

Glasses-Free 3D Technology

Display, Camera, and System Solutions



True 3D with the Naked Eye

High-end 3D technology – made in Germany

Our mission is to launch a new era of autostereoscopic 3D experiences on a global level. At 3D Global, we focus on innovative products that revolutionize the way people see the world. Our cutting-edge glasses-free 3D screens and system solutions are based on our patented 3D filter technology. Experience breathtaking true 3D with the naked eye.

What sets us apart is that we are not a supplier, but an expert partner for integrating 3D technology into your product. 3D Global is at your side throughout, from the initial idea through to series production and certification. And from development to production of our 3D screens, every link in the value chain is located in Germany for thorough monitoring.

When it comes to integrating our 3D technology, our experts work closely with you to ensure optimum integration of camera systems and image processing technologies into your products. So you can enjoy the best possible live images, brought to life on world-first 3D screens.



Three-dimensional

Spatial vision with breathtaking depth



No 3D glasses

Patented filter technology means no more glasses



Technology partner

More than a supplier: your dedicated 3D expert



Customized

3D technology can be adapted to your application



Patented

50+ patents, trademarks, and property rights



Certified

We are certified according to ISO 9001

Why is 3D vision so important?

The situation today:

3D image content is generated by imaging sensors or 3D engines but displayed on a conventional 2D monitor.



Important information for the perception of shape, size, and depth is **lost**.

The future with our 3D technology:

Existing 3D image content realistically depicted on glasses-free 3D monitors.



Important information for the perception of shape, size, and depth is **retained**.

Example from the field of medicine

Medical technology has made enormous progress in recent years, with versatile 3D innovations transforming the medical landscape. Our glasses-free 3D monitors are a milestone in the fields of medical imaging and diagnostics. They deliver a whole host of benefits for doctors, patients, and the entire healthcare sector.

In the case of doctors, our 3D technology enables precision viewing and assessment of detailed 3D depictions of anatomical structures and tissue via MRI and CT – without any need for auxiliary equipment such as special glasses. This ensures more accurate diagnoses, improves the identification of illnesses, and therefore makes it easier to perform treatments and surgical procedures. Enhanced spatial representation and depth perception enable doctors to better determine the size and location of tumors and potential metastases or more precisely assess tissue structures.

High-Tech 3D Components

1 INPUT

1.1 Recommendation: 3D camera Customized camera development for your application

- Stereo cameras
- Zoom lens
- Autofocus
- Fixed focus

1.2: 2D camera

- Billions of cameras available on market
- Image material converted from 2D to 3D with AI

1.3: 3D signal input

- HDMI side by side
- Customized interface

2 PROCESSING

Processing unit

- FPGA platform for highest performance
- Short latency time
- Entire signal chain coordinated
- Optimum system integration in monitor housing

