REVOLUTIONARY CIRCADIAN® HORSE LIGHTING SYSTEM
OPTIMIZES HEALTH, WELL-BEING AND ATHLETIC PERFORMANCE OF YOUR HORSE

Less than 2% blue light content at night

DaySync™ delivers over 20% blue content during the day

DynamicBlu™ Spectrum Control with Zirc™ NightSafe™ and DaySync™ LEDs
SUMMARY:
To provide the best environment for the health and well-being of horses, they need lighting designed to protect and strengthen their circadian rhythms. CIRCADIAN® ZircLight™ has created a uniquely effective spectrally engineered LED lighting technology that automatically provides the right light at the right time of day and night for your horse.

THE RIGHT LIGHT IS ESSENTIAL FOR OPTIMAL WELL-BEING & PERFORMANCE:
Light is the main synchronizer of the biological clock for all organisms on Earth... and horses are no exception. Research has confirmed that light entrains the circadian rhythms of horses and synchronizes them to their environment. In turn, providing the right light spectrum across the 24-hour day helps horses regulate and strengthen their:
• Sleep cycles
• Feeding patterns
• Energy and Athleticism
• Reproductive cycles
• Hormone cycles

WHAT'S THE BEST LIGHT FOR HORSES?
• Horses Need Blue-Rich Light During the Day - Blue-rich light during the day (from either sunlight or blue-rich light sources) entrains and strengthens a horse’s circadian cycle. In turn, this boosts alertness and energy during the day and improves sleep at night.

• Horses Need Blue-Depleted Light After Sunset - As in humans, research has shown that exposure to standard light sources (e.g., LEDs and fluorescent light fixtures) in the evening and at night disrupts the circadian rhythms of horses and suppresses health protecting hormones, such as melatonin. Furthermore, circadian disruption interferes with sleep and reproductive cycles, as well as feeding patterns, and can lead to jet-lag symptoms which can impact performance.

• Automatic Controls That Adjust Blue Light Levels by Time-of-Day and Season - The spectrum of light is automatically adjusted to the natural day-night cycle where the horse is stabled. Normally horses should be kept in synch with time zones, longitude and latitude, and the seasons of the years. But there are special applications in breeding and travel across time zones where adjusting CIRCADIAN® ZircLight™ timing can be advantageous.

CIRCADIAN® ZircLight™ is the first and only light fixture ever verified by UL – the global safety certification company - to have less than 2% blue light content at night.
CIRCADIAN® ZIRCLIGHT™: THE LIGHTING SOLUTION FOR HORSES:

CIRCADIAN® ZircLight™ developed and patented a revolutionary LED lighting technology that provides horses with the ideal lighting for health, athletic performance and well-being:

**CIRCADIAN® ZircLight™ Ensures the Right Light for your Horse 24/7**

- **OptiBlue™ Day LEDs are rich in blue during daylight hours** - to boost energy and strengthen a horse’s circadian cycle.

- **NightSafe™ LEDs** - UL verified to provide “Less than 2% blue light content at night” protects the horse from circadian disruption and the detrimental health effects of light at night.

- **High Quality White Light 24/7** - Color temperature remains in the preferred 3200-4200K range during each 24-hour period while maintaining accurate color rendering (CRI >80).

- **Automatically Controls the Amount of Blue Light 24/7** - Blue light is adjusted daily by time, location, and season to boost energy and protect health.

- **Easy Installation** - CIRCADIAN® Zirc™ Lights can be installed by any qualified electrician.

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To maximize the benefits and minimize the risks of blue light, the CIRCADIAN Light’s DynamicBlue™ system automatically controls the dosage of blue light by time of day, location and season (Example of CIRCADIAN® Blue light exposure for July 6th in the Helios Equine Rehabilitation Center in Lincolnton, GA is shown above based on local sunrise/sunset).

**A DYNAMIC SOLUTION:** A DaySync™ and NightSafe™ LED to Provide the Right Light, at the Right Time

Bio-Active blue light (440-490nm) modulates the activity of the circadian clock. During the day, blue-rich light is good. However, blue-rich light at night disrupts circadian rhythms and is a health concern. To ensure the right spectrum of light is provided 24/7, the CIRCADIAN® ZircLight™ fixture is powered by both Day and Night LEDs:

- **Day LED:**
  - Blue-rich LED utilized during the day to simulate alertness and productivity. Blue light levels are adjusted to peak in the morning and again during the post-lunch dip.

- **CIRCADIAN® Night LED:**
  - Patented CIRCADIAN® Zirc™ DaySync™ and NightSafe™ LED, which emits very little bio-active blue-light, is used at night. It’s a high quality, white light (CCT 3200K, CRI >80) that removes blue light without compromising alertness.
## Special Applications made possible by CIRCADIAN® Lighting for Horses

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<td>Rehabilitation</td>
<td>Insufficient daytime light in the stall, and turning on normal stall lighting at night to inspect a sick or injured horse disrupts circadian rhythms and slows recovery</td>
<td>Circadian light provides optimal blue rich light during the day and enables horses to be inspected safely in good quality light at night</td>
<td>Faster rehabilitation and recovery and shorter, less costly, stays in rehabilitation facilities away from their home stalls</td>
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<td>Breeding</td>
<td>Competitive events where horses compete in age brackets put horses at a disadvantageous if they are born later in their age bracket year</td>
<td>Because CIRCADIAN Lights give complete control over seasonal light cycles, the day length can be adjusted to whatever season for breeding you desire</td>
<td>Foals are born at the time of year that gives the maximum competitive advantage in their age bracket</td>
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<td>Transporting Horses Across Time Zones</td>
<td>Horses suffer from jet-lag just like humans, even if they are travelling by road in a horse trailer: The result is lackluster performance, disrupted appetite and malaise</td>
<td>CIRCADIAN Lighting Systems enables the horse’s circadian rhythms to be adjusted to a new time zone either before the trip and on arrival</td>
<td>Your horse arrives in tip-top shape, and performs at its best</td>
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Intelligent light technology that removes the harmful effects of bio-active blue light at night.

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