



The Lighting Design Process

KICHLER

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Landscape lighting is an investment in beauty, safety and entertainment spaces for homeowners.

That's why professionals as well as homeowners trust Kichler. We combine product innovation and unmatched design for products to suit every need. With rigorous testing standards and customer support, we're here for landscape professionals, too.

In order to truly understand what your customer wants; you need to start by understanding them. Most consumers want landscape lighting for one or more of the following reasons:



Aesthetic

Bring a home's best features to life by creating a dramatic effect with shadowing or illuminating paths and entryways. And, since the fixture is as important as the light it gives off, you can select from a variety of styles and finishes to find the look that's best for each space—whether it's path lights along a walkway or a fixture that complements the finish of patio furniture.



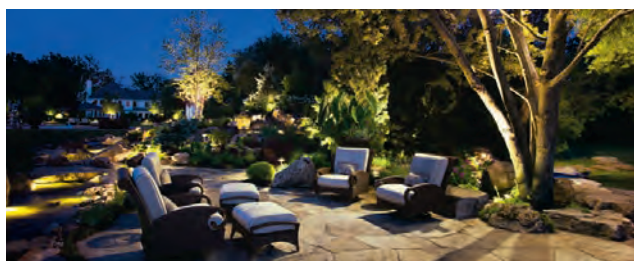
Functionality

Create functional, livable spaces outside, around pools, decks or patios with the right light. A wide selection of fixtures and color temperatures allow you to create unique lighting effects, while different accessories such as timers, photocells and smart connected products, give your clients easy control at their fingertips.



Safety

Besides adding curb appeal to a home, landscape lighting gives off essential illumination for nighttime navigation and helps ensure safe passage around stairs, walkways, and entryways.

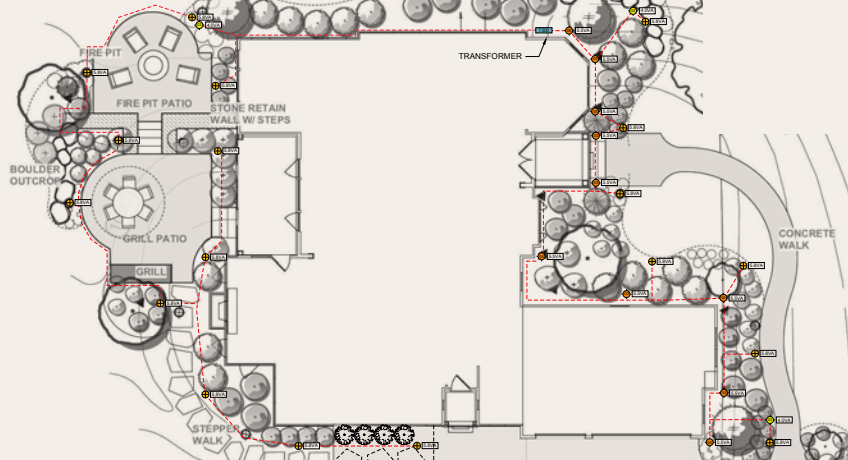


Security

Landscape lighting works to provide additional security at night. The right lighting system can illuminate a home's dimly lit spots making for a well-lit outdoor space.

Getting Started

Undertaking a landscape lighting project is no small feat. Getting started the right way can mean the difference between a successful project and one with complications and troubleshooting.



HOMEOWNER CONSULTATION

First, it's important to consult the homeowner to understand their needs and get familiar with their space and the property. Here are a few questions to start with:

- What are your favorite features of the property?
- How are you using the space?
- Do you like to entertain? Do you host large groups or smaller parties often?
- Are there areas you wish you could see after dark?
- Where do you spend most time inside the house? (Consider the view from this point and areas you can illuminate to make the home feel larger at night.)

Documenting the Property

Draw a Plan

It's always a good idea to begin drawing a plan with a scale drawing of the house and yard, though exact distances are not as significant an issue as they are for irrigation. The amount of wire and voltage drop are affected by the distances in landscape lighting.

Create a Scale Drawing

The quick and easy way to create a scale drawing of a small to medium sized property is to place a 200-foot long measuring tape along the curb, and walk from one end of the property to the other, noting the distances of major points of interest as you walk. Include the edges of the house, driveway, trees, etc. You can then do the same thing along the side of the property to get a scale plan of the yard very quickly.

Things to Note

Include the house (especially significant architectural elements like windows, columns and the front entryway), driveway and sidewalks. It's also helpful to take reference photos which you can use to overlay with the drawn plan.

Choosing Fixtures

When indicating fixtures on the plan, note the fixture location, type (use the part number), and any additional installation instructions.



And if you need more help, send all of your photos and sketches to the LightPro Rewards Landscape Lighting, Layout & Design team for a free layout and bill of materials at [LightProRewards.com](https://www.kichler.com/LightProRewards.com).



Determining the Fixtures

Now it's time to walk your client through their options. They rely on you as the expert, so ensure you're taking all of their considerations into account before you recommend a product. Make sure to highlight the features they may not know, like the fact that Kichler has finish options that coordinate with exterior lights and fans as well as options that blend in with the environment.

Important Features

Even before you discuss the product options, try to get a sense of which product features might be most important to your customer. Whether it's accent lighting or finish options or a long warranty for their forever home, we have the products to help create their ideal landscape.

Keep it Simple

Be selective and keep it simple. Not every feature is worthy of mention, only those that could tip their decision one way or another.

It's OK to Upsell

As a professional, you provide extraordinary value to your customer. They get quality lighting from day one and many more years of reliable performance without the need for service. Ensuring they have the best possible product is part of the service you provide.



Centennial Brass

For coastal areas we recommend our Centennial Brass for its superior corrosion resistance to weather the storm in even the harshest elements.



Upselling Accent Lights

As the expert, your clients rely on your recommendations - take the opportunity to sell on product features rather than price point. We offer three tiers of accent lights: good, better and best.



12V Drop-In

GOOD

Drop-in accent fixtures, also referred to as “retrofits” or “fixture and lamp products”, may require attention after a few years, when the LED lamps inside require changing.



