



## Fundamentals of **Industrial Measurement** Technology

# **Optical** Measurements



ProDSP Post Series Nr.15.



# Introduction

Optical measurement technology is one of the most **versatile** and **highest-resolution** methods used in industrial environments. By **examining** various properties of **light, numerous physical parameters** can be determined with high precision.





# Light intensity and spectrum measurement

- Brightness
- Color coordinates
- Spectral distribution





# Spectral characteristics analysis

- Spectral evaluation of ...
  - ... light sources
  - ... LEDs
  - ... and optical components





# Geometric measurement

- Determination of ...
  - ... size
  - ... shape
  - ... position
  - ... distance





## Smart camera systems

- Integrated image processing
- Robust and fast solutions
- Not as accurate or versatile as a custom system





# Laser scanning systems

- Measurement of 2D/3D contours
- Distance profiles





## **3D cameras**

- Spatial reconstruction
- Position and shape recognition





# The universal advantages of optical measurements

- High resolution
- Fast measurement cycles
- Contact-free operation





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