

# IRISS<sup>®</sup>

## PRODUCT SOLUTIONS



**SAFE • EFFICIENT • SIMPLE**

# IRISS for Safer, More Efficient Electrical Inspections

Infrared (IR) cameras are essential tools for predictive maintenance – but they can only inspect what they can get to. IR windows from IRISS give you a quick, efficient way to safely inspect electrical equipment without exposing you to the risk of a hazardous arc flash incident involved with opening the electrical cabinet.

**Depend on IRISS for All of Your IR Inspection Support Needs to Save You Time and Money**

## IRISS IR Windows

- **Safe**- Perform IR scans without opening enclosures – virtually eliminating arc flash hazards.
- **Efficient**- Inspect a panel in seconds, not 30+ minutes.
- **Simple**- Ensure only authorized personnel gain entry.

## Inspect More Often, on Your Schedule with instant Access

- Requires only one person vs. three
- Minimizes need for cumbersome PPE
- Guarded condition of electrical assets reduces arc flash triggers

IRISS solutions are not limited solely to IR windows – IRISS founded Safety and Maintenance Academy of Reliability Technologies™.



IRISS Global Headquarters

# IRISS Polymer IR Windows Offer NFPA 70E Compliance without Compromising Product Performance

## Certified

Comply with UL, CSA, IEEE, IP65/NEMA 4/, BSI, ABS, and Lloyds of London Certifications.

## Visual, UV, IR Inspections All Through One IR Window

Poly-View System™ technology available in Platinum Series and Custom Solutions products.

## Versatile

Works with all IR cameras for low, medium, and high voltage equipment located indoors or outdoors.

## Fixed and Stable Transmission (FAST)

Eliminate need to recalculate transmittance on a regular basis.

## Durable Design

Impact-resistant industrial-grade optics with reinforced grills compliant with fail-safe IP2x standards.

## Protected by Our Unconditional Lifetime Warranty

IRISS polymer optics do not degrade when exposed to acids, alkalis, UV, moisture, humidity, vibration, and high frequency noise – a guarantee no crystal IR window can provide.

## Wide Range of Product Solutions



### CAP Series

Larger Area Provides Easier Inspections



### VP Series

Traditional Round with Modern Technology



### Platinum Series

Safest, Easiest, and Most Efficient IR/ Visual Inspections Available



### Custom Solutions

Designed to Fit Your Application (Shape, Color, Private Label, and More)

# CAP SERIES

## Save Time, Save Money, Stay Safe

The durability and proven transmission stability of our patented reinforced polymer is the cornerstone of the **CAP Series**. Traditional round crystal infrared (IR) windows are made in 2" – 4" diameters. This is primarily because increasing the diameter and maintaining the thickness exponentially increases the fragility of the crystal, making larger sizes weaker and cost prohibitive.



The entire **CAP Series** was designed to comply with all mandatory impact, load and flammability requirements – industrial standards NO crystal or non-reinforced polymer IR window can possibly meet. Available in 6", 12" and 24" widths, they allow inspection of multiple components through one window, reducing the total number of windows required, associated installation time, and costs.

**PROTECTED BY OUR UNCONDITIONAL LIFETIME WARRANTY**

**Cap Series Datasheet**

# CAP-V SERIES

## IR Window and Viewing Pane Combination

Visual inspections of electrical components are essential. The **CAP-V Series** adds a viewing pane that allows visual and IR inspections to be completed simultaneously.

Covers are also available in the **CAP-V Series** as they are useful in areas of high traffic and protect from impacts, flying debris and dust:

- **CAP-VC** offers locking covers for your IR window
- **CAP-VCH** offers a single locking cover for both IR window and visual viewing pane



If you would like a larger viewing and transmissive area, we encourage you to look at the Platinum Series CAP-T. The patented, transparent Poly-View System™ polymer enables the entire IR window to provide the dual purpose of allowing visual inspections of the electrical components.

**PROTECTED BY OUR UNCONDITIONAL LIFETIME WARRANTY**

**Cap-V Series Datasheet**

# CAP-VIZ SERIES

## When a Clear Viewing Pane is All You Need



Industrial applications require solutions that meet numerous criteria where safety and performance are of the utmost importance. To accommodate the needs of industrial applications, IRISS manufactures a clear viewing pane window in 6", 12" and 24" sizes and comes with or without a cover.

