

SMART CONTROL RGB

- I-1 RGB CONTROL
- I-2 CCT CONTROL
- I-3 BLACK LIGHT



SMART CONTROL

SST also specializes in smart lighting controls that can be programmed to run from sensors or from a pre-scheduled pattern. A smart lighting system maximizes efficiency by automatically controlling and adjusting lights based on the surrounding environment or position of the user.

All of SST's lights can be incorporated into a SMART LIGHTING system. All of SST's lights can be upgraded to be SMART CONTROLLED without changing the light fixtures. All of SST's lights are efficient and dimmable.

Selected SST models have RGB color changing options or color temperature changing option (tunable white). Customized designs and controls are available.

SENSOR CONTROL

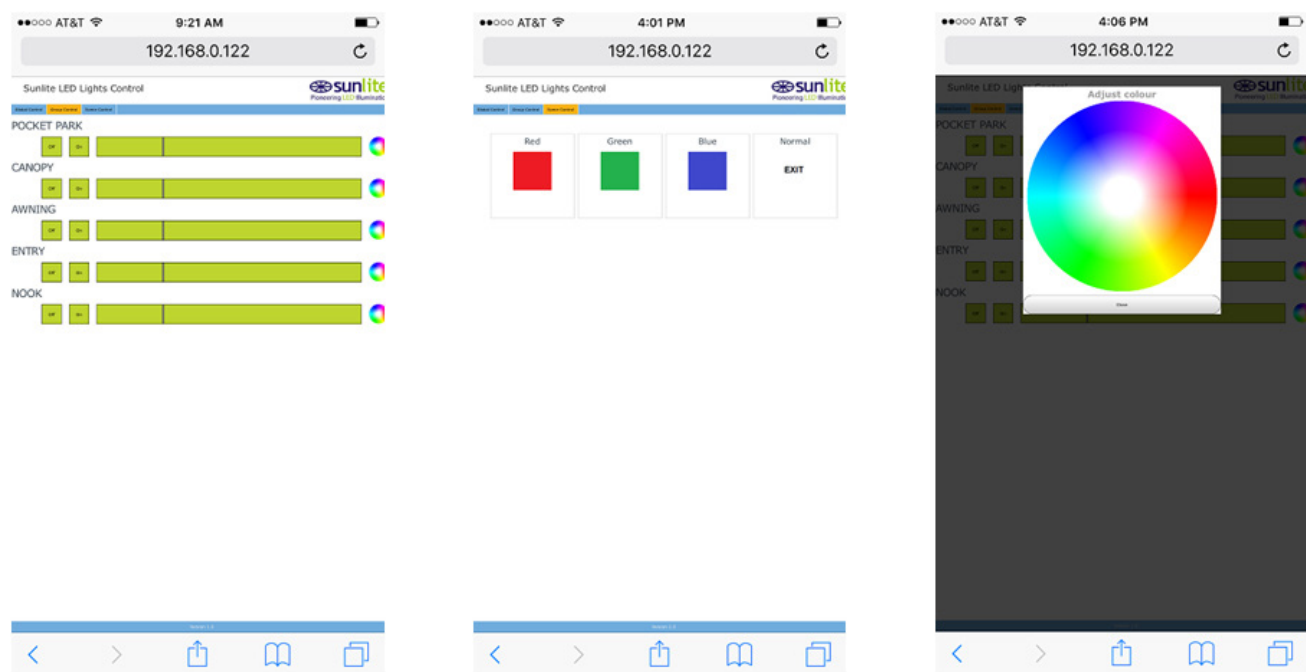
Regular AC sensors (e.g. occupancy sensor) can be wired to the SST LED lighting system to turn off the lights when there is no activity in a room.

SST's DC motion sensors are also available for fully automating the lighting system. The sensors can dim the LED lights when there is no activity in a room, or trigger other automatic controls and adjustment of the lights.

WIRELESS CONTROL

The SST lighting system can be wireless controlled by a smart phone independently, or be integrated into a existing lighting control system.

All of SST's LED fixtures can be upgraded to be wireless controlled without changing the fixtures. When you decide to upgrade your lights to be wireless controlled, we only need to add a smart control box to make it wireless controlled by smart phone.



