

MOISTURE SEALED PANEL LENSES FOR LEDs

VCC's new CMS Series lenses are designed to provide a means of protecting equipment from both drip or splash conditions while displaying panel or circuit board mounted LEDs.

The traditional methods of moisture sealing have been the use of bulky military style indicator lights requiring "O" rings, nuts and washers. While these units are effective, they do not provide aesthetics desired in today's modern equipment designs. As a result, engineers faced with the problem of moisture sealing are forced to design elaborate display panel windows with special gaskets. When limited by design funds, engineers have attempted to seal standard panel lenses or indicator lights with adhesives such as RTV or the like. These methods are very expensive in component hardware, extremely labor intensive and lack required aesthetics.



VCC's new CMS Series low-profile lens is equipped with a moisture sealing gasket. Tests by an independent environmental testing laboratory have shown that the lens provides an effective seal against splash and drip conditions. In addition to the water tests, the lens and retaining systems were tested up to 6Gs of shock and from 0 to 2000Hz of vibration. An operating temperature test from -40°C to +85°C and a UV test were also performed. The conclusions attained upon completion of these tests were that the CMS Series lens and the retaining systems used exceeded all test criteria.

The CMS Series consists of button-type lenses designed for mounting 5mm LEDs. These lenses have a smooth, clean look with a convex shaped surface protruding a mere .080" above the panel. This design minimizes the potential problem of snagging, interference or physical damage that might result from outside agencies such as clothing, jewelry, tools, etc.

Installation is accomplished by inserting the lens through a panel hole. A retaining ring is pressed onto the back of the lens, compressing the seal between the panel and the lens. This allows the PCB mounted LED to be moved easily in or out of the lens. The circuit board is now completely independent of the display panel, simplifying its installation or removal for assembly or repair. The integrity of the sealing lens remains intact. In addition, the lens is also designed to be used in conjunction with VCC's panel mounting LED interconnect system.

The new CMS lenses greatly increase the aesthetics of the display panel. With their use the viewing angle of the 5mm LED is increased considerably. The low-profile design greatly enhances the light output of the LED by significantly reducing the ambient light effect upon the lens. Use of the lens with a non-diffused LED increases the viewing angle from 35 degrees up to 180 degrees, a 400% change. When used with a diffused LED this angle increases from 90 degrees to 180 degrees, a 100% change. These increases in viewing angle are the result of the use of a convex shaped lens in conjunction with fresnel rings.

The CMS Series low-profile, button-type lenses are constructed of optical quality, U.L. listed, polycarbonate plastic in six colors including red, amber, green, yellow, blue and water clear. The seal is a medical grade 40 durometer thermoplastic material produced by J-Von.