

# Belysningsstyrning

## Belysningsbranschen

Styr och reglergruppen

Per Vesterlund

(Zumtobel Group)

# B E L Y S N I N G S B R A N S C H E N

## Belysningsbranschens tekniska kommitté

Driftdonsgruppen

sektion för driftdonstillverkarna

Styr och reglergruppen

sektion för styrkomponenttillverkarna

Lampa

sektion för ljuskällleverantörerna

Ljusa

sektion för armaturleverantörerna

FSN

sektion för leverantörerna av nödbelysning

# BELYSNINGSBRANSCHEN

**ESYLUX**

**PHILIPS**  
Lighting

 **ZUMTOBEL**

**STEINEL**

*Karl H Ström AB*

**OSRAM**

**Helvar**

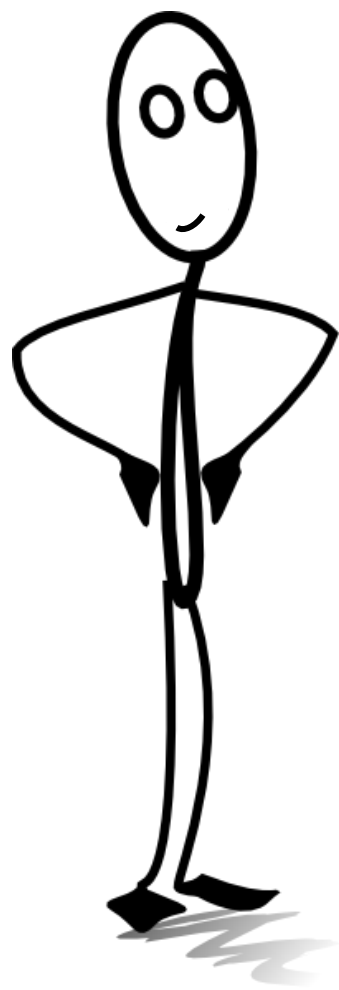
**TRIDONIC**

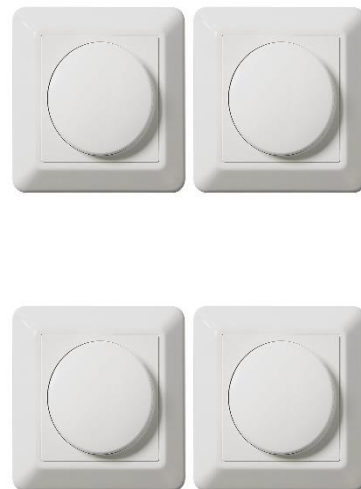
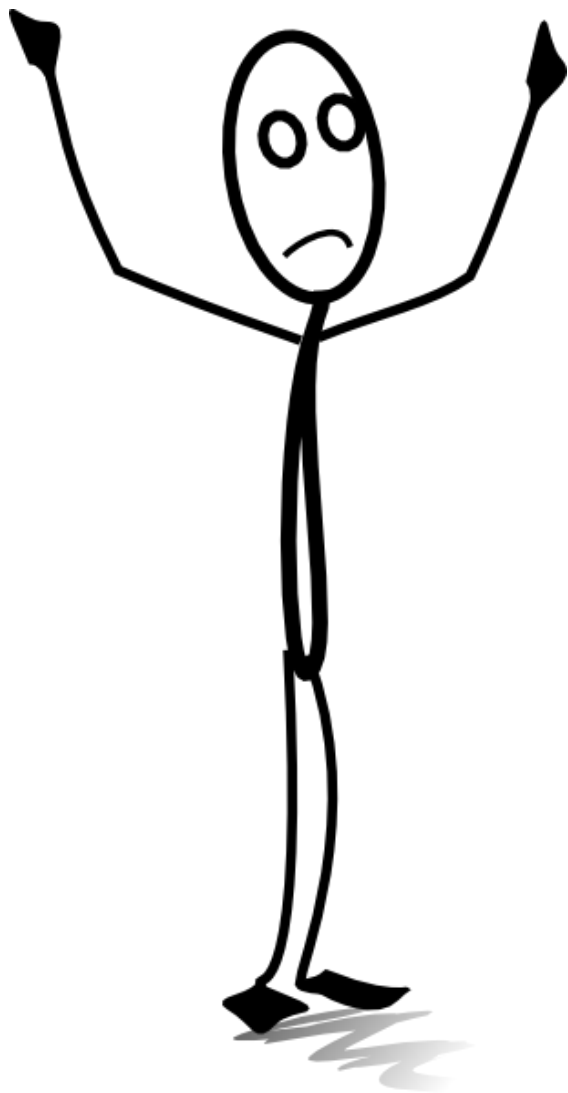
*WLK - Wennerström Ljuskontroll AB*

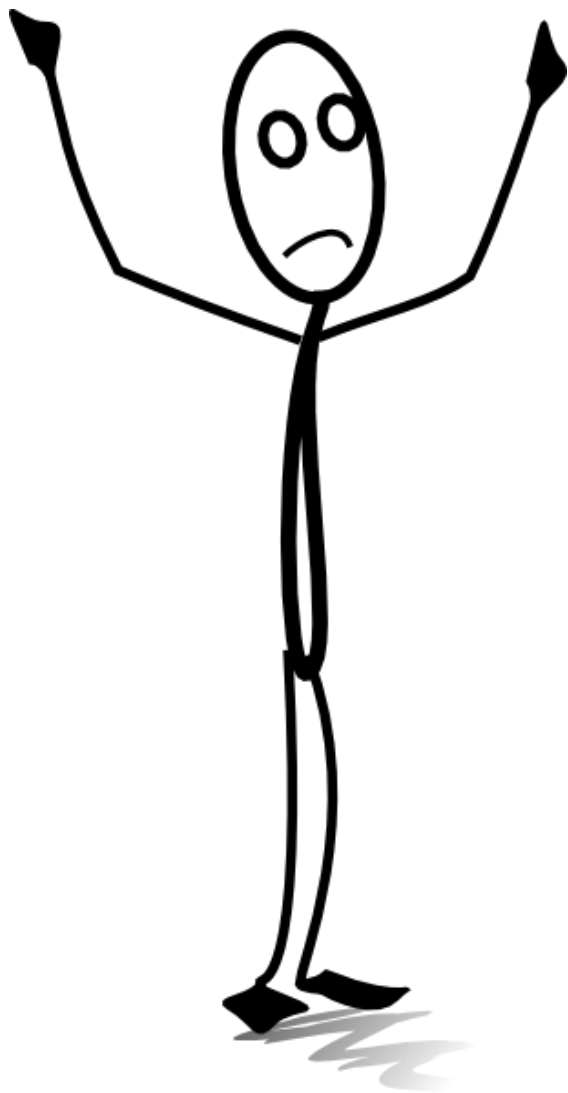
ljuskultur.se

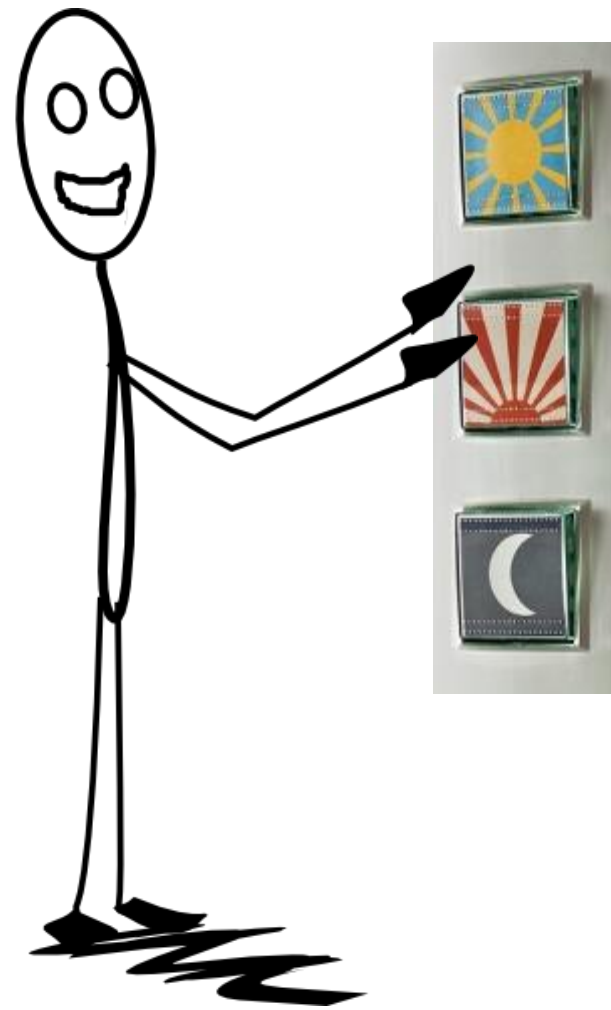
## Sensorstyrning

Ljuskultur inleder en artikelserie som tar upp det viktigaste och senaste inom ämnet belysningsstyrning. I kommande nummer kommer du, bland annat, att få läsa om olika tekniker för trådlös styrning, Human Centric Lighting samt om framtiden och IoT – ”sjävlärande belysning”. Men först ut är ett avsnitt om sensorstyrning.

