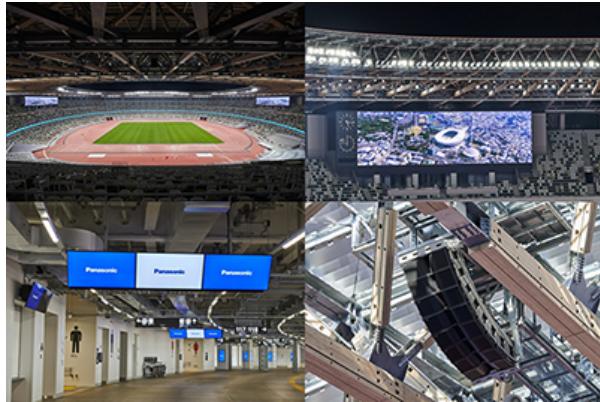


Jan 7, 2020

Panasonic Delivers Large Screen Displays, Audio Systems and Various Stadium Equipment to the National Stadium



Osaka, Japan - Panasonic Corporation delivered a wide range of equipment essential to stadium operation including large screen displays and audio systems that amplify the excitement, stadium lights that illuminate the field of play and also help create an unforgettable fan environment, as well as approximately 600 digital signage systems, the largest number of such systems ever delivered, to the National Stadium, which was completed on November 30, 2019.

*As of January 7, 2020; according to Panasonic research.

The new National Stadium was built on the site of the old National Stadium, which served as the Olympic Stadium during Tokyo 1964 (demolished in 2015). During Tokyo 2020, the new National Stadium will host the Opening and Closing Ceremonies and competitions such as track and field. Based on the concept, "a stadium in forest," it was designed to incorporate elements of nature such as greenery and trees, yet, it is also equipped with the state-of-the-art technologies. This juxtaposition between nature and technology makes this stadium uniquely Japanese.

Panasonic delivered AV and lighting equipment essential to enlivening the competitions as well as other facilities essential to stadium operation and for spectators to get around. Panasonic also installed two approx. 9m x 32m large screen displays on both the north and south sides of the stands, in addition to 38 line array speakers that consistently deliver clear sound ensuring sound pressure even on the field, far away from the speakers. The lighting equipment not only illuminates the field of play, but can be turned on/off instantly, enabling the use of lighting for spectator entertainment. The system also has adopted a light source that has been designed to optimize color reproducibility during TV broadcasts. For the stands, Panasonic delivered 600 digital signage systems that can be remotely controlled to provide information to spectators. Different information can be delivered in each concourse area, so information can be efficiently relayed to spectators. Furthermore, Panasonic also provided eco-friendly air conditioning systems such as large-scale air conditioning systems that utilize natural refrigerants (Natural Chiller), gas heat pump air conditioners (GHP), etc. to various operating rooms.

Panasonic's stadium solutions are transforming the way fans watch sports by utilizing a diverse range of solutions including audio-visual and lighting solutions, surprising and delighting spectators and delivering peace of mind in public spaces. Panasonic will amplify the allure of sports and also contribute to the evolution of stadiums with its extensive range of safe and eco-friendly solutions.

A closer look at the equipment provided:

【Large screen display systems】

- South side: Approx. 9m high, 32m wide
- North side: Approx. 9m high, 36m wide (including 4m for the turret clock, 45-minute counter, and running timer)
- Resolution: Full HD

【Audio systems】

- Line array speakers (competition audio): 8 barrels x 24 units, 4 barrels x 14 units; a total of 38 units.

The RAMSA audio system line array speakers, WS-LA4WP, was delivered. The ideal linear sound source was brought to life by selecting the unit optimal for the acoustic characteristics demanded of stadiums, theaters, and event halls, and employing the waveguide horn design. Here are the key features of these speakers that satisfy the acoustic characteristics of large spaces: (1) Amplify sound clearly near or far, in a very large venue; (2) Create optimal sound thanks to the high resolution simulation software; (3) Feature a metal mounting structure that realizes both workability and safety.

【Lighting equipment in the stands】

- For competitions – Approx. 1,300 units
- For spectators – Approx. 200 units among others

LED floodlights "Stadium Beam", utilizes cutting-edge technology to realize the optimal color reproducibility and high speed image reproduction for 4K/8K broadcasts. 4K/8K broadcasts can reproduce color more vividly than Full HD. Panasonic has developed floodlights that offer the optimal color reproducibility for 4K/8K broadcasts – an average color rendering index of Ra 90 plus a special color rendering index of R9 80* for red tones. Moreover, by adopting ignition technology, the floodlights minimize flickering during high speed reproduction of slow motion footage, etc. With these two technologies, Panasonic will support high quality image expression for 4K/8K broadcasts. The floodlights create an optimal lighting environment that satisfies the lighting design standards, but is less glaringly bright when people look up. With proprietary light distribution design technology, the floodlights optimally narrow the focus of the light from the light source to significantly reduce glare. The floodlights will clearly illuminate the competitors' field of view and the way within the stadium for spectators.

*: According to the (General Incorporated Foundation) Association of Radio Industries and Businesses technology document ARIB TR-B40 1.0.

