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## **Magnet designs for the multi-bend achromat lattice of the Shenzhen Innovation Light Facility**

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The Shenzhen Innovation Light-source Facility (SILF) is a 4th generation diffraction limited storage ring project with an operating energy of 3 GeV, which is proposed by the Institute of Advanced Science Facilities, Shenzhen. For the storage ring, hybrid seven-bend achromat (H7BA) lattice is used in order to achieve a low electron beam emittance. There are longitudinal gradient bends (LGB), strong dipoles with longitudinal gradient (SUPB), dipole and quadrupole combined function magnets, strong quadrupoles with large vertical gaps, strong sextupoles, octupoles and corrector magnets in each unit cell. The field requirements of these magnets and the limited space available pose several design challenges. This paper presents a summary of magnet designs for the various magnet types.

### **Funding Agency**

### **Footnotes**

### **I have read and accept the Privacy Policy Statement**

Yes

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