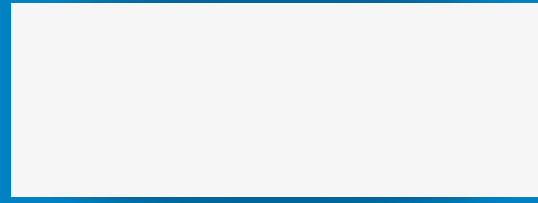

Advantages, technology, photometry, backlight or straylights, how to avoid it.

APPLICATION NOTE

Asymmetrical lenses

ASYMMETRICAL LENSES

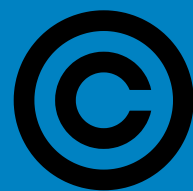
Advantages



Rectangular beam



Recessed optic



Patented technology



Excellent light distribution on the wall, starting right from the beginning of the wall.



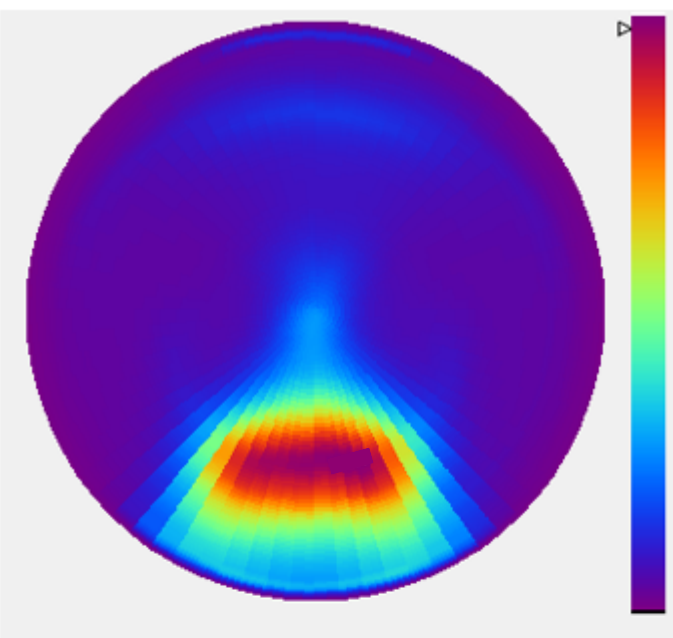
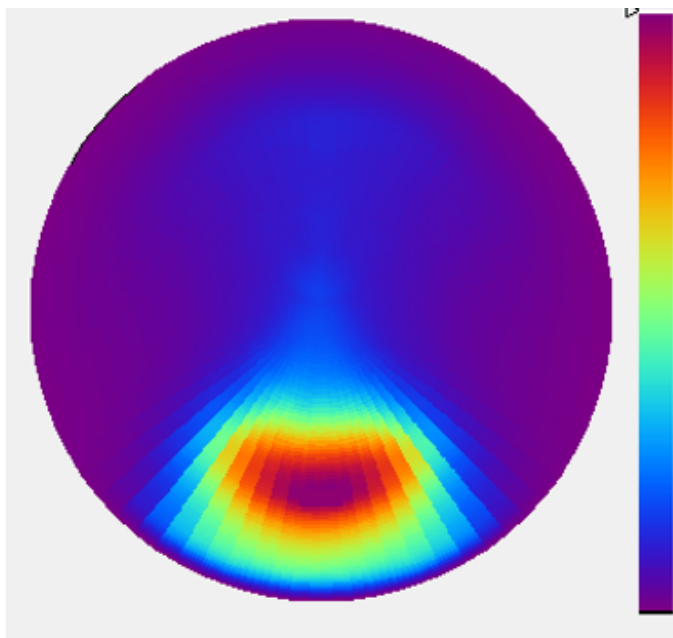
ASYMMETRICAL LENSES