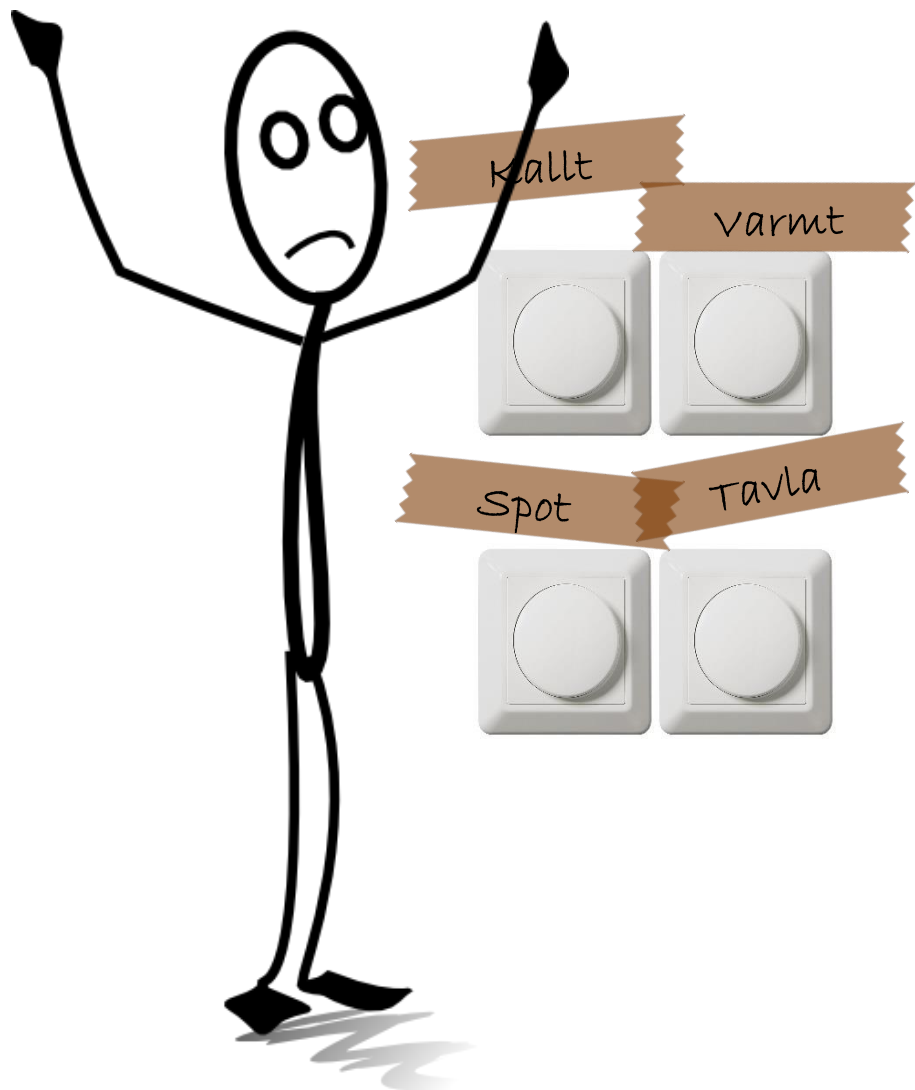












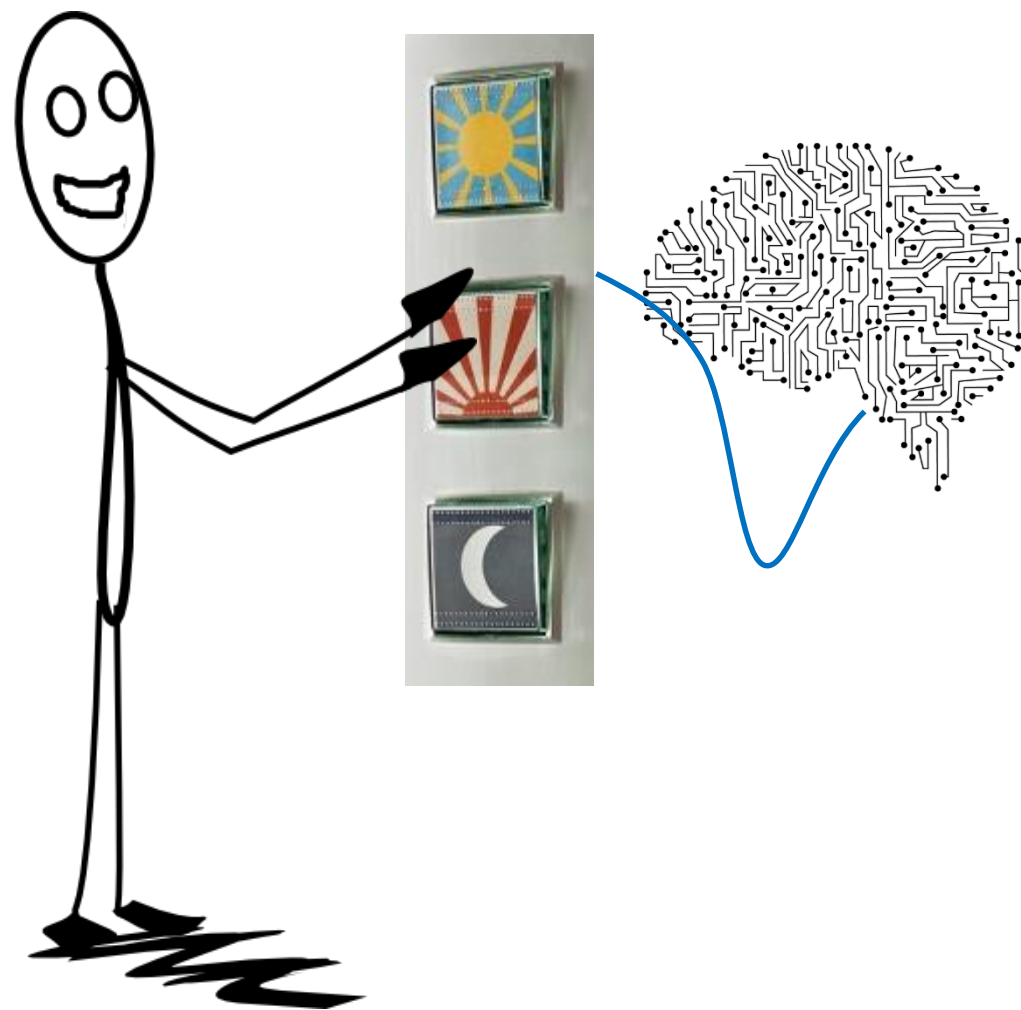
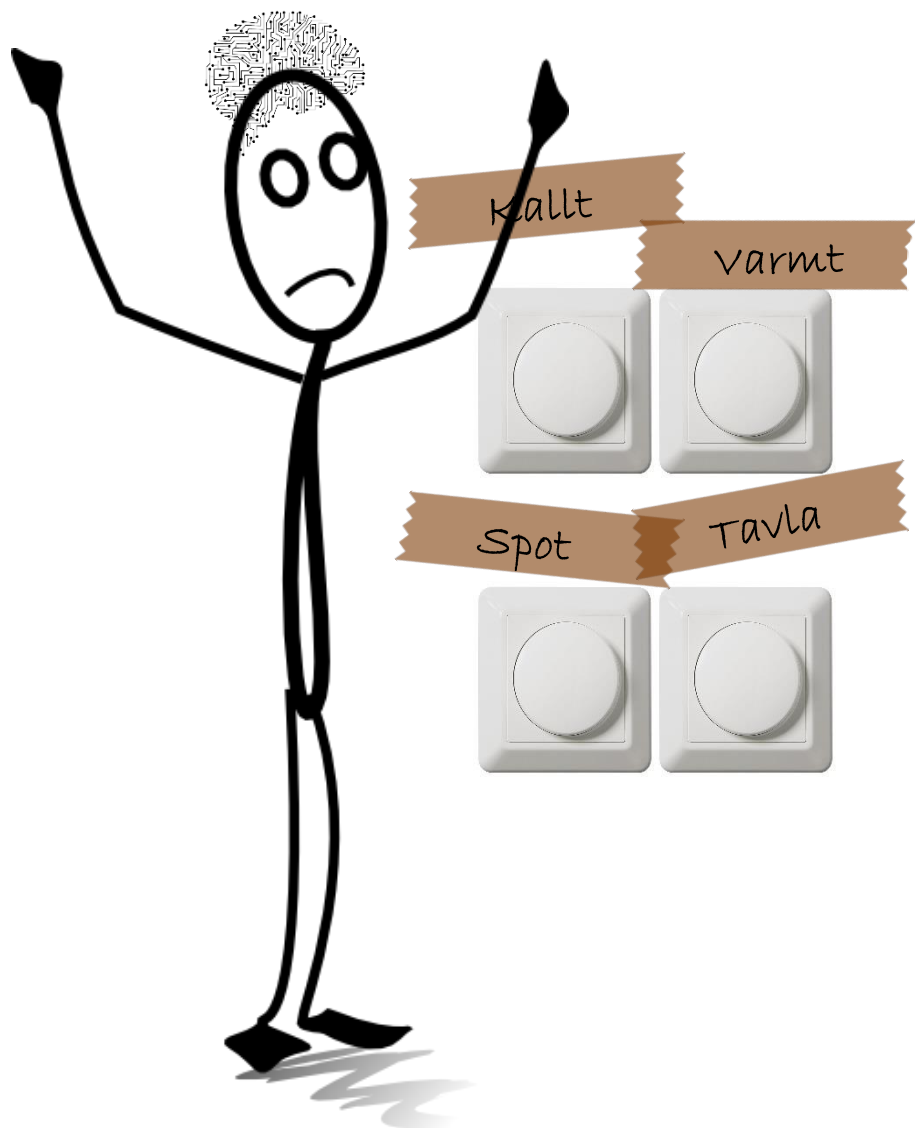
Styr och reglergruppen

