

## Conclusion

In conclusion, the performance evaluation of the Aufero air purifier revealed average efficiencies of 21% for  $PM_{2.5}$  and 32% for  $PM_{10}$  over a seven-day period. The efficiency for  $PM_{2.5}$  exhibited a significant decline, emphasizing the impact of seasonal variations in particle concentration. Intermittent sampling using an aerodynamic particle sizer indicated higher efficiencies of 30% for  $PM_{2.5}$  and 39% for  $PM_{10}$ , particularly for larger particles. These results suggest that the purifier is effective at capturing both fine and coarse particles .

Table 5: PM ambient levels at upstream position , samples obtained through APS.

PM ambient levels ( $\mu\text{g m}^{-3}$ )								
	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Mean (7 days)
$PM_1$	6.04	2.03	2.68	8.83	10.59	4.81	4.97	5.71
$PM_{2.5}$	23.25	19.71	15.21	31.66	37.79	13.92	18.41	22.85
$PM_4$	43.41	53.39	31.90	50.45	50.93	21.52	39.52	41.59
$PM_{10}$	89.30	118.59	54.91	84.43	90.83	40.51	109.48	84.01
$PM_{2.5}/PM_{10}$ ratio	<b>0.26</b>	<b>0.17</b>	<b>0.28</b>	<b>0.37</b>	<b>0.42</b>	<b>0.34</b>	<b>0.17</b>	<b>0.27</b>

Table 6: Single pass efficiency obtained through APS sample

Single pass Efficiency (%)								
	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Mean (7 days)
$PM_1$	45.26	33.82	42.99	48.88	18.06	49.21	47.96	40.88
$PM_{2.5}$	27.51	20.68	29.04	35.27	17.26	39.13	39.38	29.75
$PM_4$	25.96	20.54	28.61	34.31	22.05	38.21	41.99	30.24
$PM_{10}$	31.32	31.37	35.98	39.70	37.33	40.92	51.97	38.37

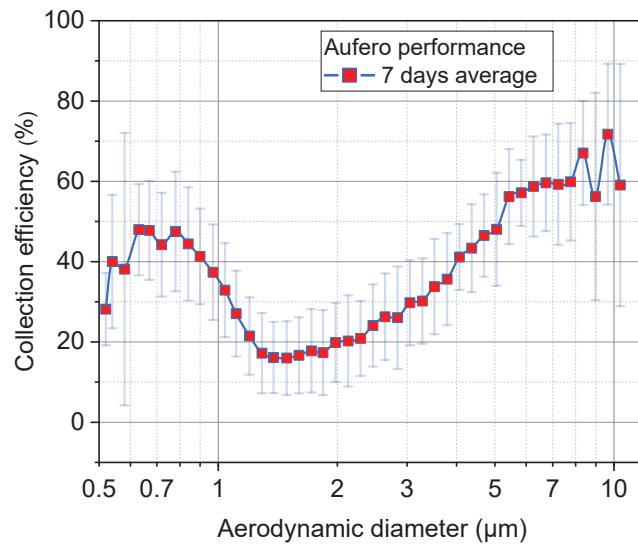


Figure 12: Aufero continuous 7-days operations performance obtained through particle sizer (APS) sample.