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***Quantum of the Seas* Sails with Energy-efficient Elation Lighting and Video Systems**

Over 700 Elation and Acclaim products – 95% of them LED - installed in main entertainment and relaxation areas on the world's most advanced cruise ship

Royal Caribbean's newest luxury cruise liner, *Quantum of the Seas*, set sail in November with a full complement of energy-efficient Elation Professional lighting and video products, as well as Acclaim architectural lighting products, and a promise to deliver experiences never before seen at sea.

Quantum of the Seas is the third largest cruise liner in the world and can accommodate more than 4,000 passengers, all of whom want to be entertained on each voyage. As with Royal Caribbean ships of the past, the options for that are many with *Quantum of the Seas* offering many first-at-sea activities like a sky-diving simulator, bumper cars, the world's first robotic bartenders, and the North Star, an engineering marvel that transports guests more than 300 feet above the ocean.



Smartship

Quantum of the Seas embraces technology at a whole new level as an environmentally friendly ship as well. Promoted as the world's first smartship, *Quantum of the Seas*, built at Germany's Meyer Werft shipyard, sets new standards in terms of energy-efficient entertainment lighting systems onboard. The media and entertainment system integration for about 40 public areas was provided by Amptown System Company (ASC), including system

engineering, supply, installation and commissioning.

Christopher Vlassopoulos, Superintendent SLVR & Architectural Lighting for Royal Caribbean International, coordinated the design and specification for all the entertainment equipment in the ship's public spaces, including the ship's entertainment lighting systems. He explains that a key aspect of the smartship ethos is energy efficiency and the large number of Elation LED lighting and video products used in the ship's many entertainment and relaxation areas fit the bill perfectly. "The core reason why we have so much LED lighting onboard *Quantum* is because of a directive that there should be no incandescent lamps, which would have been quite the challenge three years ago but is now possible. There should be no lamps to change," said Christopher, who specified and designed lighting for the entertainment spaces together with Benjamin Couling of Tristwell Solutions, the company responsible for installation and commissioning.

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As Christopher explains, power savings was important and the dollar savings quite significant. “By switching from incandescent to LED we realize millions of dollars in savings over the lifetime of Royal Caribbean ships and on Quantum we’ve also already benefited from the lower maintenance involved.” *Quantum of the Seas* left the Meyer Werft shipyard in October and Christopher says if the ship had been outfitted as they were in the past, they would already have relamped every single fixture. “That’s not only a considerable savings in cost but it frees technicians up to do other things with their time. I can tell you this. It has made for happier technicians.” Another aspect to think about, he says, is the visibility of the fixtures. “In Two70 for example, where the fixtures are visible, you don’t want to be going up into the rig to change lamps with guests down below you. We avoid that with an LED lighting system.”

Savings extends to other areas as well. With the Elation LED systems there is less cabling, fewer connections to contend with, and there are no dimmers to work with. There is also less heat generated, which means a lower burden on the air conditioning system which translates into less power draw and fuel savings.

Close cooperation

Christopher did his background work to investigate what were the best LED fixtures to use and because he must make decisions on fixture choice years before the ship sails, it is important that he work directly with the manufacturer. “Elation has been very helpful,” he states. “Everything fit together with what Elation could offer with LED, also the video products. I was given knowledge of what fixtures were in the pipeline very early in order to make the correct choice and that was important. I appreciate the close cooperation we have had throughout.”

Entertainment and relaxation spaces

Whether enjoying a show in one of the ship’s many entertainment venues, enjoying a stroll along the Royal Esplanade, working up a sweat at SeaPlex or hanging out at the pool, Elation lighting systems are there to enhance the experience.

Two70

A top attraction is Two70, a multifunctional multi-story space at the stern of the ship that takes a futuristic approach to entertainment. During the day the room acts as a lounge area with a large window front providing 270° panoramic sea views. In the evening, Two70 becomes an event venue with stage shows performed before a huge floor-to-ceiling Vistarama video projection screen that transforms the windows into any scene, real or imagined, while six large Roboscreens driven by ABB Industrial Robots are included in the choreography.



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An Elation lighting rig of Platinum Wash ZFX Pro, Satura Spot LED Pro, Platinum Spot LED Pro II and Platinum Beam 5R Extremes light shows “Starwater” with lighting design by Alex Picotte and “The Virtual Concert,” an all-virtual show with band performing on the Vistarama and solo performances coming alive on the Roboscreens. “It’s a combination of a concert and a club with the band performing digitally and guests out on the dance floor,” explains lighting designer and programmer for “The Virtual Concert” Susan Rose. “I use the lights to create the feeling of a concert and the Elation LED lighting is perfect for this environment. The brightness is ideal although I did have to dial it down a bit in order not to overpower the video. The Platinum Beam is the only non-LED fixture in the rig and I have that at 20% intensity.”

Because there is really no stage per say most of the rig is located over the audience with Susan lighting around the video elements - the room, the audience and scenery. She uses the Platinum Wash ZFX Pro’s to color splash and provide eye candy looks for the audience while the Satura Spots light the dancefloor or scenic pieces, also with gobos. “The light show works well with the video,” Susan says. “It was a fun rig to work on, very different, but it worked perfectly.”