12V Integrated LED

BETTER

Our integrated LED accent light is highly engineered and sealed from the elements, which means it provides many years of reliable service – without lamp changing. Integrated fixtures offer many benefits that justify the difference in cost, such as:

- Longer performance life (with a longer warranty)
- Better quality of light
- No need to change the bulbs
- Fewer limitations of light or lumen output (like with drop-in)



VLO 12V Integrated LED

BEST

Our VLO 12V integrated LED accent is the best investment because it offers flexible lighting design options that adapt as landscape needs change over time. This premium, longest lasting product offers no bulb changing, is entirely sealed and delivers optimal light quality, with a built-in feature for adjusting lumen levels.

Plus, the VLO 12V integrated LED accent allows you to adjust between 2-4 lumen levels with the touch of a magnet, giving you the flexibility to fine tune your lighting design or adjusting as plants and trees grow.

These are all reasons to lead your customer toward integrated LED accent lights which, over time, may bring greater satisfaction.

Lighting Design Tips

Creating Depth and Dimension in Design

The light that shines on a landscape at night is what brings its beauty out of the darkness. That's why it's important to have a design strategy. To help you create one, we've provided some techniques below to help you best illuminate your project (or your client's property).



Selecting the Perfect Color Temperature

Our integrated LED fixtures and LED lamps come in a variety of color temperatures that can enhance the colors in a home's exterior and landscape. Measured by Kelvin (K) degrees, consider these suggestions for your applications:

WARM WHITE - 2700K

- Ideal for surroundings with warmer colors, like brown and cedar
- Natural colored walls or stonework
- Foliage that is red, orange or yellow (ex: highlighting oak trees)

PURE WHITE - 3000K

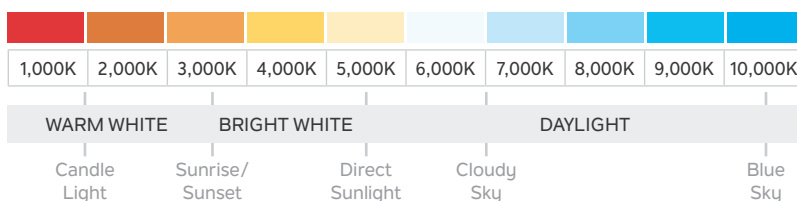
- Ideal for surroundings with dark materials, like deep slate, black or gray
- Foliage that is blue or purple (ex: highlighting blue spruce trees)

COOL WHITE - 4000K

- Complements contemporary homes and structures
- Commercial applications

BRIGHT WHITE - 5000K

- Works well for illuminating evergreen trees and shrubs
- Commercial applications
- Moonlighting applications



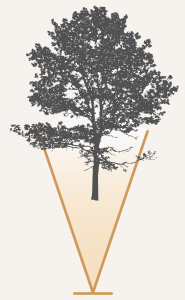
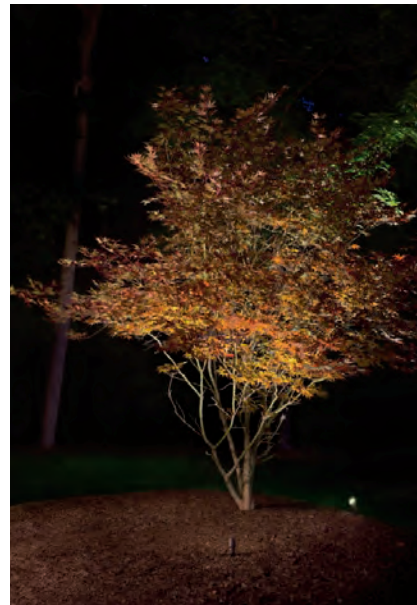
Choosing the Right Beam Spread

Our integrated LED fixtures and LED lamps are available in a variety of beam spreads so you can tailor the light to where it's needed the most.



10°-15°
Beam Spread

Tall, thin beam of light ideal for grazing trees and column features.



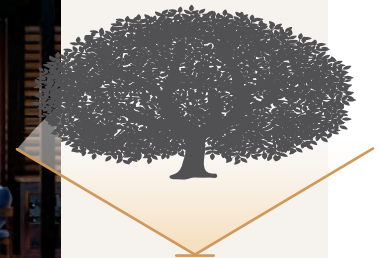
25°-45°
Beam Spread

Medium width beam of light suited for general accent lighting.



55°-60°
Beam Spread

Wide beam of light useful for broad trees and wide structures.



120°
Beam Spread

Ideal for wall washing, grazing, and short yet wide, objects.

Top left image: Rosecliff, Newport, RI lighting design by Chris Beneduce, New England Landscape Lighting, Inc. 2023 and 2024 Regional Contractor of the Year

Lighting Design Tips

Accent Uplighting

How to Uplight a Tree

No two trees are the same, and how the tree is situated within the landscape design will affect how you illuminate it. To assist you with planning, we have outlined some basic rules you can refer to when uplighting trees.



SMALL DECIDUOUS

- Single accent 35°: Most small, deciduous trees only need one accent light, but it's important to take the viewing angle into account. If viewed from two angles, the tree may benefit from two accent lights.
- Canopy-aimed: The fixture should graze the trunk and point up into the canopy for maximum effect.

Recommended fixture: VLO 12V LED Small 35° (16016)



MEDIUM DECIDUOUS

- Cross-lighting: While it is possible to use one 60° accent, it is better in most cases to use two 35° lights because they will direct more concentrated light into the canopy.
- Position the accent lights so they graze the trunk but are focused on the canopy.

Recommended fixtures: One VLO 12V LED Small 60° (16017) or two VLO 12V LED Small 35° (16016).

Additional Uplighting Tips

Don't be Afraid to Make Contact

Most smaller trees will look best when the beam grazes the trunk on its way up to the canopy.

Bring Out the Contrast

Narrow beam widths throw more concentrated light on the trunk, creating contrasts and drawing out shadows, variations, bark texture, knots, and other features. By contrast, wide beam spreads soften details.

Less is More

Don't overpower your landscape features. Instead, aim to create contrast between light and shadows. An overlit tree can distract from an otherwise balanced landscape lighting design.

Plan Your Viewing Angles

Think about who will be viewing the lighting effects and at what angles. How will the tree appear from the street and from inside the home? More viewing angles may require more accent lights.

Think About Distance

When choosing beam angle, keep in mind that the angle will open up with distance. A 15° beam angle's spread will increase in diameter the further the light travels. On the other hand, a narrow beam width that hits a thick branch close to the ground may get blocked and go no further.

