

# PR Lighting XLED 590

By Richard Cadena

If you aren't aware of the seismic shift towards LED sources in the entertainment lighting industry, welcome back to Planet Earth. Even if you have been hanging out in the International Space Station since the first crew occupied it in 2000, you've probably heard or read about the advantages of LEDs — low power consumption, high efficacy in lumens per watt, low heat, long life and more. But for the critical eye of a lighting designer, LEDs also bring with them their own set of issues. Among the concerns are color rendering, flicker, smooth dimming and brightness. These are the new measuring sticks for LED luminaires.

PR Lighting, a manufacturer headquartered in Guangzhou, China, has been

unfortunately the four indicator LEDs are not. And they're positioned so close to the menu and they're so bright that they make it difficult to read the menu display without being blinded by the glare. But a few bits of gaff tape can take care of that.

## Features

Some of the notable features include: linearly adjustable color temperature from 3200-10,000K; 8-bit or 16-bit dimming; strobing from 1-25 FPS; and 10 preset colors. In addition to operating with DMX512, it also has stand-alone capabilities with three preset user-programmable programs. The fixture can also be run in a master/slave mode. The product literature

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building products for the entertainment lighting industry since 1984. According to their Web site they are the "very first Chinese supplier of stage lighting products which entered the world scene," and I would argue that there is truth in that statement. As a side note and disclaimer, their chief R&D engineer, Steve Tulk, and I worked together at High End Systems for many years. He helped develop many High End products including Laser Chorus, Dataflash, Intellabeam, F-100 and many, many more.

PR Lighting has been manufacturing automated lighting for at least 16 years that I know of. Their Orlando Scan 1200 moving mirror fixture was a big seller around the world and they have since designed and developed the XL line of automated moving yoke fixtures ranging from 250 watts to 1500 watts. They have also produced many LED fixtures, displays and effects. Now they've married their LED technology with their moving yoke technology in the new XLED 590 moving yoke color wash fixture.

## Physically Fit

The XLED 590 joins the growing genre of automated LED color wash fixtures, but this one might be the brightest one I've measured. It has 90 Osram Diamond Dragon 5-watt LEDs; 30 red, 30 blue and 30 green. The head is 10.5 inches (267mm) in diameter and the unit stands 13-7/8 inches (353mm) high with the head focused straight up. The base is 12-3/4 inches (350mm) wide by 9-9/16 inches (243mm) deep and the fixture weighs 24.25 pounds (11kg). It has a stylized polycarbonate and aluminum housing with an IP rating of 20, which means that the housing is not protected from dust or water but it has no openings large enough to allow a finger to reach into it. There is a 16-character by 4-line LCD menu display on the front of the base, with four navigation buttons and four indicator LEDs for DMX, power, configuration and auto M/S. The menu display is dimmable, but

says that it is RDM capable, but I couldn't find any information about that in the user manual. But to be fair, I didn't have an RDM controller to test the discovery of the fixture.

The pan range is 540° and the tilt range is 270°, and it does have pan/tilt correction so the yoke moves back into place when it's bumped. We measured the fastest pan at 2.75 seconds and the fastest tilt at 1.88 seconds. The movement is very smooth and exhibits no steppiness at all, even with a 10-second crossfade. The motors do make a little bit of a whining noise when the yoke is moving quickly.

## Shining Bright

The field is 26° with the standard lens and there is an optional 46° lens, which we did not test. At a throw distance of 12 feet 8.5 inches (3.87 meters) it produced a 6 foot (1.83 meter) field. I measured the light output using a Minolta T-10 Illuminance Meter. In cool white light I measured 6550 lux at the center of the beam. I also measured the illuminance using various colors including primary colors, secondary colors and warm white. The results are shown in the table below:

| Color      | Illuminance (Lux) |
|------------|-------------------|
| Red        | 2700              |
| Green      | 3320              |
| Blue       | 965               |
| Cyan       | 4360              |
| Magenta    | 3300              |
| Yellow     | 5550              |
| Cool White | 6550              |
| Warm White | 4220              |



PR Lighting's XLED 590



The menu display is dimmable; the indicator LEDs are not.

Dimming is one of the biggest challenges for LEDs because they are so responsive, they tend to lack the smooth fade of incandescent dimming. This fixture does a relatively good job of dimming but not quite as good as some. The dimming looks good with a fast fade time but it gets slightly choppy in the last half of the dimming curve using a 10-second fade.

## Summary

The quality of light is very good, particularly since you can adjust the color temperature to

match incandescent or daylight. It renders colors and skin tones well for an RGB color mixing fixture. I shot some video using a DXG-567V HD digital video camera. The frame rate of the camera combined with the frequency of the LED power supply produced noticeable flickering.

The XLED is actually a very nice fixture in the right applications. It is small, bright and fast with a nice wide field. The beam profile looks good with only a slight hot spot in the center. It renders objects and skin tones well and the colors vary from saturated to pastels. Many lighting designers will enjoy using it in their lighting plot. **PLSN**

## PR Lighting XLED 590

**What It Is:** Moving yoke LED color wash fixture

**What It's For:** Ideal for nightclubs, color washes on scenery, industrial shows and other applications where complete silence, perfect dimming and flicker-free video is not strictly required

**Pros:** Lightweight, small, bright, fast

**Cons:** Power LED is too close to menu display and creates glare, slight fan and motor noise, slightly stepy dimming near blackout, slight video flicker

**Retail Price:** \$4,999

PR Lighting products are distributed in North America by Omnisistem ([www.omnisistem.com](http://www.omnisistem.com)).