BELYSNINGSBRANSCHEN



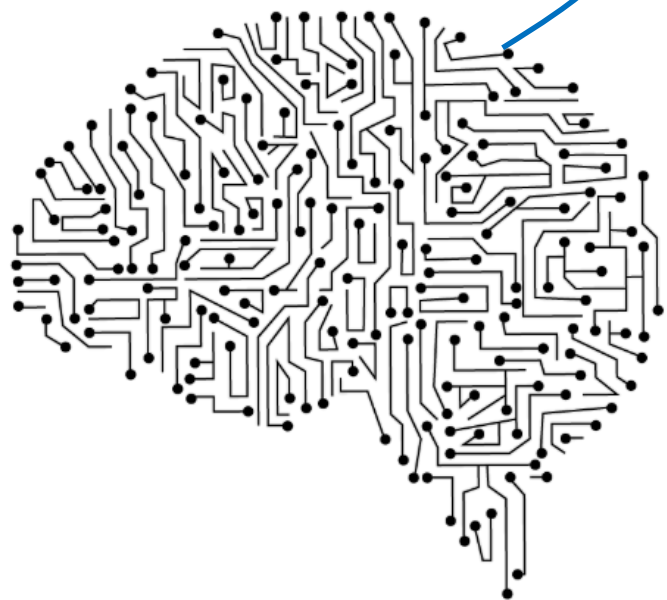
Styr och reglergruppen

BELYSNINGSBRANSCHEN



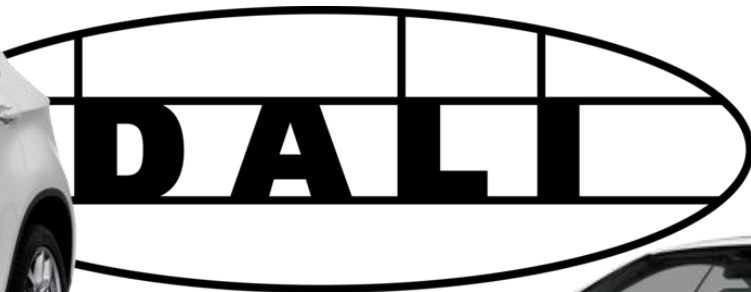
Styr och reglergruppen

BELYSNINGSBRANSCHEN

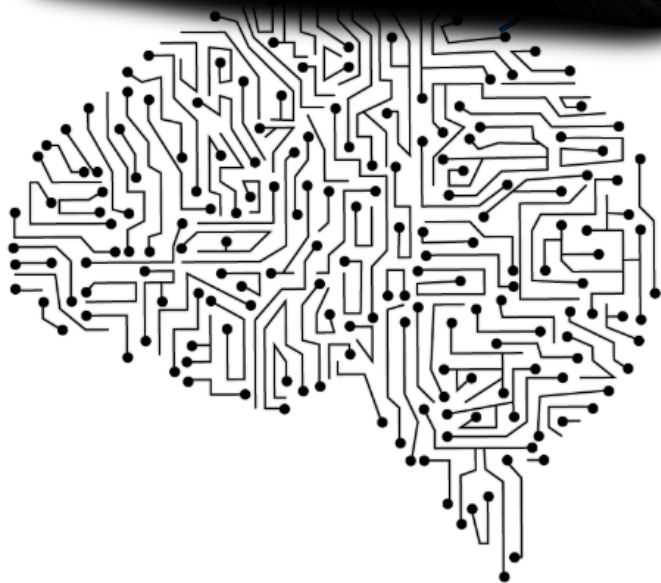


 **Bluetooth™**  
Low energy mesh network





Low energy mesh network





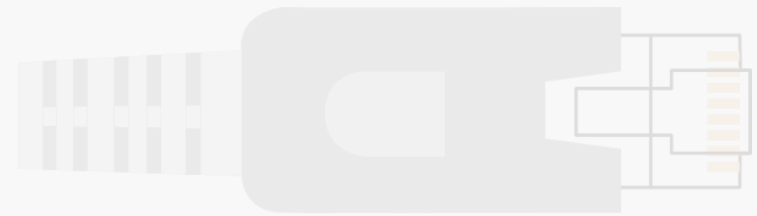
DALI

Bluetooth™

Low energy mesh network



KNX





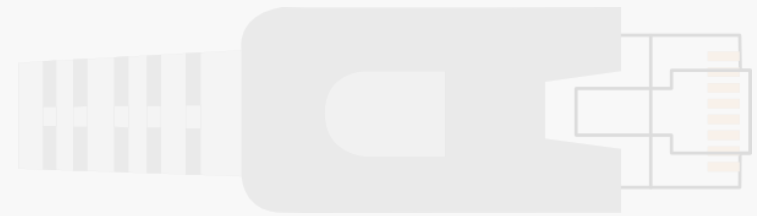
DALI

Bluetooth™

Low energy mesh network



KNX





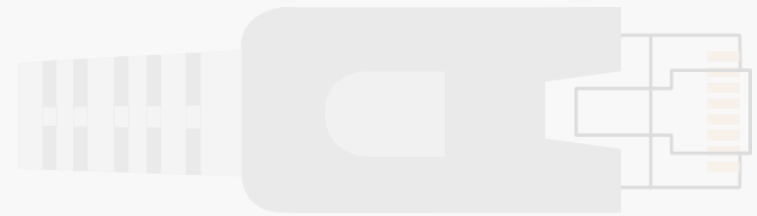
DALI

Bluetooth™

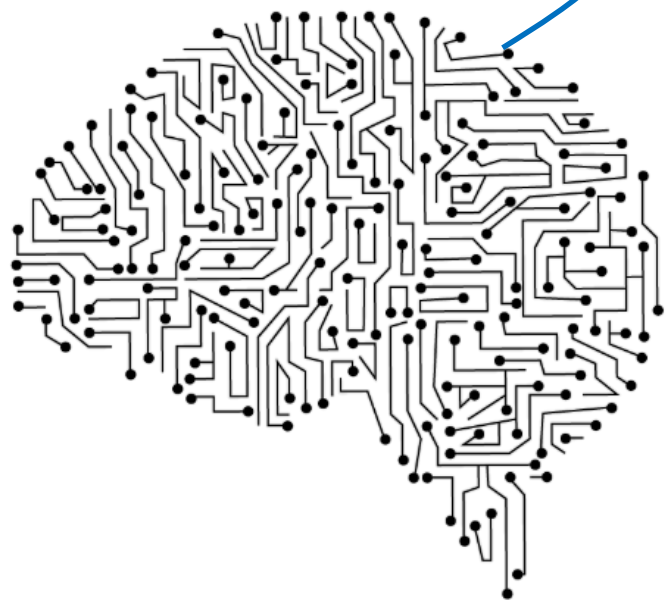
Low energy mesh network



KNX

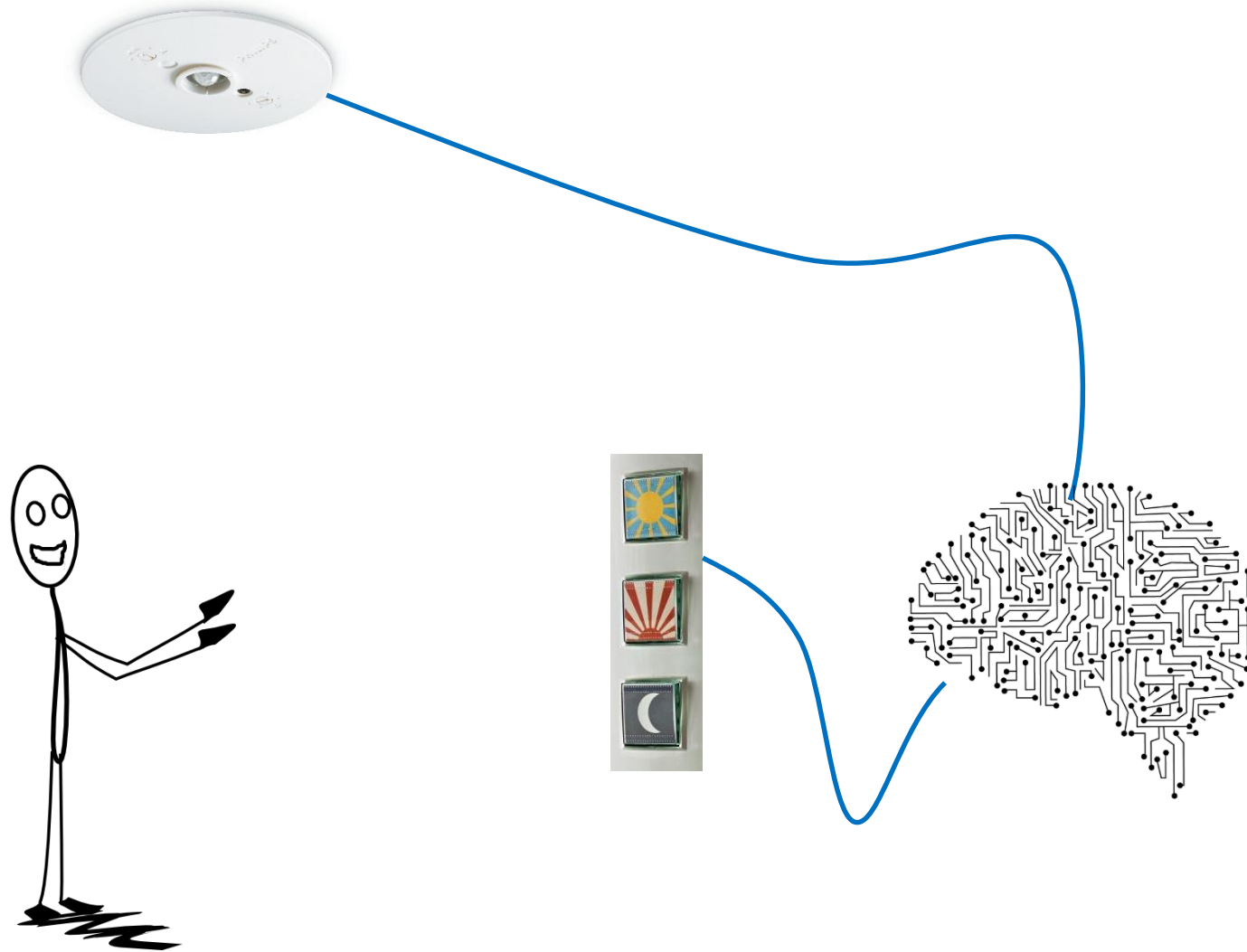


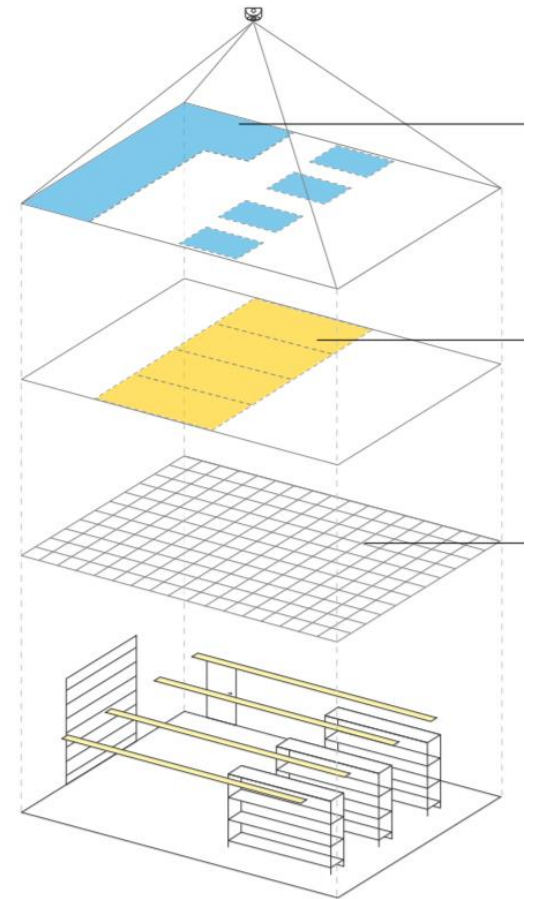
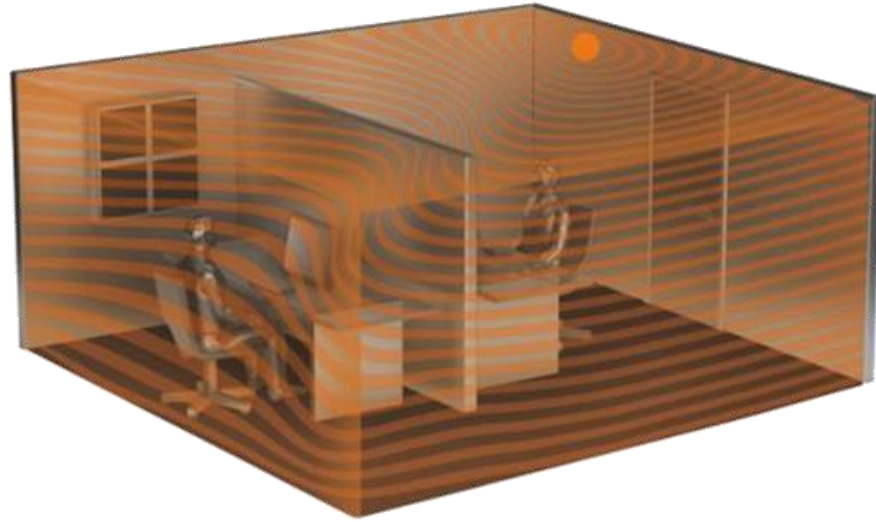


