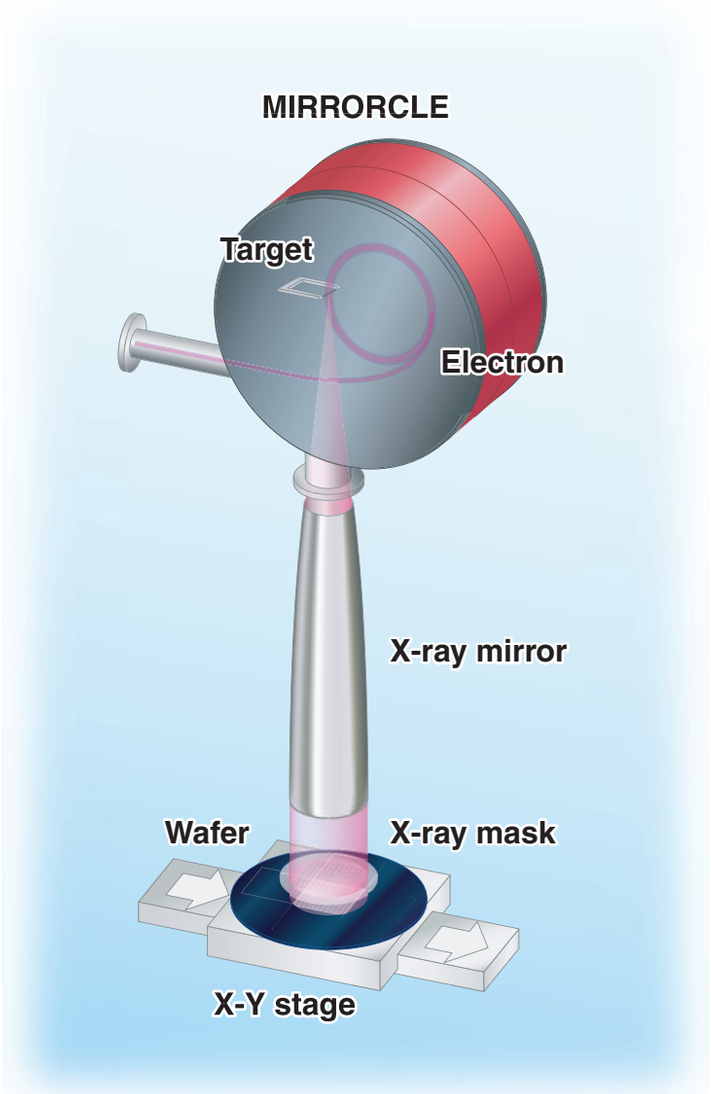
MIRRORCLE-20SX : for EUV Lithograpyhy Light Source

MIRRORCLE-20SX

MIRRORCLE-20SX for EUV Lithography and LIGA process machine is an EUV and soft X-ray source based on a tabletop electron storage ring (SR). A thin foil target is put in the MIRRORCLE-20SX SR electron orbit to generate transition radiation (TR) in EUV and soft X-ray range. Soft X-ray power is more than 100 mW/cm^2 with irradiation area of 1 inch square.

A microtron is used to accelerate and inject 20 MeV electrons into the SR. The main components of MIRRORCLE-20SX are the microtorn, synchrotron, klystron and beam transport system, can be installed in a narrow space of L: 6 m x W: 3 m x D: 2.5 m as shown in the above photo.

- MIRRORCLE-20SX for EUV Lithography and LIGA process.
  - Electron energy: 20 MeV
  - Integrated X-ray power: > 100 mW/cm^2
  - Critical wave length: 8 µm
  - X-ray energy range: 100 eV - 1 keV
  - Magnet diameter: 80 cm
  - Weight: 2 t



MIRRORCLE-20SX irradiation arrangement

TR X-ray from MIRRORCLE-20SX has an emission angle of approximately 25 mrad. A suitable optical element converts the divergent X-rays into a parallel beam with an irradiation area of 1 inch square. Thus wafer irradiation is possible without an oscillating mirror. The direction of soft X-ray beam line for lithography is oriented in the vertical axis earthward for convenience versus horizontal for conventional applications. Therefore a wafer position is adjusted on the horizontal plane in alignment with the soft X-ray beam as shown in the figure above.

Company profile

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