

ENVIRONMENTAL DOSIMETRY LOW DOSES

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The COGEBADGE[®], COGEMA Dosimeter, equipped with a 4 dosimeter thermoluminescent card, is used for environmental dosimetry.

The capacities and limits of the thermoluminescent dosimetry system, allow, in routine operations, the measurement of very low dose levels, including natural radiation background.

For the photon thermoluminescence dosimetry system :

- the critical level (LC), representing the signal that provides a confidence level $1-\alpha$ that the result is not due solely to a fluctuation of the background, is equal to $4\text{ }\mu\text{Gy}$.
- the detection limit (LD) representing the lowest value of dose which can be measured with a given confidence level (95 %) is equal to $10\text{ }\mu\text{Gy}$
- the determination limit (LQ) representing the lowest value of dose which can be measured with a given precision (10 %) is equal to $120\text{ }\mu\text{Gy}$

The variation of the determination limit LQ with precision is given in the figure 1.

Determination limit (μGy)

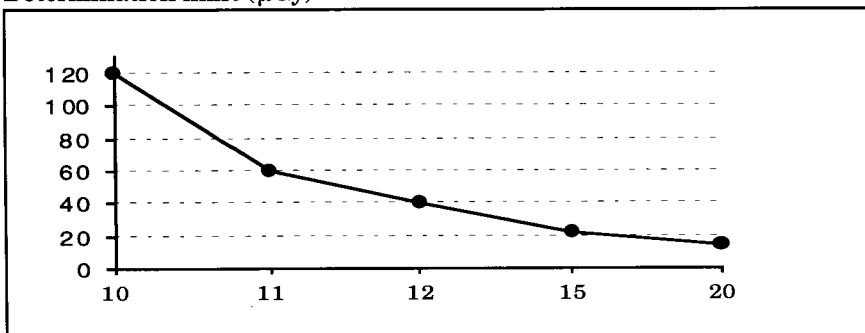


Fig. 1 Variation of the determination limit with precision