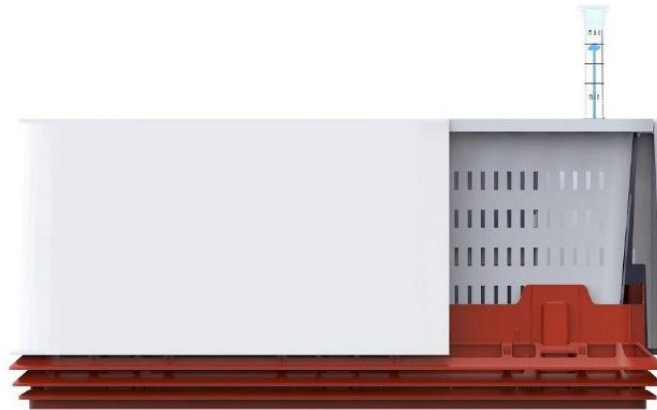


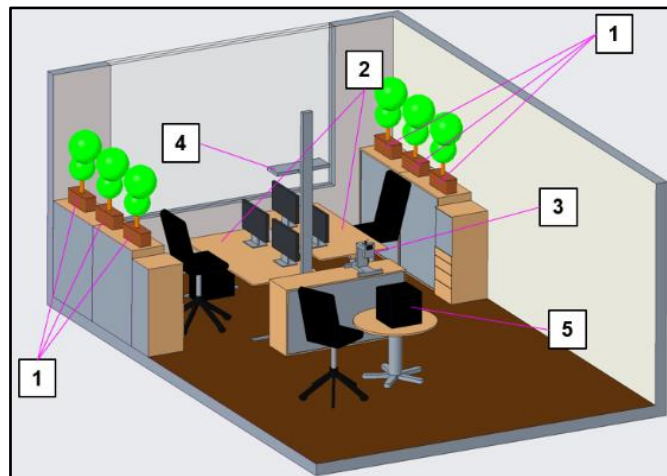
# Influence of a biofilter on the indoor air quality



## 1 Target of investigation

The target of the measurement series is to evaluate if the usage of the AIRY System L leads to significant differences regarding the indoor air quality, especially the relative humidity.

