

How to Use the Photometric Data Package: Typical Page Elements

elliptipar photometric files can be used with any computer program which uses the IES standard photometric format. Programs such as *Lumen Micro* by Lighting Technologies, *AGI* by Lighting Analyst,

Luxicon by Cooper Lighting, *Lite-Pro* by CPM Lighting and *Genesis* by Genlyte are all examples of lighting calculation programs which use the IES standard photometric format.

These guide pages are categorized by lamp type and reflector size. A source/lamp icon (①) is shown at the top right corner of each table. The applicable luminaire styles (②) are listed for each photometric test, along with quick-reference line drawings (③) of representative styles. Thumbnail sketches of the reflector and candlepower distribution curve (④) illustrate the orientation of the reflector for the test and the degree of asymmetry of the source/luminaire

combination. For example, a 500W tungsten halogen source in a large reflector is more asymmetric than a 26W quad tube compact fluorescent in a small reflector. To view or download ITL (Independent Testing Laboratories) Reports, click on the highlighted **ITL** in the lower right corner of the candlepower distribution curve. The filename (⑤), IES photometric type (⑥), (To download the IES file, click on the highlighted Photometric Report - the five-digit number with ".ies"

extension - to open in your Browser window, then save to your computer), location of maximum candlepower (⑦) and luminaire adjustability (⑧) are listed in the directory for reference. Lamp wattage (⑨) in bold indicates the wattage used in the actual test. Multipliers (⑩) for other wattages are given.

If you have problems, call 203-931-4455.



② Style Numbers	③ Luminaire Sketches	④ Reflector Orientation for Photometric Test	④ Candela Distribution	⑤ File Name	⑥ Photometric Type	⑦ Location of Maximum Candlepower	⑧ Adjustability	⑨ Lamp Wattages	⑩ Lamp Multiplier
Ceramic Metal Halide - SMALL Reflector									
101 102 115 120 130 133 151 160 203 206 401 402 407 452				46423.IES	B	-15°	Adjustable	35 70 150	0.53 1.00 2.18
				46423_C.IES	C	25°			

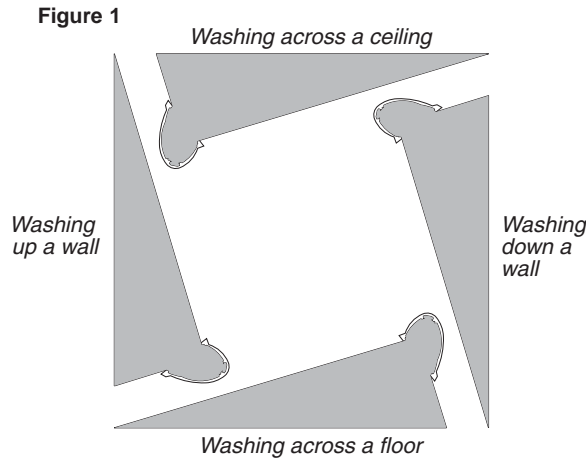


When modeling spaces in lighting calculation software, **elliptipar** adjustable asymmetric luminaires are more challenging than 2x4 lay-in troffers or recessed downlights. Prior to modeling a space with a lighting calculation program, the proper reflector orientation, position and aiming should be determined.

The following instructions will acquaint you with the proper methods of orienting, locating and aiming the **elliptipar** luminaire in the space you are modeling. Please refer to the Applications Section of the catalog for more information.

Reflector Orientation

The **elliptipar** asymmetric reflector is designed to light a plane evenly from one edge. Figure 1 illustrates the proper reflector orientation for a variety of applications. The "long side" of the reflector points toward the target surface and the aperture opens in the direction the light is to be thrown.

