



Lighting the way.

Wood·Mode[®]
FINE CUSTOM CABINETS




75TH
ANNIVERSARY
1942 - 2017

Lighting in Design Applications



Under Cabinet Lighting P. 8



Interior Cabinet Lighting P. 10



Drawer Lighting P. 12



Down Lighting P. 14



Mirror Lighting P. 16



Shelf Lighting P. 17



Wardrobe Lighting P. 18



Sink base interior lighting



Pull-out pantry interior lighting



Advantages of LED lighting

LED lights offer beautiful, controllable and discrete illumination with unlimited creative possibilities. Here are just a few of their practical advantages.



Long Lasting and Durable

LED lights have an extremely long service life, up to 25 years or 50,000 hours, dramatically reducing maintenance and replacement costs. Their strong and sturdy design makes handling easier during project construction, installation and transport.



Energy-Saving

LED lights use an impressive 90 percent less power than conventional light bulbs. They can be used to create modern residential and commercial lighting scenarios, and still be in line with the energy saving trend.



Low Heat/No UV Rays

LED lights generate almost no heat, making LED lighting systems especially suitable for displays and enclosed spaces. Since LEDs do not emit ultraviolet (UV) wavelength rays, there is less risk of fading to wood finishes, fabrics, paint and artwork.



Powerful

Even with their small footprint, LED lights are bright and produce a saturated light color. They achieve full brightness as soon as they are switched on, and are fully dimmable with no buzzing or humming.



Consistent Quality

Loox LED lighting by Häfele adheres to strict testing and sorting standards that deliver the highest level of color consistency, in addition to longer diode life. This process, called binning, assures that LED lighting components will match and perform with a uniform light output.



UL Approved

Low heat generation is a requirement for allowing lighting in enclosed spaces. The LED UL Rating allows building inspectors to sign off on projects that use lighting in closets, cabinets and drawers.



