

# Q&A

**Terrence O'Hanlon, Publisher at Uptime magazine recently caught up with entrepreneur and innovator Tim Rohrer of Exiscan for a discussion on a new line of Infrared Viewing Windows.**



**Q** Tim, you started a new company in the midst of one of the worst economic downturns in recent history. Are you crazy?

**A** It sure sounds like it when you put it like that! But, I'm just really passionate about electrical safety, and I'm passionate about the concept of predictive maintenance. And actually, in a tough economy like this one, every company is looking for ways to save money, increase workforce efficiency, improve electrical efficiency, protect their process uptime and avoid OSHA fines. IR windows help companies accomplish all of these things while creating a work process that reduces inspection costs by 75% to 95%.

**Q** Infrared Viewing Windows have become more popular as more companies become aware of and follow the NFPA 70E and 70B guidelines. Do you agree that Infrared Viewing Windows make Infrared Thermographic inspections much safer?

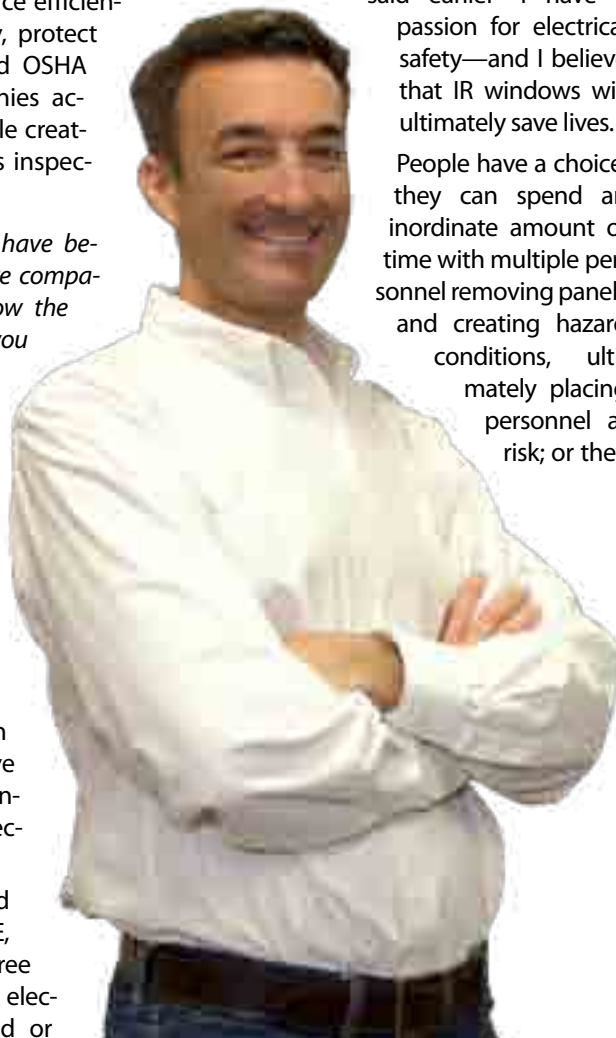
**A** Absolutely. My experience in the industry and with the standards tells me that more and more emphasis will be placed on infrared inspections as a cost-effective and accurate way to identify electrical faults. You can see that in the way insurers have adopted the NFPA 70B recommendations for periodic infrared electrical inspections.

But every electrical safety standard in the world—including NFPA 70E, OSHA 1910 and CSA Z462—agree that personnel are safest when electrical equipment remains closed or

de-energized. IR windows are the perfect solution, allowing thermographers to gather the insurer mandated images and data in the safest and most efficient manner; because the gear remains closed, there is no user-initiated electrical hazard. Therefore, the risk of electrocution or arc flash is not elevated above standard administrative tasks, such as reading a panel meter. It goes back to what I

said earlier—I have a passion for electrical safety—and I believe that IR windows will ultimately save lives.

People have a choice: they can spend an inordinate amount of time with multiple personnel removing panels and creating hazard conditions, ultimately placing personnel at risk; or they



can use one engineer spending a couple of minutes without elevating risks, while gathering data that is arguably more accurate due to reflection issues.

