

Light is a powerful, natural, medium that can be used to influence well-being and human behavior. LED technology advancements are using scientific research, along with human reaction, to hone new color points that result in positive experiences.

What is Class A or Human Centric Lighting?

Created by Behavioral Scientists at the [Lighting Research Center](#) (LRC), with Bridgelux and other Alliance for Solid-State Lighting Illumination Systems and Technologies (ASSIST) members, Class A lighting redefines high quality light. Class A was developed from worldwide tests on sample groups of consumers and lighting professionals to determine the most preferred white points. The end product is a unique set of white points with a balance of CRIs for good color rendering and and Gamut Area Indices to render color saturation.

Class A is defined by its overall appeal, its brightness and how natural it feels to the human eye. Colors are vivid and whites are at their whitest.

What is Gamut Area Index or GAI?

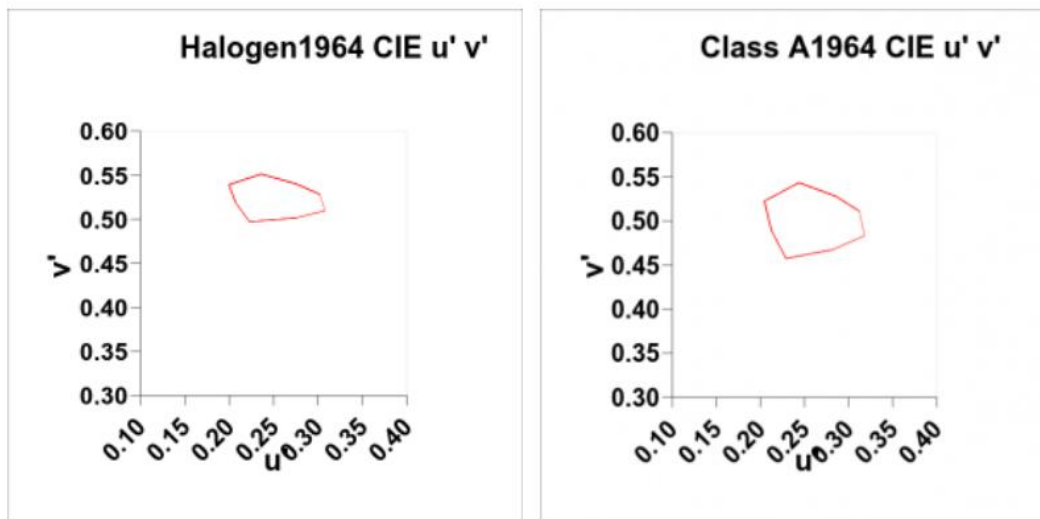
Bridgelux Décor Series Class A Chip-on-Board (CoB) LED arrays feature a new approach to color targeting that addresses the way the human eye perceives color.

Gamut Area Index (GAI) is a metric that, when combined with CRI, more accurately describes the overall effect of light than just CRI measurement. CRI only provides a comparative score for color rendering consistency but does not capture color saturation. The human eye perceives both attributes in viewing a color. GAI measures the saturation or dominance of a color and, combined with CRI, is a more accurate representation of how a person will perceive color.

The internationally recognized LRC (make this a [hyperlink to LRC](#)), with whom Bridgelux collaborates, has carried out years of research on how the human eye perceives light. Optimized color points, defined by GAI values, are then developed based on viewer's preference. The human eye perceives light as the combined effect of hue, saturation and brightness. All of these factors must be considered to accurately characterize light.

Gamut Area Index plots the relative values of each of the CRI reference colors on the color space. This captures additional information about how the source renders color saturation. In the example below, Class A is compared to a halogen light source. The larger area of Class A (on the right) indicates the ability of Class A to render a wider range of color and saturation. Class A (3000K) vs Halogen (3000K)





Class A has substantially better and broader GAI color spectrum than a Halogen light source.

Features:

- Excellent light quality optimized to human preference
- High GAI provides a more complete saturation of color
- GAI color targeting delivers the subtle light properties of hue, saturation and brightness; better than Halogen!
- No IR, UV or blue light peaks in spectrum
- Warm white color point
- Energy efficient lighting with long lifetime

Benefits:

- Optimized light creates comfortable ambience that feels natural for users of the space
- Evokes a positive emotional response
- Enhances prestige of premium locations
- Makes colors POP; creating a stunning visual experience
- Increases visits, use of services, customer purchases and \$/sq ft
- Does not damage artwork and interior fixtures
- Light does not discolor or age produce
- Ideal for CDM and CMH replacement
- Better light quality matched to human preference
- Reduces electricity, AC cooling and operating costs

Applications:

Lighting has become a critical design feature for high-end premium spaces like retailers, hotel lobbies, museums, and restaurants. Solid state lighting technology is playing an increasing role in helping operators enhance the environment of such locations to offer a highly differentiated experience.

Outstanding illumination that optimizes the ambience, architectural features and merchandise increases number and duration of customer and user visits to the space. Users and customers are drawn to a well-lit space. Perceptions are enhanced, value of product rises, and overall moods are improved. The result is an increase of revenue per square foot.

Selecting the Right Class A Light Source

Bridgelux offers two CCT options (3000K and 4000K) to provide lighting designers with a range of white points match specific application color rendering needs. The 3000K Class A LEDs offer vibrant color rendering with clean/bright whites and unmatched natural color representation. The reds, purples, oranges, greens, yellows, and blues are naturally vibrant and spectacular when compared to halogen and light resources. The 3000K Class A has an



attractive and familiar color warmth that is highly desired by average consumers. The 4000K Class A offers the brightest/cleanest white and blue/purple rendering in the industry. The 4000K Class A is a perfect replacement for matching Ceramic Metal Halide light sources. The 4000K is a favourite with lighting designers who are especially discerning when it comes to illuminating white/black and colorful objectives. Class A (CCT) configurations do not have intentional (harmful) artificial violet spikes in their color spectrums. Regardless of your specialty application, Bridgelux Decor Series Class A LEDs have you covered.

Current Part Numbers:

Selection Guide, Pulsed Measurement Data (T_j=T_c = 25°C)

Part Number	Nominal CCT (K)	CRI	GAI	Nominal Drive Current (mA)	Typical Pulsed Flux T _c = 25°C (lm)	Typical V _f (V)	Typical Power (W)	Typical Efficacy (lm/W)
BXRC-30A2001-C-03	3000	80	>80	500	1316	32.3	16.2	81
BXRC-30A4001-F-03	3000	80	>80	1050	2527	29.5	31.0	82
BXRC-40A2001-C-03	4000	80	>80	500	1747	32.3	16.2	108
BXRC-40A4001-F-03	4000	80	>80	1050	3354	29.5	31.0	108