

Adem Ateş

Miniaturized Optical Beam Diagnostics

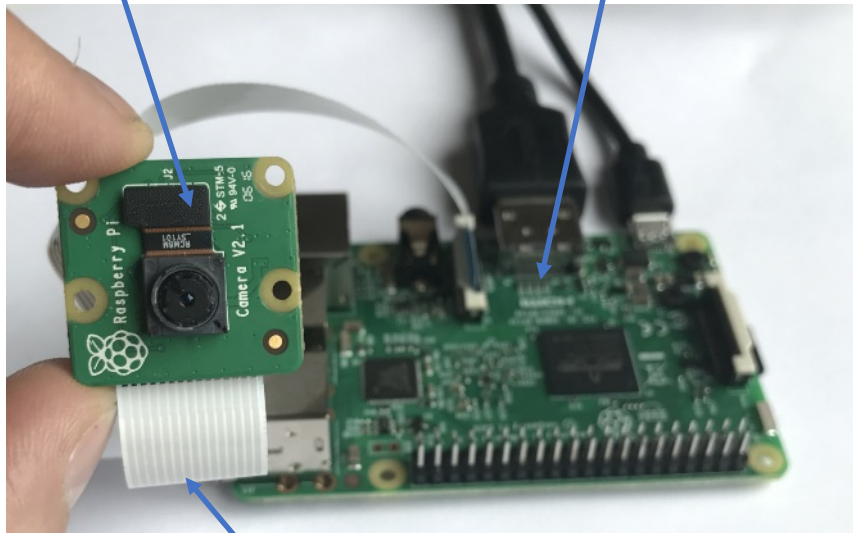


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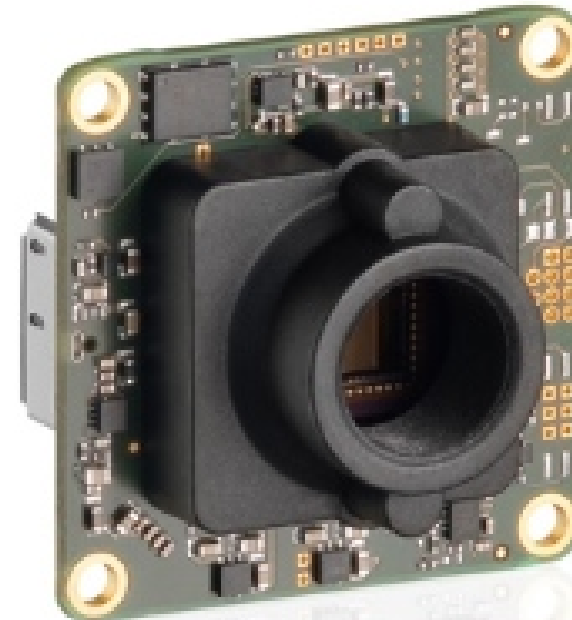
Embedded Vision System for Beam Investigation

Non Scientific
CMOS Bord-Level
Camera

Processing
Single Board
Computer



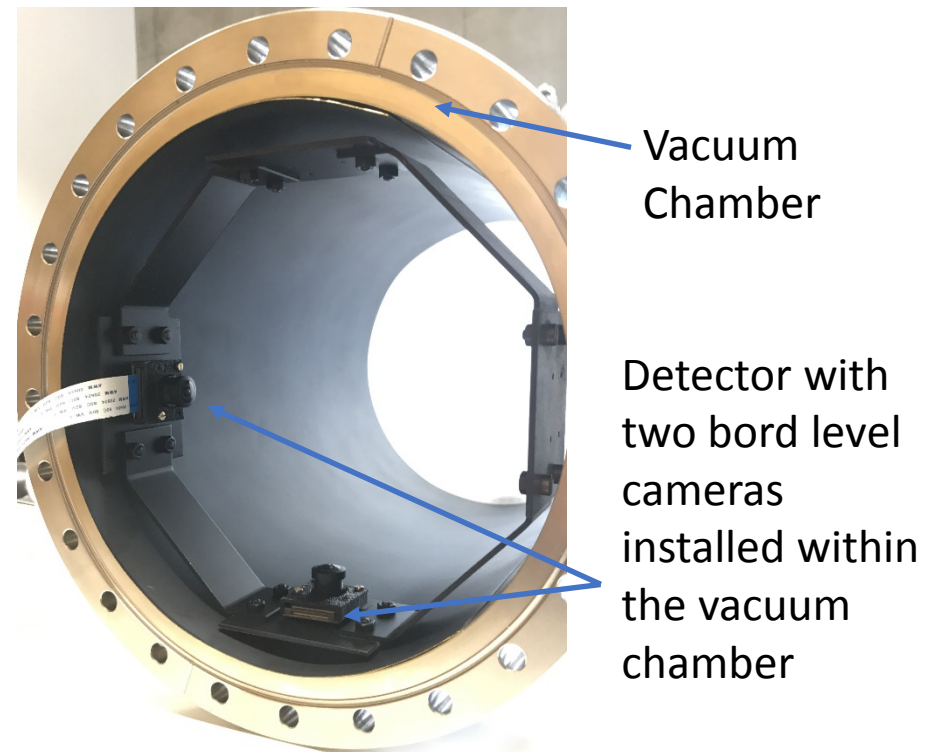
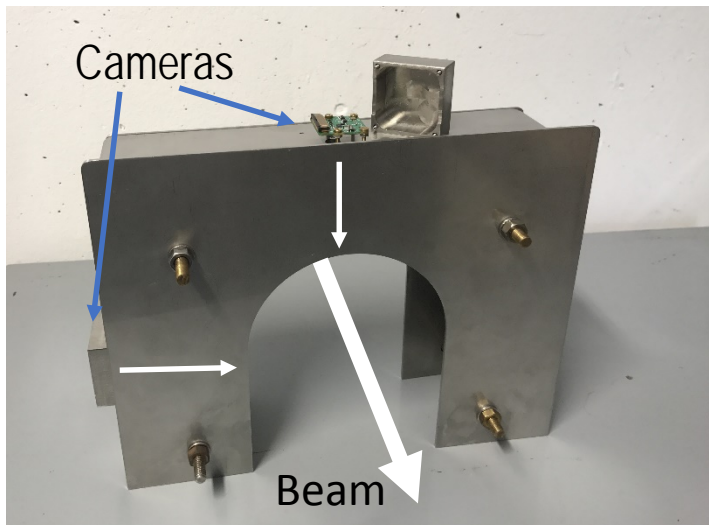
Flexible Low
Level Interface



