The comparison of the performance of low-cost black carbon (BC) sensors, the correction algorithms and their impact on the measurements, as well as the sensitivity of these sensors to changes in relative humidity and temperature presented in this manuscript is valuable to the scientific community. Thus, I find this article suitable for publication, once the remaining points that need further attention are addressed.

- Although the language in the manuscript has improved, there are still instances where the writing lacks clarity. I suggest another round of language revision. For example, sentences like "Unfortunately, the Observair sensors are not being produced as of the end of 2023...", "The assumptions are that with 880 nm light source the absorption" or "However, still in the field study, several issues were observed..." need to be revised for better readability and precision.
- In Figure 2, the dates on the x-axis have not been corrected as suggested by Referee #1. There is still a shift in the dates between late May and early June. I recommend using consistent labeling, as with the other dates (every 2 days). Additionally, there is a language error: "Timeseries" should be corrected to "Time series."
- In Figures 12 and 13, there are errors in their descriptions. The units should be placed outside the parentheses, or the word "in" should be included within the parentheses.
- The subsections on methodology and results were not fully renamed to reflect the context, as suggested by both referees. Below are some examples for improved subsection titles:
 - 2.1. Measuring principle to obtain BC mass concentration with low-cost sensors
 - 2.3. Deployment of small BC sensors at the Kumpula Campus
 - 2.4. Description of the sampling site
 - $\circ~$ 3.1. Intercomparison of BC sensors
 - 3.1.2. Adjusting differences between sensors for comparison
 - 3.2. Temporal and spatial variability during deployment
 - 3.2.1. BC levels during days of the week
 - 3.2.2. Diurnal variation in BC concentration
 - 3.2.3. Artifacts caused by sensor overheating
- The authors did not provide the strong justification in line 71 as suggested by Referee #2 on the use of the MAAP as the reference instrument.
- While presenting the calibrations results (F and orthogonal fit), a comparison with previous literature, as suggested for Referee #2 is missing. The authors report the results of the orthogonal fit (slope, correlation coefficients and intercept) in Table 4 but they do not include metrics from literature data with the type of calibration procedure adopted.
- The added paragraph discussing the results with literature on temporal and spatial variability has enhanced the revised version of the article, as suggested by the referee #2. However, the discussion could be further enriched by comparing these results in greater detail with findings from other studies conducted in urban areas across Europe using the same sensors.
- The discussion on spatial variability has improved; however, there are still questions raised by referee #2 that have not been yet fully addressed, which would be of interest to the reader. For instance: "How is spatial variability captured by different devices?" or "Are there differences in performance, and how can spatial variability be effectively captured by these devices?" Additionally, some recommendations or comments are missing, such as identifying which devices performed best in specific contexts.
- The authors have revised the conclusions in the manuscript; however, they need to update them by incorporating a few lines addressing the points raised here (previously asked by the referees). This would enhance the manuscript by providing valuable information and recommendations for the community. For example, identifying which device performed best for monitoring the spatial and temporal variability of BC mass concentrations under the specific

ambient conditions of the site (e.g., high relative humidity) would be particularly useful. Additionally, positioning the sampling site as having high, medium, or low BC levels in comparison to other urban sites using small BC sensors would further enrich the conclusions. This revision would avoid discussing aspects not explored in the manuscript, as noted by Referee #2, such as BC source apportionment, which refers to determining BC sources through spectral dependency or positive matrix factorization in the scientific community.