Sensors

X-RAY

Measuring Method

The X-Ray sensor is based on the x-ray transmission procedure, with the acceleration voltage limited to <5kV. The material to be examined is placed between the emitter and the detector, which are installed facing each other. Radiation is weakened by the goods to be measured. The degree of weakening depends on grammage and composition of the measured goods.

Special Features of X-Ray Measurement <5kV

The special benefit of x-ray radiation <5keV is its low energy and small range. Therefore, the radiation load is very low outside of the sensor casing. Another benefit of x-rays is that they can be switched off. The device is not subject to legal ristrictions and does not require approval. This leads to considerable benefits in the radiation protection area, e.g.:

- No radiation protection officer necessary
- No additional costs for storage, transport and disposal
- No requirements for fire and theft protection
- Maintenance work possible without radiation exposure

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MEASURING RANGES

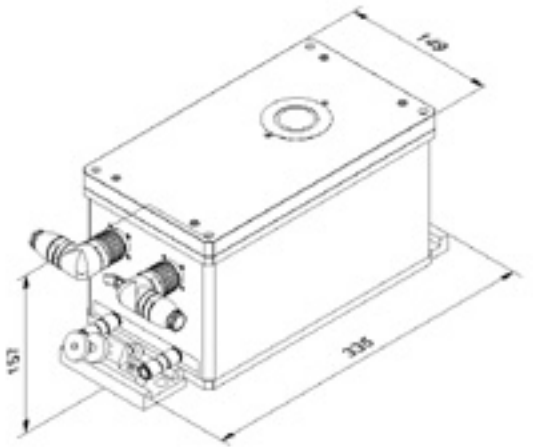
Parameters	Standard	Extended Rage
Acceleration voltage	<5kV	<5kV
Measuring range	up to 750 g/m²	up to 4000 g/m²
Typ. measuring accuracy	+/- 0,5g/m² / +/- 0,5%	+/- 0,5g/m² / +/- 0,5%
Max. ambience temperature (no cooling)	40°C	50°C
Size of measurement spot	2 cm²	4 mm² ... 2 cm² (different spot sizes on request)

The **<5keV standard x-ray sensor** has a measuring range up to 750 g/m², depending on material composition.

The X-Ray extended range expands the measuring range to up to 4000 g/m² at the same acceleration voltage. Particularly note that, in contrast to beta radiation, absorption of x-ray radiation strongly depends on the atomic number of the material to be measured.
For materials containing components at a higher atomic number, such as PVC, the measuring range reduces and the measuring accuracy increases depending on atomic number. Due to the low statistical noise, the possibility of collimation of the measuring spot and the specific benefits in the low-energy range, both versions of the x-ray sensor were designed for very different measuring tasks and situations. Precise inspection and assessment of the customerspecific measurement requirements before placement of the order provides the customers with a measuring system customised to his measuring task.

Note

We supply x-ray emitters with an acceleration voltage > 5kV for applications outside of the above measuring ranges.



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We are happy to help!
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