Brilliant design, made better

Before



After



Before



After

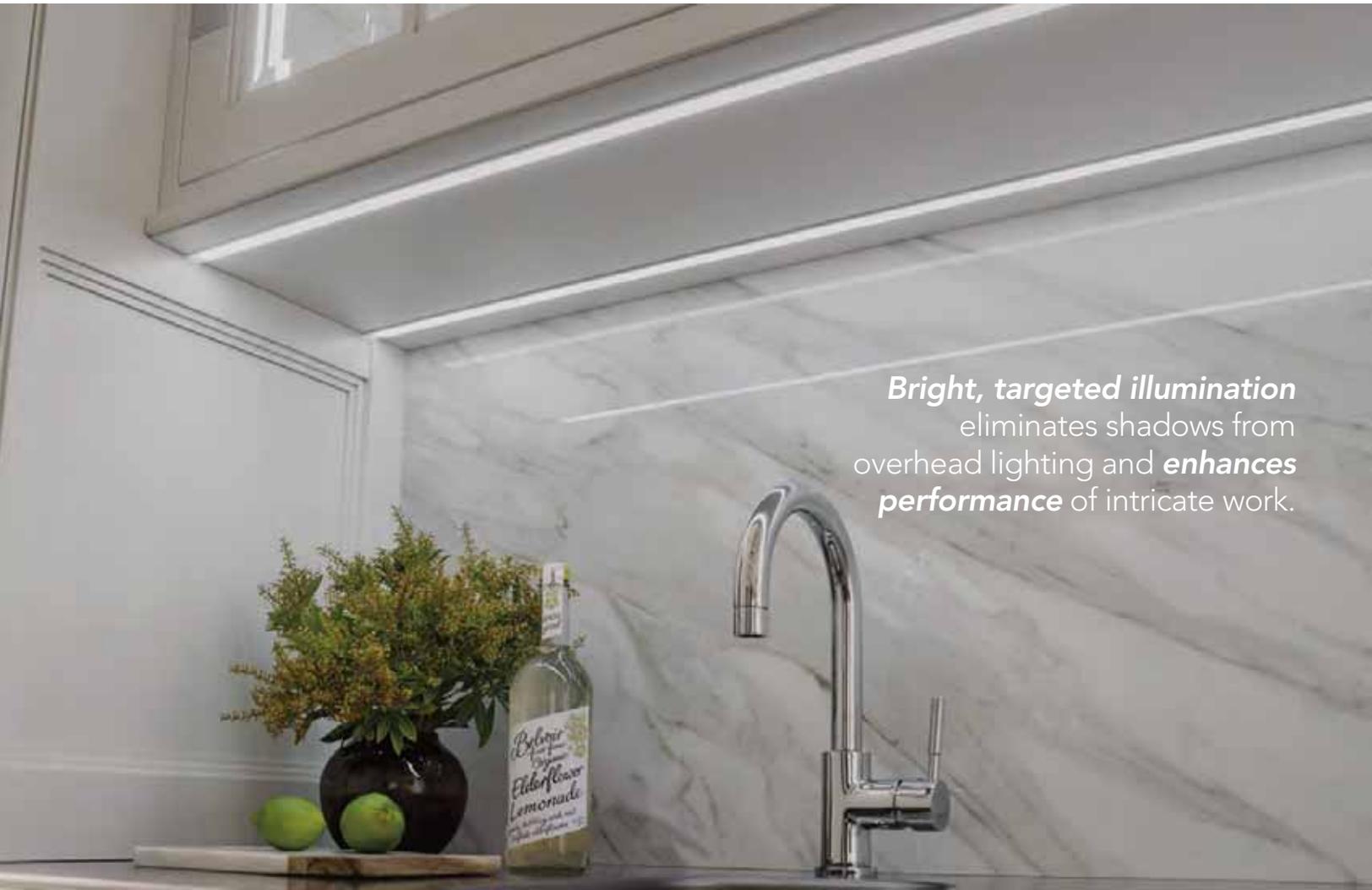


Under cabinet lighting

KITCHEN / BATH / OFFICE / DINING

This application is used to illuminate countertops, backsplashes and other work surfaces while reducing shadows caused by overhead lighting. Lighting can be specified across long cabinet lengths, while individual puck lights add brightness exactly where needed. High intensity is best for work surfaces; choose from warm or cool color temperature depending on the cabinet and countertop finishes.

An independent bottom panel is used to integrate a recessed light profile. This method can span multiple cabinets seamlessly. An optional dimmer can soften the light at night and add ambiance.



Bright, targeted illumination
eliminates shadows from
overhead lighting and **enhances**
performance of intricate work.



Recessed puck lights and under cabinet profile and ribbon lighting



Integrated profile and ribbon light bridging multiple frameless cabinets



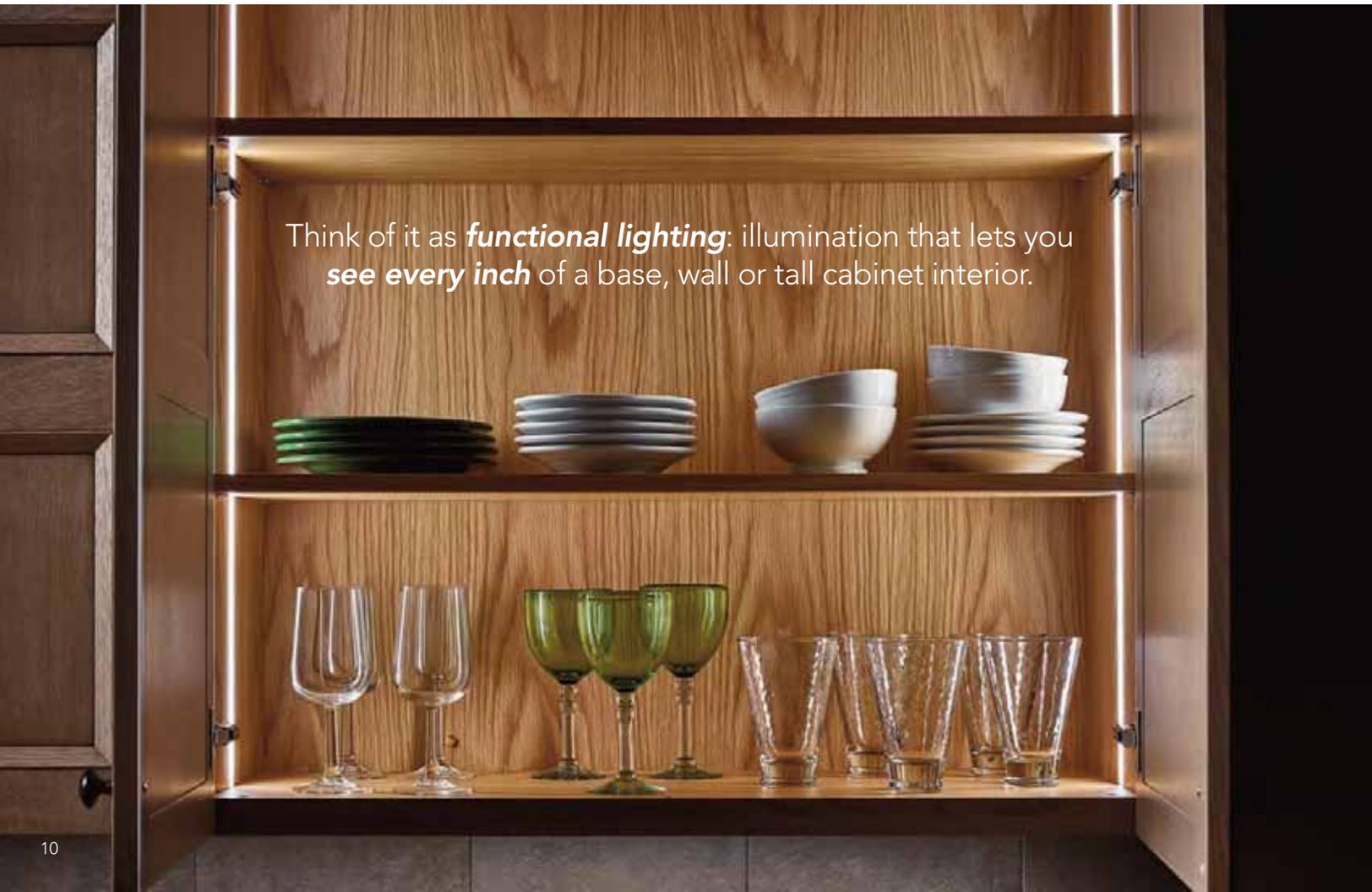
Light rail and surface mounted light bar