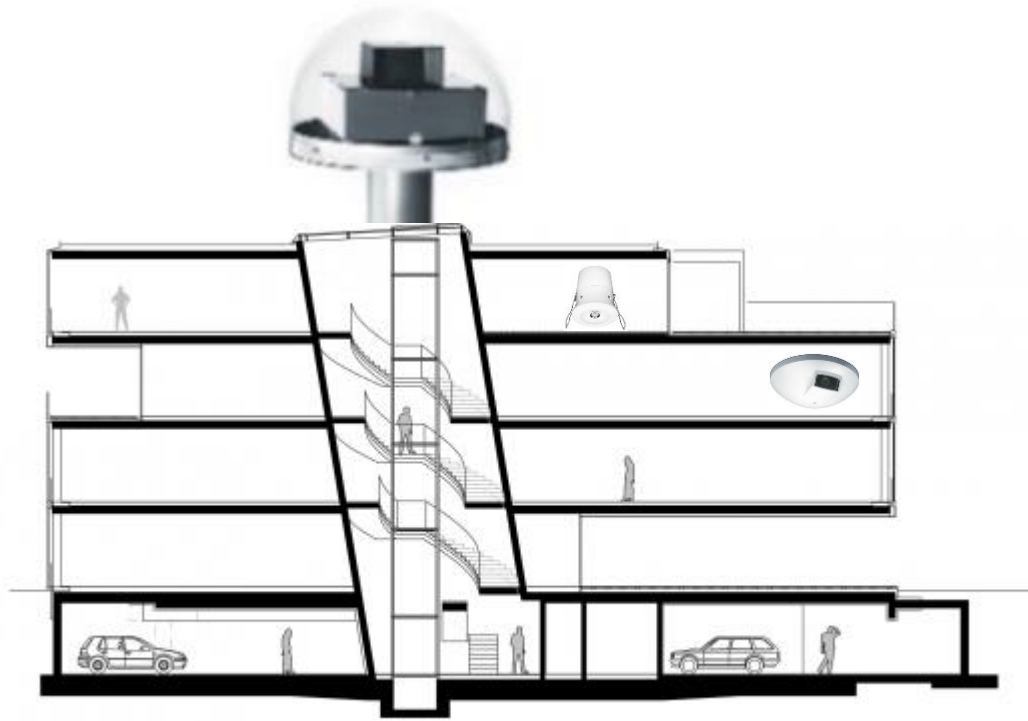


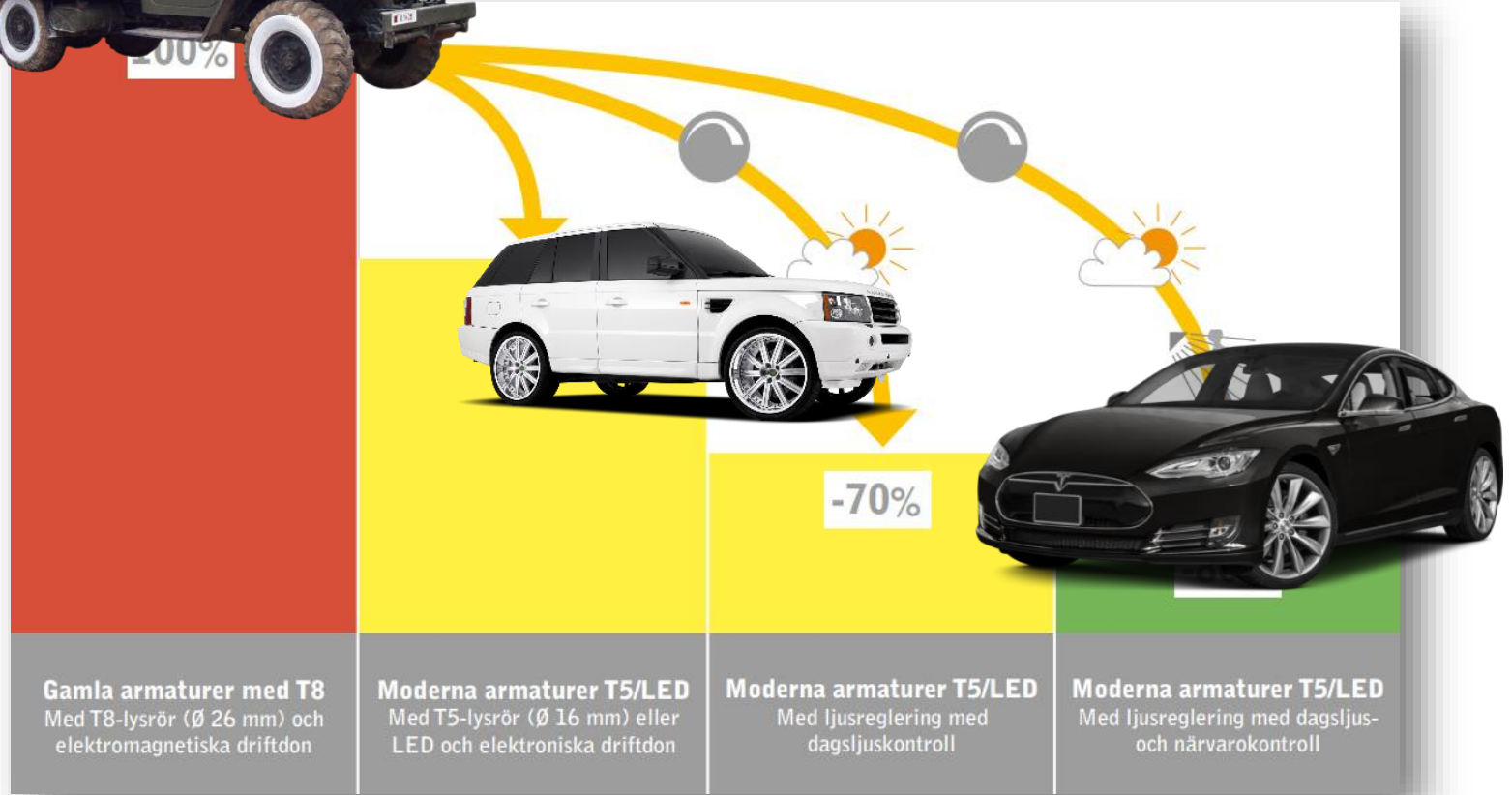
 **Bluetooth™**  
Low energy mesh network









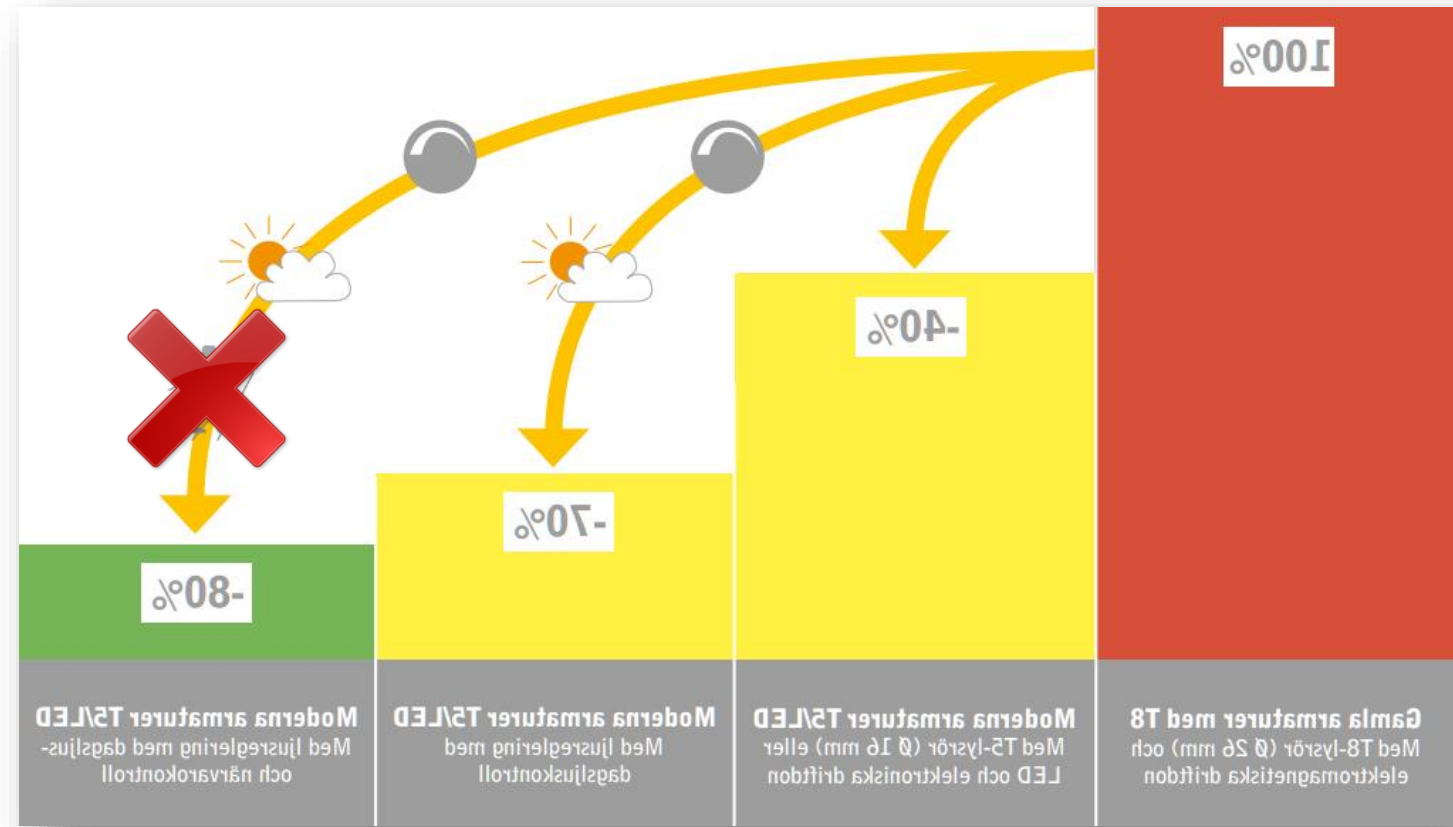


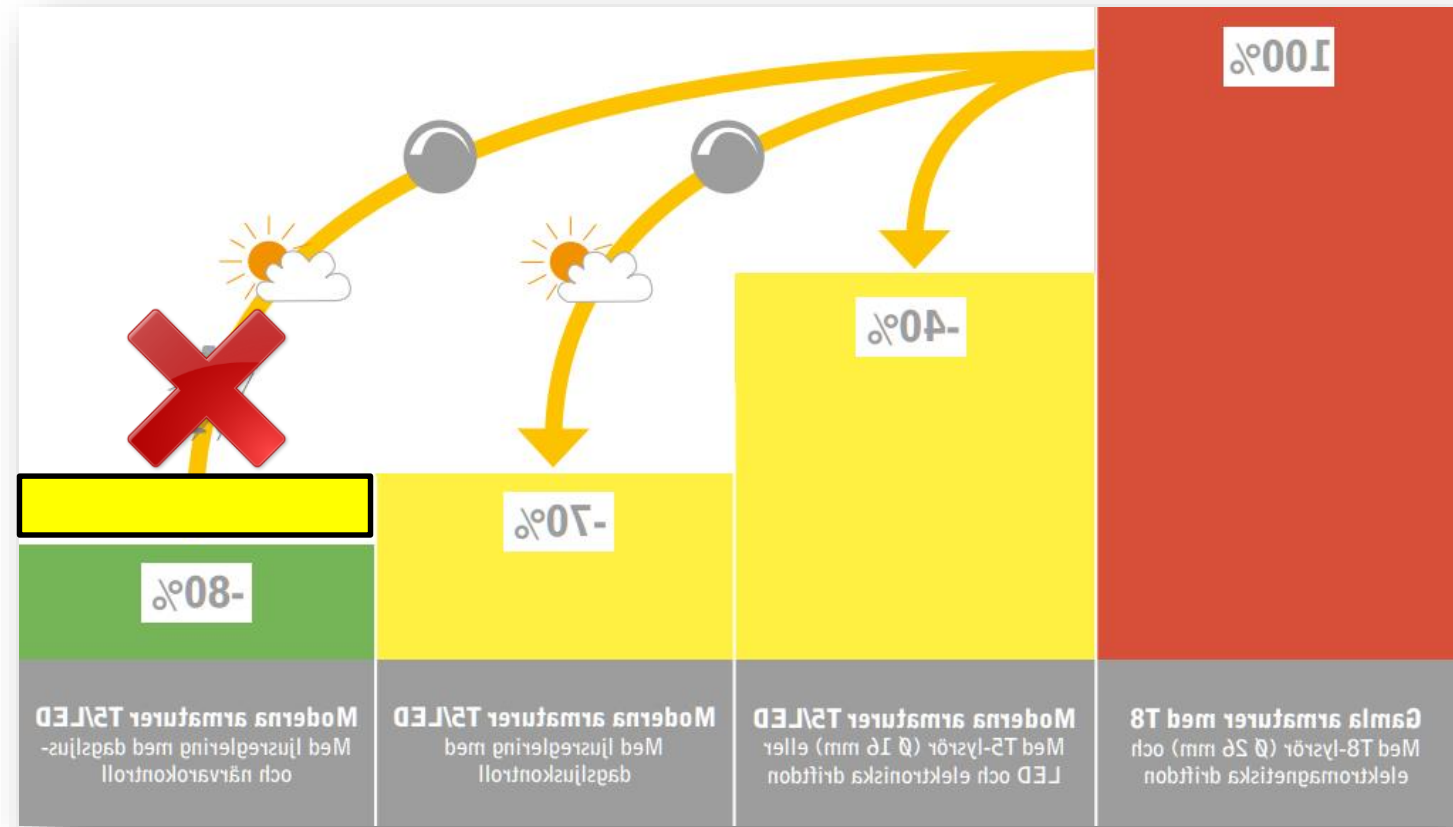
**Gamla armaturer med T8**  
Med T8-lysrör (Ø 26 mm) och  
elektromagnetiska driftdon

