

Title (en)

APPARATUS AND METHOD FOR MEASURING A SPATIALLY RESOLVED TEMPERATURE DISTRIBUTION

Title (de)

VORRICHTUNG UND VERFAHREN ZUR MESSUNG EINER ORTSAUFGELOSTEN TEMPERATURVERTEILUNG

Title (fr)

DISPOSITIF ET PROCÉDÉ DE MESURE D'UNE RÉPARTITION DE TEMPÉRATURES À RÉOLUTION SPATIALE

Publication

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Application

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Abstract (en)

[origin: WO2014095442A1] The present invention relates to an apparatus and a method for measuring a spatially resolved temperature distribution, wherein the apparatus has an imaging detector and a pyrometer, wherein the imaging detector is set up in such a manner that the latter provides a spatially resolved intensity distribution  $I_L$  from the electromagnetic radiation coming from a region A of a measurement object, wherein the pyrometer, preferably a quotient pyrometer, has a radiation-sensitive sensor which is set up in such a manner that, during operation, said sensor provides a reference temperature  $\theta_i$  for at least one predetermined measuring field  $i$  inside the region A, wherein the detector and the sensor are set up to measure electromagnetic radiation from at least partially overlapping wavelength ranges. In order to provide an imaging pyrometer which is suitable for measuring a spatially resolved temperature distribution and can be produced in a cost-effective manner, the invention proposes that a section  $i'$  of the spatially resolved intensity distribution  $I_L$  and the predetermined measuring field  $i$  inside the section  $i'$  are associated with one another in such a manner that, during operation, the reference temperature  $\theta_i$  and the maximum intensity  $I_i$  measured in the section  $i'$  form a pair of measured values  $(\theta_i, I_i)$ , wherein a calibration module is provided and, during operation, associates each value of the spatially resolved intensity distribution  $I_L$  with a temperature  $\theta_L$  on the basis of the at least one pair of measured values  $(\theta_i, I_i)$  and a predetermined approximation function  $F(I_L, (\theta_i, I_i))$ .

IPC 8 full level

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