



Flash of Genius Inc

Memo

To: Manufacturing Design Teams
Date: 2011-03-27
From: Ralph Stirling
Subject: Flashlight Manufacturing

Summary

FlashOfGenius will be manufacturing an updated single-cell flashlight in 2011. This flashlight will have an all-aluminum, sealed body, a magnetic switch, a Cree XR-E light emitting diode, and a 3.6v rechargeable LiFePO4 battery. The components of the body will be produced on a Mori Seiki DuraTurn 2050 CNC turning center, with minimal secondary operations on a Haas TM-1 CNC vertical mill. Material is 6061 aluminum bar stock. The flashlight will be assembled using a custom automation system.

Criteria

1. Components are:
 - 26650 size battery (LFP-26650-3300 from batteryspace.com or equivalent)
 - Cree XR-E LED mounted to a custom printed circuit board and heatsink
 - Custom reflector machined from aluminum
 - Flat glass lens
 - O-ring to seal lens
 - O-ring to seal body halves
 - Internal snap ring to hold nose components together
 - Magnet to activate Hall switch (4mm x 4mm x 1mm magnet)
2. Flashlight body will consist of three major assemblies
 - Nose, with lens, reflector, o-rings, LED module, and snap ring
 - Tail, with battery
 - Ring, with magnet
3. The magnet ring rotates around the nose/tail joint to activate the magnetic switch
4. The nose, tail, magnet ring, lens, reflector, LED module, battery, and seals are to be automatically assembled.

Additional criteria may be issued as the design is finalized. You will develop the final flashlight design, generate CNC programs for machining the custom components, and create the automation system to assemble the flashlights.

Team 1	Team 2	Team 3
Josh Grant (leader)	Andrew Hellie (leader)	Nathan Reeves (leader)
Alex Banton	Wesley Brown	Dan Biesenthal
Jorge Cruz	Greg Peterson	Jonathan Schreven
Ryan Gratias	Andy Wooley	Brielle Starr

"The people walking in darkness have seen a great Light." - Matthew 4:16