SENIOR LIVING LIGHTING SOLUTIONS
FOR RESIDENTS & STAFF
Improving Health, Wellbeing, Safety & Staff Productivity

Less than 2% blue light content at night

DynamicBlu™ Spectrum Control
With Day and NightSafe™ Technology
HUMAN-CENTRIC LIGHTING FOR OPTIMAL HEALTH AND WELLBEING

HEALTHY LIGHTING SOLUTION
FOR HIGHER QUALITY OF LIFE FOR EVERY STAGE OF SENIOR LIVING

THE CHALLENGE: ELDERLY HEALTH REQUIRES HUMAN-CENTRIC LIGHTING

Lighting designed to boost circadian rhythms and health is the key to healthy senior living and can make your facility stand out in an increasingly competitive marketplace.

Most elderly people are deprived of the right kind of light during the day and are exposed to the wrong kind of light at night. Spending time indoors under inadequate lighting, disrupts the circadian rhythms of elderly residents negatively impacting their appetite, energy and sleep. The result is depressed mood, increased agitation, chronic fatigue and increased risk of falls and injuries.

Traditional fluorescent and LED lighting provides too little healthy light that mimics the benefits of daylight and provides too much blue content after sunset resulting in sundowning, sleep disruption and health disorders.

THE RESEARCH

In the last ten years an extensive body of scientific research has shown that delivering the rich blue content in daytime lighting stabilizes circadian rhythms, improves sleep and is beneficial to health. However traditional static lights are harmful because blue light at night is linked to diabetes, obesity, certain cancers, and cardiovascular disease. So lights must change the spectrum they emit depending on the time of day.

Leading health organizations such as American Medical Association, World Health Organization, and National Health Institutes have issued reports which recognize as a major health issue the substantial scientific evidence that blue rich light sources in the evening and at night (e.g. LEDs, fluorescents) disrupt circadian rhythms, triggers carcinogenic and metabolic processes and suppress health-protecting hormones like melatonin.

BENEFITS OF CIRCADIAN® ZIRC™ LIGHTS FOR RESIDENTS:

• Minimizes stress, anxiety, and agitation
• Reduces circadian disruption with improved mood and sleep
• Improves emotional wellbeing and reduces fatigue related to falls and injuries
• Enhances quality of life for your senior living community

BENEFITS OF CIRCADIAN® ZIRC™ LIGHTS TO YOU AND YOUR STAFF:

• Key market differentiator for prospective residents looking for improved quality of life
• Increases staff energy, performance and alertness
• Reduces employee turnover and absenteeism due to fatigue
• Maintains natural circadian rhythms throughout the night

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781.439.6333 • circadianlight.com • info@circadianlight.com
Medical science breakthroughs have created an intelligent light technology that removes the harmful effects of bio-active blue light at night that cause circadian disruption.
THE SOLUTION: OPTIMAL LIGHTING FOR HEALTH AND WELLBEING

Installing sophisticated CIRCADIAN Lighting systems in your senior living facility is a key differentiator that can attract and retain elderly residents, whether you provide independent living, assisted living, or nursing care. An added bonus is that CIRCADIAN spectrum-controlled lighting also boosts the mood, morale and health of your staff, reducing absenteeism and turnover.

By providing the precise wavelengths of blue-rich light during the day, and high-quality blue-depleted white light after sunset, the normally weakened circadian rhythms of elderly residents are strengthened so they are alert and happy during the day and sleep well at night. Your residents’ mood and morale is sustained, and their active years of mobility extended.

To design the best light system for senior living facilities, CIRCADIAN® ZircLight™ with support from the National Institutes of Health developed and tested in our Medical Research Center the optimal lighting solution for residents and staff exposed to various lighting conditions over a 24-hour period.

- **Residents and Staff need Specially Designed Blue-Rich Light During the Day**
  Fatigue from disrupted circadian rhythms leads to increased absenteeism and turnover, which has a significant impact on morale, stress, productivity, and indirect payroll costs.

- **Resident and Staff need Blue-Depleted Light After Sunset** - Blue-depleted light after sunset prevents circadian disruption – a significant health concern.

- **Automatic Controls** adjust the blue content by time of day and season to the latitude & longitude of your facility. The lights take care of themselves, with no demands on your staff.

