



B3110 & B3112 ENERGY WEDGE CARD ARRAY

Technical and Usage Information

Instructions for Use with the P4701 RISØ Aluminum Wedge

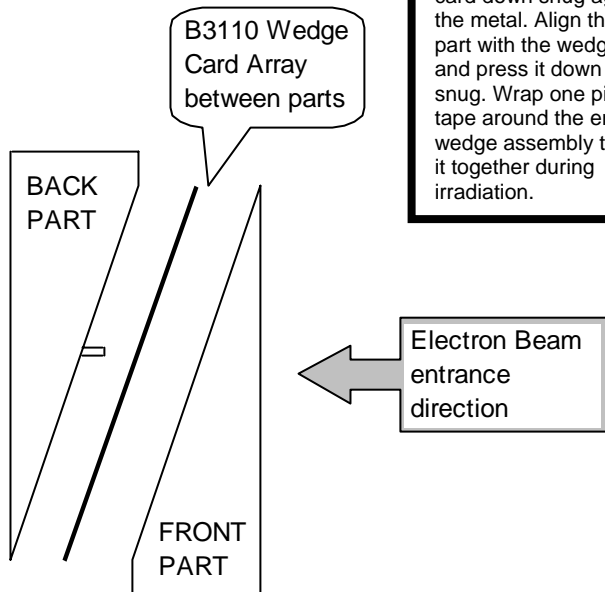
Keep B3110 and B3112 energy card array packages sealed until just before use so that the environmental conditions of the packaging are maintained. For best results, set the accelerator parameters to deliver a targeted surface dose of approximately 25 kGy.

The Risø HDRL aluminum wedge consists of two parts. The “back” part is fitted with two alignment pins. The “front” part has two holes that mate with the alignment pins.

When ready to perform the energy test, open the product package and remove and unfold the card array. Orient the card so that the lowest numbered dosimeter will be over the thick end of the back part and align the card holes with the wedge pins. Press the card down snug against the metal. Align the front part of the wedge with the wedge pins and press it down until snug. Tape the wedge assembly to secure it fits tightly together during irradiation.

Orient the wedge in the material handling system such that the wedge is perpendicular to the electron beam in the center of the electron beam scan, and that the electrons will enter through the “front” portion. Perform a single-sided irradiation of the wedge.

Orient the card and align the card holes with the wedge pins. Press the card down snug against the metal. Align the front part with the wedge pins and press it down until snug. Wrap one piece of tape around the entire wedge assembly to keep it together during irradiation.



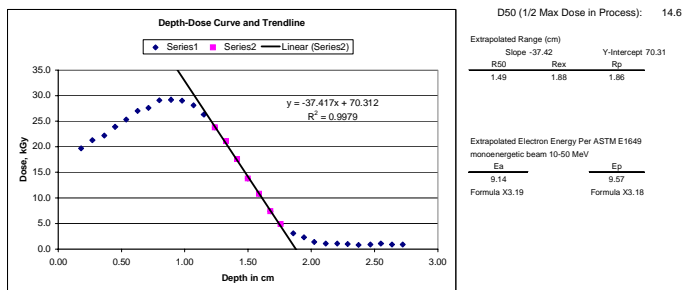
Post Irradiation Handling

Remove the array card. Follow a post-irradiation protocol as with all B3 dosimeter products. This is particularly needed for the lower dose dosimeters in the card that will be used to determine the slope that impacts the intercept and therefore the final energy estimate. Measurement without completing color development of the dosimeters can cause a bias in the result.

Measuring the Wedge Card Array

Use the *WINdose* for Excel worksheet program (S5100) for the dose measurements with automated plotting. The readout worksheet will plot the dosimeter results and use the extrapolated range to estimate the energy. For information, contact GEX Corporation.

The WINdose for Excel software automatically graphs display of doses at different wedge depths.



Each B3110 Dosimeter Energy Card Array contains 30 B3WINdose sequentially numbered dosimeters. The cards fit over the pins in the Risø wedge (GEX Part # P4701). The wedge is then irradiated in a single-sided process. As the dosimeters are read in sequential order the worksheet plots the depth-dose curve and calculates an energy based on formulas found in ASTM E1649, Standard Practice for Dosimetry in an Electron Beam Facility for Radiation Processing at Energies Between 300 keV and 25 MeV.

References

ISO/ASTM 51649 - Standard for Dosimetry in an Electron Beam Facility for Radiation Processing at Energies Between 300 keV and 25MeV.

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