

WELDING HELMETS: THE OPTIMAL EQUIPMENT FOR A BETTER VIEW

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Only the optimal view on the work piece guarantees a good welding work result. Welding helmets can provide the full perspective due to the properties of their viewing windows. Automatic high-quality welder protection filters achieve the best results.

When it comes to the personal safety equipment, the main focus is first and foremost the safety of welders. Welding helmets shall protect them from "burning" their eyes by looking at the electric arc light. This is the most important task of the welding masks. The welders however, above all those who are working professionally and permanently on the work pieces, are especially entitled to be granted the quality of view.



Therefore, during the development of welding helmets not only the size of the protection filter, but also the excellent view through the filter is of great importance. The optical classification is representative for the rating of view quality. 1/1/1/1 are the best values that a welding helmet may achieve in this regard. These values represent the optical quality, light diffusion, homogeneity and angle dependence. But only very few welding masks achieve this values. Especially when it comes to the angle dependence, in most cases the values must be deducted.

In professional usage area there are viewing windows with automatic welder protection filter, in short ADF for automatic darkening filter. Their advantage in comparison with traditional protection glasses consists in automatic darkening a few milliseconds after the ignition of the electric arc. An ADF is made of four main components:

1. an ultraviolet and infrared filter in order to shield from invisible, harmful emissions,
2. a liquid crystal display (LCD) in order to darken the visible light according to the protection levels,
3. a photocell in order to detect the ignition of an electric arc as well as
4. an electronic part that switches the LCD for blank mode using a sensor signal.

But what do these four values mean and what distinguishes the ADF technology in terms of the view on a work piece?

1. Optical quality: High-quality ADF guarantees an unlimited view on the work piece. Light rays are not impaired, on the contrary to ADF viewing windows of lower quality.
2. Light diffusion: Light rays are not broken when they hit against the welding helmet. Thanks to this there is no diffusion of light and the view remains further undiluted.
3. Homogeneity/translucency oscillation: High-quality ADF guarantees a homogeneous quality of translucency throughout the whole viewing window.
4. Angle dependence of translucency: If a welding helmet also achieves the value 1 regarding the angle

dependence, the field of vision also guarantees the maximum, uniform viewing area through the viewing window. Due to the bigger angle the high-quality ADF provide the optimal view also through the edge area. On the contrary, the uniform viewing area of the usual ADF viewing windows is smaller.

