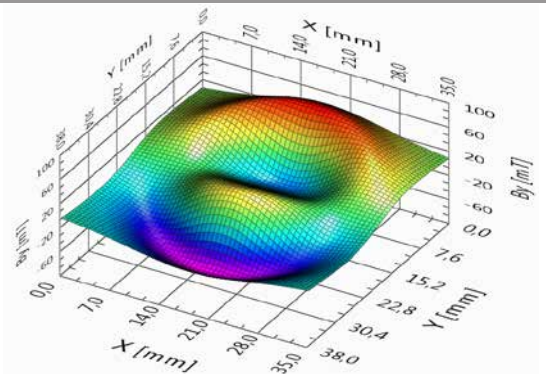


1

1 Array camera with interface
for USB operation

2 Live visualization of
magnetic field values



2

HallinSight 3D MAGNETIC FIELD CAMERA

Applications

- Quality control in magnet manufacturing
- Non-destructive material testing
- Multi dimensional position measurements
- Visualization of static or alternating magnetic fields (e. g. motors, coils)

Features

- True 3D magnetic field on 4 cm x 4 cm
- Integrated temperature sensor
- Fully calibrated sensors
- Ready-to-use with USB interface
- Labview software for visualization and easy implementation in existing setups
- Measurement range up to 1 T (optional)

Technology

The 3D magnetic field camera, based on the Fraunhofer HallinOne® technology, measures all three components of the magnetic field in the plane of a 16 x 16 pixel array. The distance between the single 3D magnetic field sensors is 2.5 mm. Spline interpolation allows for accurate sub-pixel measurement results. With global shutter all sensors of the array can measure synchronously. Dynamic measurements are enabled by the unparallelized high measurement speed. The actual sensor array can be separated from the interface PCB for flexible placement.

Properties and Accuracy

- Resolution 16 μT (no avg.)
- Magnetic field range 0 ... ± 100 mT (typ.)
- Absolute offset error <50 μT (typ.)
- Absolute gain error <1% (typ.)
- Noise 30 μT RMS (no avg.)
- Measurement interval 5 ms (no avg.)
- Single measurement time 2 ms
- Geometric position error <100 μm
- Temperature range -40° C ... 125° C
- Orthogonality error <1°

Fraunhofer Institute for Integrated Circuits IIS

Am Wolfsmantel 33
91058 Erlangen, Germany

Contact

Dipl.-Ing. Klaus Taschka
Phone +49 9131 776-4475
Fax +49 9131 776-4499
klaus.taschka@iis.fraunhofer.de

www.iis.fraunhofer.de