

COOPERATIVE  
EXTENSION SERVICE  
UNIVERSITY OF HAWAII

**BETTER  
LIGHTING  
FOR YOUR  
HOME**

VERA Y. REID  
HOME ECONOMICS  
CIRCULAR 330

Cooperative Extension Work in Agriculture and Home Economics  
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## **BETTER LIGHTING FOR YOUR HOME**

VERA Y. REID

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Good lighting in the home is essential for pleasant living. Good lighting can also reflect an atmosphere of hospitality, comfort and convenience. Even more important is that proper lighting guards precious eyesight.

A large amount of body energy is consumed by the eyes in their normal daily usage. Reading continually for 8 hours will use as much energy as marching 33 miles. When the light is inadequate or when there is too much glare, your eyes work harder. Eye fatigue is often caused by extreme light contrast. If you sew or read in a bright spot of light in a room otherwise dark, your eyes adjust and readjust continually, tiring themselves out. An even distribution of light over the room will solve this particular type of eye fatigue.

Human eyes are the most amazing and priceless faculties given to us. Their greatest abuse results from the lack of mechanisms to warn us quickly when they are being strained by too little light. Unlike our feet, they are slow to complain about being abused. Punishing your eyes by using poor lighting may become a costly affair—protect them with good light.

### **PLAN FOR GOOD LIGHTING**

Adequate lighting should be important for each member of your family. When you plan and buy lighting equipment, consider the cost and the amount of money available to spend on such equipment. The activities of your family, your home surroundings, the principles of good lighting and the appearance of lighting equipment should also be considered when planning and purchasing lighting fixtures.

Ceiling fixtures do not provide a sufficient amount of light for reading, sewing, cooking or other close detail tasks. In your scheme for good room lighting you should plan to spend some money for portable lamps.

## COLOR MAKES A DIFFERENCE

The effectiveness of light supplied in any room depends largely on the color and texture of the walls and ceiling. Light walls and ceilings that are smooth reflect a greater amount of light than dark, rough walls, thereby making a room appear lighter. Dark furniture and woodwork absorb light and increase the amount of light needed to illuminate a room.

The approximate amount of light reflected by various colors used for paint, paper, and wood finishes is shown below:

<u>Color</u>	<u>Light Reflected</u>
White	85%
<i>Light</i>	
Cream	75%
Gray	75%
Yellow	75%
Green	75%
Blue	55%
<i>Medium</i>	
Yellow	65%
Gray	55%
Green	52%
Blue	35%
<i>Dark</i>	
Gray	30%
Green	7%
Blue	8%

In dimly lighted rooms true colors are not seen, but where there is much diffused light, colors come to life. When selecting lighting fixtures the amount of illumination needed can be ascertained by consulting the above reflected light percentages.

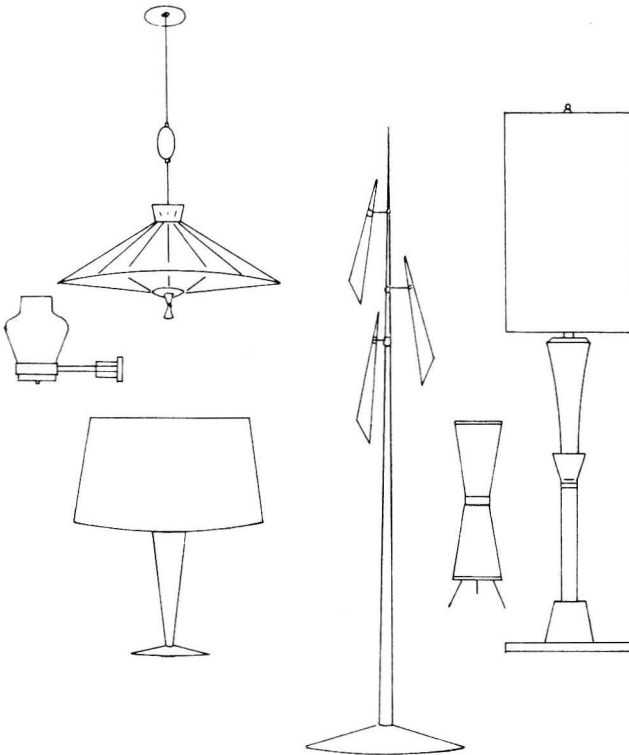
## LIGHTING IN THE HOME

There are normally two types of lighting used in the home; these are:

- General purpose lighting
- Special purpose lighting

General purpose lighting provides light for moving through a room, playing games, conversation, and usually for television viewing. This type of general room lighting often is provided by ceiling or valance lighting.

