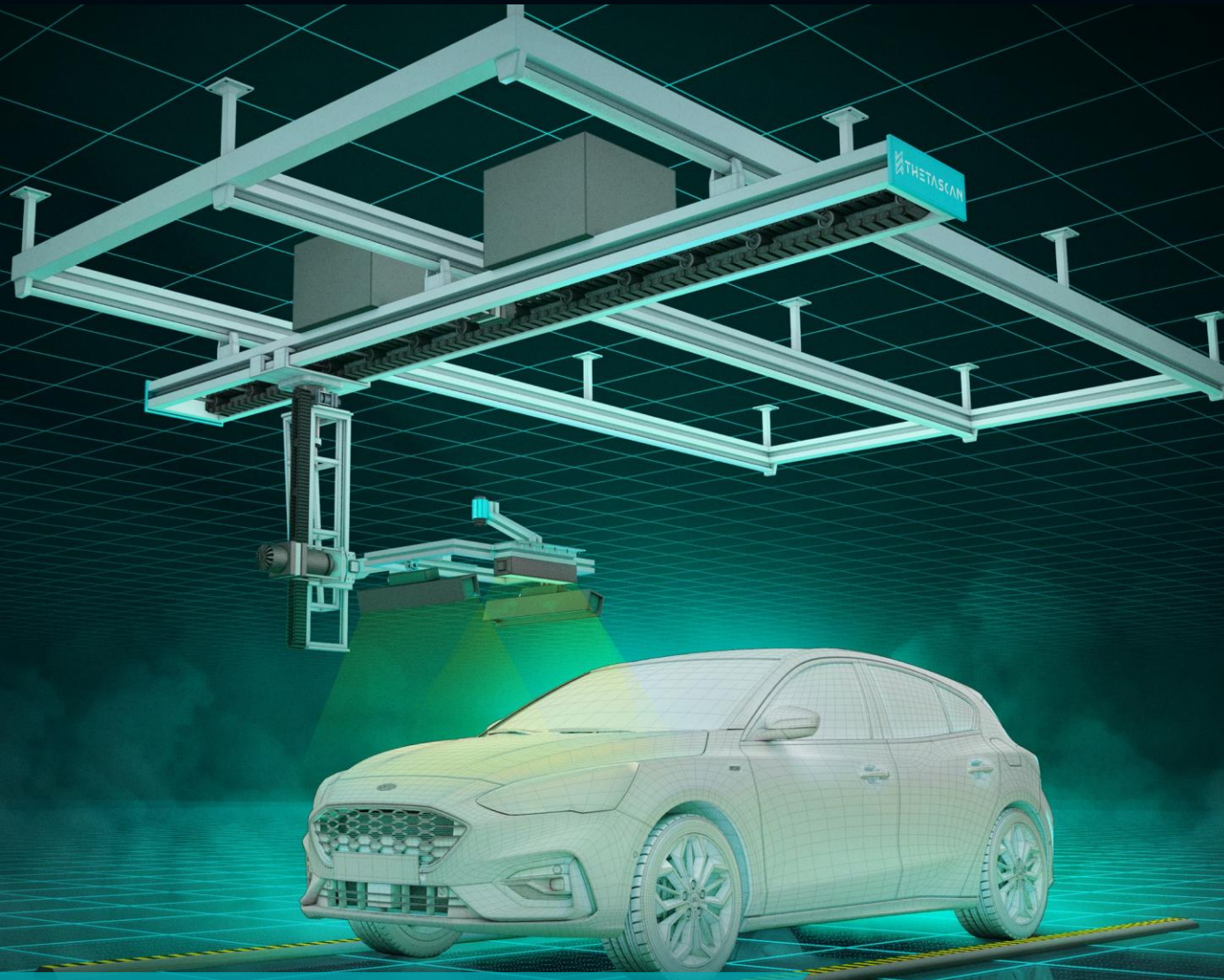


THETASCAN® Car Check System

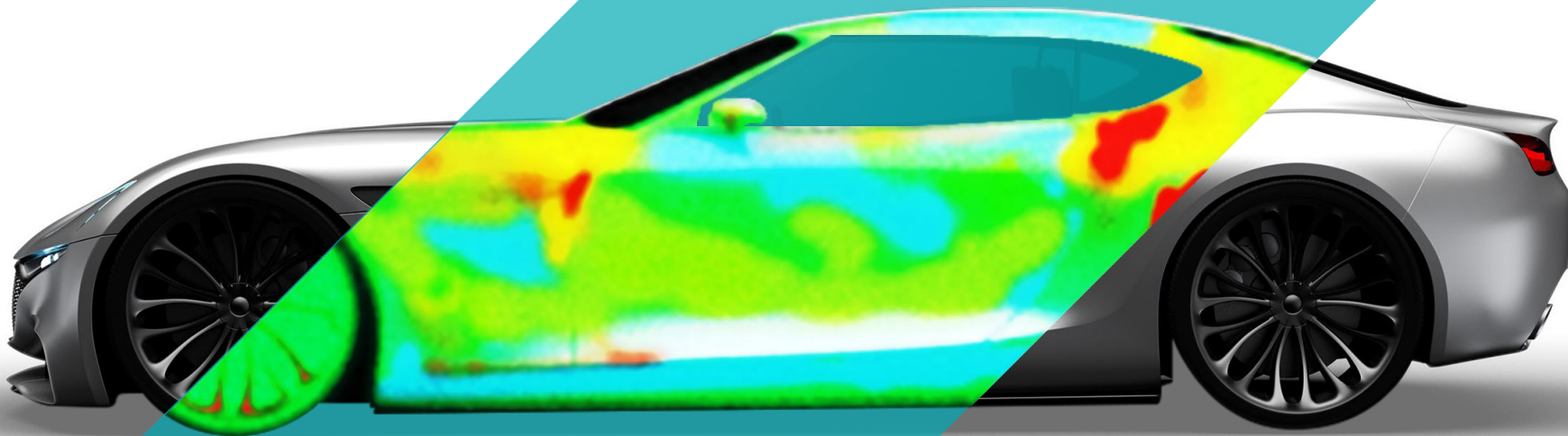


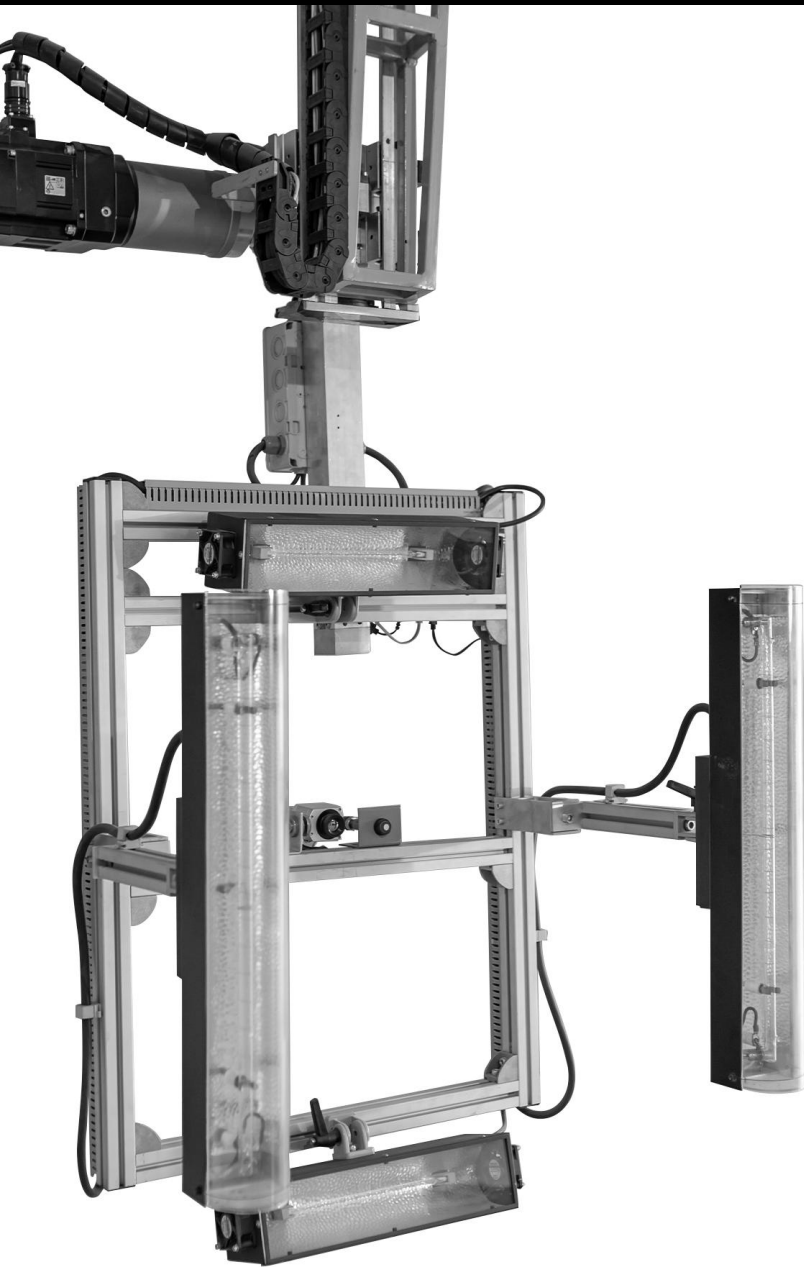
360° Thermography - Carscanner

www.thetascan.de

Original or Fake?

You will get the truth, within minutes!





Content

About us	4
Carscanner	5
Setup	6
Assembly	7
How it works	8
Data analysis	9
Benefits	10
Requirements	11
Support	12
Live-Presentation	13
Contact	14



Bild oben: © NASA, X-38 Raumgleiter / Bild mittig: © ITER Brennkammer / Bild unten: © NASA, Spaceflight Skylab 3

About us

Since 1999, the engineering office Carl Messtechnik (TZFP) in Dinslaken / Germany has been developing special testing devices and special tests for non-destructive testing in the aerospace sector. At the beginning of 2005, infrared optical testing machines were also designed, tested and built. Together with various partners, we manufacture "turnkey" systems specifically and precisely tailored to the area of automateted application.

THETASCAN® GmbH, is owner - managed by Volker Carl. The THETASCAN® company now bundles extensive knowledge of materials and testing technology and has guaranteed highly innovative control processes in the aerospace, automotive and power plant industries since it was founded. With broad know-how, THETASCAN® provides reliable advice and develops specific solutions with you. Our products are now sold worldwide.



