Excellence in Shape
3D Sensors **Shape**Drive **G4**

ShapeDrive **G4**: Quadruple Ingenious Performance on One Chip

Thanks to the ingenious Multiprocessor-System-on-a-Chip technology (MPSoC), the 3D sensors of the ShapeDrive G4 series have a wide range of performance features – all in the smallest of spaces.

1. **Processing unit**: Two Dual Core Arm® processors with up to 1.3 GHz for extremely smooth command processing, control and communication.

2. **Field Programmable Gate Array (FPGA)**: Real-time processing unit with 192k System Logic Cells for fast calculation of 3D point clouds in under 250 milliseconds.

3. **Memory**: Large (4 GB) and fast (19.2 Gbit/s) memory enables reliable processing of huge amounts of data.

4. **Connectivity**: The integrated Gigabit Ethernet interface ensures fast transmission speeds of up to 10 Gbit/s.


Structured Light

Structured light is an illumination technology where the light creates a known pattern such as grids or bars. The depth and surface information of the objects can be detected by the way in which the patterns are deformed. Highly accurate resolutions of less than 10 microns can be achieved with the measurement method based on triangulation and structured light. This enables the smallest structures that are practically invisible to the human eye to be identified.

3D Point Cloud

The pattern sequence of structured light is recorded by the camera. The result of the calculation is a 3D point cloud – i.e. the set of points providing a three-dimensional description of the object surface. Information on the intensity and quality of the point can also be obtained.
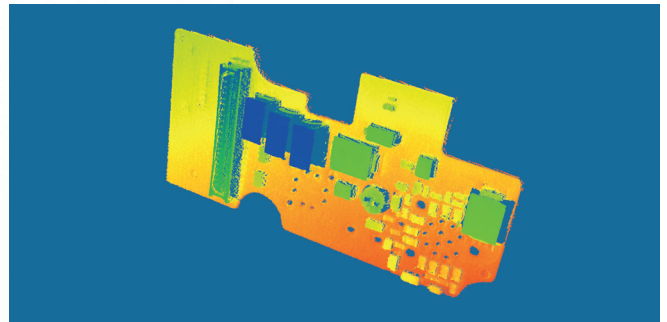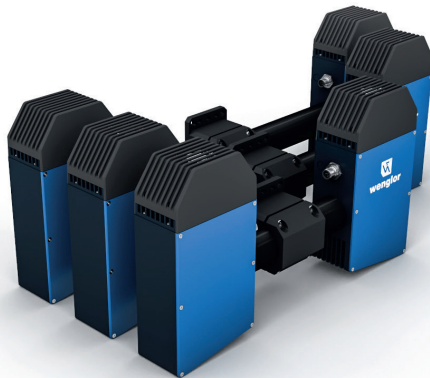
ShapeDrive **G4** MLAS

Compact Design for Small Measuring Volumes

ShapeDrive G4 MLAS 3D sensors are distinguished by high precision for small measuring volumes. The models in this series are available with a resolution of 5 or 12 MP. This means that even the smallest structures are precisely detected. High-quality optics provide high-contrast illumination and pattern projection.

The robust design (IP67) makes the MLAS sensors suitable for use in harsh industrial environments. ShapeDrive G4 impresses in terms of both variety and speed thanks to the efficient MPSoC technology including FPGA for integrated 3D point cloud calculation, the fast Ethernet interface and the three measuring ranges in each performance class.

www.wenglor.com/ShapeDrive/MLAS

ShapeDrive **G4** MLBS

High Performance for Large Measuring Volumes

The ShapeDrive G4 3D sensors from the MLBS series are designed for better illumination and detection of objects due to their symmetrical design. The 3D sensor requires only short exposure times thanks to the high-performance illumination.

The robust design (IP67) makes the MLBS sensors suitable for use in harsh industrial environments. The MLBS models master complex 3D applications in the field of intralogistics or measurement technology, such as bin picking or automated depalletization, quickly and reliably thanks to the efficient MPSoC technology.

www.wenglor.com/ShapeDrive/MLBS

The Models

Measuring volume (X × Y × Z) in mm	Megapixel camera resolution	Products
60 × 48 × 40	5	MLAS112
120 × 90 × 100	5	MLAS113
240 × 200 × 200	5	MLAS114
60 × 40 × 40	12	MLAS212
120 × 80 × 100	12	MLAS213
240 × 160 × 200	12	MLAS214

The Models

| Measuring volume (X × Y × Z) in mm	Megapixel camera resolution	Products
500 × 380 × 400	5	MLBS111
750 × 560 × 500	5	MLBS112
1,300 × 1,000 × 1,000	5	MLBS115
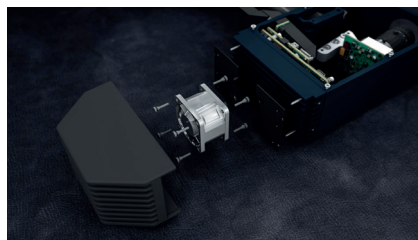
3D Surface Inspection of Die-Cast Motor Housings
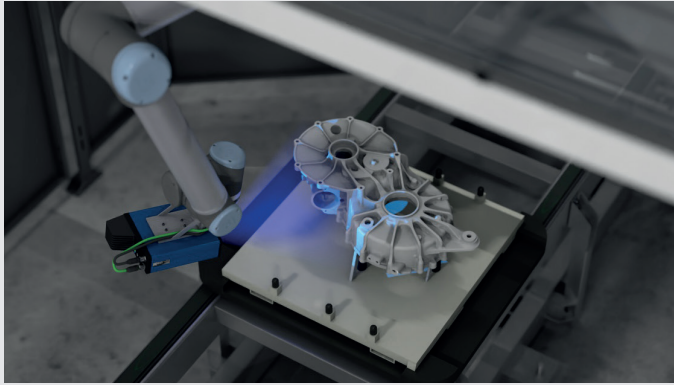
When manufacturing die-cast housings for electric motors made of aluminum, a high-precision quality inspection of the castings in the micron range must be carried out. Robot-guided measuring systems such as the 3D sensors from the ShapeDrive G4 series can inspect shrinkage, distortions, wall thicknesses, sink marks and many other geometric parameters fully automatically using structured light three-dimensionally and accurate to the micrometer.

Bin Picking of Metallic Components Using 3D Sensors

Bin picking refers to an automation process where chaotically arranged objects are detected, picked and conveyed using 3D sensors like the ShapeDrive G4 and robots.
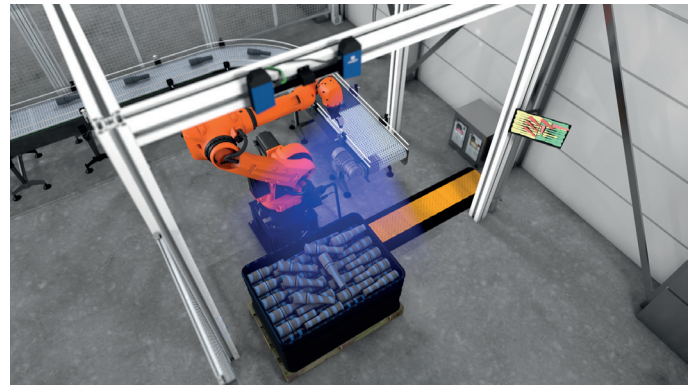
More information on this and other 3D applications is available on our website.
www.wenglor.com/ShapeDrive/Applications

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the innovative family