

IESNA light distribution types

This lighting classification system is mainly based on the shape of the lighting area of the luminaire. It is generally used in road and area lighting fixtures to determine what light distribution is reasonable. IESNA types are defined by the highest and 50% candela intensity which is also called luminous intensity distribution. The IESNA type classification is established by measuring where most of the light falls on the grid. This classification relates to lights crossing the road and lights along the road. The lateral light distribution depends on the position of the half-maximum candela point in the position across the road. According to this, it can be divided into Type I, II, III, IV, V and VS. However we normally called Type 1, Type 2, Type 3, Type 4 or Type 5 light distribution because it's not very easy to enter roman numerals. See the table 1 below for half-maximum candela points of different light distributions, spectrum diagram and corresponding applications. Vertical light distribution depends on the position of the maximum candela point in position along the road. According to this, the light distribution can be classified as Short (S), Medium (M), or Long (L).

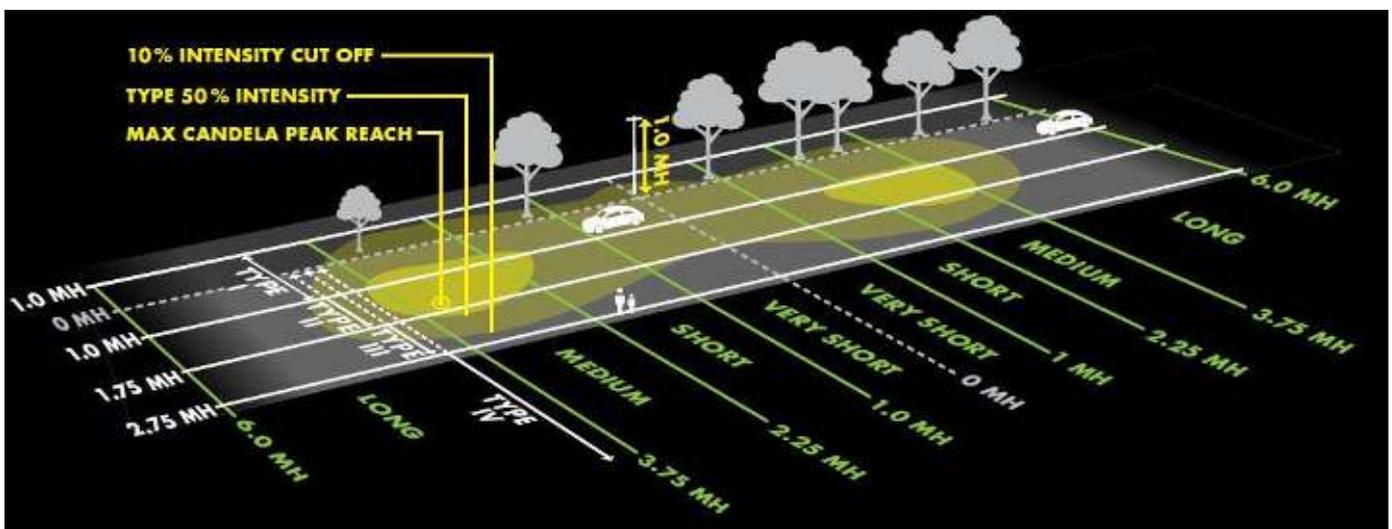


Table 1 | Lateral light distribution categories are defined.

| Type | Half-maximum candela point | Light distribution pattern | Application | Photo |
|----------|--|----------------------------|-----------------------------------|--|
| Type I : | Falls between 1 MH on the house side and 1 MH on the street side of the luminaire position | Narrow symmetric pattern | walkways, paths, roadway | <p style="text-align: center;">TYPE 1</p> |
| Type II | Falls between 1 MH and 1.75 MH on the street side of the luminaire position | Narrow asymmetric pattern | walkways, roadways and bike paths | <p style="text-align: center;">TYPE 2</p> |

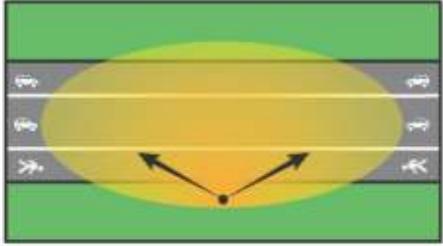
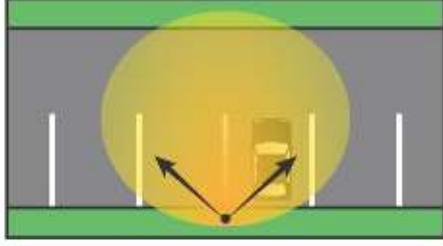
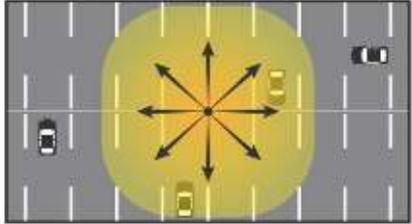
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|----------|--|----------------------------------|--|--|
| Type III | Falls between 1.75 MH and 2.75 MH on the street side of the luminaire position | Wide asymmetric pattern | roadway, highway, parking, other area light applications |  |
| Type IV | Falls beyond 2.75 MH but less than 3.7 MH on the street side of the luminaire position | Asymmetric forward throw pattern | wall mount or pole mount perimeter applications |  |
| Type V | Circularly symmetrical around the luminaire position | Symmetrical circular pattern | parking and area lighting |  |
| Type VS | Essentially the same at all lateral angles | Symmetrical square pattern | large areas, like the parking lot and the square | Almost same as above |
| | | | | |

Table 2 | Vertical light distribution categories are defined.

| Type | maximum candela point | Suggested Pole distance | Remarks |
|------------|---|-------------------------|---|
| Very short | Falls between -1 MH and 1 MH along road | 1MH | Suggested Pole distance can be more than 1MH which is based on lighting design |
| Short | Falls between 1.0 and 2.25 MH along road | 1.0 to 2.25 MH | Suggested Pole distance can be more than 2.25MH which is based on lighting design |
| Medium | Falls between 2.25 and 3.75 MH along road | 2.25 to 3.75 MH | Suggested Pole distance can be more than 3.75MH which is based on lighting design |
| Long | Falls between 3.75 and 6.0 MH along road | 3.75 to 6.0 MH | Suggested Pole distance can be more than 6.0MH which is based on lighting design |