Special purpose lighting is used to bring light close to the user and to provide light for special tasks. Lamps should have good lighting features as well as be attractive and should contribute to the decor of the room.



## ESSENTIALS OF GOOD LIGHTING

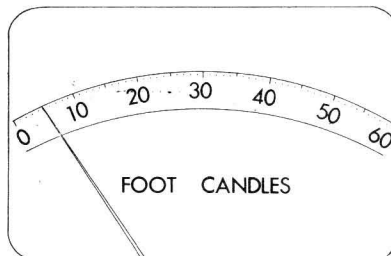
When planning your lighting equipment be sure you are making provision for the essentials of good lighting. These essentials include proper amount of light, good quality of light and well-balanced lighting.

### Proper Amount of Light

For general and close detail tasks you will want to use bulbs and tubes which are large enough to provide good light and have them properly located in enough places. It would be advisable to have your home checked to be sure that your illumination provides adequate lighting for the many uses to which it will be put.

The amount of light that will be needed for ease in seeing is determined by such factors as, type of work, length of time required for accomplishing the task and amount of light reflected from surrounding areas.

Light is usually measured in units called foot candles. The instrument used for measuring light is called a light meter. A foot candle is the amount of light indicated on a light meter that is a foot from a standard lighted candle.



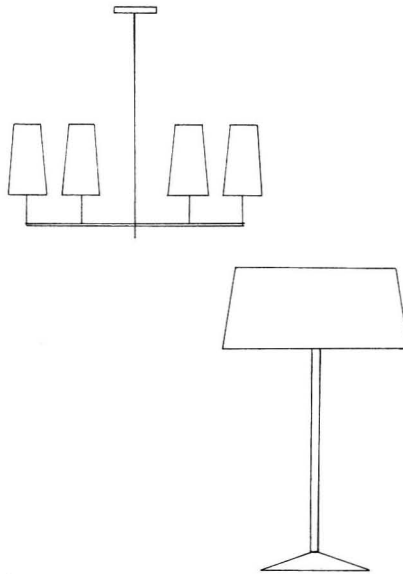
Tasks or Kinds of Work Being Done	Amount of Light Needed in Foot Candles
Difficult fine detail jobs, fine needle work, on dark material	70-150
Moderately critical jobs, reading small type, writing, studying, average sewing	30-70
Average sewing jobs, reading large type, dressing, periodic sewing on light material	15-30
General seeing jobs, work areas in kitchen and laundry	7-15
General purpose jobs, walking through house, general lighting in dining room, halls, stairways, and stair landings	3-7

### Good Quality Light

In addition to having the proper amount of light, good quality light is essential to insure comfort, safety and protection of the family's eyes. Good quality light should be softly diffused, well shaded and well balanced. Light produced by bulbs may be diffused by passing it through a diffusion bowl, or a shield of opaque or enameled glass.

Specific or special purpose lighting should be well shaded. A shade is most efficient when it has a white, dull surfaced lining with slightly slanting sides. It should be large in size and made of light-to-medium colored translucent or opaque materials.

Glare is sometimes defined as light wrongly directed, or poorly distributed. Direct glare comes from bare bulbs or from lamps and fixtures with shades too transparent to diffuse the light, permitting light to shine directly into the eyes. Indirect glare is the result of diffused light striking a shiny surface, mirror, varnished table tops, or glossy paper. Glare by contrast is produced when only one lamp is burning in a dark room. The proper use of the essentials of general lighting procedures will lessen glare by contrast.



### **Well Balanced Lighting**

A lighting balance should exist between the amount of general lighting from the ceiling fixtures, and special lighting from the portable lamps when doing close detail work. Reading or close work done in a small amount of bright light which is surrounded by darkness will strain and tire your eyes. A good ratio for general light in a room is 1 in 10, that is, general lighting should provide one-tenth of the total illumination, the remaining nine-tenths should come from a good reading lamp.