	15° Beam	35° Beam	60° Beam
Distance (in feet)	Diameter of Beam Spread (in feet)		
10'	2.63'	6.31'	11.55'
20'	5.27'	12.61'	23.09'
30'	7.9'	18.92'	34.64'
40'	10.53'	25.22'	46.19'
50'	13.17'	31.53'	57.74'
60'	15.8'	37.84'	69.28'
70'	18.43'	44.14'	84.02'
80'	21.06'	50.45'	100.69'



LARGE DECIDUOUS

- Different angles: A large tree (60-100 feet) will require a combination of accent lights with different angles.
- If the canopy starts at 25' place one 15° accent light at the base of the tree highlighting the trunk, and if the tree shape resembles the one above, use a 35° accent light to highlight the trunk.
- Place 2-3 accent lights (35° or 60°) away from the trunk pointing into the canopy* and 1-2 accent lights in the canopy, pointing up.

Recommended fixtures: VLO 12V LED Large 15° (16018) for the trunk, VLO 12V LED Large 35° (16019) or 60° (16020) for the canopy. Add 16091FRO beam expander to 16020 to go wider than 60°.

*Tree-mount junction box required:

For each light in the canopy, use a tree-mount junction box with stand-off screws, so the tree has room to grow. Each junction box will provide a mounting location for one accent light. Connections and wire nuts go inside the box. Run the wire up the non-visible or least-visible side of the trunk and fasten it to the trunk with cable ties or zip ties and stainless steel screws, making sure that the wire can still move with the tree. Leave some extra wire at the base of the tree to allow for tree growth.



LARGE CONIFER

- Total capture: Two accent lights with 60° beam spread to light up the tree on two sides, creating 360° of visual interest.
- Greater distance: With firs, the fixtures should be placed farther away from the base and should shine directly onto the tree (rather than aiming up into the canopy).

Recommended fixture: 25' tall or less: VLO 12V LED Small (16016, 16017) or 30' tall: Large 35° or 60° (16019, 16020).



Lighting Design Tips

Accent Downlighting

How to Downlight a Tree

A mood-enhancing option that will make an outdoor living space magical.



Add Drama and a Focal Point

Uplighting trees is dramatic and can create a focal point for the entire landscape lighting design. By comparison, downlighting is subtle and can create an inviting outdoor living space.

Downlighting and Uplighting

Downlighting and uplighting can be used together on the same tree for maximum effect or used separately on different trees. Also, downlighting can be installed on structures, such as pergolas or gazebos.

Enhance Social Gatherings

Downlighting makes a space inviting and delightful for social gatherings. It creates a special experience without the lighting itself being obvious.

Simulate Moonlight

With a tall tree, downlighting can simulate the impression of moonlight and, with a gentle breeze, you will be able to see the shadows of branches and leaves at play on the ground. If you want to wow your customers, try enhancing one of their outdoor living spaces with moonlighting.



Create a Beautiful Moonlight Effect

VLO 5000K LED High Lumen Accent comes equipped with a moonlighting kit which includes a Long Cowl and a 6500K CCT Mercury Vapor Green Lens to mimic the color of the moon. Use our Tree Bracket Mount (15609AZT) to install the fixture on trees for an optimal moonlighting effect.



How to Create Downlighting

Identify a large deciduous tree on the property that is a focal point of the landscape or near an outdoor living space. A large, tall tree is best with branches that start high up, although you can use a smaller tree too.

Place one Variable Lumen Output (VLO) small 60° wide accent light at least four feet above the lowest tier of branches, about 20-25 feet from the ground is ideal. Point the accent light downward, experimenting with the right direction for creating shadows with the branches below.

You can place the light lower or higher, but you want to avoid situations where the light is buried behind too many branches or where the light is visible or blinding from below.

How to Mount an Accent Light in a Tree

Our VLO small or large 60° wide accent light is ideal for downlighting from 20' or less because it offers three-lumen levels to choose from, allowing you to get the lighting mood just right. You can also experiment with the beam expander lens that is available as an accessory.

We recommend using a tree-mount junction box with standoff screws for mounting the accent light, so the tree has room to grow. The junction box will provide a mounting location for one accent light. Connections and wire nuts go inside the box. Run wire up the non-visible or least-visible side of the trunk and fasten it to the trunk with cable ties and stainless-steel screws, making sure that the wire can still move with the tree. Leave some extra wire at the base of the tree to allow for tree growth.



PRO TIP

A long cowl for the VLO small accent light helps prevent the light source from being visible when looking up from the ground.

Lighting Design Techniques

Get the most out of a project with these professional landscape lighting effects



Wall-Washing

Delivers a subtle, low amount of light to a wide area, up close to the structure, with minimal hot-spots and density.

Recommended fixtures: VLO 12V LED Accent 60° 16017 & 16020. VLO Mini Wall Wash 16026. Also 120V-277V C-Series 16210-16211, 16213-16214, 16218-16224.



Cross Lighting

Using two or three beams of light, it creates 360-degree visual interest on large trees, statues or other tall features.

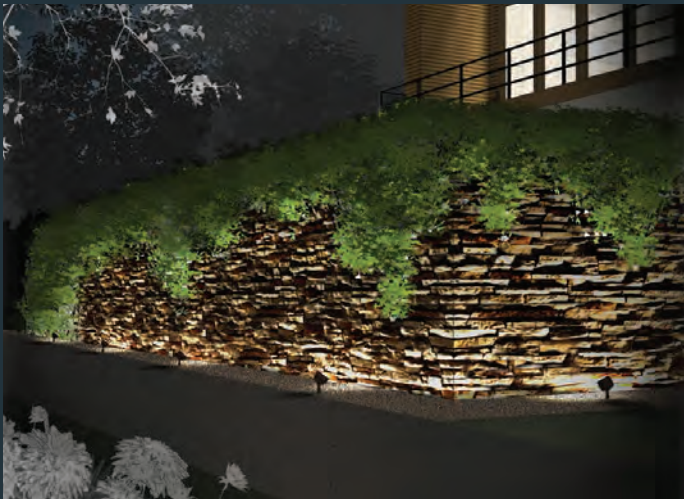
Recommended fixtures: VLO 12V LED Accent 15°-35° 16015-16016, 16018-16019. Also 120V-277V C-Series 15°-40° 16209-16210, 16212-16213, 16215-16216, 16218-16219.