**Q** We have seen several other companies offering Infrared Viewing Windows. What makes the Exiscan products different?

**A** Due to my experience in the IR window industry, I understand the strengths and liabilities of the other manufacturers. There are some good solutions out there right now that help to make thermography easier and safer. We simply looked at the strengths of the two predominant solutions to come up with the best of both worlds, and then we upped the ante on the ruggedness.

Users expressed the need for an optic that was truly impact resistant, not just covered over, and they wanted an optic that would maintain a consistent transmission rate for accuracy. A polymer optic was the best way accomplish those demands. But thermographers wanted a ghost-free image and we wanted to be able to give clients a single transmission rate that worked with all cameras, again for accuracy. So we have a patent-pending design for an impact-resistant optic that requires no grills.

Then, for the housing, everyone wants a rugged metal body and cover, and they want to make sure that once installed, the window will not be the weak point of the system, even in non-arc-resistant gear. So when you pick up our window you will notice that it is *substantial*. I kept telling my partner, "It has to be bomb proof!"

**Q** One thing we noticed is that the Exiscan Infrared Viewing Windows are square and most of the others we have seen are round. What is up with that?

**A** Well, thermographers always want the biggest IR window that they can get their hands on. So it's simple math; a square window increases the area of the window by roughly 27% to 55%. Besides, even though the IR camera lens might be round, the image is rectangular or square—so why cut corners?

**Q** What has the initial customer reaction been?

**A** When we started sharing the product with customers and other industry leaders, they expressed that the product's ruggedness and transmission characteristics really stood out. I think we are really filling a void.

**Q** What are the issues about transmissivity for Infrared Thermographers?

**A** Too often, thermographers disregard the effect that transmission rates play in temperature measurement and therefore Delta Ts (or differences in temperature), and even the images they view. If the thermographer properly calibrates their camera for transmission and emissivity, they can get meaningful data, and meaningful images. But if their IR window experiences transmission degradation, or if its grill causes variable transmissions across the optic, then it makes proper calibration impossible, and therefore, accurate data and images impossible.

**Q** What is ghosting and how does the Exiscan Infrared Viewing Window prevent it?

**A** Well it has nothing to do with the Ghost Hunter, or finding spirits using thermography. Spread your fingers out and put your hand up a few inches from your face and look off in the distance. I am guessing that you can see the objects in the distance, but you can also see the "ghosted image" of your fingers. That's because one eye is receiving the light from the distant objects while the other eye is receiving light from your fingers. The result is a "ghosted image" of your fingers.

Thermography works the same way. When you take an image through a grill, the grill allows variable amounts of radiation through to the camera's sensors. Since the camera has a bunch of sensors behind that lens, some sensors are receiving full radiation from a target point, while others receive none. It's not a huge problem for the expensive cameras with a large lens, again

as long as the thermographer presses the lens to the grill. But like everything else, the technology is making the cameras and the lenses smaller and smaller. Those cameras with a small lens are far more affected by ghosted images and inconsistent temperature readings. So Exiscan designed its windows to yield clean, "ghost-free" images, with higher transmission rates that are the same for every camera, and uniform across the surface of the optic—it all results in better accuracy.

**Q** Tim, we wish you great success in this new venture. Can you share with us what your vision is for 5 to 10 years into the future?

**A** I see predictive maintenance and condition-based monitoring becoming more and more common across industries as the technology becomes easier and less technical for companies to implement and utilize. This will only increase the need for, and the value of highly trained and experienced technicians, as there will be a larger base of companies that will need good people with a broad vision.

With regard to my part of the industry, there is no doubt that we are already seeing IR windows becoming a standard across the industry. I sit on various industry standards dealing with arc flash and electrical safety; the people driving those standards appear to universally support the use of windows and similar tools or design methods that limit or eliminate the need for personnel to open equipment. In fact, even as some of the market moves toward online temperature monitoring, the need for windows becomes even more critical since engineers will always want to double-check a sensor's readings prior to ordering a facility to shut down, but no one will want to open gear that is likely experiencing near-catastrophic faults.

As for Exiscan, we will continue to listen to our clients and distribution channels. Ultimately, they will drive us to invent new ways to limit risks, save money and save lives. We've already got a few products in the pipeline—so stay tuned, Terry.

Readers interested in more details should visit Exiscan LLC online at [www.exiscan.com](http://www.exiscan.com).

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