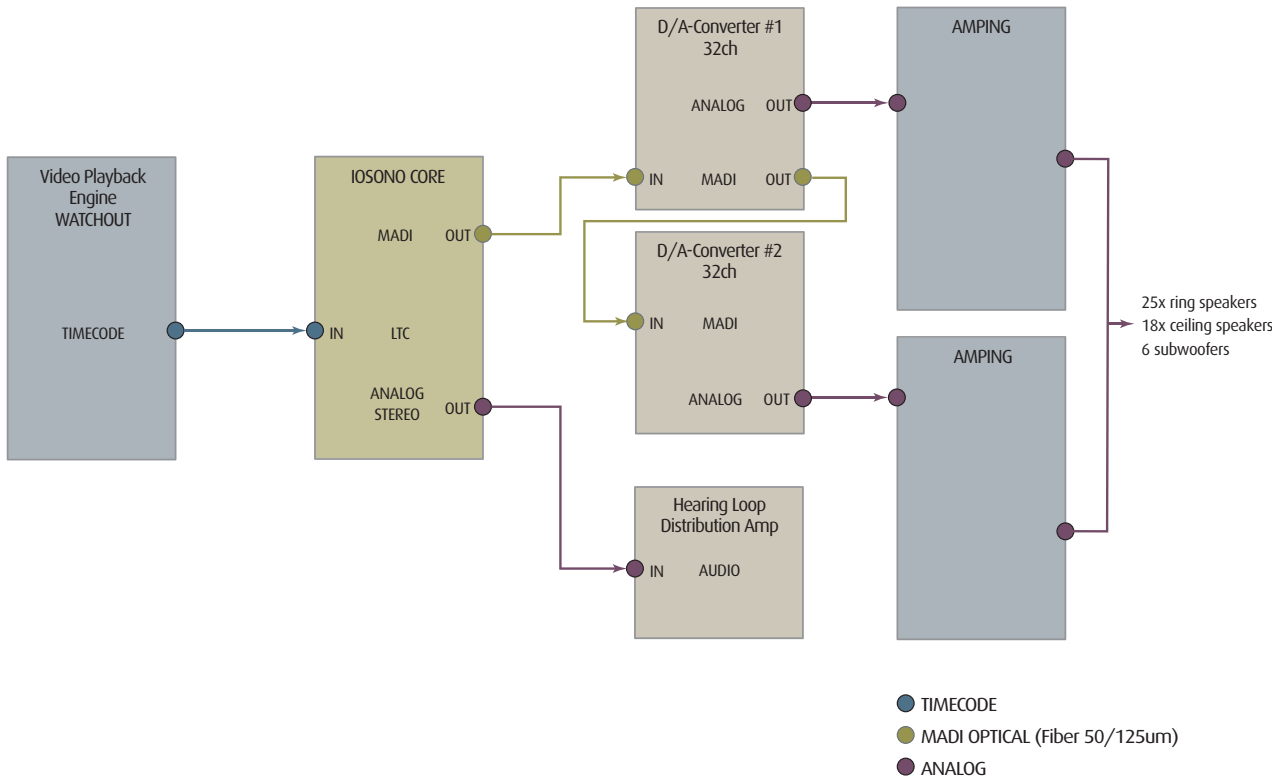
### 6 subwoofers

type: Bowers & Wilkins CT8 LR and CT SW15

## System setup



## Signal flow chart



## Impressions



Find out more at <http://bit.ly/bjork-moma>

## More performances

08 March to June 7 2015

New York, U.S.

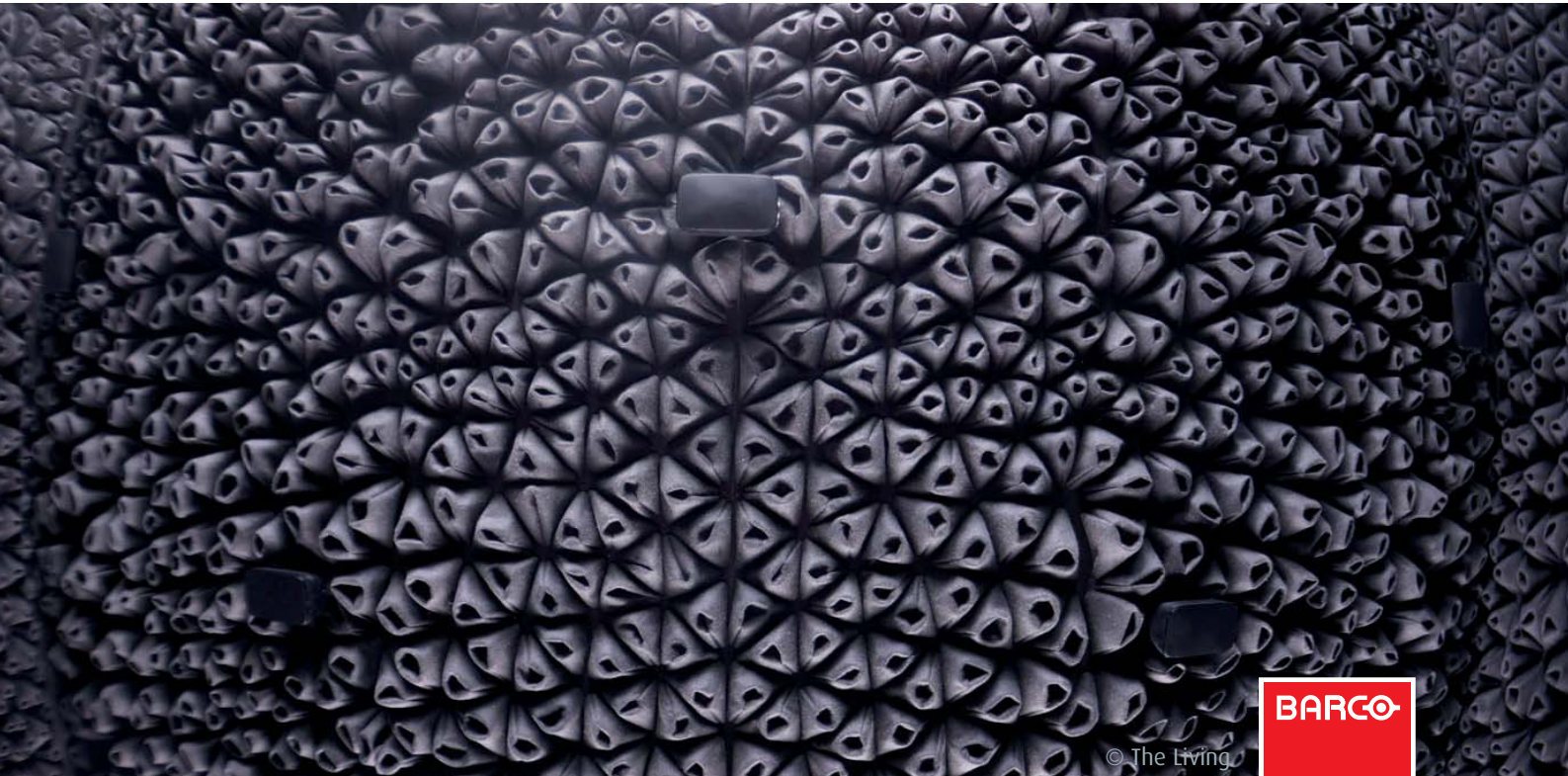


## Special feature

- Museum of Modern Art ran the exhibition from March 8 to June 7, 2015
- 2 screens, dual projection
- Hearing impairment / visual impairment (HI/VI) support

»This installation is a great example of Björk's dynamic vision, careful curation and attention to detail. The entire production team is very pleased to have created such an extraordinary media experience with our partners, and the spatial sound is a vital part of the concept.»