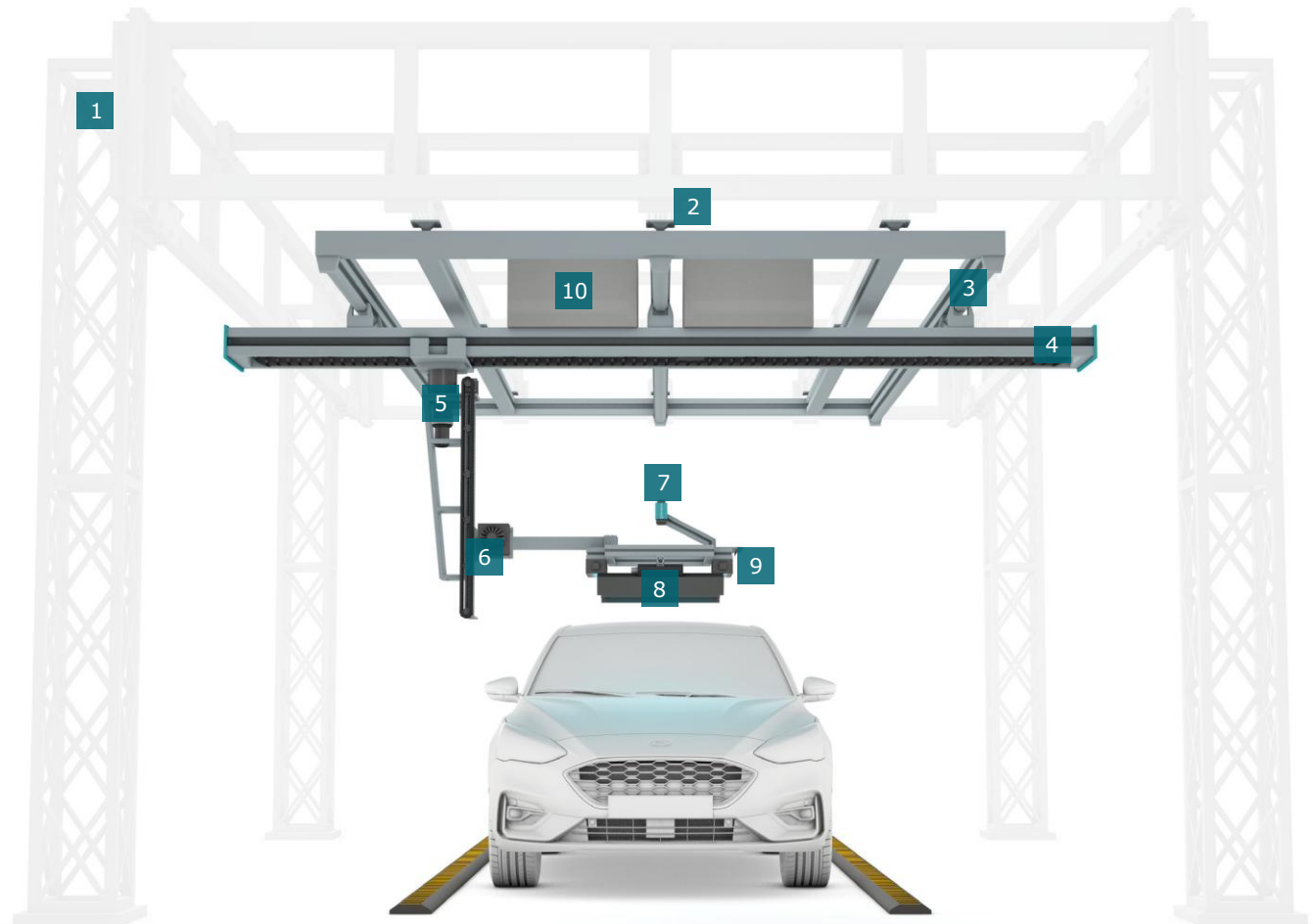
Carscanner

The specially developed “Combipulsed” THETASCAN® Car Scan technology records the paintwork condition of a vehicle within a few minutes. The result is an analysis of several infrared image records, which unmistakably show the first and second paint, filling material and clear paint etc. The surface is thermally stimulated at the same time by means of a light pulse or constant heating. The process was named "Innovation of the Year 2017" by the editors of well-known German magazine “Auto Bild Klassik”. The user-friendly and understandable operation requires only one short training. In order to enable vehicle inspection to be automated, THETASCAN® has developed a 3D robotic system that is perfectly tailored to the requirements of thermographic inspections. Based on the scanning technology developed, it combines high - resolution digital imaging technology with a three - dimensional inspection of a vehicle. The entire vehicle surfaces including roof and hood can be inspected in a range between 50 microns and 4000 microns. A complete system perfectly tailored to your testing needs.

Setup

The THETASCAN® Car Check System consists of the following components:

- 1 Massive steel frame (optional)
- 2 Linear moving system 5 axis
- 3 Up to 8m axis for large cars
- 4 Axis for car width
- 5 Axis for up and down movement
- 6 Axis for inclination
- 7 Infrared camera
- 8 2 Halogenelamp
- 9 2 Xenon flash lamp
- 10 NUC PC