Accent Lighting

Shines light upward to illuminate an object or surface for dramatic, attention-getting visuals.

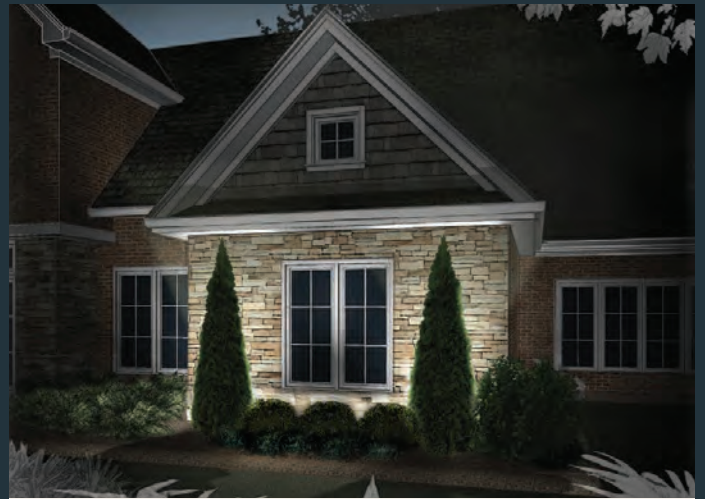
Recommended fixtures: VLO 12V LED Accent 15°-60° 16015-16020. VLO High Lumen Accent 15°-60° 16160-16162. Also 120V-277V C-Series 15°-55° 16209-16220.



Grazing

Adds depth and dimension to stucco, brick, stonework or architectural features of a home or building.

Recommended fixtures: VLO 12V LED Accent 60° 16017 & 16020. VLO Mini Wall Wash 16026. Also 120V-277V C-Series 40°-55° 16210-16211, 16213-16214, 16218-16224.



Silhouette Lighting

Draw attention to an interesting shape by lighting a vertical surface behind the object to accent that unique shape.

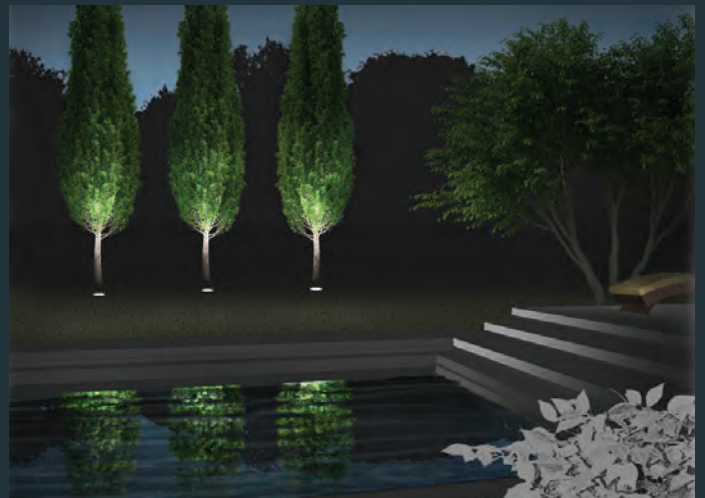
Recommended fixtures: VLO 12V LED Accent 15°-60° 16015-16020. Also 120V-277V C-Series 15°-55° 16209-16220.



Shadowing

A technique that projects the look of a tree or yard art onto a surface behind the object.

Recommended fixtures: VLO 12V LED Accent 15°-60° 16015-16020. Also 120V-277V C-Series 15°-55° 16209-16220.



Mirror Lighting

Create dream-like water scenes by strategically lighting background areas around bodies of water that reflect the landscape off of the water.

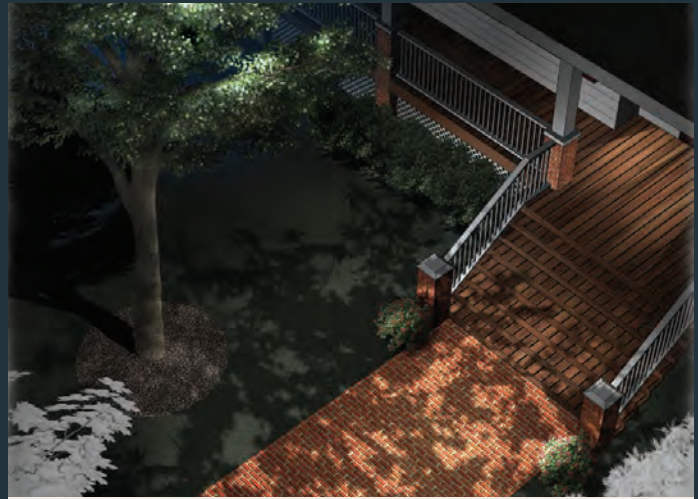
Recommended fixtures: VLO 12V LED Accent 15°-60° 16015-16020. Also 120V-277V C-Series 15°-55° 16209-16220.



Underwater & Water Accent

Enhance and highlight flowing water in waterfalls, streams and fountains. Create a magical mirroring effect on still waters.

Recommended fixture: VLO 12V LED Underwater 16027.



Moon Lighting

Placing a lower lumen fixture high in a tree catches the details of branches and leaves, emulating the look of moonlight.

Recommended fixtures: VLO 12V LED Accent 60° 16162AZT50, 35°-60° 16016-16017, 16019-16020. VLO High Lumen Accent 35°-60° 16161-16162. Also 120V-277V C-Series 40°-55° 16210-16211, 16213-16214, 16218-16224.



In-Ground Lighting

Deliver light to permanent and semi-permanent installations such as sidewalks, large mature trees, walls and flagpoles.

