

Kitchen Lighting

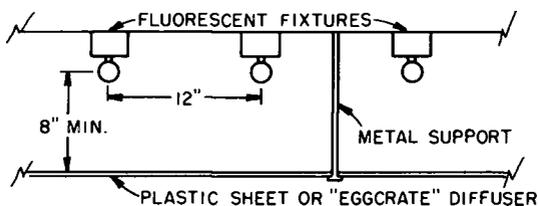
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Good lighting in a kitchen is important for several reasons. Sufficient light on countertops and inside cabinets makes working easier and more pleasant. Handling sharp tools and electrical equipment is safer under adequate light. Since light and color are closely interrelated, the quality of light makes a big difference in the appearance of the colors in a kitchen.

Lighting in an existing kitchen can be improved by replacing inadequate fixtures and adding more light in areas with shadows. Better lighting can best be accomplished when planning is done for a new or remodeled kitchen.

Lighting experts agree that two kinds of lighting are needed in a kitchen: **general lighting** and **local lighting**. Building contractors usually provide general lighting by putting a fixture in the center of the kitchen ceiling. While this provides light for walking around and seeing inside cabinets, the person working at a counter, sink or range makes a shadow in the area where the work is being done. Additional local lighting is needed for these surfaces.

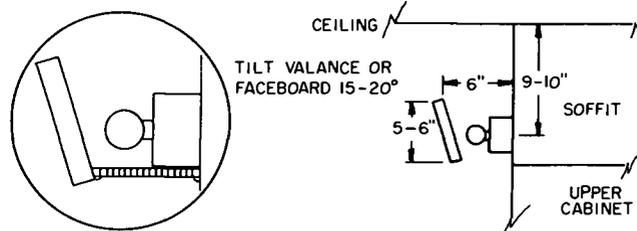
General and local lighting can be combined very successfully by illuminating an entire ceiling with a series of fluorescent fixtures. This technique is ideal for remodeling older homes with loftier ceiling heights. The light extends over the countertop areas and eliminates shadows. The ceiling should be painted a matte white to reflect light downward.



Fluorescent tubes should be fastened to ceiling or mounted between joists so distance from plastic diffuser to tube center is $\frac{2}{3}$ distance between tubes. Minimum distance from diffuser to tube center is 8". If distance is increased to 10", spacing between tubes is 15". Diffuser rests on metal or wood supports. If ceiling is made of combustible material, check electrical code.

If the kitchen ceiling is vaulted instead of flat, substitute a floating panel for the complete luminous ceiling. A box framework of 1" x 10" lumber will hold the metal or wood supports for the diffusion plastic across the bottom and support the fluorescent lighting channels at the top. This structure can be hung from the ceiling by metal rods. The size of this structure should be as large as is practical. To achieve adequate light from a complete luminous ceiling or a floating panel, the total wattage of the fluorescent tubes should be at least 2 watts per square foot of floor area.

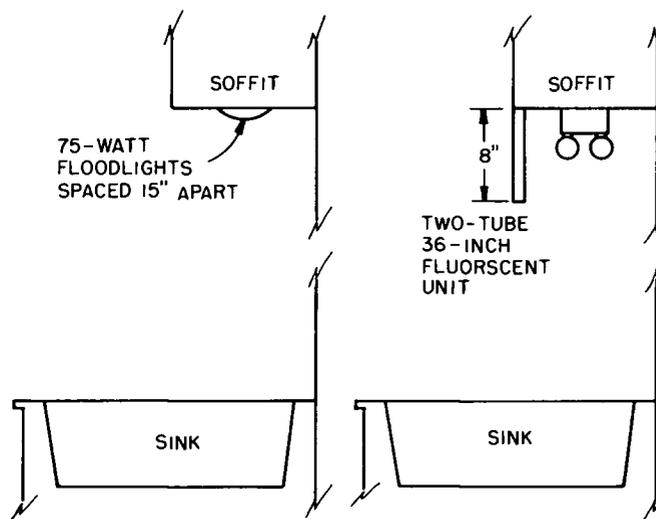
"Perimeter lighting" is another method of achieving general background lighting and also providing shadowless light on countertops. A continuous line of fluorescent channels is mounted on the soffit (the dropped-down area above kitchen cabinets that is frequently enclosed). Upward light from the fluorescent tubes is reflected off ceiling for general illumination, with local lighting on work surfaces provided by downlight from tubes.



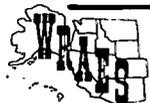
Perimeter lighting requires a faceboard or valance of 1" x 6" lumber installed 6" out from soffit. Paint inside surface of faceboard white. If desired, plastic diffuser can be supported by molding strips along bottom of valance and soffit.

An alternative to the perimeter lighting with fluorescent tubes is the installation of incandescent fixtures in the ceiling directly above the countertops. The fixtures can be recessed or surface-mounted. Surface-mounted fixtures will light the ceiling and provide more illumination than recessed fixtures.

Good lighting over the sink is mandatory. The lighting fixtures may be installed on the ceiling or in the soffit. The switch circuit for the sink lights should be separate from other lights in the room. Switches should be placed near the sink and at the doorway(s) for use when the need is for "walk-through" lighting for a few moments. This will save frequent switching of fluorescent lighting, which shortens tube life, if other lighting in the room is fluorescent.