【Digital signage】

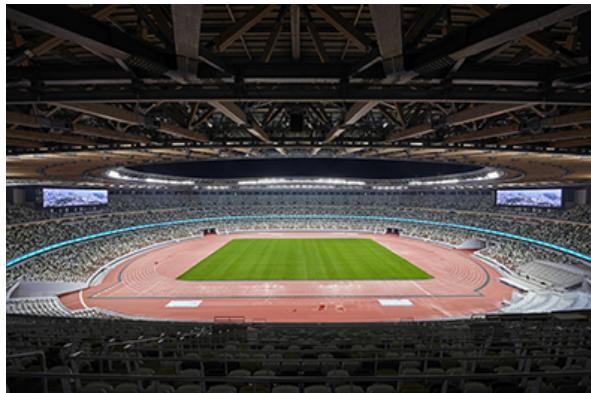
- Digital signage: Approx. 600 units

Utilizing Panasonic's digital signage solution, "AcroSign", a wide range of content from core industry systems including sightseeing information for inbound travelers and information from L Alert (Public Information Commons), etc. can be delivered to systems that cater to needs of different customers. Moreover, by combining an extensive range of Panasonic devices and a rich power of expression, Panasonic will provide a new value for signage. By taking advantage of the collective power of the Panasonic group, extensive range of audio-visual technologies, and the wealth of experience in installation and operation, Panasonic will provide large-scale stadium solutions that can create an electrifying environment that integrates and flexibly operates multiple screens.

【Large-scale air conditioning system】

- Absorption chillers utilizing natural refrigerants (Natural Chiller) 400 RT – 2 units
- Gas heat pump air conditioners (GHP) Excel Plus Series – 1 unit

【Equipment image】



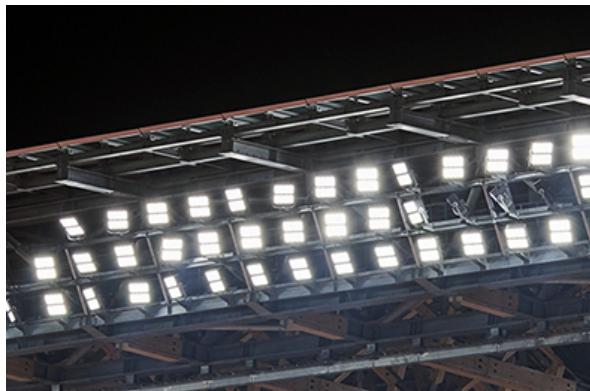
Large screen display systems
(Left and right side of image)



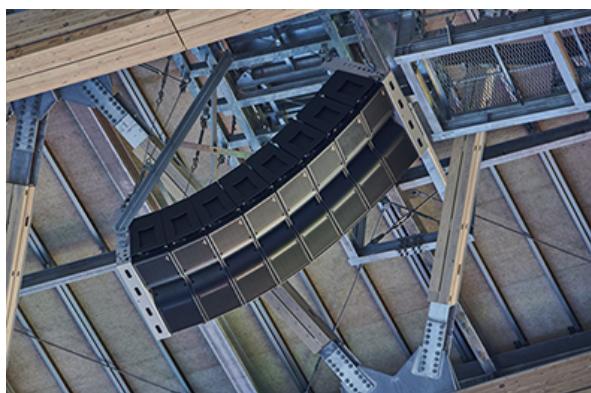
Large screen display system
(North side)



Large screen display system &
Lighting equipment in the stands



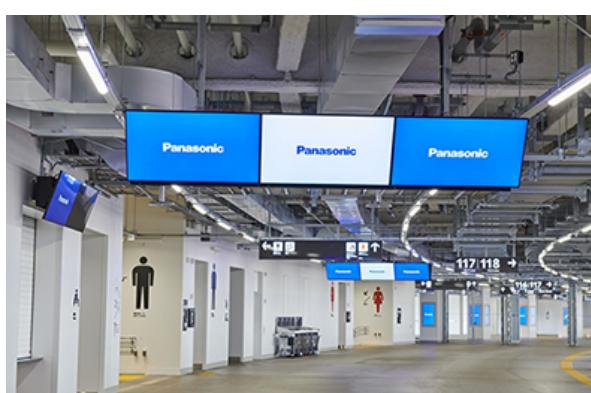
Lighting equipment in the stands



Audio system 8 barrels



Audio system 4 barrels



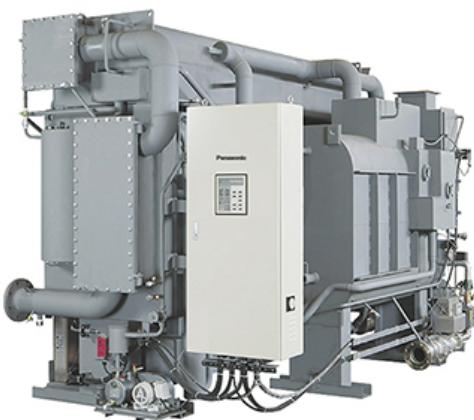
Digital signage



Digital signage



Gas heat pump air conditioners
(GHP) [Product picture]



Absorption chillers
(Natural Chiller)
[Product picture]

About Panasonic

Panasonic Corporation is a worldwide leader in the development of diverse electronics technologies and solutions for customers in the consumer electronics, housing, automotive, and B2B businesses. The company, which celebrated its 100th anniversary in 2018, has expanded globally and now operates 582 subsidiaries and 87 associated companies worldwide, recording consolidated net sales of 8.003 trillion yen for the year ended March 31, 2019. Committed to pursuing new value through innovation across divisional lines, the company uses its technologies to create a better life and a better world for its customers. To learn more about Panasonic:

<https://www.panasonic.com/global>.

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