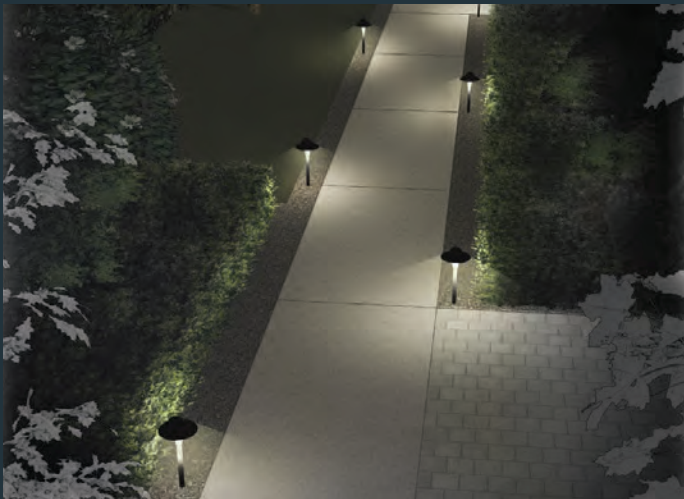
Recommended fixtures: VLO 12V LED In-Ground 16023-16025, 12V LED Mini All-Purpose Recessed 16140-16141. Also 120V-277V C-Series 16227-16228.



Xeriscape Lighting

Cacti, grasses and the stone used in xeriscape designs can benefit from a lower lumen illumination than traditional landscaping.

Recommended fixtures: 2700K fixtures; 12V LED Path 15811, 15821, VLO 12V LED Accent 16015-16017.



Path & Spread Lighting

Illuminate sidewalks, stone pathways and lawn walkways while adding a hint of intrigue to boulders and plant beds. Spread lighting uses a path light inside a landscape bed to illuminate the plantings.

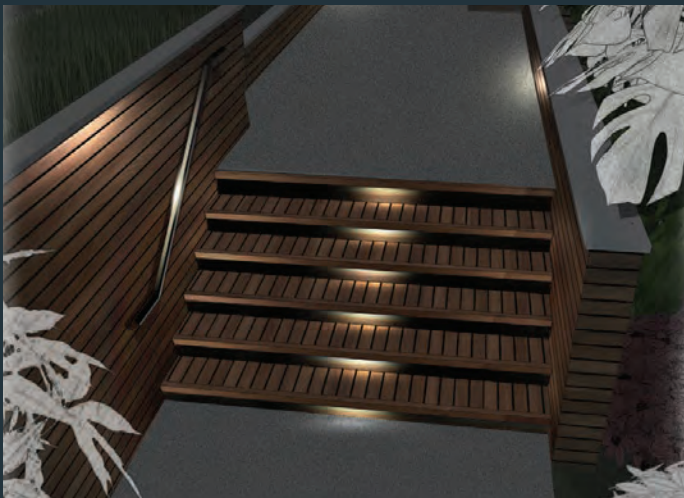
Recommended fixtures: 12V LED Path Fundamentals 16120, Stepped Dome 15820 or Dome 15810.



Deck & Patio Lighting

Accentuate all of the beauty and details of decks, patios, outdoor kitchens, steps, handrails and more.

Recommended fixtures: (top) 12V LED Half Moon 15764. (bottom) 12V LED Brick Light 15773, LED Surface Mount Step Lights 16171-16172.



Hardscape Lighting

Highlight stone features, retaining walls, outdoor kitchens, steps, handrails, benches and more.

Recommended fixture: 6" 12V LED 16101.



Fixture Spacing

Make Your Design Stand Out

Where you place the fixtures not only determines the visible light, but also the shadows. It's important to consider the play between the shadows and the light to create a natural rhythm of contrast and symmetry.



12V VLO HIGH LUMEN ACCENT

Item	16161 (High - 1200 lm)		
Beam	35° Flood		
Candela	Max Candela: 2,872		
Distance	fc	1200 lm	Beam Width
84'	0.4		42'
72'	0.6		36'
60'	0.8		30'
48'	1.2		24'
36'	2.2		18'
24'	5		12'
12'	20		6'
8'	45		4'

Item	16161 (Low - 1000 lm)		
Beam	35° Flood		
Candela	Max Candela: 2,394		
Distance	fc	1000 lm	Beam Width
84'	0.3		42'
72'	0.5		36'
60'	0.7		30'
48'	1		24'
36'	1.8		18'
24'	4.2		12'
12'	17		6'
8'	37		4'



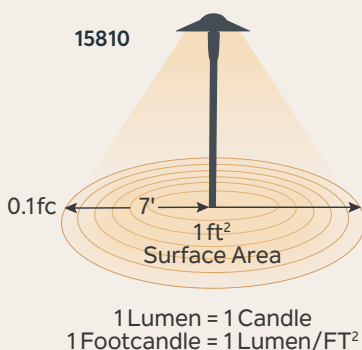
Reading Photometrics

Choosing the right fixture for the job requires technical know-how. When it comes to specifying products on the design and ordering the fixtures, how do you find the right light for the job? The answer is that you'll need to read the photometric chart for the fixture to find the right amount of light for your specific homeowner's situation.

Characteristics of Light

Illuminance and Footcandles

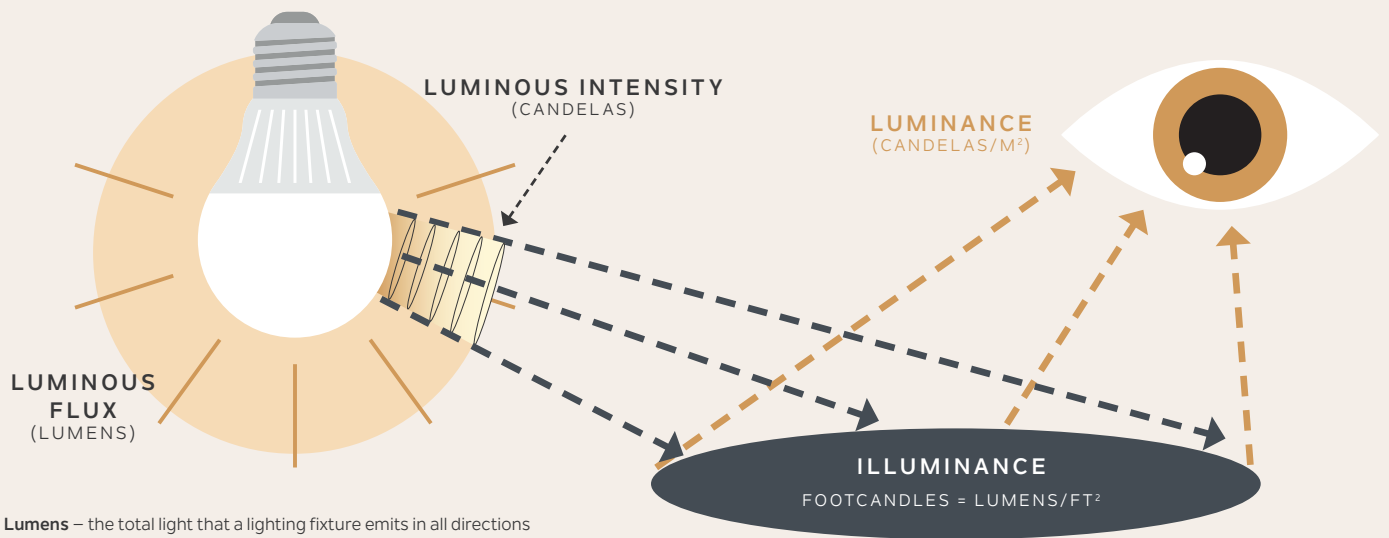
The amount of light falling on a surface or an object is called illuminance and it is measured in footcandles (where one footcandle equals one lumen per square foot).



