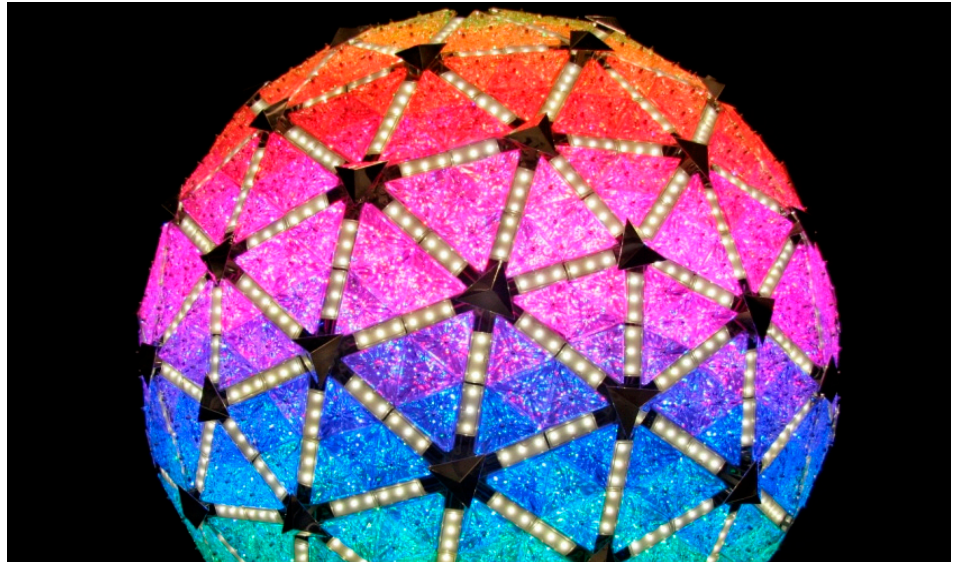


Case Study



The Times Square Ball

never before possible

Each year, millions of eyes from all over the world are focused on the sparkling Times Square New Year's Eve Ball. At 11:59 p.m., the Ball begins its descent as millions of voices unite to count down the final seconds of the year, and celebrate the beginning of a new year full of hopes, challenges, changes and dreams.

Reinventing an Icon

On October 4, 2007, the Times Square Alliance and Countdown Entertainment, co-organizers of New Year's Eve in Times Square, unveiled the new LED Crystal Times Square New Year's Eve Ball, sponsored by Waterford Crystal and Philips Lighting.

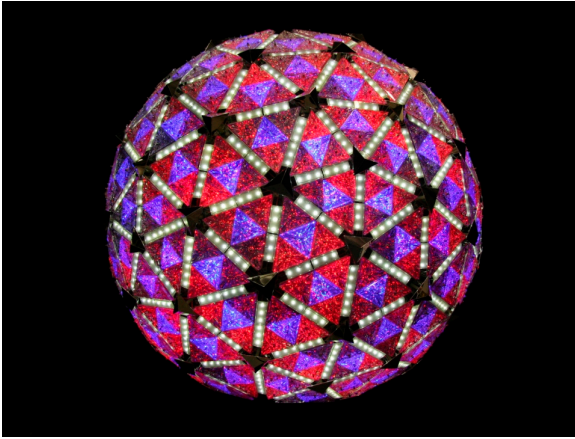
Tim Tompkins, President of the Times Square Alliance, tells the story: "This year, we are celebrating the 100th anniversary of the New Year's Eve Ball, which was first dropped on December 31st, 1907. At that time, the Ball represented a marriage of Tradition and Technology, because New Year's Eve itself is about looking back at the past and reflecting on where we've been, and looking forward into the future with hope. The Technology of 1907 was one hundred, 25W incandescent light bulbs. Those today, for us, are just regular, old-fashioned light bulbs, but at the time, it was incredibly new technology—electric lights in place of gas lights—and that was the newest, hottest thing. So fast-forward a hundred years. Once again, the Ball is about the marriage of Tradition and Technology. And the Technology of the Future is these amazing Philips LUXEON LED lights, of which there are 9,576 in the new Ball. It's incredible to see them because it has so much more capacity than the old New Year's Eve Ball—it is so much brighter, there are so many more patterns, and it just looks modern, and new, and cutting-edge."

