

A luminaire retrieval system (brand name: **Lumitrack**) can be used on new overhead sign structures. This system is pre-wired for either 3-wire, single-phase, 120/240-voltage or 4-wire, 3-phase, 277/480-voltage.

Single-phase system: Power distribution to the luminaires alternates:  
Line-1, Line-2, Line-1, etc.

Three-phase system: Power distribution to the luminaires alternates:  
Phase-A, Phase-B, Phase-C, Phase-A, Phase-B, Phase-C, etc.

For Example:

If a sign structure requires 5 luminaires, the lighting designer must recognize that all three phases should be delivered to the sign. Two of the line phases will be used to power 4 luminaires. The fifth luminaire will be powered by the remaining line phase. The sign plans may show phases evenly distributed as:

Phase-B, Phase-A, Phase-C, Phase-B, Phase-A

#### 4.5.2 Signalized Intersection Lighting

The roadway lighting luminaires associated with a signalized intersection are typically mounted on combination signal poles. As such, their location is fixed by the location of the signal pole. That is, the lighting designer may be able to adjust the bracket arm length, and wattage, but may find that there are limitations on the luminaire orientation and mounting height.

The design of a roadway lighting system that includes an illuminated, signalized intersection should be performed in the following sequence:

1. The signal pole locations should be imported into the lighting design program.
2. An illumination calculation grid is established in the intersection.
3. Luminaires are added to the lighting design. The luminaires, including a bracket arm, are positioned such that the base of the arm is located with the signal pole, and the luminaire is positioned over the intersection. The luminaire should not fall directly above a pedestrian crosswalk. Such a location will not provide sufficient contrast and reduce the overall visibility of the intersection. Effectively, placing a luminaire directly over a crosswalk will result in a washout effect rendering the pedestrian less visible to the driver.
4. Only after the lighting criteria are met for the intersection should the lighting designer begin the task of developing the roadway lighting plan for the roadway adjacent to the intersection.
5. The positions of the signal pole mounted luminaires are passed to the signal designer for inclusion in the Signal Plan.
6. The electrical service plan for the luminaires varies on the preference of the locality.
  - In some cases, the luminaires are installed as part of the roadway lighting system, and the power for the luminaires is metered from the same service as