Illuminance Measurements

The light is naturally brightest near the source, where the area illuminated is smaller, so there are more lumens per square foot, and therefore more footcandles. Illuminance goes down the farther away from the light source you get because the area illuminated gets larger and there are therefore fewer lumens per square foot and fewer footcandles of illumination.





Lumens – the total light that a lighting fixture emits in all directions
Candelas – the light that a fixture emits in a certain direction
Footcandles – the measurement of how much light (lumens) hits a surface area (FT²)
FT² – the surface area measured in square feet

Illuminance is how much light you're throwing in a space vs. luminance which is how your eye perceives.

Photometric Chart Examples

15810R – Dome									
Foot-candles (FC)	Distance from Light								
	0 ft.	1 ft.	2 ft.	3 ft.	4 ft.	5 ft.	6 ft.	7 ft.	8 ft.
	11.97	6.14	2.32	0.74	0.31	0.19	0.12	0.07	0.01

15820 – Stepped									
Foot-candles (FC)	Distance from Light								
	0 ft.	1 ft.	2 ft.	3 ft.	4 ft.	5 ft.	6 ft.	7 ft.	8 ft.
	12.47	5.79	2.04	0.67	0.18	0.05	0.02	0.01	0.00

A path light is mounted at a fixed height above the ground, and the chart measures the footcandle value on the ground at intervals measured from the location of the path light. Charts for bollards, deck and step lights work the same way. The light is brightest, closest to the path light (the footcandle value is high), and grows less bright the further away from the fixture that you get (the footcandle value goes down). That is, as the distance from the path light increases, the footcandle value decreases.

For instance, this 15810 path light produces 11.97 footcandles on the ground directly under the fixture, 6.14 footcandles on the ground one foot away from the fixture, 2.32 footcandles on the ground two feet away from the fixture, 0.74 footcandles on the ground three feet away from the fixture, and so on.

Photometric Data & Footcandle Reference Values

Photometric data can help you sort out differences between fixtures: consider, for instance, these two path lights, which have these two photometric charts above. The 15810 fixture at the top has a different style shade, than the 15820 fixture on the bottom. If we look at the photometric charts, we see that two feet away from the fixture the top fixture produces greater illuminance: it produces 2.32 footcandles as opposed to the other fixture's 2.04 footcandles.



15810R



15820

Why Path & Spread Lighting

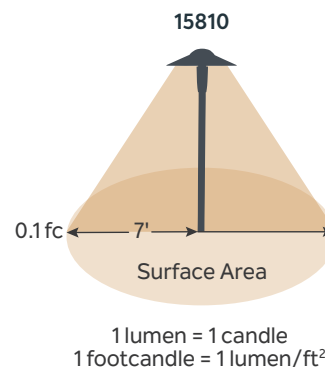
Path and spread lights help illuminate sidewalks, stone pathways, and lawn walkways while adding a hint of intrigue to boulders, plant beds and patio perimeters. Spread lighting uses a path light inside a landscape bed to illuminate the plantings and ground cover.



Typical Plot Plan Using Spread Light Fixtures

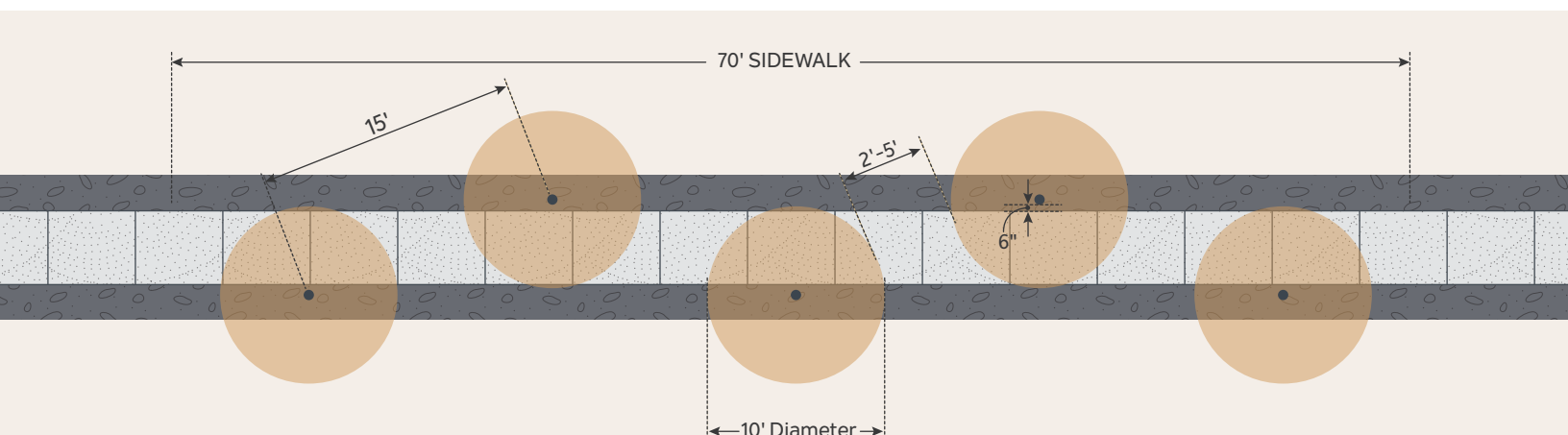
It is important to use a center-to-center measurement, rather than linear, along the sidewalk to help plan for path and spread lights. This will help ensure your fixture spacing is not subject to the width of the walkway. The chart below outlines that most path lights have a 5'-7" light spread from the fixture from each side of the center, which maintains a bare minimum .1 fc at that distance. A typical path light casts a 10' diameter light spread. You will need to double the distance of the below footcandle chart to get a full diameter.

