

# Transparent Shielding for Fixed Dome Cameras

Erik Hansson & Fabian Sondh

Through rigorous testing with materials that are both transparent and conductive. We have been able to reduce emissions from a camera dome while keeping transparency.

As technology advances in both complexity and volume. It becomes more and more crucial to make sure that devices do not interfere electrically with each other. Therefore, a large chunk of product development is delegated to making sure that the devices satisfy the directives of the relevant markets. Imagine this: you're working on the latest fixed dome camera at Axis and you bump into a problem. The camera is really noisy! Since the camera needs to have a large hole to be able to see, the fix is to spend a lot of time troubleshooting the circuit board. But now instead, a "quick fix" could be to simply shielding using a transparent material and see an instant reduction of emissions.

The plan was to construct prototypes of different transparent materials and then testing emissions and image quality for evaluations. These prototypes can be seen as the camera's own little ozone layer. Protecting the camera from BAD emissions, just like how the ozone layer protects Earth from ultra violet light

To test the emissions a circuit that generated noise was constructed to serve as a main noise source, but a camera was also used. The results point to a broad reduction of emissions using all prototypes, especially with the noise generator. The camera had some uncertainties, but the materials still managed to show potential!

Some of the prototypes has great clarity in the visible spectrum. But oh no! A problem occurs when using infrared light, which is used for lighting up dark areas. The infrared light LEDs bounces back from the prototypes and destroys the image quality. From both the aluminium mesh and silver film nothing could be seen, because of the small aperture size on the mesh and the reflections from the silver. The ITO had a greater shot at reflections, the image in front of the camera was visible with minor reflections. For the galvanized steel mesh the image quality was the best because of its larger aperture size. Still the mesh hid some image information for the camera.