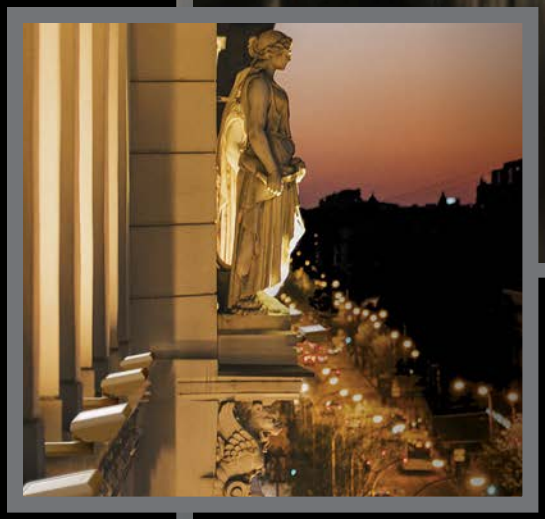
# FLOODLIGHT APPLICATION GUIDE



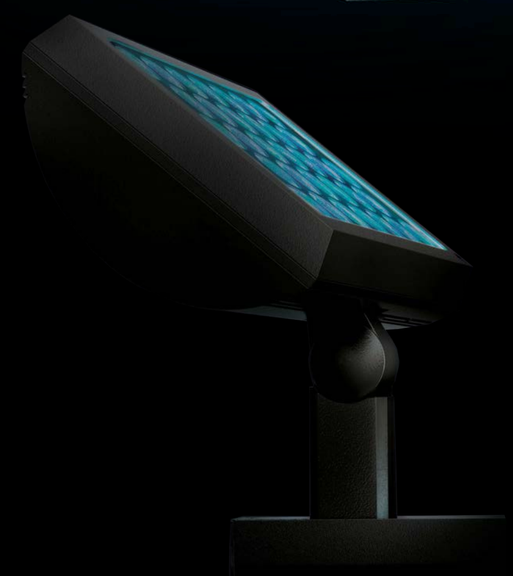
KIM LIGHTING

HUBBELL® Lighting

STATIC WHITE
& RGBW COLORS

GUIDE





## intent linear floodlights

The Intent linear floodlight family joins Kim Lighting's extensive floodlight offering. This compact architectural floodlight provides optimal appearance and performance for exterior wall washing, grazing or sign lighting applications in Static White, RGBW and RGBA configurations.

The striking, timeless form of Kim Lighting's KFL Collection floodlights seamlessly blends high performance optics, controls, scalability and architectural mounting options that cover a variety of applications and enhance their environment.

## KFL Collection

# WHITE & COLOR
APPLICATIONS



## desired **effect**

Wall Grazing is a technique where lighting is positioned close to the wall with the intent of highlighting the textures of the wall. Wall grazing is a popular technique used in landscape and façade lighting. This technique is commonly used on natural materials such as stone to bring out variety and imperfections in the texture.

## **common** distribution

Wall Grazing



**INTENT** - COLOR & WHITE

# GRAZING

## general **guideline**

By placing the lights close to the wall it forces the beam of light to hit the wall at a narrow angle. This narrow angle highlights the textures of the wall by creating shadows. The size of the shadowing can be adjusted by moving the beam of light closer or further from the wall.

## desired **effect**

Wall Washing is a description used when the intent is to light a wall evenly. This is most commonly used when lighting murals, signage, or drawing attention to a vertical surface. Washing walls will help remove the visual appearance of any surface inconsistencies.

## **common** distribution

Wall Washing

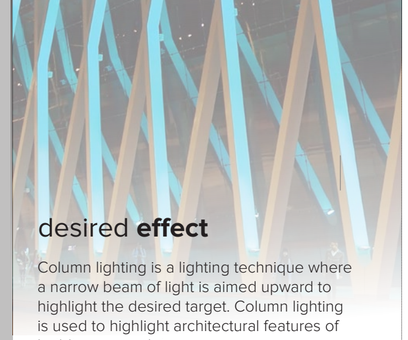


**INTENT** • COLOR & WHITE
**KFL** • COLOR

# WASHING

## general **guideline**

Luminaire setback is an important metric for wall washing. Space between the lit surface and the luminaire will help create even illumination on the wall and remove the possibilities of shadowing. Fixture spacing must also be considered to avoid scalloping on the wall.



## desired **effect**

Column lighting is a lighting technique where a narrow beam of light is aimed upward to highlight the desired target. Column lighting is used to highlight architectural features of buildings or sculptures.

## **common** distribution

Spot



**INTENT** - COLOR
**KFL** - COLOR

Narrow



**INTENT** - COLOR & WHITE
**KFL** - COLOR & WHITE

# COLUMN lighting

## general **guideline**

The intensity and length of the beam can be adjusted by modifying the setback of the luminaire. Evaluate center beam candlepower to help determine the intensity in the center of the luminaire's beam. Consider using optical accessories such as a glare shield or barn doors to prevent light from spilling off of the desired surface reducing glare.


# SIGN

## desired **effect**

Illuminating signs is similar to wall washing but may have physical boundaries. Sign lighting can be achieved by using a number of lighting effects; the type of lighting used would be based on the type of sign and the desired effect.

## **common** distribution

Horizontal Distributions

**INTENT -** WHITE
**KFL -** COLOR & WHITE

## general **guideline**

Luminaire setback is an important factor in sign lighting if the goal is to evenly illuminate the sign. Rectangular signage is more common than square, so vertical and horizontal distributions can be helpful in optimizing target illumination.

## desired **effect**

Canopy lighting can be used to create a dramatic architectural effect as you would see in large colosseum, museum or even interior applications. Canopy lighting can be used to highlight artwork, architectural features or to create ambient illumination. The goal of canopy lighting is a smooth glow on the ceiling without being able to see the direct lighting source.

## **common** distribution

Medium Flood



**INTENT** - COLOR & WHITE
**KFL** - COLOR & WHITE

Wide

**INTENT** - WHITE
**KFL** - WHITE

# CANOPY lighting

## general **guideline**

In creating ambient lighting, the goal should be to achieve a uniform light level across the canopy so the light will reflect back to light the space (see page 38 for more information on reflection). In trying to achieve a dramatic affect, you can use other lighting effects such as grazing or highlighting to illuminate the architectural features of the canopy. Luminaires needs to be mounted high enough so occupants are unable to see the light source.