**Moderna armaturer T5/LED**  
Med T5-lysrör (Ø 16 mm) eller  
LED och elektroniska driftdon

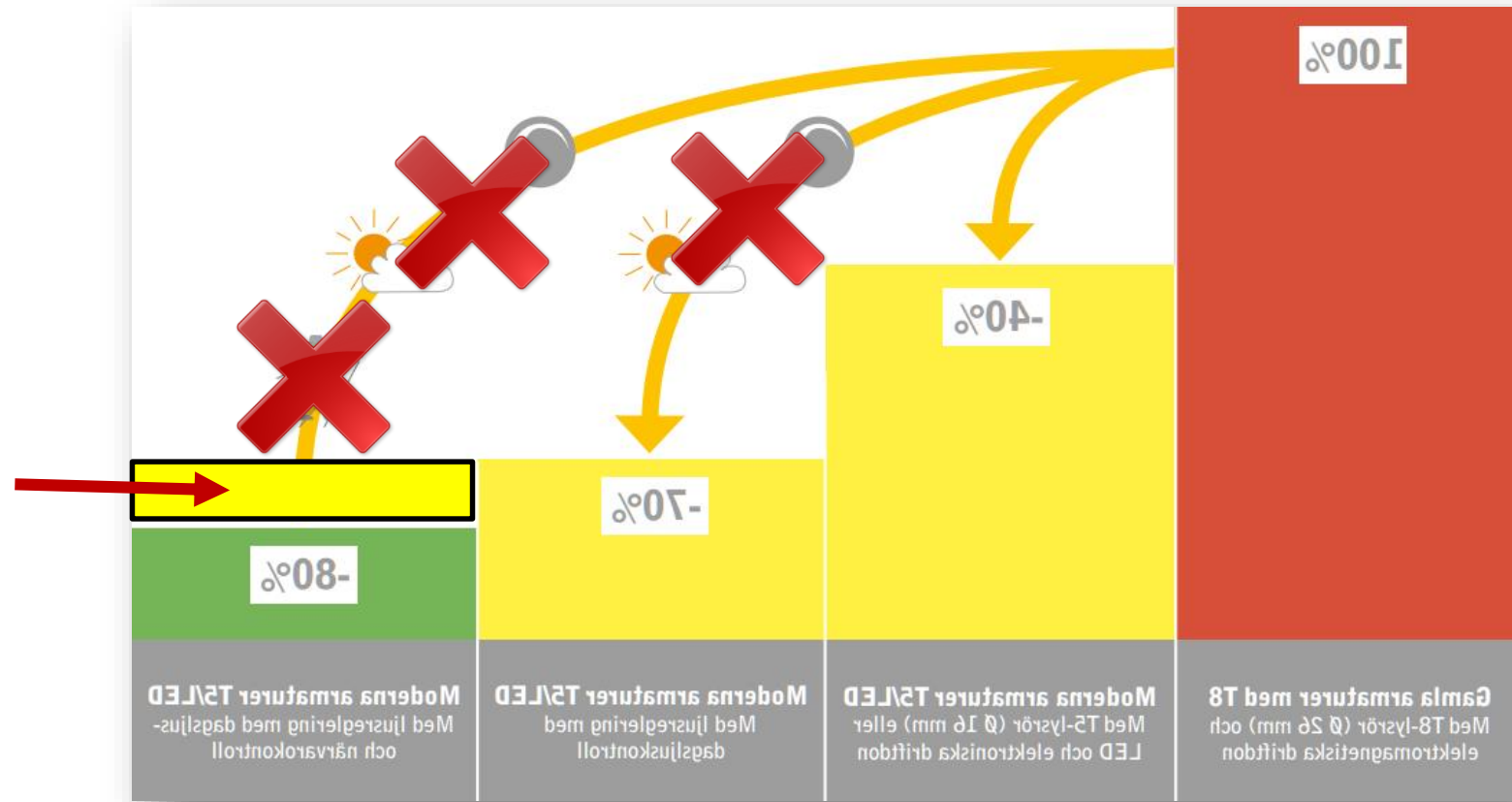
**Moderna armaturer T5/LED**  
Med ljusreglering med  
dagsljuskontroll

**Moderna armaturer T5/LED**  
Med ljusreglering med dagsljus-  
och närvarokontroll



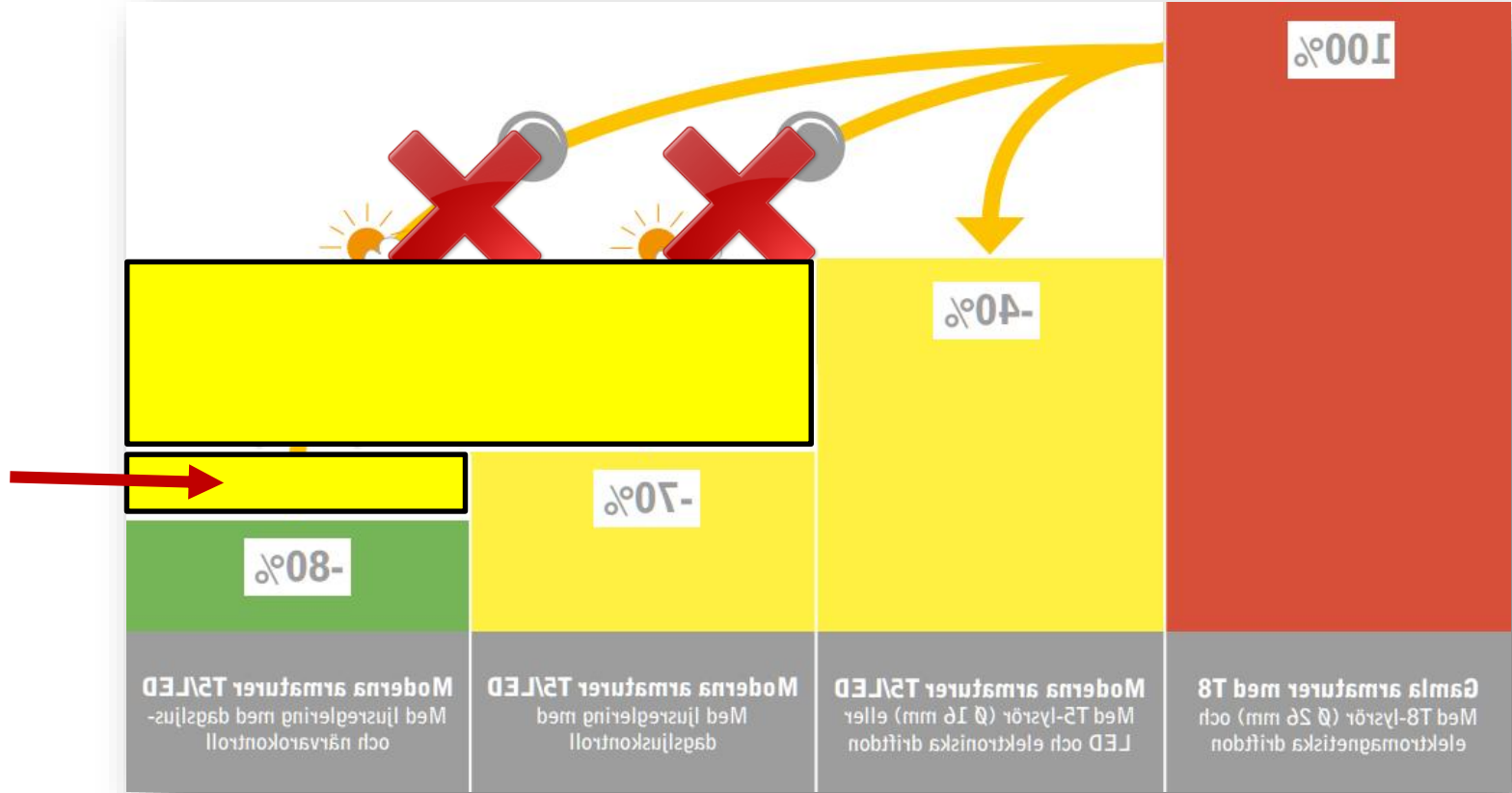


50% ökning!!!

