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## No BUG's about it!

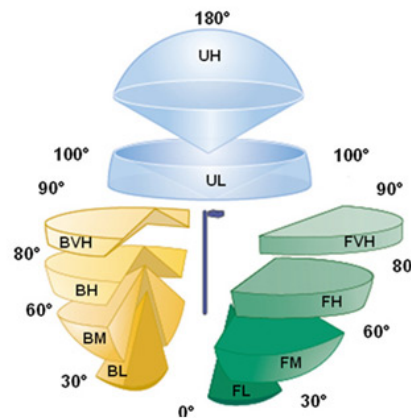
The advent of most new technology also invariably brings along with it new terminologies and new ways of analyzing that technology. This is especially true as applied to outdoor LED luminaires, which are being more commonly specified on outdoor projects.

B-U-G – (Backlight, Uplight & Glare) ratings are simply a new and more specific way of looking at the performance of a luminaire, based on specific zones surrounding that luminaire. For the purpose of identifying those zones, visualize a sphere with the luminaire at its center, typical of a fixture mounted on a pole. Slicing that sphere in half, the upper half is the “U” **uplight zone**, the lower quarter-sphere in front of the luminaire is the “F” **forward zone**, and the lower quarter-sphere behind the luminaire will be the “B” **backlight zone**. These zones are then further sub-divided.

**Uplight** contains **UL, & UH** (Uplight - Low & High), **Forward** contains **FL, FM, FH & FVH** (Forward – Low, Mid, High & Very High), **Backlight** contains **BL, BM, BH, BVH** (Backlight – Low, Mid, High & Very High). For example **FL** would refer to the

zone from zero degrees up to 30 degrees in front of the Luminaire – the others follow in a similar fashion. A complete list of the angle references maybe found in **IES TM-15-11** or by following this link.

**B-U-G** ratings are derived from the volume of light that falls in specific zones. The **B** rating derives its value from the minimal value



within zones **BL, BM, BH**. The **U** rating consists of minimal values within zones **UL, & UH**. The **G** rating is comprised of minimal values within zones **FH, FVH, BH, & BVH**. The complete listing of allowable values can be found in **IES TM-15-11**. The values used to determine **B-U-G** ratings are numerical values of maximal zonal lumens. **B#, U# & G#** are not to be confused with the “percentage of light” used in the

common “Cut-off” classification system. This is important to understand because cut-off classifications are based upon a percentage of lamp lumens, which is not measured for LED luminaires tested using absolute photometry per IES LM-79-08. That is precisely why the new Luminaire Classification System or LCS in TM-15-11 was developed. The new LCS and BUG ratings supersede cutoff classifications.

The intent of this rating is better analysis of lighting needs not previously addressed, such as vertical illumination requirements for safety and security. Engineers, Specifiers and Lighting Designers can now discuss where light is going in more discreet angles all around a luminaire. Manufacturers are beginning to publish **B-U-G** ratings along with the cut-off classification – most indicating that the cut-off classes are “deprecated” (outdated). Excellent analysis of the zones can be done using lighting software such as AGI 32 and by viewing the templates provided in Photometric Toolbox. For a more complete discussion of this topic please follow this link.

*-Michael Hanley-  
Philips Professional Luminaires*

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2

2nd Annual

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WHERE: Paradise Island Bowl, Neville Island

WHEN: Thursday, February 16th, 2012