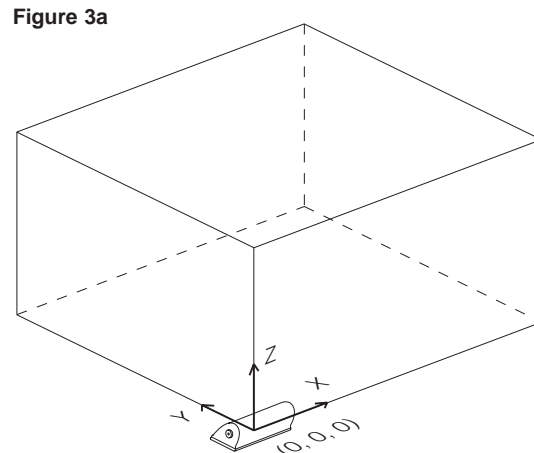
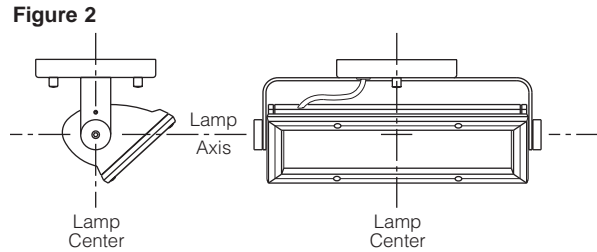


Luminaire Location

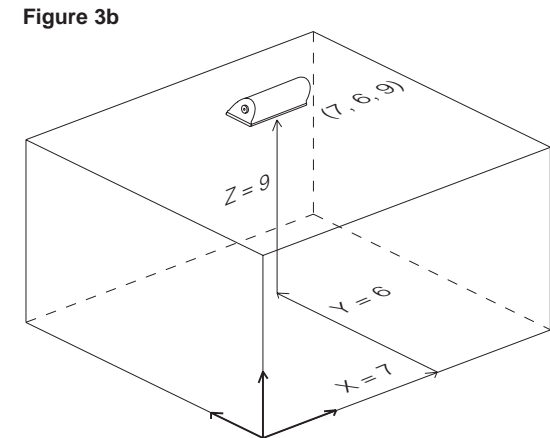
The position of the luminaire is defined by its lamp center (see Figure 2). Therefore, it is important to identify the overall length and width of the luminaire to ensure that the entire luminaire lies within the boundaries of the room. This becomes especially important with linear fluorescent units.

If your program has a file viewer, view the photometric file to find the overall dimensions of the luminaire.

The luminaire location is usually described in cartesian coordinates (X, Y), with the mounting height specified either by a distance from the floor ("Z" coordinate) or a suspension length from the ceiling. The initial position of the luminaire upon importing into a lighting calculation program such as Lumen Micro is at the lower left in plan view, at floor level. See Figures 3a and 3b.



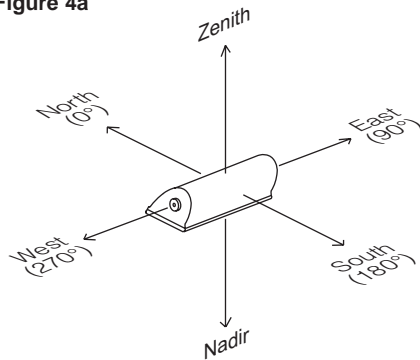
Luminaire imported with lamp center at the origin, (0, 0, 0).



Luminaire located at 7 feet from west wall, 6 feet from south wall, and 9 feet above the floor, coordinates (7, 6, 9).

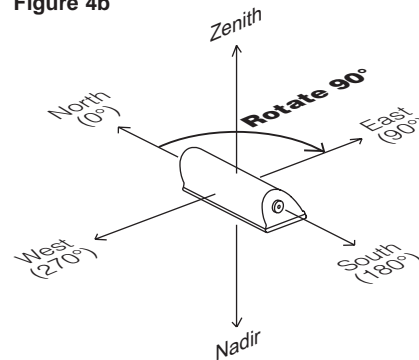


Figure 4a



Typically, luminaire imported facing the 0° direction.

Figure 4b



Rotation occurs in the horizontal plane.