## desired **effect**

Spot lighting is used to highlight features such as clocks, flags, statues, signs or anything that needs to be highlighted. The goal of spot lighting is to draw attention to these features.

## **common** distribution

Spot



**INTENT** - COLOR
**KFL** - COLOR

Narrow



**INTENT** - COLOR & WHITE
**KFL** - COLOR & WHITE

# SPOT lighting

## general **guideline**

Spot lighting is best achieved with the fixtures setback away from the target to allow for uniform lighting. Typically spot lighting will use a narrow beam angle. However, wider beam angles can be used depending on the size of the target object. With larger setbacks, the distance between the illuminated surface and the luminaire need to be evaluated for objects that could obstruct the light, including occupants that may be walking through the space.

## desired **effect**

The goal of landscape lighting is to allow for the beauty of surrounding trees, shrubbery and flowers to extend into the night. Often, lighting can be used to add an additional dramatic effect to the landscape. High light levels are normally not needed unless it is also being used for ambient lighting in the space.

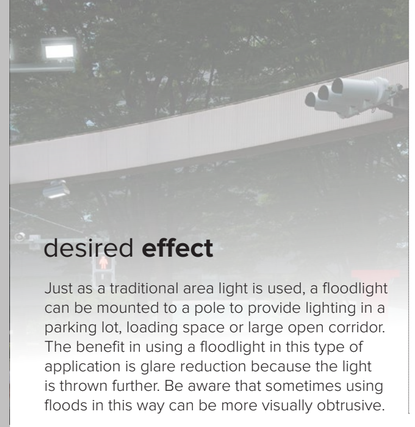
## **common** distribution

Any

# TREES
# landscape

## general **guideline**

Wide distributions are normally used for shrubbery and narrow for taller trees. Colored lighting is normally not used (see page 39 for more information on absorption).



## desired **effect**

Just as a traditional area light is used, a floodlight can be mounted to a pole to provide lighting in a parking lot, loading space or large open corridor. The benefit in using a floodlight in this type of application is glare reduction because the light is thrown further. Be aware that sometimes using floods in this way can be more visually obtrusive.

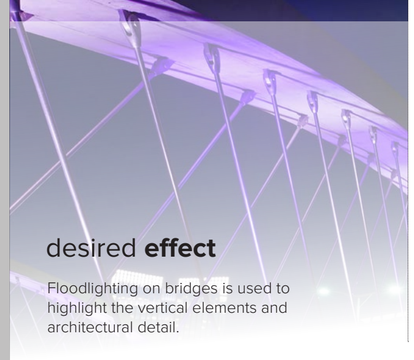
## **common** distribution

| Medium | Medium Flood | Wide |
|---|---|---|
|  |  |  |
| **INTENT** - COLOR<br>**KFL** - COLOR & WHITE | **INTENT** - COLOR & WHITE<br>**KFL** - COLOR & WHITE | **INTENT** - WHITE<br>**KFL** - WHITE |

# AREA lighting

## general **guideline**

Area lighting is best achieved with higher mounting heights and wide beam angles. To reduce glare, it is best to keep the luminaires below a 65º tilt angle if possible. Floodlighting is also commonly mounted midway up the pole to supplement area lighting.



# BRIDGES

## desired **effect**

Floodlighting on bridges is used to highlight the vertical elements and architectural detail.

## **common** distribution

Spot



**INTENT** • COLOR
**KFL** • COLORT

Narrow



**KFL** • COLOR & WHITE
**KFL** • COLOR & WHITE

## general **guideline**

Space restrictions normally limit the allowable setback on bridges, so more luminaires are required to achieve the desired effect. Shielding is also recommended as to not distract drivers or pedestrians when moving through the space.

