LUTRON

Application Note #622
Revision F
August 2023

Finiré 3” Design Guide

Overview

The Finiré 3” downlights are a diverse product offering with many options to provide the flexibility to fit into most applications. While the product family gives a wide scope of potential uses, it can also cause confusion as to what options should be used in specific applications. This document will go through some of the different design options, explain the differences, and the applications for which these options might be best suited.

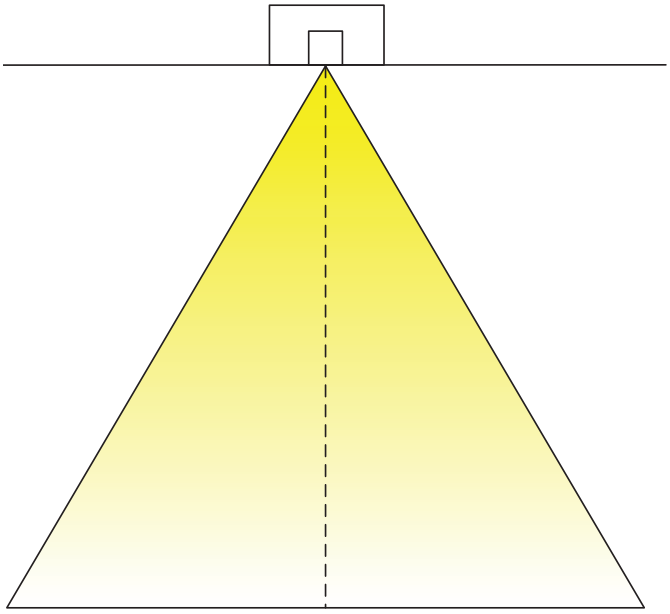
Table of Contents

Fixed vs Adjustable vs Infinite Adjustable Downlights

Fixed vs adjustable refers to the type of mechanism the LED module is mounted to. This cannot be changed after the fixture is shipped.

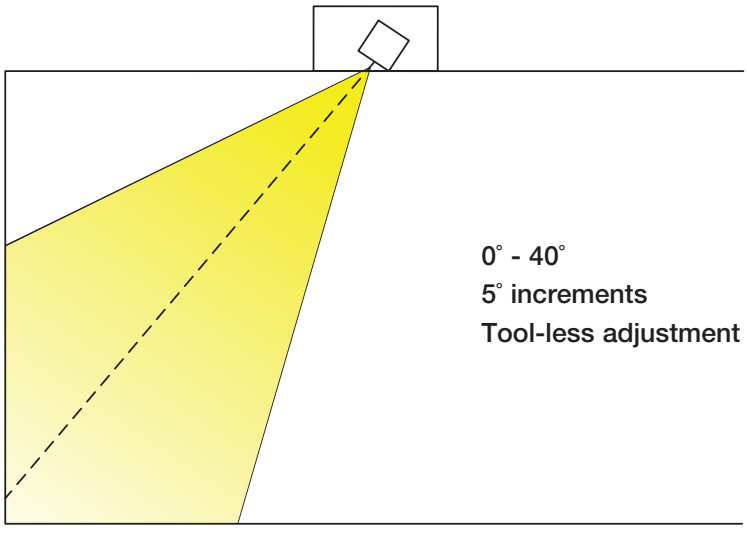
Fixed Downlight

Fixed downlights should be used in applications where it is desired to have the light shine perpendicular to the front surface of the downlight (nadir). This encompasses a majority of general lighting applications that have a standard ceiling (parallel to the floor).



Adjustable Downlight

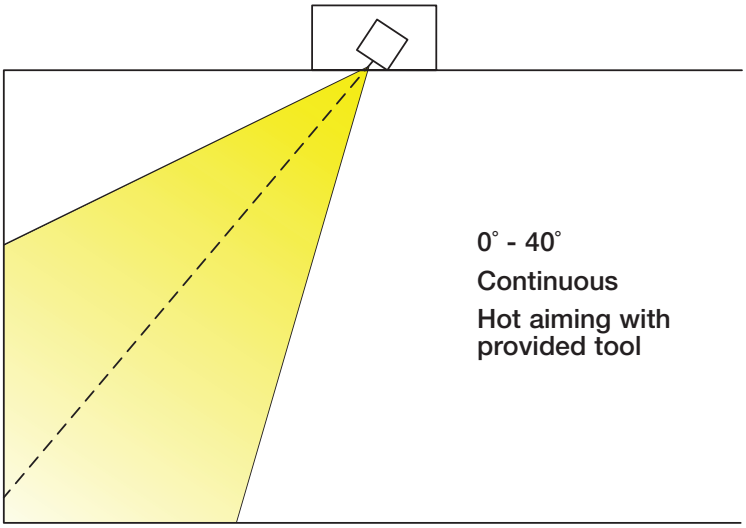
Adjustable downlights are used in applications where it is desirable to have the light from the downlights shine at an angle other than straight down. The adjustable version of the Finiré 3" downlight allows the light module to be adjusted from 0° to 40° in 5° increments. The 5° increments allow multiple downlights to be adjusted to the same tilt without going back and forth to fine tune the downlights. Common applications are where light is to be pointed at something specific (e.g., artwork, vase, pedestal) or as a wall wash (e.g., hallway, accent wall).



