

«LUND»

*Luminaire
Pascal Hirt*



Brief and task

The starting point should be a lighting problem related to a specific space and an activity in that space. The guiding principle, solving the lighting problem should reflect energy efficiency and relate to the concept of „darkness design“, i. e. using as little light as possible solving the lighting problem, not disturbing the „night vision“.

The material/process

The light source is one OSRAM Golden Dragon+ LED. The power source shall be 230 V, no batteries. The material/s is of your choice. The light should be possible to produce in large numbers, at a reasonable cost. The following should also be considered: efficient use of material, transport volume, assembly/mounting/disassembly, and resistance to rough handling, energy efficiency, housing of the power supply unit, sustainability.

The result

The result shall be a full-scale prototype in „working condition“, „installed“ in right position. Instructions of how to mount, install and maintain the product shall be provided. Anybody without any prior information or knowledge about the product should be able to understand.

«Thomas Edison's invention of the electric light bulb, more than 100 years ago, is now being challenged by EU's decision to phase out the electric light-bulb. Development of light sources is now so fast that it is difficult to keep track. However, LED is seemingly the technology that the industry is going for now.»

Lightning Problem



«Create a Luminaire as a reading lamp, which gives an optimum of light quality for reading. That means a perfect readability, supports better and long concentration and no weariness.»

The whole western world is lighted up. But still, we do not use the light very efficient. If it is in public space or at home – mostly it is more light on then we actually need but at the same time it is not good enough. For the light and color project, I was thinking about different lightning problems. I wanted to find an activity where often the light is wasted. There are a lot of activities, where we actually do not need so much light. But for some activities the light is very essential. So I came up with reading, where we really need a good light. Often we read with a standard room light. So the whole room is light up but we actually need only

a small lighted up space. This lighted up space where we read is often not lighted up enough now.

With this Luminaire, I will create a light, which focused the light on the reading space. There it should be very bright to get a good reading quality, which supports our concentration. It should also light up a little bit the environments. Otherwise we get tired when we have to read in a dark room.

Inspiration

A big Inspiration during my researching was the light and furniture Fair in Stockholm. I looked up a lot of different reading luminaires and got a lot of inspiration. I wanted to figure out what the most important aspect for a reading luminaire is. For me one of the most important aspects is of course the light and the adjustment that you have the light exactly there, where you would like to have it. But in my research I realized, that is often not the case. A lot of luminaires are too big or take too much space that I felt impairing. Also the light is sometimes distributed in the whole room and not focused enough where light is needed.

The research gave me a lot of inspiration how I would like to do my luminaire. I came to the result, that an easier or simpler luminaire often works better than a complex one. My luminaire is inspired from some of those reduced luminaires.



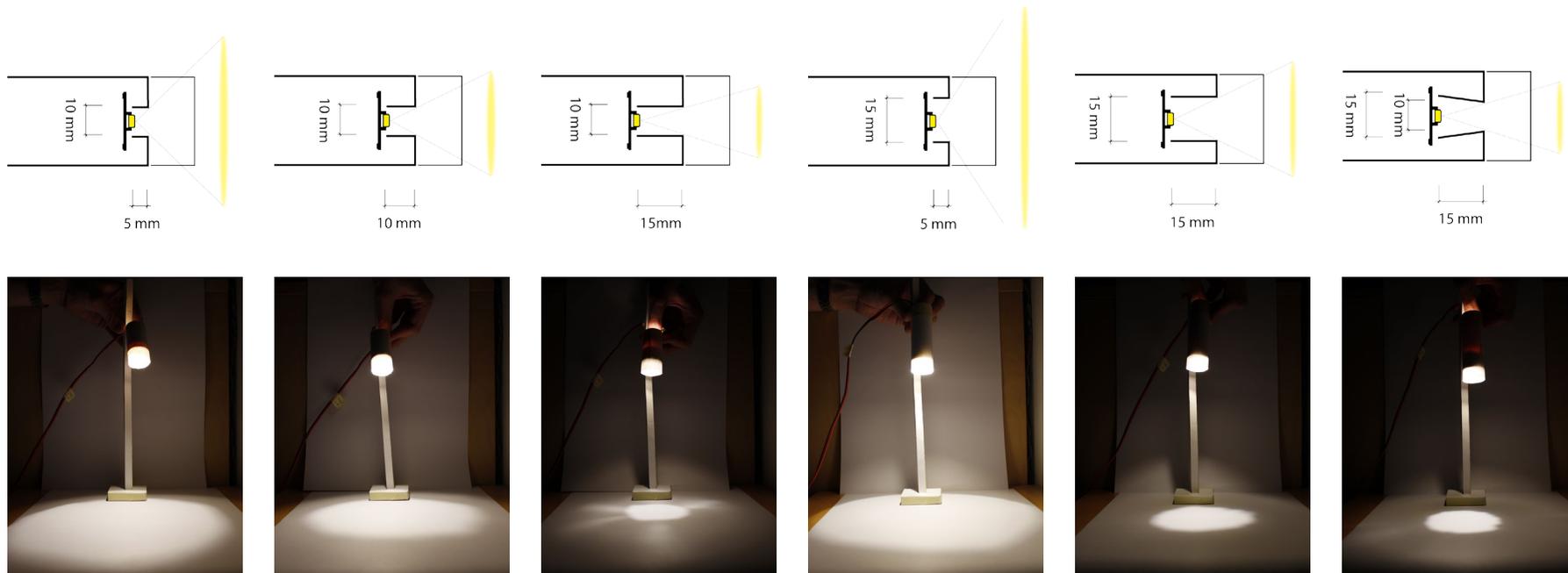
– focused light – simple – easy to adjust – less space –

