

# Smart Light Team 1



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# Smart Light Description



Smart light is a remotely controlled dimmer switch with sensor and user input.

- Sensor checks ambient light and alters lighting to a preset luminosity.
- Light levels can be read and controlled at both the host unit and remotely.
- Manual override allows Smart Light to function as a normal light switch.

Designed for the domestic market within the  
United States

# Smart Light

## Key Requirements



### Cost

Sales Price: \$80, Component Cost: \$30, Assembly & Test Costs: \$20

### Environment

- Indoor, Stationary
- Operating Temp Range: -20 C to 75 C
- Operating Humidity Range: 5% to 85%

### Power Input(s)

- AC Power: 114 to 126VAC @ 60 Amps
- Battery Power: Rechargeable battery, 3.6V, 0.22mA
- Solar Panel: Photovoltaic, 0.5 Volts, 400mA

### Major Functions

- Sensor Function: Measure, Standby
- Host Function: On, Off, Program

### Quantities Measured/ Displayed

- Lux (Lumens per meter squared)  
Range: 0 to 1000 Lux, Accuracy: +/- 5%, Resolution: 1 Lux
- RMS Voltage (displayed as % of nominal AC)  
Range: 0 to 120 Volts, Accuracy: +/- 3.3%, Resolution: 0.1V

# Smart Light Block Diagram



Block A: Power /  
Rectification (Nate)

Block B: Host MCU  
I/O (Andrew)

Block C: Host  
Display U/I (Derek)

Block D: Output  
Driver (Peidong)

Block E: Sensor / A  
to D (Jon)

Block F: Sensor  
Power / Driver  
(Zack)

