

UV Aging of sensors and other objects

UV radiation up to 130 mW/cm² and temperatures up to 350°C

▶ UV-AGING

The UV aging behavior of commercially available UV sensors is quite various. Some sensors degrade or even fail while exposed to UV light, in particular when the UV irradiation exceeds a value of 1 mW/cm². Other UV sensors are stable and do not degrade even when exposed to irradiation levels of 100 mW/cm² or more. An UV aging analysis evaluates the sensor's degradation behavior and allows a conclusion if the UV sensor is suitable for a designated application. Furthermore the result of an aging analysis can be used to define the needed re-calibration cycles of a UV sensor.

▶ OUR UV AGING CHAMBER

The UV aging chamber is equipped with low pressure Hg lamps (up to 5 mW/cm² of UV radiation) and medium pressure Hg lamps (up to 130 mW/cm²). The temperature of the UV sensors can be adjusted from room temperature up to 350°C. The internal dimension of the chamber is 600 x 500 x 400 mm³.

▶ THE AGING PROCESS

The analysis starts with a determination of the spectral responsivity between 200 nm and 400 nm. The parameters of the subsequent aging process (duration, radiation intensity, type of UV source, temperature) vary with the designated application of the sensor and will be defined in cooperation with the customer. During the irradiation the sensor's output is continuously monitored and stored. This allows to discover if an aging effect is caused by an initial degradation followed by a stable behavior or if the UV sensor shows a continuous degradation. After the aging process the sensors will be characterized a second time as described above. Finally the sensors and the analysis report will returned to the customer.

Besides the UV sensors also other objects can be stressed in the aging chamber to determine their behavior under high UV radiation and high temperature.