Interior cabinet lighting

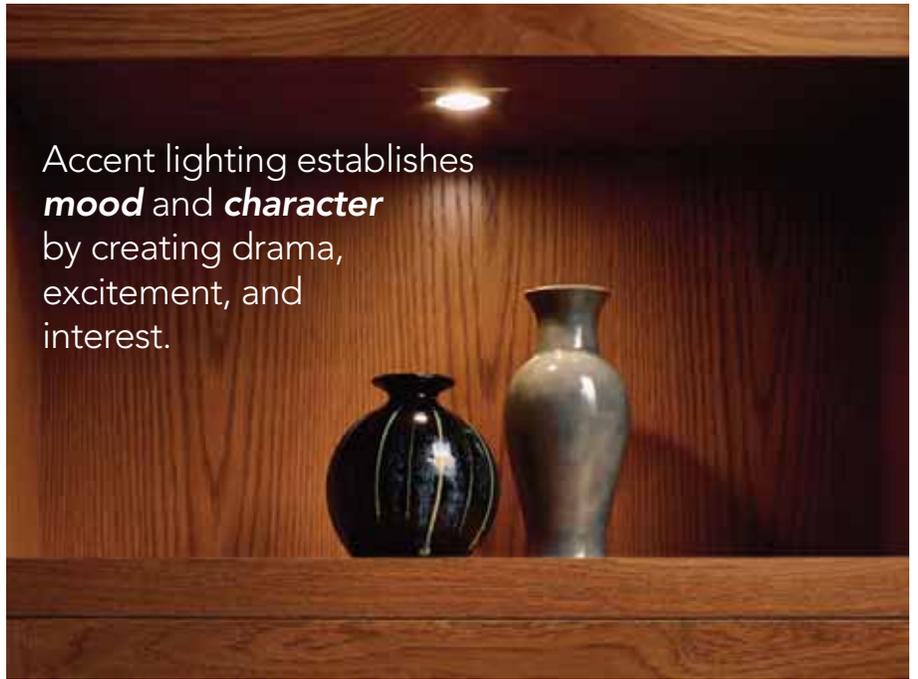
KITCHEN / BATH / OFFICE / WARDROBE

The functional advantage of interior cabinet lighting is more usable space, with great possibilities for display. Overhead lighting rarely reaches the back of a cabinet and a single puck light on the top of the cabinet cannot penetrate through solid shelves. This fully integrated vertical placement is preferred for frameless cabinets.

LED light profiles recessed vertically on the side of the cabinet are switch activated to come on as the door opens. The integrated profile allows the LED diodes to disappear under a diffuser lens cover leaving a soft ambient glow.



Think of it as **functional lighting**: illumination that lets you **see every inch** of a base, wall or tall cabinet interior.



Accent lighting establishes **mood** and **character** by creating drama, excitement, and interest.



Top left: an LED light profile is recessed into the cabinet sides of a glass door display cabinet.
 Top right: a recessed puck light creates a unique accent display.
 Bottom left: LED lighting is hidden behind the front frame of frameless cabinets.
 Middle: an integrated light profile runs behind common internal features.
 Bottom right: an LED light profile is recessed into the sides of an interior storage cabinet.

