

**FLUKE®**

**COMPLIANCE** without compromise  
**SAFETY** without sacrifice  
**YOUR RESULTS MATTER™**



**ClirVu® Series  
IR Windows**



## Safety shouldn't be secondary



If Fluke has learned anything in more than 65 years, it's not to compromise quality in order to beat a competitor's price. Asking, "How well can we make it?" versus "How cheaply can we make it?" may not win price wars, but it has established Fluke as the standard of excellence, and the preferred name in test and measurement equipment.

## Compliance. The future is clear.

"Better safe than sorry," is becoming a modern mantra for companies who want protection from the physical and economic tragedies that can result from arc flash incidents.

If there's ever a problem, it won't be a question of whether or not you've done the minimums, but whether you've done as much as possible to protect your people. With Fluke IR Windows comes the confidence that when it comes to the safety of your people, you have not compromised.

- ✦ **Every time you open a panel cover, you expose yourself to the potential dangers of arc flash.**
- ✦ **99.9 % of all arc flash incidents occur when the panel door is opened. Eliminate that risk with ClirVu® IR windows.**

# Fluke ClirVu® IR Windows

Not just a better window  
—a clearer view.

## The solution

### Don't open the panel door.

Once a ClirVu® IR Window is installed, there's no more need to power down or remove panels—you may never have to open the panel door again. Inspections are conducted quickly, easily, and of course, safely. Decreasing risks of arc flash may also result in lower insurance costs.

Your greatest investment is not what's behind the panel, so when Fluke made the decision to manufacture infrared windows, our priority was to offer the ultimate protection for the electricians, engineers and inspectors who risk their lives doing their jobs.

At the same time, the quest for safety has led to numerous technological advancements resulting in faster installation and inspections. It's safe to say, ClirVu is all you need to be both compliant and more productive at your job.



**WARNING**  
TO MAINTAIN ENCLOSURE  
TYPE RATING, COVER  
MUST BE SECURELY LATCHED  
US PAT: [www.patentlabel.com/fluke](http://www.patentlabel.com/fluke)



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When a product far exceeds the minimum safety and performance standards, that's confidence.

# That's Fluke

## Fast installation with AutoGround™ design—less than 5 minutes.

Yes, five minutes. That's about how long it takes to install a Fluke ClirVu® CV Series IR Window, the only IR Window with AutoGround™. With its AutoGround design, Fluke has eliminated the need to separately ground each metal component of the window. The time saved and safety benefits from installation alone clearly make Fluke the preferred choice.

## Torture Tested™ to the highest arc blast test ratings

- IEEE C37.20.7: 63 kA Arc tested at KEMA
- UL 50/50E/50V, UL1558, IEC60529-1: IP67, IEC 60068, NEMA 4/12, CSA C22.2 NO. 14-13:2012, and CE
- Grounds instantly to metal enclosure with patent-pending AutoGround™ process
- Maintains panel arc test ratings up to 63 kA when properly installed

## Convenience at the turn of a key

ClirVu® IR Windows are designed with hinged covers that can be easily opened with the quarter turn latch or key to perform an infrared inspections. The covers also protect the windows from accidental exterior impact.



# It's time

## Save time with quick and easy installation —5 minutes or less!

- One technician
- One hole with standard Greenlee® punch
- Panel door does not need to be removed
- Grounds instantly to metal enclosure with patent-pending AutoGround™ process
- Maintains panel arc test ratings up to 63 kA when properly installed

1



Lock out-tag out

2



Punch hole

3



Attach and secure cover

Watch the video at [fluke.com/install](http://fluke.com/install)



## Can you afford not to install ClirVu® IR Windows?

Arc flash accidents can cost an employer in excess of a million dollars. Lost production, equipment and facility repair and replacement may just scratch the surface of costs. There's always the potential for lawsuits, skyrocketing insurance premiums, and staggering fines from OSHA (or other occupational safety bodies around the world). Of course, the monetary costs are overshadowed by serious injuries, or the loss of a valued employee's life. Fluke ClirVu IR Windows gives you and your company an extra layer of protection to avoid the tragedy of an arc-flash incident.

# Hierarchy of controls

Occupational Health and Safety Organization (OSHA) and the National Fire Protection Association (NFPA) recommend the system of Hierarchy of Controls to minimize or eliminate exposure to occupational hazards. OSHA and NFPA are United States organizations but the Hierarchy of Controls concept is relevant worldwide.

**Elimination/substitution**—removes a hazard all together or controls a hazard by substituting something in its place that would be non-hazardous or less hazardous.

**Engineering controls**—physical changes or modifications designed to eliminate or reduce hazardous exposure to equipment or a work environment. This is the preferred method for eliminating and reducing workplace hazards.

**Safe work practice controls**—safe work practices are designed to change the way a job is performed to remove the employee from exposure to the workplace hazard.

**Administrative Controls**—changes to include additional backup workers, breaks and the rotation of workers to reduce exposure to work hazards.

**Personal Protective Equipment**—protective equipment or clothing worn by employees to reduce injuries or exposure to hazardous or toxic substances.



# Arc flash facts

**The arc flash itself can achieve temperatures in excess of 35,000 °F.**

Source: National Fire Protection Association

**Approximately 2,000 workers will be admitted to hospital burn units this year due to thermal burns from arc flash or arc blast accidents.**

Source: National Fire Protection Association

**5 to 10 arc flash explosions occur every day in the US.**

Source: CapShell, Inc.

