

Altman Debuts LED Theatrical Lighting Firsts with Future Lighting Solutions in Cameo Role

Altman's four-channel LED-based PAR and CYC fixtures broaden the palette for theatrical lighting with a custom red, green, blue and amber light engine.



In mid-2008, two theatrical/architectural LED lighting fixtures from Altman Lighting took a bow as the first products in their class. The Altman Spectra CYC 100 was the first four-channel LED cyclorama/wall wash luminaire, featuring amber LEDs added to RGB to enable better color saturation and warmer white. The Altman Spectra PAR 100 was the first four-channel PAR spot capable of producing four different beam spreads with a simple tool-free lens change. Both are capable of creating over 281 trillion different colors. With the help of LUXEON® Rebel LEDs as well as behind-the-scenes assistance from Future Lighting Solutions, these new fixtures are helping Altman simplify and improve lighting on stages and buildings around the world – including well-known theme parks, museums, TV shows and productions of all kinds.



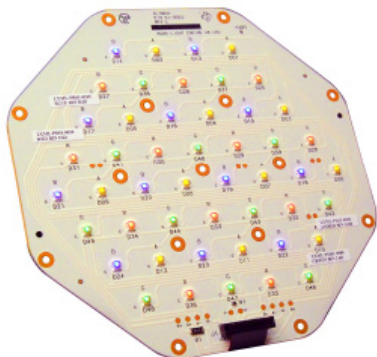
Altman Spectra PAR 100

ALTMAN'S NEW ACT

New York-based Altman Lighting was one of the first entertainment/architectural lighting manufacturers to add solid state luminaires to its product portfolio. The company began producing LED-based fixtures in 1998, not only to deliver benefits such as long lamp life, low heat production and low energy consumption, but also to equip the theatrical community with never-before-possible digital color mixing and dimming. Altman's LED theatrical lights were among the first to enable a palette of 16.8 million colors to be generated from a single fixture with no gels or dimmers.

“For these two products, we needed to develop our own light engines for the first time. Future Lighting Solutions played an important role in helping us optimize our design, maximize our light output, identify the best color bins for our purposes, and in general take our LED theatrical lighting to the next level.”

Gary Raymond Leonard, Director of Technical Sales & Marketing, Altman Lighting



Inside the Spectra PAR 100



Altman Spectra CYC 100



Inside the Spectra CYC 100

Until the release of the Spectra CYC 100 and Spectra PAR 100, however, Altman built its solid state fixtures with off-the-shelf light engines that were available only in a limited number of configurations. That was the challenge the company faced in 2008 when it recognized the opportunity to use a then-new, higher output LUXEON Rebel amber LED to raise the color bar.

“We wanted to build four-channel luminaires with the addition of amber LEDs to give lighting designers more range of dynamic colors, better color rendering, and better control in the warm color range that is a favorite in the theater for skin tones, but only RGB light engines were available,” said John T. Ryan, Director of R&D for Altman Lighting. “We realized we would have to develop our own solutions from scratch.”

RGBA ON STAGE

Based on a relationship with Future Lighting Solutions dating back to its earliest LED product initiatives, Altman engineers turned to Future’s solid state lighting application development specialists for assistance. The Future team recommended using LUXEON Rebel LEDs because of their small package size – particularly useful for the cyc fixture – as well as their high flux, forward voltage and heat tolerance. Then they utilized proprietary Future tools to help optimize the lighting assembly design.

Altman originally considered using six red, green, blue and amber LEDs in each fixture for a total of 24, for example, but wanted to increase the light output. Future engineers calculated that the thermal capabilities of LUXEON Rebel LEDs as well as the use of specific printed circuit boards would make it possible to double the number of LEDs to 12 per color for a total of 48 without overheating. The change not only doubled the light output per fixture but also – in combination with widening the viewing angle - reduced the number of luminaires required to achieve the desired wall wash or spot illumination.





281 trillion colors, 4 beam spreads in one energy-saving PAR fixture

Future also assisted in designing the board layout to achieve the desired light distribution via a linear LED array for the cyc product and a hexagonal array for the PAR; specifying the microcontrollers and power supplies; identifying the best color bins for Altman's purposes using Future's internally developed color mixing tools; and providing binning services and inventory management to ensure color consistency from fixture to fixture as well as reliable LED supply.

Future's narrow color binning was in fact critical to the project. "If you have two of our Spectra CYC 100 fixtures set six feet apart and washing the wall on a play or concert, the color has to be even and smooth across the backdrop," Ryan noted. "That can only be achieved if your supplier can guarantee tight color bins."

2 STARS ARE BORN

The collaboration between Altman and Future resulted in two major new color-changing LED theatrical/architectural lights that break new ground in several areas.

The Spectra CYC 100 is not only the first four-channel LED cyclorama/wall wash luminaire, with the ability to produce both deeper tones and warmer colors via the addition of amber LEDs, but also the first true LED cyc light by virtue of optics not used in competing products. A patent-pending LED lens reduces pixelization, for example, and an asymmetrical reflector controls the beam as if it were a conventional tungsten/halogen light. Light output is equivalent to a 1000W quartz Altman Focusing Cyc with gels.

The Spectra PAR 100 is the first solid state PAR spotlight to offer interchangeable lenses to achieve very narrow, narrow, medium and wide beam spreads from the same fixture. True PAR lenses replicate the light distribution of a standard quartz PAR – including a scalloping effect with the medium and wide lenses that is not available from any other PAR LED product.

Colorwise, both fixtures are compatible with DMX and RDM lighting control protocols. They ship with a library of pre-programmed single colors and color mixes, enable four conventional color luminaires to be replaced with one, allow color changes without using gels, and offer other standard features of solid state entertainment lights.

In addition, both fixtures provide the usual lifetime, maintenance and energy savings advantages of LED illumination. The LEDs will last for an



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estimated 50,000+ hours compared to 2,000 for standard cyc and 600 for standard PAR solutions, and each luminaire consumes just 100W of power – far less than either the 575W of a comparable PAR or the massive 4000W draw of a conventional four-cyc set. The lower power consumption also makes it possible to run many more fixtures on a single 20 amp circuit, both simplifying setup and amplifying the lighting options in environments with limited electrical capacity.

GOOD REVIEWS

Both Altman products quickly captured the attention of the entertainment lighting community. Early users of the Spectra PAR 100 included Disneyland, where multiple units now light up the theme park's parade route as well as the exterior of the "It's A Small World" ride. Early users of the Spectra CYC 100 included lighting designers for the Food Network's Ultimate Recipe Showdown 2 and New York Mercedes-Benz Fashion Week, who praised the unit for everything from brightness, color range and even wash to the ability to quickly set the color and intensity on location without receiving detailed site layout information in advance.

Based on its early success with the fixtures, Altman is in the process of expanding the line with an outdoor version of the Spectra CYC 100 as well as RGBW and single white color editions. Stay tuned: Altman's next act promises to be as interesting as the last.