Fixed vs Adjustable vs Infinite Adjustable Downlights *(continued)*

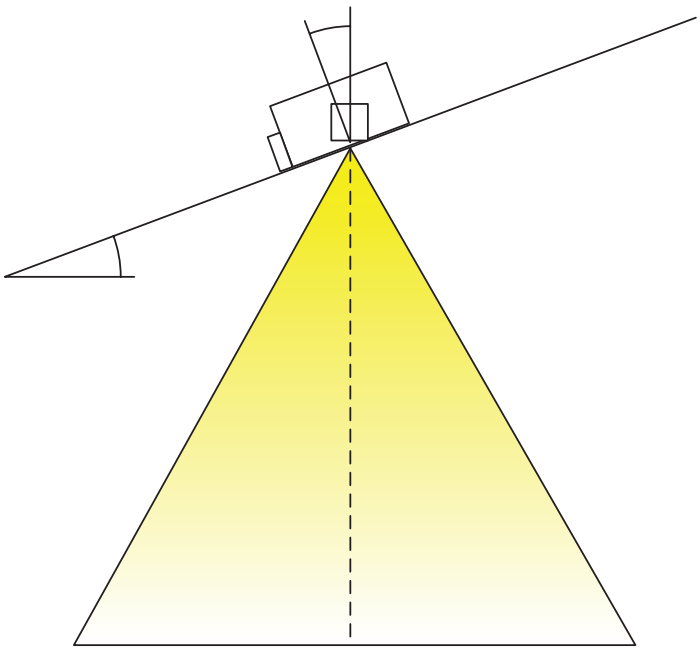
Infinite Adjustable Downlight

Certain applications may require increments finer than 5°. To allow for this, Finiré 3" downlights have an infinite adjustable option available. This option allows for continuous adjustment from 0° to 40°. It also allows for hot aiming via the provided tool. The applications for this option are those that require very detailed adjustability or applications where a designer wants hot aiming capability.



Sloped Ceiling Application

A specific application that adjustable and infinite adjustable downlights are used is in sloped ceilings. In sloped ceiling applications, the design intent is often to provide a fixed look and feel. To achieve this when the ceiling is not parallel to the floor, adjust the fixture to counter the slope of the ceiling. For example, if you're ceiling is slanted 25°, tilt the fixture to 25° to produce a fixed affect. Since the exact slope of the ceiling might not be known, adjusting the downlight to the correct tilt might require multiple rounds of adjusting the tilt and checking the result.



Non-IC vs IC vs Plenum vs Rough-In Housings

IC vs Non-IC refers to whether or not the housing is able to be in contact with insulation. This cannot be changed after the downlight is shipped.

Non-IC (Non-Insulation contact) Housing

Non-IC housings either do not have a housing or the housing has ventilation slots that cannot be blocked. These housings can be used in applications that do not have insulation around the downlight. If there is insulation around the downlight, a downlight with an IC housing MUST be used.

IC (Insulation contact) Housing

IC housings are airtight and can come in contact with insulation. They have larger enclosures (check spec sheet for dimensions) to allow for heat dissipation. If a downlight is in contact with insulation, it CANNOT be an Non-IC downlight.

Plenum Housing

The term “plenum” describes air handling spaces above ceilings that are an active part of the air return for the HVAC system. To help protect the quality of the air, there are stricter requirements for anything going into these types of spaces. If the space above your ceiling is a plenum air handling space, you must use plenum rated downlights.

Rough-In Housing

The Finiré 3” rough-in housing option has a shorter lead time without the electronics (power supply/driver and LED emitter/module) to support earlier job installation during the framing stage for new construction projects.

- This option enables customers to stock rough-in housing inventory to satisfy urgent projects.
- Provides added flexibility for late design changes.
- Quicker Ship option that allows customers to complete rough-in construction (EC housing install and wiring) while specifications are being finalized.
- Mitigates competitor flips by locking in jobs after rough-in install.

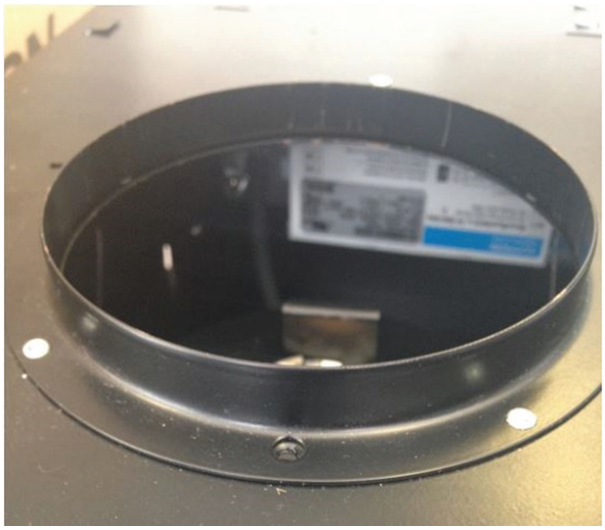
The electronics can be ordered separately and installed after the ceiling has been installed. See lutron.com/finire3-install for more details.

