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The Ion Source for the Commissioning of ELENA Ring

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The commissioning and first results of the ion source to test the Extremely Low Energy Antiproton Ring ELENA are presented. ELENA is a compact ring for cooling and further deceleration of 5.3 MeV antiprotons delivered by CERN Antiproton Decelerator (AD) down to 100 keV. Because of the long AD cycle of 100 s, one ion source for protons and H^- with a kinetic energy of 100 keV has been installed for commissioning and start-ups. The complete device is described including the control and power subsystems. The beam profiles and the emittance for protons and H^- were measured with a wire scanner and a pepper-pot diagnostics. The current was also measured by means of a current transformer. The ion source meets the parameters required by ELENA testing program in order to tune the decelerator ring before starting with the antiproton beam.

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