Bat Signal Night Lamp

by technocraftStudio

This is a handcrafted Bat Signal Night Lamp.

**Backstory**

The Bat-Signal first appeared in *Detective Comics* (February 1942).

The Bat-signal is a large projection lamp that casts the silhouetted shape of a bat across the sky of Gotham City. The signal is used by the Gotham City Police Department (GCPD) or Commissioner James Gordon incorporated it as a means of contacting Batman, whenever he was needed and as a weapon of psychological intimidation to the numerous villains of Gotham City. Also it was placed on the roof of the headquarters of GCPD.

During it's early days, some criminals shot the Bat-Signal and others stole it to prevent communication between Gordon and Batman. Then, Batman designed a new Bat-Signal with the following features:

- Super Carbon Arc Filaments to produce a beam 100 times brighter than a normal searchlight
- Bullet-proof glass, handground for clarity
- Outer casing of duraluminium covered with bullet-proof glass
- Yellow fog filter
- Bat slide
- Larger, changeable and more powerful carriage

So, I decided to make one as a Table-top Night Lamp. This one does not project signal on walls but for visual appearance only.

**Supplies:**

Below are the tools and materials that I used to make this Lamp.

**TOOLS**

- Hacksaw
- Files Set
- Sandpaper
- Drill Machine
- Cutter
- Scissor
- Screw Driver
- Carving Tools

**MATERIALS**

- PVC Pipe (3.5 inch diam)
- Metal Sheet \textit{(aluminium)}
- Foam Sheet
- Cement Concrete
- Wood
- Plywood \textit{(6mm, 2mm)}
- PVC Sheet
- Acrylic Sheet \textit{(clear, 1mm)}
- Tracing Paper
- Thermocol Sheet
- Rubber Sheet \textit{(cycle tube)}

**OTHER COMPONENTS**
- Nuts & Bolts \textit{[6x(M3x25)]}
- Nuts & Bolts \textit{[2x(M5x15)]}
- Screws \textit{[4x(M2x8)]}
- Screws \textit{[4x(M2x12)]}
- Spacers
- Marker
- Wood Glue
- Super Glue
- Hot Glue
- Spray Paints \textit{(black & silver)}

**ELECTRONIC COMPONENTS**
- Round COB LED
- Wires
- Spiral CPU Heat Sink
- 2 Pin Connector
- Micro Switch
- Micro USB Port \textit{(female)}
- Jumper Wires \textit{(male)}
- Heat Sink Paste
- 5v Power Supply
Step 1: The Lamp Shade

So, starting from here, I used **PVC pipe** for building the main chamber or the **lamp shade**.
I marked the lines on the face and cut them accordingly.
Step 2: Adding Design Elements to Shade

Next, I added few design elements on all the four sides of the lamp shade, both on front and on back.
Step 3: Making Linkage Holes & Adding Bolts

Then, I drilled 2 holes on both left and right sides to fix the Nuts onto it, so that it can be clamped to the base later on.
Step 4: Making Front Glass & Ring Plate

Here, I used clear **Acrylic** sheet for the front glass panel and **aluminium** sheet for making the border line ring pattern.
Step 5: Making LED Base

Next, I used 5v **COB LED** to light up the lamp. If the led runs for a longer period, its definitely gonna heat up and for this I needed a heat-sink at the back.

Therefore, I found this **CPU heat-sink** to be the perfect fit on my size and also its round in shape.

So, I did little modification to it. I separate the fan and the aluminium part. Then, I cut and modified the holder to fit on my lamp shade.
Step 6: Adding LED to Heat Sink & Wiring

Next, I installed the LED to the heat sink with some heat paste and tightly fitted with a pair of nuts. Also, I soldered a 2 pin connector clip to the LED that leads to the back to connect wire later on.
Step 7: Making Base Arm

For making the base legs, I used wood pieces cut at that angle and glued them together. Next, I drilled 2 holes for holding the lamp shade and a gap for adding the switch.
Step 8: Installing Switch & Internal Wires

Then, I installed a micro switch on the arm and done some internal wiring by carving out the wood and then covered it later with wood dust.
Step 9: Adding Base Sockets

Also, at last I added few **brackets** at the bottom of the wooden base as a stability and design element.
Step 10: Making More Base Plates

For holding the wooden base, I added a couple of circular base plates of different sizes at the bottom. Also a rectangular plate at the bottom-most part with 4 holes on the corners to get fix later on.
Step 11: Making Bottom Chamber

Here, I used acrylic and sun-board sheets to make the bottom chamber of our lamp shade. Then, I made few metal clips and fixed to the sides to screw them to the lamp shade.
Step 12: Making Wooden Gears

In this step, I used 2 gears at both the sides to hold the lamp shade. One gear is used to tighten the lamp shade or to fix the tilting of the shade and another gear is used to on/off the switch.