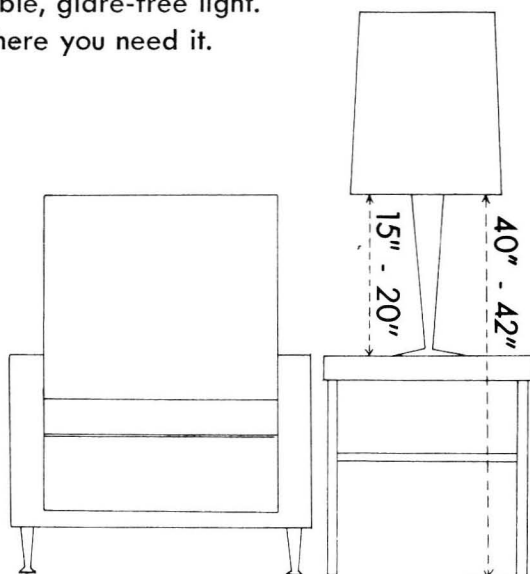
## WHAT KIND OF LAMP SHOULD I BUY?

When purchasing lighting select lamps on the basis of where they will be used and the kind and quality of light needed. Some people buy large lamps in the belief that they will shed a large amount of light and thus be more economical. Actually, size has little to do with the quality of lamp light. A small lamp with a bulb of high intensity and suitable shade casts as satisfactory a light as a large one. It is usually better to use several lamps of 60 to 75 watts for general illumination than to depend on a 100 watt intensity in one table lamp.

In general, the smallest serviceable table lamp should have a 15-inch base (distance from table to bottom of shade) and a shade depth of 10 inches. The distance from the floor to the bottom of a table lamp should not be more than 42 inches. The size and height of lamp tables also influence lamp height. A 25-inch table can use a lamp with only a 15-inch base, but a 20-inch table will need a 20-inch lamp. A good rule for table lamps states that the total height of table and lamp (to bottom of shade) should be 40 to 42 inches. If chairs are higher or lower than conventional heights, lamp heights should be adjusted accordingly.

For good visibility, your lamp must:

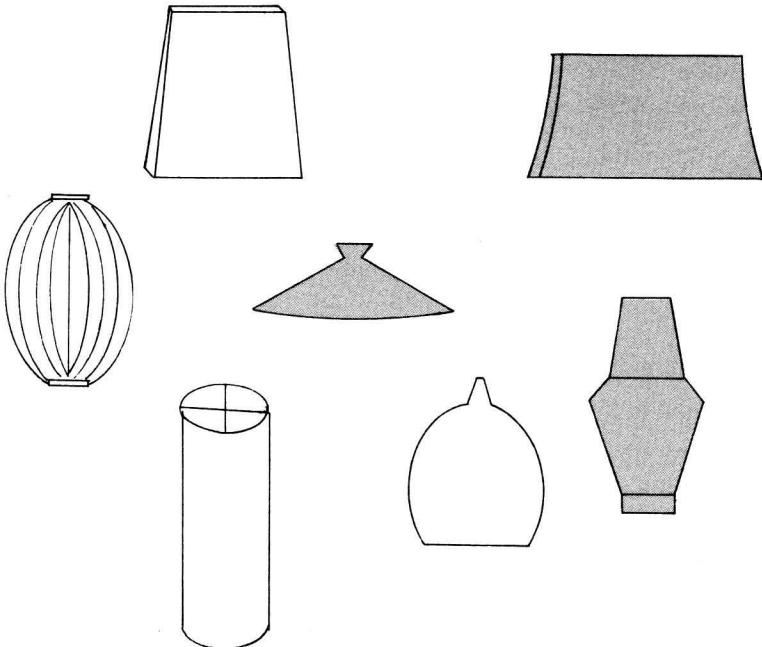
- Produce the amount of light you need.
- Produce comfortable, glare-free light.
- Direct the light where you need it.



