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).

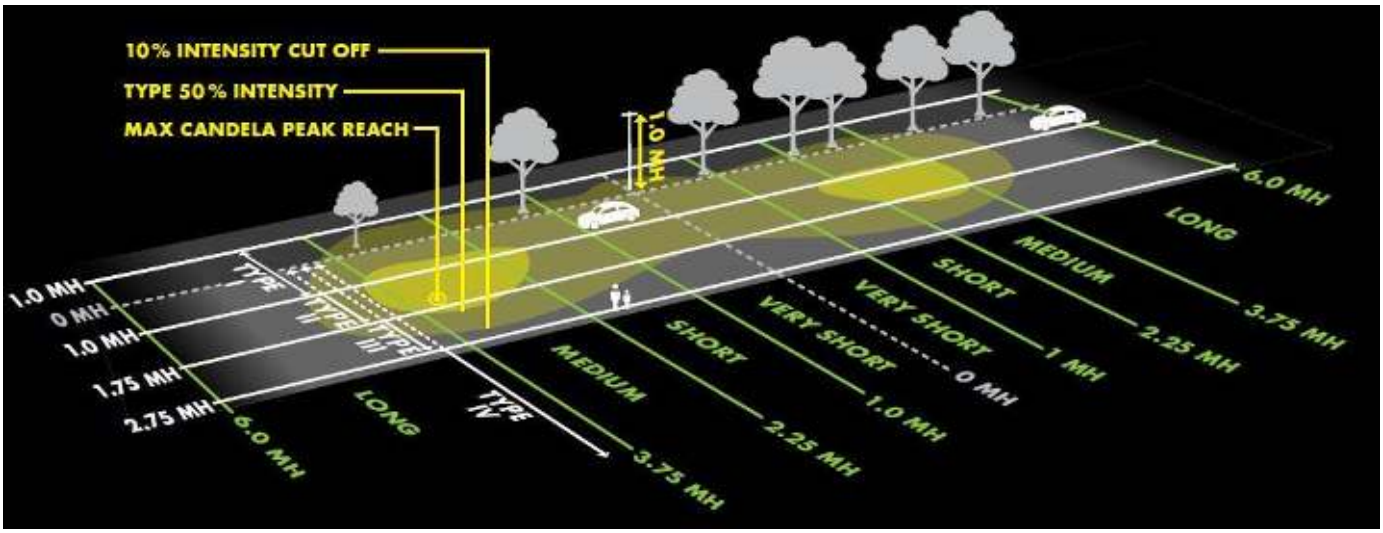
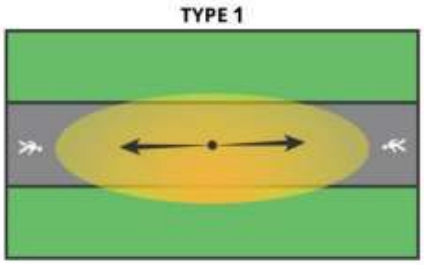
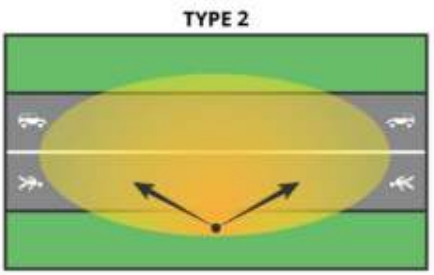


Table 1 | Lateral light distribution categories are defined.

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	
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	

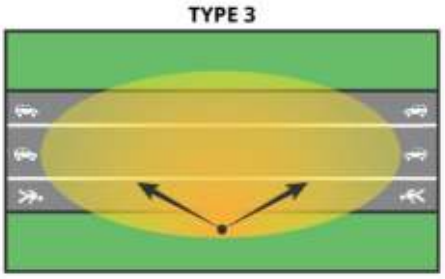
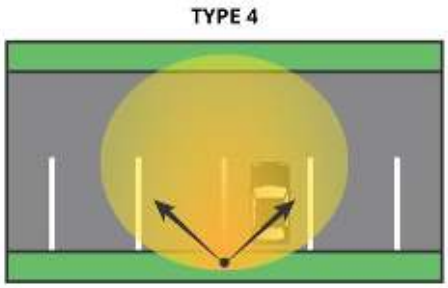
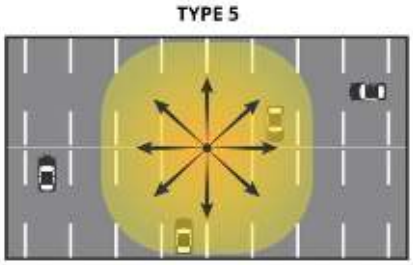
Type Ⅲ	Falls between 1.75 MH and 2.75 MH on the street side of the luminaire position	Wide asymmetric pattern	roadway, highway, parking, other area light applications	
Type Ⅳ	Falls beyond 2.75 MH but less than 3.7 MH on the street side of the luminaire position	Asymmetric forward throw pattern	wall mount 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