The load resistant, window is made from glass fiber reinforced Makrolon® polycarbonate that is an amorphous, thermoplastic molding compound. Makrolon is noted for its high light transmission, high temperature resistance, high impact strength, high creep modulus, superior dimensional stability and good electrical insulation properties.



The high rigidity, clear viewing pane carries many of the same certifications as the other IRISS IR windows including UL, CUL, CSA, ABS and Lloyd's of London.

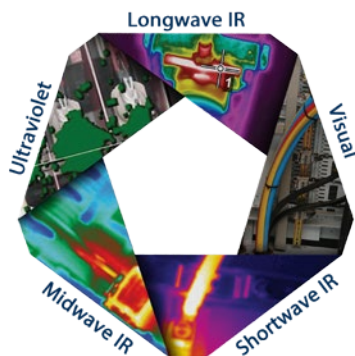
**PROTECTED BY OUR UNCONDITIONAL LIFETIME WARRANTY**

**Cap-VIZ Series Datasheet**

# PLATINUM SERIES

## The Next Generation of IR Windows

The Platinum Series utilizes our exclusive Poly-View System™. This industrial-grade polymer allows inspection in the visual, UV and shortwave/midwave/longwave IR spectrums making it the clear choice when compared to other IR window optics. All products in the Platinum Series are designed with a patented reinforced grill, exceeding high voltage and switchgear viewing pane standards.



### Features:

- Largest visual/IR combination window available is made possible with this polymer
- Durable, fully impact-resistant, industrial-grade optics safe for use in food and pharmaceutical applications
- Strong and reliable polymer will not degrade over time
- Proven compatibility with acids, alkalis, UV, moisture, humidity, vibration and high frequency noise
- Reinforcing grills comply with IP2x standards for safe maximum hole size and fail-safe design
- Fixed and Stable Transmission (FAST)





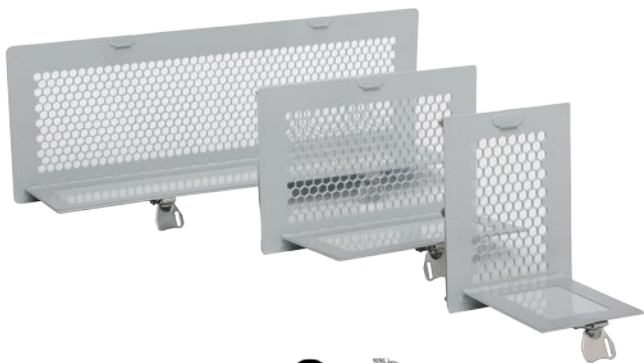
# PLATINUM SERIES

## CAP-CT

**Safest, Easiest and Most Efficient IR/Visual Inspections Available**

The **Platinum Series CAP-CT**

features the largest Poly-View System™ transmissive viewing area available and features an optional cover with locking catches. Surpassing even the original industrial-grade CAP Series, the **Platinum Series CAP-CT** has the largest visually clear IR transmissive viewing area available.



Poly-View™

The exclusive industrial-grade reinforced Poly-View System™ polymer allows any thermographic camera to monitor completely undisturbed assets inside electrical equipment.



The larger rectangular viewing area provides an unparalleled field of view when compared to traditional round IR windows. Available in size of 6", 12", 24".

The **Platinum Series CAP-CT** is also available without a cover as the **Platinum Series CAP-T**.

**PROTECTED BY OUR UNCONDITIONAL LIFETIME WARRANTY**

**Cap-CT Series Datasheet**



# VPFC SERIES

## Crystal IR Window

Calcium Fluoride ( $\text{CaF}_2$ ) has long been used in research applications. It performs best in controlled environments where humidity, chemical exposure, vibration and high frequency noise are minimized or eliminated. **VPFC Series** (Viewing Pane Fixed Crystal) 2", 3", 4" infrared (IR) windows are specially coated to reduce the transmission drift due to moisture/humidity. However, industrial users are strongly encouraged to investigate the VPFR and Platinum VPT Series of industrial-grade IR windows which are specifically designed for stability in harsh industrial environments and are protected by our unconditional lifetime warranty.



When purchasing crystal windows, ask for the Material Safety Data Sheet (MSDS) to ensure that the crystal does not contain hazardous substances. Some window manufacturers use crystals made of Barium Fluoride ( $\text{BaF}_2$ ), a toxic substance, especially hazardous to the food and beverage industry.