Drawer lighting

KITCHEN / BATH / OFFICE / WARDROBE

In addition to convenience, drawer lighting makes the space more usable by putting every inch of a drawer's interior in bright view. Overhead room lights and table lamps do not always brighten the bottom or back of a drawer. Drawers that are not lit lose their storage and organization potential.

Drawer lighting uses a pre-wired light bar and includes a pre-installed switch at the back of the cabinet to turn lights on and off as the drawer is opened and closed.



Interior drawer
lighting makes every item
accessible and **identifiable**.



Lighting on reflective surfaces and rich wood tones adds **depth** and **brilliance** to a design.

Above, left and middle:
a light bar is mounted
above each drawer
opening.

Right:
an integrated vertical
light profile floods
light across roll-out
shelves.



Down lighting

KITCHEN / BATH / OFFICE / WARDROBE

Down lighting is effective in a wide range of situations. As functional lighting, it creates more usable space and allows intricate work to be done. As accent lighting, it adds a dramatic, ornamental effect. Down lighting shines light into dark spaces beneath shelves or cabinets, and creates a floating effect under vanities. Down lighting is often used to add lighting layers to a design.

The effect of down lighting on this island is both accent and functional.



*Illuminate dark, open spaces to showcase items or make storage spaces **brighter** and **more visible**.*



Horizontal recessed down lighting



Down lighting makes small spaces appear larger.



Valance lighting adds a wash of light down the mahogany cabinets, accentuating the wood color and grain.

Mirror lighting

BATH / WARDROBE

Create a dramatic, yet practical look by lighting the vertical sides of a mirror with LED lighting profiles integrated into the mirror frame. Covering the profile with a milk lens will wash the mirror with diffused light, eliminating glare or harsh reflections. Add a remote control or wall dimmer to adjust lighting from high intensity for personal grooming, to low level for after hours visits.

Adding light to the vertical sides of a mirror creates a dramatic look that is impressively practical.

A photograph of a modern bathroom vanity. The vanity features a dark wood cabinet with a light-colored countertop. On the countertop, there is a copper-colored vessel sink with a chrome faucet and handles. To the left of the sink, there are several copper-colored vases of different heights, some containing dried branches. To the right, there is a small, textured copper-colored container. Above the countertop, a large mirror is mounted on the wall. The mirror is illuminated from the sides by integrated LED lighting profiles, which are covered with a diffused lens. The lighting creates a soft, even glow across the mirror's surface, eliminating harsh shadows and highlights. The overall aesthetic is warm and sophisticated.

Vertically integrated lighting applications **eliminate harsh contrasts** and **unflattering shadows**.

Fixed shelf lighting

OFFICE / WARDROBE

Fixed shelf lighting illuminates dark interiors and can be used as an alternate to drawer lighting. When used to wash light down a set of drawers, the drawers must be recessed deeper into the cabinet.



Fixed shelf lighting provides a wash effect on drawers below.



Brighten dark interiors
with shelf lighting.

Horizontal lighting is recessed in fixed shelves.

Wardrobe lighting

Integrated pole lighting offers a highly functional way to illuminate the dark interiors of a wardrobe. The effect is a soft glow that illuminates clothes hanging on the wardrobe pole, providing just the right amount of light for making color and texture selections.

This solution consists of LED lighting placed inside a custom-length wardrobe pole and covered with a diffuser lens.



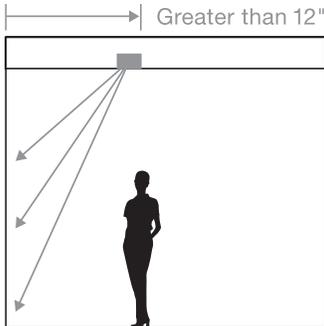
Integrated wardrobe pole lighting creates a ***more spacious feel*** by eliminating dark corners.





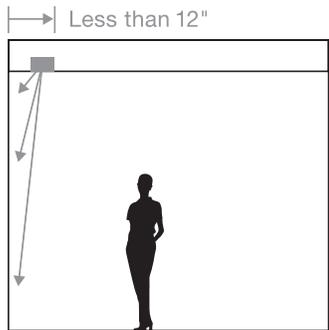
Lighting effects by technique

When light reflects off a vertical surface, it adds visual interest and creates a spacious feel. Wall washing, grazing and scallops are popular techniques for achieving lighting effects on a wall of any size.



