

dation that two grids be used: a series of fine grids over task areas, and a coarse grid across the core area of the working plane (see CD, figure in Field surveys).

### 3.8.5 Discomfort glare

Freedom from discomfort caused by glare is an important criterion of lighting quality. The sensation of glare in a lighting installation, experienced by people in the form of discomfort, annoyance or irritation, is a complex function of the imbalance within the luminance pattern experienced by the visual mechanism, certain parts (glare sources) lying above the range to which the eye is adapted at the time.

Experimental work has shown that the main factors influencing discomfort glare are the luminance of the sources and their apparent size, their position in the field of view, and the luminance of the general environment. These factors can be combined in a formula to determine the degree of discomfort glare, which is known as the unified glare rating (UGR). The UGR formula may be used to evaluate the glare stimulus within a given environment. However, the actual perception of glare varies from person to person. The calculated index for a particular interior and lighting system can then be compared with a limiting value given in the recommendations in this *Code*. Lighting that is considered to be uncomfortable in one environment may be acceptable in another, and it is possible to determine values that represent (from experience and practice) a suitable comfort criterion that is acceptable to most people for a given occupation in a given location. If the calculated value is greater than the recommended limit, modifications to the lighting system or the interior will be required.

In the Calculations Guide (see CD), the recommended procedure is given for the evaluation of the UGR for a lighting installation from the basic formula. This method has the greatest applicability, being capable of use for any arrangement of glare sources and for any position of observation. Recommendations are given for the determination of each of the parameters in the formula. Whilst the direct application of the this sort of calculation to various points within a space may give insights in to the variation of glare within that space, the limits given in the Lighting schedule (section 2.5) are based on UGR values calculated in standard conditions.

In the Calculations Guide (see CD), recommendations are made for the preparation in a standard form of tables of UGR data to be published for specific luminaires, and the method of determination of the parameters in the formula is included. This work is based on a regular array of luminaires in an overhead installation viewed from a set position.

It is expected that the luminaire manufacturers will prepare and publish these tabulated data as part of the photometric data for each luminaire. For the design of a lighting installation, the data can be converted simply, by means of predetermined terms, to the actual conditions of lamp light output under study.

Example calculations of discomfort glare (see CD) give examples of the calculation of a standard glare table and the application of a glare table to calculate the glare in a sample room.