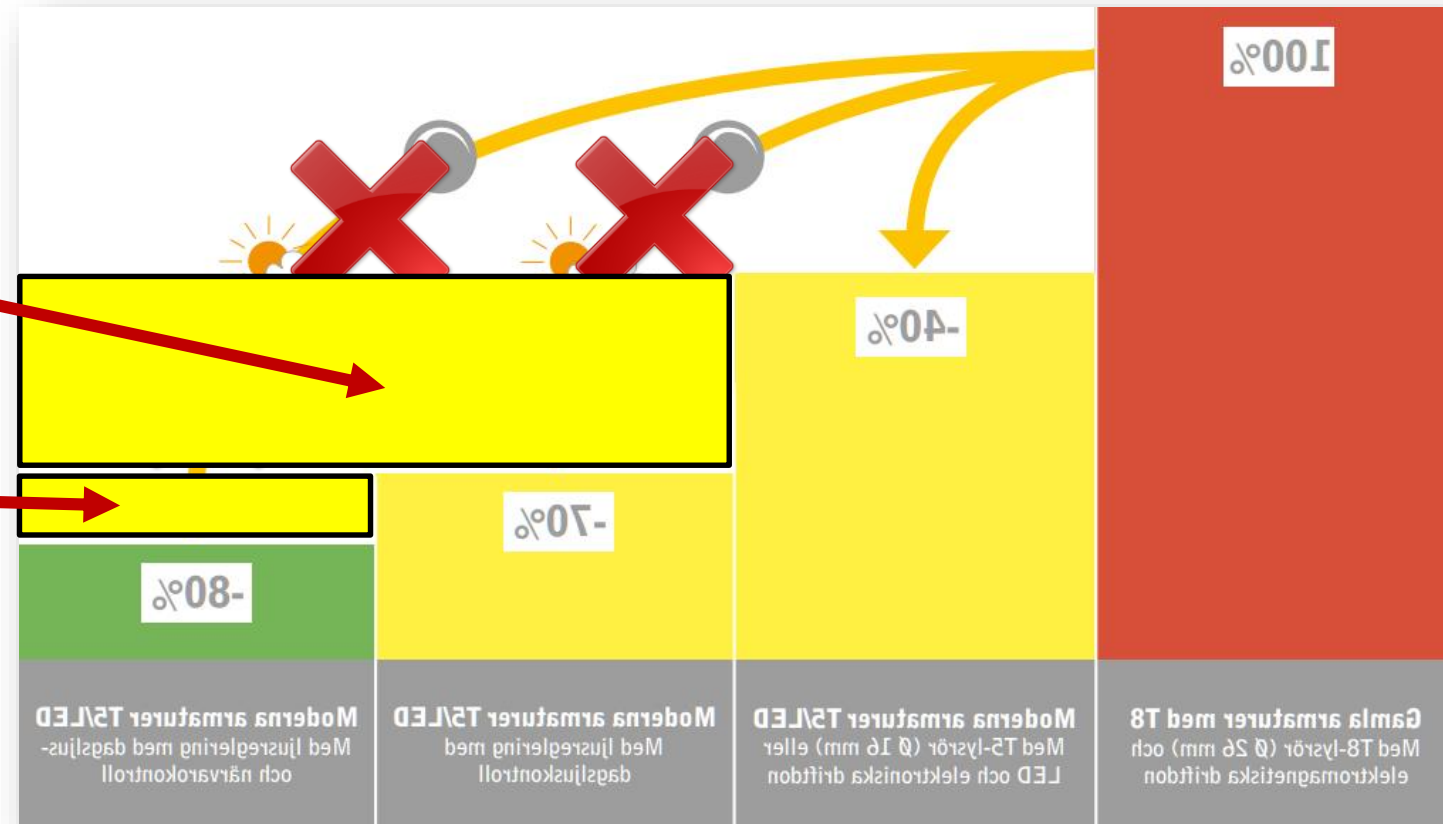




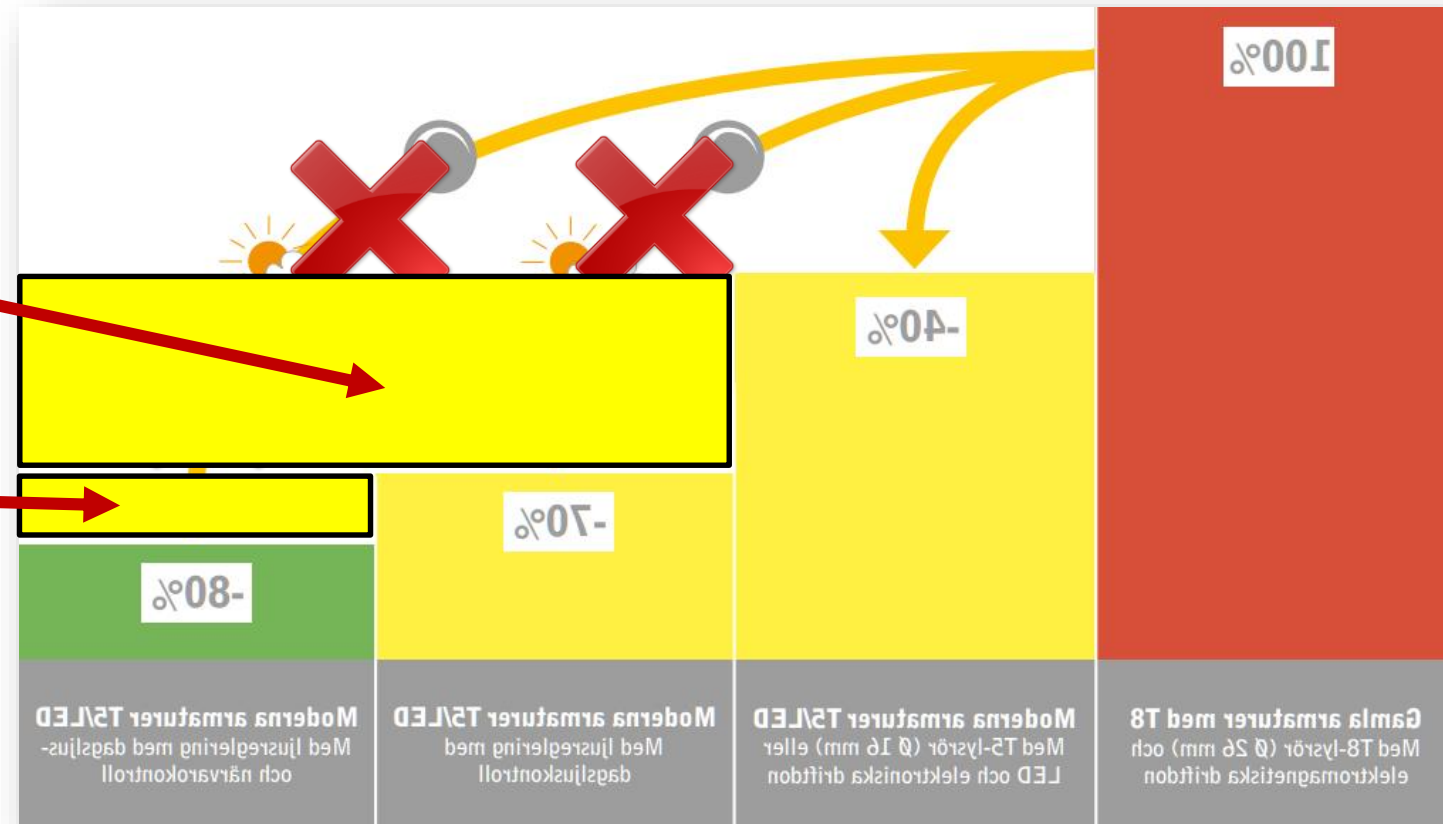
50% ökning!!!

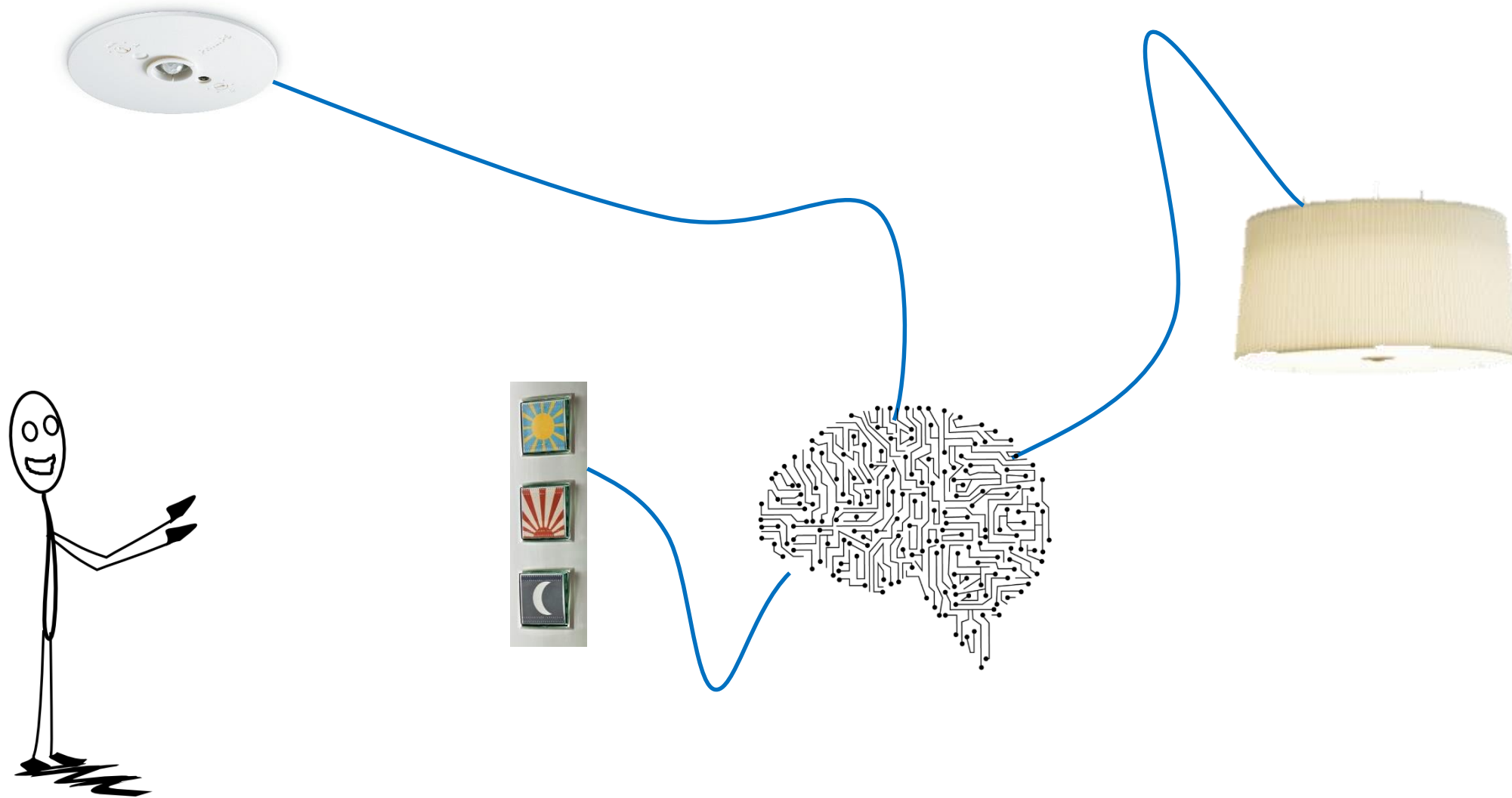


Ytterligare 100%  
ökning!!!  
50% ökning!!!

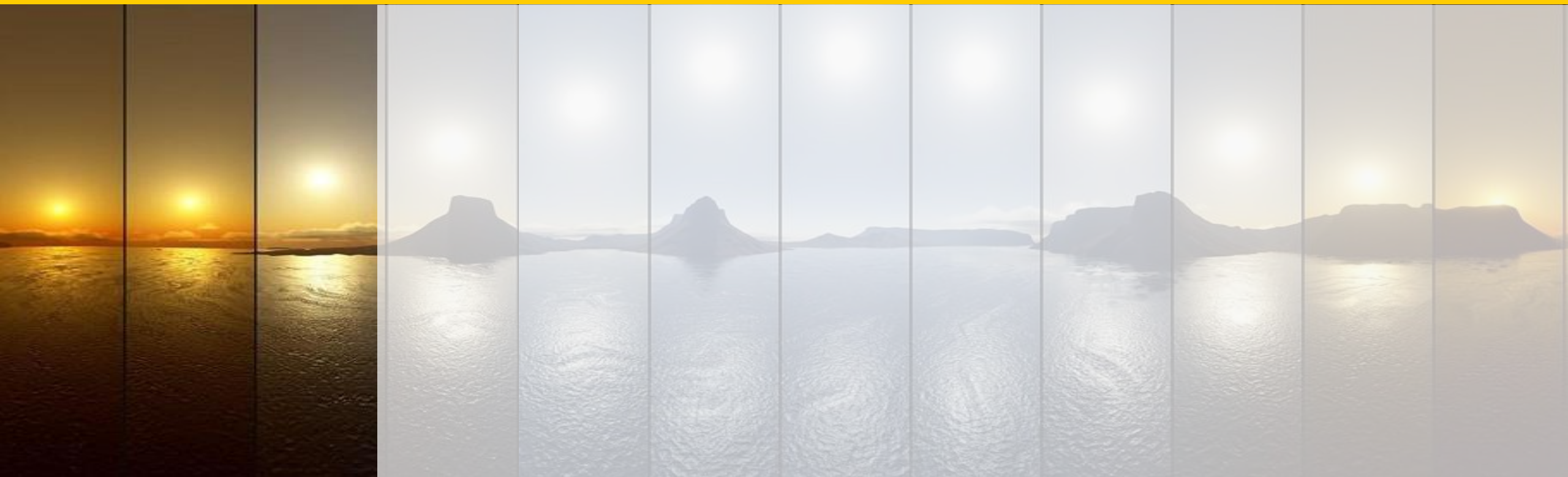


Ytterligare 100%  
ökning!!!  
50% ökning!!!

