working plane, and in some cases other room surfaces and illuminance variation quantities are commonly generated as part of the output of such programs.

The purpose of this section is to explain how to calculate the different variation criteria to confirm that the design objectives have been met. To calculate diversity, illuminance values should be calculated on a grid of points located symmetrically over the core area of the working plane. For installations with ceiling heights of up to 5 m lit by a regular array of ceiling-mounted luminaires, the grid of points should normally be at a spacing of 1 m. For other types of installation the grid size may vary. In larger interiors lit by luminaires with a smooth medium-to-wide intensity distribution and those with a mounting height greater than 5 m, the calculation grid size may be increased, in this case the total number of calculation points being determined by reference to the table in Field surveys (see CD). On the other hand, a calculation grid size of less than 1 m may be necessary for installations where abrupt variations in working plane illuminance may occur – for example, those using luminaires with bat-wing or narrow distribution. Care must be taken to ensure that the luminaire and calculation grids do not coincide, and this may also necessitate a small change in the size of the calculation grid. The calculated illuminance value at each point must be made up of both illuminance arriving directly from light sources and illuminance received at the point after reflection from room surfaces (see CD for Calculations guide). The illuminance diversity is calculated from the maximum and minimum illuminance at any point on the grid over the core area of the working plane, ignoring calculation points within 0.5 m of obstructions (see section 1.4, Variation in lighting).

The calculation procedure for uniformity differs slightly depending upon whether or not the size and position of the task areas on the working plane are known. If task location can be identified, then the illuminance calculation should be on a 0.25-m^2 grid over the task and immediate surround for a typical workstation. If the task locations are unknown and may be at any position on the working plane, a suitable number of grid points used for the illuminance diversity assessment are chosen. These should at least include the points of minimum and maximum illuminance over the coarse grid. In this case, the task area may be assumed to be a 0.5-m square with one corner coinciding with the coarse grid point. The illuminance is then calculated on nine points of a 0.25-m grid and at points in a band 0.5 m wide surrounding the area, to check that the illuminance of the surround is at least the level given in Table 2.1. Task uniformity is assessed using the area-weighted arithmetic average of the points within the individual central task areas and the minimum point illuminance value within each area. The lowest value of task uniformity calculated for the various potential or actual locations is taken as representative of the whole installation (see section 1.4, Variation in lighting).

Any discrete set of grid points (measured or calculated) cannot necessarily capture the minimum or maximum values over an area, and under some circumstances abrupt variations in rate of change can be missed by a grid. The representation of illuminance using a grid is therefore an approximation, and is only as good as the choice of location and size of the grid. Hence the recommen-