Reflective hood

There are many different ways to shape and direct light where it is needed. Often lenses can be used, but with LED lighting, the glare can be magnified. This glare in applications such as streetlights can be at best annoying, at worst a safety hazard. To reduce the effects of glare, a reflective hood can be used; this reflective hood is designed for an ‘acorn-shaped’ streetlight.

This reflective hood design provides lower glare than a typical lens design, especially since the LEDs are partially concealed by the reflector. The underside of the reflector is used to direct light downward, especially light above the LED’s viewing axis, to help meet International Dark-Sky Association (IDA) recommendations. It also provides improved downward-directed light near the pole since it projects a smaller shadowed area around the base. The top side of the reflector is used to redirect low angle light outward from the LEDs above it to improve total output and uniformity, whereas low angle light is typically lost within a refractive optic or the lamp housing.

One example of the use of the reflective hood design is shown above. Note that it creates a uniform output pattern, even without a Fresnel Globe for 360 degrees around the streetlight as shown in the simulation.
Points to note:

• Parts can be attached using the glue groove or screw attachment.
• Both top and bottom surfaces participate in directing the light.
• Other surface finishes could be used; the bead blast here provides a very diffuse reflection.
• SILASTIC™ MS-2002 Moldable Silicone is highly reflective and UL listed.
• Parts can be molded in a sheet, but are done as individual parts here; this allows for flexibility in the number of LEDs on a fixture.

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