Light distribution

For my reading luminaire I wanted to have a very focused and strong light at the point where we will read. With my first sketch models I worked with one cylinder. That gave me a ugly sharp edge. I did a lot of experiments to get a nice gradient. At first I tried out different cylinders, which should lead the light over a soft edges. That did not really work. Then I came up with the idea

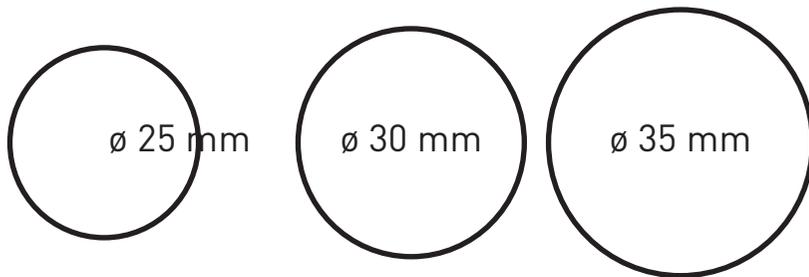
of a second cylinder, which is very close to the light. So a got a very nice solution. As an extra support for a good distribution, I came up with a translucence front part which distributes the light even more.

*«With a double cylinder
I receive the best distribution.»*



Form studies

As soon as I defined the overall shape, which supports the light distribution, I went more into details. During prototyping I used mostly a cylinder of 30 mm diameter. But was that the right diameter? And how long should I make the length of the cylinder? Another undefined part was the hinge, the connection to the rod. I had several ideas but first things first.



For getting the right diameter and length of the cylinder, I tried out different measurements. At first, I was kinda satisfied with the 30 mm diameter. Through getting different opinions, I realized, that this diameter is a little bit so small. The same case was with the length. I had at the beginning a length of 160mm. But with the 35 mm diameter, the proportion felt wrong. That is why I decided to make the length 180mm.

A way trickier part was the hinge. As I said, I had a couple different ideas. I had to decide about the shape, the measurement and the placement. But every single hinge should make the luminaire as flexible as possible, so that the light can adapt in every direction. My first idea was having a rod with the same diameter as the cylinder. That felt pretty clunky whereon I came up with a lighter, thinner rod. With trying out different combinations and placement I came closer to my favourite version. My favourite version was at the end the thin rod placed in the middle of the cylinder.



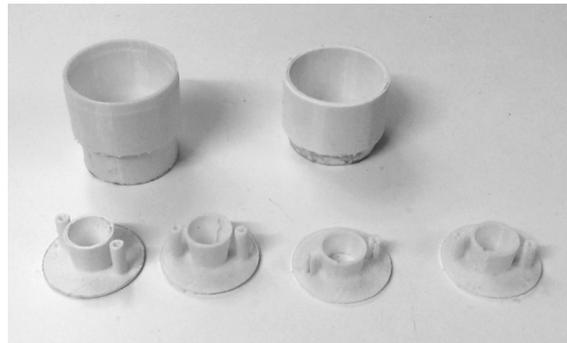
Work in progress



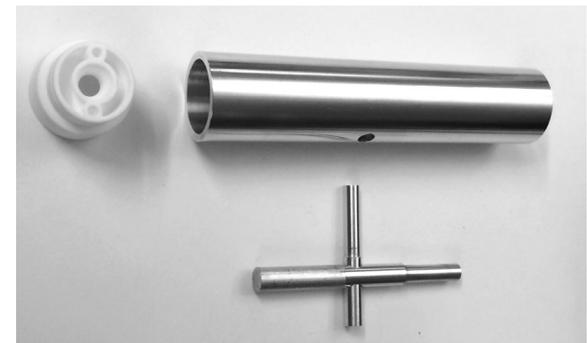
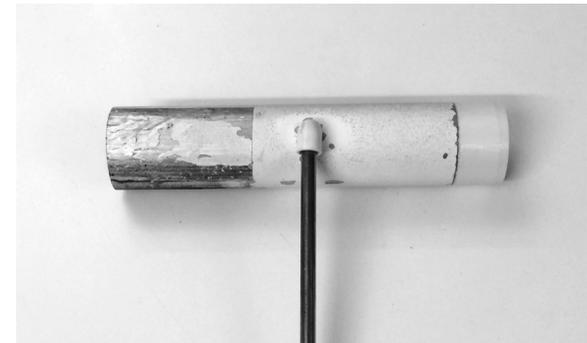
My first sketch model was an easy shaped cylinder out of paper. I continued with the same shape to experiment the light distribution. Thereby I created several different big and small cylinders and came up with lots of different versions.



