Smart Visibility Motion Light
Team 5

Brock Sigl
Dedrick Elger
Edwin Ezekwu
Austin Equitz
Yanming Zhu
Weiyan Qian

Smart Visibility Motion Light

Description

- Purpose of Product – Solar powered outdoor home light
- Feature 1: Motion sensing for convenience and security
- Feature 2: Color changing LED for better visibility, based off weather conditions
- Feature 3: Battery and AC backup for night time operation, automatically chooses best power source
- Feature 4: Heated Surface of LEDs for continued use and enhanced visibility during snowy weather
- Feature 5: Three brightness settings from 800-1600 lumens depending on outdoor brightness
- Feature 6: Includes varying light intensity modes with corresponding color differentiation based on time of day
- Intended for use in the U.S.
Key Requirements

- **Cost**
  - Sales Price: $200, Component Cost: $100, Assembly & Test Costs: $75

- **Power Inputs**
  - Residential AC Power: 102-132 VAC @ 3 Amps Max
  - Battery Power: +12VDC Nominal Valve Regulated Lead Acid (VRLA) Batteries
  - Solar Power Input

- **Major Functions, Quantities Measured, Displayed**
  - **Functions:** On, Off, Measure, Standby
  - **Quantity:** Motion Sensor, Temperature, Rain/Snow, Light Intensity
    - Range: -30 to 60°C, Accuracy: ±1°C,
    - Range: 0 to 7 meters, Accuracy: 0.5 meters
  - Sampling: Motion sensor at 0.5 second intervals, internal temperature at 1 minute intervals, 10 minute intervals for all other sensors