

# **How illuminated is the light?**

For as long as people can remember light has been associated with consciousness. In language, this connection is colourfully illustrated.

The LED hype, which is conquering the lighting world, is predominated by an awareness of energy saving. Professionals who relativized this energy efficiency with the output of already existing discharge lamps of 100-120 lumen per Watt, hardly had any influence. With additional arguments of improved directionality of light and light control of the LED, energy saving was underlined. That directionality of light beams and light control with reduced effectiveness of the already existing discharge lamps had hardly been applied and developed because of the limited need was no obstruction for the persuasiveness of these additional arguments. The awareness was not characterized by positive side-phenomena of waste light of accepted installations such as social security, face recognition and vertical illumination strengths. Also, arguments such as fine-tuning light levels with the need of the user of the traditional lighting installation by switching off light groups lost against the fluent dynamics of the electronic controls of the LED.

How can arguments, which are completely justified in themselves, force themselves so prominently and overwhelmingly to the conscience? Why are side aspects of a technological development, which always carries also shadows, hidden?

These questions are answered extensively in a dissertation by ICT specialist Dieter K. Hammer "Omgaan met denktechnologie" (Dealing with cognitive technology)<sup>1</sup>. He concludes that ICT has a fatal influence on our mental and social capacities and results a range of pitfalls which have arisen simultaneously c.q. have increased with the application of ICT in our society:

- miscommunication, no time for reflection, shattering by multi-tasking, a cognitive vortex, game addiction, mechanization and hardening.

The individual consequences for thinking are:

- talking along each other, incomprehension, misunderstandings, quarrel, rush, continuation with old ideas, tunnel vision, lack of overview, reverse of the memory, copy paste instead of own creativity, superficiality, rapid instrumental thinking, no long focus and fossilization within the intellectuality of linear, black/white causal thinking.

An alarming list, in which he agrees with neuro-scientist Manfred Spitzer, who exposes in his book "Digitale Demenz"<sup>2</sup> (Digital dementia) how current science works especially symptomatically and is not looking for deeper causes.

## Additional arguments

The life span of the LED lamp forms an important additional argument that cannot be exhaustive discussed here because of the many coherent aspects. Here can only be noticed that the life span of the LED lamps which appears now on the market relies on calculated, extrapolated values, because the development of the product was too recently performed to be able to determine the very long life span of 25.000-100.000 burning hours in practice. Beside drivers which are applied up to other technical ageing. The guarantee of the lamp system is disproportional with the life span in practice. In the market of fluorescence lamps already longtime life exist which correspond to the expected life span of a lamp system with LED.

Many of these ICT-pitfalls, particularly tunnel vision, but also continuation with old ideas can be found in causal thinking around the LED.

#### Not effective

Many light outputs of LED lamps, which aim to replace incandescent lamps, are reduced by fluorescence layers on the lenses to 60-80 lumen per Watt.

Nowadays, some LED lamps gradually reach convincing light efficiencies of 160 or more lumen per Watt. But the reason why this does not become effective in a lot of applications remains shrouded in mystery. And what the side aspects of the electronic products, which go hand-in-hand with the application of the LED, mean for ourselves and the environment remains in a gloomy conscience. Recently, the effect on protein in milk appeared after 4 hours in cooling cases by the influence of the blue emission summit around 460 nm of the LEDlamp.<sup>3</sup> We can safely conclude that study into life aspects in our world does not take place, barely takes place or takes place afterwards. And the research of the LED is no exception in this.

And the Task Force, its name betraying its power, uses legal resources to phase out incandescent lamps. That a completely correct argumentation of energy saving exercises dictatorial power on argumentation for other lamps conflicts with the values of freedom and tolerance in a democratic society. The context of the restricted study into the related aspects of the LED stands beside a doubtful range other technological power seizures:

- the genetic manipulation of plants;
- the superiority of synthetic medication;
- the technology regarding life and death.

All these technologies suffer from the problem that the associated well-formulated argumentations spread across the entire world, resulting in constriction of freedom and leading to compulsion. Plants are mutated without permission, natural medication or homeopathies are banned as charlatanism and the birth of children with a disability is best prevented. Terror through technology obviously is not separate from terror in society.

What can we do against these prevailing forces? How do people preserve their freedom of choice for a (halogen) incandescent lamp? Can a highly sensitive person still avoid electronics if he wants to read at a lamp?

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A lot can be learned from the food industry. It sought its refuge in excessive quantities, often indecipherable specifications on packagings. This led to another cheap dogma to ban all E numbers, while far from all of these are harmful. A specification of a LED lamp can easily be as long as 16 pages A4 in order to be compared to an equal amount of information from the competitor. So, we cannot take that road. Simplification can and must help, although that also always comes with objections. There is a fundamental difference between light from heat and light from discharge. It is possible to print that on the packaging of lamps, besides other

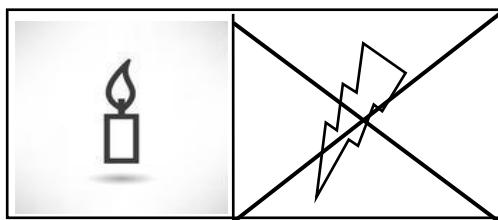
relevant technical light specifications, in order to offer the layman in the store or in the lumberyard a clear first handhold in the labyrinth of technical data.

For this reason, I argue for two fundamental changes for the future sale of lamps.

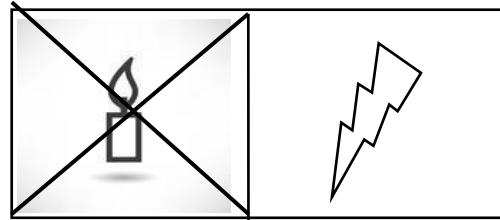
First of all, for a directive instead of a regulation which demands phasing out.

Legislation is of the 19th and 20th century. Directives and the free future are for conscious people and are appropriate in the 21st century. The Obtrusive Light Directive of the NSVV (the Dutch Illumination Foundation) is an example for this.

As a second change I propose a new pictogram on the packaging of lamps, in which it is indicated with a cross whether it concerns light generated with heat or discharge.



Preliminary draft pictogram "light from heat"



"light from discharge"

Light from heat is generated with techniques completely different from discharge, where much more electronics are used. It is obvious that both light qualities have their applications. Where they are best used, wherein the different energy consumption is of course also weighed, is a free individual choice. Phasing out light from heat is governed by a tunnel vision with legislative terror, which has lost sight on justified applications on a small scale. More than two hundred years after the Enlightenment in history, in a world where dictators manifest themselves at the cost of conscious free people, another view on light is appropriate.

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Manfred Spitzer, digital dementia: how we break our sense, atlas contact 2013.  
Journal of Diary Science June 2016 Exposure of fluid milk to LED light negatively affect consumer perception and alters underlying sensory properties,