## LAMP SHADES

When selecting a lamp care should be taken to assure that the shade will serve the purpose for which it was designed. A good lamp shade:

- Puts light where you want it. You may want light on the side of your face, on your work, or for general room lighting.
- Has a white or almost white lining to reflect light.
- Protects your eyes from the glare of the bulb.
- Is deep enough to cover the bulb, preventing glare from the bulb upon the table top. The diameter should be large enough to furnish the amount of light needed. A slanting shade gives a lighted area larger than a straight-sided one of the same bottom diameter. The bottom of lamp shades should be at approximately eye level when person is sitting down.



## WHAT KIND OF SHADES DO YOU WANT?

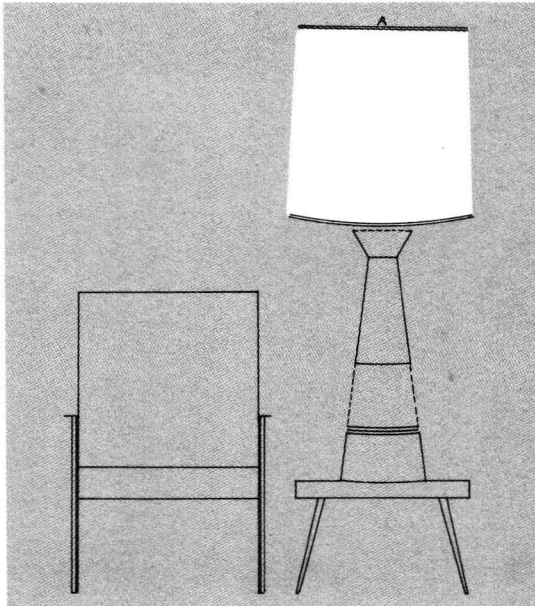
A shade open at top and bottom is used on most lamps. Some of the light goes upwards to help illuminate the room, but most of the light goes downwards to illuminate your work or your books.

A shade closed at the top is used when you need to direct light onto a specific task, such as sewing. General room lighting must be supplied from other sources.

A shade that is dark on the outside and white on the inside is best used on lamps in rooms with rather dark walls.

A light colored lamp shade with a white lining is a good choice for most rooms.

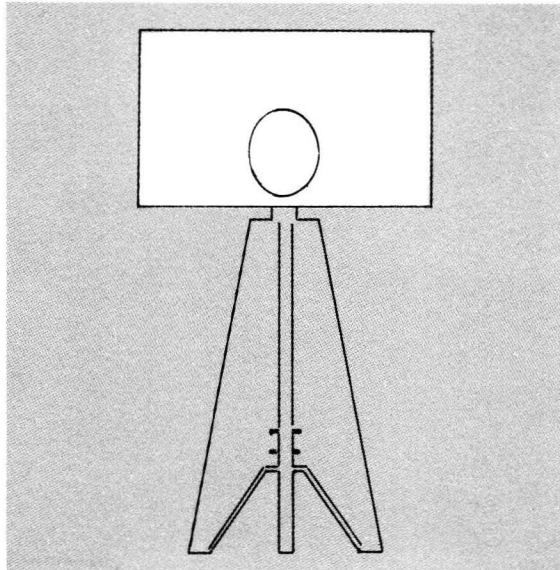
A translucent shade must be used when you want light to come through the shade onto the area that you want illuminated. You may want to use this type of shade on a dresser lamp when you desire light to illuminate your face. This shade will also help to give general room illumination. A translucent shade requires a white lining to reflect light downward or upward, while the outside cover should be light in color and thin enough so that light comes through.

