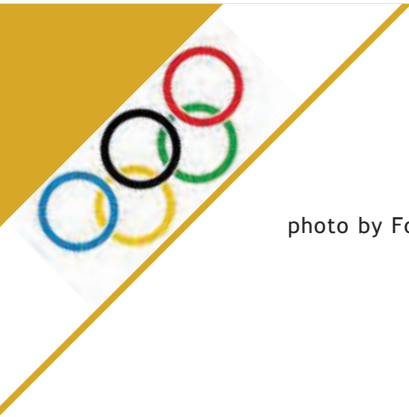


HIGH-DEFINITION OLYMPIC GAMES

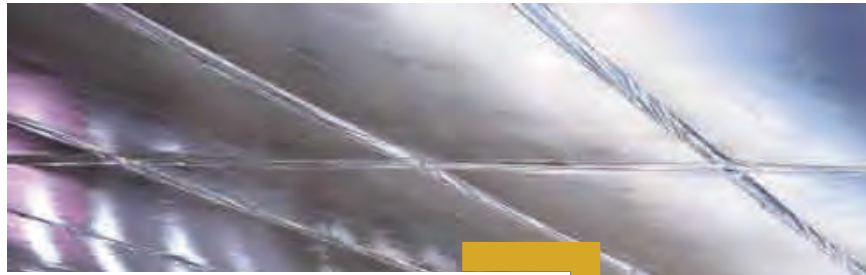
The Adler Arena Skating Center, one of the jewels in the crown of the Sochi Olympic Park, will host the speed skating competitions of the Olympic Winter Games 2014. A worldwide audience will enjoy a spectacular show made possible thanks to a lighting system with extraordinary qualities







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OLYMPIC SPEED skating competitions are one of the most spectacular events of the Winter Games and are set to be even more spectacular on the occasion of Sochi 2014 thanks to high-resolution TV coverage that will allow a worldwide audience to enjoy an unbelievable clarity of detail, such as the ice lifted by the skaters or the faces of the athletes and their fatigue. The competitions will take place in the Adler Arena, one of the jewels in the crown of the Sochi Olympic Park. The facility, designed by Bob Johnston leader of the US-based Cannon Design firm, which also designed the Olympic facilities in Calgary and

Salt Lake City, looks like an iceberg or a ice floe, with glass façades supported by angular walls in which big coloured glass slabs are embedded. The dominant colours are grey and white that emphasise the theme, and the walls are mostly transparent so that spectators can look outside and keep a visual contact with the natural landscape surrounding the facility. The Arena can contain up to 8,000 people seated around the large oval ice rink, which measures 400 metres long and 12 metres wide. The Adler Arena, which cost 32.8 million dollars to build, will be converted into a trade exhibition centre after the Games are over.



L Featured here, some photos of the Adler Arena in Sochi, taken in March 2013 on the occasion of the general tests of the lighting system for the speed skating competitions. The ice rink is 12 metres wide and 400 metres long. The Adler Arena has a capacity of 8,000 seats.







THE LIGHTING DESIGN

Over the years, in the race to build bigger and better Games, the Olympics have become an increasingly more important event, televised worldwide with high resolution images to guarantee even greater quality.

The lighting system of the Adler Arena in Sochi, designed by Disano illuminazione for the request of Technosvet-Service with the support and assistance of Disano Russia, achieves high levels of lighting and luminous uniformity. Along the outer and inner perimeters of the ice rink, we find 604 **Forum** (Disano) 1000 W spotlights with roto-symmetric optical system with wide and extra wide beam, 64 **Olympic** (Disano) spotlights with asymmetric optics and 28 **Area** (Disano) spotlights with 1000 W symmetric wide beam. All fixtures are installed on two gangways at a height of more than 13 metres above ground to emit an exceptionally even luminous flux. The system at its maximum workload guarantees a horizontal illuminance of

4200 lux with a uniformity coefficient of 0.90-0.70 and a vertical illuminance of 2400 lux with a vertical coefficient of 0.80-0.60.

It is basically a wide field shadowless illuminance that will allow stationary and moving cameras to ensure the high definition of greatly spectacular images. The lighting system can be used with five different turn-on times and, in addition to full power, it can be used at different reduced power modes during non-televised competitions, training sessions or when the ice rink is being cleaned. All spotlights were designed to allow hot restrike and the other Disano spotlights (**Rodio** 150 W) are located in the grandstands for emergency lighting. The lighting system was difficult to build owing to the quality of the performance required and for the complexity of the design. "To find the exact inclination angle of the spotlights – explains Maurizio Fortunato of Disano illuminazione – we needed to elaborate complex calculation procedures. Shadows needed to be completely eliminated and the design had to be defined down to the smallest detail. To have an idea of the

The lighting system recently installed in the Sochi Adler Arena includes 604 Forum (Disano) 1000 W spotlights with roto-symmetric optical system with wide and extra wide beam, 64 Olympic (Disano) spotlights with asymmetric optics and 28 Area (Disano) spotlights with 1000 W symmetric wide beam.





The Forum spotlights are designed for sports facilities that host events for HD television coverage. The system comes with six types of optical systems capable of meeting any need. The fixtures have 1000 W and 2000 W metal halide lamps and double connection with short arc, as well as colour rendering index above 90 and colour temperature of 5600/6100 K. The photo above shows a detail of the hot restrike device, which is included in all the lights as required by the 2014 Sochi Olympic Committee to ensure any type of light scenario during the event.

necessary work, it is sufficient to think that a minimal variation of the inclination of even one spotlight would require the system to reprocess all the measurements that will keep the computer busy for more than an hour. In Disano, we managed to use all our experience in the planning of big facilities, like the lighting system of the Oval in Turin during the Winter Games 2006. In that system, however, the request was to have a vertical illuminance of 1500 lux, while the Sochi achieves 2400 lux. In any case, our previous experience with the technicians and engineers of the Olympic Committee served us very well. For the Olympics in fact, very severe procedures are required in all implementation phases in order to obtain optimal results. The final result will be admired by millions of worldwide spectators during the Olympics.”