Flanged vs Flangeless vs Flangelesss Millwork (Wood/Stone) Housings

When choosing different trim types (flanged vs flangeless), the housings are the same but ship with different hardware. A flangeless millwork housing has a completely different housing design.

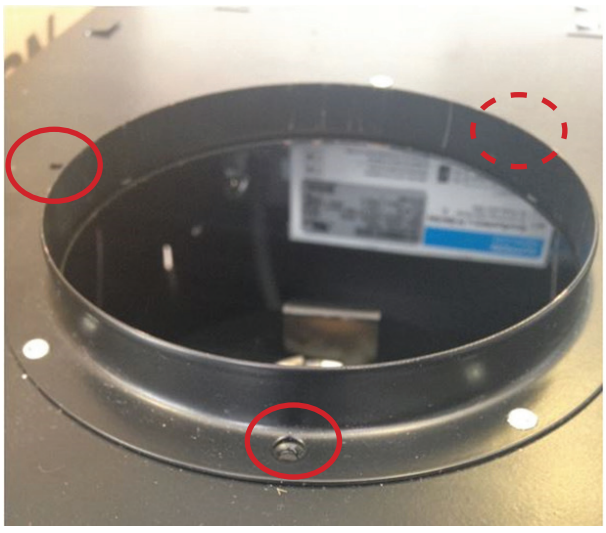
Flanged Housing

A flanged housing features a 0.5 (1/2) in (13 mm) collar protruding from the bottom surface of the housing. This collar is there to provide a guide into the housing through the opening in the ceiling. The trim has clips that clip above this collar. A flanged housing can be used for a normal flangeless application if a mudring and screws are ordered.



Flangeless Housing

A flangeless housing is similar to a flanged housing in that it features the above mentioned collar; however, the housing ships with additional hardware. A flangeless housing comes with a mudring and mounting screws. The mudring gets installed after the drywall is installed and is screwed into mounting holes located around the collar of the housing. The flangeless trim clips into the retainer and assists in finishing the drywall surface around the hole. A flangeless housing can be used for a flanged installation without any adjustments but the mudring would not be used in this instance.

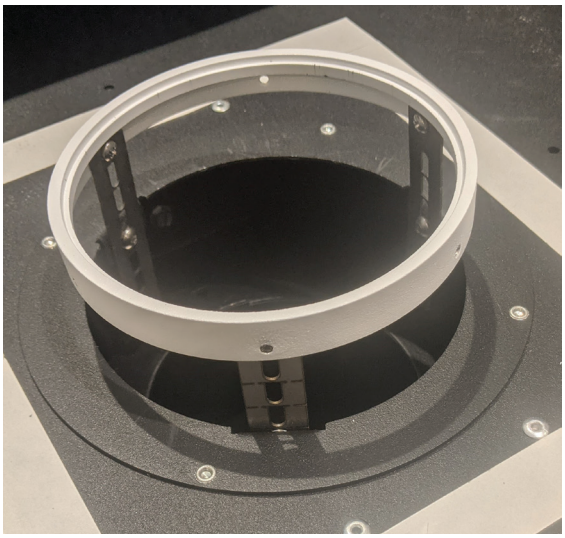


Flanged vs Flangeless vs Flangeless Millwork (Wood/Stone) Housings *(continued)*

Flangeless Millwork (Wood/Stone) Housing

The flangeless millwork housing features a retainer that comes with adjustable attachment straps. This allows for adjustability in aligning the bottom edge of the retainer with the ceiling surface. A mudring cannot be used with wood, stone or other hard surfaces as it only works with mudded or plastered surfaces. A flangeless millwork housing is unique and cannot be converted to a flanged or standard flangeless housing. Vice versa, a flanged or standard flangeless housing cannot be converted to a flangeless millwork housing. However, flanged trims can be ordered, which can then clip onto the ceiling.

Note: The adjustable retainer on a flangeless millwork housing will be the same color/finish as the trim chosen for that downlight. This is done to decrease the aesthetic impact of the retainer in the space.