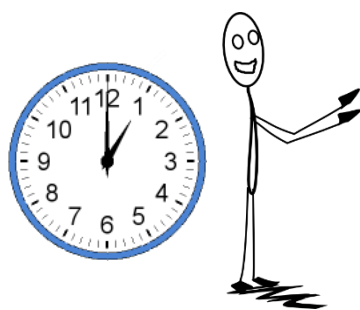








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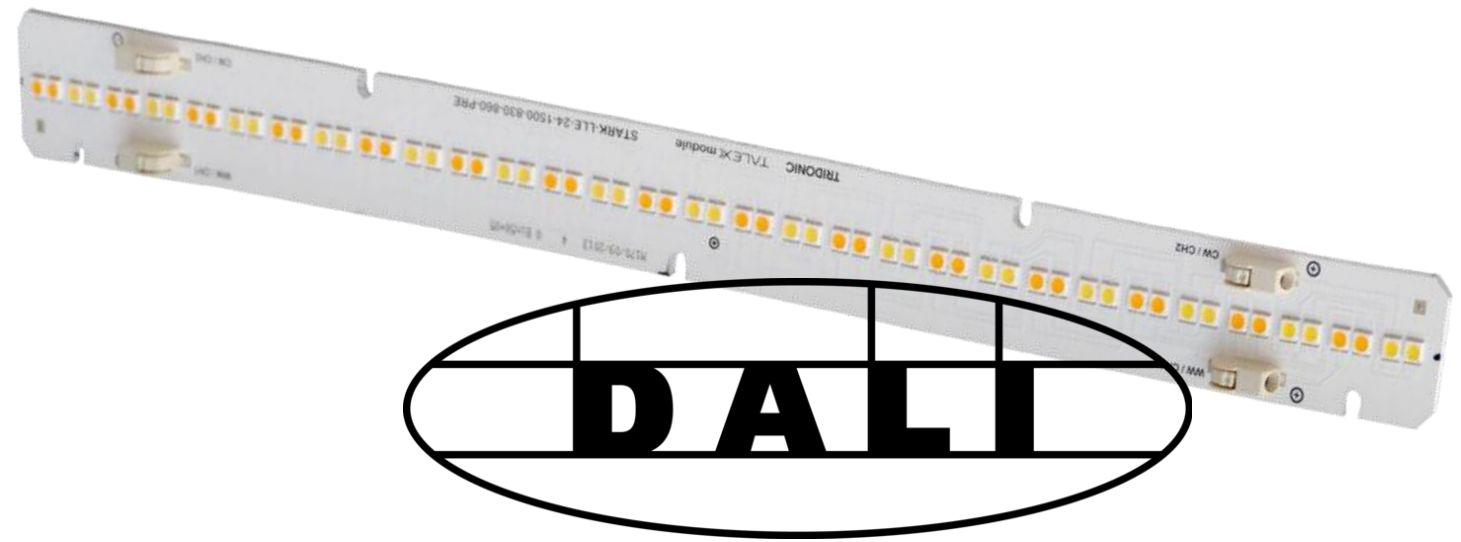
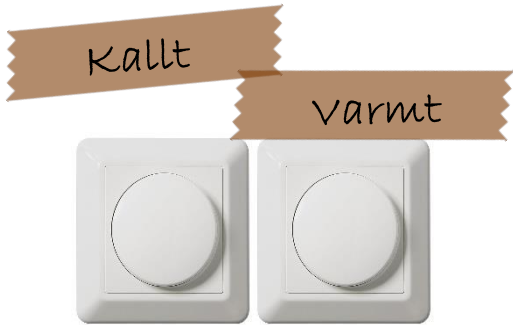


**BELYSNINGSBRANSCHEN**  
*Styr och reglergruppen*



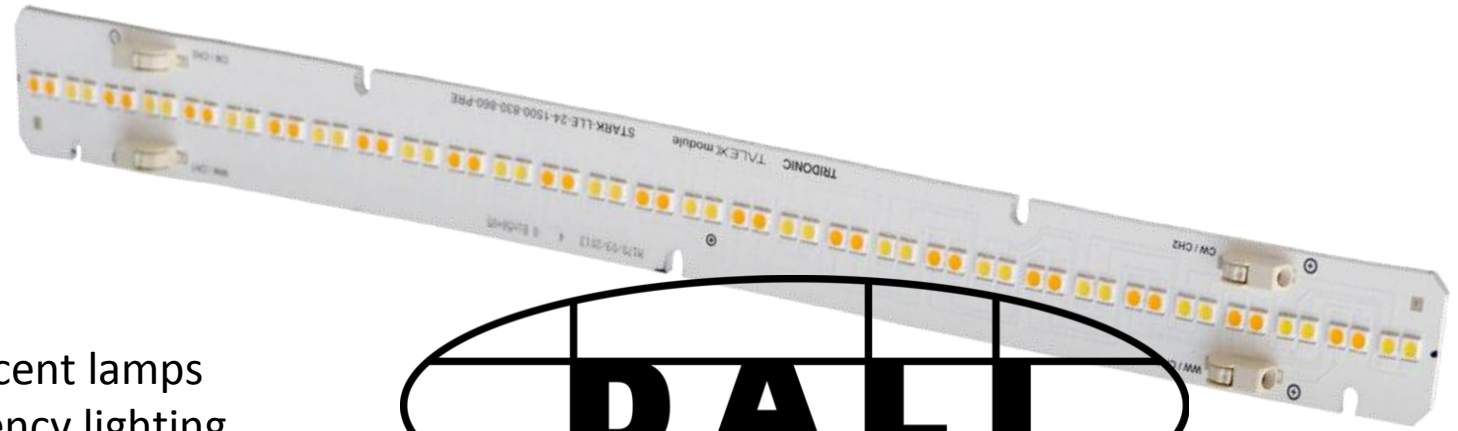
BELYSNINGSBRANSJEN





## IEC 62386 DALI

- Device Type 0 (DT 0): control gear for fluorescent lamps
- Device Type 1 (DT 1): control gear for emergency lighting
- Device Type 2 (DT 2): control gear for high-pressure discharge lamps
- Device Type 3 (DT 3): control gear for low-voltage halogen lamps
- Device Type 4 (DT 4): control gear for phase dimmers
- Device Type 5 (DT 5): control gear for digital/analogue converter
- Device Type 6 (DT 6): control gear for LEDs
- Device Type 7 (DT 7): control gear for switching functions
- Device Type 8 (DT 8): control gear for colour converters