# The line



100 mm (4 in), 75 mm (3 in) and 50 mm (2 in)



50 mm (2 in)



75 mm (3 in)



95 mm (4 in)

## Fluke ClirVu® IR Windows are Torture Tested™

From a northern Canadian winter to a California desert to the corrosive conditions of offshore oil rigs and anywhere in between, you can count on ClirVu® IR Windows to stand up to the challenge.

- No more removing the panel door for installation.
- A significant reduction of work permit requirements and NFPA 70E processes are now in your future
- Full PPE is often not required so inspections are done faster and more comfortable

### Arc blast protection is assured:

- High temperature silicon gaskets
- Mounting and door latches provide high pressure gasket compression
- Die cast components are manufactured with the highest strength alloys (ZA-27 and EZAC)
- Jam nut screws are made from 4037 steel, heat treated to 160,000 psi tensile

### Torture Tested to the highest test ratings

- IEEE C37.20.7 63 kA Arc tested at KEMA, UL 50/50E/50V, UL1558, IEC60529-1: IP67, IEC 60068, NEMA 4/12, CSA C22.2 NO. 14-13:2012, and CE

### Corrosion and UV resistance for challenging outdoor environments:

- All hardware is made from stainless steel or zinc plated steel
- Die cast components are plated with black chromium over high phosphorous electroless nickel

# Specifications

| Model                                  | CV400   | CV401        | CV300                   | CV301        | CV200                | CV201        | CLKT  |
|--|---|--------------|-------------------------|--------------|----------------------|--------------|---|
| Size                                   | 95 mm (4 in)  |              | 75 mm (3 in)            |              | 50 mm (2 in)         |              | 100 mm, 75 mm and 50 mm (4, 3 and 2 in)                                 |
| <b>General</b>                         |   |              |                         |              |                      |              |   |
| Voltage range                          | Any   |              |                         |              |                      |              | Any   |
| NEMA Environment Type                  | Type 4/12 (indoor/outdoor)  |              |                         |              |                      |              | Type 3/12   |
| AutoGround™                            | Yes   |              |                         |              |                      |              | Yes   |
| ClirVu® Optic                          | Yes   |              |                         |              |                      |              | Yes   |
| Operating temperature                  | -40 °C to +232 °C (-40 °F to +450 °F) and +260 °C (500 °F) intermittent |              |                         |              |                      |              | -40 °C to +232 °C (-40 °F to +450 °F)                                   |
| Body material                          | EZAC and ZA-27 high strength zinc/aluminum alloy                        |              |                         |              |                      |              | Anodized aluminum   |
| <b>Ratings and testing</b>             |   |              |                         |              |                      |              |   |
| Arc-Tested (IEEE C37.20.7)             | 63 kA for 30 cycles @ 60Hz at KEMA                                      |              |                         |              |                      |              | 50 kA for 30 cycles @ 60 Hz at KEMA                                     |
| UL 50V component recognition           | Yes   |              |                         |              |                      |              | Yes   |
| UL 50 /NEMA Environmental Rating       | NEMA Type 4/12  |              |                         |              |                      |              | NEMA Type 3/12  |
| UL1558                                 | Yes   |              |                         |              |                      |              | No  |
| CSA C22.2 No.                          | Yes   |              |                         |              |                      |              | Yes   |
| CSA Type Rating                        | Type 4  |              |                         |              |                      |              | Type 3/12   |
| IP rating                              | IP67 at TUV   |              |                         |              |                      |              | IP55  |
| Lloyds Register                        | Up to 11 kV marine switchgear, indoor or outdoor (offshore only)        |              |                         |              |                      |              |   |
| Vibration rating                       | IEC60068-2-6 at TUV   |              |                         |              |                      |              | IEC60068-2-6  |
| Humidity rating                        | IEC60068-2-3 at TUV   |              |                         |              |                      |              | IEC60068-2-3  |
| <b>Install</b>                         |   |              |                         |              |                      |              |   |
| Actual mounting hole diameter required | 115.42 mm (4.544 in)  |              | 89.89 mm (3.539 in)     |              | 61.37 mm (2.416 in)  |              | 50 mm 43.2 mm (1.7 in); 75 mm 69.9 mm (2.75 in); 100 mm 92 mm (3.62 in) |
| Greenlee Punch Kit = Punch / Die       | 742BB = 2984AV / 2983AV   |              | 739BB = 1431AV / 1432AV |              | 76BB = 441AV / 442AV |              | 50 mm 06974/04013; 75 mm 04247/04246; 100 mm Hole Saw Only              |
| Door Latch                             | Hand Turn   | Security Key | Hand Turn               | Security Key | Hand Turn            | Security Key | Hand turn   |
| <b>Optics</b>                          |   |              |                         |              |                      |              |   |
| Optic insert diameter                  | 95 mm (3.74 in)   |              | 75 mm (2.96 in)         |              | 50 mm (1.97 in)      |              | 100 mm, 75 mm and 50 mm (4, 3 and 2 in)                                 |
| Warranty                               | Lifetime replacement against manufacturing defects                      |              |                         |              |                      |              |   |

For more detailed specifications download datasheets at [www.fluke.com/irwindows](http://www.fluke.com/irwindows)

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