Andrew Melchior  
Chief Architect, Third Space Agency



© The Living

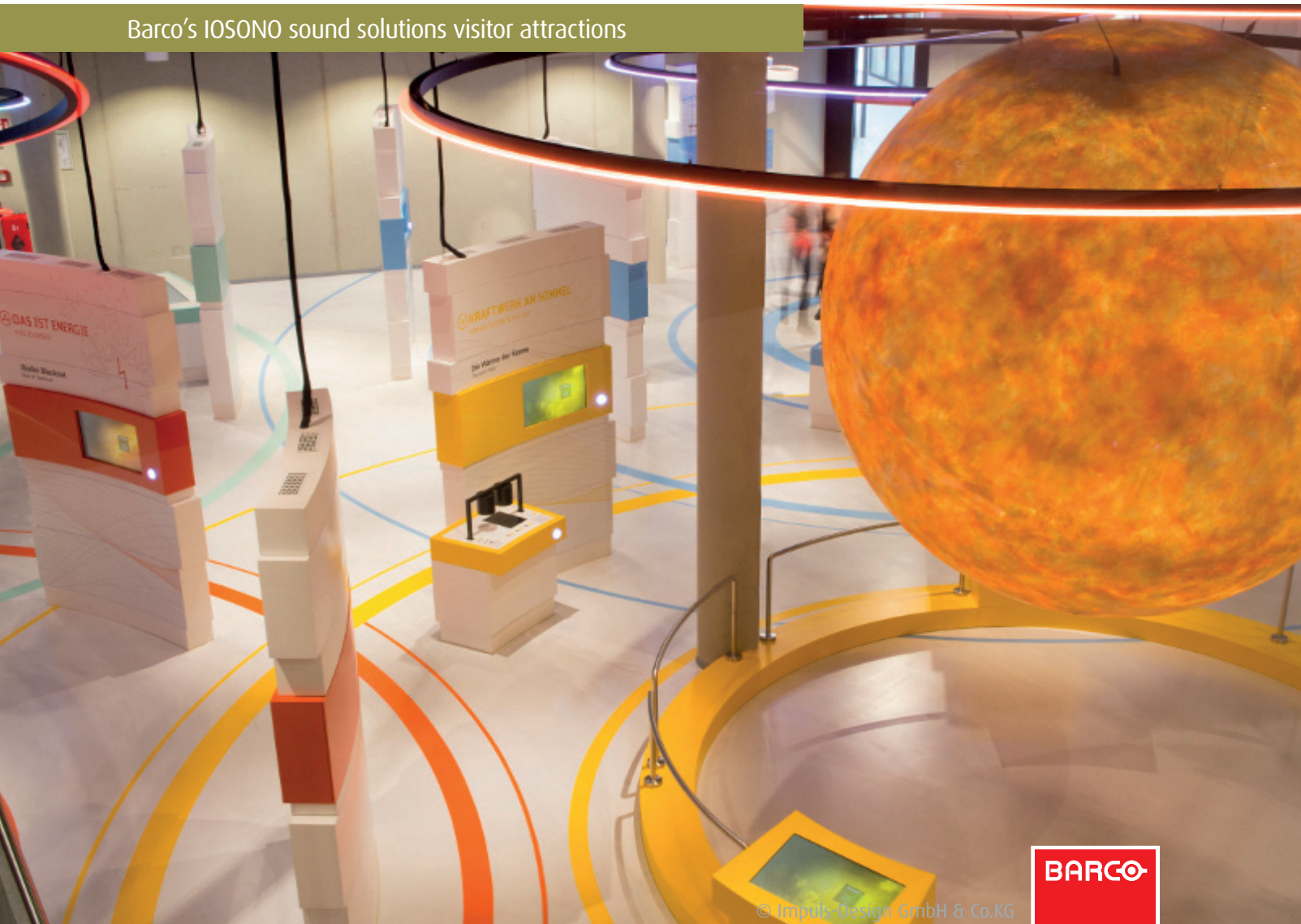
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# Energy, Education and Experience Center

Aurich, Germany, 2015

Barco's IOSONO sound solutions visitor attractions



© Impuls-Design GmbH & Co.KG



## Special feature

- '3D audio system' matches seamless 360-degree ceiling projection
- integrated into museum automation for smooth operations
- 3 layers of speakers for increased vertical localization

“With the energy tower, we really wanted to create a captivating experience, allowing our visitors to engage and feel the strength of energy. This would not have been possible with standard surround sound and we're impressed by the effects the IOSONO sound system adds to this part of our exhibition.”

Hardwig Kuiper  
City Council, Aurich



© Architekturbüro Tabery

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## About the project

In July 2015, the 'Energy, Education and Experience Center' (EEZ) opened in Aurich, Germany. A spectacular and emotional multimedia installation using Barco's IOSONO immersive sound solutions lets visitors experience the power of energy up close. Using new media tools to create an immersive and entertaining visitor experience, the EEZ aims to inform and educate tourists as well as researchers and students on topics like climate change and coastal protection.

An interactive exhibition spreading across 1,800 square meters allows visitors to experience the central theme of energy with all the senses. One of the exhibition's highlights is the so-called 'energy tower' that is equipped with an IOSONO immersive sound system by Barco.

