

P11216 Wandering Ambassador Test Plans & Test Results

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3. MSD II – WKS 3-10 DESIGN VERIFICATION

3.1. Logistics

Test Number	Specification	Eng Spec Number	Unit of Measure	Marginal Value	Ideal Value	Measured Value
TM1	Range	ES1	Ft	.5	2	>3
TM2	Pressure	ES2	KPa	100	200	Not Measured
TM3	Duration	ES3	S	5	20	>30s
TM4	Sonar Coverage	ES14	%	0	100	100
TM5	Varying plant size	ES15	Binary	Y	Y	N/A
TM6	Additional Plants	ES29	Binary	Y	Y	Y

3.2. Analysis of Data – Design Summary

With regard to the first three tests, the water deterrence system is capable of hitting targets more than 3 feet away. This was demonstrated at ImagineRIT as people interacted with the robot. Similarly, the robot was able to run for several hours without the need to refill the reservoir. Over the course of this time, the pump was definitely run for more than a combined 30 seconds. On the pumps themselves, there is a warning that they should not be run for more than 10 seconds at a time. With regard to sonar coverage, the addition of the two servos doubled the amount of area the robot can 'see'.

3.3. Conclusion or Design Summary

The pressure specification was not measured. This was because the electronic system that controls the pumps was behind schedule and was not ready for testing. In the future, this should be tested and potentially improved as the design progresses.