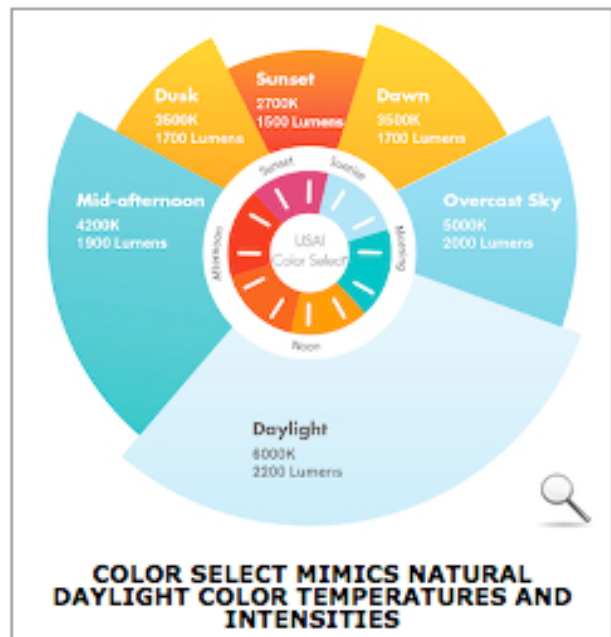


Controlling LEDs to Impact Worker Productivity

11.3.14 | New Windsor, NY | Long days spent beneath cool electric light and a pervasive addiction to smart devices that often lasts into late nights is throwing off circadian rhythms, disrupting sleep/wake cycles and preventing people from performing at their best. Now more than ever, people need greater awareness about — and control over — the lighting they take for granted. Driven to find a solution to these issues, **USAI Lighting** has developed **Color Select**, proprietary technology that shatters the boundaries of LED potential and is the first architectural LED downlighting fixture offering independent control of both color temperature and intensity. USAI's

Color Select brings personalized lighting to reality, with users able to tune white light over the broadest possible color temperature range — from candlelightlike 2200K to 6000K that's comparable to daylight, and control intensity from 100% down to 0.1% using either standard roomside dimmers or programmable control systems.



"Color Select represents USAI Lighting's unending quest to be at the forefront of LED illumination innovation," said **Bonnie Littman**, company president and CEO. "As LEDs have risen in prominence, designers and consumers have been challenged to find precise optics and high performance LED fixtures. Color Select boasts unprecedented color versatility, beamspread options, and output, while granting people the control they desire over the lighting in their personal spaces – allowing them to adapt it to their personal needs. With research linking light's spectrum to health outcomes, we've strived to harness the functionality and performance of LEDs to deliver every nuance of natural daylight knowing it has the potential to optimize health and even transform the way people perform, learn, and live."

Color Select provides seamless lighting solutions for every aspect of life and for every type of interior application — corporate, residential, hospitality, healthcare, education and retail.

CORPORATE

Architects and interior designers responsible for today's corporate workplaces are constantly challenged to determine what will be the most appropriate lighting for the varied and ever-changing tasks of workers. With Color Select as an option, the lighting can be customized for each employee and task.

"Lighting research reveals that anyone located more than 10 feet from a window will typically not receive the sun's circadian benefits from natural daylight, and many office interiors have windowless workspaces, so people are deprived of this circadian stimulus," said Littman. "Disruption to circadian rhythms shortens sleep/wake cycles and poses serious health risks due to suppression of melatonin, our sleep hormone. So, with the installation of Color Select, office lighting can be tuned throughout the day to simulate the light-dark cycle helping to reinforce circadian rhythms and, in turn, increase productivity and general well-being."

RESIDENTIAL AND HOSPITALITY

Color Select presents a new opportunity for designers to effortlessly match light with different décor styles and moods. For instance, it allows the white light in an all-white surface treatment application to be precisely selected to more definitively amplify minimalist architecture, or the color temperature can be tuned down to emphasize the cozy ambiance of a rustic kitchen. With Color Select, lighting can also adapt to the changes to finish selections interior designers may make in the midst of the design process without investing in new or added fixtures.

Designers will also appreciate how Color Select can recreate the fluctuations of natural daylight in hotels and homes to enhance activities such as waking, exercising, dining, and lounging. By setting Color Select to warm "sunset" color temperatures and lower light intensities, a spa environment can fully promote relaxation and enhance skin tones, while in a gym, setting Color Select to a cooler temperature and higher light intensity can serve to energize guests and keep them focused.

HEALTHCARE/LONG-TERM CARE

Designers specializing in healthcare facilities know the environments they create have to be sensitive to the often conflicting needs of both patients and caregivers. Color Select provides the flexibility required for these unique demands.

One example of lighting's impact in this category derives from research with Alzheimer patients. It's been found that the right prescription of light color and intensity can boost their memory and wakefulness, reduce irritability, and realign them with their natural 24-hour circadian rhythm, which helps them complete the multiple stages of sleep.