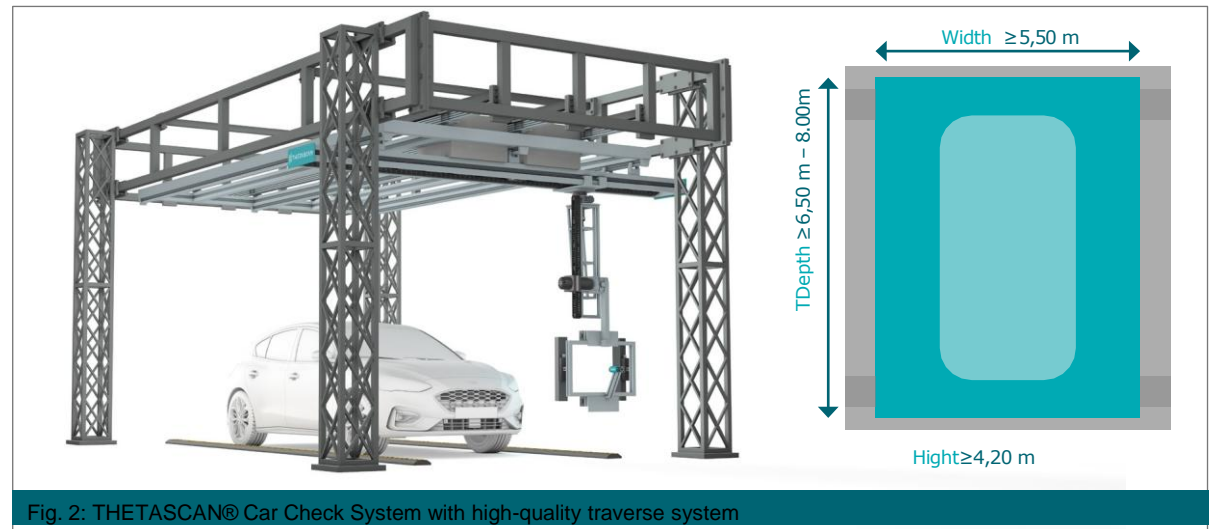
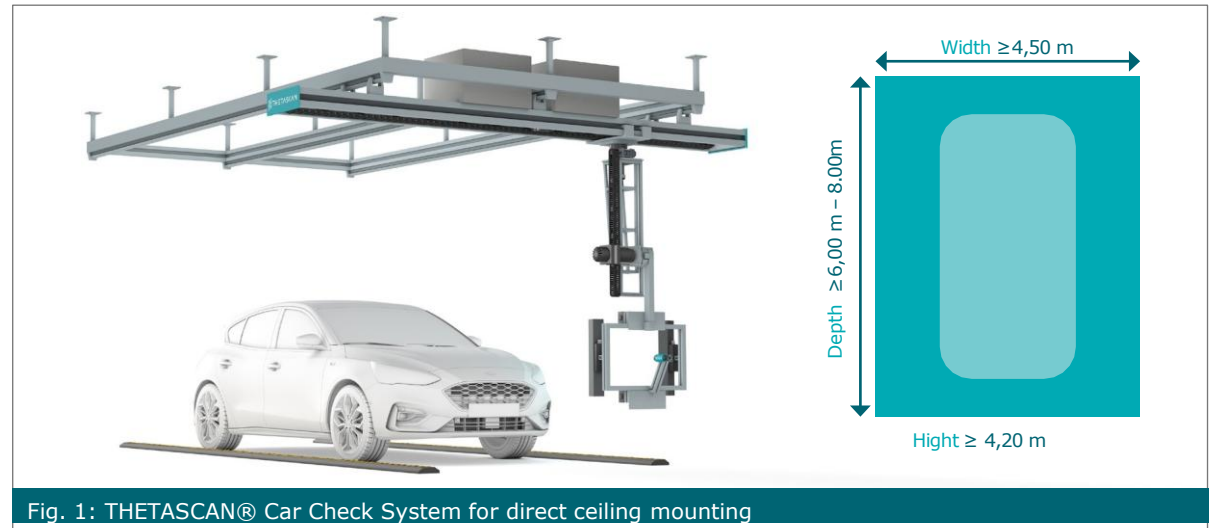


Assembly

The THETASCAN® Car Check System can be mounted directly to the ceiling or – if the ceiling is too high or sloping – it can be delivered with a high-quality steel structure.

Attention: When installing the system, the required minimum ceiling height of 4.20 m must be observed in any case, so that the system can work properly! You must allow for a base area of 4.50 m for the width and 6.00- 8.00 m for the depth (with the steel system 5.00 m wide and 6.00 – 8.00 m deep).

Advice needed? Our customer service would be happy to assist you more.



Scan

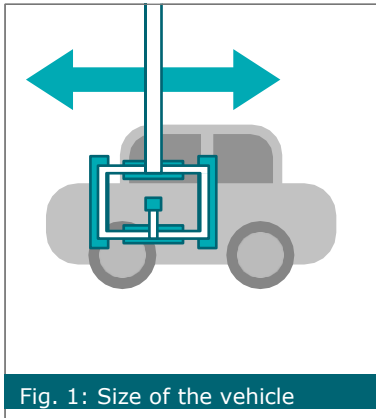


Fig. 1: Size of the vehicle

After the vehicle to be scanned has been aligned in the scanning area, the vehicle is measured. To do this, the scanner moves along the length of the vehicle and creates an infrared image.

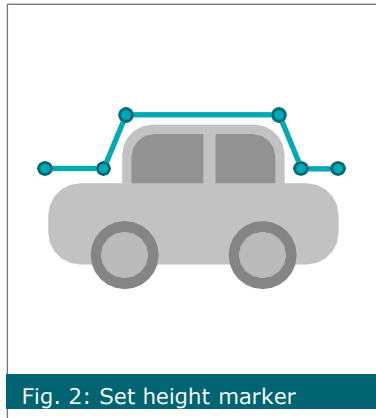


Fig. 2: Set height marker

The next step is to set the height markers based on the available side image, which specify the vertical alignment of the scanner when scanning from above. The distance during the scan is constant.

