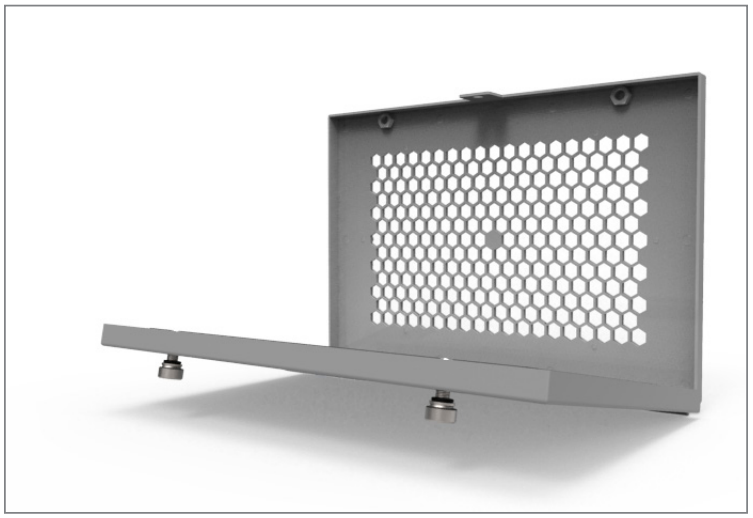

1. Product Name

- CAP-ENV Series Infrared and Visual Inspection Window

2. Manufacturer

IRISS Inc.
10306 Technology Terrace
Bradenton, FL 34211
Phone: 877-704-7477
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3. Product Description

CAP-ENV Series Infrared and Visual Inspection Windows

The CAP-ENV Series has the largest visually clear infrared (IR) transmissive viewing window area. The exclusive patented, industrial-grade, reinforced Poly-View System™ polymer can be used by any make or model of infrared and ultraviolet camera.

Basic Use

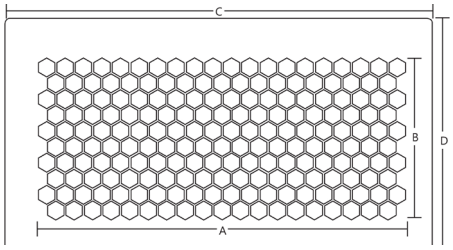
The essential element for electrical safety is to protect personnel by ensuring that all equipment is in an electrically safe condition before any maintenance tasks are commenced. The CAP-ENV Series are primarily used as viewing windows that allow essential maintenance tasks such as infrared, ultraviolet and visual inspections of electrical equipment to be completed whilst the energized equipment remains closed and in a safe condition ensuring workers are never exposed to the dangers of arc flash or electrocution.

Materials and Finishes

The window housing and covers are constructed using 304 stainless steel with 316 stainless steel hardware. Custom materials are also available on request. Gasket material is HT-800 closed cell, medium density silicone.

Infrared lens material is a reinforced visual, UV and IR transmissive polymer complying with UL and CSA requirements for infrared inspection windows.

Table 1—CAP-ENV Dimensions



	Window Dimensions [inches (mm)]		Overall Dimensions [inches (mm)]	
Model	A	B	C	D
CAP-ENV-4	3.81" (96.8 mm)	3.85" (97.7 mm)	6" (152.3 mm)	6" (152.3 mm)
CAP-ENV-6	3.6" (91 mm)	5.9" (150 mm)	6.3" (160 mm)	8.6" (218 mm)
CAP-ENV-12	9.3" (236 mm)	5" (127 mm)	12" (305 mm)	8.1" (206 mm)
CAP-ENV-24	20.9" (530 mm)	5.9" (150 mm)	24" (610 mm)	8.6" (218 mm)

Benefits

- Durable
- Fixed and stable transmission (FAST)
- Can be used both indoors and outdoors
- IR window construction materials and colors can be customized to clients specification
- The larger rectangular viewing area provides an unparalleled field of view when compared to traditional round IR windows.
- The exclusive industrial-grade, reinforced Poly-View System polymer allows any model of IR and UV camera to monitor completely undisturbed energized components inside electrical equipment
- The CAP-ENV offers locking covers for areas of high traffic and protection from impacts, flying debris moisture and dust
- Water and dust ingress complies with IEC IP67 and NEMA 250 Type 6

Product Limitations

Not recommended for use in temperatures less than -40 degrees F (-40 degrees C) or greater than 617 degrees F (325 degrees C). for temperatures outside of these requirement speak with IRISS directly.

Dimensions

See Table 1.