## Technical specification

**Processor:** 1x IOSONO CORE AA (32 Channel AES)

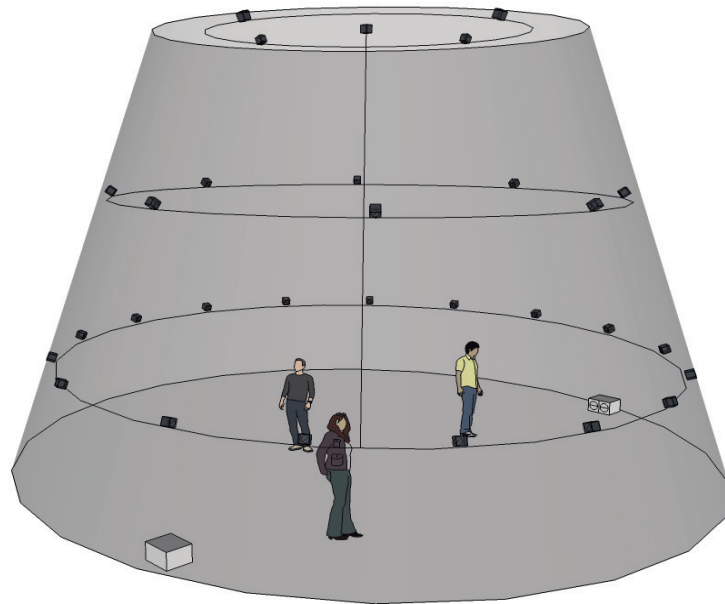
**17 speakers**  
type: Fohhn LS-10 ASX

**8 speakers**  
type: Fohhn LS-10 ASX

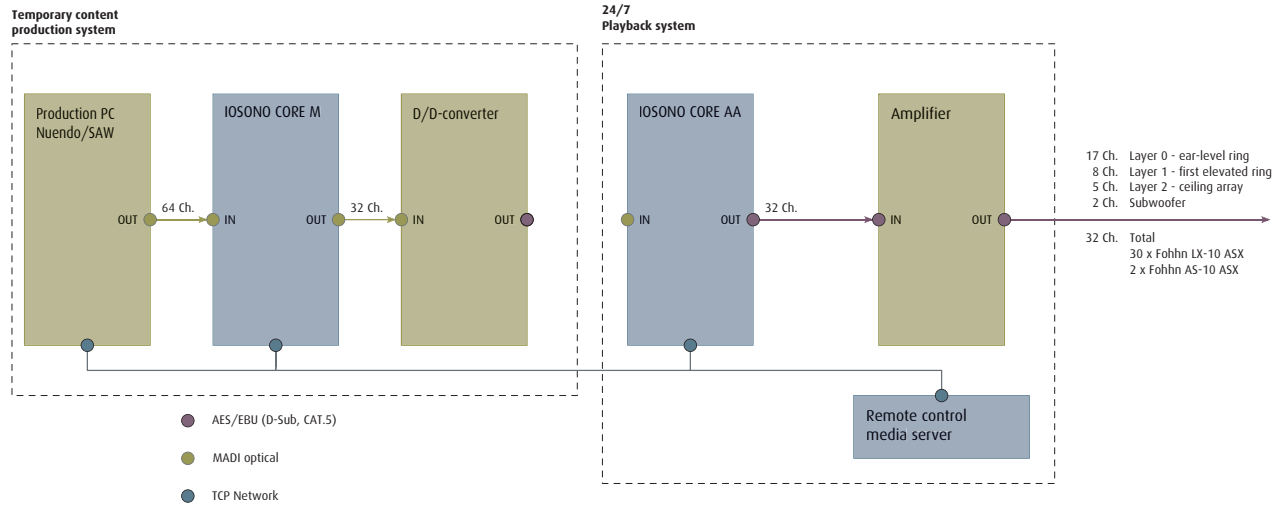
**5 speakers**  
type: Fohhn LS-10 ASX

**2 subwoofers**  
type: Fohhn AS-10 ASX

## System setup



## Signal flow chart



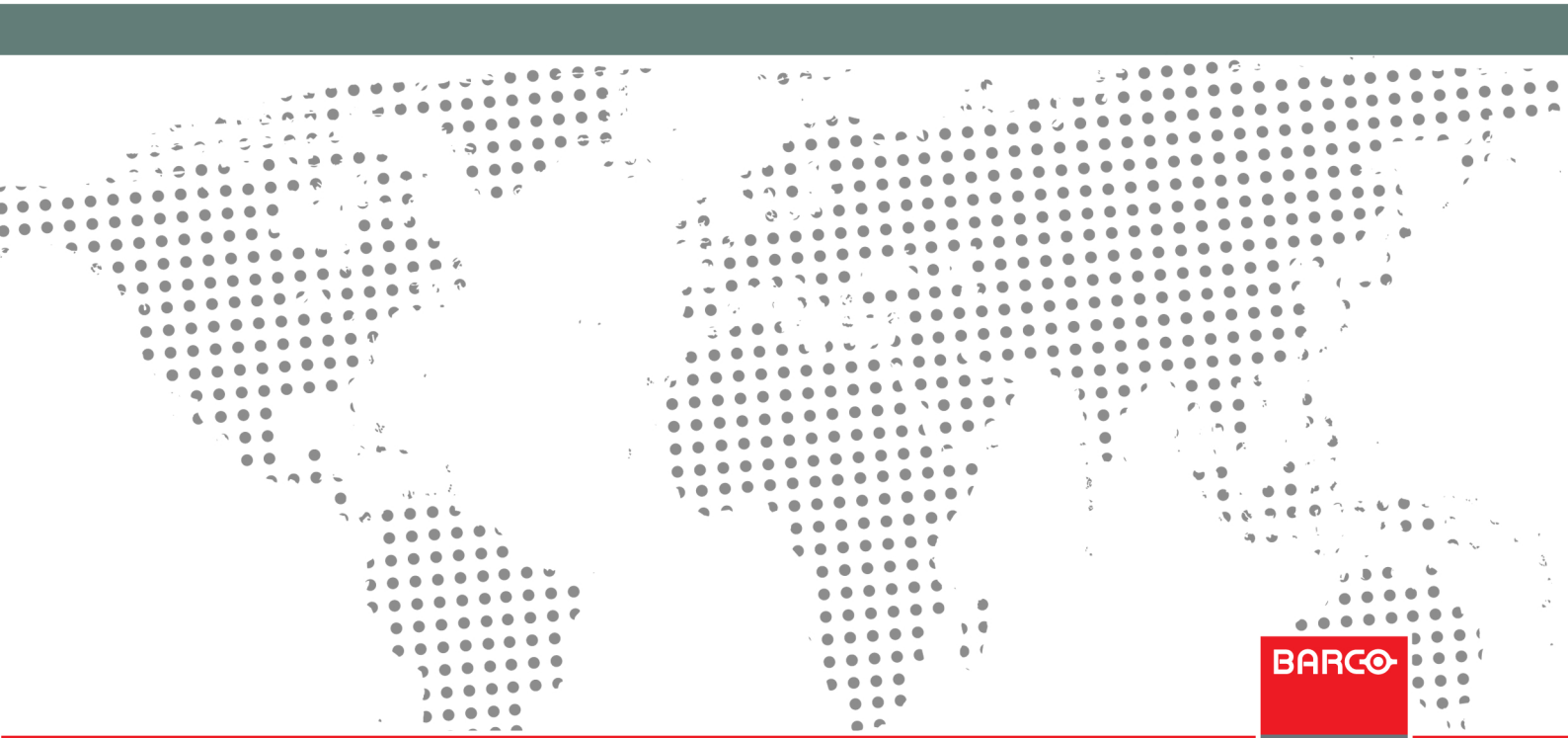
## Impressions



Find out more at [http://bit.ly/EEZ\\_Aurich](http://bit.ly/EEZ_Aurich)

© Impuls-Design GmbH & Co.KG (picture 1 & 2)

# Barco's IOSONO sound solutions for events



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# »Neither« Opera

Dresden-Hellerau, Germany, March 2012

Barco's IOSONO sound solutions for events



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## About

»Neither« is the world's first 3D audio opera, staged by the Berlin based artist group phase7. In-the-round staging and a unique LED encrusted cube 3 meters above the stage floor are the central design features to this mobile, self-contained roadshow. Instead of a conventional orchestra, a digitally programmed virtual orchestra, using the Vienna Sound Library, is mixed in IOSONO for an immersive audio experience to match the striking visual presentation.

Norwegian soprano, Eir Inderhaug is the only performer on stage. Synchronized with a click track to the IOSONO composition, she sings live from within the sonic landscape as a perfect counterpart to the virtual orchestra.