# DISTRIBUTIONS

APPLICATIONS

## INTENT

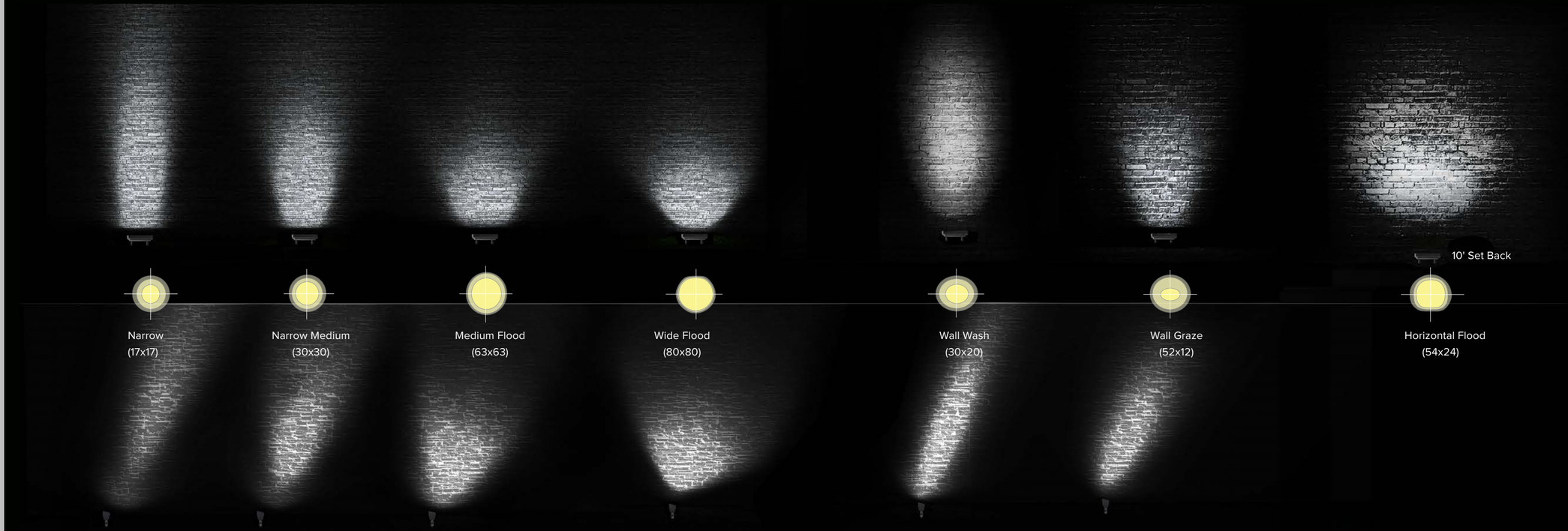
**STATIC WHITE**

RGBW COLOR

## KFL

STATIC WHITE

RGBW COLOR



# DISTRIBUTIONS

APPLICATIONS

## INTENT

STATIC WHITE

**RGBW COLOR**

## KFL

STATIC WHITE

RGBW COLOR

# DISTRIBUTIONS

APPLICATIONS

## INTENT

STATIC WHITE

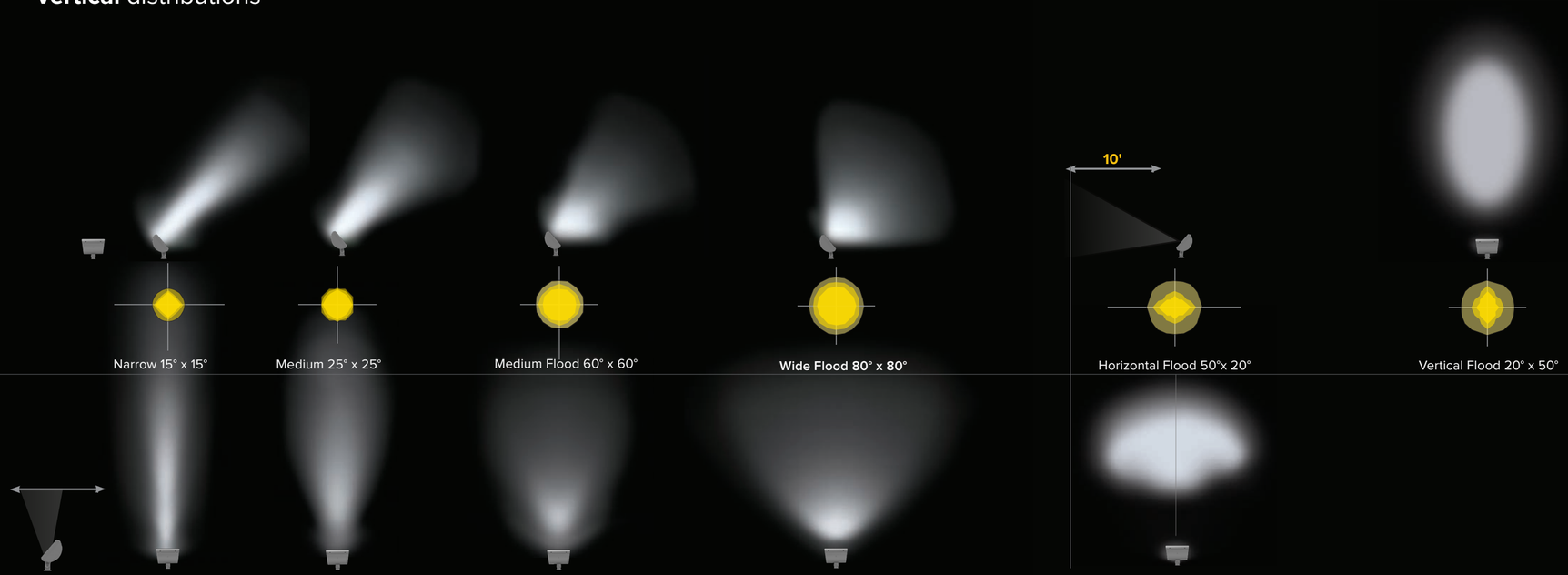
RGBW COLOR

## KFL

**STATIC WHITE**

RGBW COLOR

**vertical** distributions




**horizontal** distributions

# DISTRIBUTIONS

APPLICATIONS

## INTENT

STATIC WHITE

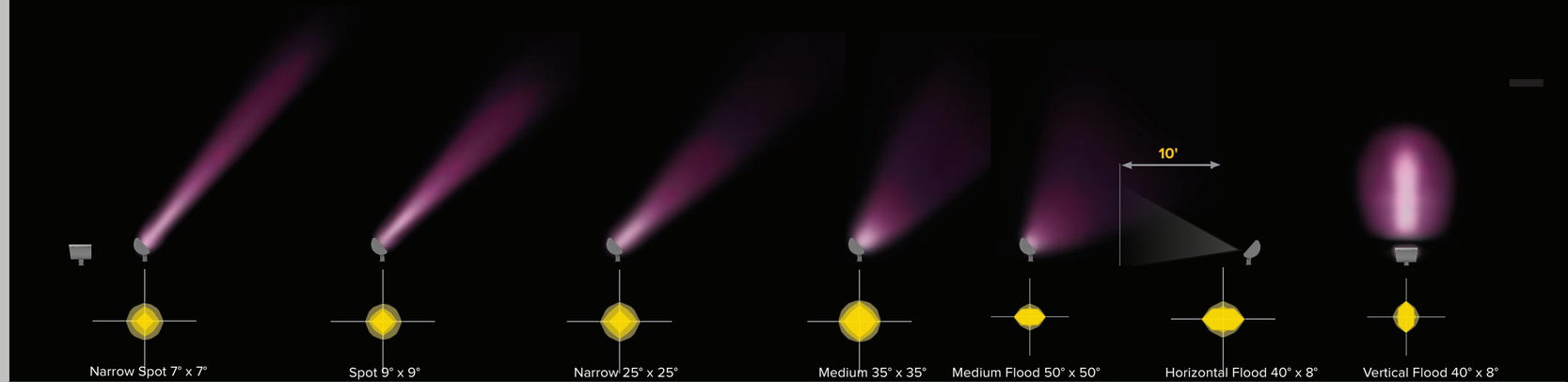
RGBW COLOR

## KFL

STATIC WHITE

**RGBW COLOR**

## **vertical** distributions



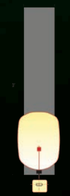

The KFL is available with six distinct distribution patterns to illuminate a variety of applications.

## **horizontal** distributions

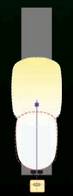
# WHITE OPTICAL
DESIGN

## **application** considerations

All floodlighting applications have several considerations that must be measured before selecting the correct luminaire; **area being lit, illumination level, desired effect and mounting location.** Once these are determined, it becomes significantly easier to find the right **luminaire, output, distribution and mounting,** as long as you have the right tools.