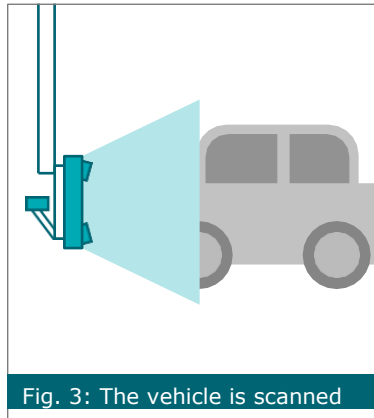


Fig. 3: The vehicle is scanned

The scanner moves fully automatically around and over the car and uses an infrared camera to capture the thermographic data generated by xenon flash lamps and halogen lamps in several steps.

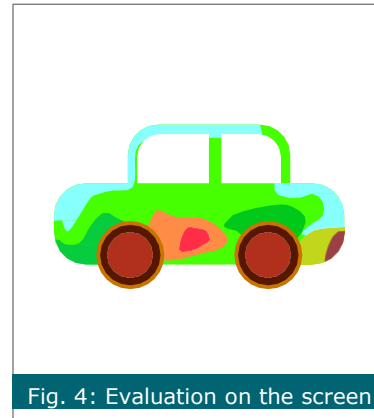


Fig. 4: Evaluation on the screen

All painted surfaces can now be examined on the screen. With various setting options, the trained eye does not miss even the smallest damage or repaired areas.

