

LED Downlight Fixture Offers Independent Control of Color Temperature and Intensity

Written By retrofitadmin | Lighting, Products



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.

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.

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.

Designers specializing in healthcare facilities know the environments they create have to be sensitive to the oftenconflicting needs of both patients and caregivers. Color Select provides the flexibility required for their 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.

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 light balance of light color at the right time of day, and that, in turn, can affect attention span and the ability to

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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.


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

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