**Note: No crystal IR window meets impact requirements for switchgear above 1kV (IEEE C37 20.2.a.3.6: Impact and Load).**

# INNOVATION TIMELINE

**1997**  
VPC Series  
(Aluminum Housing)



**2003**  
VPFR Series  
(IR Polymer Featuring  
Fixed and Stable  
Transmission with  
Nylon Reinforced Grill)



**2007**  
VPFR Series  
(2 Nylon Coated  
Aluminum Grills)

IR-ID Labels

VP-12-US  
(Ultrasound Port)



VPC Series  
(Plastic Housing & Cover)



**2000**

VPFR Series  
(Nylon Coated  
Aluminum Grill)



**2005**



Transmissive Panel  
Cover (TPC)

**2008**

2013

IRISS, Inc. New Global Headquarters



2011

VPIC (Internal Cover)  
and Certification  
from UL and ABS



CSA

Certification  
C22.2 No.14-10



UL  
E 248443



2009

CAP Series



**SMART™**

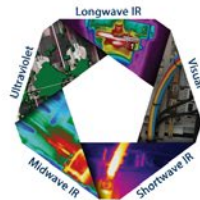
Platinum Series  
(Featuring Poly-View  
System™)

SMART™ Training

US Patent

Private Label and  
Easy-Grip™

2012



Custom Solutions

2010



# VPFR SERIES

## The Original Industrial-Grade IR Window



Industrial-grade **VPFR Series** (Viewing Pane Fixed Reinforced) infrared (IR) windows enable thermographers to survey critical electrical applications efficiently and safer than ever.

NFPA standards recommend IR inspection under fully energized conditions. However, PPE requirements, panel cover removal and reinstallation are time consuming and costly. Use of the **VPFR Series** IR windows nearly eliminates the risks associated with IR electrical inspection by providing companies with a non-invasive, closed-panel inspection methodology.

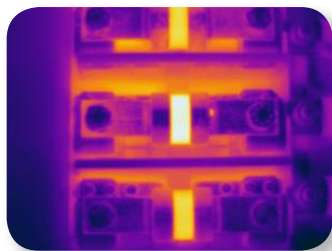


Image taken through a VPFR Series IR Window

Thermographers using IR windows are never exposed to energized conductors or circuit parts and are not engaged in risk increasing behaviors. Therefore, elevated levels of PPE for invasive surveys are not required, minimizing survey time while maximizing safety. The **VPFR Series** is also available with an Easy-Grip™ stainless steel cover as the **VPFR-M Series**.



**PROTECTED BY OUR UNCONDITIONAL LIFETIME WARRANTY**

**VPFR Series Datasheet**

# PLATINUM SERIES

## VPT

### Versatile Round Window

An evolutionary step in infrared (IR) windows, the **Platinum Series VPT** utilizes our exclusive Poly-View System™ technology enabling visual inspections, traditional IR inspections utilizing cameras across the entire IR spectrum, and UV inspections with a corona camera. The **Platinum Series VPT** IR windows are industrial-grade with a patented reinforced grill that exceeds high voltage switchgear viewing pane standards and are available in 2", 3" and 4".



Poly-View™



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**VPT Series Datasheet**



# VP-12-IR & VP-12-US

## SERIES

### Small Inspection Points Supporting an Essential Multi-Technology Approach

#### VP-12-IR

The **VP-12-IR's** 12mm, transmissive area was designed for tight areas, small targets or for use with infrared (IR) cameras with smaller, wider angle lens systems. The polymer lens material and switchgear-grade plastic assures compliance by maintaining an IP65/ NEMA 4 seal whether open or closed. This keeps your equipment in a closed and guarded condition, allowing your thermographers to work safely and efficiently.



#### VP-12-US

A standard and systematic approach to data collection is essential to establishing a repeatable and reproducible condition-based monitoring program. **VP-12-US** standardizes location and method for accessing consistent and quality acoustic data regardless of ultrasound technician experience or enclosure rating. Easily identify potentially hazardous faults such as arcing, tracking and corona in electrical distribution systems and switchgear.



**PROTECTED BY OUR UNCONDITIONAL LIFETIME WARRANTY**

**VP-12-IR Series Datasheet**

**VP-12-US Series Datasheet**

# CUSTOM SOLUTIONS

## Customize Your IR Window

IRISS is the only global infrared (IR) window manufacturer with solutions for unique applications providing you IR windows that fit YOUR needs!