## 2 Measurement setup

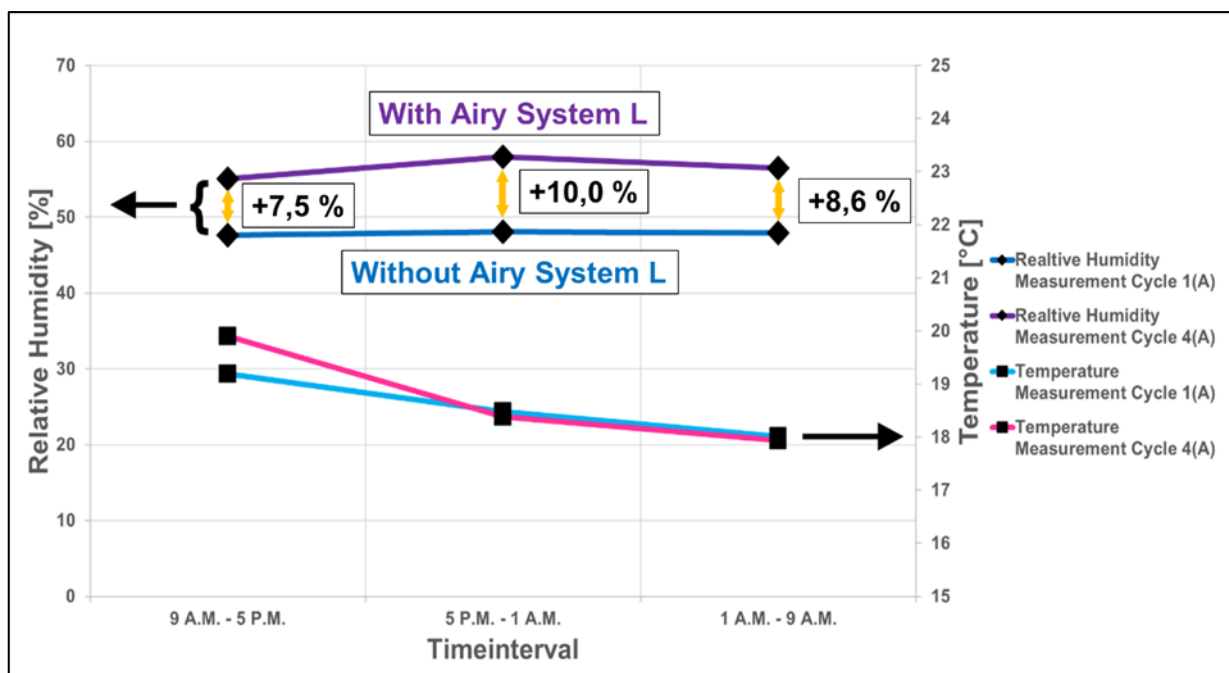


The test room is part of a conventional office building built in 2004 out of reinforced concrete, plasterboard walls and a floor covering out of vinyl (laid 2018). The test room is equipped with two PCs (2) and a printer (5). Depending on the measurement series 6 Airy systems L with plants of the type Spathiphyllum (1) are located inside the test room. The room has a floor area of 30,5 m<sup>2</sup> and a room volume of 90 m<sup>3</sup>.

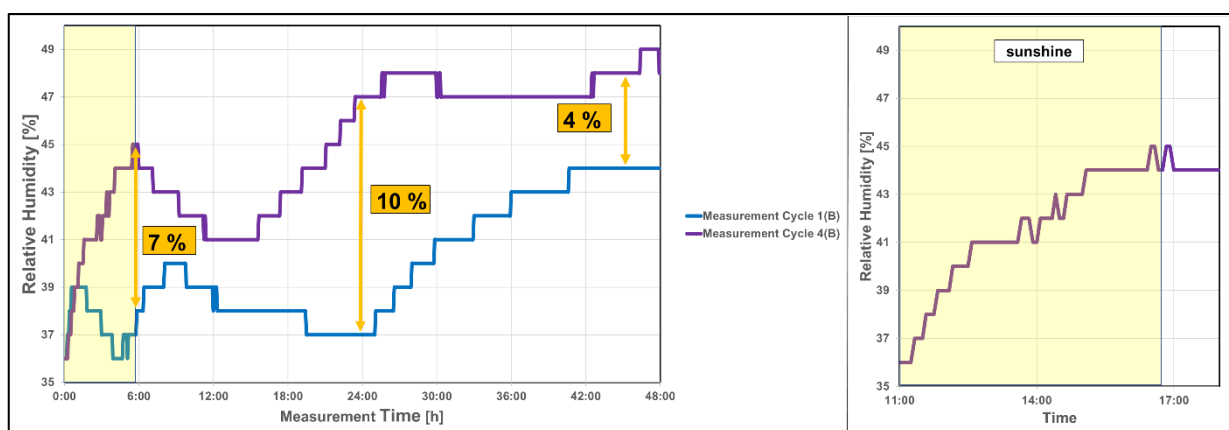
- Measurement every 5 minutes with measurement equipment (3):
  - PCE-PQC 35 EU: relative humidity, temperature und gas composition
  - PCE-172-ICA: light intensity
- Measurement conditions in test room:
  - No active air exchange with the environment & no employees in the test room
  - Standard conditions in the test room: 45 - 55 % rH
  - Treated air conditions for dry air scenario: 36 % rH  
(Room air treatment with air dehumidifier: Trotek TTK 40 E).

### 3 Measurement results

- Averaging of repeated measurements show an increase of the relative humidity up to 10 % rH with the usage of Airy system L (see **Figure 1**).
- Utilizing the Airy system L in dry starting conditions, the relative humidity can be increased by up to 10 % rH during the first 24 hours (see **Figure 2**).
- The primary increase of the relative humidity with Airy system L is achieved at daytime with a high light intensity.



**Figure 1:** Averaging of repeated measurements of the relative humidity without treated air condition with and without Airy system L



**Figure 2:** Measurement of the relative humidity with treated air condition (temperature and relative humidity) with and without Airy system L

#### Disclaimer:

The described measurements have been carried out with maximum care and with calibrated measurement devices. The results depend on the chosen measurement- and environmental conditions and thus cannot be generalized or considered independent from these conditions.