## Technical specification (Bergen)

Audience area (WxDxH): 21m x 16m x 3.50m

Central staging (WxDxH): 2m x 0.9m x 2m

Processor: IOSONO Spatial Audio Processor IPC100

### 64 speakers in a ring

type: Yamaha DSR112

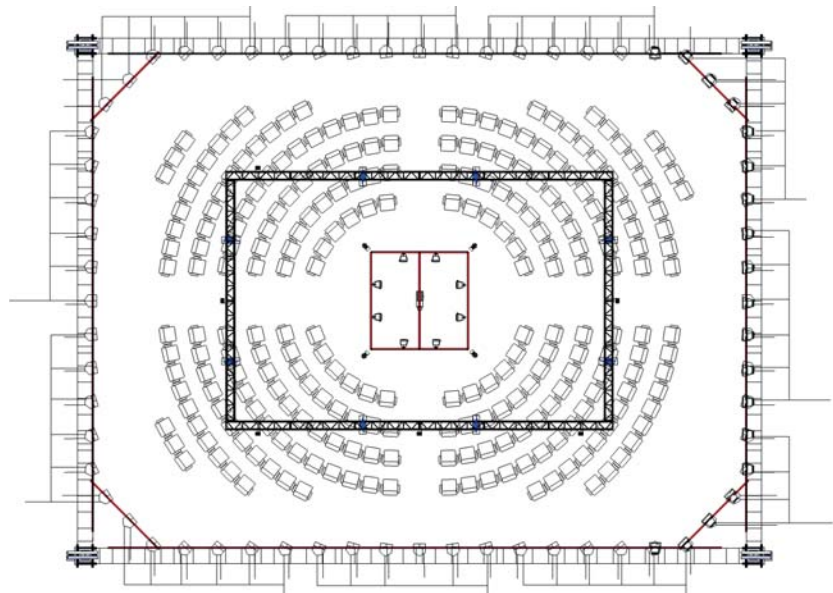
### 8 ceiling speakers

type: meyersound UPJ-1P

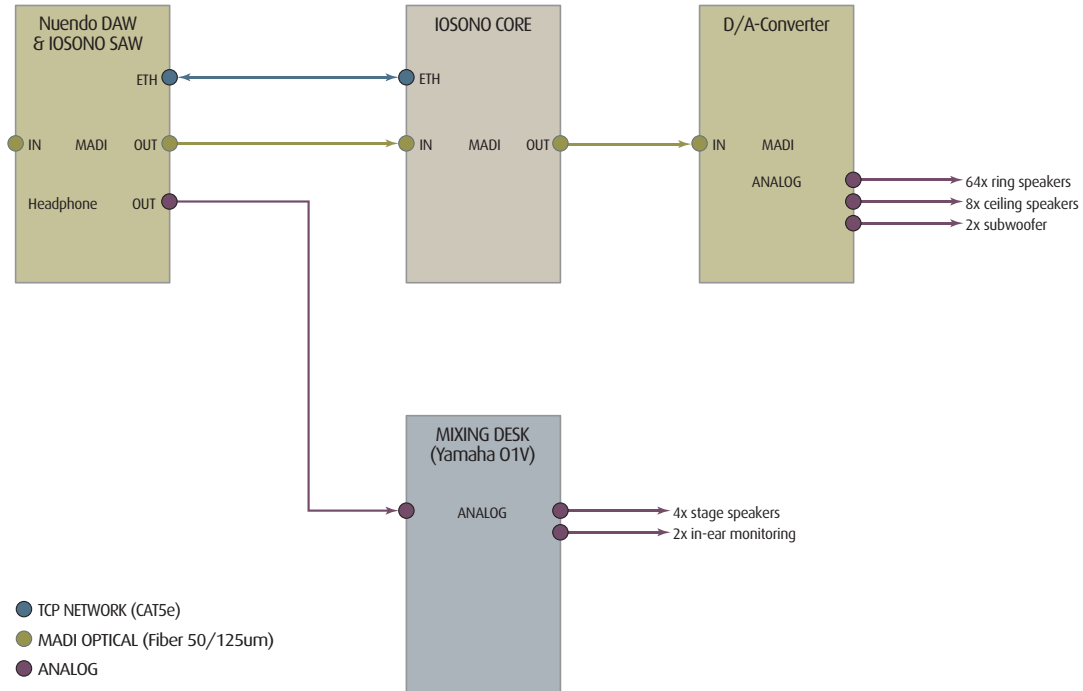
### 2 subwoofers

type: Dynacord COBRA PWH

## Simple system drawing



## Signal flow chart



## Impressions



Watch the whole video: <http://bit.ly/neither-video>

## More performances

### *July 2012*

Radialsystem V  
Berlin, Germany

### *November 2012*

New Vision Art Festival  
Hong Kong, China

### *May 2013*

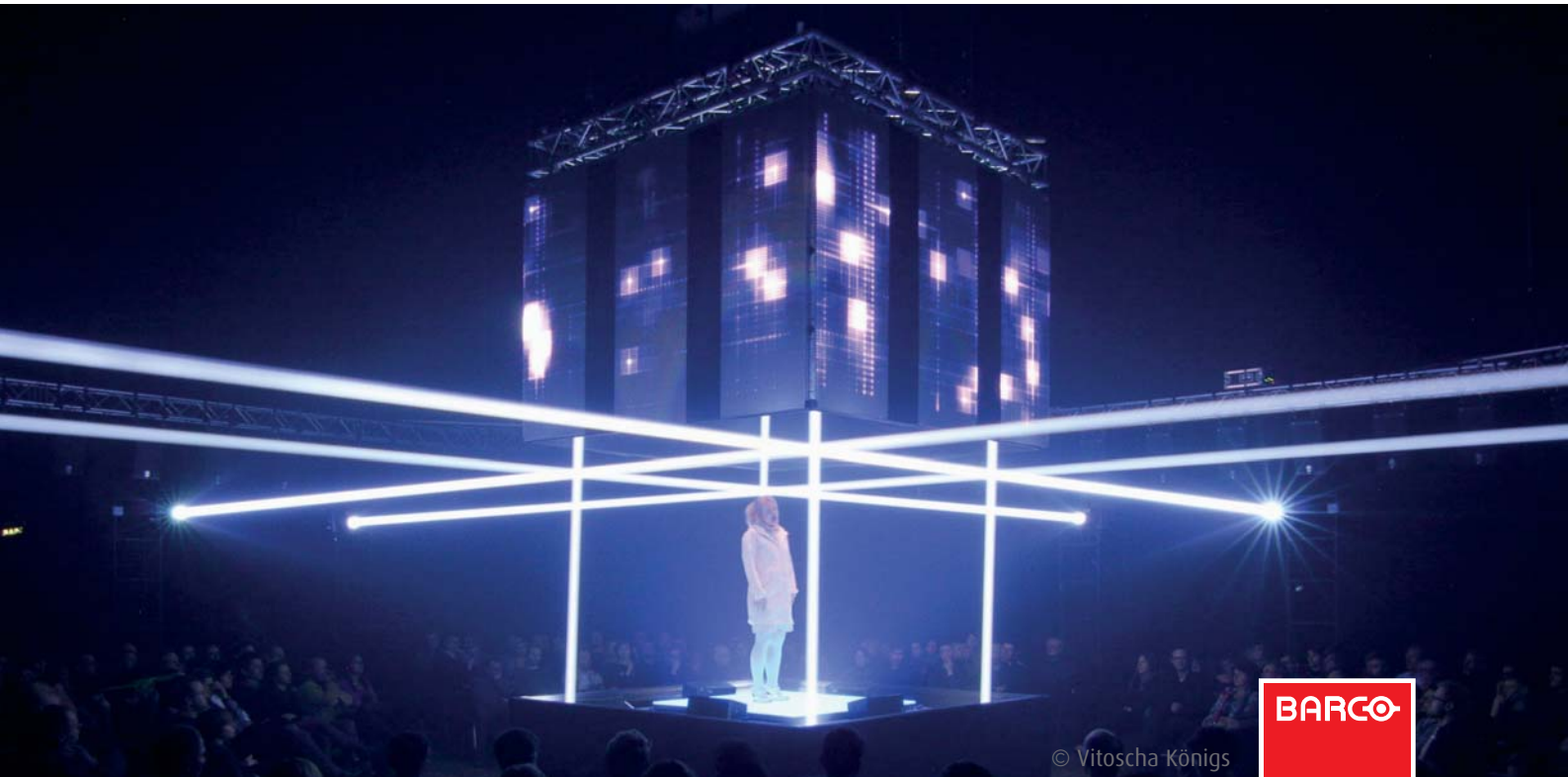
Bergen International Festival  
Bergen, Norway

## Special feature

- about 250 chairs for circular seating
- virtual orchestra
- one singer
- has been performed in various settings without the need to adapt the original IOSONO mix
- has been awarded the German Stage Award 2013

»The IOSONO spatial sound system was essential to give this opera a new sound and it worked perfectly.«

Sven Sören Beyer  
phase7



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# Mercedes-Benz Fashion Week Berlin

Berlin, Germany, January 2012

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## About

In January 2012, IOSONO technology provided high quality immersive sound for the fashion show of German designer Sissi Goetze.

Berlin based sound design studio TAUCHER Sound Environments created the show sound that combined hip hop classics with ambient sounds and special 3D effects.

The Fashion Tent was filled with vivid soundscapes that swirled around and through the models on the runway presenting Goetze's new collection.

## Technical specification

Audience area (WxD): 19m x 11m

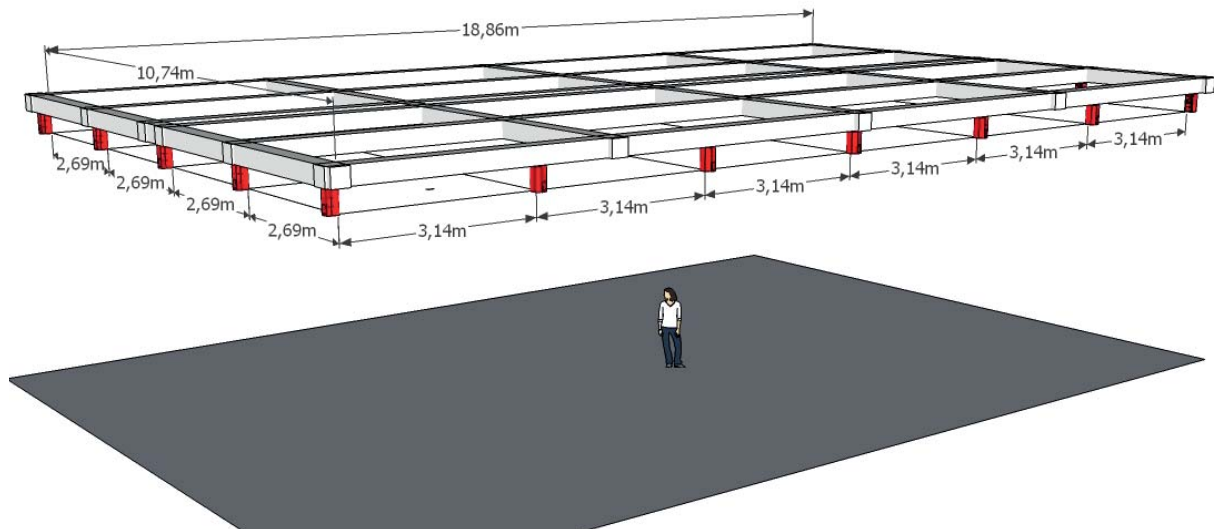
**Processor:** IOSONO Spatial Audio Processor IPC100

**20 speakers in a ring**  
type: Kling&Freitag CA106

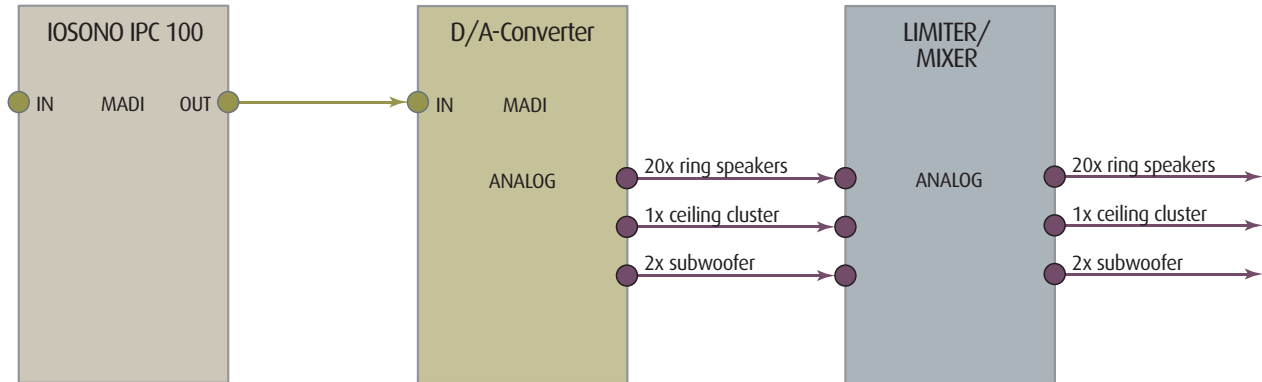
**4 ceiling speakers**  
type: meyersound UPA 1P

**2 subwoofers**  
type: meyersound 700-HP

## Simple system sketch



## Signal flow chart



## Impressions



Watch the whole video: <http://bit.ly/mbfw-video>

## More performances

07 July 2012  
Berlin, Germany

## Special feature

- about 150 to 200 visitors
- models were in the center of the audience area
- first time immersive sound was used for a fashion show
- integration into a predefined technical environment

»It was like you're standing still, you suppose to see people moving but actually the sound is.«

Catherine Bollet  
Country Manager France for LinkLift Ltd.