**VFL** Vertical Flood



**VFL** Vertical Flood

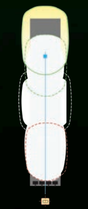
**NFL** Narrow Flood

**MULTIPLE BEAM COVERAGE**

When a large area is to be illuminated, multiple fixtures are often required to produce satisfactory coverage of the target. By using complementary optical designs in combination, virtually any surface can be illuminated uniformly.

**PATTERN OVERLAP**

Increasing the overlap between adjacent beam patterns will reduce the contrast between illuminated areas and shadowing. However, shadow width will not be reduced, as this is a function of setback distance.



**NFL** Narrow Flood

# COLOR

## LIGHTING SURFACE

There are many ways that light can react when hitting a surface; reflection, refraction, transmittance, absorption, or a combination of any of those. Understanding these effects will help you understand how the light will appear in the application.

SET BACK 20'

SET BACK 10'

SET BACK 5'

**SETBACK EFFECTS**

As the setback distance increases, the required beam pattern size decreases for the same target area. Although distribution plays into this as well. Narrowing the beam pattern as the setback increases retains the level of illumination and area of coverage.

**SETBACK DISTANCE**

One of the largest impacts on appearance of surface details is setback distance. The availability of a wide range of complementary optical distributions means that the appropriate setback distance can be used to achieve desired shadowing and surface appearance.

**SHADOW WIDTH AND SETBACK DISTANCE**

Shadowing from surface detail is inversely proportional to set back distance. Shallow set back distances render deep shadows. As setback distances increase, the depth of shadows decrease.

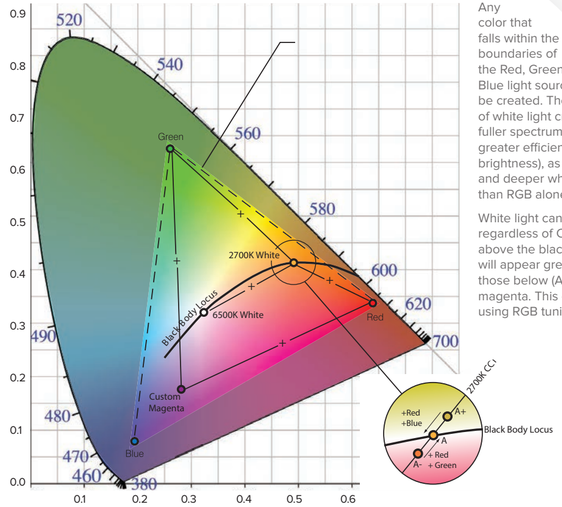
# COLOR
EFFECTS

## blending RGB and White

Blending Red, Green, and Blue with a 6500K White LED produces opportunities to tune white light into any hue, with any degree of saturation desired. This allows lighting to be tuned to produce the desired surface appearance, enhanced or muted, that might be desired.

SpectraSync™ Color Tuning Technology

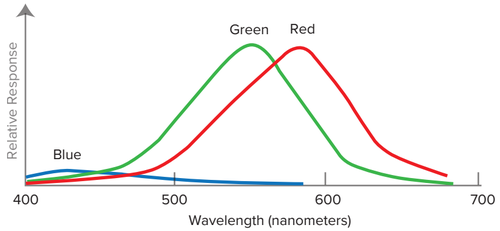
Dim-to-Warm



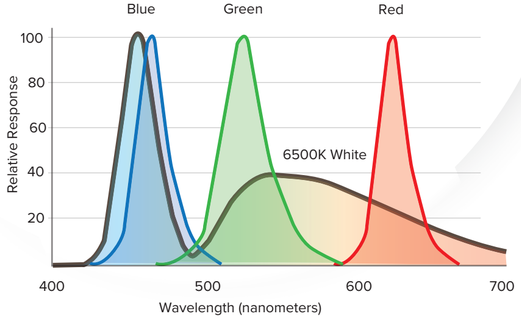

Any color that falls within the boundaries of the Red, Green, and Blue light sources can be created. The addition of white light creates a fuller spectrum, enabling greater efficiency (and brightness), as well as fuller and deeper white light hues than RGB alone.

White light can present hue shift regardless of CCT value. Shift above the black body locus (A+) will appear green tinted, while those below (A-) will appear more magenta. This can be controlled using RGB tuning.






Visual Response to Saturated RGBW




RGB+W Creates White Light Effect

### VISUAL RESPONSE TO SATURATED RGBW

Human visual response to color is not uniform. Red and Green produce a similar response, while blue does not. In color light application, when it is desirable to have saturated effects appear balanced in brightness, blue will require a significantly higher “dim” setting than either red or green.

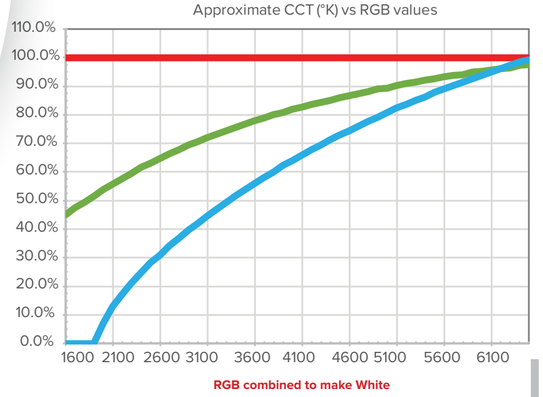
### RGB+W CREATES WHITE LIGHT EFFECT

Blending white light with RGB color, produces a wide range of white light effects. Any hue can be created, from the warmth of candle light to cool blue moonlight, along with any pastel shade. This expands the range of a single white light source over the entire spectra, in addition to adding saturation and hue adjustment to suit a specific desired lighting effect to enhance or accent surfaces or landscape features.

### RGB COMBINED TO MAKE WHITE

Mixing RGB colors will generate approximation of white light. The chart to the left shows the approximate values Between Red, Green and Blue to create any shade of white light from warm dimmed incandescent to bright

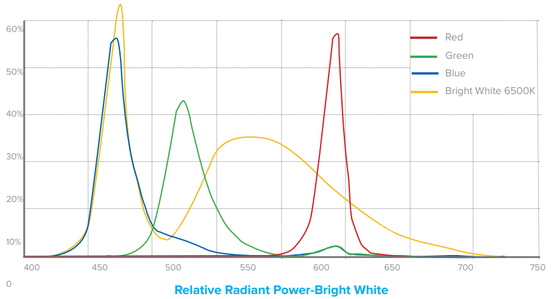
daylight.



