Technology fighting the sun

Success factors for sunlight readability

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Visibly yours

Workstation operators are very familiar with the problem of sunlight readability. Also inside vehicles, intruding sunlight can completely wash out the display, and important, life-critical information can get lost in a reflected glare. If the reflected light is greater than the display's emitted light, the display is washed out in sunlight. The display still is there, but the visual contrast has dropped to zero, so the information is now unreadable.

Barco has designed its **TX vehicle displays** for readability in the harshest sunlight environments. Let's see how they perform on a more than average sunny day at Barco's headquarters in Kortrijk, Belgium.

Barco's TX display put to the test

The circumstances are perfect. On a sunny afternoon in June, twelve Barco associates met outside, to see whether they can still discern all necessary information presented on three Barco displays.

In an ambient light of **80,000 to 100,000 lux**, which represents a more than average sunny day, all Barco displays were readable and presented a **contrast ratio** of **more than 3:1**.

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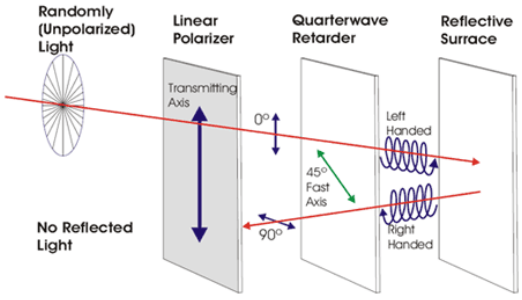
Let's see which technologies give Barco's TX display that superior sunlight readability:

- **LED backlighting system**: The TX display series features high-bright LED backlight technology, providing operators with exceptional image performance in high ambient light conditions.
- **Low reflection touch screen:** The TX display has a circular polarizer touch screen which eliminates reflections. The circular polarizer is created by combining a linear polarizer with a quarter-wave retardation film. Unpolarized light passes through a linear polarizer and becomes polarized in the direction



of the polarizer's axis. The light then passes through a quarter-wave phase retardation film and becomes right-circularly polarized. Circularly polarized light changes orientation when it bounces off a surface, so the reflected light becomes left-circularly polarized. When the light passes through the quarter-wave film again, it reverts to linear polarization, but this time orthogonal to the original direction of polarization. The linear polarizer therefore blocks the reflected light.

- **Bonding**: The TX touch screen is bonded to the front glass, which in turn is also bonded to the LCD panel. The bonding material and hence the absence of air between LCD and the front glass makes sure that reflections are heavily reduced.