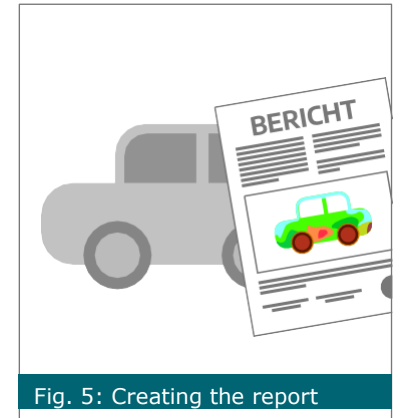


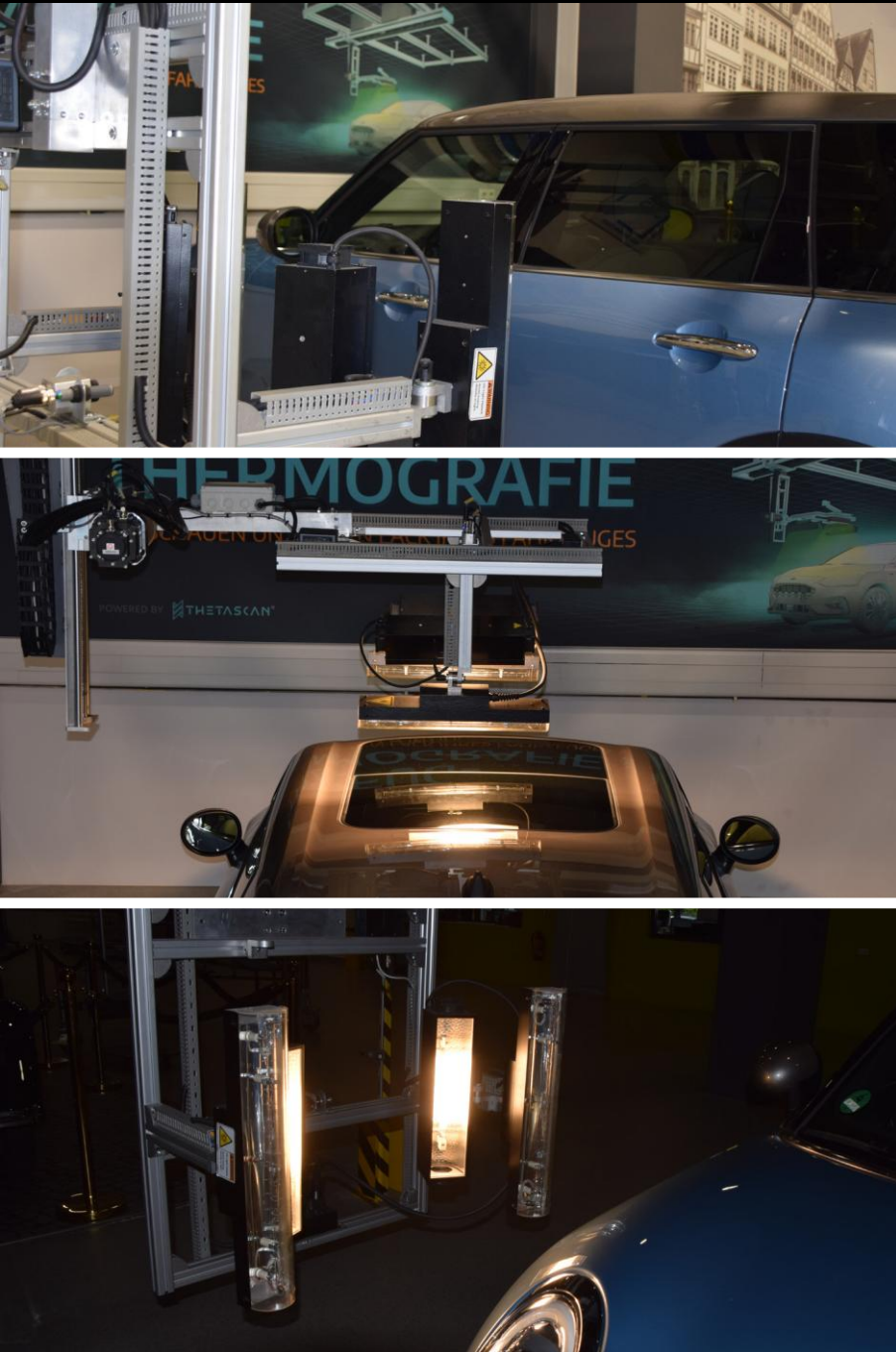
Fig. 5: Creating the report

All recorded information can now be summarized and illustrated in a report and thus offer comprehensive documentation of the vehicle's paintwork condition.



Evaluation

The energy sources generate a heat wave that penetrates the material from the vehicle surface (clear coat). If the vehicle is in its original condition, this heat wave penetrates the paintwork (about 100 microns) very quickly and reaches the sheet metal. Due to the different thermal conductivities of the materials (paint, filler, tin, metal) and the different material thicknesses (number of coats of paint, filler application), the length of time that the heat wave requires through the material varies. This time difference can be analyzed and color-coded using the recorded infrared data (thermal images). In contrast to the well-known infrared imaging technique, the colors here do not mean warm and cold, but thick and thin.



Benefits

In principle, the result of a measurement can be compared to a paint thickness gauge. However, there are two differences. While only one value is determined with the paint thickness pen and the result of a vehicle inspection is tabulated and recorded quantitatively, the inspection with the THETASCAN® 360° thermographic vehicle scanner shows the result in high-resolution images and quality. Each pixel in the image corresponds to a measurement of the paint thickness pen. The accuracy of the paint thickness is not important here, but rather the precise identification of the indications. The real paint thickness can then be obtained later with a paint thickness pen. The system is also able to find the smallest repair spots (smart repair). Even on plastic - i.e. in places where the paint thickness pen fails. With this method, concealed repairs, welded sheet metal and even the smallest repairs can be verified. Even carbon or glasfiber material can be investigated.

Requirements

To ensure a smooth construction and perfect function the THETASCAN® 360° thermographic vehicle scanner, must meet some basic requirements. It is best to clarify in advance at your desired installation location whether these points have been clarified.

Do you have any questions? Our customer service will be happy to answer them for you.