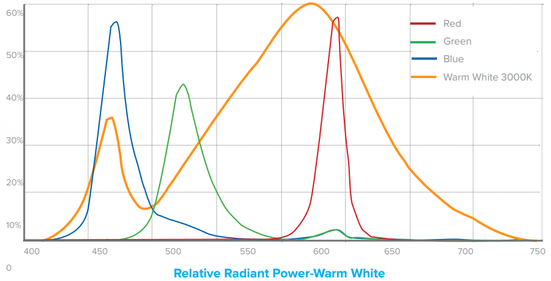

RGB combined to make White

COLOR
EFFECTS

# **mixing** recipes




**Relative Radiant Power-Bright White**



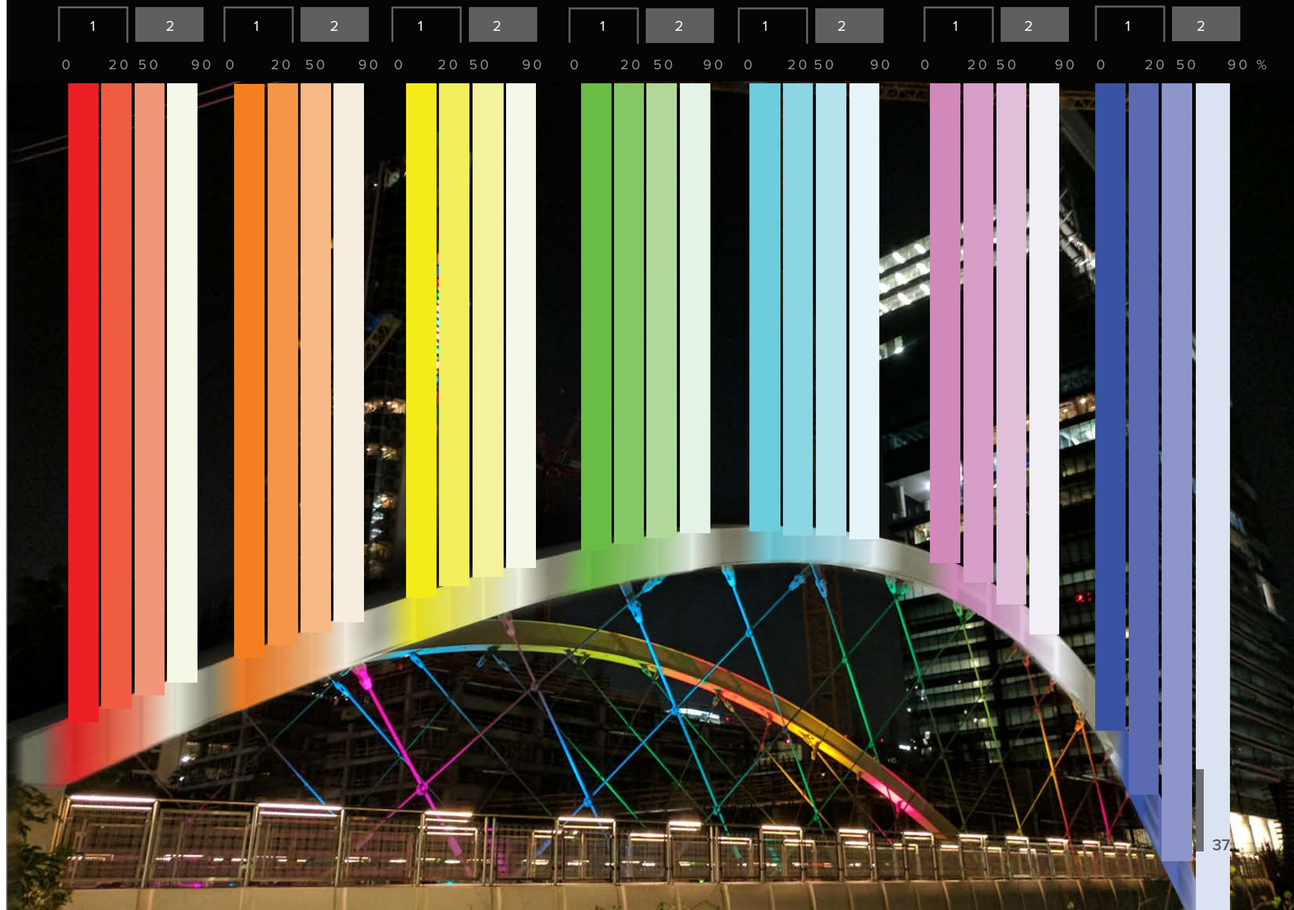

**Relative Radiant Power-Warm White**

Blending Red, Green, and Blue with a 6500K White LED produces opportunities to tune White light into any hue, with any degree of saturation desired. This allows lighting to be tuned to produce the desired surface appearance, enhanced or muted, that might be desired.



1. High Saturation (*No White Added*)

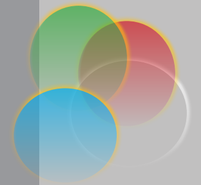
2. Low Saturation (*White Added*)



# COLOR

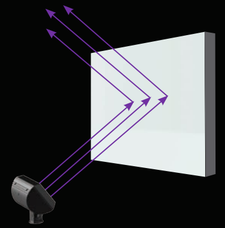
## LIGHTING SURFACE

There are four ways that light can react when hitting a surface; reflection, refraction, transmittance, absorption, or a combination of any of those. Understanding these effects will help you understand how the light will appear in the application.



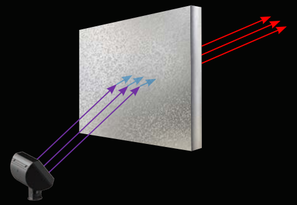
**REFLECTION**

A pure white surface reflects all colors meaning any and all colors from a light directed at a white surface will bounce off and fill back into the space. A white surface will appear the color of the light shining on it and will also reflect that color on other nearby objects. Reflectance is expressed as the percentage of light leaving the surface divided by the amount hitting the surface.



**REFRACTION**

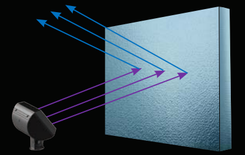
As light enters and exits a transparent material, the beam angle will change direction. If the two surfaces are parallel the exit angle will equal the entry angle, for no net change in direction. An example of this is a window pane. If the two surfaces are not parallel, the light will bend. An example of this is a lens or a prism. In the case of the prism, white light can be separated into the colors that make up the white light. Water droplets can also act like a lens and separate colors into a rainbow.





