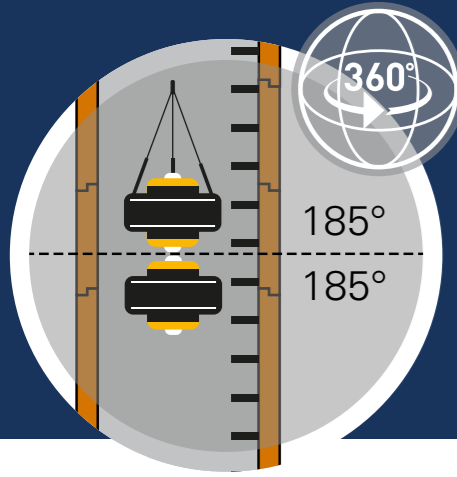


# PANORAMO 4K



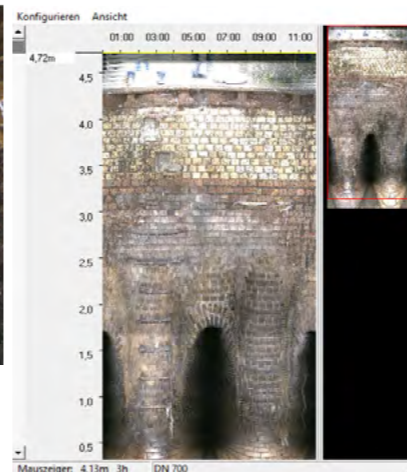
Two hemispherical photos taken at the same position are put together to form a single picture. In this way, an image file is generated from various angles of view.

## Comprehensive Scanning in 3D

Left mouse button:  
Navigate in all directions  
(360°, continuously variable)



Right mouse button:  
Move downwards faster



Unfolded view of a manhole

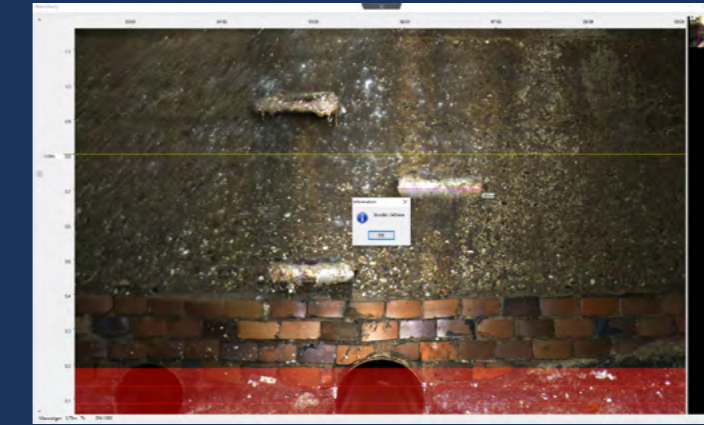
The result of the optical inspection is a PANORAMO SI film with 4K resolution (3,840 x 1,920 pixels over 360°) and this can be viewed and analysed straight away with the IBAK sewer analysis software IKAS (PANORAMO SI manhole inspection option). What is special and unique about this is that you can stop at any position in the manhole, do a 360° pan, zoom, and also save still photos. Condition assessment can be performed optionally in the office or directly at the job site. As IBAK viewers are licence-free, they can also be passed on to the customers to give them a full overview of their commissioned project.

With the **IBAK PANORAMO SI 4K**, the user also has all the advantages of PANORAMO technology at his disposal for manhole inspection. The result is a rapid, comprehensive optical scan of the manhole condition.

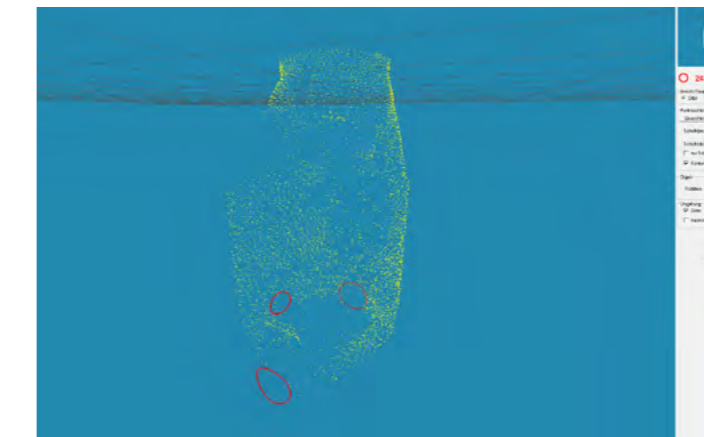
The 3D scanner uses two high-resolution digital cameras with distortion-free wide-angle lenses that were specially designed for this purpose. The cameras scan the entire interior of the manhole optically in a single vertical movement and in only a few seconds.

Whereas only the view in the camera's line of vision at the time of recording is saved in a video from a conventional pan and rotate camera, PANORAMO SI 4K technology makes comprehensive manhole inspection possible. The scanning procedure is not affected by the number of features or defects in the manhole so it is possible to make a time schedule for inspections. When the camera is moving, motion blurring in the images is avoided by the use of xenon flash-lighting and pin sharp images are generated even when the system is navigating through the manhole at a speed of up to 35 centimetres per second.

## Analysis



Besides the 3D view, an unfolded view of the manhole can be displayed – for this, the manhole is virtually cut open lengthwise and the sides are folded down to provide the viewer with a rapid overview of the entire manhole. In particular, you can see the structural condition of the manhole at a glance in the unfolded view and defects, inflow and outflow pipes and the distance between the step irons can be measured. All inspection reports and inspection data can be handed over to the customer in the usual data interfaces with all the required values, e.g. both in ISYBAU and DWA M-150 format.



# IBAK

## PANORAMO SI 4K