IRISS understands that not every application is suitable for a standard IR window. The patented IRISS, reinforced optics is flexible and can be manufactured in an infinite number of shapes and sizes. This allows the IR industry safe access to energized targets.

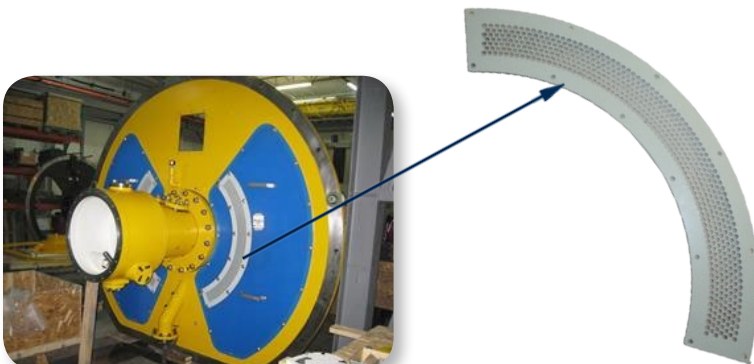
### Materials for Your Exact Requirements

- Any Size or Shape
- Housing Materials
- Polymer or Crystal Optics
- Gaskets
- Locking Devices
- Color
- Private Label

Perform IR, UV and visual inspections safely and efficiently with your customized IR window!



To learn more about our Custom Solutions, please email [marketing@iriss.com](mailto:marketing@iriss.com) to receive our Customs Solutions brochure



**Custom Solutions Datasheet**



# PRODUCT COMPARISON

## Standard Features

Shape: Square (S), Round (R), Custom (C)	S	S	S	S		S	S				S	R	R	R	R	VP-12-IR	Custom Solutions
IR Optics: Opaque (O), Poly-View (V), Calcium Fluoride (CF), Custom (C), Makrolon (M)	O	O	O	O	M	V				V		O		V		O	C
Visual Optics: Poly-View (V), Calcium Fluoride (F), Custom (C), Makrolon (M)		M	M	M	M	V				V				V	F		C
Body Material: Aluminum (A), Switch-Gear Grade Nylon 6 Plastic (S), Custom (C)	A	A	A	A	A	A					A	S	S	S	S	S	C
Cover Material: Aluminum (A), Switch-Gear Grade Plastic (S), Easy-Grip™ Stainless Steel (E), Custom (C)			A	A	A						A	S	E	E	S	S	C
Lockable Cover			X	X	X						X	X	X	X	X	X	X
Reinforcing Grill (Complies with IP2x Standard)	X	X	X	X		X				X	X	X	X	X		X	X
Fixed and Stable Transmission (FAST)	X	X	X			X				X	X	X	X	X			X
Proven Compatibility with Acids, Alkalies, UV, Moisture, Humidity, Vibration and High Frequency Noise	X	X	X	X	X	X					X	X	X	X		X	X
Impact-Resistant	X	X	X	X	X	X					X	X	X	X		X	X
Fitting Instructions and Template Included	X	X	X	X	X	X					X	X	X	X	X	X	
Electronic Dimensional Drawings Available	X	X	X	X	X	X					X	X	X	X	X	X	X
Unconditional Lifetime Warranty	X	X	X	X	X	X					X	X	X	X		X	

## Customizable Features

Private Label	X	X	X	X	X	X				X			X	X	X	X	X
Color	X	X	X	X	X	X				X			X	X	X	X	X

Contact [info@iriss.com](mailto:info@iriss.com) To Obtain More Information On Custom IR Windows That Meets Your Exact Requirements!