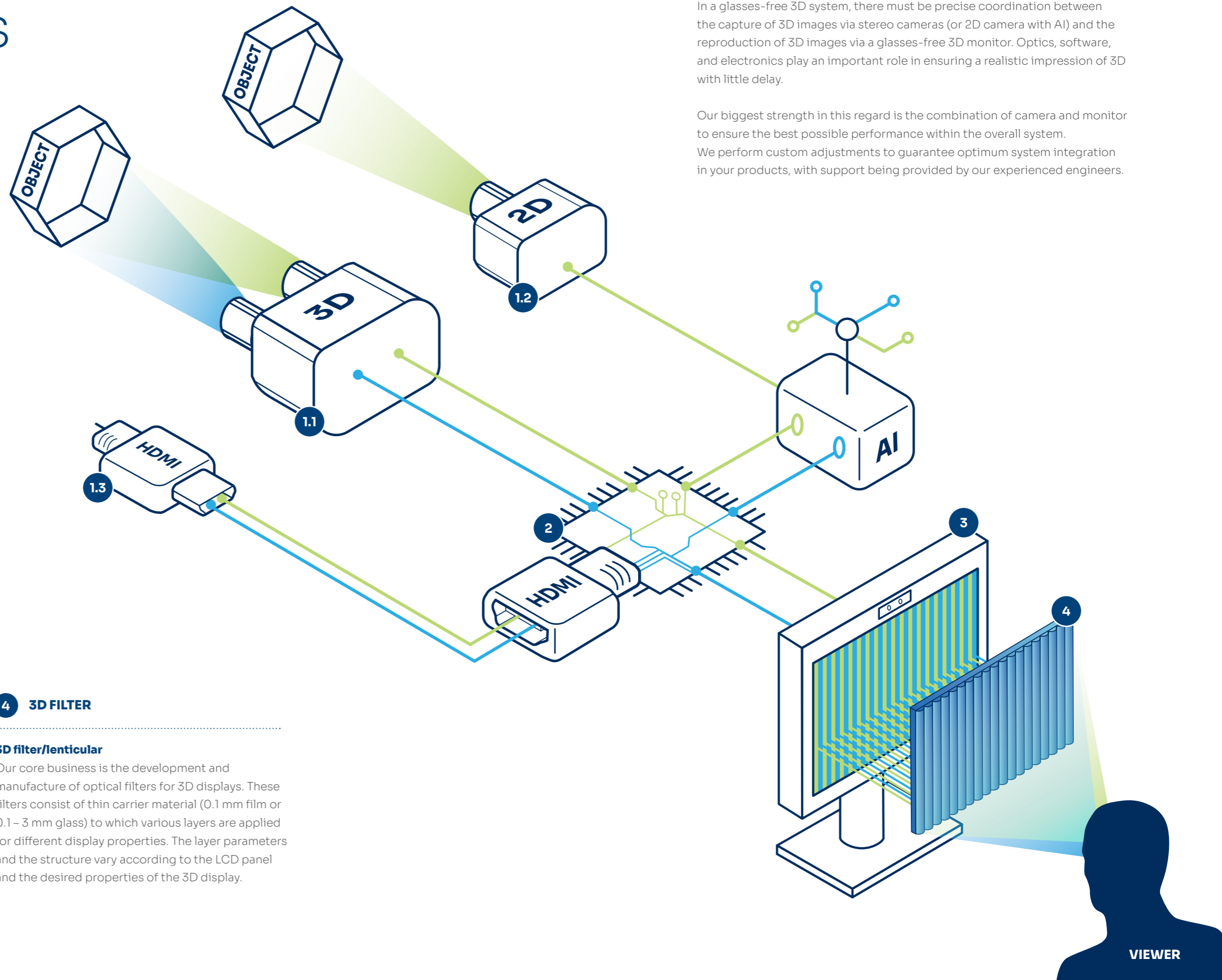
3 DISPLAY

Tracking system

- User tracking for optimum 3D impression
- Untracked multiview systems available

Panel

- Customization of our 3D technology to suit your 2D panel
- Various panel sizes from 2.5 to 86 inches



We provide individual components or complete systems along the entire signal chain of a 3D visualization system.

In a glasses-free 3D system, there must be precise coordination between the capture of 3D images via stereo cameras (or 2D camera with AI) and the reproduction of 3D images via a glasses-free 3D monitor. Optics, software, and electronics play an important role in ensuring a realistic impression of 3D with little delay.

Our biggest strength in this regard is the combination of camera and monitor to ensure the best possible performance within the overall system.

We perform custom adjustments to guarantee optimum system integration in your products, with support being provided by our experienced engineers.

4 3D FILTER

3D filter/lenticular

Our core business is the development and manufacture of optical filters for 3D displays. These filters consist of thin carrier material (0.1 mm film or 0.1 – 3 mm glass) to which various layers are applied for different display properties. The layer parameters and the structure vary according to the LCD panel and the desired properties of the 3D display.

Ergonomic 3D Digital Microscope

Example application: Assembly and inspection of technical and medical components

SCALERE0 is an ocular-free digital 3D industrial microscope that provides a natural view and displays objects with exceptional clarity. This glasses-free 3D experience offers major benefits, optimally enabling users to see and feel the depth of the object on the 3D screen.



EXAMPLE APPLICATIONS:

- + Assembly and inspection of medical components
- + High-precision assembly and repair of small parts
- + Inspection and quality assurance in cutting and 3D printing
- + Equipping of circuit boards, solder joint monitoring, and reworking



SCALERE0 Desk

MORE PRECISION AT WORK

SCALERE0 Desk



This innovative standalone digital microscope delivers excellent depth of focus and spatial 3D. Instead of constantly leaning forward to look through an ocular, you can now enjoy the comfort of sitting up straight to view stunning 3D depictions on the 3D monitor – with autofocus, flexible ring lighting, and a stepless zoom system.