Footcandles by Item Number	DISTANCE FROM FIXTURE CENTER								
	0'	1'	2'	3'	4'	5'	6'	7'	
15810	10.5	5.7	2.4	1.0	0.4	0.3	0.2	0.1	
16120	20.0	7.6	2.8	0.9	0.4	0.2	0.1	0	
15870	16.5	7.2	2.5	0.7	0.2	0.1	0	0	



Staggered Path Lighting

When using a staggered path lighting approach, we recommend installing the path lights at least 6" away from the edge of the pathway and space the fixtures at 15', using a center-to-center measurement, which will leave a 2'-5" gap between pools of light and properly illuminate the sidewalk.



Additional Path & Spread Lighting Tips

- Spread lights are typically center mounted
- Most spread lights have a larger round or square area of light; the shade geometries will dictate the shape of the light spreads
- Use spread lights when illuminating sidewalks, lawn, and flower beds at the same time
- Use path and spread lights sparingly, try not to overlap the light output of other path lights
- The wider the top canopy, the wider the spread because of a greater reflective surface

MAPPING OUT YOUR PLAN

- 1 Make sure to always review your application area first.
- 2 Next, start drawing out some layout ideas with distance and measurements to ensure that you are accounting for the beam spread and photometrics of the selected fixture. We recommend planning for a total spread diameter light spread from the center of each fixture.

Check out our photometric details and diagrams on [Kichler.com](https://www.kichler.com) for additional details and information.

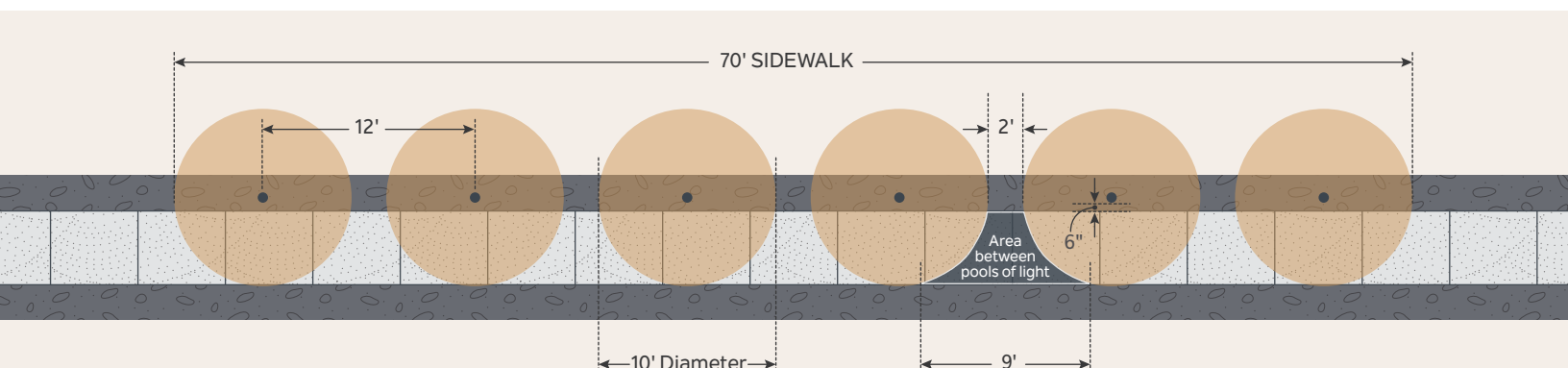
For help with layout planning, contact our **Landscape Lighting, Layout & Design Services team** at **844-KICHLER** (844-542-4537) or via email at techsupport@kichler.com.



15870AZT27R

Linear Path Lighting

By spacing the fixtures at 12', the gap between pools of light would end up being just over 2' on the near side of the walk and 9' on the far side of the walk.



Calculating Project Load & Cable Size

Once you've selected the fixtures you need to achieve your lighting design using the lighting design tips on page 6-15, list the wattage and VA for each fixture in the system.

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Lights

Transformer

Controls

Cable & Connectors

Accessories

CHOOSING A TRANSFORMER

- Add the VA values of each fixture to determine total VA of the system.
- The total VA value of the system should not exceed the wattage value of the transformer.

Example: A system totaling 300 VA should use a transformer rated with at least 300 Watts

TRANSFORMER CONTROL OPTIONS

- **Photo Cell** – Sensor turns lights on when it gets dark and off when it gets bright outside.
- **Mechanical Timer** – Uses traditional pin setting to automate on and off sequencing.
- **Digital Timer** – Program on/off times for each day of the week and automatically adjusts for daylight savings time.
- **Smart Control Timer (Wi-Fi)** – Schedule and control your lights from your phone or another Wi-Fi enabled device.

Voltage Drop Calculation

Utilize the voltage drop calculation below to select the appropriate cable gauge and to determine the voltage that will be delivered to the last fixture on your wire run. This calculation should be done on each cable run to ensure safe and effective operation.

Voltage Drop = (2 x Length of Cable x Total VA on Run) / Cable Constant *see calculation example below*

End Fixture Voltage = Transformer Tap Voltage – Voltage Drop *calculation above*

- **Length of Cable** – The length in feet of an individual wire run.
- **Total VA on Run** – The total VA of all fixtures that will be installed on an individual wire run.
- **Cable Constant** – Predetermined value (see chart to the right). We recommend starting with 12 gauge and adjusting to a larger cable if necessary.
- **End Fixture Voltage** – The outcome of this equation (above) should be greater than 10V to ensure effective operation.
- **Transformer Tap Voltage** – Varies by transformer and can be 12V, 13V, 14V or 15V.

