

Kirkpatrick-Baez Mirror pairs



KB mirror pair (with differential coating)

Many synchrotron research techniques are pushing for smaller focused spot sizes. The major technical barrier to producing KB pairs with the required performance has been the difficulty in reproducibly achieving the extremely high specifications in both slope error and micro-roughness required for the elliptical mirrors.

Here utilises a unique methodology to overcome this barrier. Super high quality spherical surfaces with state-of-the-art slope errors and micro-roughness (better than $0.4 \mu\text{radian}$ and $<2 \text{ \AA rms}$ respectively) are transformed to the required elliptical profile using an advanced material deposition process.

The process requires detailed long trace profiling at the sub- μradian level, before, during and after the overall transformation process. Kirkpatrick-Baez mirror pairs manufactured with this process have been used to focus x-ray spot sizes down to below $1 \mu\text{m}$. An accurate measurement of micro-roughness is required both before and after coating and this is carried out with a non-contacting optical interferometry instrument.

KB mirror pairs can be produced to the following specifications:

- **Typical trapezoidal shape**
- **Slope error <0.3 microradians over 220mm**
- **Roughness $<2\text{\AA rms}$**

Aunion Tech Co.,Ltd

Floor 3, F Building, No. 86 Caobao road, Shanghai 200235 P.R. China

Tel: +86-21-51083793

Fax: +86-21-34241962

E-Mail: info@auniontech.com

Website: www.auniontech.com