SCALERE0 AddOn

MORE PRECISION AT WORK

SCALERE0 AddOn



The SCALERE0 AddOn makes it simple to take existing optical microscopes and convert them to digital 3D microscopes without an ocular. Not only can this 3D upgrade easily be applied to all conventional microscopes with a parallel beam path, it can be adapted for ZEISS, Leica, Olympus, Askania, Nikon, and more.

Product highlights



Real-time stereo camera

Perform your precision mechanical tasks with even greater care thanks to easy hand-eye coordination. Images are displayed in real time.



A truly practical solution

From training to in-depth discussion, this microscope helps you share your knowledge and experience. You and your colleagues can view key details simultaneously and explain what is displayed on the monitor.



Ergonomic work

More comfort for better health in the workplace. Our 3D microscopes enable an ergonomic sitting position and therefore less tiring work.

Treatments with 3D Microscopes

Example application: Digital 3D dental microscope

CJ-Optik is a leading manufacturer in the field of dental microscopy. Our close cooperation has established a next-generation digital 3D treatment system for dentists, featuring integrated detection of tooth decay, tartar, and artificial dental material.

FURTHER APPLICATION AREAS:

- + Hair transplant
- + Ear, nose, and throat care
- + Ophthalmology
- + Hand, plastic, and cosmetic surgery



3D Global was responsible for the development of the stereo cameras and the 3D monitor. It also provided support during system integration into the electronics.

OEM Component Integration

Example application: SIMtoCARE dental simulator

OEM integration in dental simulator

SIMtoCARE devices make it possible to simulate a wide variety of treatments, such as drilling teeth or injecting with needles. The use of our 3D panel technology, combined with haptic feedback during the simulation, has succeeded in generating a breathtakingly realistic treatment setting.

PRODUCT HIGHLIGHTS:

- + Improving the efficiency and quality of education, training, and care
- + Realistic and practical training experience
- + Realistic 3D models for learning purposes



3D Global provided support during the development of the 3D technology and its integration into the simulator. An FPGA board was deployed for control purposes alongside a customized 3D panel.

Remote Control in Yard Management

**Example application:
3D camera and glasses-free 3D monitor for
controlling driverless vehicles**

In a rapidly changing world, 3D technology is at the forefront of progress. One of the most intriguing fields is the remote control of heavy vehicles. Imagine a situation in which diggers performing demolition, mine clearance vehicles, and transportation systems are controlled from a safe distance away rather than by an individual in the driver's cab.

We help make this a reality with the integration of our 3D technology into 5G work processes, marking the start of a new chapter of safety, efficiency, and precision. The unique depth perception means you are always fully in control – even during remote operation.

FURTHER APPLICATION AREAS:

- + Forklift truck
- + Digger (for demolition)
- + Driverless transportation system
- + Mine clearance vehicles



Building Site 4.0

Example application: 3D vision for controlling construction machinery

Glasses-free 3D technology enables spatial depth perception in the event of poor visibility in the working environment and helps machinery operators perform precise and safe control. The combination of 3D and 5G technology establishes the workplace of the future: remote and accessible from anywhere in the world. This represents a key competitive advantage in an age of increasing personnel shortages.



Option 1:
Remote control on 3D display via 5G technology



Option 2:
3D display in vehicle for optimum depth perception

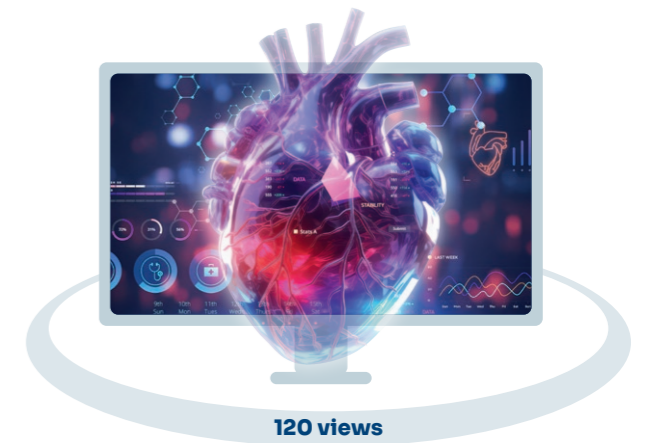


3D camera

Real-Time 3D Visualization

Example application: Education and training

Our goal is not only to provide education but to make it tangible. A mission that drives us to push the limits of learning and offer learners a comprehensive multi-dimensional experience. With our advanced 3D technologies, we establish an interactive learning environment that deepens understanding, awakens curiosity, and promotes learner interaction.



