

**Cove Design**

In cases where luminaires are to be concealed within a field constructed continuous cove, the specifier must ensure that the cove is properly designed to conceal brightness from normal viewing angles, without obstructing light intended for the target surface.

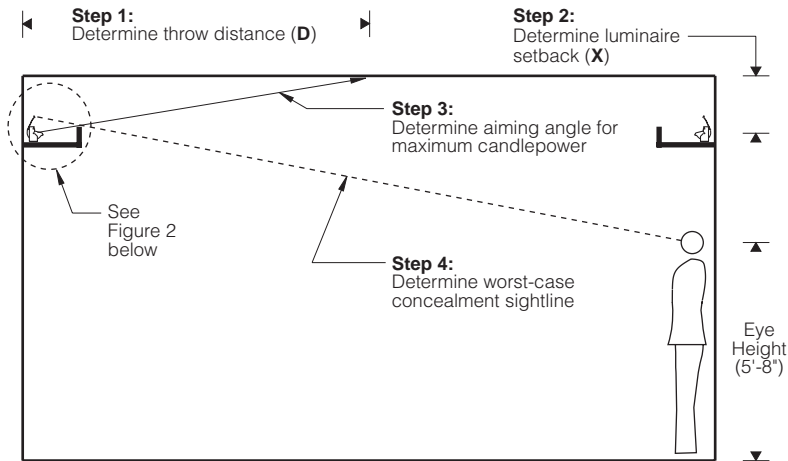
The example below walks you through the design of a cove. For additional assistance, contact **elliptipar** Applications Engineering.

**Example**

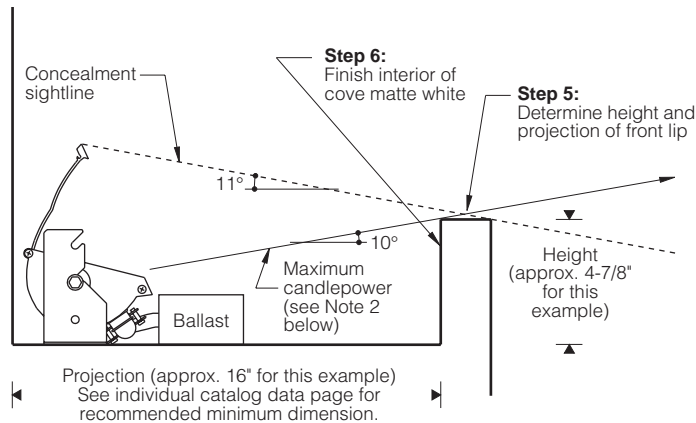
A space is 40' long x 18' wide, with a flat ceiling at 10' above the finished floor. Continuous coves will be designed to house **elliptipar** Style 302 concealed fluorescent units with long twin tube compact lamps. Coves will be mounted along both 40' walls.

- Step 1** Determine the throw distance (**D**) across the target surface. Since the space is 18' wide with coves on both sides, each cove must throw light across an effective target surface of 9'.
- Step 2** Determine the proper luminaire setback (**X**). Using a linear fluorescent source, the setback should be at least 1/8 of the throw distance ( $1/8 \times 9' = 13-1/2''$ ). However, for long twin tube fluorescent lamps, the setback should be no less than 18". The larger dimension governs, so the minimum setback is 18".
- Step 3** Determine the aiming angle for the maximum candlepower of the luminaires. Using a room section, draw a line from the lamp center to the far edge of the target surface. (In this case, this is the center of the ceiling.) This approximates the lowest angle of maximum candlepower. In this example, the aiming angle is measured as 10° above horizontal.
- Step 4** Determine the worst case sightline. Find the worst-case viewing position. For uplighting applications, this is usually the farthest and/or most elevated position from which the cove may be viewed. (Note: if the cove is viewable through a window or doorway, the worst case viewing position may lie outside the dimensions of the space.) In the above room section, draw a line from the worst-case viewing position to the top of the luminaire. This is the concealment sightline. If we assume the worst-case viewing position to be standing along the opposite wall, with eye height at 5'-8" AFF, the concealment sightline is measured as 11° above horizontal.
- Step 5** Determine the height and projection of the cove lip. The top of the lip should intercept the concealment sightline without obstructing maximum candlepower. In this example, the overall inside projection is measured to be approximately 16", and the height of the front lip approximately 4 7/8".
- Step 6** Interior surfaces of cove should be finished matte white to maximize efficiency and minimize socket shadows.

**Figure 1: Room Section**



**Figure 2: Cove Detail**



**Notes**

1. For tungsten halogen and HID units, the cove shall be constructed from non-combustible materials.
2. Refer to appropriate luminaire photometric report on our Website at [www.elliptipar.com](http://www.elliptipar.com) to determine location of maximum candlepower with respect to reflector.
3. Remote ballast(s) can be mounted within the cove. If space is limited, ballast(s) can be mounted in a remote accessible location. See individual data page for maximum remote distance.