Length of Cable (ft)

85 Feet

Total VA on Run

75 VA

Cable Constant (see chart)

7,500

Transformer Tap Voltage

14V

COM

TAP1 12V

TAP2 13V

TAP3 14V

TAP4 15V

Cable Constant
 18/16 gauge.....*
 12 gauge.....7,500
 10 gauge.....11,920
 8 gauge.....18,960

End Fixture Voltage

14V

-

2

x

85'

x

75W

7,500

=

12.13V

Voltage Drop

What if Your End Fixture Voltage Number is Less Than 10V?

- If possible, select the next highest voltage tap and recalculate.
- Decrease the load (eliminate fixtures) on the wire run and recalculate.
- Increase the cable gauge and recalculate.

*NEC dictates no wire smaller than 12 gauge to be used on home runs.
We don't accept responsibility for any missuses or misunderstanding of the wire size calculations. We always recommend utilizing a voltmeter to confirm your calculations.



Accessories to Help Get The Job Done

Lenses, louvers and cowls can help reduce glare and direct light where you want it, wall or tree mount kits allow you to mount fixtures in spaces where the ground isn't an option.

A FEW OF OUR MOST POPULAR ACCESSORIES

- 15609 Junction Box Mounting Bracket
- 15511CBR 12" Male and Female Riser
- Hexcell Louvers 15679BK, 16073BK, and 16175BK
- 6" Long Cowls (VLO Large 16068, VLO Small 16067, 200-500lm Accent 16076)

Maintenance Tips

Once the lights are installed, your job isn't done. A twilight check to ensure everything is running correctly can reduce calls from unhappy clients. The first thing you should do is review your job in the dark to make sure fixtures are aimed correctly. Then, annually or twice a year, make sure you're performing ongoing system maintenance.

Maintenance Contract

It's a good idea to offer your clients a maintenance contract when you install each system. This allows you to walk the property annually or twice a year to check for lamps that are out, clean dirty fixtures or reset fixtures that need realigned. Typically, a maintenance contract involves the following:

- 1 Straighten up lights at end of season
- 2 Replace any lamps at 80% of useful life
- 3 Clean fixture lenses

Maintenance contracts allow you to stay in front of any potential emergency calls and should cover the cost of your time for a quick visit.



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As a member of the LightPro™ Rewards program, you gain access to a full suite of business and marketing tools while earning points for qualified landscape lighting product purchases. The more Kichler landscape lighting products you buy from a participating distributor, the more you are rewarded.

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Let Us Design Your Layout

You're managing crews during the day and making sales calls in the evening. How do you find the time to prepare landscape lighting layouts? If that's a challenge for you, we have good news. With our layout and design service, our LightPro Rewards members get a free layout just for being a member.

HOW TO GET STARTED:

Log into your LightPro Rewards Account

1. Visit **LightProRewards.com** and login to submit your completed design request form and any drawings or pictures related to your job. If possible, provide one or two photos showing details of the house or property, landscaping, trees' height, and any other aspects of the area being lit.
2. We provide you with a bill of materials and a finished layout free of charge.

We'll Work With What You Give Us

We're flexible. If you send professional CAD drawings, our team will return these to you with the lighting design incorporated, but if you send only one or two photographs, our team will find a way to work with these, too. The more information you can provide, the better.

All members of our layout and design team are Certified Outdoor Lighting Designers (COLD) and Certified Low Voltage Lighting Technicians (CLVLT) by the Association of Outdoor Lighting Professionals (AOLP). So, you'll be in good hands.

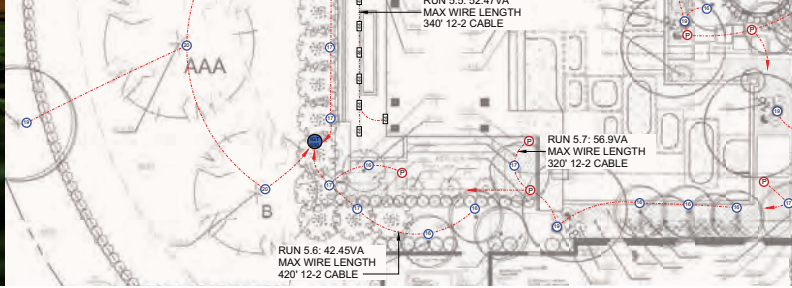


A Layout You'll Love

Our team will provide you with a professional layout including our logo and yours. The layout will include a bill of materials, list of all the required runs, including fixture load and wire length. A win-win for you and your customer.

“ I have adopted Kichler Layout Services as part of my business model which has propelled my sales year after year. This service has provided my company with detailed and well thought out fixture placement and layout designs with a timely turnaround. ”

Nick Rundo | Chief Navigator, Northern Territory Lighting



Business Building Marketing Materials

Our LightPro Rewards members get access to free, professionally designed marketing materials, including door hangers, postcards, and brochures, to help you market and grow your business.

Standard Marketing Materials

Access various free marketing materials to help you promote your landscape business services. Reach out to your local Kichler Sales Representative or Distributor to get started.

Customizable Marketing Materials

Allows you to create a co-branded piece that relates to your geographic region while handling the printing yourself through our Brand Portal. Members can swap photos and add company information.

Custom Demo Kit Program

Presentation is everything. When you do your selling by showing, there's a light that goes on in a homeowner's head. It may switch a 'no' or a 'maybe' to a 'yes.' As a LightPro Rewards member, you'll have the exclusive opportunity to earn a free custom demo kit. To get started, contact your participating distributor.

To join our LightPro Rewards program visit **LightProRewards.com** and create an account.

Earn Points and Get Rewarded

Redeem points throughout the year or bank them for larger rewards such as merchandise, gift cards, or an all-inclusive trip. Select from over 60,000 items, including products from brands such as Apple®, Bose®, Cuisinart®, Nike®, Beats®, and Callaway®.



Training and Education

Because we know that continuous education and training are essential as you grow your business, we offer a variety of landscape training and educational opportunities for you and your staff. These educational opportunities include expert information on safety, troubleshooting, installation overviews, and tips on how to build your business.

Need more? Just ask; we're here to help: **LightPro@Kichler.com**.

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Featured on Front Cover: 16023CBR VLO In-Ground, 310765SBK Loa Ceiling Fan, 49551BKTLED Walden Wall Lights, 15764CBR Half Moon Deck Light, 16261CBR Ninety Degree Path Light, 16141CBR Mini All-Purpose

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The majority of newer Kichler fixtures are U.S. Patent Pending.