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Angular dependence tests of an ionization chamber developed for determining the X radiation field homogeneity

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Pencil ionization chambers are widely, if not exclusively, used for computed tomography (CT) dosimetry. Some studies pointed for the possibility of using this type of ionization chambers in other radiation beams, showing that they can be extended for other types of radiation. As these ionization chambers have a small thickness, this work presents a new type of pencil ionization chamber, that was especially designed for determining the radiation field homogeneity. This ionization chamber has a 1.00 cm sensitive volume length, instead of the usual 10 to 15 cm of commercial chambers. In this work the operational characteristics of this new ionization chamber, as the angular dependency and the linearity of response, were evaluated. The results were all in agreement with the IEC 61674 recommendations.

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