**ABSORPTION**

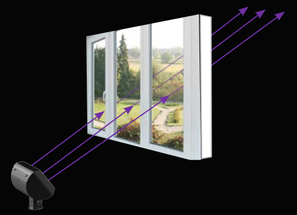
As referenced above, pure white surfaces will reflect all colors, but colored surfaces will absorb some light. This means that when working with colored light it can get tricky to predict the appearance it will have on a colored surface. If the surface color does not contain the color of the light, all light will be absorbed, resulting in a false black appearance.



Colored surfaces, on the other hand, appear their respective color because they absorb the light that does not match their color. For example if white light is shining on a red surface, the surface is reflecting back only the red component of the white light, absorbing the rest and appearing red. This means that when working with colored light it can get tricky to predict the appearance it will have on a colored surface. If a light source does not contain the color of the object, then there is none of that color to be reflected back, and the object will appear black. An example of this would be if you shine purple light on a green object. With no green in the light source, the object simply appears black.

**TRANSMITTANCE**

Transmittance occurs when light travels through a transparent media. The media can be gas, solid or liquid. The best examples of this are air (gas), glass (solid) or water (liquid). As light travels through the media some light will be absorbed. Because light either travels through the material or is absorbed, no light is reflected off of the surface and cannot be perceived on the surface.



# CONSTRUCTION

MOUNTING OPTIONS

## KFL

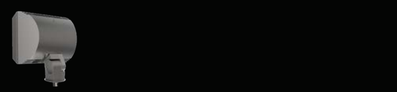
**KFL1**

KFL2

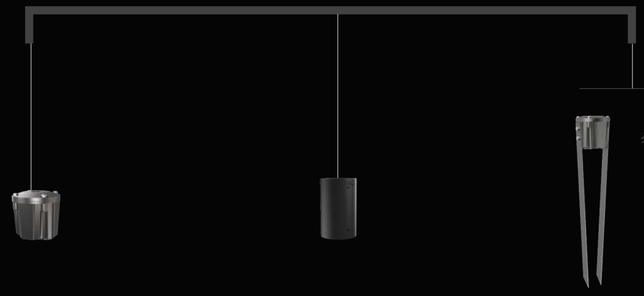
KFL3

## INTENT

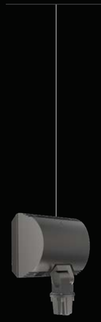
INT



Knuckle (K)



Junction Box (JBR)



KFL1-K-JBR

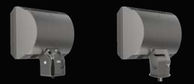
Architectural Junction Box (JB1)

KFL1-K-JB1

In-Grade Staked Box (JBR30/32)

KFL1-K-JBR30

*Dimensions are for illustration purposes only.*



Yoke (Y) Knuckle (K)

Wall Mount (WM1)

KFL1-Y-WM

KFL1-K-WM

Side Pole (SPM)

KFL1-Y-SMP

KFL1-K-SMP

Twin Mount (PT2)

KFL1-Y-TM2

KFL1-K-TM2

# CONSTRUCTION

MOUNTING OPTIONS

## KFL

**KFL1**

KFL2

KFL3

## INTENT

INT

Knuckle (K)

Wall/Ceiling
Mount (WM)

Surface
Mount (J-27N)

KFL1-K-WM

KFL1-K-J-27N

*Dimensions are for illustration purposes only.*

Yoke (Y)

Post Top
Mount (PT)

Twin Post Top
Mount (PT2)

KFL1-Y-PT

KFL1-K-PT

KFL1-Y-PT2

KFL1-K-PT2

# CONSTRUCTION

MOUNTING OPTIONS

## KFL

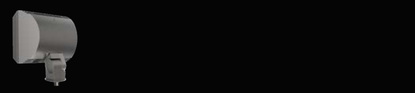
KFL1

**KFL2**

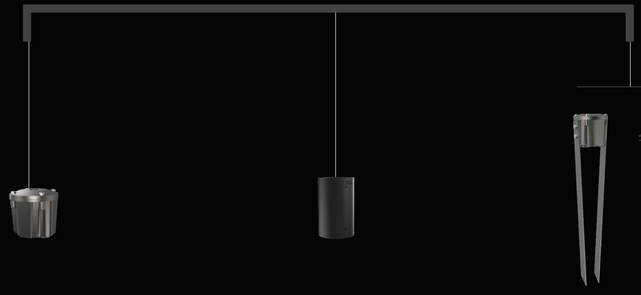
KFL3

## INTENT

INT



Knuckle (K)



Junction Box (JBR)

KFL2-K-JBR

Architectural Junction Box (JB1)

KFL2-K-JB1

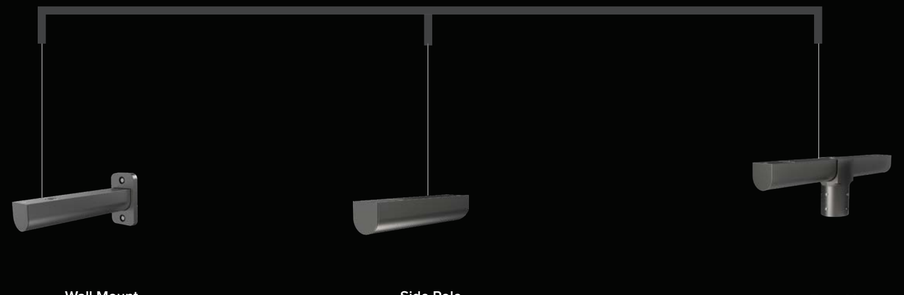
In-Grade Staked Box (JBR30/32)

KFL2-K-JBR30

*Dimensions are for illustration purposes only.*

Yoke (Y)

Knuckle (K)



Wall Mount (WM1)

KFL2-Y-WM

KFL2-K-WM

Side Pole (SPM)

KFL2-Y-SMP

KFL2-K-SMP

Twin Mount (PT2)

KFL2-Y-TM2

KFL2-K-TM2

# CONSTRUCTION

MOUNTING OPTIONS

## KFL

KFL1

**KFL2**

KFL3

## INTENT

INT

Knuckle (K)

Wall/Ceiling
Mount (WM)

