

Video cube is highlight of O₂ World in Berlin

DISPLAY ENGINEERING

Summary

PROJECT LOCATION

O₂ World, Berlin

ENGINEERING

Mitsubishi Electric Europe B.V.
German Branch, Ratingen

CUSTOMER

Anschutz Entertainment Group
Development GmbH, Berlin

COMPLETION

September 2008

PROJECT DATA

Installation of a video cube and
LED walls as an information
and advertising medium in the
event facility

APPLICATIONS

Information
Score board
Display of sports events
Display of live concerts
Replays
Advertising banners
Entertainment

PRODUCTS INSTALLED

AVL-IDT10
AVL-ID25
AVL-ODQ10
AVL-ODQ12
AVL-ODQ15

FURTHER INFORMATION

Mitsubishi Electric Europe B.V.
German Branch
Electronic Visual Systems
Gothaer Straße 8
D-40880 Ratingen, Germany
Phone: +49 (0) 21 02/4 86 92 50
Fax: +49 (0) 21 02/4 86 73 20
www.Mitsubishi-EVS.de
www.Mitsubishi-LED.de



PROJECT

O₂ World, one of the most modern multifunctional arenas in the world, opened on September 10, 2008. The extraordinary technical highlights of the auditorium include the octagonal video cube installed under the ceiling – with a total weight of 23 tonnes and a display area of 125 square metres it is one of the largest in the world. State-of-the-art LED technology from Mitsubishi Electric enables the video cube to deliver razor sharp images to visitors of the 17,000-seat arena.

O₂ World has been fitted with Mitsubishi Electric's most extensive LED installation ever. In addition to the video cube, it also includes three LED walls mounted outside with a total area of 320 square metres. There is a nearly 190-square-metre screen on the north side of the semicircular arena. Two others with an area of 86 and 36 square metres, respectively, are located near the O₂ World wharf and on the pedestrian bridge to Warschauer Straße.

Mitsubishi Electric served as the general contractor for this project. Besides supplying the LED screens, the scope of the project included the planning of the installation, the structural steel design, the chain hoist control system including the control system software and the scoreboard software as well as the delay clocks in the cabins. The list of companies that supported Mitsubishi Electric in the implementation of the project is long. It includes Berlin-based q-bus Mediatektur GmbH, GuD Planungsgesellschaft für Ingenieurbau mbH, Pons Stahl- und Schweißtechnologie GmbH & Co. KG and ASM Steuerungstechnik GmbH.

RESULT

The octagonal LED video cube consists of four central displays and four corner displays along with an LED strip along the periphery of the cube, the so-called 'ring screen'. Four indoor LED modules from Mitsubishi Electric's Diamond Vision series, each of a different size, were used for the corner and central displays. The model used was the AVLIDT10 with 10-millimetre pixel pitch. Each of the corner displays provide a presentation area of 11.5 square metres and weigh 1,000 kilograms. The larger central displays weigh 1,200 kilograms and provide 14.3 square metres of presentation space.





The ring screen incorporates 23 model AVL-ID25 LED modules with a pixel pitch of 25 millimetres. They provide a display area of 22 square metres. This results in a total presentation area for the entire cube of about 125 square metres and a total weight of eleven tonnes. Together with the structural steel supporting the video cube, the whole assembly actually weighs a full 23 tonnes.

Four different camera settings can be visualised on the cube simultaneously. The central displays are used as video screens for event-related information and video images as well as fan TV during sporting events. With sporting events, the corner displays are also used – to display scores, game and penalty clocks and statistics. The cube is mounted at a height of 14 metres and can be lowered or raised to a maximum height of 28 metres depending on the event and its seating capacity. This flexible height adjustment is accomplished by means of eight double chain hoists.

PLANNING AND INSTALLATION

Engineers started drawing up plans for the project in the summer of 2006. After the owner approved the design planning, the design and fabrication of the structural steel and its on-site installation were completed within 57 working days. The Mitsubishi Electric LED modules reached their intended destination by ocean freight directly from the factory in Nagasaki, Japan. Installation of the LED screens, electrical connections, advertising texts and chain hoists together with the subsequent commissioning and final acceptance was completed within just 15 working days.

