

## UL Recognized and UL Listed: What's the difference?

### Application Note



Thermal imaging or infrared imaging has become commonplace in most daily plant operations. As the number of infrared scans increases, so too does the exposure to and risk of arc flash. Enclosures must be opened to scan with infrared (IR) and doing so greatly increases the likelihood of an arc flash explosion. IR windows can mitigate this risk by allowing infrared scans to be performed without opening enclosures, virtually eliminating the risk of an arc flash.

While the reasons to install IR Windows are quite clear, a common question posed by those considering the installation of IR Windows into UL Listed switchgear is 'Won't the UL Recognized IR Window de-rate my UL Listed switchgear?' The misconception is that UL Recognized products are somehow inferior to UL Listed products. This is not true.

UL Listed products are 'end products' or products that stand alone and are not designed to

be included as a component in another product. A computer or electrical switchgear are examples of end products that you buy and use as-is.

In contrast, UL Recognized products are considered to be components of an end product. A UL Recognized product is not considered to be an end product in and of itself, as it must be incorporated into an end product in order to be used with any real purpose. For instance, a computer micro-chip is UL Recognized because it would never be used on its own; it would always be installed in to a computer. Similarly, electrical fuses are UL Recognized because they are designed to be used in electrical control systems.

IR Windows are UL Recognized instead of UL Listed because IR Windows serve no real purpose by themselves. They need to be installed into an electrical enclosure, or onto something, to be used for their intended purpose. All Fluke IR Windows are tested to meet the UL50V Infrared Viewport Standard. This standard outlines the necessary testing criteria to achieve UL Recognition.

To further this point, let's take a look at how electrical switchgear manufacturers use IR Windows.

A switchgear manufacturer has various types of UL Listed switchgear. In order to maintain that UL Listing, the IR Window is added to the switchgear manufacturer's UL Listing or file as a



UL Recognized component. This allows the manufacturer to install IR Windows into their switchgear during assembly, prior to delivery to the customer without violating their UL Listing. As long as the IR Window is installed according to the IR Window manufacturer's instructions (instructions that are approved by UL during the UL50V testing), the UL Listing of the switchgear is maintained.

**Sources:**  
General: [www.ul.com](http://www.ul.com)

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