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- Tim Tompkins
President, Times Square Alliance

PHILIPS

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The new Times Square New Year's Eve Ball is more than twice as bright as the old one, with enhanced color capabilities and state-of-the-art LED lighting effects. Waterford Crystal crafted a beautiful new design for the crystal triangles on the Ball. Philips Lumileds provided new LUXEON solid state lighting technology that substantially increased the brightness, energy efficiency,

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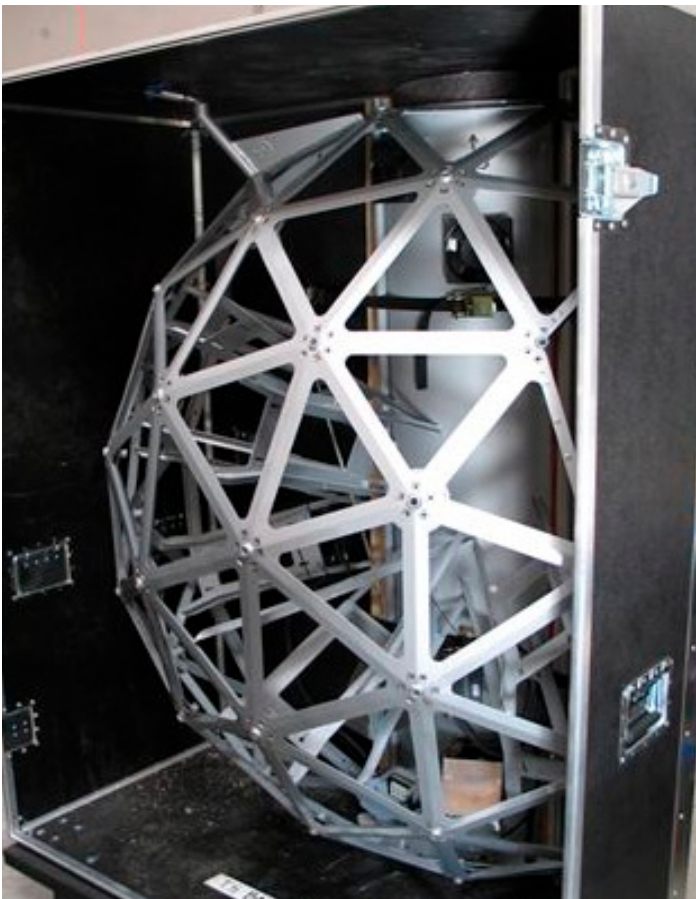
- Jeffrey Straus
President of Countdown Entertainment

and color capabilities of the Ball. And Philips Lighting brought all the technology together, engineering a completely re-thought Ball based on the spectacular and unique light show created by Focus Lighting.

"We should all look this spectacular at our 100th birthday party," said Jeffrey Straus, President of Countdown Entertainment. "The combination of Waterford Crystal and Philips lighting technology has created a dazzling new look for this worldwide tradition of celebrating the New Year." Jeff continues, "What's great about the LUXEON LEDs is that we can actually now individually light each of the 672 Waterford crystal triangles on the Ball in a different color, from a color palette of over 16 million. It just creates this fantastic, kaleidoscopic effect."

Building the New Ball

The story of the New Ball begins in 2006, when Philips Lighting—lighting partner since 1998 with Countdown Entertainment, the owner of the Ball, and the Times Square Alliance—began talking about making the change to solid state lighting. The previous Ball, created for the December 1999 celebration and therefore called the "Millennium Ball", was a sphere-within-a-sphere. The exterior of the Ball was illuminated by 168 Philips Halogen Brilliant Crystal light bulbs, Inside were 432 Philips incandescent light bulbs (208 clear, 56 red, 56 blue, 56 green, and 56 yellow), and 96 high-intensity strobe lights, all computer controlled.