- **Easy Installation:** CIRCADIAN® Zirc™ Lights can be installed by any qualified electric-

THE ROI: WHY YOU NEED CIRCADIAN® ZIRC™ LIGHTS

CIRCADIAN® Zirc™ Lights directly address the top two concerns of your facility:

1. **Attracting residents and keeping them healthy and safe**
   - Promoting healthy sleep
   - Increasing energy and alertness during the day
   - Improving mood
   - Addressing depression and seasonal affective disorders

   Extended healthy stays and better quality of life enables you to attract and retain residents

2. **Attracting and retaining motivated and productive staff**
   - With healthier and happier residents the workload on staff is reduced
   - Reduces the health risks of light exposure at night for your staff
   - Demonstrate to your staff that you care about their health and wellbeing
   - Improves staff alertness, morale and retention

Make a Lighting Decision for People not Buildings:

All too often lighting decisions are made based on energy savings, which accounts for less than 1% of operating costs according to the US Department of Labor. However, since 90% of your costs are related to the people in your facility, it makes much more sense to focus on the human impact on light rather than energy savings.
COLOR TUNING: IS NOT THE SOLUTION
Lights which vary color temperature still have 8 – 10% blue content at night
Only CIRCADIAN® ZircLight™ is UL Verified to have less than 2% blue at night.

COMPLIMENTARY* FATIGUE TRAINING FOR STAFF
Since CIRCADIAN® ZircLight™ is designed to optimize the health, safety and performance of your staff, an important part of the installation process is to provide overnight staff with optional education on how to take advantage of CIRCADIAN® ZircLight™ both at work and in their daily lives.

The CIRCADIAN® ZircLight™ Training Includes:
- The impact of blue light on sleep and health
- Managing light at home and work to get better sleep
- Tips to reduce fatigue and increase alertness
- Improving health, wellness and nutrition
SPECIFICATION FEATURES

LED TROFFER CSPT/CSM Series

SPECIFICATIONS

1’x4’, 2’x2’ and 2’x4’

**Mounting Options:** Recessed Troffer, Surface Mount, and Pendant.

**Human Performance Optimized:** Proven results using human subject testing in 24/7 simulation of 12-hour day and night shifts in our medical research facility.

**DynamicBlu™ Spectrum Control:** DAY-LED provides blue-rich light during the daytime, while NIGHT-LED provides blue-depleted light (removes over 90% of blue light emitted by conventional LEDs) after sunset and during the night.

**Color Characteristics:** High quality white light, CRI >80; CCT 3200 – 4200K; Spectrum modulates based on astronomical time.

**Dimmable:** 0-10V dimming controls are standard.

**Electrical:** 48 - 108 watts dimmable to 10% (50% recommended) using standard 0-10V DC protocol. Universal input voltage range (120-277VAC) or 347VAC. Driver transient protection to NEMA SSL-2010. Non-roadway 2.5KV.

**Construction:** Heavy-duty C.R.S. construction. Matte white paint and frosted lens provide pleasing architectural aesthetics with non-glare reflective surfaces. Shallow housing depth (2 3/8”) minimizes required plenum space.

**Installation:** For non-insulated standard 15/16” T-grid ceiling applications.

**Operating Temperature:** 0°C - 40°C

**Listings:** Rated for dry indoor locations. UL1598 listed, FCC and RoHS compliant.

**Warranty:** Limited 5-year warranty

**Enhanced Visual:** Uniform ambient illumination. Ribbed lens for enhanced visual comfort.

FIXTURE PERFORMANCE

<table>
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<tr>
<th></th>
<th>Nominal Lumen Output</th>
<th>Nominal Wattage</th>
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<th>CCT (k)</th>
<th>CRI</th>
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<td>4000</td>
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<tr>
<td>2x4</td>
<td>4000-5700</td>
<td>33-90</td>
<td>up to 92</td>
<td>3200-4200</td>
<td>&gt;80</td>
<td>up to 108</td>
</tr>
</tbody>
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* based upon 24 hour duty cycle - 12 hour night, 12 hour day
A DYNAMIC SOLUTION: A Day and Night 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**: 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® Zirc™ Night LED**: The patented CIRCADIAN® Zirc™ Day 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.

Figure 1. A blue-rich LED is 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.

Figure 2. The patented CIRCADIAN® Zirc™ Day 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.
Intelligent light technology that removes the harmful effects of bio-active blue light at night.