Surface
Mount (J-27N)

KFL2-K-WM

KFL2-K-J-27N

*Dimensions are for illustration purposes only.*

Yoke (Y)

Post Top
Mount (PT)

Twin Post Top
Mount (PT2)

KFL2-Y-PT

KFL2-K-PT

KFL2-Y-PT2

KFL2-K-PT2

# CONSTRUCTION

MOUNTING OPTIONS

## KFL

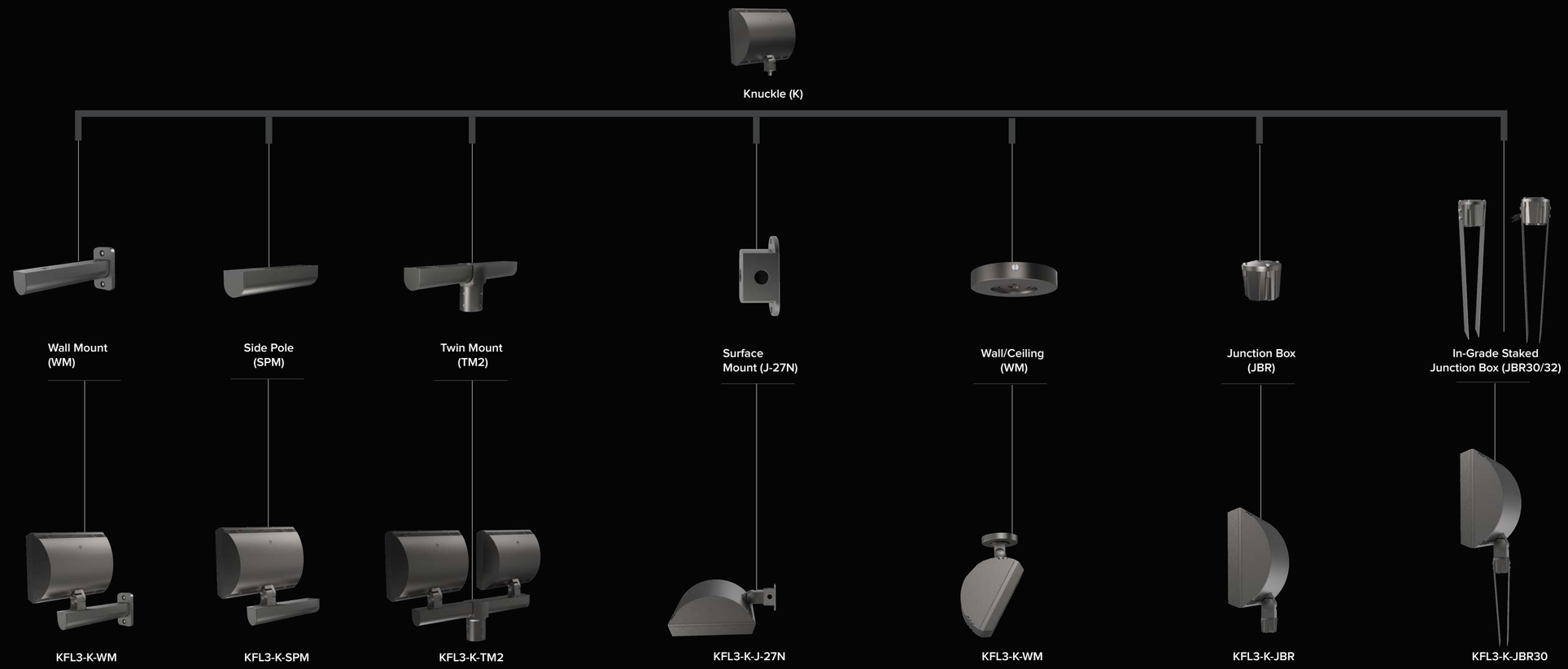
KFL1

KFL2

**KF3**

## INTENT

INT




*Dimensions are for illustration purposes only.*

# CONSTRUCTION

MOUNTING OPTIONS

## KFL

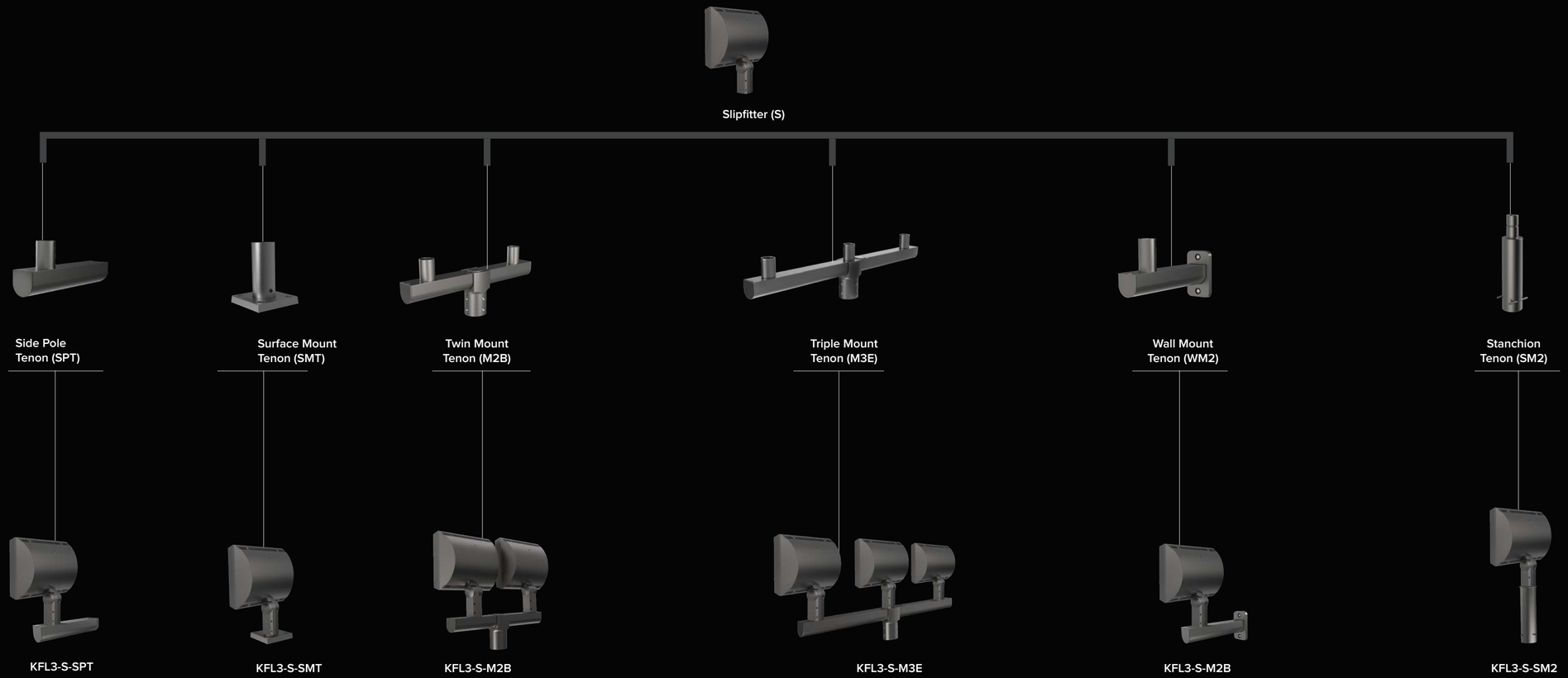
KFL1

KFL2

**KF3**

## INTENT

INT




*Dimensions are for illustration purposes only.*

# CONSTRUCTION

MOUNTING OPTIONS

## KFL

KFL1

KFL2

KFL3

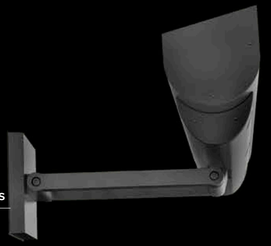
## INTENT

**INT**

Wall Mount – Adjustable Arm

3" Adjustable Arms

6" Adjustable Arms



12" Adjustable Arms

Ground Mount – Knuckle (K)

J-25N

JBR

JB1

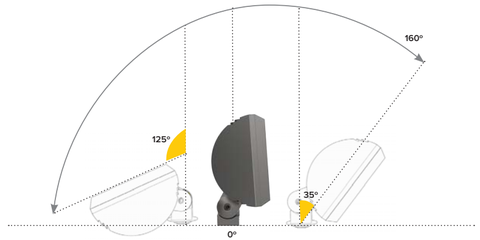
SM18

*Dimensions are for illustration purposes only.*

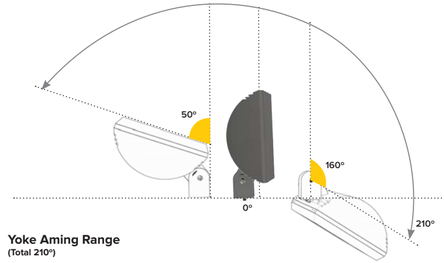
# AIMING

**KFL**

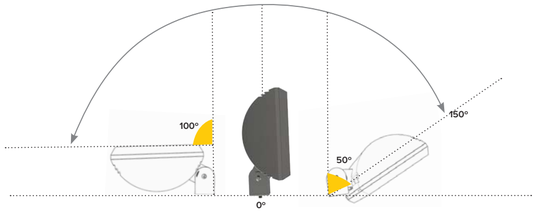
INT




