IRISS®

Infra Red Inspection Support Solutions

What Certifications are relevant to Infra Red Viewing Panes?

Currently, specific certifications for infrared window by a recognized body (UL, IEEE) do not exist. The following certifications are used by manufacturers to provide confidence that the IR Viewing Pane is suitable for use in Electrical Switchgear and Motor Control Centres.

ANSI/UL 508 – Scope: These requirements cover devices rated 1500 volts or less. Industrial control equipment covered by these requirements is intended for use in an ambient temperature of 0 - 40°C (32 - 104°F) unless specifically indicated for use in other conditions. IRISS® VPFR and VPFC ranges are both recognized to this standard.

UL 508A – Scope: These requirements cover industrial control panels intended for general industrial use, operating from a voltage of 600 volts or less. This equipment is intended for installation in ordinary locations, in accordance with the National Electrical Code, ANSI/NFPA 70, where the ambient temperature does not exceed 40°C (104°F) maximum. IRISS® VPFR and VPFC ranges are both recognized to this standard.

UL746c – Scope: A standard identified by UL to test the performance of the viewing optic. This standard identifies the ability of a window to withstand impact and flame. UL746c gives an exemption to IR crystals over 1.4mm in thickness as they are treated as glass. However no IR crystal (except Sapphire which is SWIR only) can pass the impact test.
The IRISS® VPFR range are the only infrared inspection Viewing Pane lens system in the world that have passed this test.

IEEE C.37.20.2 section a.3.6: This is the IEEE standard and test procedure for viewing panes mounted in medium and high voltage electrical equipment (up to 38kv metal clad and 72kv station type gear). It requires the viewing pane to withstand impact and load. **Both** sides of the viewing pane are subjected to the impact and load test and neither side can crack, shatter, or dislodge. IRISS® VPFR is the only infrared viewing pane in the world that meets this standard while being greater than NEMA 4 open and closed. Some insist that if the cover over the viewing pane can withstand the impact then in fact the window meets the standard. Note that the standard specifically identifies that the viewing pane must withstand the impact and load from both sides (inside and outside) and the viewing pane must not "crack, shatter or dislodge. No infrared crystal (except Sapphire which is SWIR only) can withstand the impact requirement of this test. You can use a mesh or a grill as the viewing material and it will pass the impact and pressure test however it does not provide a NEMA 4 seal.

Lloyds of London Type Approval: Lloyd's Register Type Approval is an impartial certification service providing independent third-party Type Approval certificates attesting to a product's conformity with specific standards or specifications, and verification of an appropriate production quality system. It is based on a design review and typetesting or, where typetesting is inappropriate, a design analysis. There is growing international awareness of the importance of third-party certification. The IRISS® VPFR and VPFC ranges were the first IR viewing pane in the world to be Lloyds Type Approved

IP65/NEMA 4: This is an ingress/integrity proof standard. IP65 is issued by an independent test facility while NEMA is a self certification. IRISS® VPFR and VPFC models are certified IP65/NEMA 4 both open and closed. You should typically install viewing panes with only an equal or higher IP/NEMA rating than the enclosure it is going into.

Arc Rating – Arc Testing: An arc rating can only be given to a completed assembly and not to a single component within that assembly. Electrical cabinet designs and dimensions are infinite and we therefore CAN NOT or MUST NOT use the data from one cabinet design to another design unless they are identical in every way.
This is the reason why components can never carry a generic arc rating and must be subjected to industry standard tests to confirm that they conform to the minimum required level of mechanical strength and environmental properties for the electrical cabinets and assemblies which they are going to be fitted into.
A recent article written by Mr. Ray Jefferis, a senior technical manager at ASTA BEAB regarding Arc Flash Testing concludes that:

"The Arc flash testing conducted at many factories is a going-through-the-motions exercise rather than and effective and beneficial test.

To get the most out of flash testing, each product must be evaluated on its own merits and in the right test regime implemented and maintained accordingly – making the tests cost effective, worthwhile and meaningful"

For more information on standards visit www.iriss.com or contact your local IRISS supplier

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