Photometry

UFO45A

LED : Citizen - Ref : CLU702

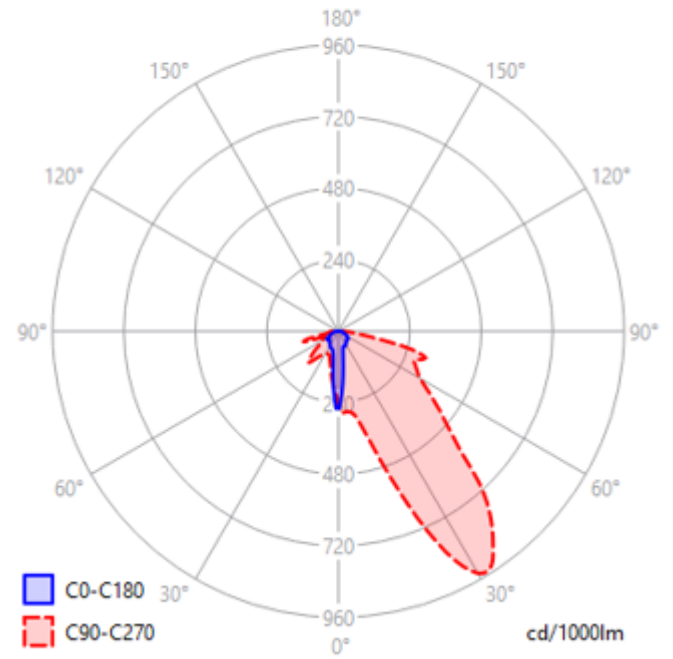
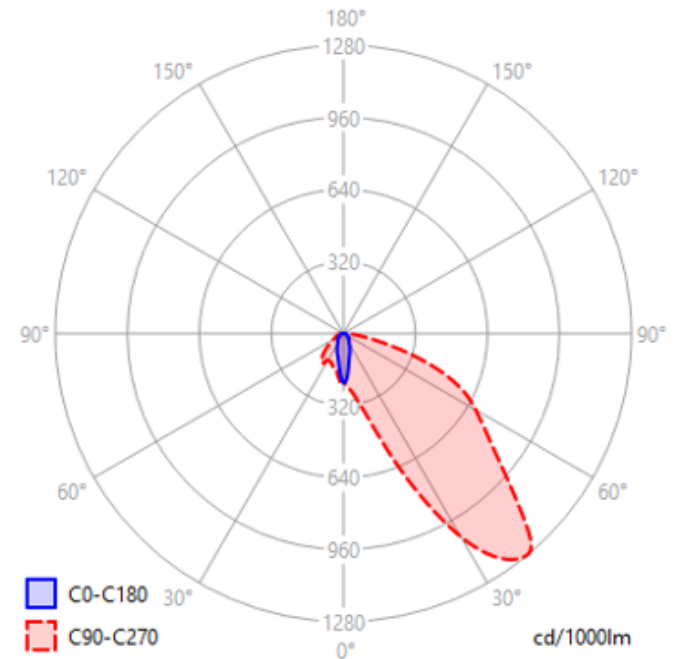
- LOR front (wall) - 76.9 %
- Intensity peak front - 1130 cd/klm



LLC25A

LED : Cree - Ref : XHP35B HI (flat top)

- LOR front (wall) - 77.6%
- Intensity peak front - 1279 cd/klm



LLC25A

UFO45A



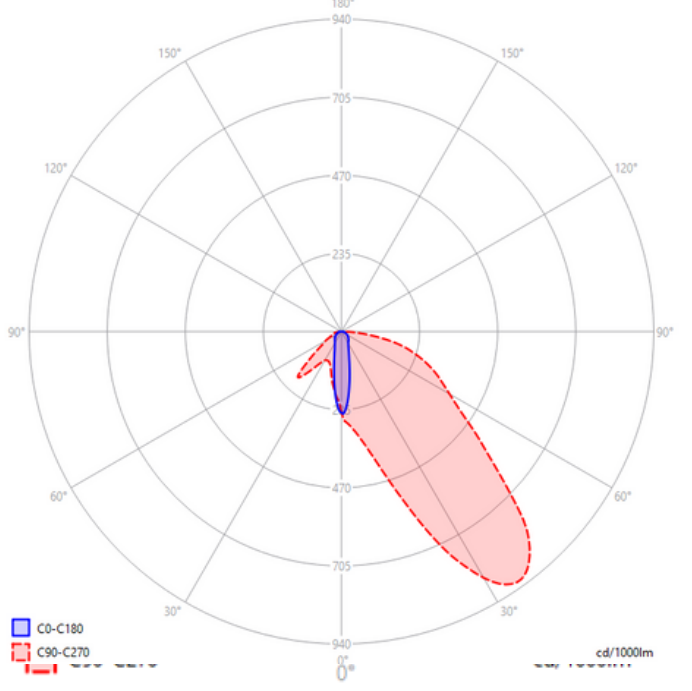
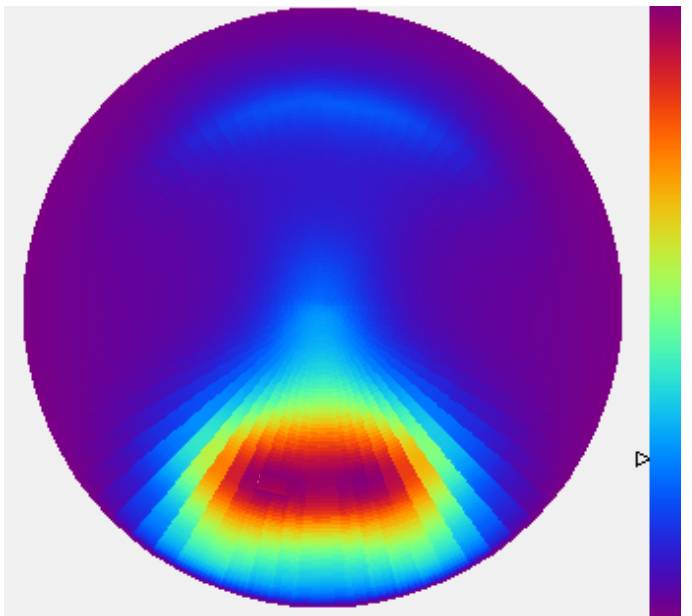
ASYMMETRICAL LENSES

