

Risk Level Report

Application: Auto-Shading Device Analyst Name(s): Shilpi Ganguly, Kelsey Lipman, Molly Shay
 Description: Company:
 Product Identifier: Facility Location:
 Assessment Type: Detailed
 Limits:
 Sources:
 Risk Scoring System: designsafe Three Factor

Guide sentence: When doing [task], the [user] could be injured by the [hazard] due to the [failure mode].

Final Assessment						Initial Assessment		Status / Responsible /Comments /Reference				
Severity	Exposure	Probability	Risk Level	Item Id	User / Task	Hazard / Failure Mode	Risk Reduction Methods /Control System		Severity	Exposure	Probability	Risk Level
Minimal				1-1-1	Device User Normal Usage of Device	mechanical : unexpected start If the light sensor is not optimally positioned and power is applied the device may begin movement before the user is ready	Ensure electronics are properly positioned.	Minimal	Occasional	Unlikely	Low	
Minimal				1-1-2	Device User Normal Usage of Device	mechanical : head bump on overhead objects User taller than device	Stay seated under device	Minimal	Remote	Possible	Low	
Minimal				1-1-3	Device User Normal Usage of Device	mechanical : machine instability Not Properly Set Up	Follow set up directions	Minimal	Remote	Unlikely	Low	
Minimal				1-1-4	Device User Normal Usage of Device	mechanical : impact Something Falls	Follow Set Up Directions	Minimal	None	Unlikely	Low	
Slight				1-1-5	Device User Normal Usage of Device	biological / health : mold Long term exposure to wet conditions	Make sure dry before put into storage	Slight	None	Negligible	Low	
Minimal				1-1-6	Device User Normal Usage of Device	radiation : UV skin/ eye exposure Device falls apart	Proper set up of device	Minimal	Remote	Negligible	Low	
Slight				1-2-1	Device User Set Up & Take Down	mechanical : pinch point Putting together pieces	Carefully set up device	Slight	Remote	Possible	Moderate	

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Minimal				1-2-2	Device User Set Up & Take Down	mechanical : unexpected start Light sensor is not in proper place when power applied	Ensure sensor is in safe place before power applied to device	Minimal	Remote	Unlikely	Low	
Slight				1-3-1	Device User Basic Troubleshooting	electrical / electronic : unexpected start up / motion Power surge or malfunction of sensors	Make sure device is fully charged and all waterproof containments are sealed	Slight	Remote	Unlikely	Low	
Minimal				1-3-2	Device User Basic Troubleshooting	electrical / electronic : overvoltage /overcurrent Power surge	Make sure power supply is fully charged and all water proof containments are sealed	Minimal	Remote	Unlikely	Low	
Minimal				1-3-3	Device User Basic Troubleshooting	electrical / electronic : power supply interruption Power not adquetely plugged in	Make sure device is properly plugged in	Minimal	Remote	Unlikely	Low	
Slight				1-3-4	Device User Basic Troubleshooting	material handling : instability Initial parts may fall apart during assembly	Use care when putting device together	Slight	Occasional	Unlikely	Moderate	
Slight				2-1-1	Device Creator Modify Parts / Components	electrical / electronic : improper wiring Wiring individual components together may not be done at once	Make sure wiring is done with care and that all wires are properly grounded.	Slight	Remote	Possible	Moderate	
Minimal				2-1-2	Device Creator Modify Parts / Components	electrical / electronic : overloading Individual components draw too much power from source	Make sure power source produces adequate power requirements so components don't overload it.	Minimal	Occasional	Unlikely	Low	

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Severity	Exposure	Probability	Risk Level	Item Id	User / Task	Hazard / Failure Mode		Risk Reduction Methods /Control System	Severity	Exposure	Probability	Risk Level
Slight				2-1-3	Device Creator Modify Parts / Components	ergonomics / human factors : lifting / bending / twisting Putting components together may require bending twisting and lifting	Take care when putting pieces together	Slight	Occasional	Possible	Moderate	
Slight				2-1-4	Device Creator Modify Parts / Components	fire and explosions : sparks Wiring was not done properly	Make sure wires are all enclosed and grounded before putting power to device	Slight	Remote	Unlikely	Low	
Slight				2-2-1	Device Creator Adjust Software Program / Controls	electrical / electronic : improper wiring improper wires from microcontroller	make sure software and wires are in proper terminals of PCB	Slight	Occasional	Possible	Moderate	
Slight				2-2-2	Device Creator Adjust Software Program / Controls	electrical / electronic : unexpected start up / motion software isn't coded properly	Ensure code is functioning properly to make device move	Slight	Occasional	Possible	Moderate	
Slight				2-2-3	Device Creator Adjust Software Program / Controls	electrical / electronic : overvoltage /overcurrent Microcontroller recieving too much power can fry device.	Make sure microcontroller doesn't recieve anymore power than in its range	Slight	Occasional	Possible	Moderate	