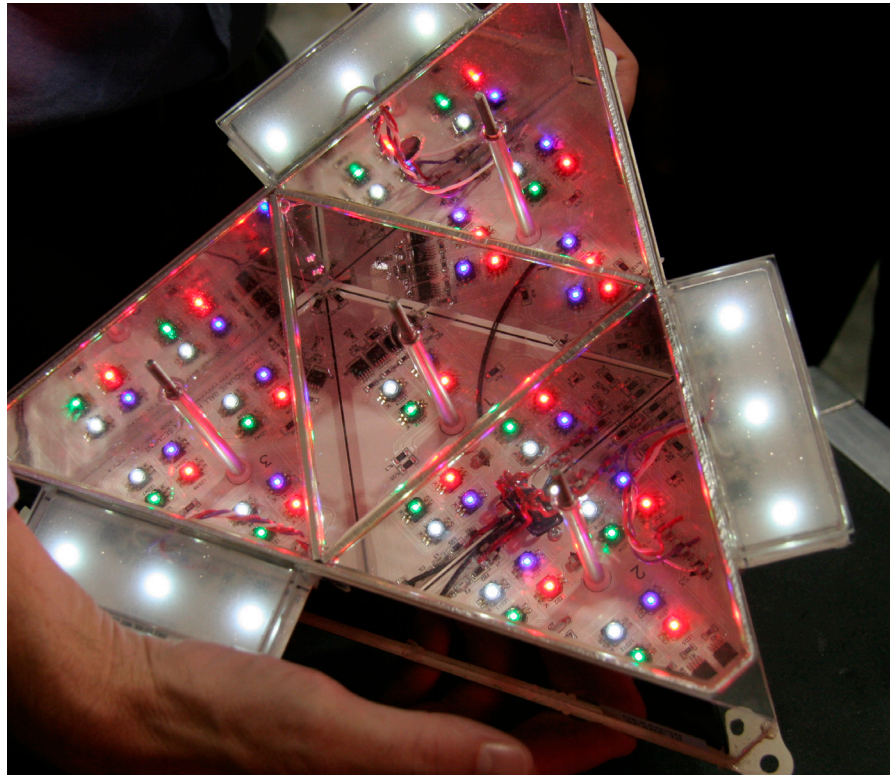


With the approach of the 100th anniversary, Philips Lighting proposed a whole new approach using industry-leading solid state lighting technology. LUXEON LEDs could provide the same or better color mixing with much finer granularity, much faster on/off/dim response time, better digital program flexibility, and much more light using far less energy than any other lighting option. Because of the never before possible capabilities of LUXEON LEDs, they imagined a Ball that behaved almost like a color video screen wrapped around a sphere.

First, Philips Lighting did away with the two-sphere structure. The new Ball builds on the same 6-foot diameter, external geodesic sphere as its predecessor. This framework is made up of 168 triangular panels, each made up of four smaller triangles. Each of the 672 small triangles contains three groups of four LUXEON K2 LEDs in red, green, blue, and white (RGBW). Each small triangle is fully isolated from its neighbors by reflective separation panels that prevent bleeding of light between triangles, allowing complete control of light color and patterns in the Ball.

The large triangles are flanked by "wings"—linear strips of white LUXEON Rebel LEDs that, when the large triangles are joined, turn into bold, light or dark outlines, or can be programmed to sparkle or "race". In fact, each of the 9,576 LUXEON LEDs is individually addressed and controlled, with the result that the Ball can produce billions of different lighting effects.

The LUXEON lighting design created an opportunity for an equally creative optical design. Waterford's unique, triangular lens crystal is "double cut" (cut on both sides) and "finely cut", with small facets spaced closely together. The detailed design and careful arrangement of the crystal and the Luxeon LEDs gives the crystals the ability to maximize both color blending and light refraction. The new Times Square Ball is truly a jewel in the sky.



The Glorious Results

"What is most striking to me is how beautifully the tiny LEDs refract through the Waterford crystals," says Jeff Straus. "They just sparkle and dance in a whole new way! The older incandescent technology created a big, uniform light surface, but could not create the life and brilliance we have achieved with the LUXEON LEDs."

