**Lux:**

The amount of light that is cast on a surface is called illuminance, which is measured in lux. This can be thought of as light intensity within a specific area.

lumen/ m2 = lux

**Lumens:**

 The total output of visible light from a light source is measured in lumens. Typically, the more lumens a light fixture provides, the brighter it is.

Although 1 lumen will theoretically produce 1 LUX of light over an area of 1 square metre this is only in the perfect world as there are other factors to consider. For in stance the decor and colouring in the space will undoubtedly result in some loss of light unless the room has perfectly reflecting mirrored walls.

**The Calculation of LUX level in a room**

E(LUX) = F(lm) x UF x MF / A

E is the LUX level achieved

F is the average lumens value form the light source

UF is the utilisation factor for the space which takes in to account the colouring of the surfaces in the space together with the geometry

MF is the maintenance factor for the lamp which allows for a level of light depreciation over time.

Utilization Factor

Utilization Factor or Co-efficient of utilization. It may be defined as “the ratio of total lumens received on the working plane to the total lumens emitted by the light source”.i.e.

 Utilization factor =Lumens received on the working plane/Lumens emitted by the lamp

**Factor Effecting Utilization Factor:**

Type of light, light fitting, Colour surface of walls and ceiling, mounting height of lamps, Area to be illuminated

Its value lies between 0.4 and 0.6 for direct fittings it varies from 0.1 to 0.35 for indirect fittings

**Maintenance factor**

It may be defined as “the ratio of illumination under normal working condition to the illumination when everything is clean or new” i.e.

D.F = Illumination under normal working conditions / Illumination when everything is clean.

The maintenance factor is based on how often the lights are cleaned and replaced. It takes in to account such factors as decreased efficiency with age, accumulation of dust within the fitting itself and the depreciation of reflectance as walls and ceilings age. For convenience, it is usually given as three options:

Good = 0.70

Medium = 0.65

Poor = 0.55