

Demanding Mechanical Specifications on the I18 Microfocus Beamline at Diamond

Andrew Peach

*Senior Mechanical Project Engineer
Diamond Light Source Ltd.
Rutherford Appleton Laboratory
Chilton
Didcot
Oxfordshire
OX11 0QX*

The objective to hold a 1 micron beam size stable to within 10% of the spot size on the sample at 42m from the source at Diamond presented the need for some challenging mechanical specifications for the key beamline components. In particular, for the first mirror, double crystal monochromator, slit systems, refocusing mirrors and the sample manipulation stage

Whilst the performance of many of the commercially available beamline components has continually improved over recent years, we were keen to push some of the technical specifications for the key optics to new limits.

During the next 6 months we will be in the process of building the beamline and evaluating and testing many of these key components.

Some of these aspects and the overall beamline design in general will be described.