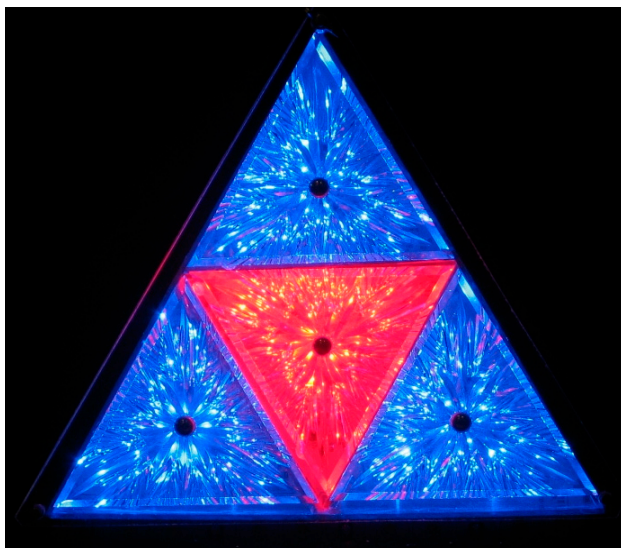
The sustainability of high-power Luxeon LEDs is an important message for the 21st Century. The new ball can provide more light using less power than its predecessor, without the use of toxic substances such as lead or mercury. The light given off by the 40W color incandescent bulbs in the older Ball can now be created using just 1-2 watts in the new Ball. This, too, looks forward to a future in which technology is used to create a more sustainable society.

"Times Square has always been an arena where the latest and greatest cutting-edge technology is unveiled and showcased. It's also a neighborhood that's rich in tradition—from Broadway to Tin Pan Alley to Restaurant Row," said Tim Tompkins, President of the Times Square Alliance, "the re-invented New Year's Eve Ball reflects the spirit of Times Square. It's that same spirit of renewal and new beginnings that brings people here from across the globe, in person or

in spirit while watching from home, on New Year's Eve every year."

Waterford Crystal

created an exclusive "Let There Be Light" design for the crystal triangles on the new Ball. Designed and crafted by Waterford artisans in Ireland, "Let There Be Light" features a dramatically stylized, radiating sunburst on each of the 672 crystal triangles. Due to the new



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design and technical innovations, this represents an increase of 168 crystal triangles from last year's Ball. And, for the first time, the crystal triangles will feature cutting on both sides. The double cutting maximizes the light refraction within the crystal triangles.

"Waterford Crystal is once again extremely proud to join our Times Square partners, Countdown Entertainment and the Times Square Alliance, as an integral part one of the world's most iconic symbols, the Times Square News Year's Eve Ball," says John Foley, Waterford Crystal Chief Executive Officer. "Our craftsmen



and artisans have blended the time-honored traditions that have defined Waterford through the centuries with cutting edge technology to create the magnificent crystal panels that have adorned the Ball since the Millennium. With this year's theme of 'Let There Be Light,' we continue to spread light and harmony to the millions who watch the Ball descend at midnight through the art of crystal."

Philips Lighting provided the design, engineering, assembly and of course the solid state lighting technology for the Ball, resulting in an astounding increase in brightness, energy efficiency, and color capabilities. The 9,576 LUXEON K2 and LUXEON Rebel LEDs more than replaced the 600 incandescent and halogen bulbs of the previous Ball. The new Ball is more than twice as bright and capable of creating a palette of more than 16 million vibrant colors and billions of patterns, truly creating an visual experience that was never before possible.

"Philips is extremely delighted to once again light the Times Square Ball and to be a part of this year's revolutionary makeover in celebration of the Ball's 100th birthday," said Philips Lighting Company Director of Corporate Communications Susan Bloom. "In keeping with Philips Lighting's mission to deliver innovative and energy-efficient lighting solutions to the world, the globally-recognized Times Square Ball represents an outstanding platform to demonstrate the powerful, high-performing, and highly sustainable qualities of LUXEON technology."

Focus Lighting created a spectacular and unique lighting design that fully leverages the brilliant facets of the Waterford crystal triangles and Philips solid-state lighting technology. The lighting design skillfully illuminates the beauty of each individual triangle as well as the colorful moving patterns of light radiating from the Ball. In addition, for the first time ever, Focus Lighting designed a second layer of LUXEON LEDs to showcase the geodesic structure of the Ball.

"Our goal for this year's re-design of the New Year's Eve Ball was to create a shining gem in the sky, equally stunning from various distances," says Focus Lighting principal lighting designer Paul Gregory. "Working with these new lighting methods, combined with the advanced crystal cutting technique, and the flexibility of the e-cue control systems, we created a look that is vibrant and unique. This year the Ball will be brighter and more brilliant than ever before, each crystal gleaming like a diamond in the sky."

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