**Royal Theatre**

The state-of-the-art 1300-seat Royal Theatre is another of the ship’s main entertainment spaces, featuring contemporary musical stage productions with all the glitz and special effects of a Broadway production. A pair of top quality production shows feature on each cruise – “Mamma Mia!” with lighting design by Ed McCarthy and “Sonic Odyssey” with lighting design by Todd Clark – as well as other special events. Both shows are full productions and the lighting rig is impressive to say the least with LED-based Elation Platinum Wash ZFX Pro and

Satura Spot LED Pro moving heads used as the main color and graphics luminaires. Extended color possibilities come from Design Brick 70 II RGBWA color battens and ELED QA Strips while Elation Platinum Beam 5R Extremes and Platinum Spot 35R Pro’s, both housing powerful Platinum lamps, provide an extra punch of power when needed. The Royal Theatre also has three 20mm pixel pitch Elation EPV20 LED screens for displaying a variety of on-screen graphics. Capable of extremely bright projection up to 4000 nits when needed, one large 5.8 by 11.5 meter screen is positioned upstage as a dynamic backdrop with smaller 5.8 x 1.9 meter screens positioned at each side.

Music Hall

In the two-story Music Hall, guests can enjoy a range of activities during the day from dancing or cooking classes to billiards while at night the multi-use venue comes alive as the heart of the ship’s entertainment with live performances by a tribute band or a late-night show featuring the cast of the Royal Theatre. Accommodating around 400 guests for performances, design inspiration for Music Hall comes from the House of Blues with décor in



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deep, rich tones. Lighting plays a major part in creating the atmosphere with an Elation rig of Platinum Spot LED Pro II and Platinum Wash ZFX Pro moving heads along with Design Brick 70 II capable of accommodating any and all events.

Royal Esplanade

The Royal Esplanade is a multi-level thoroughfare lined with boutiques, clubs, restaurants and bars that runs along the length of the ship and provides an elegant retail shopping area and spacious gathering place for guests. Platinum Wash LED Zoom and Platinum Spot LED Pro II fixtures painted white to blend in with the architecture run along each side of the Esplanade and provide mood lighting effects. Used every night from everything from shows to special events, the lighting is also an integral part of the theming during a choreographed parade in which singers, dancers and even the crew entertain. There are always people walking through the area so it was important that the lighting fixtures, which are not easy to access, not require a lot of maintenance. Christopher says the lights in the Royal Esplanade are used more than they have been in earlier ships thanks to the power savings and long operational life benefits of LED lighting.



SeaPlex

On deck 15 is the SeaPlex, the largest indoor active area on the ship and a sports and entertainment venue that houses a circus school with trapeze, bumper cars, regulation size basketball court, soccer area and a roller skating rink. The multi-use space is also used to hold parties and other events. From the two-deck-high ceiling Elation Design Wash LED Pro and Platinum Spot LED Pro II moving heads light the space from pods protected with wire so as not to be hit by a stray ball. For dance and music events, a special DJ pod with floating arm can be lowered when needed. At one end of the room hangs a high-resolution 6 mm pixel pitch Elation EPV6 video wall, a bright 2,500 nit LED video display used to provide graphics for both sporting and entertainment events.

Pool, Crew and Sports Decks

Specialty architectural effect lighting has been incorporated into several of the ship's outdoor areas including the pool, crew and sports decks where, in the evening hours, Elation ELAR 108 PAR RGBW fixtures light up the decks in vibrant color, often a complementary blue. ELAR 108 PAR lights have been a staple on Royal Caribbean ships as a powerful wash light since the first time they were used by Royal Caribbean on *Oasis of the Seas*' first voyage in 2009.

Quantum of the Seas sails itineraries from New York to the Caribbean for its inaugural season and will have a new homeport in China in May 2015. Two more ships in the Quantum class will soon be sailing with Elation and Acclaim lighting and video systems, *Anthem of the Seas* set to sail in 2015 and *Ovation of the Seas*, planned for 2016.

Two70

Platinum Wash ZFX Pro
Platinum Wash ZFX ProXL



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Satura Spot LED Pro
Platinum Beam 5R Extreme
Platinum Spot LED Pro II

Royal Theatre

Platinum Wash ZFX Pro
Platinum Wash ZFX ProXL
Satura Spot LED Pro
Design Brick 70 II
Platinum Beam 5R Extreme
Platinum Spot 35R Pro
Platinum Spot LED Pro II
ELED QA Strip
Sixpar 100ip
ELAR Quad Par
EPV20
EPV VSC

Music Hall

Design Brick 70 II
Platinum Spot LED Pro II
Platinum Wash ZFX Pro

Royal Esplanade

Platinum Spot LED Pro II
Platinum Wash LED Zoom

SeaPlex

Design Wash LED Pro
Platinum Spot LED Pro II
EPV6 video panels

Pool Deck

ELAR 108 PAR RGBW

Sports Deck

ELAR 108 PAR RGBW

Crew Sun Deck

ELAR 108 PAR RGBW

Acclaim Lighting

Acclaim AL Dome (clear and diffused)
Acclaim Rebel Eye HP



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Acclaim Dyna Drum HO
Acclaim Rebel Drum 18
Acclaim Rebel Drum 3

About Elation Professional

Elation Professional is one of the world's leading lighting and visual solutions providers and is the global brand of Elation Lighting. Founded in 1992 and headquartered in Los Angeles, with European sales, distribution and support based in The Netherlands, Elation designs and manufactures a comprehensive range of innovative yet affordable lighting and video products that are distributed through a global network of dealers and distributors. Made up of a spirited team of dedicated personnel, Elation is setting new efficiency and performance standards in Platinum lamp and LED technology and is acknowledged for a comprehensive commitment to Total Support. As a company in expansion with a presence in a growing variety of market segments, chances are you've experienced Elation lighting at a concert, special event, TV, theater, late night venue, House of Worship, theme park, cruise ship, exhibition, architectural space or elsewhere. For more information, please visit www.elationlighting.com

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