

JOB NAME _____

TYPE _____

NiteBrites, Outdoor HID Lighting from Day-Brite, offers a complete selection of square straight steel poles, luminaire mounting brackets and accessories for all of our area lighting and floodlight luminaires. The following information provides easy guidelines for almost any pole-luminaire-bracket combination, but recommends the consultation of a qualified professional for verification of the system design, foundation specification and local soil conditions.

WARNING: The information contained within this document is intended as a general guideline only. The customer is solely responsible for proper selection of the pole, luminaire, accessories, and foundation under the given site conditions and intended usage. The mounting of any items to the pole, in addition to the luminaire, will dramatically impact the EPA load on that pole. It is strongly recommended that a qualified professional be consulted to analyze the loads given the user's specific needs to ensure proper selection of the pole, luminaire, accessories, and foundation. Day-Brite Lighting and Genlyte Thomas Group, LLC assume no responsibility for such proper analysis or product selections. Failure to ensure proper site analysis, pole selection, loads and installation can result in pole failure, leading to serious injury or property damage.

Several issues must be carefully considered when making a pole selection. First, recognize the lighting application requirements and, of equal importance, the structural requirement imposed on the pole by the lighting luminaire and the mounting method-crossarms or brackets. It is necessary to understand the terminology of the various items that must be considered in making the proper pole selection.

Steady Wind Velocity-The steady wind velocity, expressed in miles per hour (MPH), likely to occur in a specific location. Refer to the Isotach wind map for the expected high wind velocity in any given location.

Gust Velocity-A momentary increase in wind causing a whipping action. The standards as charted are designed to withstand dead loads and predicted dynamic loads developed by variable wind speeds with an additional gust factor under the following conditions:

- The charted weights include luminaire(s) and/or mounting bracket(s).
- The wind velocities are based on 10 MPH increments from 80 MPH through 100 MPH. Poles to be located in areas of known abnormal conditions may require special consideration. For example: Coastal areas, the Great Lakes, airports and areas of special winds.
- Poles are designed for ground mounted applications. Poles mounted on structures (such as buildings and bridges) may also necessitate special consideration requiring the consultation and recommendation of a qualified professional.
- Height correction factors and drag coefficients are applied to the entire structure. An appropriate safety factor is maintained based on the minimum yield strength of the material incorporated in the pole.

Effective Projected Area (EPA)-

- **Luminaire:** The exposed surface area of a luminaire or bracket multiplied by a shape factor, or coefficient of drag, which varies depending on the shape of the luminaire or bracket. For example, a rectangular luminaire will present more resistance to the wind than will a round or cylindrical shaped luminaire.
- **Pole:** The EPA rating of a pole refers to its maximum luminaire-or luminaires- EPA load that the pole is capable of safely supporting. For example, if a pole's EPA rating at 80 MPH is 10.0, it can support any luminaire combination whose total EPA sum is 10.0 or below (e.g., three (3) luminaires at 2.5 EPA each, plus one (1) bracket at .75 EPA, totals 8.25 EPA, well within the pole's designed strength).

Maximum Weight-The maximum allowable total weight the pole is capable of safely supporting. The total value is determined by the combined weight of all the lighting luminaires and bracketry that the specific application requires.

Mounting Height-The vertical distance from the base of the lighting pole to the bottom of the luminaire or luminaire attachment.

Maintenance-A regularly scheduled maintenance program should include the following:

- Periodic inspection for normal deterioration and any indication of external or internal corrosion.
- Observation for excessive vibration.
- Examination for any structural damage to the pole or foundation, and for bolt loosening.

How to Select the Proper Pole

Selecting the Proper Pole:

1. Calculate the total EPA of the desired luminaire(s) and mounting bracket(s) from the respective cataloging data.
2. Select the size of pole and mounting height desired.
3. Determine the maximum wind velocity in your local area as shown on the Isotach wind map below.
4. Determine the specific pole capable of sustaining the luminaire(s) and bracket(s) by utilizing the wind loading capacity charts for the desired pole type. The total wind load rating for the desired pole must be greater than the total EPA of the luminaire(s) and bracket(s).
5. Ensure that the pole tenon or drilling matches the mounting hardware of the luminaire.

