Massachusetts Institute of Technology
The Zwierlein Group Research Labs
Cambridge, MA

Lab I
925 sf
2008

Lab II
1250 sf
2009

IKM designed two new lab facilities in MIT's Research Lab of Electronics (RLE) for Professor Martin Zwierlein.

The Zwierlein Group studies ultracold gases near absolute zero temperature. The physical space requirement called for the placement of 2 laser tables, an experiment table and a high pressure pump system, all within a very limited footprint. The primary environmental requirements for this laboratory were temperature, humidity, particulate, and noise control.

"The Research Lab of Electronics Atomic, Molecular, and Optical Physics Group studies Bose-Einstein condensation, atom interferometry, the Rydberg frequency, quantum optics and photonics, non-linear optics, quantum computing, atom-optics, and optical memory".

To help with temperature stability, separate air-handling units were installed to individually service optic table setup and experiment table setup areas. These units were installed at the ceiling level and isolated with an acoustical ceiling to save valuable floor space and to help control noise. In addition a secondary active thermal wall system was built to isolate existing exterior glazing from the interior lab spaces.
Other features include anti-static flooring, isolation transformers, the separation of circuits for sensitive electronics, ceiling system grid for electronics/optical cabling/vacuum piping, AHU hepa filtering, point-of-use hepa filtering at the laser tables, and black out laser grade isolation curtains. In Lab II a unique shade system was developed by IKM to provide improved control, flexibility and access at the for the tables.

70 Phillips Street Watertown MA 02472 tel 617 923 6010 fax 617 923 2659 www.imai-keller.com