Figure 5

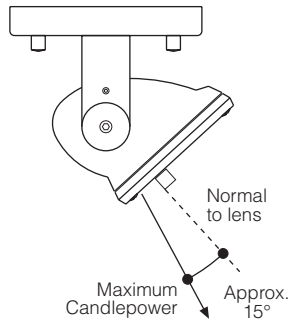
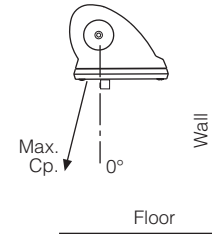
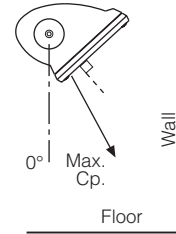


Figure 6a



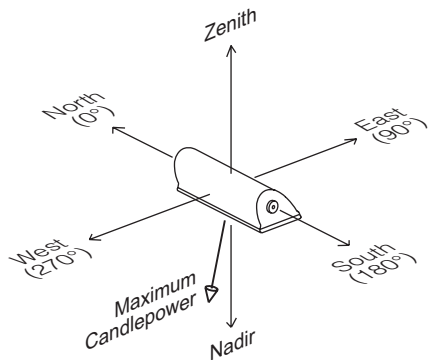
Default aiming for B type photometric report. (Note: maximum candlepower directed behind luminaire.)

Figure 6b



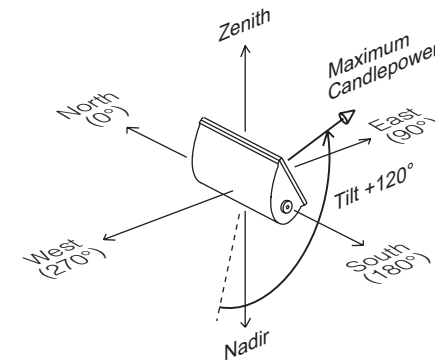
Default aiming for C type photometric report. (This example shows a luminaire oriented for wallwashing.)

Figure 7a



Typically, luminaire imported with the photometry's 0° axis facing nadir. (B-type data shown for example.)

Figure 7b



Tilt occurs in the vertical plane.

Luminaire Orientation

As you import a photometric file into the calculation program, the initial direction (north, south, east, west) of the luminaire will vary by program. In most programs the luminaire is inserted facing north at 0° (see Figure 4a). Direction is easily changed by rotation angle. Refer to your lighting software documentation to determine how rotation angles are defined. For example, a rotation of 90° in Lumen Micro will turn the luminaire clockwise from north to east (Figure 4b).

Luminaire Aiming

It is important to note that **elliptipar** luminaires are aimed with reference to maximum candlepower. Unlike most luminaires, the **elliptipar** asymmetric reflector produces its peak candlepower at an angle 5° to 18° below the normal (perpendicular) to the lens (see Figure 5). The exact angle varies based on the lamp used.

The default aiming angle of a luminaire will vary by photometric type. A luminaire tested in a **type B** format (often referred to as a "floodlight" report) will be imported into the program with the fixture's aperture facing the floor (see Figure 6a). A luminaire tested in a **type C** format (formerly referred to as type A, often called an "indoor" report) will be imported in the orientation at which it was tested. In many instances, these luminaires have been tested in the orientation you will wish to use them. For example, the fixture shown in Figure 6b was tested in a position suitable for wallwashing.

In most calculation programs, aiming is controlled through the "tilt" setting (sometimes called "cant"). Again, consult your program documentation to see how positive (+) and negative (-) tilts are defined. In most programs, a positive tilt is defined as shown in Figure 7. As a rule of thumb, maximum candlepower should be aimed 3/4 to 7/8 of the distance down or across the surface being lighted. However other factors, such as concealment of lens brightness, may influence the aiming angle used in the particular application. Refer to the Applications section of the product catalog for further guidance.

Note that some **elliptipar** luminaires, such as the Style 201 semi-recessed with hood, are not adjustable and, therefore, should not be tilted. **Ensource** luminaires, which have been tested with enclosures, should not be tilted because any change in tilt would also tilt the enclosure. Non-adjustable models are noted in the directory under the *Adjustability* column.