# Franz Liszt's »Via Crucis« by Robert Wilson

Weimar, Germany, September 2012

Barco's IOSONO sound solutions for events



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## About

World famous stage director and visual artist Robert Wilson has staged a light and multi-dimensional sound installation with Franz Liszt's »Via Crucis«, a composition for piano, organ, vocal soloists and choir and known to be one of Liszt's most extraordinary works.

Hosted in a century-old, former livestock auction hall, Franz Liszt's musical interpretation of the 14 Stations of the Cross was emphasized by a fascinating light and sound installation, making the production an art experience for all senses.

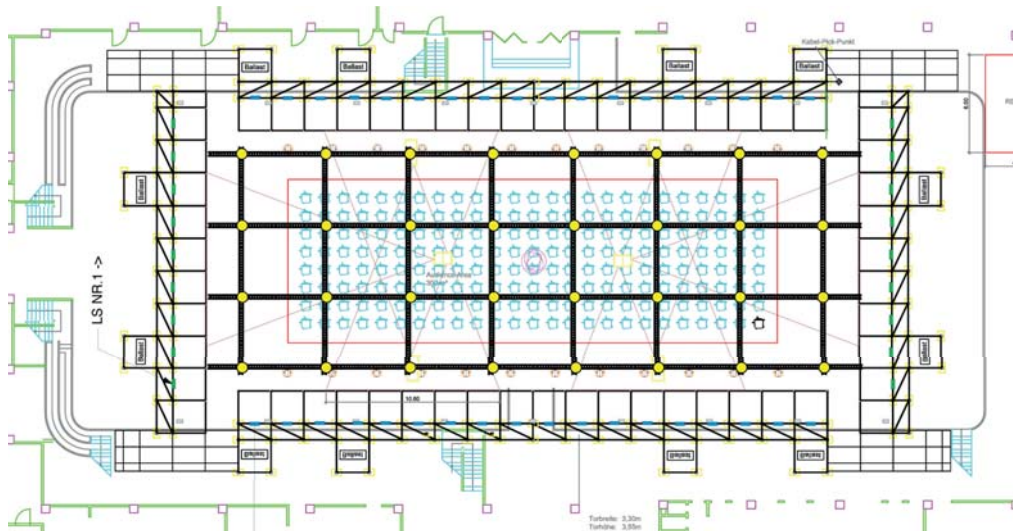
## Technical specification

Audience area (WxD): 10m x 30m

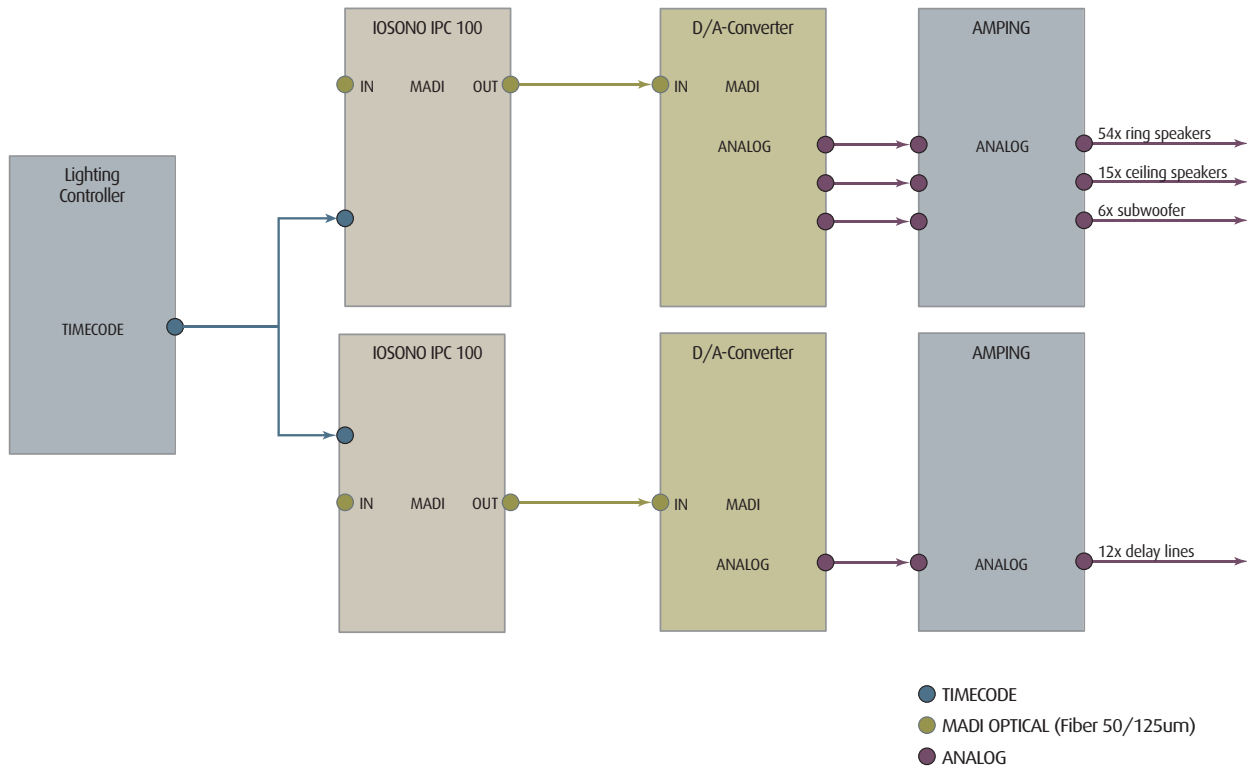
**Processor:** IOSONO Spatial Audio Processor IPC100

- 54 speakers in a ring**  
type: meyersound M'elodies
- 15 ceiling speakers**  
type: meyersound UPM-1P
- 12 delay lines**  
type: meyersound UPA-1P
- 6 subwoofers**  
type: meyersound 700-HP

## Simple system drawing



## Signal flow chart



## Impressions



Watch the whole video here: <http://bit.ly/viacrucis-video>

## More performances

2, 4-8 September 2012

Pèlerinages Kunstfest Weimar,  
Germany

## Special feature

- extraordinary work: wrapping classical music into 21<sup>st</sup> century sound
- was the most spectacular project at Kunstfest Weimar 2012
- all shows were sold out
- about 200 visitors per event

»The multi-dimensional soundscapes and light architecture are creating a unique experience of space.«

