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MIRAS INFRARED MICROSPECTROSCOPY BEAMLINE INSTALATION

MIRAS is the first Phase II beamline constructed at ALBA Synchrotron. MIRAS is dedicated to infrared microspectroscopy. Its installation started in November 2015 and the beamline received its first users on October 2016. The radiation of this beamline is covering a wavelength range from 0.4 to 100 μm . The beam size at the sample varies between 3×3 and $30 \times 30 \mu\text{m}^2$. The source of the light is a bending magnet; a slotted flat mirror is inserted horizontally into the bending magnet vacuum chamber to let the more energetic radiation pass through the slot, collect the rest of the radiation and direct it through a transfer system built by eight mirrors leading it to the end station. Three of these mirrors are flat, one is toroidal, two are cylindrical, one is parabolic, and lastly, another flat one which acts as a beam splitter, that lets the light be shared between the first end station and a future second branch. All the mirrors have been fiducialized to guarantee their final position. The motion of the extraction mirror has been characterized in order to check that the full insertion movement does not cause a collision between the mirror and the vacuum chamber. Most of the mirrors have a diagnostics camera to check the position and the shape of the visible beam at the mirrors. Since part of the collected beam includes visible radiation, a comparison between the infrared simulated beam and the real footprint on the mirrors has been done

Summary

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