In some applications the proper rotation and tilt are not readily apparent. One such example is uplighting a wall from the floor or ground using a type B photometric report. The following example discusses this particular application.

Orientation Example: Uplighting a Vertical Surface from Floor or Ground

Let us assume we wish to uplight a 16 foot high wall from the ground using a 400W metal halide unit. The photometric file we will use is filename 46279.IES. According to the directory, this file is a B type photometric report, with maximum candlepower located at -15°. For purposes of this example, we will assume Lumen Micro to be the modeling software.

First, determine the luminaire position using the guidelines given on pages 2.0 and 3.0, and in the Applications section of the catalog. Setback should be 1/4 times the distance the light is to be thrown, or $1/4 \times 16 = 4$ feet (see Figure 8a).

Next, calculate the aiming angle. Maximum candlepower should be aimed about 7/8 the distance up the wall, or $7/8 \times 16 = 14$ feet. The luminaire should therefore be aimed such that the maximum candlepower is located at $\text{Tan}^{-1}(14/4) = 74^\circ$ above horizontal.

Before we can begin tilting, however, we must be sure that the reflector is oriented properly. As previously stated, the default orientation of a B type luminaire in Lumen Micro is facing 0°, with aperture toward the ground (nadir). In order to orient the reflector for washing up the wall as shown in Figure 1, we must rotate the unit such that the short side of the reflector is closest to the target surface (in this case, a rotation of 180°, see Figure 8b). The luminaire may now be tilted to the proper aiming angle. Referring to the directory, the maximum candlepower is located at -15° (behind nadir). A tilt of -75° will aim maximum candlepower horizontally at the wall. An additional tilt of -74° will aim maximum candlepower at 14 feet up the wall. The total tilt is $(-75^\circ) + (-74^\circ) = -149^\circ$, as shown in Figure 8c.

For More Information ...

Please call the elliptipar Applications Engineering department if you require any assistance with photometrics, sightline studies or other technical services. Copies of original test reports are available upon request.

Figure 8a

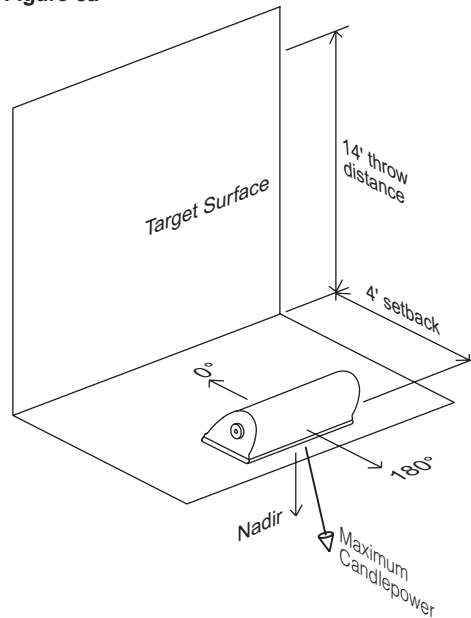


Figure 8b

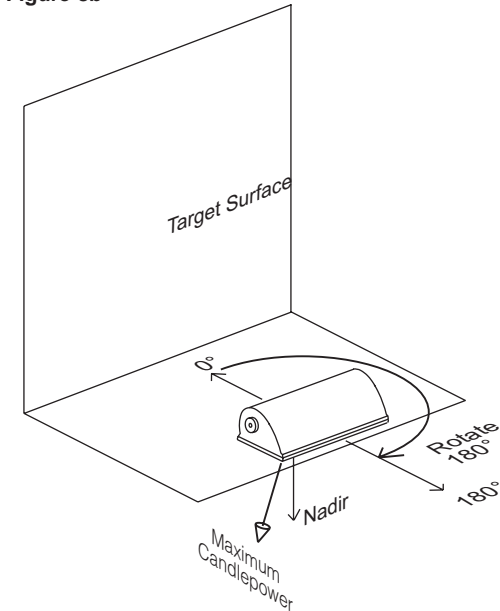


Figure 8c