Thick Ceiling Applications

A thick ceiling application is any application in which the total thickness of all ceiling materials is greater than 0.625 (5/8) in (16 mm). In these applications, special considerations must be taken in order to allow a Finiré 3" downlight to be used. A Finiré 3" downlight can accommodate ceilings up to 2 in (51 mm) thick using either of the thick ceiling options noted below. For ceilings thicker than 2 in (51 mm), contact lightingsupport@lutron.com

Flangeless

If the application is a thick ceiling and the flangeless trim is being used, the Trimless Thick Ceiling (TT) option must be chosen. This option comes with longer screws that allow the mudring to be mounted further away from the housing than in a standard application. The flangeless trim remains unchanged and clips into the mudring as it normally would. **The thickness of the ceiling must be specified when ordering.**

Flanged

If the application is a thick ceiling and the flanged trim is being used, the Thick Ceiling (TC) option must be chosen. This option comes with longer spring arms that allow the trim to be mounted further away from the housing than in a standard application. Due to the longer arms, the trim itself is different. **The thickness of the ceiling must be specified when ordering.**

Flanged vs Flangeless vs Flangeless Millwork (Wood / Stone) Housings *(continued)*

Light Output Based on Ceiling Thickness

Standard ceiling thickness is 0.5 – 0.625 in (13 – 16 mm). For thicker ceilings, it is important to understand the difference in light output. In the following table, the percent of total light output based on ceiling thickness is being shown for the different reflector options. Other light losses due to color or lens material would still apply as well.

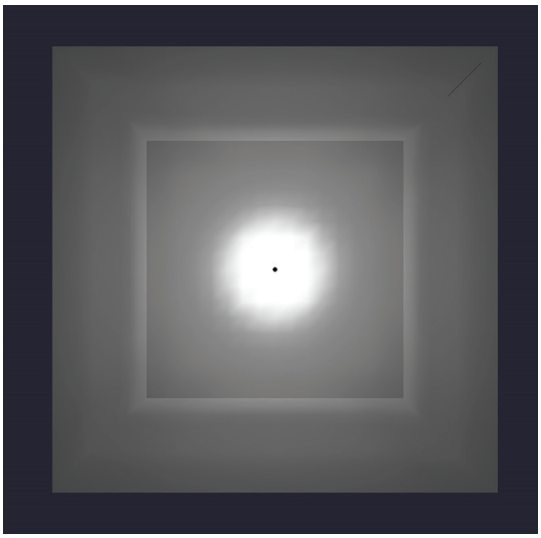
	% of Total Light Output			
Ceiling Thickness in (mm)	15° Reflector	30° Reflector	40° Reflector	55° Reflector
1 (25 mm)	82%	82%	88%	82%
1.5 (38 mm)	68%	66%	73%	59%
2 (51 mm)	60%	54%	65%	46%

Beam Spread Options

Finiré 3” downlights have a number of different beam spreads to meet the needs of any application. The 30°, 40°, and 55° options are interchangeable and can be used with the Standard, High Output, and High Plus light engines. This provides flexibility to change the beam spread in the field quickly and easily if the chosen option does not give the desired effect.

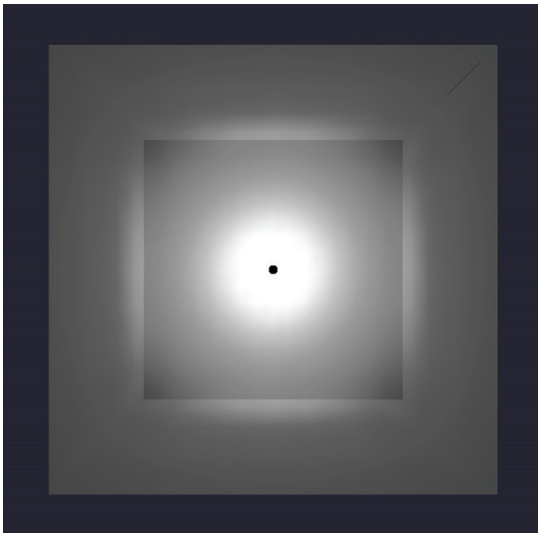
15° Spread

A 15° beam spread is meant for applications where a narrow spot of light is required, typically to highlight a specific point/object. The 15° option can only be used with the Narrow Spot light engine, as the point of light must be smaller to achieve this narrow beam. This option can be seen below and is rendered in a 10 ft x 10 ft (3 m x 3 m) room with a 9 ft (2.75 m) ceiling.



30° Spread

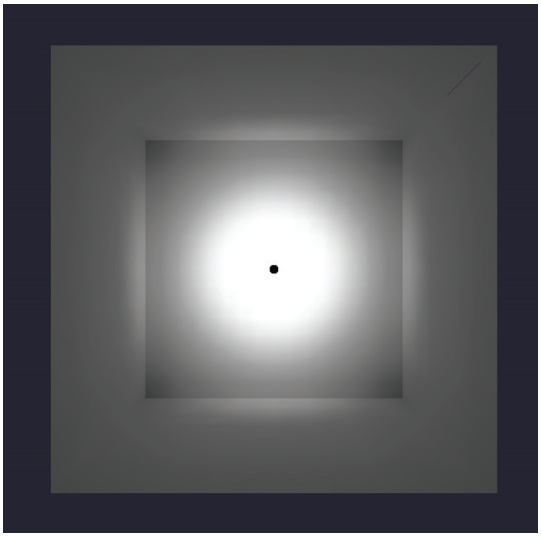
The 30° beam spread can be used on any light engine except Narrow Spot. It can illuminate applications that require high lumen output light engines but do not require wider spreads of light (40° / 55°). It is commonly used in high ceiling applications because it keeps the light concentrated so that it looks like a pool of light on the floor and allows higher lumen output light engines to be used. This option can be seen below and is rendered in a 10 ft x 10 ft (3 m x 3 m) room with a 9 ft (2.75 m) ceiling.