Inspection Capabilities

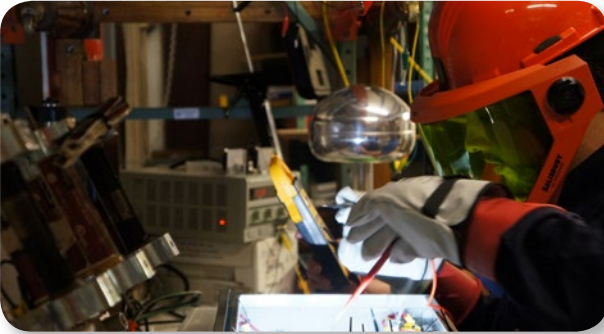
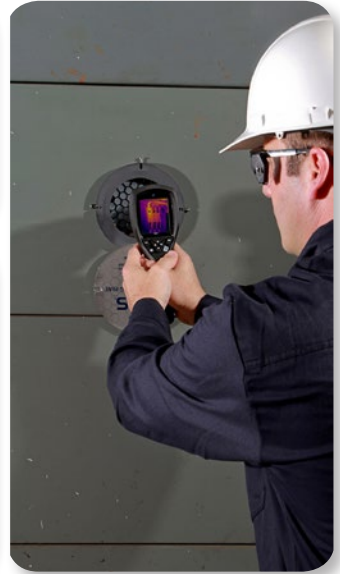
Inspection Capabilities	Longwave IR (Compatible with All Brands of IR Camera)	CAP	X	CAP-V	X	CAP-VC	X	CAP-VCH	X	CAP-VIZ		Platinum Series CAP-T	X	Platinum Series CAP-CT	X	VPFR	X	VPFR-M	X	Platinum Series VPT	X	VPFC	X	VP-12-US		VP-12-IR	X	Custom Solutions	X
	Midwave IR (Compatible with All Brands of IR Camera)		X	X	X	X	X					X	X	X	X	X	X	X	X	X	X	X			X	X	X		
	Shortwave IR (Compatible with All Brands of IR Camera)		X	X	X	X	X	X	X			X	X	X	X	X	X	X	X	X	X	X			X	X	X		
	Ultraviolet- UV (Compatible with All Brands of Camera)											X	X	X	X					X	X	X					X	X	
	Allows Visual Inspection			X	X	X	X	X	X	X	X		X	X	X					X	X	X					X	X	
	Allows Laser Pointers & Illumination Shine Through			X	X	X	X	X	X	X	X		X	X	X					X	X	X					X	X	
	Ultrasound (Compatible with Any Brand)																							X				X	
	Low/Medium/High Voltage Applications			X	X	X	X	X	X	X	X		X	X	X		X	X	X	X	X			X				X	

Certifications

IP65/NEMA 4: Closed	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	*
IP65/NEMA 4: When in Use	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	*
Impact and Load: IEEE C37 20.2.a.3.6 & UL 1558	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	*
Industrial Control Equipment: CSA Standard C22.2 No. 14-10	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	*
American Bureau of Shipping (ABS) Certificate # 11-HS807296& Lloyds of London Type Approval	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	*
Environment: IP65, UL 50 E & NEMA	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	*
Impact and Flammability: UL 746C & UL 945VA	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	*
Construction: UL 508, 508A & 50V* (50V N/A for CAP-VIZ)	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	*
BSI ISO-9001 & Quality & Management	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	*
IP2x Standard for Maximum Hole Size Fail Safe Design	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	*

\* All components used in Custom Solutions are certified and designed with the same integrity & durability as our standard products.

# ABOUT SMART



## IRISS Believes Working SMART Is Not Hard!

The **S**afety and **M**aintenance **A**cademy of **R**eliability **T**echnologies™ offers several unique training and certification classes that provide you and your company the knowledge and practical experience necessary to complete your electrical inspections safely and efficiently.

**SMART courses train your personnel to perform inspections with leading safety practices enhancing**



### **Hands-On Experience**

Our courses are designed to provide you the knowledge to perform.

### **Peace of Mind**

Let our experienced thermographers and trainers support your success.

### **Return on Investment (ROI)**

Invest wisely in your equipment and personnel training.

# 10 Things You Need To Know About Infrared Windows

## Want to Learn More About IR Windows & Applications:

The use of IR windows to facilitate safer, more efficient inspection of energized electrical equipment has outpaced the infrared industry in general. Today, switchgear manufacturers regularly install IR windows at the point-of-manufacture. This has generated additional issues for firms to retrofit existing equipment. As the use and application of IR windows continues to gain acceptance, the diversity of applications will continue to prompt an even wider range of questions. The tips and technical details provided in this eBook take into effect not only the engineering and scientific issues pertaining to IR windows, but also the practical knowledge that comes with years of industry experience.

1. IR Window Applications
2. Optics: Pro's & Con's
3. Importance of Emissivity
4. How to Calculate Transmission Rates
5. What Size IR Window You Need
6. Installation Procedures
7. Standards & Certifications
8. Benefits of IR Windows
9. Risk Assessment
10. Business Benefits



To receive a Free eBook on 10 Things You Need to Know About Infrared Windows, send an email to [marketing@iriss.com](mailto:marketing@iriss.com).



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