Photometry

LLK59CW59A*



- LED : OSRAM Ref : OSTAR STAGE S2WN
- LOR front (wall) - 82%
- Intensity peak front - 953 cd/klm

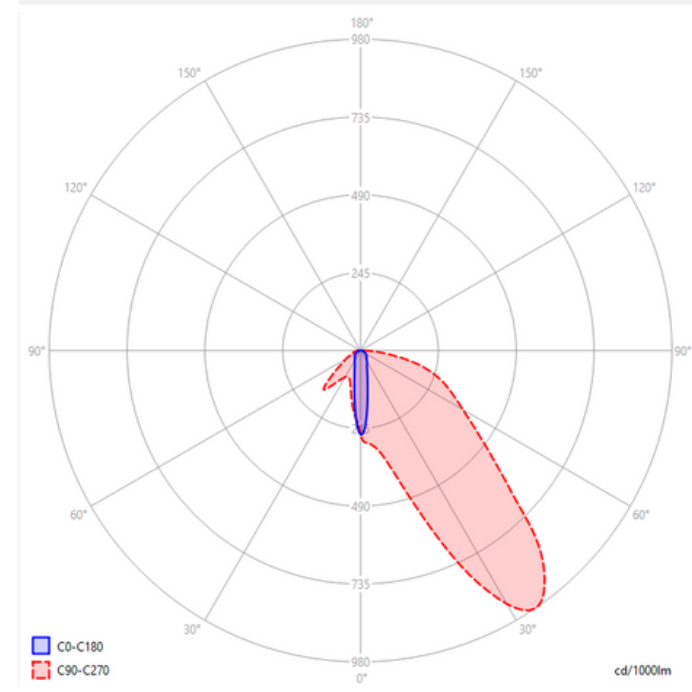
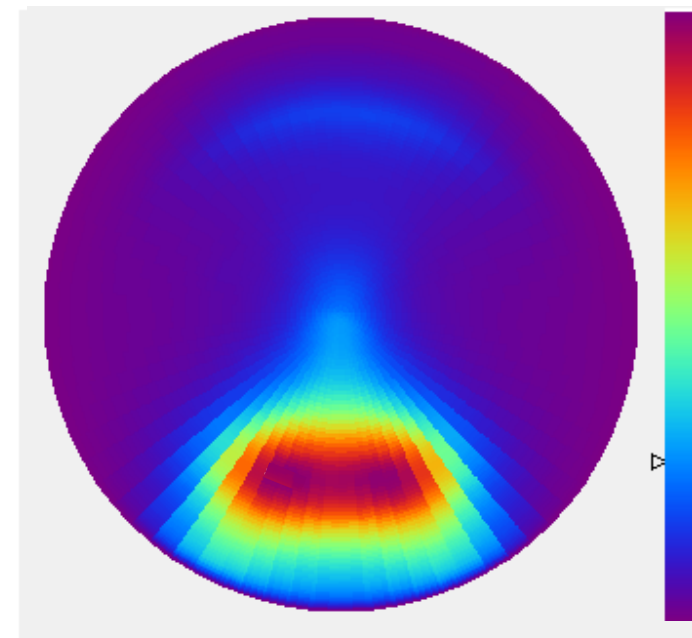


LLK59CW59A*

LLK59NW59A*



- LED : OSRAM Ref : OSTAR STAGE S2WN
- LOR front (wall) - 81%
- Intensity peak front - 1026 cd/klm



LLK59NW59A*





ARCHITECTURAL APPLICATION EXAMPLE

ASYMMETRICAL LENSES

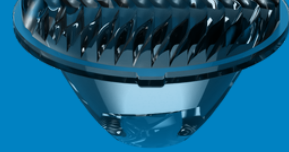
For the light to start as close to the wall as possible from the ceiling, the ideal distance from the wall is 1 meter.