Here, I used 6mm plywood for making the gears as shown. I drilled few holes and cut them in the shape.
Step 13: Adding Linkage Bolt to Gears

Next, I fixed 2 Nuts (M5) to the gears so that it can be screwed easily.
Step 14: Making Bat Logo

Here come the **Bat logo** for the front panel. I used **PVC sheet** for making the logo. I simply marked, cut and sanded it to get the perfect shape.
Step 15: Making Concrete Base

Here, I used cement concrete (using sand+cement) for making the base. As, it is heavy and natural looking and suitable with the lamp.

First, I made a mold with thermocol sheet and then poured the concrete onto it. I dipped 4 nuts in four corners to fix with our wooden base.

Also, I kept a hole for entering the wires later on and a rectangular gap at the bottom also.
Step 16: Adding Foot Pads

Here, I used bicycle tube for making four foot pads and glued to the bottom of our concrete base to have some grip.
Step 17: Coloring (black & Silver)

Now, is the time for coloring. I used spray paints for coloring all the parts.

First of all I colored black all the parts and then simply sprinkled silver color over them, now it really gives the aesthetic look I needed.
Step 18: After Color

Here are the parts after such good color. Now its metallic color right now.
Step 19: Components

Now all our parts are ready for assembling.
Step 20: Assembling

Here, I screwed the bottom chamber to the lamp shade with screws and spacers.
Step 21: Adding Front Panel

After coloring, I glued the metal ring to the front acrylic glass panel and also glued the Bat logo onto it. Finally I fixed the whole panel to the lamp shade.
Step 22: Adding Light Difuser

Next, I used few layers of *Tracing paper* and made a cylinder and put inside the *lamp shade*. It will work as a light *difuser* now.
Step 23: Adding LED With Heatsink

Then, I screwed the LED with the heat-sink assembly to the back of our lamp shade.
Step 24: Wiring

Finally I fixed the **wooden base** to the **concrete base** with the help of bolts and passed all the wires through it.
Step 25: Adding Micro USB Port

Lastly, I added the female micro USB port to back of our concrete base and did the wiring.
Step 26: Installing Lamp to Base

Finally, I mounted the lamp to the base and tightened using the gears. Here, the left gear is used to trigger the ON/OFF switch and right gear is used to tightened the tilting of the lamp.

Then I wired the 2pin also.
Step 27: Finished Product

Here is our final finished product **Bat-signal Night Lamp** that looks like above. This is very much realistic in look, however little modifications are done here.

Hope you will enjoy such a product.

Thank you so much for reading the instructable.

Comment below how you like it and share with your friends.

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Your ingenious use of materials is amazing. I love the heat sink fins adding an industrial flair to the finished product. It all comes together to present a neat look.

I have not seen an LED with concentric circles of light like this before. This is interesting. Can you provide a link to it?
The bat symbol is projected but a bit fuzzy. My understanding is that the smaller the point source of light used the clearer and sharper the projected image will be. Perhaps you may want to experiment with other smaller (yet bright) LEDs to get a sharper image.

Great job! Thanks for sharing!

Thank you so much, I really loved the way you express.
And I actually didn't make it as a projector lamp, so the bat logo is not clear. It's just a night lamp type of that can be placed on table top as a home decor.
But, I hope in future I would make a projected lamp and more realistic in look as shown in the movie.

Finally something without 3D printing, I love it!

Thank you so much.
I personally also don't understand why 3d printed products comes under handmade category, just because of assembling by hand or else.
Btw, m trying to replicate the look that get some realistic touch and thanks for noticing.

When I first saw the cover image I assumed 3D print. The fact that you made all the pieces by hand is simply amazing. Great work!

Thank you brother
And yes handcrafted products has a touch that can't be found on machine made products.
So, I like to make most of the products by simple hand tools that anyone can easily access.

Congratulations on winning Second Prize!

Thank you so much for the appreciation 😊