

forty square feet you have reduced the light intensity to two candles. But observe that the *total* result is the same in either case, i.e.,  $4 \times 20 = 80$ , and  $40 \times 2 = 80$ . This would in fact in either case be described as a total of eighty "lumens."

The forms of glass-ware now being manufactured as adjuncts to lighting are, of course, in the words of the auctioneer—"too numerous to mention." They all resolve themselves, however, into a direct classification, as follows: (a) Ornamental glassware; (b) Direct reflectors; (c) Prismatic reflectors; (d) Diffusing glassware. With regard to the first it naturally occurs that the question is merely how far it is intended to carry the idea of ornamentation and how much are we prepared to sacrifice lighting efficiency in order to obtain it? It must be confessed that in far too many cases the aesthetic or ornamental consideration is carried much too far. This has been partly dealt with in connection with the question of colour earlier in the paper. (b) This class also includes a great variety of reflectors. It includes all those glass reflectors excepting class (c) where the main idea is reflection and not ornamentation. They may be made ornamental in design merely as a secondary consideration. Unfortunately no fixed rules can be given for the proper selection, important as this is. The two principal considerations should be (1) efficiency, depending upon the shape and material of the reflector; (2) suitability, considering the area over which illumination is to be provided and the photometric curve of the reflector in question.

(c) It would be nearly correct to refer to this class as "refractors" instead of reflectors, since their high efficiency is largely due to their refraction of light rays. These are becoming increasingly popular, and are regarded by all authorities as representative of the highest grade. Their usefulness is, however, often curtailed by injudicious use, for these, more than others require care in selection. There is one point which must be emphasised; always be sure that you get the genuine "Holophane" goods when considering glass reflectors of this class. There are many imitations much like them in appearance but generally little value. Indeed, whilst prismatic reflectors can be obtained to meet nearly every need, we are bound in honesty to acknowledge that the "Holophane" reflectors have this class "all to themselves."

(d) Diffusing glassware has come into much use during the past two or three years, chiefly as the result of the adoption of large Tungsten units. One of the most usual forms of employment is by way of a globe surrounding the lamp; another form occurs where a bowl is placed beneath the lamp. Various kinds of glassware are used—sanded glass, opal, opalescent, and translucent glass like that known as "Alba," "Moonstone," etc. The purpose here is to diffuse the light by breaking