FURTHER APPLICATION AREAS:

- + Industry
- + Medical technology
- + 3D modeling

A multiview monitor makes it possible to view an object on all sides from different angles. Users can move around the monitor in a semicircle and immerse themselves in the three-dimensional object.



3D Digital Signage

Example application: Digital product presentation at point of sale

POS marketing, showroom displays, corporate signage, and eye-catching features for trade fairs and events: Experience the next generation of visual communication with extended reality 3D displays. Thrill your target group using innovative 3D presentation technology WITHOUT the need for special glasses. Communicate your message, your brand, and your product with a holographic 3D screen-out and depth effect. Guaranteed to stop potential customers in their tracks.

Our experts provide dedicated – and even interactive – support when choosing individual system solutions, from the initial idea and the creation of effective 3D content through to the deployment of hardware and software.

FURTHER APPLICATION AREAS:

- + Trade fair
- + Product launch/brand event
- + Exhibition/museum
- + Showroom/POS/retail
- + Digital outdoor advertising



Individual 3D Experiences

Example application: Home cinema and gaming

From home cinemas through to professional applications, we provide first-class solutions that break the boundaries of imagination and establish a new benchmark for image quality and realism. Discover how our sophisticated 3D monitors and their underlying technology can bring a never-before-seen level of depth, clarity, and immersion to your living room.

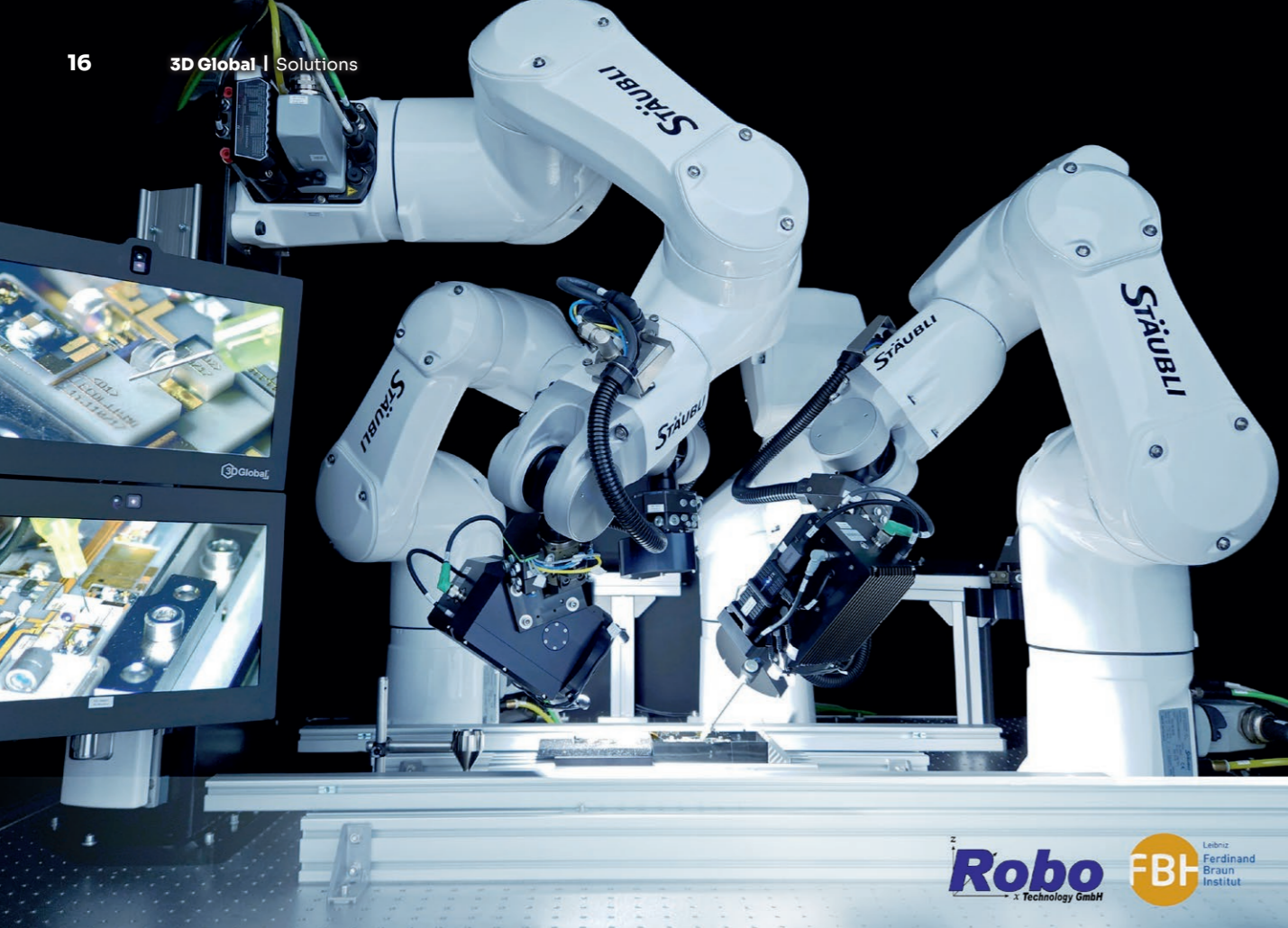
FURTHER APPLICATION AREAS:

- + Entertainment and events
- + Museums and exhibitions
- + In-car navigation
- + Product presentation



Ready for unique 3D gaming?

Welcome to an entirely new era of gaming – no cumbersome 3D glasses needed! The three-dimensional graphics let players dive even deeper into the game for a truly immersive experience. Take it to the next level with the 3D monitors from 3D Global.



Research Project: Robo Technology

The Ferdinand-Braun-Institut, Leibniz Institut für Höchstfrequenztechnik (FBH) is an ultra-high frequency research institute in Berlin. At its Joint Lab Quantum Photonic Components, it develops highly integrated miniaturized laser modules for quantum technology applications – with a particular focus on use in extreme environments such as space. During the assembly of the modules, very small optical and optoelectronic components are adjusted in a housing via micromanipulation that must meet precision requirements of below 100 nm. Module assembly comprises a variety of highly complex processes for the purpose of adjustment, calibration, and characterization.

In order to enable the industrialization of the technology developed by the FBH, it is necessary to ensure the reproducibility, documentability, and technical reliability of the individual assembly steps and of the overall workflow in an industrially compatible manner. In addition, efficient production requires the partial automation of work steps.

3D Competence and Innovation Center

Experience 3D live at our Aalen showroom

We shape the future of vision! Over 60 companies featuring more than 8,000 highly skilled roles combine with renowned research and education institutions to form the photonics cluster of the East Württemberg region. 3D Global strengthens this photonics cluster as a hidden champion in the key future technology sector of 3D.

Bring your team to visit the 3D demo center at our site in Aalen, Germany and discover our unique products for yourself. With support from our engineers, we will show you the many potential applications of our 3D technology and discuss how it could be integrated into your products.



Your 3D Partner

Generating unique viewing experiences together



The complete process – from a single source

Our goal is to provide our customers with the best possible support when integrating our 3D technology into their products.

We help with every stage of the process, from the product idea through to service for serial products.

Our engineers assist the implementation of hardware and software, working closely with the development departments of our customers. As the entire process is realized on-site at 3D Global, this enables fast development and production times.

Idea › Development › Prototypes › Certification › Series Production › Service

Business meet and greet workshop

Interested in an expert discussion exploring how 3D technology can contribute to efficiency, safety, and ergonomics at your company?

Our CEO, Head of Production, Head of Development, and additional experts are your ideal sparring partners. We take you inside the development process from the initial prototype to the finished product ready for series development. With support from our engineers, we will show you the many potential applications of our 3D technology and discuss how it could be integrated into your product range.

We look forward to welcoming you!



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