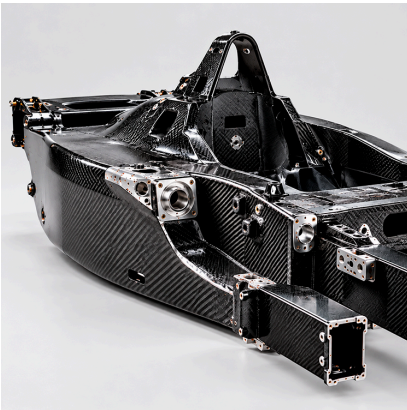


# CONDITION ASSESSMENT OF CFRP STRUCTURES IN MOTORSPORT

CFRP components in motorsport are exposed to high mechanical loads, while internal damage is often invisible from the outside. Active thermography enables non-destructive inspection of monocoques, suspension components and other structural parts.

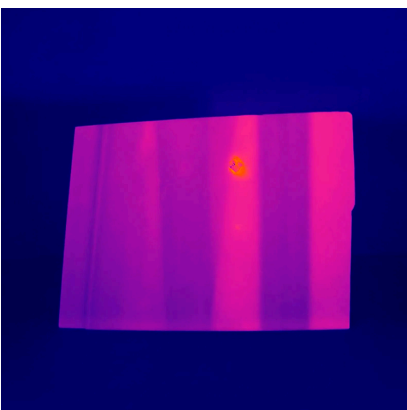
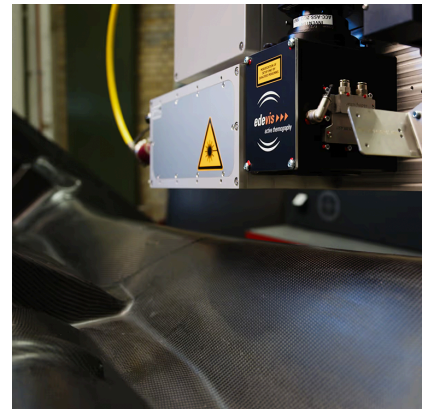


## THE CHALLENGE

CFRP and carbon fiber structural components in motorsport are complex and must withstand high mechanical loads while keeping weight to a minimum. Delaminations, air inclusions, impact damage or local inhomogeneities can compromise structural integrity without being visible at the surface. In hybrid components, the reliable bonding of metallic inserts is also critical, as these are often used to attach suspension or drivetrain components.

## THE SOLUTION

Optically excited lock-in thermography enables fast, non-contact and depth-resolved inspection of CFRP structures. Periodically modulated thermal excitation generates a defined heat flow within the component. Delaminations, porosity, impact damage or defects at interfaces and insert bonds disturb this heat flow and create characteristic thermal signatures that are captured by an infrared camera and evaluated using dedicated software. With OTvis, both localized inspection areas and larger, complex-shaped component surfaces can be examined efficiently.



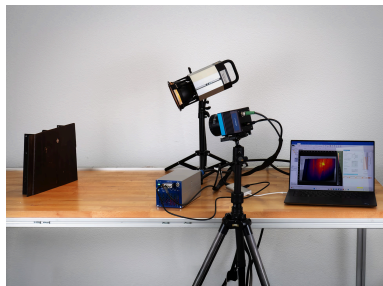
## THE RESULT

New components can first be documented in a baseline inspection and then re-examined under comparable conditions after racing, qualification testing or accidents. Direct comparison of the thermographic results reveals changes in the component condition that may not be visible from the outside and supports a reliable assessment of structural integrity. This provides a sound basis for deciding whether a CFRP component can remain in service or should be replaced.

## THE PRODUCTS

### OTVIS PRODUCT FAMILY

Optically excited lock-in thermography for precise non-destructive testing



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