

Power Line Induction Clamp Light

Team 2



**Denis
Sterjo**



**Cassandra
Appleton**



**Evan
Reichelt**

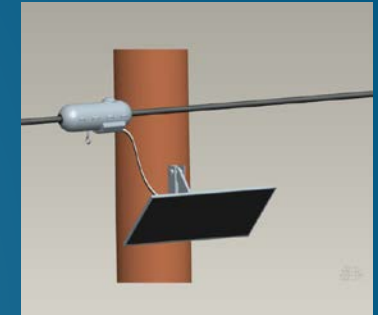
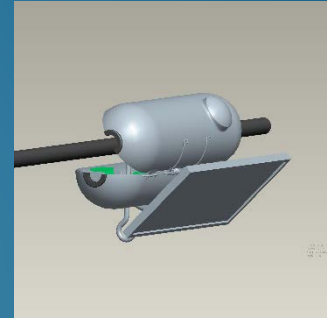
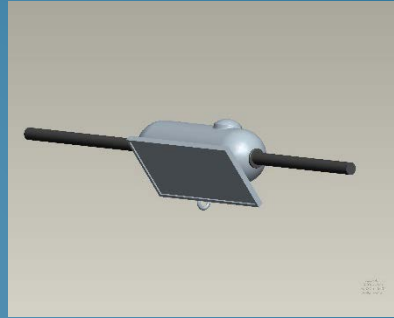
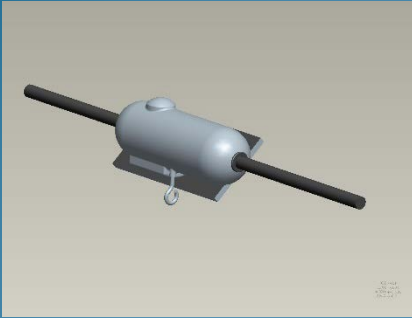


**Colin
Hermann**



**David
Messer**

Product Description



- Sustainable streetlight powered by a rechargeable battery.
- Clamps to existing distribution lines or installation near a pole. Target power line voltage: 0kV-69kV (distribution lines).
- Target input power line current: 10A-600A
- Reduces power consumption on the grid. Powered by induced magnetic field using a Current Transformer.
- Target market: 60Hz lines, USA.
- Intelligent control system and Bluetooth to provide a user interface.

Key Requirements

- **Rechargeable battery design.**
- **CT output to provide sufficient energy to charge the battery: 11.1VDC and $>\sim 10\text{mA}$ at 20A of line current.**
- **More efficient LED based design. Estimate 400 lumens of output light.**
- **Light efficiency: Achieve minimum required illumination with Low Power LEDs, less than 10W.**
- **Resistance to extreme weather conditions such as ice, snow, extensive rain, extreme heat, and sub-zero temperatures.**
- **Bluetooth interface for monitoring and control.**

Block Diagram

