

The Lighting of Textile Mills

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PRISMATIC GLASS REFLECTORS.

Prismatic glass reflectors are also very efficient. They are not opaque, but allow a small amount of light to pass through the glass to the ceiling which adds somewhat to the cheerfulness of a mill. These reflectors control the light distribution very closely. Observe the difference in distribution obtained from the reflectors illustrated by Figs. 21 and 22. Fig. 24 represents the light distribution produced by the reflector shown at Fig. 22; Fig. 25, the light distribution obtained from the reflector shown at Fig. 21.

Reflectors are manufactured for all sizes of lamps and in several shapes. The variation in shape or contour is for the purpose of light control, that is, to supply reflectors that will produce an even illumination on the working plane for various ratios of lamp spacing to mounting height. For example, Fig. 21 is an "intensive" type and suited for spacings $1\frac{1}{2}$ times the mounting height, while Fig. 22 illustrates the "extensive" type, which gives an even illumination when

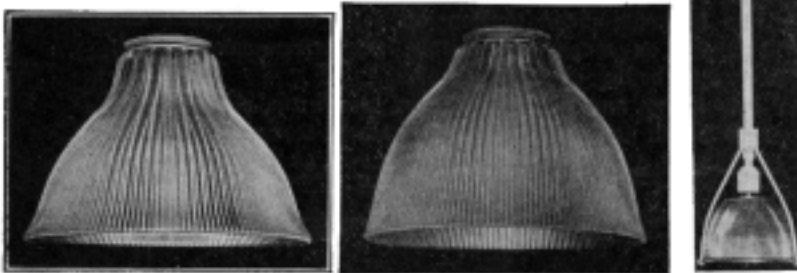


FIG. 21.

FIG. 22.

FIG. 23.

the spacing is equal to the mounting height, say 10-foot centers and 10 or 12-foot mounting height.

Fig. 23 shows a prismatic reflector which has an adjustable holder, which by a slight change in the position of the reflector may be used for several sizes of lamps. The type illustrated is suited for lamp spacings from $1\frac{1}{2}$ to $1\frac{3}{4}$ times the mounting height above the working plane.

It should be observed that the reflectors so far illustrated have had a low angle of cut-off; that is, the reflector is of such a shape and the lamp filament is so placed with respect

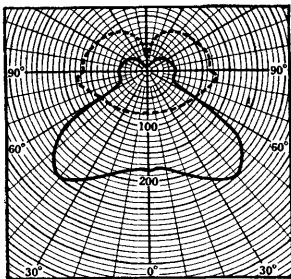


FIG. 24.

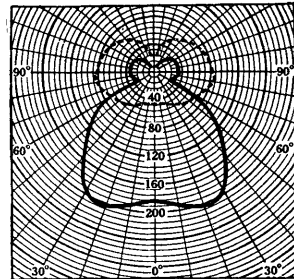


FIG. 25.

to it that when the right size of lamp and reflector are used together no light is transmitted in a direction vertically upward more than 60° , Figs. 24 and 25. This feature eliminates direct glare and is of great importance.

PORCELAIN ENAMELED REFLECTORS.

Porcelain-enameled steel reflectors are less expensive than the glass reflectors. They are less efficient and light distribution cannot be so well controlled with them. With these reflectors, as with the glass reflectors already mentioned, it is necessary to use a lamp and a reflector of the right

sizes together. The dome and bowl shapes, shown at Fig. 26, are widely used for mill lighting. The bowl reflector is suited for spacings not exceeding $1\frac{1}{2}$ times the suspension height above the working plane. It gives a low angle of cut-off and so shields the eye from the direct rays of the lamp.

The dome reflector gives a slightly wider distribution. The lamp filament cannot be so well shielded and is therefore not so desirable a type of reflector. Bowl-frosted lamps should be used with it. In fact, bowl-frosted lamps should be used with all types of reflectors unless the mounting height is exceptionally high.

The new RLM standard dome reflector represents a very desirable type of reflector. It has only recently been placed on the market. It has a low angle of cut-off and to obtain uniform illumination the spacing should be about equal to the mounting height. Bowl-frosted lamps should be used with this reflector.

The efficiency of porcelain-enameled steel reflectors depends upon the quality of the enamel. It should be smooth and white, otherwise the absorption will be high.

Compared with the glass reflectors, steel reflectors are naturally much more rugged and there are many places



FIG. 26.

where it would not be wise to install the former. Glass reflectors are stronger than is generally supposed and both types, mirrored and prismatic glass, are widely used for textile mill lighting.