2.10.4 Discomfort Glare *(indoor only)*

This occurs when people complain about visual discomfort in the presence of bright light sources, luminaires or windows. Discomfort glare is quantified by the Unified Glare Rating (UGR), derived from the equation:

$$UGR = 8\ log_{10}\ \frac{0.25}{L_b} \sum\ \frac{L_s^2 \omega}{\rho^2}$$

where: UGR = Unified Glare Rating

L_b = background luminance (cd/m2), excluding the contribution of the glare sources. This is numerically equal to the indirect illuminance on the plane of the observer's eye, divided by π

L_s = luminance of the luminaire (cd/m2)

ω = solid angle subtended at the observer's eye by the luminaire (steradians)

p = Guth position index

UGR values typically range from 13 to 30, the lower the value, the less the discomfort. Luminaire manufacturers publish UGR values for regular arrays of their luminaires in a number of standardised rooms. This enables comparisons to be made between different luminaire types. When making such a comparison the smallest meaningful difference is one whole unit in UGR.