



Pure lighting pleasure, thanks to FLIR Systems

FLIR technology helps to improve the durability of Delta Light lighting systems by monitoring the product temperature profiles.

Pure lighting pleasure. That has been the mantra of lighting specialist Delta Light for many years. The Belgian manufacturer of architectural lighting always tries to delight its customers by combining an appealing lighting design with thorough research and development. A continuous focus of the R&D team is ensuring the fire safety as well as improving the durability of its lighting designs. To achieve this, the team uses thermal imaging technology from FLIR Systems.

Delta Light is a true trendsetter in architectural lighting. By always coming out with innovative lighting designs, the company has built itself a worldwide reputation. Delta Light currently employs some 200 people at its head office in Wevelgem, Belgium, and the company is active in over 110 countries.

"A Delta Light product is always a combination of innovative system design, the right light ambiance and quality materials," says Koen Dequae, Quality and Standards Manager at Delta Light. "In terms of quality, we are especially interested in the durability of a lighting system. One of the most critical factors of durability is temperature. In order to better monitor

the temperature profile of our products, Delta Light decided to purchase a thermal imaging camera from FLIR Systems."

Critical temperatures

Delta Light has been able to present attractive growth figures over the last few years. Thanks to this growth, the company decided to make some essential investments into the R&D department, of which a FLIR E30 handheld thermal imaging camera was one. Already familiar with the concept of thermal imaging, it didn't take Delta Light very long to conclude that this FLIR camera was the best fit for their application in terms of performance and cost-efficiency.

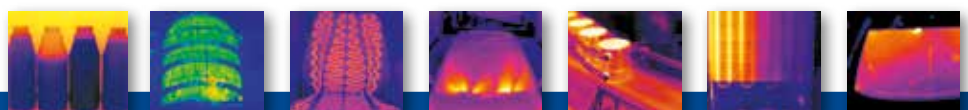
The FLIR E30 is a point-and-shoot camera that combines the best performance and value in compact thermal imaging cameras.



Delta Light is a premium brand for architectural lighting in residential buildings, offices, showrooms and for outdoor lighting.

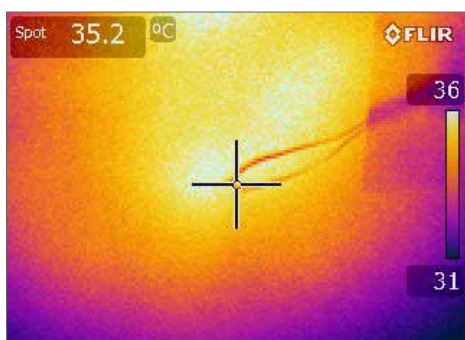


The Delta Light R&D specialists have an immediate overview of the temperature values of the total lighting system design in the blink of an eye.





Looking for a hotspot on a lighting system



Measurement differences between the FLIR camera and a thermocouple give R&D engineers a lead that something is wrong.

"Monitoring the temperatures of our products is critical in the design, development and qualification phase," says Koen Dequae. "We now work with LED lights that have a lifetime of up to 100,000 hours. If you realize that a temperature raise in the lighting system of a mere 10 degrees can reduce the LED lifetime by half, then you know that keeping the temperatures under control is essential."

International safety regulations

Delta Light uses the FLIR E30 camera to look at the LEDs, at the electronic power supply of the lighting systems – both proprietary and third party – and at the temperature profile of the lighting system as a whole. The latter is essential to be able to design



Temperature measurement of an LED board

and manufacture lighting products in accordance with international (IEC-60598) and North-American (UL-1598) standards. The thermal imaging camera from FLIR helps the R&D team achieve that.

"These safety standards stipulate that a lighting system design cannot exceed a certain temperature," says Koen Dequae. "To make sure that is the case, we look at the entire design and look for the hottest point. If that hottest point does not exceed that temperature, we meet the standard."

Thanks to the FLIR E30 camera, Delta Light can now perform these qualification tests in house. The company does no longer need to rely on external agencies to do that. That saves Delta Light a lot of time and effort in the qualification phase.

Thermal imaging versus thermocouples

The use of thermocouples is still required if you want to meet certain international standards. However, these wired sensors have some significant drawbacks which make the work of R&D specialists difficult. "To meet the required safety standards for our products, we heavily rely on finding the hottest spot on our lighting design," says Koen Dequae. "However, with thermocouples that is not always very simple. Just by moving a thermocouple just a few millimeters on the lighting design, the temperature values can present significant differences. In other words, relying on thermocouples alone for temperature measurement is not sufficient. Only using thermocouples is like groping in the dark."

A thermal imaging camera on the other hand provides more confidence. By using the FLIR E30 camera, the Delta Light R&D specialists have an immediate overview of the temperature values of the total lighting

system design in the blink of an eye. This saves valuable time.

"We also use the FLIR camera to look at our electronics designs," says Koen Dequae. "This helps us see overheated components and prevent bigger component failures. Try and put a thermocouple on certain SMD board components ... It's just not possible due to their small size. With a FLIR camera, we can see these temperature differences, also on the smallest printed circuit board components."

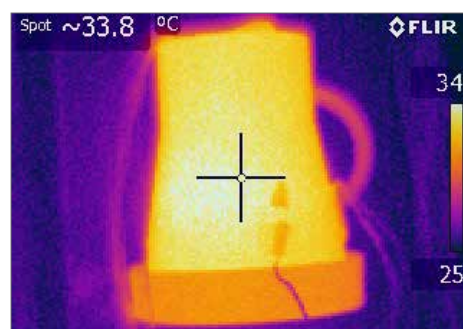
Speed and flexibility

The FLIR E30 has quickly become an invaluable tool for Delta Light's R&D team. Since its purchase, the camera has been used in the prototyping phase, the qualification phase and practically in any phase in between.

"The camera gives us the speed and flexibility boost we need," says Koen Dequae. "When we are in the design phase of a lighting system, we can quickly use the FLIR camera to see whether a certain approach is feasible in terms of temperature build up. But also in the qualification phase, the FLIR E30 allows us to see temperature profiles instantly, which would take hours with thermocouples."

Bench Top Thermal Kits

More and more R&D specialists are discovering the benefits that thermal imaging has to offer. FLIR Systems can offer them a Bench Top Thermal Kit (BTTK) that can help them with their research and design work. Each BTTK contains an entry model thermal imaging camera, fixed mount or handheld, and software. Thanks to these affordable entry packages thermal imaging is rapidly finding its way to more and more test benches.



"To meet the required safety standards for our products, we heavily rely on finding the hottest spot on the entire lighting system design." Koen Dequae

For more information about thermal imaging cameras or about this application, please contact:

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