

Halo

When operating in dynamic light conditions, images provided through **Image Intensifier Tubes** show “halos” around the brightest spots in the scene, for example; street lights or car headlights are typically surrounded by round bright areas, disturbing the overall image quality and ‘whiting out’ part or the entire image. The primary cause of a halo is **the fraction of photoelectrons generated by the photocathode** when they hit the surface between holes of the MCP input, and then backscatter.

Another cause for the halo is generated by **optical reflection at the input gap and backscattered electrons on the anode side**. The diameter of the halo is approximately equal to four times the gap between the photocathode and the MCP. Since electrons also backscatter from the electron barrier film and GaAs tubes have a larger input gap, GaAs based tubes suffer the most. GaAs tubes have therefore a much larger and brighter halo compared to PHOTONIS I2 tubes with a similar diameter. The smaller the halo, the better the image quality.



Example of halo experienced with GaAs Tubes



Reduced halo with PHOTONIS tubes