The ERI Atmospheric Simulation Chamber

The experiments were carried out in a 6500 L atmospheric simulation chamber, shown in Figure 2.5. The chamber is rectangular in shape and made of FEP Teflon foil. It is surrounded by 12 Philips TL12 (40 W) lamps with an emission maximum at 310 nm and 12 Philips TL05 (40 W) lamps with an emission maximum at 360 nm. The chamber and lamps are supported by a frame constructed of aluminium profiles (60 mm thickness, Bosch) and covered with aluminium sheets.

There are several ports for the introduction of reactants. The chamber is operated at atmospheric pressure using purified air (Zander KMA 75) and the temperature and amount of water vapour in the chamber is monitored by a dew point meter (Vaisala DM70). Experiments are typically performed at 295 ± 2 K and relative humidity 0.1% – 0.4%, however, the relative humidity can be varied by adding water to the chamber. Between experiments the chamber is cleaned by flushing with purified air at a flow rate of 150 L min^{-1} for a minimum of 6 hours.