"We've learned that patients rest better and heal faster when lighting is at warmer color temperatures no higher than 3000K, whereas hospital staff need higher color temperatures and light levels to perform their work, examine the patient, administer treatments, read their charts and stay alert and focused," said Littman. "Being able to provide the variability and flexibility to adjust light settings that satisfy these diverse situations and needs is now an easy remedy for designers who incorporate Color Select into their projects."

EDUCATION

Lighting affects behavior in the classroom, with numerous studies reporting that dedicated light settings can improve a student's attention span, concentration and learning. According to one study, even test scores could be impacted by the precise color temperature of light in a room.

While individual learning styles differ, common to everyone is an internal biological clock that's affected by the right balance of light color at the right time of day, and that, in turn, can affect attention span and the ability to focus.

"Color Select is a smart choice for classroom interiors. From pre-K to university its flexibility is unmatched," said Littman.

RETAIL

Retail also is ripe for Color Select and the tunability it brings to lighting, especially considering how greatly lighting impacts purchasing behavior for everything from carrots in the produce section of a grocery to the carats in the display case of a jeweler.

Every retail environment has a common goal — to sell — and a successful sales environment provides clear visual cues to guide the customer, supports their decision-making process, reduces stress during POS and conveys branding for repeat business. How these four objectives are achieved vary greatly by what is being sold. Orange carrots prefer a warm tone and wide beam spread at medium intensity, while diamonds prefer a cool tone and narrow beam at high intensity. And, what makes Color Select a reliable “go to” for any type of retail is that it allows the lighting to help define the experience for whatever goods are being sold.

“We’re learning more about this frontier almost daily,” said Littman. “For instance, a recent study has shown that approximately 60% of purchasing decisions for clothing are made in the fitting room, so we interpret that as meaning selectable lighting in changing areas is the future of retail. With Color Select, customers can use controls to see garments in the lighting situations in which they will be worn, such as office, evening, gym, poolside and more – providing different color temperatures and intensities to match the scenarios.”

In a single fixture, Color Select can also highlight various types of products, retail displays and ambiances to fit the moods of the specific retail environment, season and consumer. Color Select’s downlight, adjustable and wall wash options additionally provide maximum flexibility in highlighting different areas and products within a store.

Color Select is available with USAI’s **BeveLED 2.0** fixture family, boasting the following features:

- Unparalleled power and energy efficiency providing up to 1975 delivered lumens and more than 66 lumens per watt, greatly exceeding output potential of bulbs with colorchanging capabilities with 0-10V 15% dimming provided standard. Additional dimming options include **Lutron** 2-wire, 3-wire, **EldoLED**, and **DALI** dimming down to 0.1%.
- Precise optical control with a full variety of beam spreads from 40 to 80 degrees
- Tunable white color temperature offering end-users 80+ CRI from 2200K - 6000K, the widest range in the industry
- Fixture-to-fixture color consistency through advanced optical design and ideal 2-step **MacAdam Ellipse**, achieving +/- 50 K
- Complete family portfolio offered, including downlight, adjustable and wallwash functions
- Effortless serviceability in a 4.5" aperture through an industry-first tool-less light engine, enabling easy field replacement of the light engine without compromising valuable time

- Superior thermal management, achieved through a lightweight, high-performance proprietary heat sink
- Energy efficiency, using up to 70 percent less energy than traditional sources to meet **LEED** certification criteria, energy codes requiring **ASHRAE 90.1-2013** standards or later and **Title 24** requirements
- Replacement of traditional sources such as incandescent, halogen, compact fluorescent and metal halide with versatile lumen packages
- Stylish trim options that can be specified in millwork ceilings or with flanges finished in white, black, metallics, and custom colors. Trimless styles are also available.

Proprietary Color Select faceplate allows independent control of color and intensity. Compatible with **Lutron** controls.

About USAI Lighting

Building on a rich heritage in lighting that dates back to the 1930s, USAI Lighting is an industry leader in manufacturing sophisticated LED fixtures and those that utilize a variety of sources, including compact fluorescent, metal halide, and low-voltage halogen. USAI Lighting has received numerous patents for its proprietary and unique electrical and mechanical product technologies. The company takes pride in developing its sources as well as its fixtures -- not only the light engines, but also the optics and thermal management, and in ensuring dimming system compatibility through rigorous engineering testing and product development. Each new product the company introduces to the architectural lighting market pushes the boundaries of what's possible in LED research & development, a forward-thinking approach that has resulted in a stream of industry firsts and awards. For additional information, visit: www.usailighting.com. [facebook.com/usailighting](https://www.facebook.com/usailighting) [linkedin.com/company/usai-lighting](https://www.linkedin.com/company/usai-lighting)