UFO45A 

& LLK59NW59A*

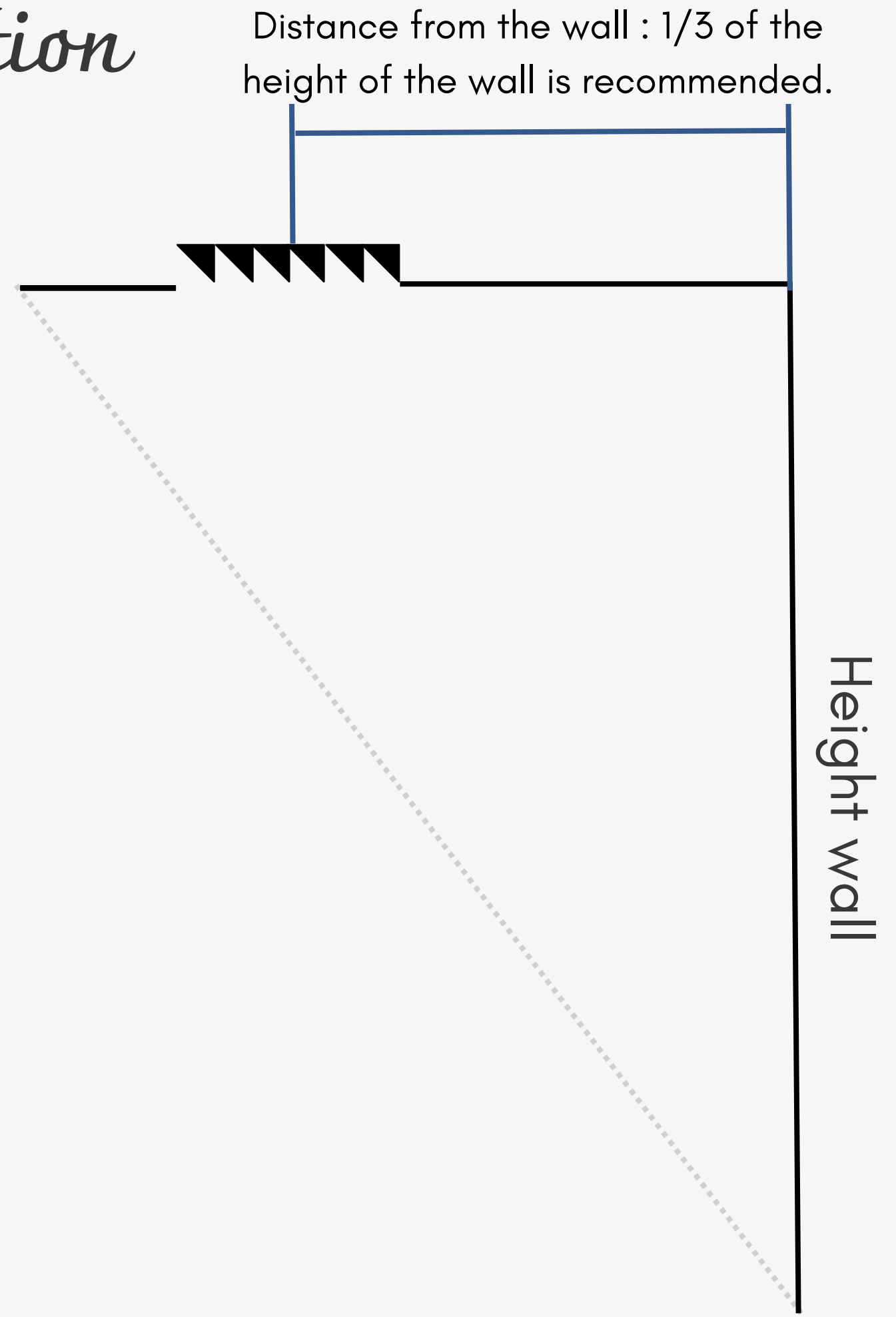
& LLK59CW59A*

The spacing of the luminaires should be equal or up to 1.2x to the distance from the wall.

LLC25A 

The spacing of the luminaires should be equal or up to 0.6x to the distance from the wall.

Integration



ASYMMETRICAL LENSES

Installation

UFO45A

LED : Citizen - Ref : CLU702

- 1300 lm per LED with 4 x UFO45A
- Projection at 1 m from the wall
- Spacing - 1.2 meter
- Wall height - 2.6 meters



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LLC25A

LED : Cree - Ref : XHP35B HI (flat top)

- 800lm per LED with 6 x LLC25A
- Projection at 1 m from the wall
- Spacing - 60 cm
- Wall height - 2.6 m



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ASYMMETRICAL LENSES

Installation

LLK59CW59A*

LED : OSRAM Ref : OSTAR STAGE S2WN

- 800 lm per LED with 4 x LLK59CW59A*
- Projection at 1 m from the wall
- Spacing - 1.2 meter
- Wall height - 2.8 meters