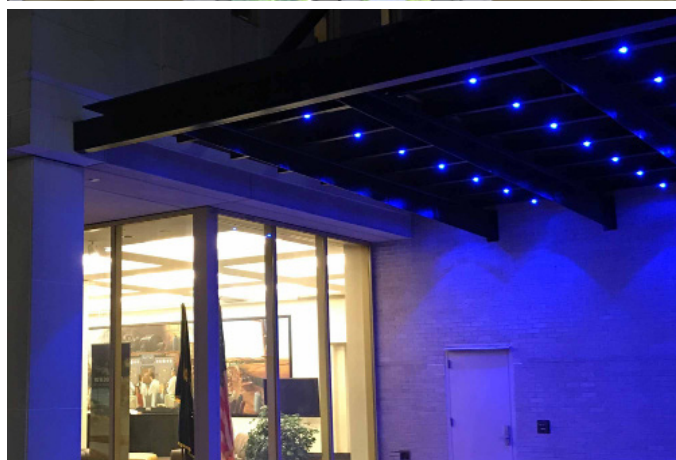
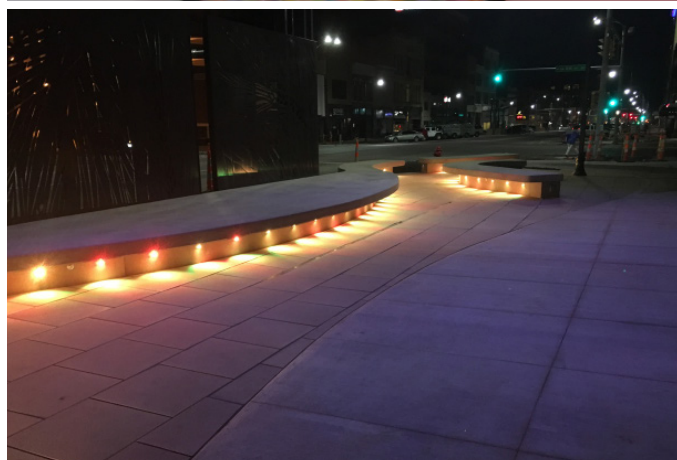
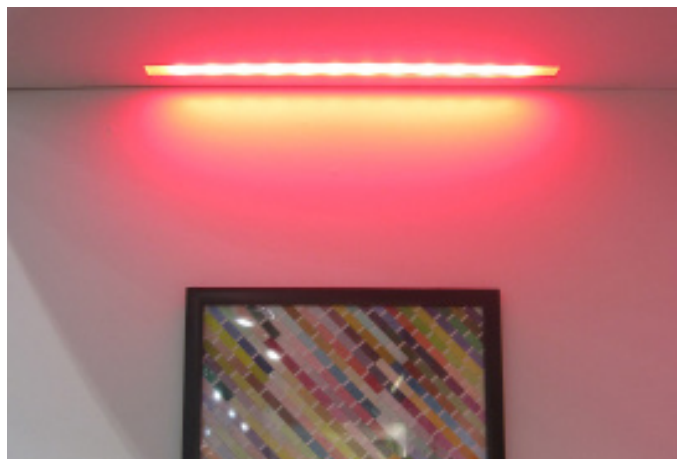
RGB COLOR CHANGING APPLICATIONS

RGB lighting refers to combining Red, Green, and Blue light sources to produce different colors of light.

RGB works really well with LEDs and SST is expert in designing RGB fixtures. SST creates both standard and creative custom RGB lights to meet your needs.

The color changing of SST RGB fixtures can be accomplished using a smart control system and 0-10V dimmers. The smart control system can be programmed to run pre-scheduled pattern, or run from an user interface.

SST SR25, WS25, WM25, SR50, ST40 and ST30-DIRECT/INDIRECT LED fixtures may be special ordered with RGB color changing applications.



COLOR TUNING APPLICATIONS

Correlated Color temperature (CCT) is defined as the temperature of an ideal black-body radiator that radiates light of comparable hue to that of the light source. CCT is measured in Kelvin (K).

CCT Tuning or Color Tuning refers to a change in the color temperature of white light, or the shade of white light.

Color tuning fixtures are often used to either simulate daylight conditions, or to highlight different jewels in jewelry stores.

Traditionally the color tuning fixture was done using added color filters or with separately controlled warm and cool light fixtures. LEDs have made color tuning simpler than that done with conventional lights;

Color tuning smoothly from 2500K to 6000K can now be done through a single LED light fixture, even through a small 2"X3" LED can light.

