

Against these advantages, they require bulkier luminaires, control of light output is more difficult, initial cost is higher and mounting may be more complex. These disadvantages can be offset by the benefits of needing far fewer fixture locations or mounting multiple luminaires in a single location.

The longer run-up and restrike times of HID lamps make them unsuitable when the lighting is only energised when an intruder is detected or a brief period of darkness occurring in the event of a power failure is unacceptable. In these situations, an incandescent or fluorescent light source is preferred.

### 18.5.2 Luminaires

The selection of the luminaire will be based on the light source to be used, the desired luminous intensity distribution, aesthetics and the degree to which the luminaire will be exposed to the environment. Environmental factors to be considered include exposure to wind, rain and salt; temperature extremes; luminaire mounting location; and the level of vulnerability of the luminaire to damage by attack.

Any fixture mounted in an area that will be exposed to the weather should have an appropriate international protection (IP) rating (see Table 4.10).

Luminaires that are located in areas that are not temperature controlled may need special components depending on the light source used. Fluorescent light sources are most affected by ambient temperature extremes.

Any luminaire mounted on a ceiling or wall less than 3 m above the ground is likely to be the subject of vandalism. Vandal resistant lighting should be considered in these applications. A vandal resistant luminaire should incorporate the following features:

- The base of the luminaire should be structurally designed, i.e. have a step or flanged base, and be solidly mounted to the building structure or mounting accessory. An electrical junction box should never be used as the sole luminaire support in a security lighting installation.
- The lens or diffuser of the luminaire should be of a one-piece wraparound, injection moulded construction using ultraviolet (UV) stabilised polycarbonate.
- Exposed hardware, such as that needed to secure the lens to the body of the luminaire, should be tamperproof.
- Light sources and sockets should be protected against mechanical shock and never located close to the interior wall of the lens.
- The luminaire should have the ability to withstand repeated blows from a heavy rubber mallet or hammer.

### 18.5.3 Lighting columns

The higher luminaires are mounted from the ground, the fewer columns and luminaires will be required to light a given area and the less likelihood of vandalism. As column heights are reduced, more columns with lower wattage luminaires are required to avoid glare and non-uniform lighting patterns. Steel and concrete columns are most resistant to attack.