We present the final engineering design and first commissioning results of two highly integrated experimental stations for the micro-focusing (FMX) and the highly automated (AMX) MX beamlines at the NSLS-II. These beamlines will support a broad range of biomedical structure determination methods from serial crystallography on micro-sized crystals, to structure determination of complexes in large unit cells. These experimental stations are completely designed and fabricated in-house to meet challenging requirements resulting from the small beam size of 1 μm and the extremely short working distance of only 190 mm from the beam exit window to the FMX focal spot.

**FMX & AMX specific & new features**
- Micro focus beams
- High energy
- Automation
- High flux
- Next Generation Pixel Array Detectors

AMX will support samples that are too small for conventional diffractometers, such as single molecular complexes, bacterial and viral proteins, active complexes in solution, and live cells. AMX will support structure determination programs that require testing of vast numbers of small crystals. AMX will support programs that cannot afford to wait the time required for inhouse sample preparation and crystallography.

**FMX Experimental Station Construction Update**

**AMX Experimental Station Construction Update**

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**FMX**

**AMX**

**Flux at focus**

**Focal spot range**

**Energy range**

**Wavelength range**

**Focal spot min**

**Focal spot max**

**Focal spot range**

**Horizontal slit**

**Vertical slit**

**Kappa KB mirror**

**Goniometer arm**

**Sample holder**

**Beam shutter**

**Detectors**

**Secondary goniometer**

**Focusing mirror housing**

**Sample visualisation**

**Beam Conditioning Unit**

**Beam shaping**

**FMX & AMX’s specific & new features**

- Micro focus beams
- High energy
- Automation
- High flux
- Next Generation Pixel Array Detectors

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