

## ID10B Characteristics (July 6, 2005)

### Source

|   |  |               |
|---|--|---------------|
| 3 undulators (U27, U35 and U27/U35 revolver unit) in series |  |               |
| <b>ID</b>   | U27 undulators   | U35 undulator |
| <b>Length</b>   | 1.6 m  | 1.6 m         |
| <b>Magnetic period:</b>                                     | 27 mm  | 35 mm         |
| <b>Minimum gap</b>  | 11 mm  | 11 mm         |
| <b>B<sub>0</sub> :</b>                                      | 2 T  | 2 T           |
| <b>Total emitted power:</b>                                 | 1.14 kW/100mA  | 2.05 kW/100mA |
| <b>Source size:</b>   | 928 x 23 $\mu\text{m}^2$ (HxV) FWHM (high- $\beta$ section)          |               |
| <b>Source divergence:</b>                                   | 28 x 17 $\mu\text{rad}^2$ (HxV) FWHM @ 10keV (high- $\beta$ section) |               |

### Optics

|                                 |  |             |        |
|---------------------------------|--|-------------|--------|
| <b>Optical elements:</b>        | Mono I   | Mono II     | Mirror |
| <b>distance from Source:</b>    | 30.5 m   | 31.3-32.2 m | 34.5 m |
| <b>focusing:</b>                | Kirkpatrick-Baez (KB) mirror for horizontal focusing                       |             |        |
| <b>beam size at sample:</b>     | max. 2 x 0.8 $\text{mm}^2$ , min. 30 x 50 $\mu\text{m}^2$ (HxV)            |             |        |
| <b>spectral range:</b>          | 8-13keV and 13-22 keV  |             |        |
| <b>intrinsic resolution</b>     | 5.9 x 10 <sup>-5</sup> diamond (111); 2.3 x 10 <sup>-5</sup> diamond (220) |             |        |
| <b><math>\Delta E/E</math>:</b> |  |             |        |
| <b>flux at sample:</b>          | 1 x 10 <sup>12</sup> ph/s/ $\text{mm}^2$ diamond (111) (100 mA @ 9 keV)    |             |        |

### Detectors

Scintillation counters, linear position sensitive gas detectors (Mbraun, Gabriel/EMBL)

### Beamline control

Linux PC with spec diffractometer control software, Windows PC with common MS software.