O₂ World

O₂ World is located in Berlin on what were once the grounds of the East Freight Station between East Station and Warschauer Bridge. It is the platform that will host top level sports and entertainment events in Berlin in the future. The new video cube not only ensures optimal acoustics and viewing conditions from all seats, but also makes it possible to reconfigure the facility for concerts or sports events in a few hours. As from Autumn 2008, up to 17,000 spectators can experience world class concerts, sports and entertainment. The owner and operator of the multifunctional arena is the Anschutz Entertainment Group. O₂ World is part of a far-reaching strategic, interactive and international partnership between Anschutz Entertainment Group and O₂.

LED display wall competence since 1980

Mitsubishi Electric technicians installed the first full-colour, almost nine-metre-wide tube display in Dodger Stadium in Los Angeles in 1980. Since then, video display walls – and especially LED display walls – have gone on to conquer the world. Mitsubishi Electric has reinforced its solid reputation as a state-of-the-art supplier of LED displays through superlative installations such as the outdoor display at the Tokyo Jockey Club – the world's largest until 2007 – and the 33-metre-wide HD LED wall in Caesar's Palace in Las Vegas, as well as with innovations like Black Package Technology. The foundation for success is the wide choice of rental and permanent installations for both outdoor and indoor use.

The LED systems from Mitsubishi Electric are mainly based on SMD technology. Due to the ability of SMDs to display all three RGB colours in one LED, the LED display walls stand out with their incredible image sharpness, lifelike colours and outstanding black levels. The pixel-level fine-tuning of each LED also guarantees first-class colour homogeneity across the entire display area.



Mitsubishi Electric LED systems also feature integrated, high-performance processors, which support true HD resolution, along with flexible control options that make it possible to combine film and live recordings with pictures, animations and text displays.

About Mitsubishi Electric

For more than 80 years now, the name Mitsubishi Electric has stood for innovative, high quality products on which business customers and consumers all over the world can rely. Based on its many years of experience, Mitsubishi Electric is a recognised market leader in the development, production, distribution and sale of electrical and electronic products for use in data processing and communications, aerospace, satellite communications, consumer electronics, industrial technology, energy, logistics and building services. Mitsubishi Electric Europe B.V. is a fully owned subsidiary of the Japanese Mitsubishi Electric Corporation. Through innovative technologies, high-quality products and solutions, Mitsubishi Electric Europe B.V. helps the group's European customers achieve their corporate objectives.



The outdoor display walls feature tremendous weather resistance (IP65) along with high brightness and contrast.



The cube can be seen perfectly from every seat in the arena.

Spezifikationen

Model	AVL-IDT10	AVL-ID25	AVL-ODQ10	AVL-ODQ12	AVL-ODQ15
Pixelpitch	10 mm	25 mm	20 mm	25 mm	30 mm
LEDs	3-in-1SMD	Delta	Quad	Quad	Quad
Resolution	Central display: 138,240 pixels H x W: 288 x 480 pixels Corner display: 110,592 pixels H x W: 288 x 384 pixels	LED ring screen: 35,328 pixels H x W: 24 x 1472 pixels	180,224 pixels H x W: 256 x 704 pixels	276,480 pixels H x W: 320 x 864 pixels	842,240 pixels H x W: 560 x 1504 pixels
Brightness	2000 cd/m ² Perimeter board: 1500 cd/m ²	2000 cd/m ²	5000 cd/m ²		
Image processing (colour)	18-bit colour	18-bit colour	18-bit colour		
Image processing (greyscale)	12-bit colour	12-bit colour	12-bit colour		
Viewing angle	Vertical: +/-80° Horizontal: +/-80°	Vertical: +/-30° Horizontal: +/-70°	Vertical: +15 - -30° Horizontal: +/-70°		
Minimum viewing distance	2 metres	10 metres	8 metres	10 metres	10 metres
Service life of LEDs	50,000 Stunden				
Power consumption	Central display: 8 kW each, total 32 kW Corner display: 7 kW each, total 28 kW	LED ring screen: 8 kW	11 kW	26 kW	133 kW
Power supply	240 V				
Weight per screen	Central display: 1000 kg Corner display: 1200 kg	2200 kg	1600 kg	3500 kg	16,200 kg



Changes for the Better

Mitsubishi Electric Europe B.V., German Branch, Electronic Visual Systems
Gothaer Strasse 8, 40880 Ratingen, Germany, phone.: +49 (0) 21 02/4 86 92 50,
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