

Luminaires in Regular Arrays: Where E = average Illuminance (lx) N = no. of luminaires n = no. of lamps in each luminaire F = flux from one bare lamp UF = utilization factor MF = maintenance factor, allowing for effects of dirt and depreciation A_f = area of working plane or floor

Utilization Factor: The Utilization Factor (UF) is the proportion of light flux emitted by the lamps which reaches the working plane. Low reflectance bench and desk tops should be avoided since these surfaces have a major effect on effective floor cavity reflectance. In general it is undesirable for the average floor cavity reflectance to exceed 0.40 or fall below 0.20. In general the ceiling cavity reflectance should be as high as possible, at least 0.6. For indirect lighting, the average luminance of all surfaces forming the ceiling cavity should be not more than 500 cd/m² however small areas of luminance up to 1500 cd/m² will generally be acceptable, provided sharp changes from low to high luminance are avoided. Without detailed knowledge of maintenance plan, One sets $MF = 0.8 \sim 0.9$

Depreciation Factor: This is merely the reverse of the maintenance factor and defined as the ratio of initial meter-candles to the ultimate maintained meter-candles on the working plane. The Room Index for a rectangular room $l \times w$ where hm is the height of luminaries above the working plane, is given by;

Maintenance Factor: The maintenance Factor (MF) is the ratio of illumination under normal working conditions to the illumination when the things are perfectly clean $M.F = (\text{Illumination under normal working condition} / \text{illumination when every thing is perfectly clean})$.

Spacing to Mounting Height ratio (SHR): It is the ratio of horizontal distance between adjacent lamps and height of their mountings. Aging of light bulbs emitting less light