



PFI

Particle Flux Imaging

INNOVATION

ZM

Messtechnik & Consulting

Particle Flux Imaging



Function principle:

Particle Flux Imaging (PFI) is a camera based diagnostic tool that can be used for all kinds of thermal spray processes. The camera unit captures the very luminous heating zone and the less luminous particle zone simultaneously. A computer software reduces the amount of information by approximating both zones with ellipses. All relevant process properties are being reflected by the calculated ellipse attributes. These attributes are then being compared with reference data collected in advance for an optimal spraying process. By this, a fast and reliable detection of process deviations from predefined boundaries can be easily realized. The process is accepted as error free if there is no deviation detected during a complete coating cycle. Due to the short measuring time both monitoring principles are possible, permanent or before/after coating.

Characteristics of the PFI-s system:

- permanent or before/after process monitoring
- result after ~6 s of measurement & computing time
- fully automatic measurement
- robust set-up
- no process disturbance
- small integration effort
- trigger able by main control system (e.g. PLC)

Technical characteristics:

Camera unit:

- robust metal housing
- automatic adjustment of
 - filter
 - integration time
 - shutter
- weight: 645 g
- dust protection: IP65
- dimensions (l x w x h): 150 mm x 50 mm x 57 mm
- measurement distance: 0,3..2 m
- ambient temperature: 10..65 °C

Integration options:

- industrial grade stand-alone system with a touch-screen panel PC and integrated camera interface
- integrable computer unit and external camera interface for top hat rail mounting
- remote controlled camera interface for top hat rail mounting

Software features:

- PFI© process monitoring
- simple-to-use software
- up to 4 independent ellipses
- easy process adjustment by just one button
- flexible communication protocol (OPC, DDE, TCP/IP)
- suitable for remote control
- host/client functionality
- data export to *.csv and *.pdf

