

Porcupine Solutions: CleanLift Test Plan

The test plan is split into 4 subsections, General system, Physical Panel, Optical Sensing Grid, and Control System.

1.1 General

Test Number	Test Name	Test Procedure	Expected results
GS - 1.1	User Experience - New User	1) A new user will be asked to trigger a floor and will be given no instructions	a) As per functional spec for demo prototype, 70% of users tested shall not touch the panel in any way
GS - 1.2	User Experience - Experienced User	1) Experienced users shall be asked to trigger a button quickly and casually	a) Users shall not inadvertently touch panel b) Users shall be able to trigger button within 3 seconds
GS - 1.3	Optical Beam Safety	1) Move an object to various locations around the front panel and observe whether the beam reflects on it 2) User shall insert a reflective object into a touchless button, and attempt to reflect beam outwards towards a target object	1.a) There shall not be a beam reflected on the object as this means that there is a possibility of beam exposure to the eyes of real users 2.a) Beam shall not be visible on target object for an extended period of time (greater than 5 seconds)

1.2 Physical Panel

Test Number	Test Name	Test Procedure	Expected results
PP - 2.1	Touchless button size and depth	1) User will attempt to activate a touchless button	a) User should not accidentally hit the sides of the recess b) User should be able to stop prior to hitting the bottom of the recess
PP - 2.2	LED feedback	1) User will activate each touchless button individually	a) The LED associated with the activated touchless button will illuminate b) LED will illuminate within 0.5 seconds of touchless button activation
PP - 2.3	Auditory Feedback	1) User will activate a touchless button	a) A small buzzer noise at 60 dB will sound
PP - 2.4	Aesthetics and Safety	1) User will look at system from all directions	a) No wires or components should be visible

1.3 Sensing Grid

Test Number	Test Name	Test Procedure	Expected results
SG - 3.1	Optical Sensor Alignment	1) Tester with access to control system will block each optical beam and check changes in optical sensor	a) Sensor values will change more than ± 20 when beam is blocked
SG - 3.2	Ambient Light	1) With system set up in a well lit room, User will attempt to activate all buttons 2) With system set up in a dim room, User will attempt to activate all buttons 3) With system set up in a dark room, User will attempt to activate all buttons 4) User will shine a bright light onto front panel and attempt to activate every touchless button	a) The panel will behave normally

1.4 Control System

Test Number	Test Name	Test Procedure	Expected results
CS - 4.1	User Errors	1) User will trigger a single touchless button three (3) times quickly 2) User will trigger more than three (3) touchless buttons at once	a) System will recognize the user distress and give short auditory instructions
CS - 4.2	Diagnostics	1) Tester with access to control system will disconnect a laser 2) Tester will run diagnostics	a) Diagnostics identifies that the laser was disconnected
CS - 4.3	Voice control - Correct Usage	1) User will activate the voice control system by pressing the call button 2) User will attempt to activate a floor by saying the floor number 3) Repeat step 2 for all floors	a) The correct floors are activated
CS - 4.4	Voice control - Error	1) User will activate the voice control system by pressing the call button 2) User will say nonsense	a) The voice control repeats the instructions to the user