Robert Wilson  
Stage director and visual artist

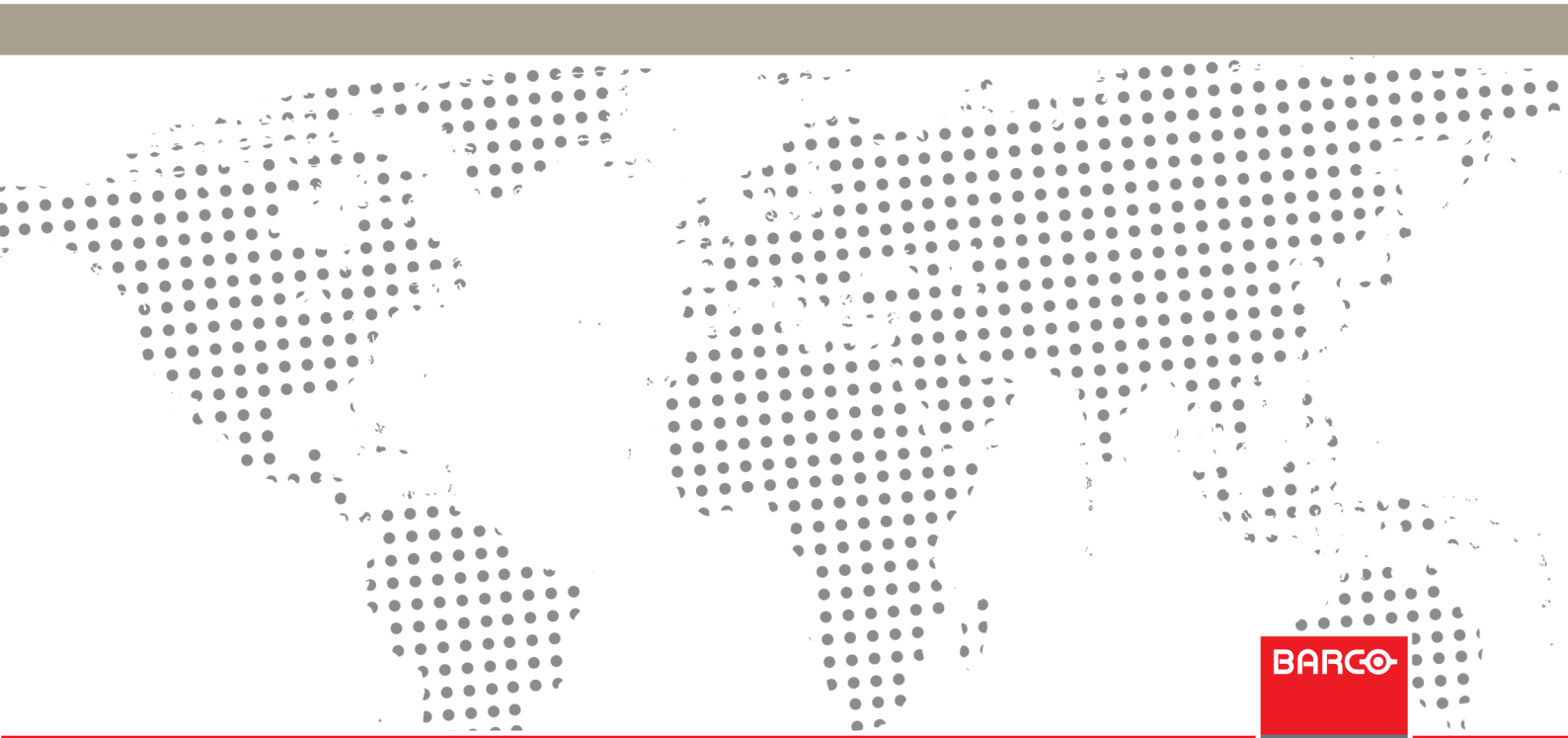


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# Barco's IOSONO sound solutions for live shows



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# »Carmen« for Handa Opera on Sydney Harbour

Sydney Harbour, Australia, April 2013

Barco's IOSONO sound solutions for live shows



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## About

The production of George Bizet's »Carmen« for Handa Opera on Sydney Harbour, staged by Opera Australia, was spectacular on all levels.

The stage resembling a bullfighting ring appeared to float on Sydney Harbour. With dazzling costumes and firework effects, the audience experience was complimented with a high quality sound system by IOSONO to present the orchestra in its dimension and the singers in their location.

Visitors will not forget the neonlit silhouette of a bull which lit up the final scene as well as the knock-out performances, dances, the fireworks and an incredible audio experience.

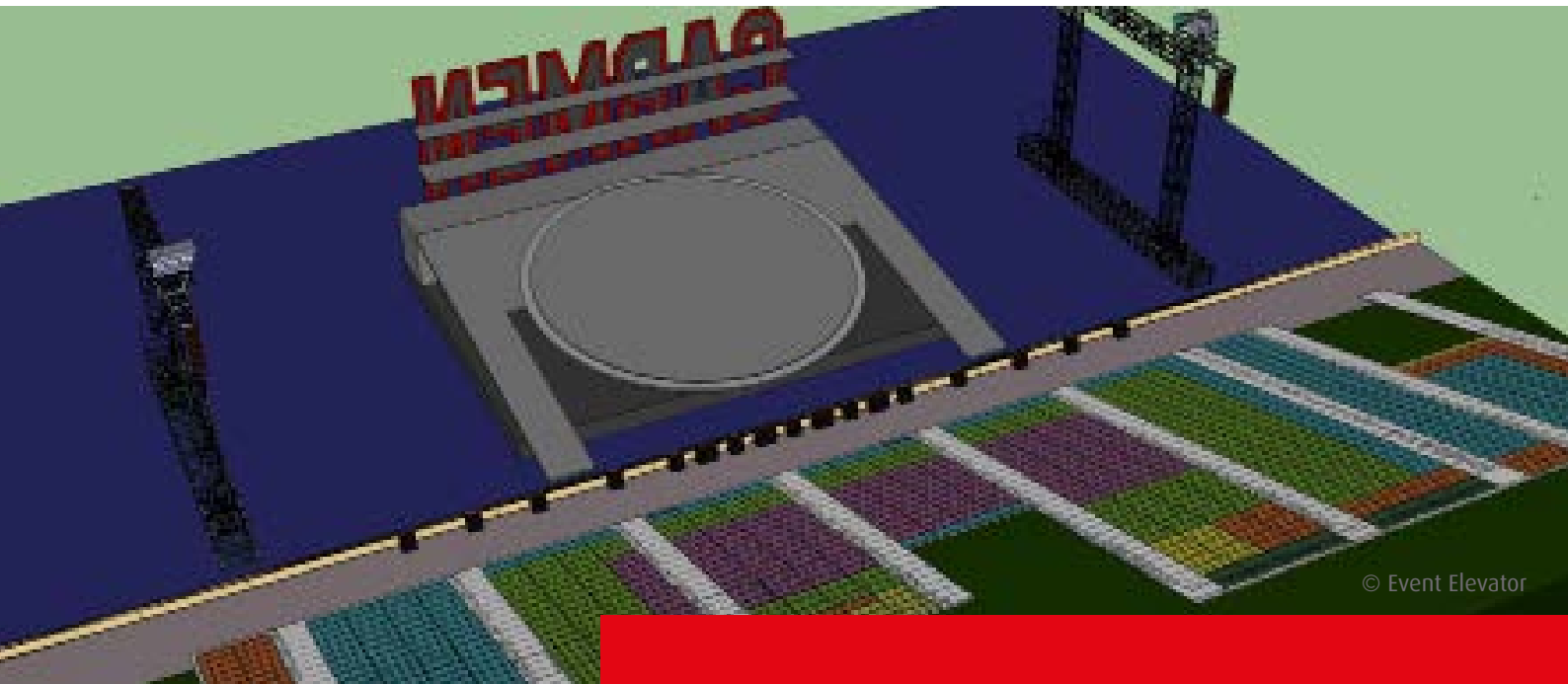
## Technical specification

Audience area (WxD): 70m x 30m  
Stage area (WxD): 32m x 24m

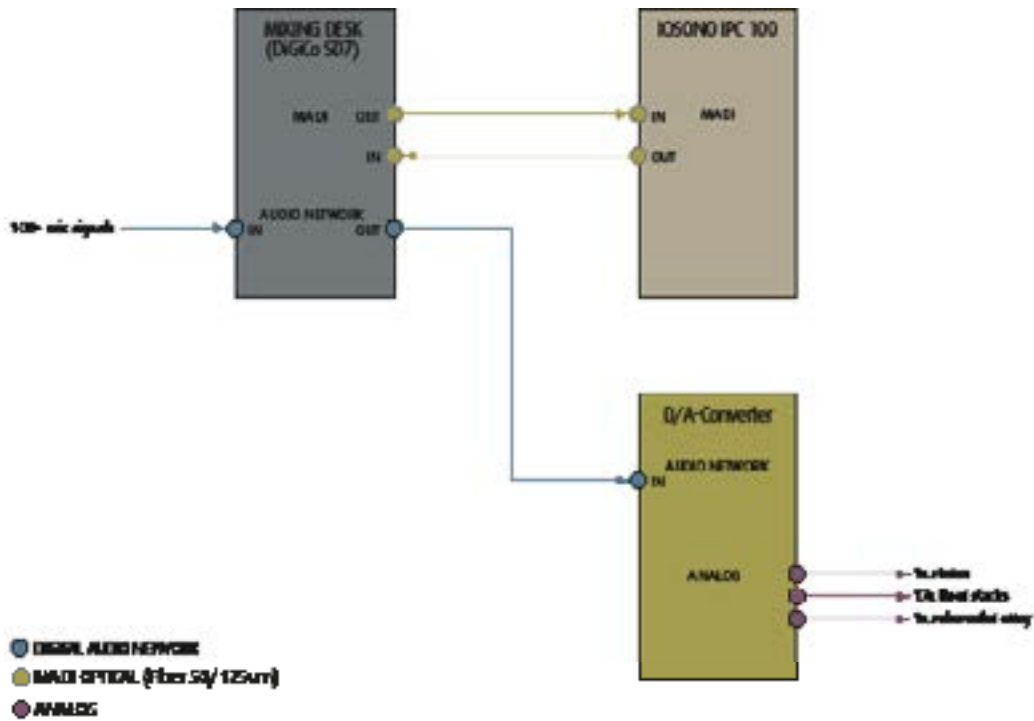
**Processor:** IOSONO Spatial Audio Processor IPC100