- Scientific CMOS Bord-Level Camera (IDS, Basler, Hamamatsu, ...)
- USB 3.0 High Speed Interface
- HD-Resolution
- Variable Objectives

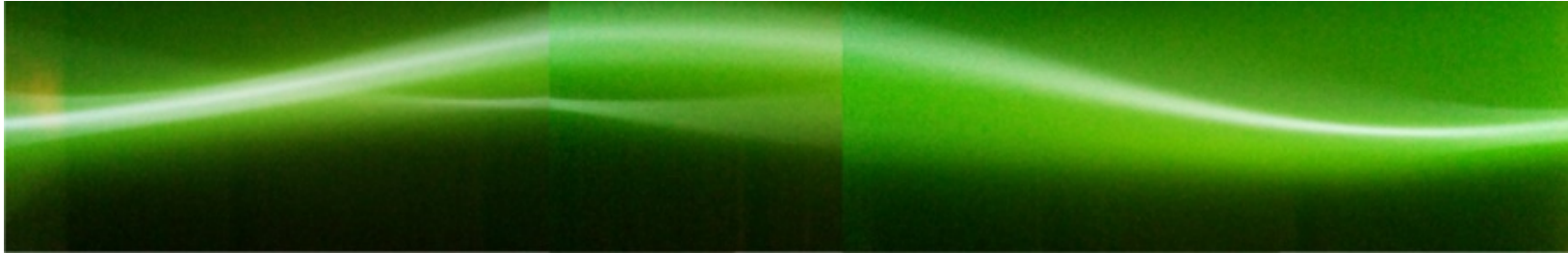
Advantages of Miniaturized Cameras

- Low energy consumption
- Low costs
- Small Size
- Insensitive against strong magnetic fields
- Fully integration into experiment even within vacuum chamber

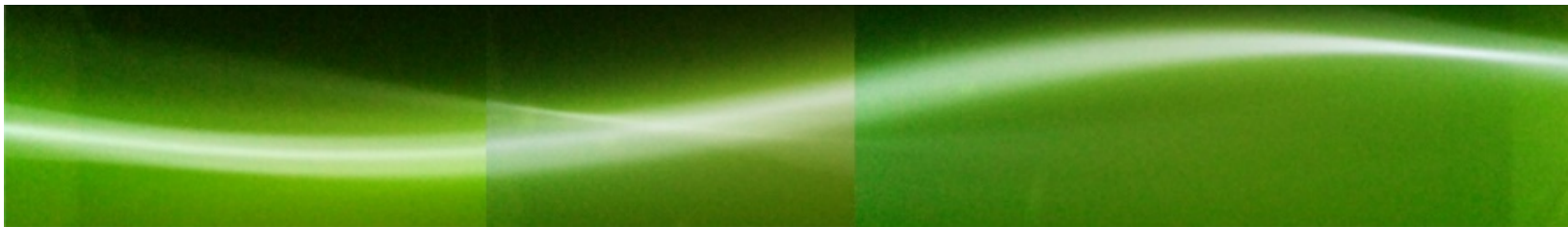


Longitudinal Beam Investigations

Vertical
Camera 1



Horizontal
Camera 2



- 7keV, 0.3mA, H⁺ and H₂⁺ beam at 1·10⁻⁵mbar residual gas pressure and 0.6T toroidal magnetic strength
- 5s exposure time, ISO 800
- Sinusoidal shape due to gyration of the beam in toroidal magnetic field

AG Prof. Ulrich Ratzinger

Name	Position	Funktion
Klaus Volk	Wiss. Mitarbeiter	Strahlexperimente, Ionenquellen
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