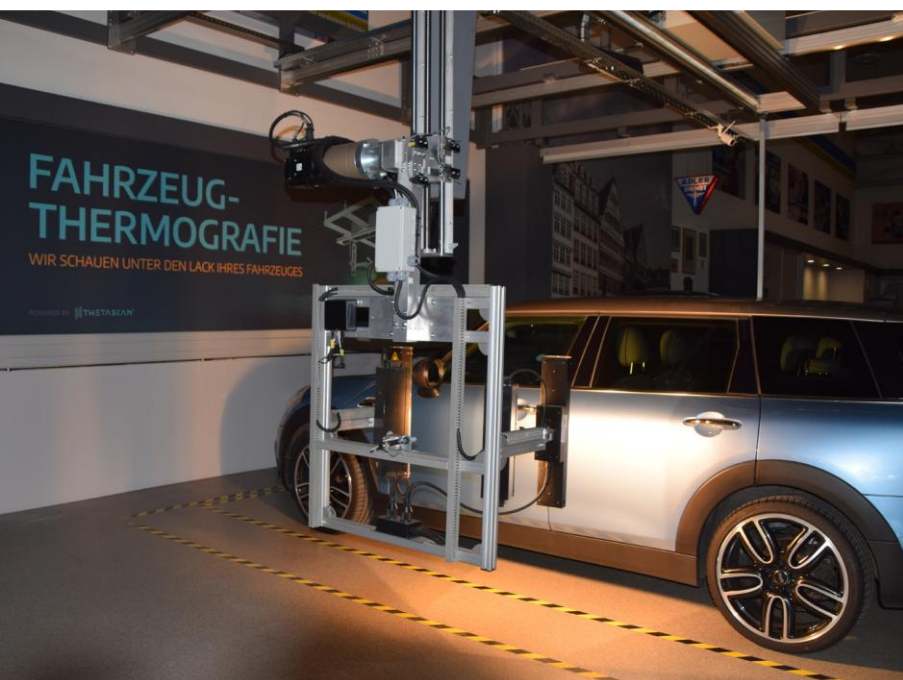
area & room height	Only ceiling: W 4,50 m x D 6,00 – 8.00 m x H 4,20 m With support construction: W 5,00 m x D 6,00 - 8.00 m x H 4,50 m
Power supply	400 V – 32 Ampere slow fuses
Location	No wind and no sun influence No heat changes during measurement
Temperature	Recommended temperature range 5 C – 40 C
Preparation	Car must be dry and clean



Technical support

Of course, we are there to help you with all questions and problems and not only support you with the planning, but also with all further steps to use your THETASCAN® 360° thermographic vehicle scanner and beyond.

- Our support offering includes: Personal advice (in advance by telephone and on site)
- Professional construction and installation of the system
- Training of your team by our experienced employees
- Refresher courses on request .Technical support via remote, telephone or on site
- Repair & replacement of technical components
- Regular software updates via remote
- Information about innovations or system expansions



Live-Presentation

If you would like to personally convince yourself of the quality of the THETASCAN® 360° thermographic vehicle scanner, please make an appointment with us.

The presentation will take place in Frankfurt am Main. Please contact us to arrange an appointment.

Book an exclusive live presentation now

Arrange your personal appointment with us.

With friendly support from :



SVS Sach-Verständigen-Stelle
für Kfz-Gutachten Technik & Controlling GmbH
Westerbachstraße 134
65936 Frankfurt am Main

Contact

If you are interested in the THETASCAN® 360° thermographic vehicle scanner or if you have any questions, we are at your disposal.


Development:

Dipl-Ing. Volker Carl

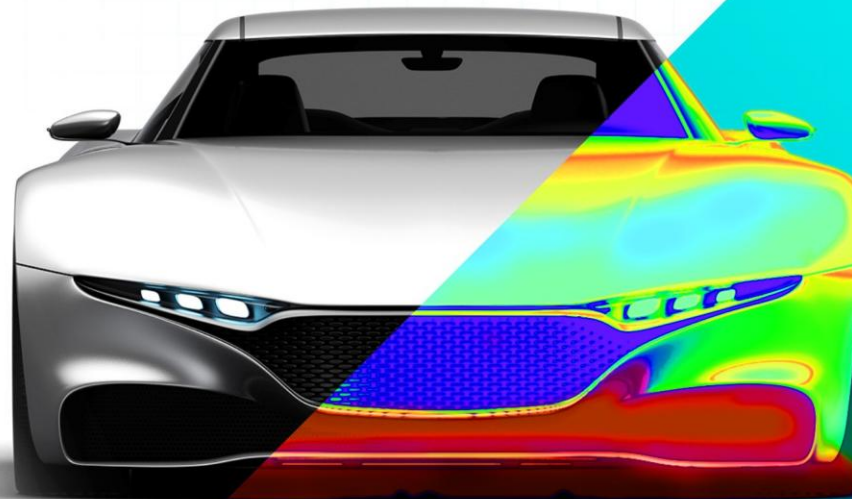
 +49 2064 6035-12

 carl@thetascan.de

Distribution: Daniel Bilek

 +49 221 96 88 059-0

 bilek@thetascan.de





THETASCAN GmbH
Thyssenstraße 183a
D-46535 Dinslaken

www.thetascan.de