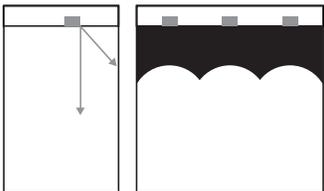
Wall Washing

Wall washing provides an uninterrupted layer of light that is free of hot spots or scallops. Lights are typically spaced equal to the set back distance from the wall. Be aware, wall washing can wash out texture and create a flattening effect.



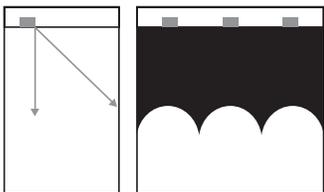
Wall Grazing

For a wall grazing effect, the light is positioned closer to the wall—usually 6"-12"—to highlight the wall's texture. Be aware, minor imperfections on smooth surfaces will be magnified by a grazing effect.



Scallops

A row of puck lights placed close to the wall can create a scallop effect. The center of the scallops can highlight architectural features such as cabinet frames, artwork and display pieces. The scallop size can be controlled by the distance from the puck to the wall: the greater the distance, the lower the scallop will appear on the wall.



Color temperature and intensity

Light color is used to establish character or mood in an environment. The color the light produces is called the color temperature and is expressed in degrees or Kelvin.

- The lower the Kelvin rating, the warmer the light color.
- Light with more red tones is at a lower color temperature, and is described as warm.
- The higher the Kelvin rating, the cooler the light color. Pure white light is at a higher color temperature, and is described as cool.



Selections that complement materials

A warm color temperature works well with wood finishes, while cool color temperatures are best for white, metallic, glazed or painted finishes. Color temperature can highlight and enhance a cabinet's finish by adding depth and brilliance. The wrong color temperature can flatten or distort the finish or color.



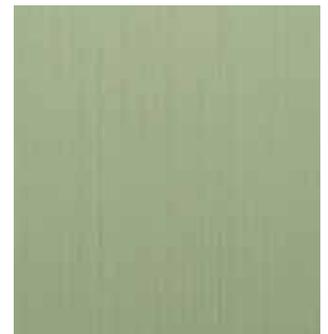
Wood – warm
2700 - 3400 K



Metal – cool
4000 - 5000 K



White – cool
4000 - 6000 K



Paints and glazes
Variable



Light intensity and purpose

Medium and high-intensity

LED lights for applications in enclosed spaces are either medium or high intensity. Proper selection requires an understanding of the purpose for the lighting in relation to the surrounding space.

Discuss your lighting goals with your designer, such as enhancing detailed work areas, background lighting, creating drama or emphasizing elements of your space.

- High-intensity lighting is used for task lighting and dark surfaces that absorb more light.
- Medium-intensity lighting is used for drawers and interior cabinet lighting because high-intensity light could overpower the small space.
- A dimmer can be used with high-intensity lighting to adjust to medium and low light intensities.



Commit to a single color in a room.

Choose either warm or cool colors; mixing lighting colors will create an incongruous look. For example, if you choose cool light for a tall cabinet, then choose cool lights in drawers and base cabinets as well.



Task Lighting

- Used to enhance visibility for intricate work or activity
- Three times brighter than functional lighting
- Is flexible if a dimmer is included
- Avoid severe contrast of lighting levels



Functional Lighting

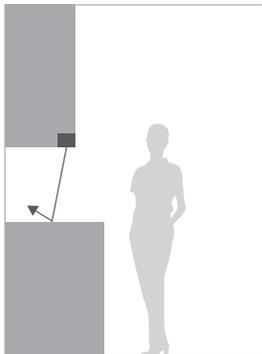
- Provides uniform lighting
- Background lighting
- Allows someone to walk safely through a space
- Reduces sharp contrasts
- Establishes mood and character



Accent Lighting

- Contributes to functional lighting
- Brings attention to an object or element
- Creates drama, excitement and interest
- Adds to character or theme
- Emphasizes artwork, sculpture, fabrics, textures or plants

Light reflections and coverage



Reflections

Light reacts differently to various materials, finishes, colors and tones.

- Dark materials absorb light and require high-intensity lighting.
- Light materials reflect light and require lower-intensity lighting.
- Surfaces that are smooth and shiny reflect more light than rough and dull surfaces.



Shadows

- Cubbies, alcoves and other dark cavities will benefit from ribbon and puck lighting.
- Use medium-intensity light to avoid creating harsh shadows.
- For mirrors, use vertical, recessed lighting on a dimmer to create a functional wash of light that eliminates shadows.



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