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LLK59NW59A*

LED : OSRAM Ref : OSTAR STAGE S2WN

- 800lm per LED with 6 x LLK59NW59A*
- Projection at 1 m from the wall
- Spacing - 1.2 meter
- Wall height - 2.8 meters

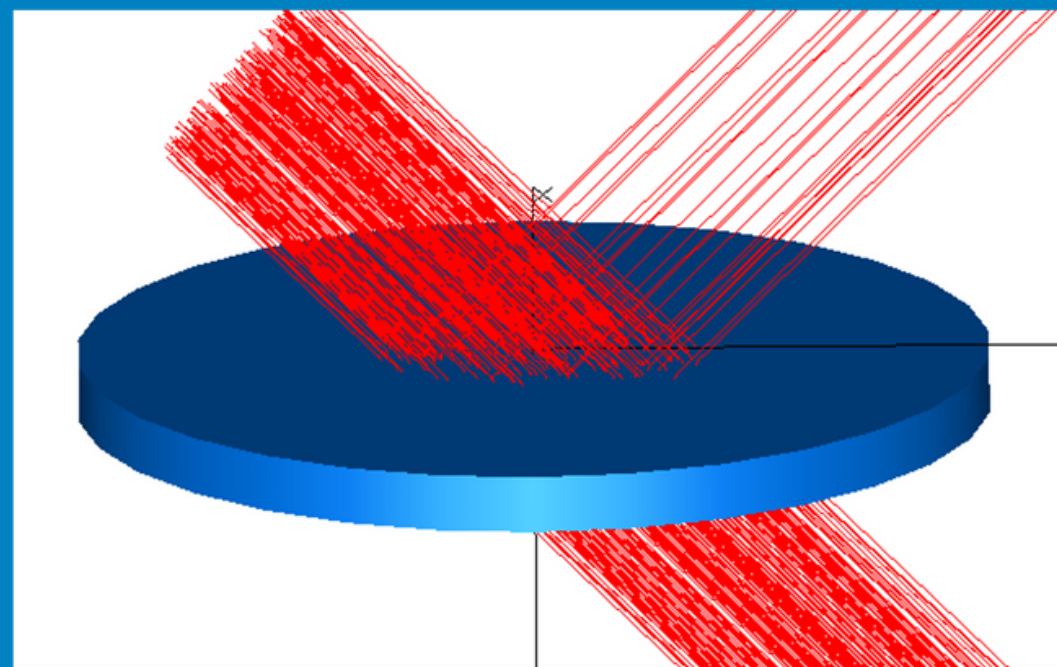


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ASYMMETRICAL LENSES

When light reaches an optical surface that separates two transparent materials, like plastic and air, around **96% of the light is transmitted** and around **4% is reflected**. This physical phenomenon is known as « Fresnel losses » and it happens each time the light travels through a transparent surface. The **asymmetrical lenses LLC25A and UFO45A** are bonded to this physical phenomenon and 4% of the incident light is reflected onto the asymmetrical optical structure instead of being transmitted. This reflected light is what creates the backlight.