SST SR25, WS25, WM25, SR50, ST40, ST30-HP products are available with Color Tuning options.



BLACKLIGHT LIGHTING APPLICATIONS



WHAT IS BLACK LIGHT?

Black lights, also referred to as UV-A or ultraviolet lights, are lamps that emit long wavelength UV-A ultraviolet light.

The most common use for the black lights is in observing fluorescent materials. Fluorescence refers to the colored glow that many substances emit when exposed to UV. The ideal wavelength for fluorescence is approximately 395 nm for most applications. Figure 1 shows a fluorescing mineral collection under black light and Figure 2 shows the multiple fluorescent colors of a carpet.

Black lights are also used for mineral and rock hunting, attracting insects, detection of counterfeit artwork or money, producing artistic lighting effects, and forensic investigations.

HOW IS BLACK LIGHT CONSTRUCTED?

Fluorescent black lights are usually constructed with a phosphor coating that emits UV-A light. Type BLB black light has a dark blue filter coating to filter out most visible light but lets UV through. Type BL black light does not have filter coating. Type BLB Black light has a dim violet glow when operating, as shown in Figure 3.

Black lights may also be constructed using incandescent lamps, mercury vapor lamps, lasers, and light-emitting diodes. Black lights constructed with LEDs gives off only a narrow UV spectrum that peaks around 395nm.

SST's LED blacklight peaks at 400nm and has a bandwidth of 20nm. It can be made with the SR25, SR50, and ST40 product lines. Figure 4 shows an install of a ST40 black light.



Figure 1: A mineral collection under black lighting
 Source: <http://geology.com/articles/fluorescent-minerals/>

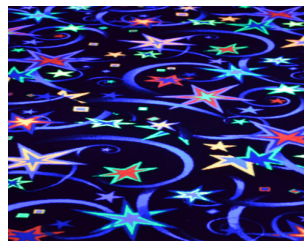


Figure 2: Carpet with multiple fluorescent colors

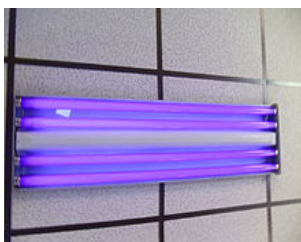


Figure 3: Fluorescent black lights
 Source: https://en.wikipedia.org/wiki/Black_light

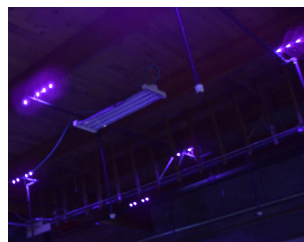


Figure 4: Installed SST ST40 Black light

BLACK LIGHT SPECTRUM

Fluorescent black lights emit a wide spectrum of UV-A light that generally peaks around 365nm. Much of this light is not useful. The emitted lower wavelength UV-A (close to 315nm) may cause cancer through indirect DNA damage.

SST's LED black light emits a fairly narrow spectrum of light that peaks at 400nm (+-10nm), very close to the visible range (400nm to 700nm). It does emit any lower wavelengths UV-A or dangerous UV-B and UV-C lights.

BLACK LIGHT LIFETIME

LED black lights are more energy efficient and have longer operating lifetime than black lights made with fluorescent, incandescent, or mercury vapor lamps.

Fluorescent and other lamp types are also very fragile and subject to breaking. LED lights are extremely durable, work well in vibrating or rough environments, and are not hazardous if damaged.

CASE STUDY (Most effective wavelength for glowing paint is 395nm)

	LED Black Light	Fluorescent Black Light
Project Space	95ft X45ft	95ft X 45ft
Product	ST40Y24M5X6-400	fluorescent black light tube
Quantity	23 pcs	180 pcs
Spectrum	400nm (+-10nm), most are useful	Peaks at 370nm
Power Rating	From 3.2 to 32.5W	32W
Lifetime	10,000+ hours, longer lifetime with dimmed light	1,000 hours
Total Energy	74W (for glowing yellow green paint), Light intensity: 2 um/cm2	5,760W
	226W (for glowing red and blue paint), Light intensity: 8-10 um/cm2	
	747W (full power), Light intensity 23-27 um/cm2	