- 1 **standard dual-mono, long-throw PA**  
type: L-Acoustics Kudo (line arrays)
- 17 **floor stacks with 3 cabinets per stack**  
type: L-Acoustics Kudo
- 4 **subwoofer stack with 2 double 18" subwoofers**  
type: L-Acoustics SB28

## Simple system sketch



## Signal flow chart



## Impressions



<http://bit.ly/sydney-opera-video>



## Special feature

- about 3,000 visitors per evening
- in total 41,000 visitors
- orchestra played in a studio under the stage (above the water) with acoustical treatment
- all sound reinforcement had to be done from the floor in front of the stage
- all shows sold out
- nominated for Best Sound Design at 2013 Helpmann Awards

»It's impossible to describe how tactile and realistic IOSONO's spatial audio processor renders the orchestra and singers.«

Tony David Cray  
Sound Designer for Handa Opera on Sydney Harbour



© Opera Australia

# Kraftwerk »The Catalogue 12345678«

London, United Kingdom, February 2013

Barco's IOSONO sound solutions for live shows

# ROBOTS



© Rhys Buchanan

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## About

German electronic music pioneers Kraftwerk have played eight live performances in Tate Modern's Turbine Hall, London in February 2013.

The shows were part of the group's »Catalogue 12345678« concert series, representing a chronological exploration of Kraftwerk's eight album releases over 40 years.

Along with 3D video projections behind the four musicians, Kraftwerk used IOSONO sound to set a new audio experience standard for their acclaimed live shows.

## Technical specification

**Processor:** IOSONO Spatial Audio Processor IPC100

**24 ring speakers**  
type: d&b Q10

**7 front speakers**  
type: d&b V-Series (line array)

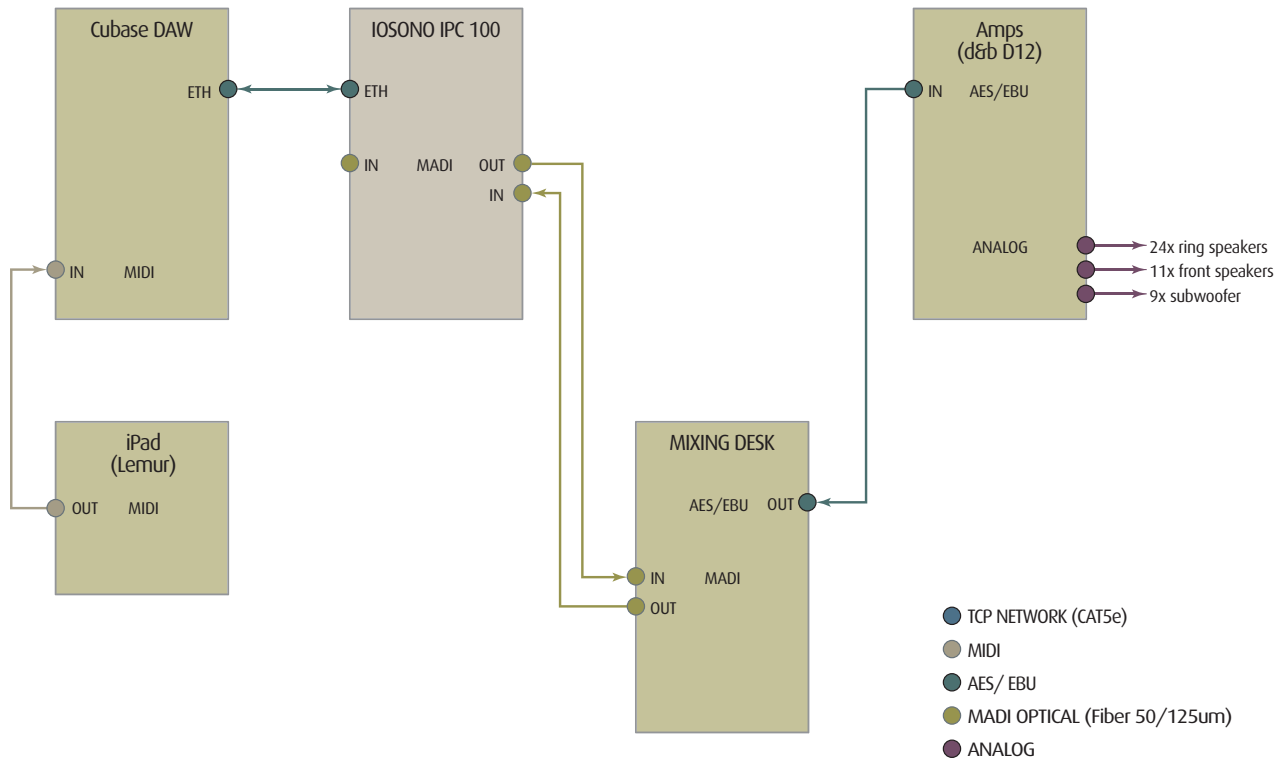
**4 front fills**  
type: d&b T10 elements

**9 subwoofers**  
type: d&b V-Subs & J-Infra 4x bass arrays

## System setup (Düsseldorf)



## Signal flow chart



## Impressions (Düsseldorf)



Watch the whole video: <http://bit.ly/kraftwerk-video>

## More performances

*January 2013*

NRW, Düsseldorf, Germany

*May 2013*

Sydney, Australia

## Special feature

- about 1,000 visitors per evening
- each night the performance centers on one studio album in order of release
- front stage

»It really brings a fresh dimension to the show.«

Serge Gräfe  
FOH engineer for Kraftwerk



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# North Bund Opera 'La Traviata'

Shanghai, China, 2015

Barco's IOSONO sound solutions for live shows



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## About

The Shanghai North Bund Opera 'La Traviata', led by renowned conductor Xu Zhong, performed at a waterfront location with a stunning view of the Shanghai skyline and was held on a stage area constructed specially for this event.

To fully immerse the audience in the intensity of the performance, the North Bund Opera Company of Shanghai deployed an impressive speaker set-up, driven by Barco's IOSONO CORE processor. Barco provided a fully-customized IOSONO CORE sound system to enhance the aural experience and to recreate the reverberation of a real concert hall.

## Technical specification

Stage area (WxD): 40m x 16m  
Listening area (WxD): 65m x 20m

**Processor:** IOSONO Spatial Audio Processor Core & Redundancy

**11 main arrays, 2 side fill arrays**  
type: JBL VTX V20

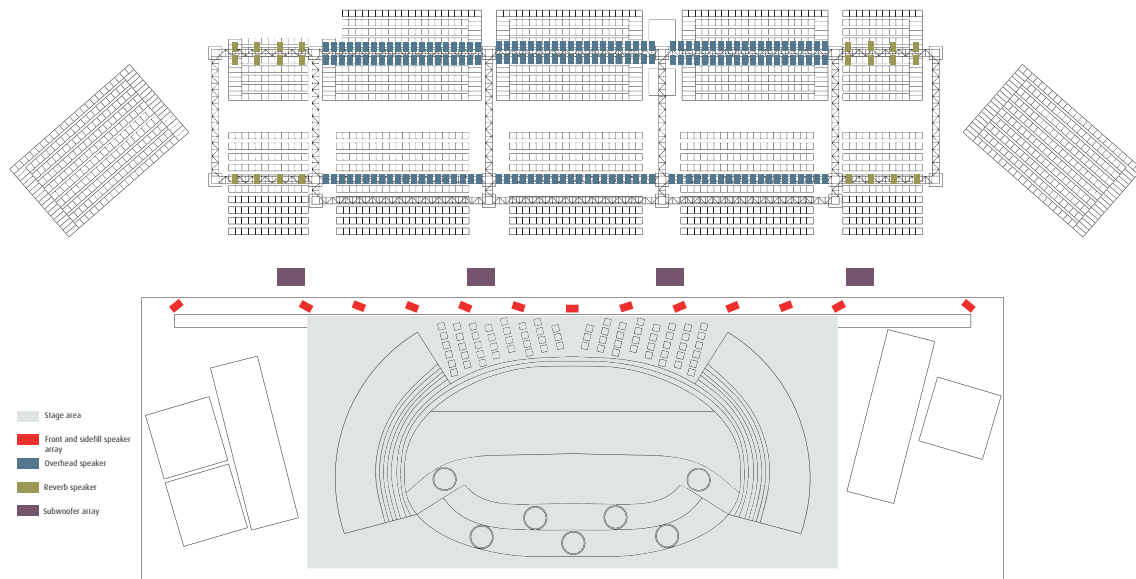
**180 overhead speakers**  
type: JBL EON615