Beam Spread Options *(continued)*

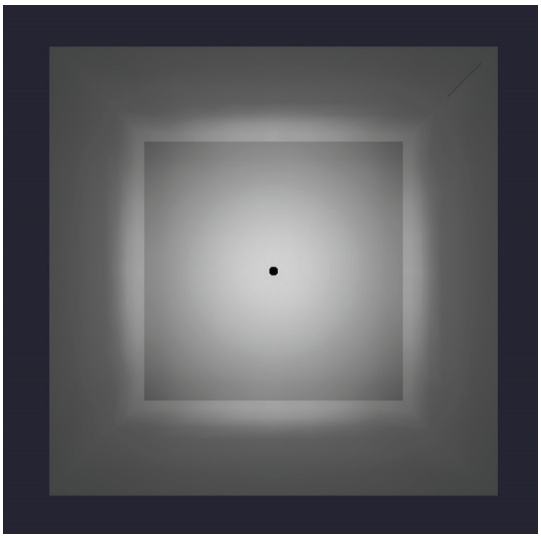
40° Spread

The 40° beam spread is the most common option. It is normally used in general lighting applications with standard height ceilings. It provides a good balance between narrow/focused lighting and flood/area lighting. This option can be seen below and is rendered in a 10 ft x 10 ft (3 m x 3 m) room with a 9 ft (2.75 m) ceiling.



55° Spread

The 55° beam spread is meant for flood lighting applications. In these applications, the light needs to be spread out as much as possible to create even distribution of light between the downlights. This could include low ceilings or other applications where the number of downlights need to be reduced. This option can be seen below and is rendered in a 10 ft x 10 ft (3 m x 3 m) room with a 9 ft (2.75 m) ceiling.



Correlated Color Temperature (CCT)

CCT refers to how warm or cool a particular light source appears. CCT is measured in degrees Kelvin (K). Finiré 3" offers three different options to meet the preference of the end-user.

2700 K

2700 K is the warmer option and represents a color temperature roughly equivalent to that of a standard incandescent bulb at high-end. This option is the most popular because the warm feel is what most people are familiar with in residential applications.

3000 K

3000 K is a slightly cooler color temperature and is more equivalent to newer high efficiency halogen bulbs. This cooler temperature can be used in specific applications where a cooler, brighter feel is desired (e.g., kitchen, bathroom, back of house space).

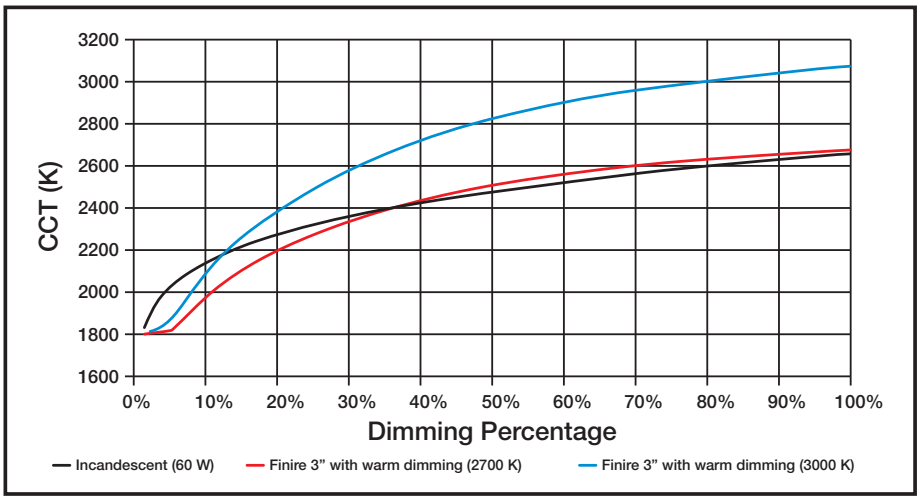
3500 K

3500 K is a neutral and cooler color temperature that is close to neutral fluorescent lamps. This color can be used if a bright white feel is desired. Of the three color options available, 3500 K has the highest efficiency.

Warm Dimming

Finiré 3" fixtures with warm dimming offers lighting that shifts to a warm amber color as it dims. This feature is difficult to render naturally, but Finiré's warm dimming coupled with Lutron dimming technology provides smooth, continuous dimming down to 0.1%, offering an incandescent-like experience that dims smoothly from 2700 K or 3000 K down to 1800 K.

