

Shining a light on the benefits of low glare lighting

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Low glare is a term increasingly used by lighting suppliers, including NVC Lighting, but it appears to have caused some confusion about what it does and doesn't mean and why electrical contractors and their customers should consider it when selecting the right luminaires for their projects.

Firstly, a definition: glare is a consequence of the inability of the human eye to adapt to different light levels at the same time. This can be an issue externally when lighting reflects off wet surfaces or glass, for example, but I am limiting this article to the issues and considerations surrounding lighting inside buildings. Internal lighting can cause problems because the eye adapts to the high light level of the glare source, which makes it hard to perceive details in the adjacent "too dark" work area/s.

Low glare lighting seeks to even out the light using a range of technologies so that the eye can see in all areas. With more and more people using digital technology in the workplace, the way that light reflects off their computer screens has become more important, because glare can make it difficult, if not impossible to see what is on them. Annoying if you are watching a dancing kitten video, potentially disastrous if you are reading commercially impactful financial data, medical information that could impact on a patient's diagnosis or the correct methods and answers to maths exam questions.

There are various ways to reduce the amount of glare in the workplace. Good lighting design from specialists is fundamental. Part of a professional lighting design proposal will be calculating the UGR (Unified Glare Rating). This is an objective measure of the risk that occupants of a building will experience glare.

In most situations, the lower the glare rating the better. International standards such as EN12464 recommend maximum UGRs for different situations. For example, UGR<19 is recommended for many office and classroom settings.

There are several steps that can be taken during the design of an installation to reduce



the UGR. Firstly, it is important to consider the position of the room's occupants in relation to the position of the light fittings. For example, in a classroom, lights should be positioned so that they are not in the direct line of the students' sight as they look towards the teacher.

Also, you may need to consider the choice of light fittings. If they are suspended, what is the optimum height to minimise glare? Would introduction of an uplight component reduce glare? Often, projecting light onto the ceiling will decrease the contrast between the fittings and the background.

For ceiling mounted fittings, consider choosing those with a narrower beam angle, which can reduce the luminous intensity. Although this could decrease the uniformity, lowering the wattage and adding more fittings can counteract this.

Consider using fittings where the light source or light emitting surface (such as the diffuser) is recessed. Generally, the deeper the recess the lower the risk of glare.

In summary, to reduce the UGR you need to take the following steps:

- Increase the background luminance
- Decrease the luminance of the

luminaire as seen by the viewer (narrow the beam angle or decrease the wattage)

- Angle the luminaires away from the viewer so they are not shining in their eyes
- Avoid positioning the fittings in the viewer's direct line of site

There are many light fittings on the market that purport to reduce glare, some of which do it more successfully than others. The best offer a variety of options to provide optimum flexibility for contractors and their customers. This includes, for example, a choice of diffusers, lenses and louvres, the flexibility to direct the light all down or in a mix of up and down, the ability to install not in straight lines or in different shapes and in different lengths.

While some of this advice might be glaringly obvious to experienced contractors, it rarely hurts to go back to basics and consider all the options to ensure that the best fittings are chosen for any given situation and project.

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