

Top Ten Myths of LEDs: #7 - "LEDs have high glare"

Mike Krames, CTO, Soraa



I'm standing in the taxi queue at Chicago's O'Hare airport, having to squint ahead to gauge my wait. The cause of my discomfort: a horrible, blue-LED array-based outdoor luminaire ahead of me and above, spilling light in all directions and casting a putrid smear of yellow-green color against a nearby wall of the terminal, and directly into my eyes.

We've all seen it - most of us are affronted by bad lighting like this daily. And because such poorly performing products are based on LEDs, we are likely to attribute the offensive glare aspects of such products to the LEDs themselves.

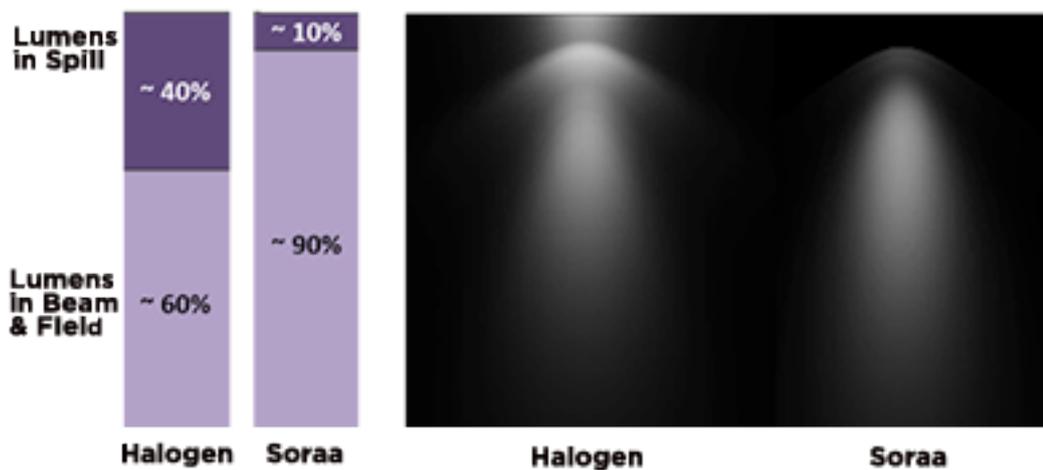
Like other aspects of new technology, the very high optical source brightness of LEDs can be either a blessing or a curse, depending on design. In a poorly designed product, the optics cast images of the high-brightness LEDs in directions outside the target beam pattern, leading to too much high-angle light that enters the eye of the casual passer-by, an example of light pollution leading to high glare.

In fact the very high brightness of LEDs can enable lamp designs that distribute light in a very pleasant manner, using minimal optical elements. Soraa's retrofit [MR16 lamp products](#) [1] based on [GaN-on-GaN](#) [2][™] technology are great examples of these designs. Compared to their halogen counterparts, which can deliver more than 40% of their light outside of the target beam, Soraa's LED MR16s have only about 10% spill light - four times less glare. Soraa lamps do not need the expensive snoots or louvers required to make glare from halogen lamps tolerable. In fact, we could deliver more than 200 Watt equivalence before we would reach the glare level of halogen!

The very high brightness of LEDs does not mean high glare, it is indeed the opposite. The high brightness and small source size enable optical solutions that were never before possible, and lamp and luminaire designs that deliver light exactly where it is wanted and needed, on the objects of interest, rather than into our eyes.

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Comparative beam patterns showing halogen's wasted light in spill, and Soraa's efficient beam, another important aspect of [quality of light](#) [3].

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Links:

- [1] <http://www.soraa.com/products>
- [2] <http://www.soraa.com/technology/gan-on-gan>
- [3] <http://www.soraa.com/technology/quality>