

UNCLASSIFIED

AD 402 570

DEFENSE DOCUMENTATION CENTER

FOR

SCIENTIFIC AND TECHNICAL INFORMATION

CAMERON STATION, ALEXANDRIA, VIRGINIA



UNCLASSIFIED

NOTICE: When government or other drawings, specifications or other data are used for any purpose other than in connection with a definitely related government procurement operation, the U. S. Government thereby incurs no responsibility, nor any obligation whatsoever; and the fact that the Government may have formulated, furnished, or in any way supplied the said drawings, specifications, or other data is not to be regarded by implication or otherwise as in any manner licensing the holder or any other person or corporation, or conveying any rights or permission to manufacture, use or sell any patented invention that may in any way be related thereto.

① 402570

③ 17511

63-3-3

② 2074

4.4472

44381

Z/050/62/000/012/001/003
E073/E535

FILE COPY

ACTIA

AUTHOR: None given

TITLE: ⑥ Pneumatic infrared detector

PERIODICAL: ② Bulletin Československé Akademie věd, no.12, 1962, 6

TEXT: A pneumatic infrared Golay-type detector, intended for use with the infrared spectrophotometer built by the same Institute, was developed at the Ústav přístrojové techniky ČSAV (Institute of Instrument Engineering, ČSAV), Brno. Compared to thermocouple and bolometer detectors the developed detector has the following advantages: a large circular pick-up area which facilitates design and adjustment of the optical part of the spectrophotometer; a very high threshold sensitivity, equalling that of the highest-quality thermocouple detectors; the design of the electronic amplifier is simpler than for thermocouple and bolometer detectors. The operation of the detector is based on the thermal expansion of gas, whereby the heat is generated by the absorption of the measured infrared radiation which hits the receiving surface of the detector. The expanding gas exerts pressure on a thin membrane which closes the pressure chamber.

Card 1/2

Pneumatic infrared detector

Z/050/62/000/012/001/003
E073/E535

The membrane deforms as a result of pressure and its curvature is measured by means of a suitable optical system. The performance of the instrument is equal to and even better than that of foreign detectors of this type. It has been successfully tested in a small infrared spectrophotometer and it is to be used in further spectrophotometers being developed at the Institute.

Card 2/2