The graph below shows a graphical representation of the 2700 K and 3000 K Finire 3" with warm dimming options compared to a standard incandescent bulb. For each intensity, the corresponding CCT values of the downlights are shown.



Note: Adjusting certain system variables (e.g., high-end and low-end trim) will not only affect the intensity of the downlight, but also the maximum and minimum achievable color temperature.

Note: Color is related to dimming percentage. If a high output module is dimmed to the same lumen output (different dimming percentages) as a standard module, they will have differing colors.

Trim Color/Finish

Finiré 3" downlights are available in a variety of trim colors/finishes that allow the aesthetics of both the trim and the light output to be tailored to the space. See actual product images below.

Matte White Finish

The Matte White finish is the most common finish. It is standard with recessed downlights, and works well with any ceiling color. It also offers one of the highest relative light outputs compared to the other finishes.

White Finish

Matte Black, Silver, Bronze, and Silver/White Finishes

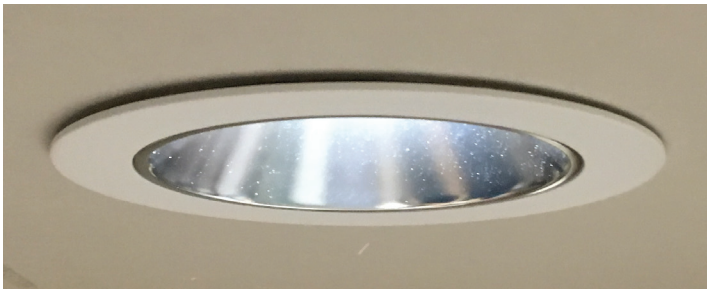
Matte Black, Silver, Bronze, and Silver/White finishes are the other powder coated finishes. They do reduce lumen output compared to the White finish, but allow the trim to have its aesthetic affect minimized or have it compliment the colors in the space.

Bronze Finish

Trim Color / Finish *(continued)*

Clear Chrome and Black Chrome Finishes

With Chrome finishes (Clear and Black), the trim has a glossy finish. When a glossy trim is used, it has an interesting effect on the way the downlight looks in the ceiling while powered. There will be some reduction in lumen output compared to Matte White finish, but not as much as with the Matte Black, Silver, or Bronze finishes. A glossy finishes minimizes the glare that can be seen when looking up at a downlight.



Clear Chrome Finish

Black Chrome Finish

Clear Anodized Finish

Very similar to the chrome finishes, the Clear Anodized finish minimizes the glare that can be seen while looking up at a downlight. In addition, it helps resolve a common complaint with chrome finishes. Reflections can be seen in chrome finishes as people move about the space. The Clear Anodized finish helps reduce glare and has the added benefit of not showing reflections.

Clear Anodized Finish

Lens Options

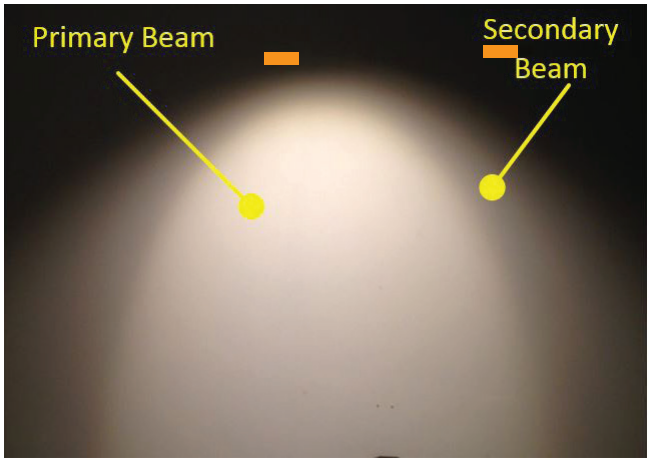
Finiré 3” downlights offer different lens options for different applications. Each of those lens are described below, including an image showing what the light output looks like as well as information regarding the differences and common applications.

The images below were taken with the same round, adjustable, 2700 K, Finiré 3” downlight, tilted at 40° towards the wall to show effect. This same effect can be viewed on the floor with a fixed downlight. The orange lines in each picture are in the same position and can be used as a point of reference.

The height of the ceiling and the distance from the wall will affect the dimensions of the beam of light as it spreads out. These images should be viewed relative to each other to understand the intrinsic differences between each lens, not to determine the true size of the spread in your application.

No Lens

Offers no transition between primary and secondary beams of light. The primary beam has a distinct cutoff. This option will provide the highest lumen output, but can be harsh when the downlight is viewed directly and can have a “halo” effect on the top of the trim. Please note that this option is not rated for wet locations.