100%

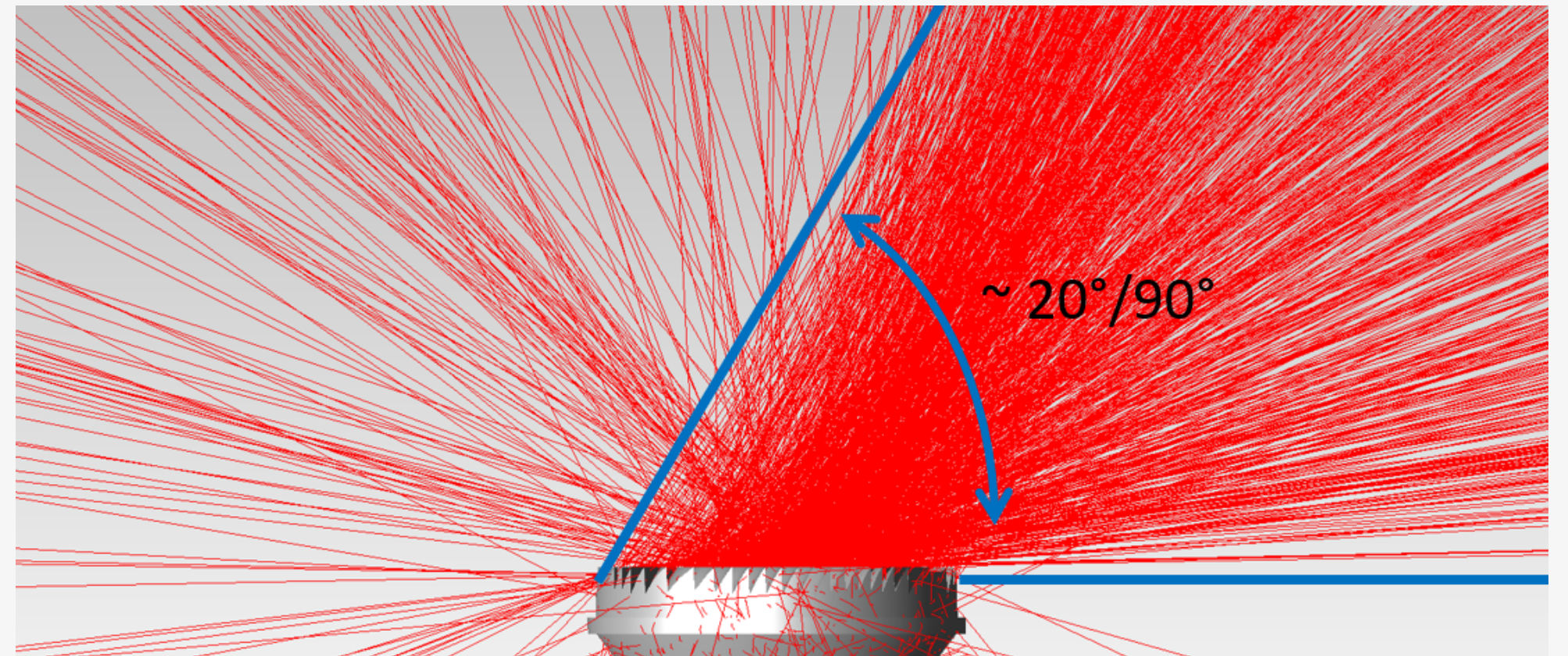


4%
Backlight

96%
Main beam

Focus on backlight

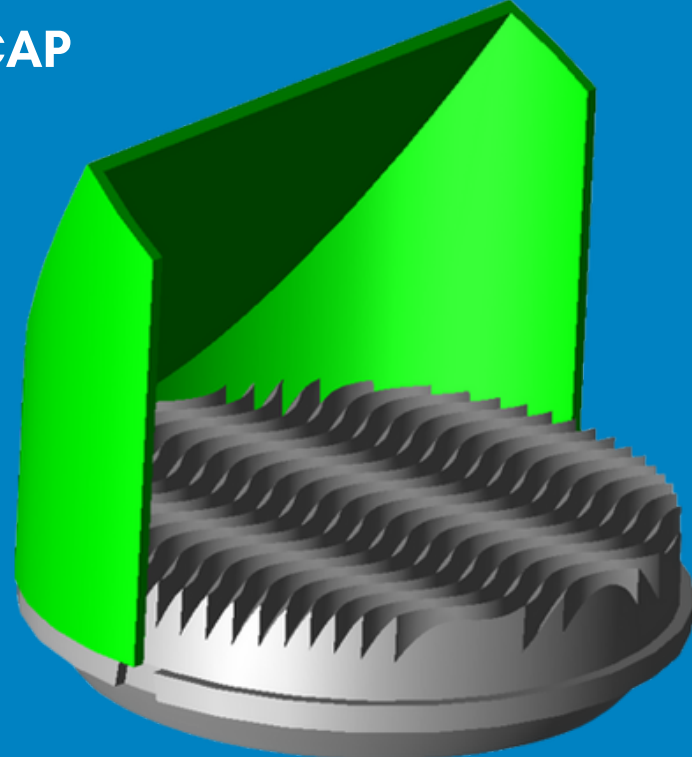
Even if the optical system is extremely well designed, there may be some **unwanted light** coming out of the optic. This light are **rings around the main beam** and they are not intended to the design, but the effect is **inevitable with the highest intensity beams**.



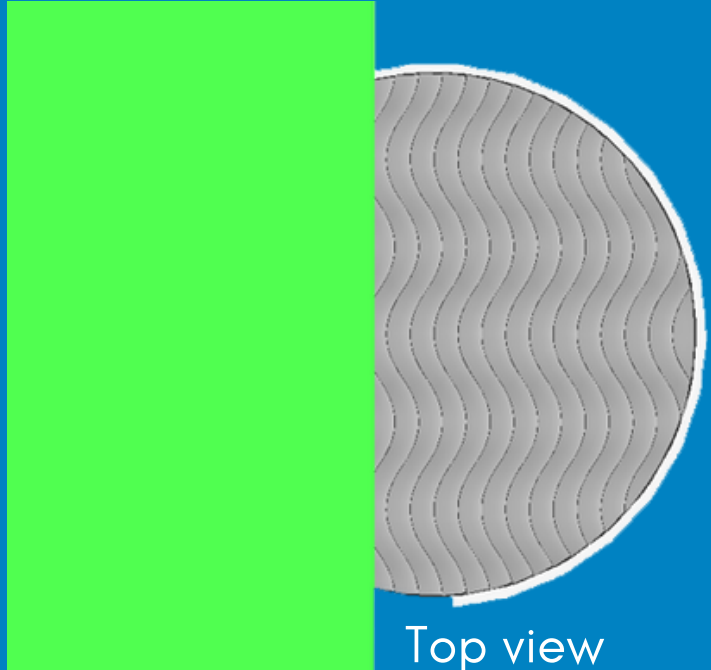
ASYMMETRICAL LENSES

To make this backlight disappear, we have created two concepts.