Example:

Installation-Three FLM 400 watt metal halide floodlight luminaires mounted in-line on a 25', 5" square straight steel pole in Rockford, Illinois.

1. Total EPA for fixtures and brackets: 6.5 sq. ft.

Luminaires

FLM-1.9 sq. ft. x 3=5.7 sq. ft. (EPA)

Weight-40 lbs. X 3=120 lbs.

Bracket

RHB3-2DB-0.8 sq. ft.

Weight-28 lbs.

Total Luminaire EPA-6.5 sq. ft.

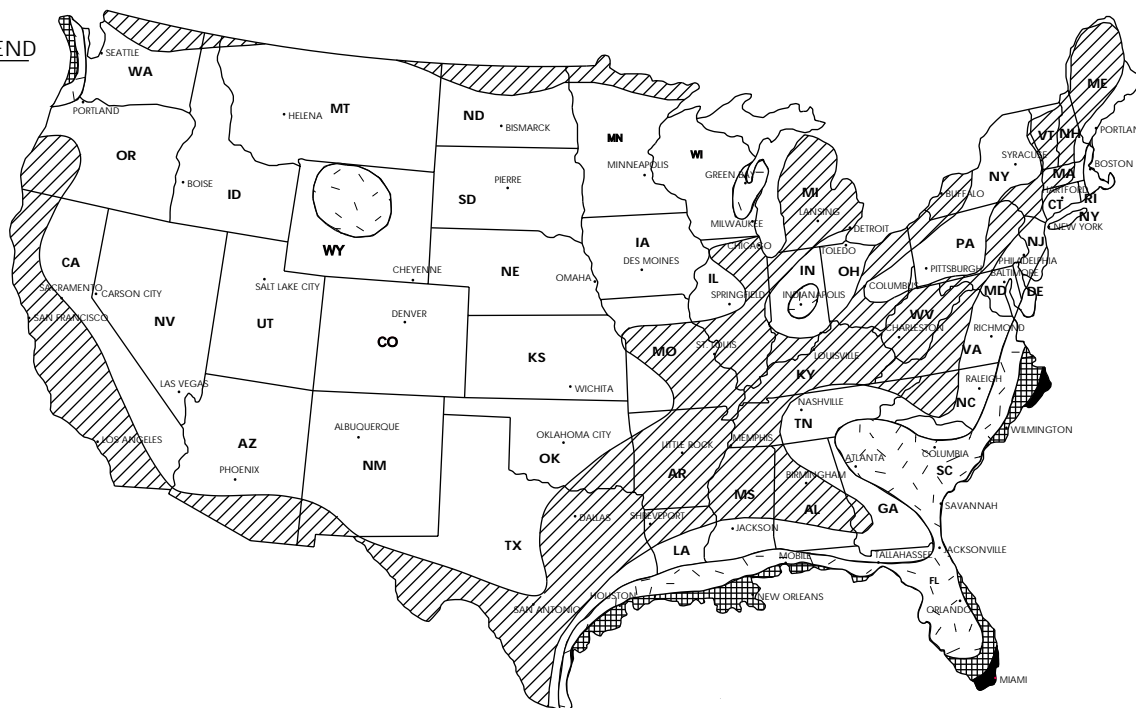
Total Luminaire Weight-148 lbs

2. Wind velocity for Rockford, Illinois, as shown on Isotach wind speed map: 80 MPH.
3. Based on luminaire EPA, the SQS525G11-T24 is suitable to withstand the load. Its maximum EPA capacity is 8.8 sq. ft., and its maximum weight capacity is 220 lbs.

Isotach Wind Map

The 50-year mean recurrence Isotach wind map below will help determine the wind velocity of a given area and aid in the selection of a pole to meet the specific wind load criteria for that geographic location. For areas where unusual wind conditions may exist, such as mountain terrain or hurricane regions (shown as 110 MPH zones), it is advised to contact Day-Brite Lighting.

WIND SPEED LEGEND



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