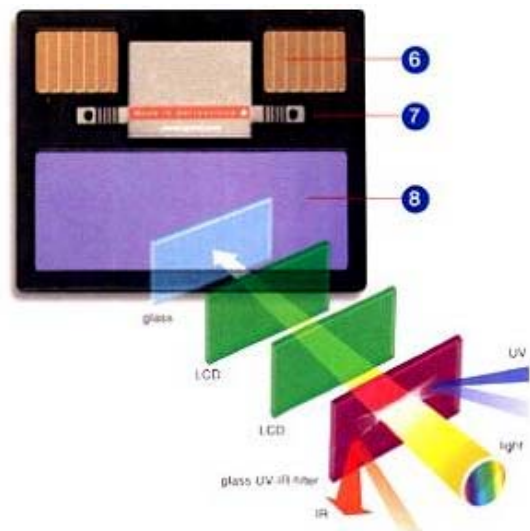


## TECHNICAL BRIEF

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### Shutter LCD Technology and Applications

So-called "shutter LCDs" are mainly used for high-end "auto-darkening welding helmets" and "auto-darkening welding filters". Due to the unique technology (see below), the number of LCD manufacturers that can fabricate such displays can be counted on one hand, and AZ Displays belongs to that number. "Shutter LCDs" are also designed for 3D goggles (!!). Implementation of LCD-based goggles instead of polarizer-based glasses, enables end-users achieve a crisper 3D effect while watching 3-D content projected on a movie theater screen or even computer monitor. Thus, "Shutter LCD" based goggles can be used for 3-D viewing either in special movie theaters or with wide-screen gaming computers.



Both applications, welding shutters and viewing goggles, use the same type of LCD. Its unique feature is mainly in the mixture of liquid crystal fluid itself. The displayed content of such displays is normally just **one big pixel** that covers the entire viewing area. But it is the LC material with properties carefully configured by AZ Displays experts that allows the display's only pixel **turn ON and OFF at a high (very high for passive TN displays) speed**. That is why we also call it "the fast-switching fluid". Switching ON and OFF at high speed (which "opens/closes" displays to and from their transmissive mode) helps bounce off most of the harmful light in welding shutters and split the image in two to create a 3D effect in goggles.