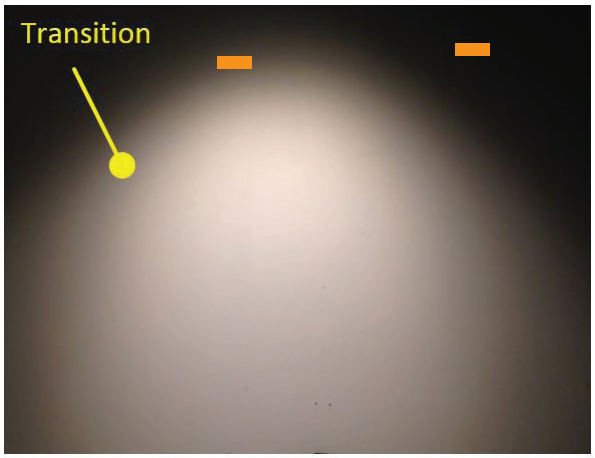
Primary Applications:

High ceilings that would mitigate the harshness of the light due to distance or other areas that require the maximum amount of light output.

Lens Configuration Model Number: XX

Solite Lens

Offers some transition between the primary and secondary beams of light. There is approximately 4% decrease in light output vs. no lens. This option gives a softer look to the light output as well as to the downlight (if viewed directly). It also eliminates the “halo” effect at the top of the trim. The aesthetic of this lens is similar to that of a halogen source.



Primary Applications:

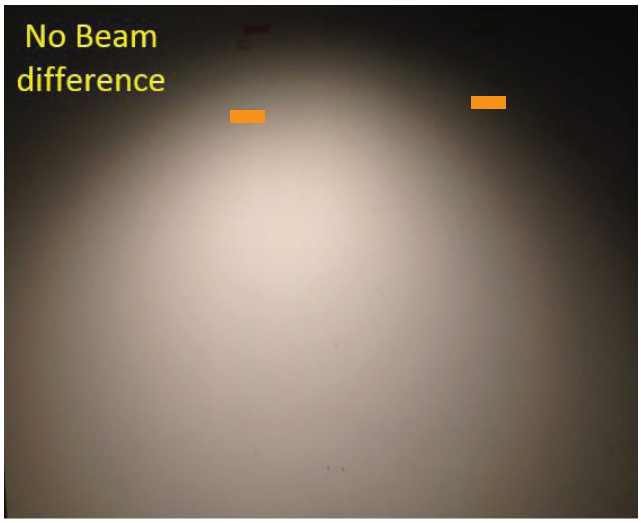
Residential - kitchens and bathrooms
Commercial - conference rooms

Lens Configuration Model Number: SO

Lens Options *(continued)*

Frosted Lens

Offers the softest transition between the primary and secondary beams of light. There is approximately 15% decrease in light output for a frosted glass lens vs. no lens. The aesthetic of this lens is similar to that of an incandescent source.



Primary Applications:

Bedrooms, living rooms, home theaters, or other areas where softer light is desired.

Lens Configuration Model Number: FG

Wall Wash Lens

Offers a soft transition similar to the frosted lens; however, a micro-prism film pulls the light higher and wider on the wall to help create a more even wash of light across the surface. There is approximate a 40% decrease in light output vs. no lens. The aesthetic of this lens is similar to that of an incandescent source.

Primary Applications:

Areas where a higher, wider light is desired to more evenly illuminate a wall.

Lens Configuration Model Number: WW

Wall Wash Downlight Spacing

When using the Wall Wash Lens, it is commonly asked what the spacing of the downlights should be. There are a few variables that go into determining this, including the beam spread of the downlight as well as the distance from the wall that the downlights will be located.