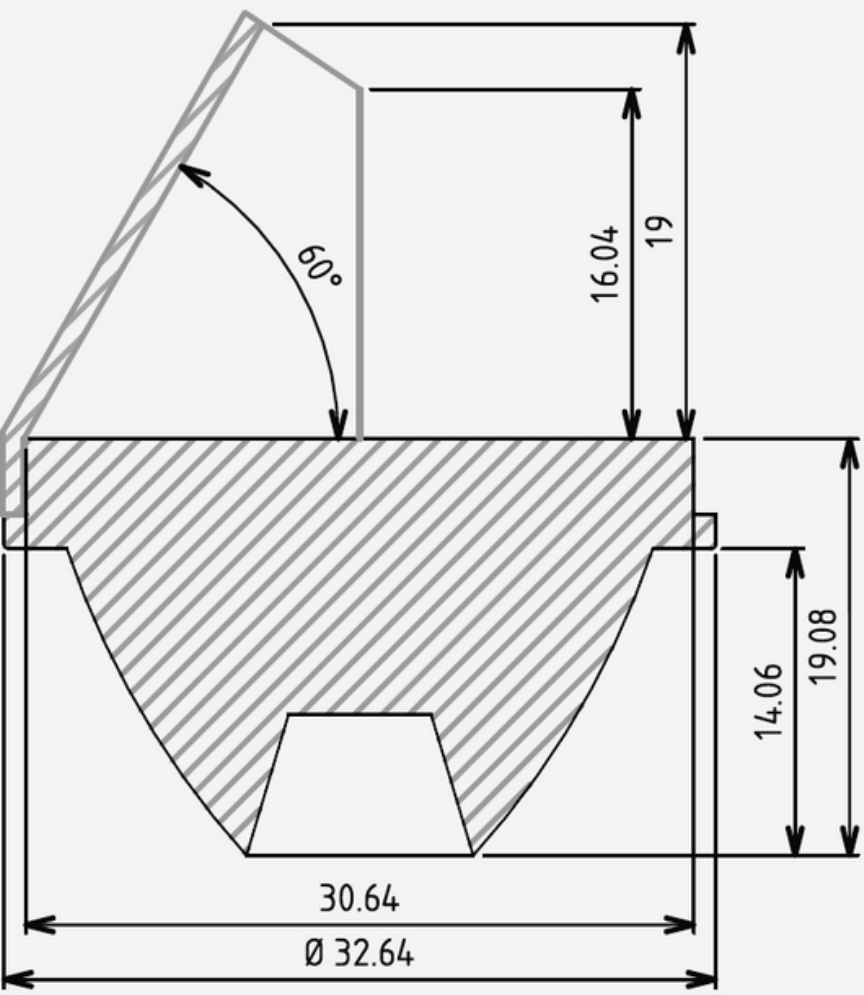
1 - THE CAP



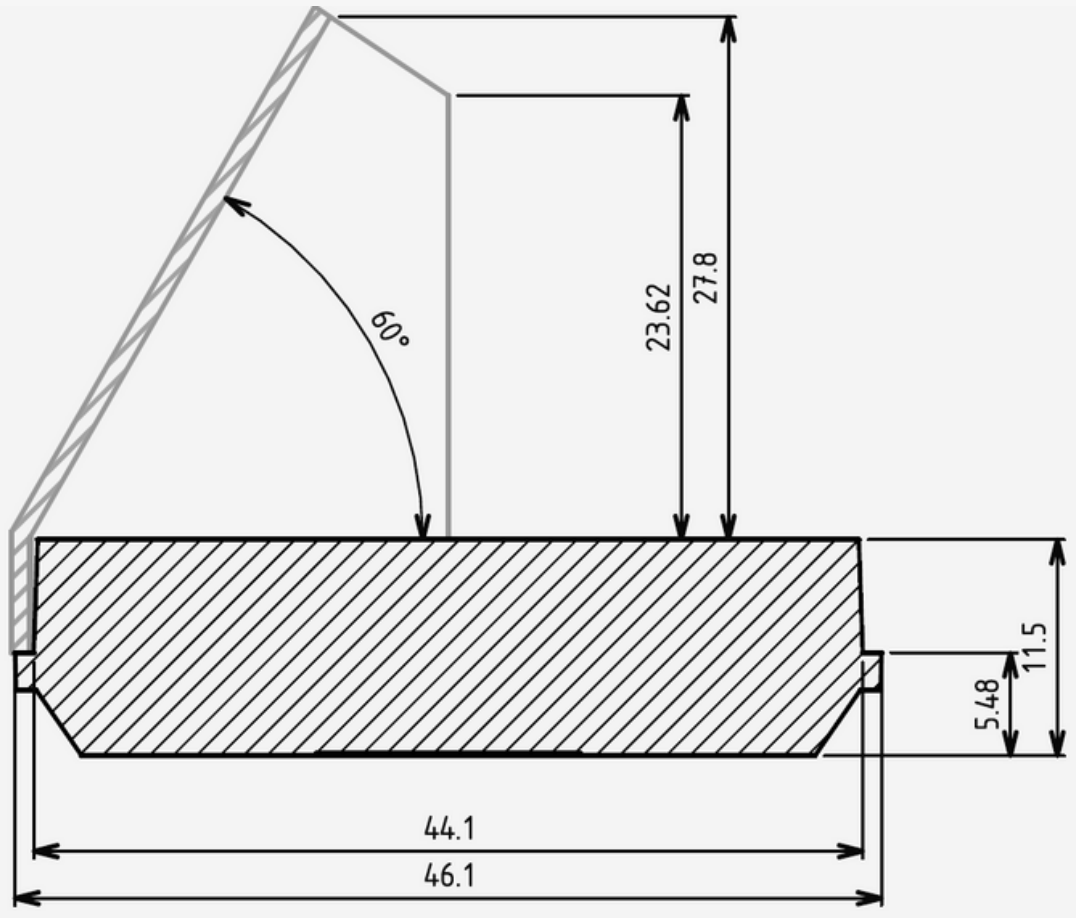
2 - THE PLATFORM



