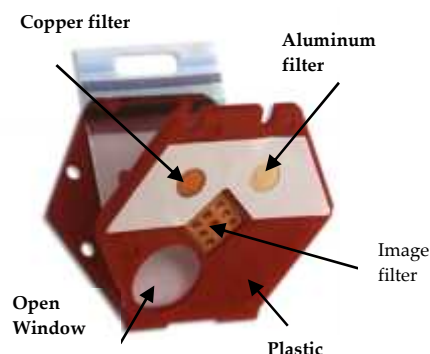


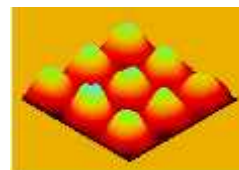
Imaging Notes Demystified

Landauer Luxel+ dosimeters are equipped with an imaging filter to aid the client in their dose investigation. The filter pack provides a unique filter pattern on the $\text{Al}_2\text{O}_3\text{:C}$ detector that is analyzed using Pulsed Optically Stimulated Luminescence and interpreted using Discrete Fourier Transform to decide if the dosimeter (or the source) was in motion at the time of exposure. Luxel+ dosimeter with doses of 500 mrem(5mSv) or higher are automatically imaged. Dosimeters reading lower than 500 mrem(5mSv) could also be imaged by customer request. Imaging results are recommended for photon energies below 70keV. The most common imaging notes listed on the Dosimetry Reports are detailed below.



Static Exposure

During a static exposure, the absorbed radiation pattern is sharp and clear. A static image could be due to intentional irradiation, could indicate that the dosimeter was not worn by the participant at the time of exposure, or could originate from a dosimeter that was forgotten in the exposure room or lost for a period of time during the wear period.



Dynamic Exposure

During a dynamic exposure, either the source or the dosimeter is in motion at the time of exposure and the image pattern is diffuse. Most of the time, a dynamic note on the Dosimetry Report implies that the dosimeter was worn during the time the exposure took place. Sometimes the image appears dynamic due to the irradiation source moving, which is very common when using Computed Tomography devices (CT).

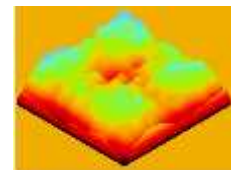
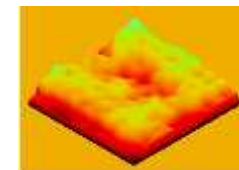


Image Results are Inconclusive

In case of a Luxel+ dosimeter being exposed to photon energies above 70keV, we are unable to determine if the image is static or dynamic, since the image behind the image filter looks diffused. This is communicated to the client by applying a note to the Dosimetry Report.



Irregular Exposure

An irregular exposure note on the Dosimetry Report indicates that the exposure is not typical and it does not follow the basic rules of radiation absorption. These situations could occur due to a dosimeter being partially shielded, exposed at extreme angles, and/or exposed from the back using low energy photon sources. Depending on the radiation field and the degree of the irregularity, the dose might be reported as "best evaluation possible" meaning that with the information Landauer had available, this is the best evaluation that could be offered.