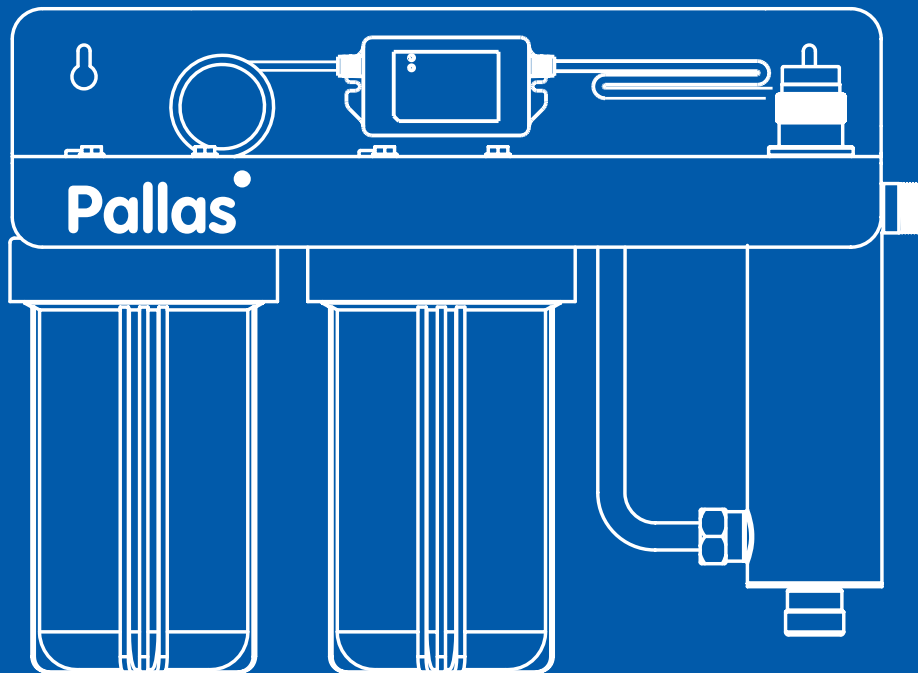


PERFORMANCE ASSESSMENT REPORT

Pallas Home UV vs Market Alternative
(Only for internal use)



The Pallas Home UV residential water treatment unit, featuring a higher-power UV lamp, offers promising potential for effective disinfection at higher flow rates, making it an attractive option for treating and disinfecting rainwater and borehole water compared to the market alternative. With a suggested maximum flow rate of 57 LPM—significantly higher than the market alternative's 35 LPM — the Pallas Home UV could represent a marked improvement over standard systems.

To validate its performance, **the Pallas Home UV system** was tested alongside the market alternative unit, both equipped with a primary sediment filter, activated carbon filter and mercury-based continuous UV lamps (see Table 1). The evaluation focused on two main questions:

1. Can the Pallas Home UV maintain effective disinfection even at its maximum flow rate?
2. How quickly does the UV lamp reach its full potential in each unit? in comparison with the market alternative?

Disinfection efficiency was assessed through heterotrophic plate count (HPC) tests on inlet rainwater, disinfected samples, and tap water to determine if **the Pallas Home UV** provides comparable disinfection (water quality comparable to disinfected tap water) performance at higher flow rates to the market standard.

Test Methodology and system specification

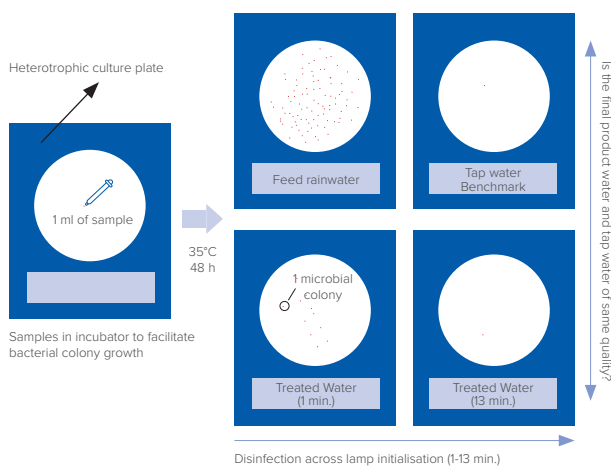
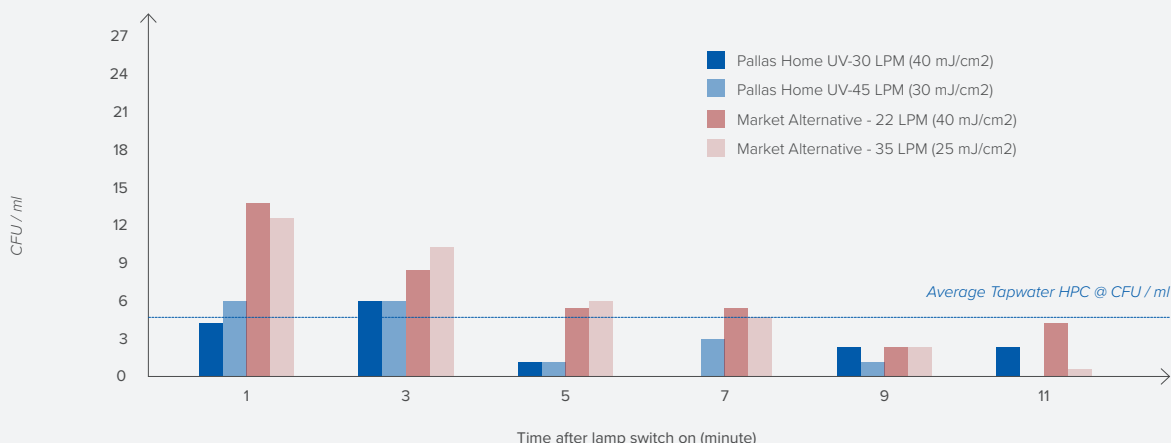


Table 1: Specification of the systems investigated

	Pallas Home UV	Market Alternative
Lamp Power	33W	25 W
Prefiltration Stage 1	Sediment Filter	25µ Sediment Filter
Prefiltration Stage 2	Activated Carbon	Activated Carbon
Flowrate @ 40 mJ/cm ²	30 LPM	22 LPM
Flowrate @ 25 mJ/cm ²	35 LPM (max. flow)	
Flowrate @ 30 mJ/cm ²	45 LPM	
Flowrate @ 16 mJ/cm ²	78 LPM (max. flow - 57 lpm)	

Results

The key observation is that at flow rates higher than those of the corresponding market alternative, the Home UV system consistently produced safe water. The quality of the water was comparable to both measured tap water (3 CFU/mL) and the water produced by the market alternative unit. **The Pallas Home UV system** demonstrated additional advantages over the market alternative. Notably, it was able to deliver water of comparable quality to tap water within just 5 minutes of lamp activation, compared to 8 minutes for the market alternative. This faster disinfection performance can be attributed to the more powerful lamp used in the Pallas Home UV system. Furthermore, internal tests showed that the Pallas Home UV unit could operate efficiently even at significantly higher flow rates than the market alternative, showcasing its capability for effective performance under demanding conditions. However, to ensure safe and optimal operation, it is recommended to adhere to the flow rates specified in the Pallas Home UV manual.



Feed water contained 75-110 CFU/mL.