**Standard Swivel**
**(Total 160°)**




**Yoke Aming Range**
**(Total 210°)**




**Yoke Aming Range with Ground Restriction** **(Total 150°)**

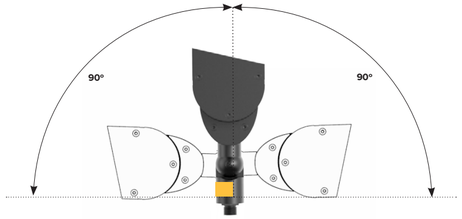


With the versatile mounting option offered in the KFL, you are able to tilt the luminaire up to 290 degrees. This extensive range of motion allows for more possibility of applications to be illuminated.

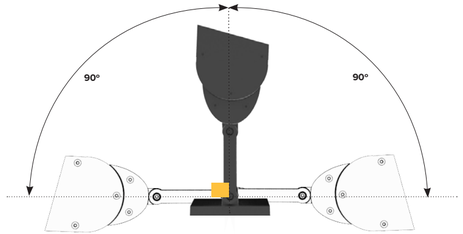
# AIMING

KFL

**INT**




**Knuckle (Total 180°)**




**Adjustable Arm (Total 180°)**

The Intent features a Knuckle and Adjustable Arm Mount which is able to pivot 180 degrees allowing for tailored made aiming.

OPTICAL

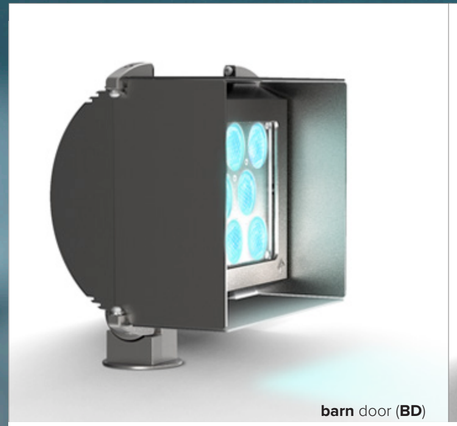
# ACCESSORIES

**KFL**

**INT**

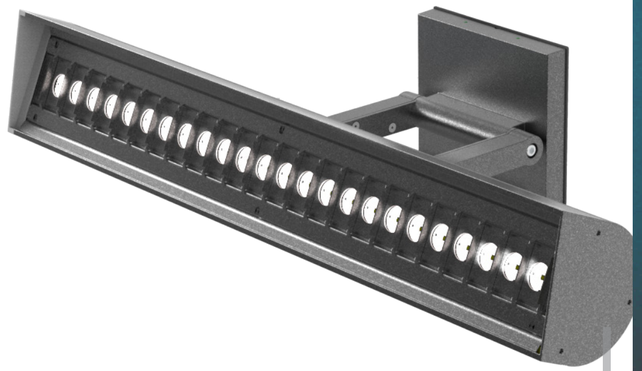
**KFL**
Barn Door and Half Glare Shield optical options allows for more customization and reduction of unnecessary glare.

**INTENT**
For additional glare control, the Intent offers louvers that are both functional and architectural in look and function.



**barn** door (**BD**)

**half glare** shield (**HS**)



**louver** (**LVR**)

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Kim-007 10/01/2020 Edition 1