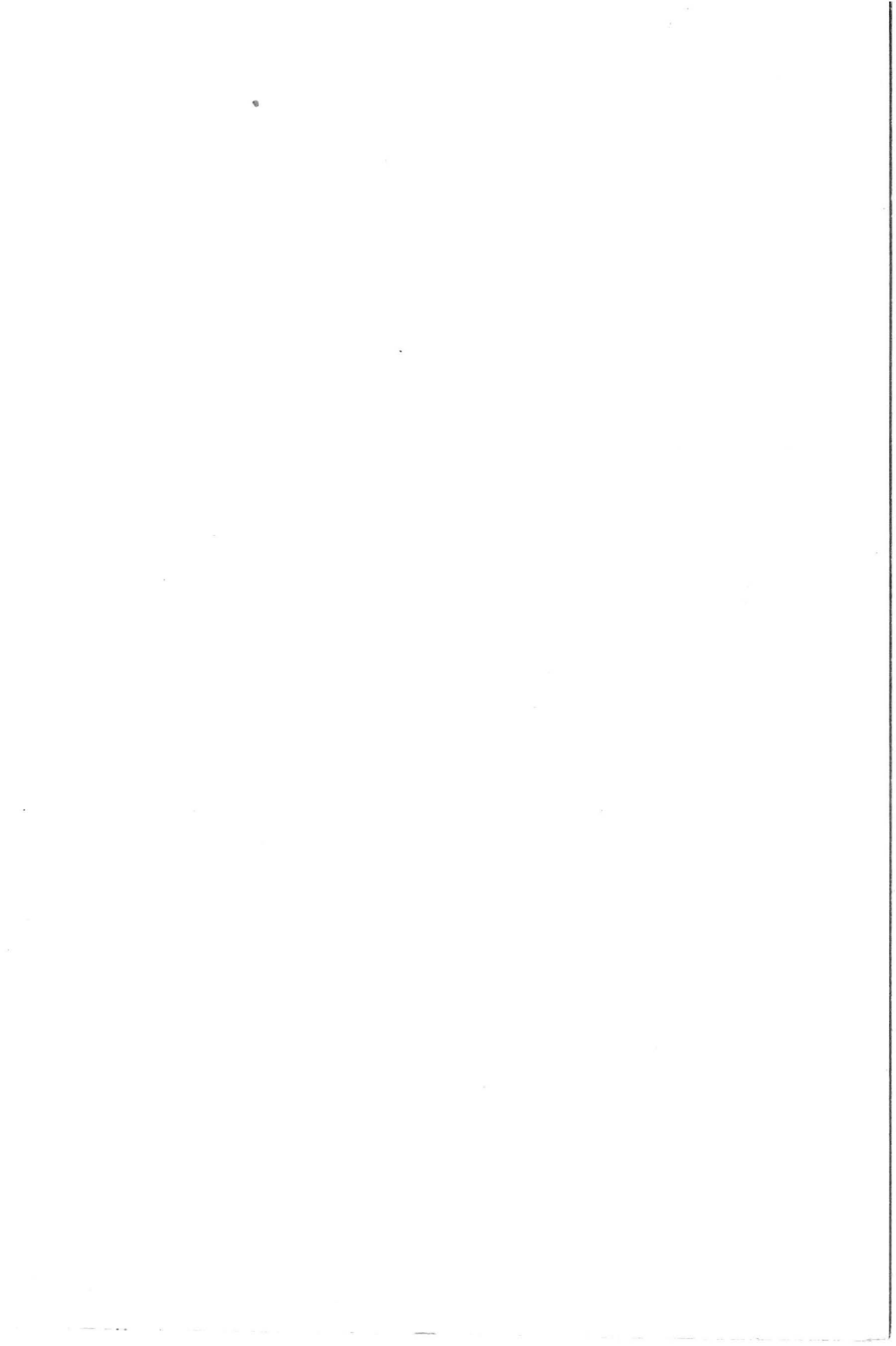


## MAINTAINING GOOD LIGHT

For appearance and efficiency, keep your lamps and fixtures at their brightest. Dust on bulbs, diffusing bowls, and shades steal light. Dust them as regularly as you do your furniture. When bulbs and fluorescent tubes need washing, turn switch off and remove them from fixtures. Wash bowls like any glassware. Clean bulbs, when cool, with a damp cloth and wipe dry; do not immerse them in water. Make sure that the light bulbs and your hands are dry before you replace them.

Planned lighting can help reduce accidents in the home. It is necessary that lighting plans afford seeing from room to room. Let your home lighting do its best to make your home accident free. A home that has planned lighting is one that exhibits an atmosphere of convenience, comfort and hospitality. Good lighting guards eyesight and assists in adding to the decor of the home. Tasteful lighting is an asset that pays dividends in personal satisfaction and contributes to enjoyable living.





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