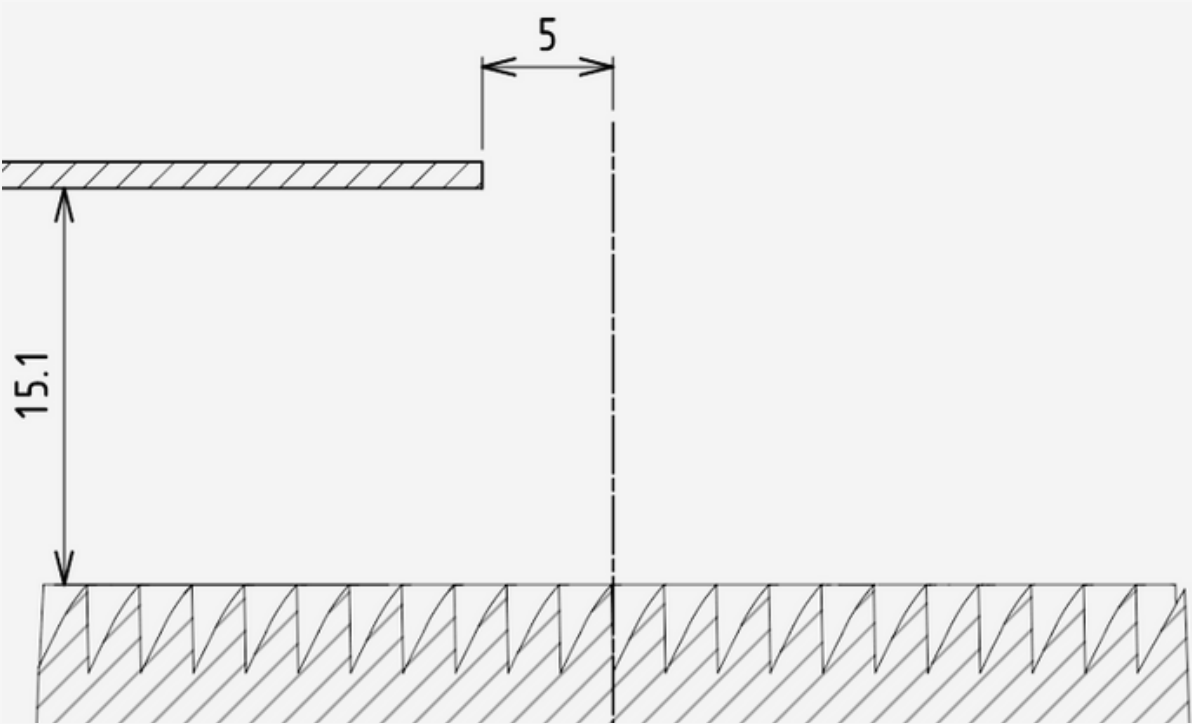
How to avoid it?



LLC25A



UFO45A



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