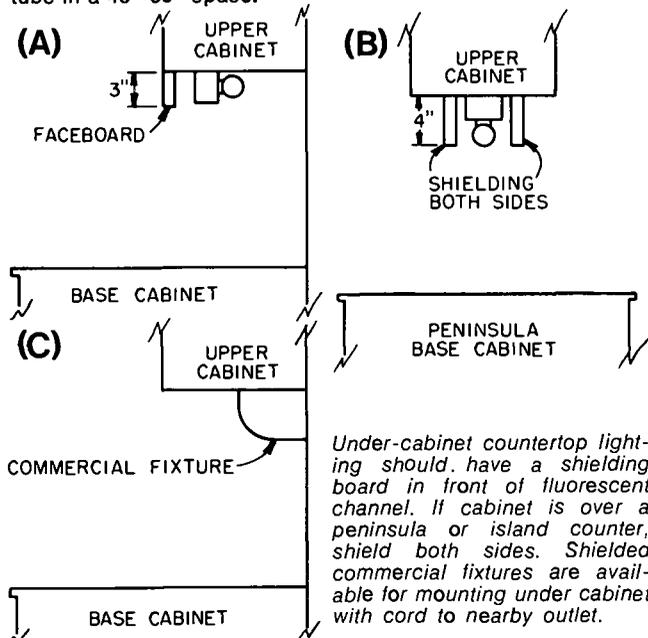
Sink lighting recommendations call for two recessed or surface-mounted incandescent "downlights" with 75-watt reflector bulbs for a 36"-wide sink, three lights for a 48"-wide sink. The "downlights" should have louvers or lenses for proper shielding. If fluorescent lighting is desired, use a two-tube, 36"-long shielded fixture surface-mounted under soffit, or a two-tube unshielded unit mounted up in soffit with diffusing plastic or louvers underneath.



A range or cooktop should have special lighting. Usually there is a hood over the cooking surface, with one or two incandescent bulb sockets. Use one 100-watt or two 60-watt bulbs. If there is no hood, a 30-watt fluorescent fixture with shield can be mounted on the wall above the range. Any flammable material must be at least 30" above range top.

Countertop work surfaces are best lighted by fluorescent tubes mounted on the underside of the upper kitchen cabinets. Some shielding must be provided so the lighted tube cannot be seen from a sitting or standing position. This may be provided by extending cabinet doors 3" below bottom of cabinet.

Ideally, fluorescent tubes should run the full length of a work surface, but it is satisfactory to use a 20-watt tube in a 24"-36" space, a 30-watt tube in a 36"-48" space, or a 40-watt tube in a 48"-60" space.

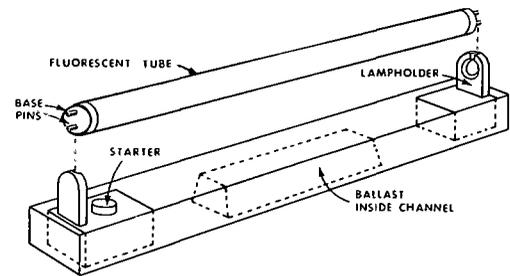


Fluorescent vs Incandescent

Fluorescent lighting has some advantages over incandescent lighting. Fluorescent tubes last up to twenty times as long as incandescent bulbs. They also furnish three to five times as much light for the wattage (amount of electricity consumed). However, the initial cost of installation can be higher for fluorescent lighting.

Fluorescent tubes are made in a variety of types that affect the appearance of colors in a room. The most commonly used tube is "Standard Cool White" which gives a cold, unflattering light and is therefore not recommended for home installations. The "Deluxe Warm White" tube enhances warm wood tones and colors that contain predominantly red, yellow and orange. The "Deluxe Cool White" gives green and blue colors a true rendering, but does not enhance skin tones as much as the Deluxe Warm White. Examples of other tubes that provide good color rendition include "Chromaline" by General Electric, "Incandescent/Fluorescent" by Sylvania, and "Living White" by Westinghouse. All of these tubes can

be purchased at electrical supply stores (they are not usually available in grocery stores or hardware sections of department stores). Even an electrical supply store may have to order from a distributor, but this should not take very long and does not have to be done very often, since the tubes last for many years.



Fluorescent lighting fixture detail.

The fluorescent lighting fixture consists of a metal channel (box) that holds the tube and also contains the ballast required to stabilize the operation of the lamp. Ballasts should carry the Underwriters Laboratories (UL) label and the emblem that says "CBM Certified by ETL" (Certified Ballast Manufacturer Certified by Electrical Testing Laboratories, Inc.). This assures that the lamps will receive the proper voltage and current for their rated light output (lumens) and hours of lamp life. Conventional ballasts and lamps require a starter, but "instant start" fixtures are available that do not require starters. The quality of ballasts varies with price, so it is wise to discuss the performance of fluorescent fixtures with several knowledgeable electrical supply dealers and pay enough to obtain satisfactory results.

Fluorescent and incandescent fixtures are available in different sizes and designs. Fixtures attached to the ceiling provide more usable light than recessed fixtures, because the light can go up to reflect off the ceiling and also go outward and downward. Enclosed drum lights that do not have ventilation to carry away the heat will shorten bulb life. The method by which the glass is attached to a fixture should be examined to be sure access is easy and fastening secure.

Color Schemes

The quantity of light needed in a kitchen is directly related to the reflectivity of colors used on the walls, cabinets, countertops and floors. A white ceiling will reflect the most light. Cabinets stained in wood-tone colors will absorb from seventy to ninety percent of the light that hits them, as will dark countertops and floors. If medium to dark colors are used to any great extent in a kitchen, the amount of artificial light and daylight needed will be increased.

Recommended Reading

- "Bright Ideas for Kitchen Lighting," Sylvania Residential Lighting Department, Salem, Massachusetts.
- "The Light Book," General Electric Residential Lighting Specialist, Nela Park, Cleveland, Ohio.
- "Kitchen Lighting Guide," Lamp Division, Westinghouse Electric Corporation, Bloomfield, New Jersey.

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