

Verification of the AQUA O3 ZONE Systems

The portable system was sent to C & M Consulting Engineers to determine the concentration of ozone emitted.

The experiment was conducted in a room with the following approximate dimensions: 3,6m long, 3,0m wide and 2,6m high, ($\pm 28 \text{ m}^3$).

The ozone distributor (mattress) was placed in the centre of room approximately 1,0m above floor level. The inlet of the UV photometer (API mod. 400E) was placed at $\pm 1,5\text{m}$ above floor level and $\pm 0,8\text{m}$ from the ozone source.

The UV photometer (API 400E, S/N 1252) was checked beforehand against C & M's Laboratory Standard, i.e a Dynamic Ozone Calibrator API-700; Ser. No: 1148. The standard was calibrated by NML-CSIR (Calibration certificate number CHEM/PA-0139).

Controlled laboratory temperature:	23 \pm 2 °C
Relative humidity:	46 \pm 10 %RH
Ambient pressure:	852 mbar
Background of Ozone concentration in the room:	\pm 5 ppb
Line voltage:	226 VAC

1. The ozone system was allowed to run for ± 20 min, set on high. The average of Ozone concentration was ± 180 ppb
2. The ozone system was allowed to run for ± 20 min, set on low. The average of Ozone concentration was ± 160 ppb
3. The ozone distributor (mattress) was placed into a plastic container with water. (Capacity ± 70 l) The mattress was covered by ± 20 cm of water. The ozone system ran for 20 min on high. The average ozone concentration measured in the room was ± 175 ppb.
4. The maximum concentration of ozone generated from the system was ± 1200 ppb.

Note:

According to the Ambient Air Quality Standards, the ambient concentration of Ozone may not exceed:

- an instant peak 0,25 parts per million (250 ppb) measured at 25° C and normal atmospheric pressure; or
- a one-hour average of 0,12 parts per million (120 ppb) measured at 25° C and normal atmospheric pressure

The World Health Organisation 8-hour guideline for human exposure to Ozone is 0,06 ppm (60 ppb). The American Conference of Governmental Industrial Hygienist's time weighted average over an 8 hour exposure is 100 ppb of Ozone.