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Title: Matrix bolometric detector for detecting electromagnetic radiation in integrated hermetic micro-packaging field, has openings placed periodically based on period less than/equal to ratio wavelength and average refractive index medium

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Abstract: NOVELTY - The detector has a matrix bolometric micro plates (14) suspended above a substrate (16) by a thermal insulation and support arm (18) for detecting radiation. A metallic focusing membrane (22) is placed above and around each micro-plate, and openings i.e. slots (26), are formed on the membrane. The openings the membrane are placed periodically along a predetermined axis according to period less than or equal to ratio wavelength range wavelengths to be detected and average refractive index medium separating the micro-plate and the membrane.

USE - Matrix bolometric detector for detecting electromagnetic radiation in a predetermined range infra red or terahertz wavelengths in integrated hermetic micro-packaging field.

ADVANTAGE - The focusing membrane extends above the micro-plate, so that a portion the incident radiation on a portion the metal membrane, which is not directly above the micro-plate is redirected toward the micro-plate, thus increasing useful surface dedicated to the detection radiation and optimizing global sensitivity the detector. The focusing membrane is placed in upper plane micro-packaging so as to compensate optically active surface loss induced by flanks micro-packaging, thus affording declining production costs allowed by collective realization packaging, while minimizing yield loss the detector induced by the packaging.

DESCRIPTION DRAWING(S) - The drawing shows a sectional schematic view a matrix bolometric micro plates along an axis.

Bolometric micro plates (14)

Substrate (16)

Thermal insulation and support arm (18)

Metal membrane (22)

Slots (26)

Drawing:

Derwent Class Code(s): P81 (Optics); S03 (Scientific Instrumentation, photometry, calorimetry); V07 (Fibre-optics and Light Control)

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Cited Patent(s):

EP2466283-A1 EP1243903-A2 COMMISSARIAT ENERGIE ATOMIQUE (COMS)
VILAIN M

FR2752299-A1 COMMISSARIAT ENERGIE ATOMIQUE (COMS) VILAIN M; YON J J

FR2935809-A1 COMMISSARIAT ENERGIE ATOMIQUE (COMS) DESIERES Y; MARY
A

US6094127-A DAEWOO ELECTRONICS CO LTD (DEWO) SHU S

US6753526-B2 COMMISSARIAT ENERGIE ATOMIQUE (COMS) VILAIN M

US6924485-B2 NEC CORP (NIDE) KANZAKI M

US2005161589-A1 UNIV PITTSBURGH (UPIT) KIM H K; SUN Z; CAPELLI C C