

KLAUS HÜNIG

The Day-Night Lamp

Takes from the day and gives to the night.
Includes a solar accumulator to harvest light during day time
and an amber LED to give it back at night.

Lampshade made from
parchment paper

Assembles without
screws or soldering

Building time:
30-60 minutes

Sturdy cardboard construction
with beautiful gold print

Solar cell with
integrated battery



Astro Didaktik

TRANSLATION: ANDREAS SCHRÖER

In 1910 the German poet Christian Morgenstern wrote a poem about the (fictional) inventor H Korf and his invention, the “*Tagnachtlampe*”. This ingenious device turns day into night when switched on, as opposed to ordinary lamps that turn night into day (and could therefore be called Night-Day Lamps). In 1959 the cartoonist Carl Barks reported that the American inventor Gyro Gearloose developed a similar device, his so-called “*gloom light*”. Neither invention got beyond prototype status, nor were they ever patented.

By using photovoltaic cells, it has recently become possible to produce a device that is reminiscent of the “*Tagnachtlampe*”. These cells do exactly what Korf was aiming at: they make the day darker (at least a tiny bit), by turning light into electricity. The photons that hit the cell vanish and their energy can be stored in a battery. Modern LED lights make it possible to use the stored daylight to make the night a little brighter. Maybe AstroMedia has solved the problem that led to Korf and Gearloose failing all those years ago?

Contents:

- 1 Sheet of cardboard
- 1 Sheet of parchment paper
- 1 Solar cell with battery
- 1 LED, connected by 12cm cable

You will also need for assembly:

- * Standard solvent based all purpose glue, e.g. UHU, Evo-Stik Impact, B&Q All Purpose Glue. **Do not use water-based glue:** it softens and warps the cardboard, and doesn't stick properly to the printed surfaces. Solvent based glues also dry much faster.
- * Pritt Stick or similar for the lamp shade.
- * A pair of scissors and a sharp knife with a fine point (thin carpet knife, scalpel), to cut the parts from the cardboard.
- * A ruler and a blunt knife or an empty biro to groove the folding lines.
- * A cutting board or mat, made from hardboard, plastic, or wood. Self healing cutting mats are ideal as the material re-closes after each cut.

Tips for successful construction - Please read before commencing!

- * Every part has its name and part number printed on the front. The part numbers also denote the order of construction. Only remove the parts as you need them.
- * Places needing glue are marked in grey. The glue tags carry the letters [A] to [M] and are glued in this order. The areas they are to be glued on are marked accordingly: [M] → means that the glue tag [M] is to be glued onto this area.
- * All folding lines (dashed) need to be prepared by grooving them with a blunt knife. It is best if you do that before removing the part from the cardboard. If the part is to be bent "forwards", you have to fold it towards you when looking at the gold printed side of the part. If it is to be bent "backwards", you need to fold it away from you. You get a straighter fold if you position the folding line over a sharp edge.

Building Instructions

This kit consists of the following parts: base (1), lamp base (2), lamp stand (3), LED socket (4), lamp shade (5), lamp shade top (6), and base plate (7). They are put together in this order.

The Base

Groove the folding lines of the base and cut it out from the cardboard. Also cut out the two rectangular openings in the base. Fold the four tags [M] forwards and all other folding lines backwards. Glue the six tags [A] to [F] onto their designated glue areas on the back. This forms the lectern-like base. The four tags [M] will be glued onto the base plate in the last step.

Push the solar panel into the rectangular hole in the angled surface of the base. The switch should be on the side with the small cutout, the cable should be inside the base. Glue the panel into this position and let the glue set thoroughly.

The Lamp Base

Remove the lamp base from the cardboard and cut out the square hole in its centre. Glue the lamp base onto its designated glue area [G] on top of the base. It will strengthen the top so it can carry the lamp.

The Lamp Stand

Fold all long folding lines backwards and glue the long tag [H] behind the opposite side. You will now have a long quadratic tube with four small glue tags on each end. Fold these glue tags forwards and glue one end of the stand [I] onto the designated area on top of the base. The quadratic hole in the top of the base should be exactly under the opening of the tube.

The LED Socket

Thread the LED from the inside of the base through the lamp stand. Stick it, from the gold printed side, into the small round hole in the centre of the LED socket, until its collar touches the cardboard of the socket. Now glue the LED into this position and let the glue set thoroughly. Then glue the LED socket on

top of the lamp stand, using the glue tags [J]. The LED now sticks out of the top of the socket.

The Lamp Shade

The lamp shade is made from semi-transparent parchment paper. Its bottom has a small hole in the centre for the LED, the four side panels taper towards the top and have a triangular flap on either side. Fold all dashed lines sharply backwards. Using a Pritt stick or another white or clear glue, glue the flaps alternating on top or behind the neighbouring side panel as indicated by the grey lines. Glue the lamp shade top onto the four tags [L] at the top of the lamp shade and then glue the whole shade onto the LED socket [K] so that the LED sticks through the small hole into the lamp shade.

The Base Plate

Glue the four tags [M] of the base onto the designated glue areas on the base plate, so that the edges are completely flush.

Congratulations, your Day-Night Lamp is now complete!

Usage instructions

During daytime, put your Day-Night Lamp in a place that receives as much light as possible, for example on a window sill. With the switch in the ON-position the light reaching the solar panel will charge the internal battery. As soon as it gets dark, the LED will automatically switch on, turning your Day-Night Lamp into a practical night light. A complete charge in full sunshine will power the LED for 5 hours or longer. If the switch is in the OFF-position, the lamp is switched off completely: it will not charge, nor will it light up.

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