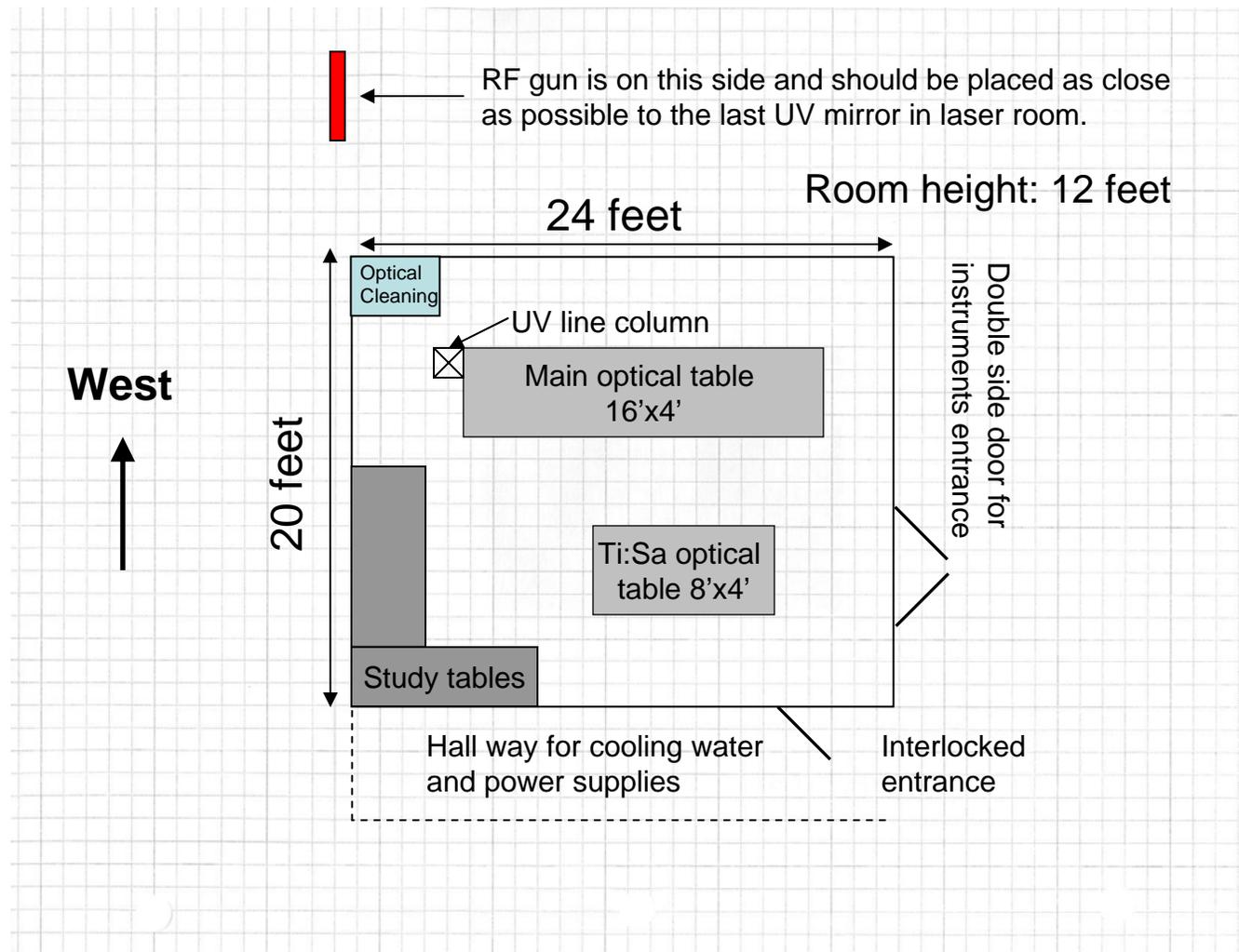


Laser room layout for SMTF



Requirements of laser room

1. The room should be located and oriented such that the RF is located as close as possible to the last UV mirror in laser room. The length of UV transport line should not be longer than 20 m.
2. Laser room should not be far from the control room, as various signal cables have to be laid between two rooms.
3. Vibration of the floor should be sub-wavelength (1053 nm). Preferably the integrated vibration < 20 nm.
4. The temperature fluctuation should be less than 1°F (± 0.5 °F). It is preferred to keep positive pressure in laser room so that the air flow will be stable and uniform.
5. Humidity should be $45 \pm 5\%$.
6. UV transport line has to be vacuumed and the boxes at the turning corners are needed to hold the mirrors and lenses.
7. Cleanliness in laser room should be class 1,000.
8. Cooling water (55 °F, 12 gallon/min). With the upgrade of diode pump amplifiers this requirement could be eased a lot.
9. Power requirement (208 VAC, 200 A).
10. It will be nice if we can have some platforms and cable trays over the optical tables hanging from ceilings so that we can put staffs on them rather than on the towers being built around the tables.
11. It would be good to have some racks on the walls so that the optics cabinets can be mounted.
12. The floor should be epoxy coated for clean room.
13. Miscellaneous (e.g. fire alarm and interlocked smoke detector, CO₂ fire extinguisher).