

# BEAM EMITTANCE RECONSTRUCTIONS AT THE KFUPM 350 KEV ION ACCELERATOR

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## Summary

We successfully reconstructed the horizontal and vertical beam emittances of a 160 keV low-intensity deuteron ion beam from the Energy Research Laboratory's low intensity duoplasmatron deuteron ion source. Reconstructions were made from horizontal and vertical beam width measurements. These measurements were done using only one quadrupole triplet and a beam profile monitor situated towards the end of the 45-degree beam line of the 350 kV ion accelerator. The deuteron beam emittances were  $\epsilon(h) = 67\pi$  mm-mrad and  $\epsilon(v) = 4\pi$  mm-mrad at 90% of the beam.

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