**24 reverb speakers**  
type: JBL EON615

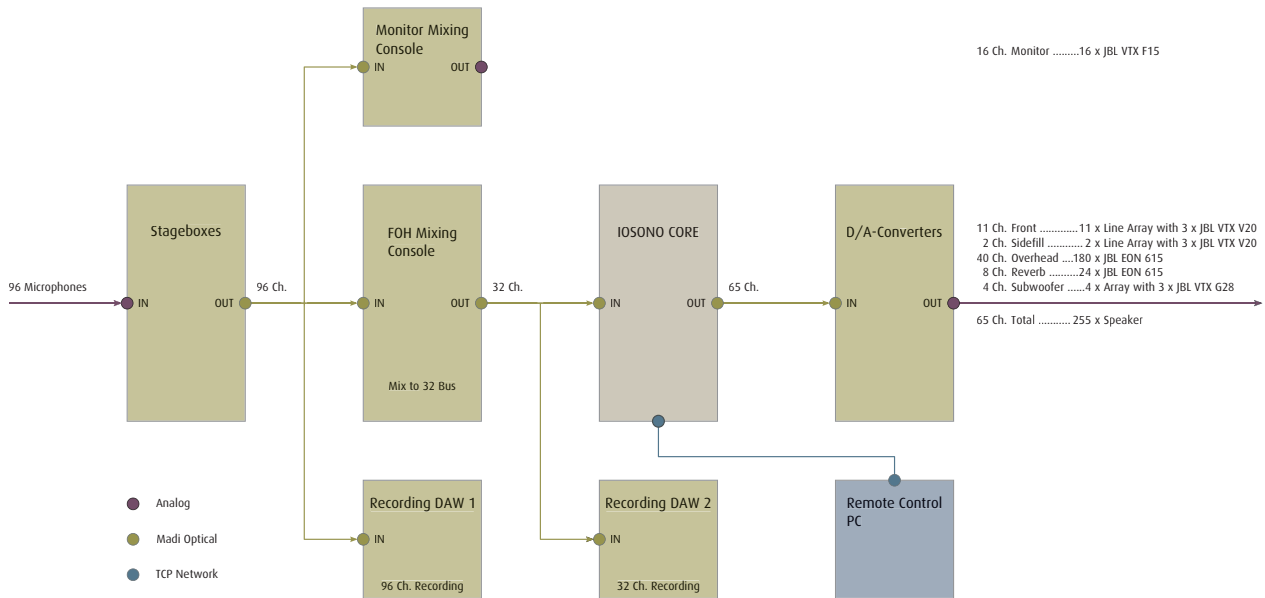
**4 subwoofer arrays ground stack**  
type: JBL VTX-G28

**16 monitoring speakers**  
type: JBL VTX-F15

## Simple system sketch



## Signal flow chart



## Impressions



For more information: <http://bit.ly/NorthBundOpera>



## Special features

- dynamic, directional sound reinforcement
- virtual canopy modelling and artificial room created acoustically by using overhead speakers
- special surround effects
- seats 2000 people
- 3 shows with approx 5,000 people/day

“Once again the 3D Sound North Bund Opera with the best view of Shanghai was a dazzling spectacle. The immersive feeling that you are sitting in the middle of an opera house made it so real and incredibly special.”

Angel Pan  
Vice President, Full Dimension Multimedia Technology



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# Esonic3 Minsheng Art Museum's concert series

Shanghai, China, 2015

Barco's IOSONO sound solutions for live shows



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## About

In August 2015, Shanghai's Minsheng Art Museum formed the backdrop to a unique concert series, combining light and dance with electronic music and live performances. No fewer than 1,500 people attended the mesmerizing, audiovisual spectacle. To ensure the audience's full immersion in the sounds, the organization deployed Barco's IOSONO sound technology. ESONIC3 is a live crossover show hosted by the Shanghai Conservatory of Music and the China Academy of Arts, the production combined traditional Chinese arts with state-of-the-art technology to create a moving media experience. Four different performance pieces were shown, each blending technology and art in different ways.

Barco's IOSONO sound system, a design of 3 layers with 128 speakers, was installed in the exhibition hall of the museum. To improve the sound environment and its uniformity, the hall was geared with customized acoustic 'balloons'.

## Technical specification

Processor: IOSONO CORE

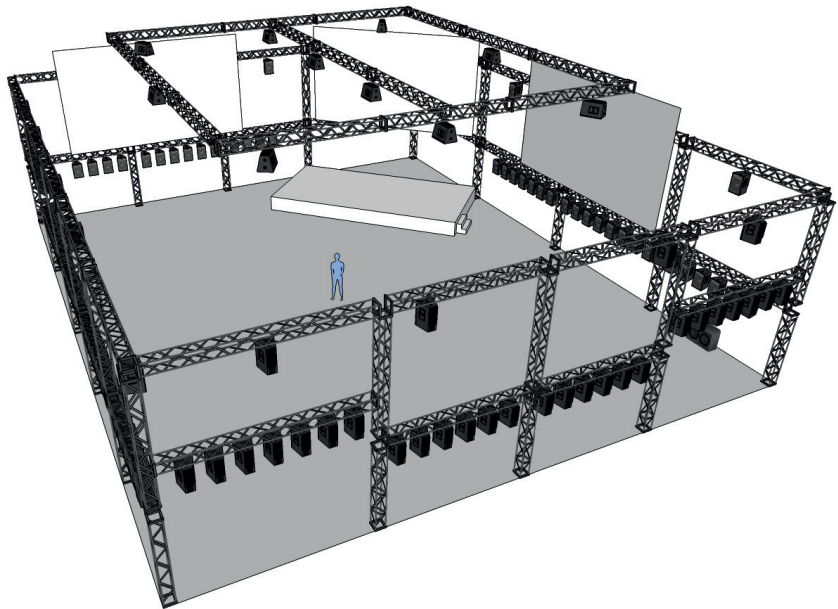
98 speakers  
type: Meyer Sound UPA-1P

18 speakers  
type: Meyer Sound UPA-1P

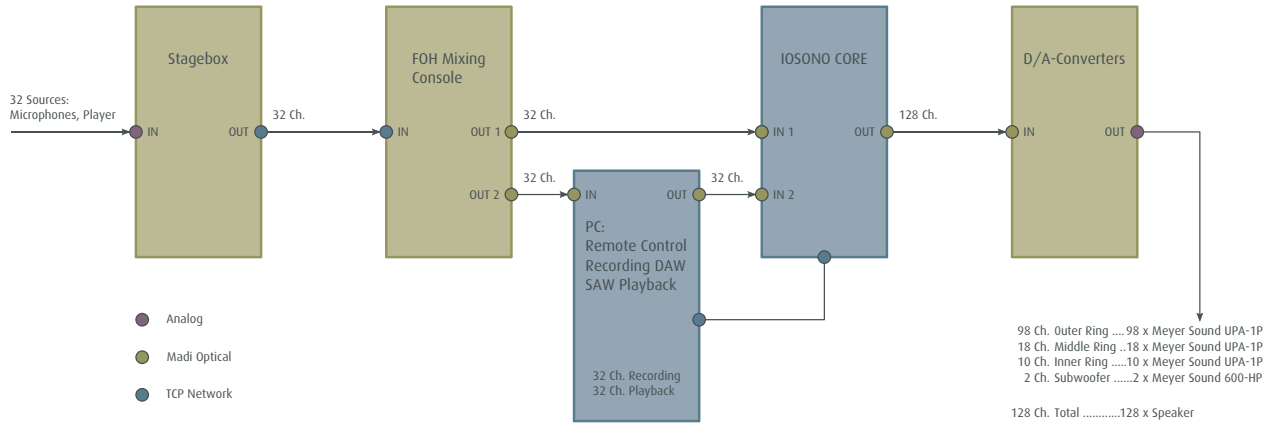
10 speakers  
type: Meyer Sound UPA-1P

2 subwoofers  
type: Meyer Sound 600-HP

## System setup



## Signal flow chart



## Impressions



Find out more at <http://bit.ly/minsheng-art-museum>

## Special feature

- real-time creation of virtual acoustics
- 4 pieces with 4 different characters
- musicians and actors among audience
- wifi-based tracking of actors used for source positioning
- real-time reverberation and speakers arrays
- lauded with Science and Technology Progress award

“Our team creates this 3D sound space with WFS system, customized acoustic panels and 128 speakers. It means that our show involves technology research and development. In some extent, I think it's the very first attempt in this area all over the world. For me, it is also one joyous discovery.”

Chen Qiangbin

Composer, Art Director of ESonic3, Professor of Shanghai Conservatory of Music



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