4. Technical Data

Applicable Standards

American Bureau of Shipping [ABS] Approved

- Certificate No. 11-HS807296-PDA

ASTM International (ASTM)

- **ASTM F2281-2004(2012)** Standard Specification for Stainless Steel and Nickel Alloy Bolts, Hex Cap Screws and Studs, for Heat Resistance and High Temperature Applications

Canadian Standards Association (CSA)

- **CSA-C22.2 No. 14-13** Industrial Control Equipment – 12th Ed.
- **CSA-C22.2 No. 94-M91** Special Purpose Enclosures – 4th Ed.
- **CSA-C22.2 No. 94.1-07** Enclosures for Electrical Equipment
- **CSA-C22.2 No. 94.2-07** Enclosures for Electrical Equipment

Det Norske Veritas (DNV) GL

- **P261.1E** Maritime, Vessel and Offshore Applications Approved

Institute of Electrical and Electronics Engineers (IEEE)

- **IEEE C37.20.2.a.3.6** mandatory impact and load test requirements for visual viewing panes for Metal-Clad and Station Type Cubicle Switchgear

International Electrochemical Commission (IEC, IP Code)

- **IP67/NEMA 6** Enclosures constructed for either indoor or outdoor use to provide a degree of protection to personnel against incidental contact with the enclosed equipment
- **IP22/IP2X** Minimum requirements for the design of electrical accessories for indoor use
- **ANSI/IEC 60529-2004 (R2011)** Degrees of Protection Provided by Enclosures (IP Code 65)

International Standards Organization (ISO)

- ISO 9001:2008 Certificate No. 74 300 3797

Lloyd's of London

- **Certificate No. 05/00026**

National Electrical Manufacturers Association (NEMA)

- Type 1
- Type 3: Viewport may be marked Raintight
- Type 3R: Viewport may be marked Rainproof
- Type 2, 5, 12, 12K and 13: Viewport may be marked driptight or Dusttight.

Ratings above are when installed on a flat surface of a suitably rated enclosure.

Underwriter's Laboratories (UL) and Canadian Underwriters Laboratories (cUL)

- **UL 50V** Infrared Viewports
- **UL 50E** Enclosures for Electrical Equipment, Environmental Considerations
- **UL 746C** Polymeric Materials - Use in Electrical Equipment Evaluations
- **UL 1558** Metal-Enclosed Low-Voltage Power Circuit Breaker Switchgear

- **UL 508A/ANSI UL 508A** Industrial Control Panels
- **UL 94-2013** Tests for Flammability of Plastic Materials for Parts in Devices and Appliances
- **UL 746A-2012** Polymeric Materials - Short Term Property Evaluations

Arc Containment Tested

- **IEC 62271-200** Arc Flash Spectest 1.1 Second Duration
- **IEC 60262271-200**: 63kA, 15kV for 30 cycles at 60Hz
- **IEC 60298 Appendix A**: 63kA, 15kV for 30 cycles at 60Hz
- **IEE C37.20.7 Type 2B**: 63kA, 15kV for 30 cycler at 60Hz

Environmental Considerations

IRISS Inc. uses recycled aluminum in the production of CAP-ENV Series frames.

IRISS Inc. uses recycled packaging materials for all IRISS product lines.

5. Installation

- Install CAP-ENV Series visual inspection window in accordance with the *CAP Series Installation Guide*
- Once an installation location has been selected, apply the supplied cutting template to the side of the panel where the window is to be fitted
- Using a center punch, mark all the fixing holes
- Use a 9⁄32 inch (7 mm) drill bit to drill the center punched holes and if using a nibbler, drill a pilot hole along line
- Cut appropriate sized hole to meet project requirements and CAP-ENV model being installed
- De-burr cut edges and peel away the remaining portion of the cutting template
- Treat all bare metal with a protective anti-corrosion coating before installing the CAP-ENV unit
- Place the body of the CAP-ENV in the panel hole and secure with 7⁄16 inch nuts
- Tighten nuts in accordance with the *CAP Series Installation Guide*

Delivery, Storage and Handling

Deliver CAP-ENV Series infrared visual inspection window and accessories in manufacturer's original packaging with project identification information clearly shown. Instruction for storage and handling will be provided upon shipment.

6. Availability and Cost

Availability

Standard stock sizes and materials are generally available within five days. Custom products are delivered within 10–15 business days. Contact IRISS Inc. directly for delivery times for products using custom materials or sizes.

Cost

Contact IRISS Inc. directly for material cost.

7. Warranty

Unconditional lifetime warranty for the period of the installation applies not only to the workmanship of the window housing but also applies to the durability and stability of the optic in the proposed environment.

8. Maintenance

Regular cleaning to ensure glazed area is clear. Little maintenance is required if the door is kept closed.

9. Technical Services

As well as offering the CAP-ENV Series in standard stock materials, IRISS Inc. will construct view windows or ports with custom materials to meet clients' needs.

10. Filing Systems

- CMD
- Additional product information is available from the manufacturer upon request