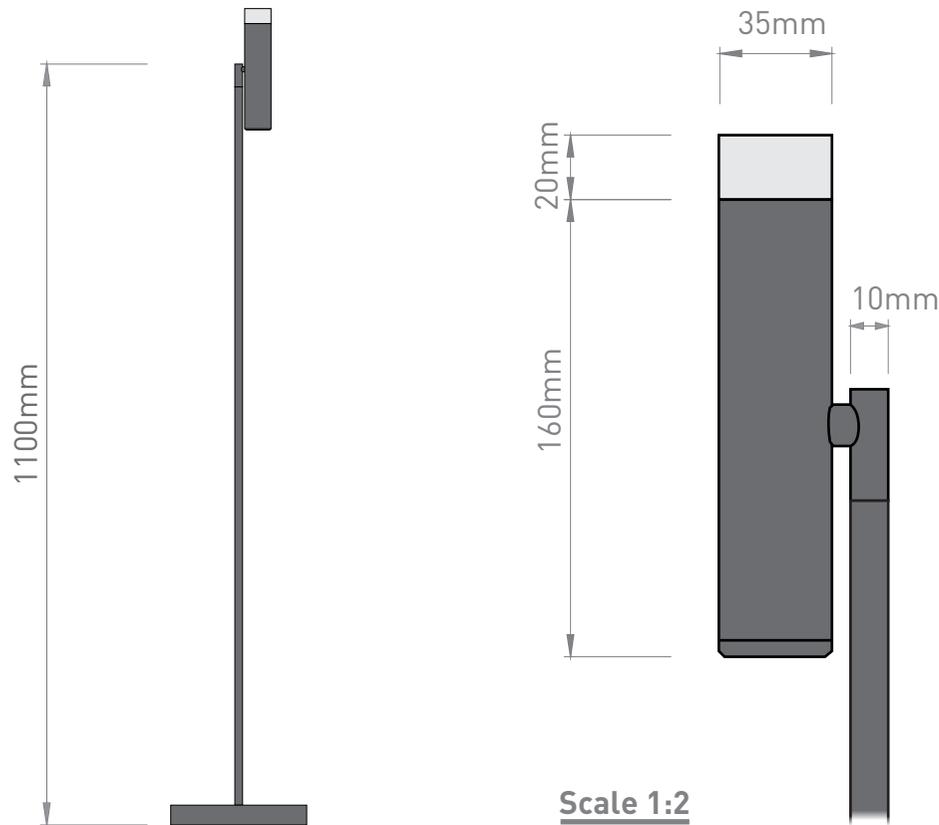
I continued with a more detailed prototype verify my thoughts and my sketch models. Then I started to build my final prototype out of aluminium.



At this time the idea of the rod came up. But I continued with the light distribution to get it perfect. With the 3D-printer I could get very exact heads for the LED. At first I wanted to make this part out of two pieces, but with the 3D-printer it was possible to make it in one piece.



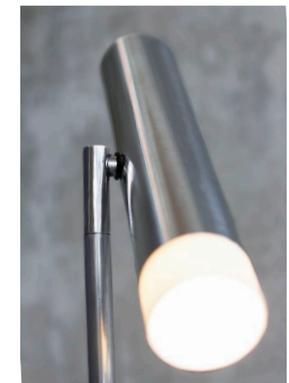
Final prototype



The reading luminaire «LUND» is very plain what makes it easy to use. With the extraordinarily height it can placed next to every couch or seat and gives a gentle light form above.

The base out of wood makes the luminaire stable and the cylinder is big enough to adjust it by hand. It can turn 360° horizontal and 180° vertical to put in the desired angle and direction.

The pipe and the cylinder is out of aluminium which makes the whole product very light and easy to produce with pressure casting. The heart of the luminaire is the plastic part in the front, which is translucent and gives the nice distribution. This piece can be produced with injection moulding. The LED is screwed on this piece, which fits in the aluminium cylinder by a rubber band.



«The luminaire «LUND» is modest and offers a pleasant light for a great reading experience.»

VT 2016

Pascal Hirt

Exchange student

Academy of Art and Design, Basel
University of Applied Sciences and Arts
Northwestern Switzerland

Lecturer:
Olaf Kolte

Project, Light and Color
Industrial Design, LTH
Lund University