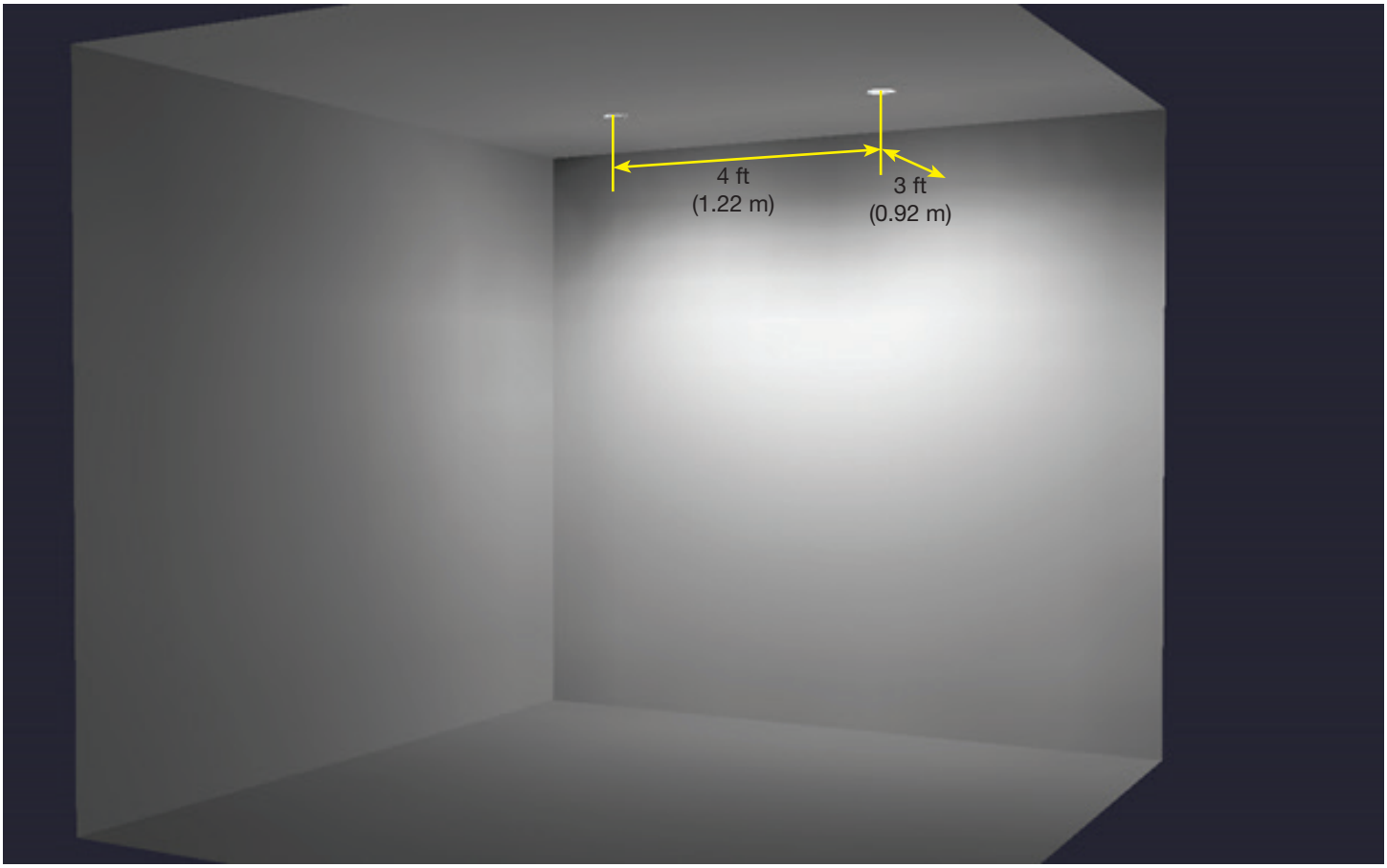
Distance from the Wall

The distance from the wall that the downlight should be is partially determined by how far up the wall it is desired to have the beam of light. While moving the downlights closer will raise the beam of light, it will also result in needing more downlights.

Distance Between Downlights

Once it has been determined how far from the wall the downlights should be, the amount of space in between them can be found by examining how wide the beam of light for each downlight should be.

For this application, the downlights are positioned 3 ft (0.92 m) from the wall and are spaced 4 ft (1.22 m) between each downlight. A round adjustable downlight was used with a 40° beam spread, full tilt, and a wall wash lens.



As can be seen, the wash along the wall is fairly even. In the spacing described above, light starts 12 in (305 mm) from the ceiling on the wall. To achieve light higher on the wall, the downlights would have to move closer to the wall and then closer together to avoid scalloping. Lutron suggests modeling your Wall Wash application in design software to confirm spacing for the specific application. IES and REVIT files can be found at www.lutron.com.

Lutron Contact Numbers

WORLD HEADQUARTERS
USA
Lutron Electronics Co., Inc.
7200 Suter Road
Coopersburg, PA 18036-1299
TEL: +1.610.282.3800
FAX: +1.610.282.1243

lightingsupport@lutron.com

EUROPEAN HEADQUARTERS
Lutron EA Limited
125 Finsbury Pavement
4th floor, London EC2A 1NQ
United Kingdom (Importer)
TEL: +44.(0)20.7702.0657
FAX: +44.(0)20.7480.6899
FREEPHONE (UK): 0800.282.107
Technical Support: +44.(0)20.7680.4481

lutronlondon@lutron.com

ASIAN HEADQUARTERS
Singapore
Lutron GL Ltd.
390 Havelock Road
#07-04 King's Centre
Singapore 169662
TEL: +65.6220.4666
FAX: +65.6220.4333
Technical Support: 800.120.4491

lutronsea@lutron.com

North & South America
Customer Assistance
USA, Canada, Caribbean:
1.844.LUTRON1 (1.844.588.7661)
Mexico:
+1.888.235.2910
Central/South America:
+1.610.282.6701

Asia Technical Hotlines
Northern China: 10.800.712.1536
Southern China: 10.800.120.1536
Hong Kong: 800.901.849
Indonesia: 001.803.011.3994
Japan: +81.3.5575.8411
Macau: 0800.401
Taiwan: 00.801.137.737
Thailand: 001.800.120.665853
Other Countries: +65.6220.4666