# Device Type 8 (DT 8)

Endast kommandon är standardiserade

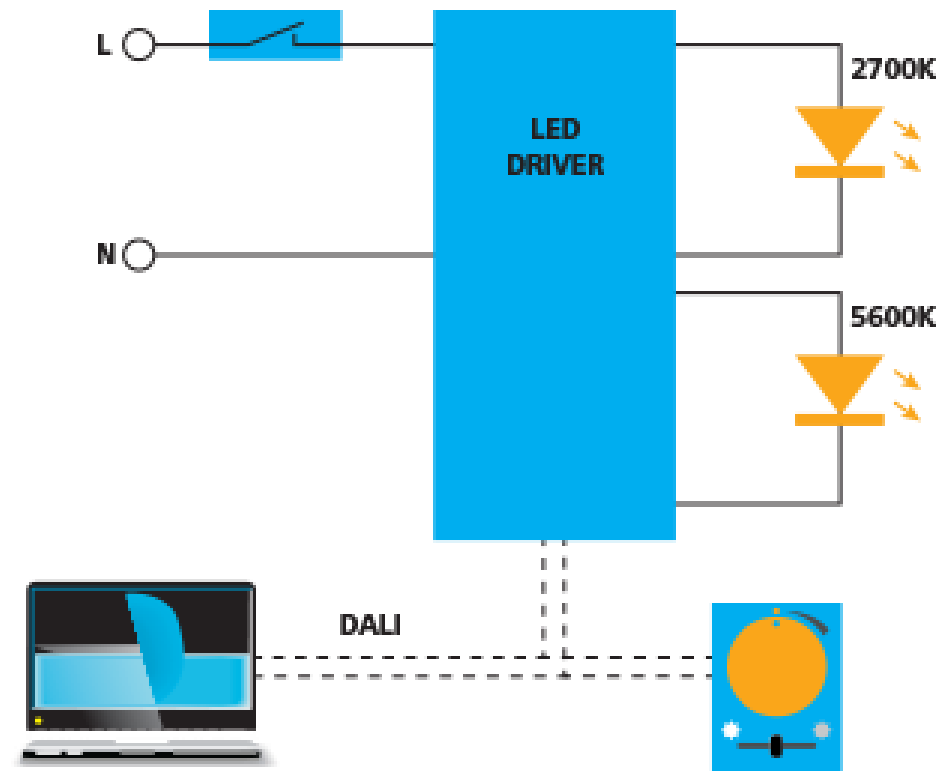
3 färgkommandon

1 färgtemperaturkommando

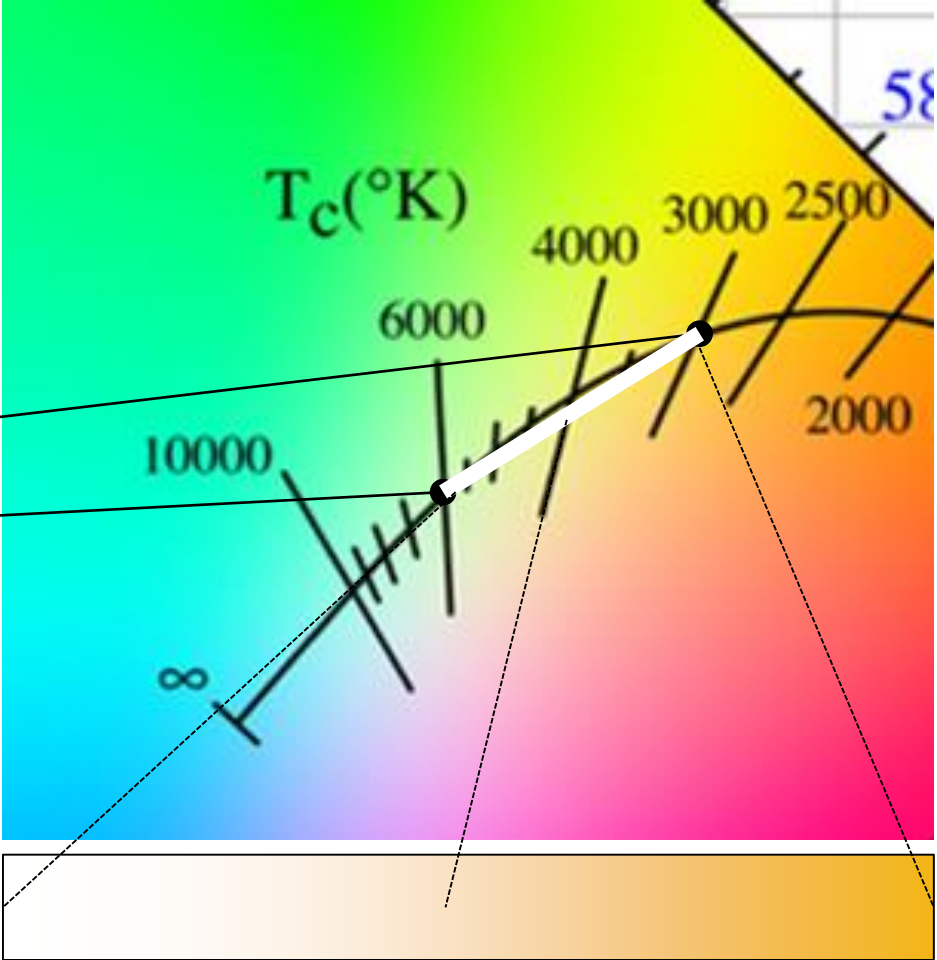
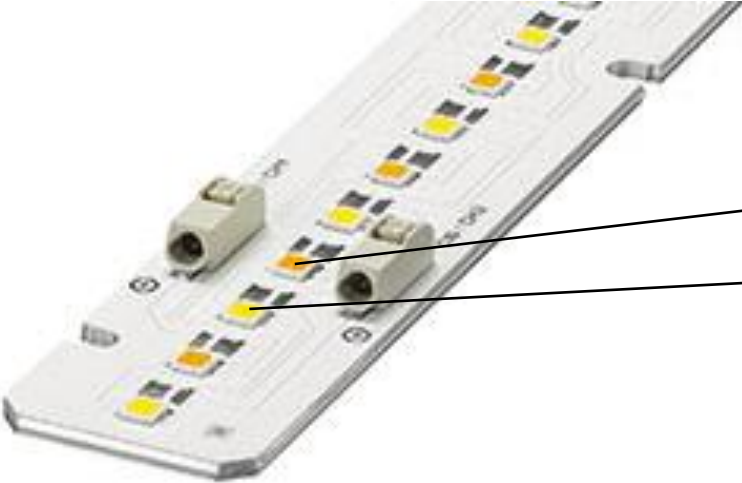
**X&Y, RGBWAF, PRIMARY**

**K**

# DALI DT8 Driver



# DALI DT8 LED





## Spotlight

- Modell X

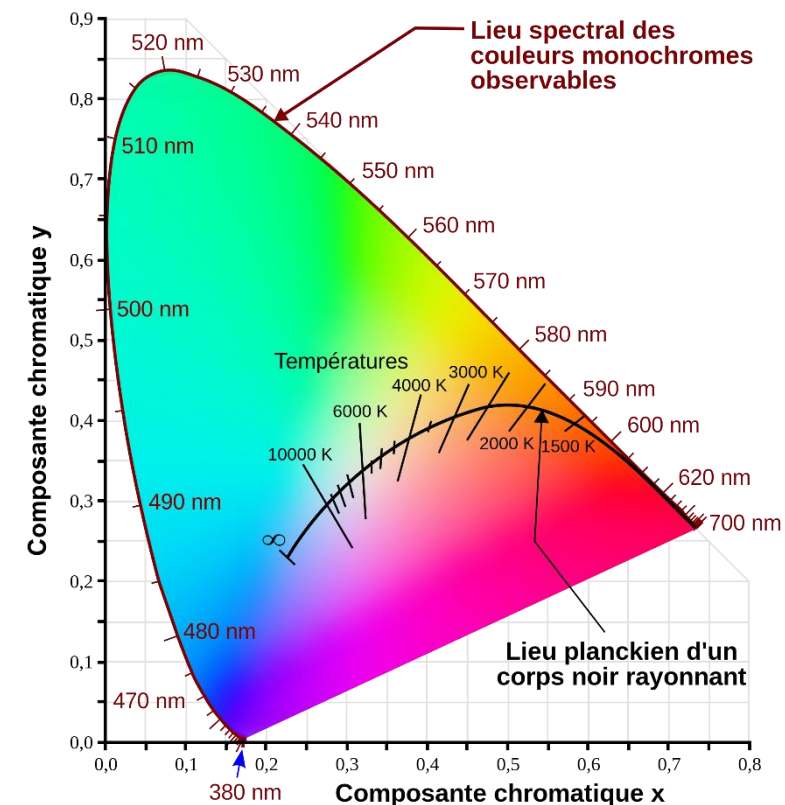
## Styrsystem DT8

- Skickar kommando 3000K

## Driver DT8

- Tar emot kommando 3000K
- Driver förstår endast x,y

## Resultat





## Spotlight

- Modell Y

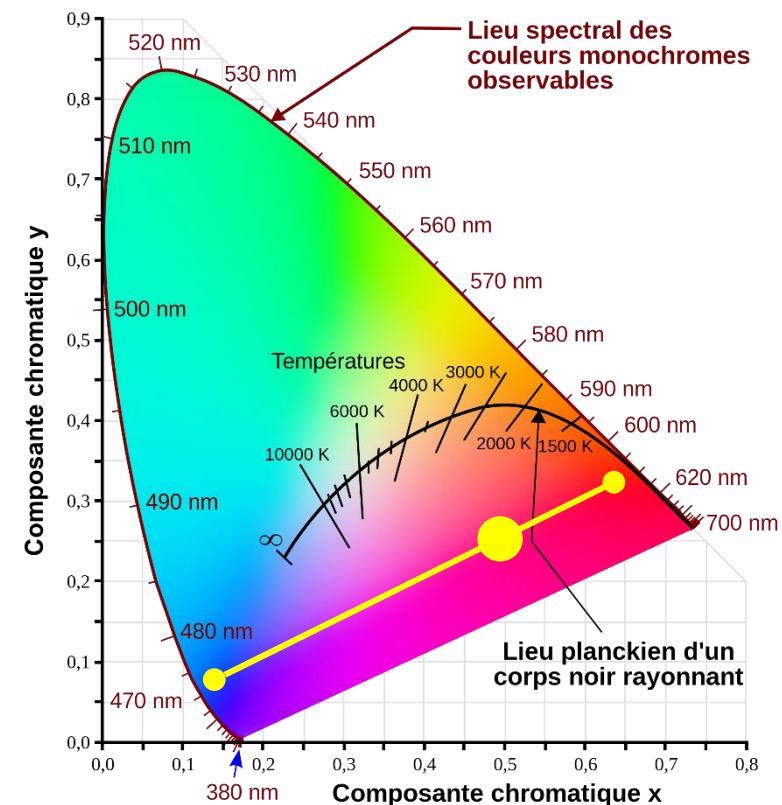
## Styrssystem DT8

- Skickar kommando 3000K

## Driver DT8

- Tar emot kommando 3000K
- Dimnivå ch 1: 73%
- Dimnivå ch 2: 17%

## Resultat





## Spotlight

- Modell Z
- Tunable White
- WW diod McAdams 3
- CW diod McAdams 3
- McAdams 3

## Styrssystem DT8

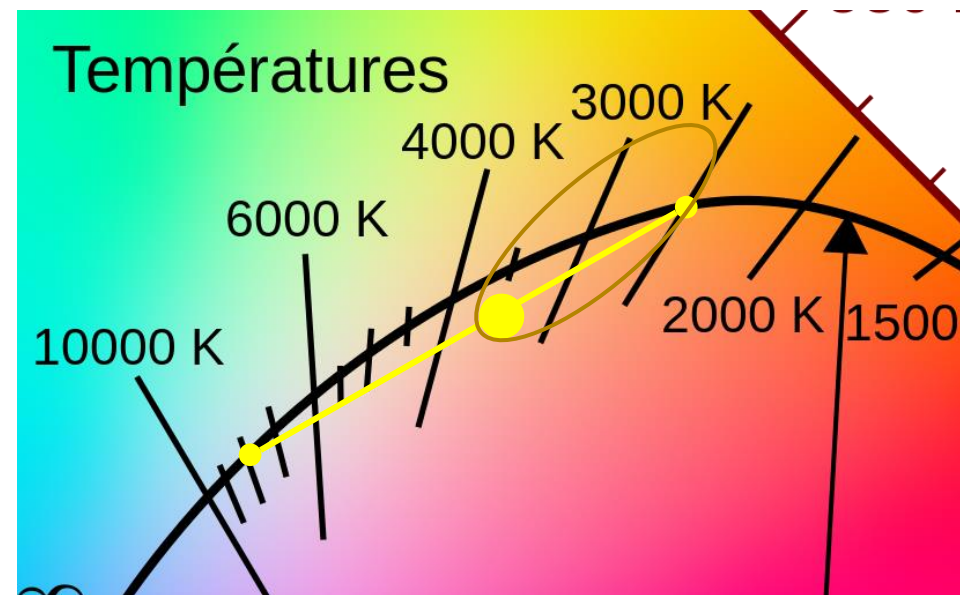
- Skickar kommando 3000K

## Driver DT8

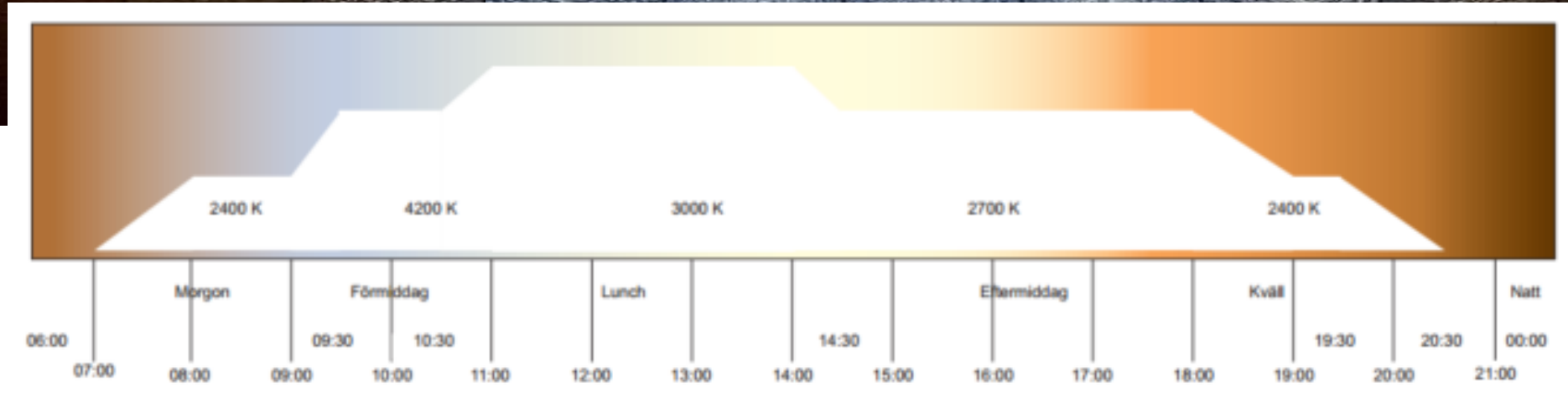
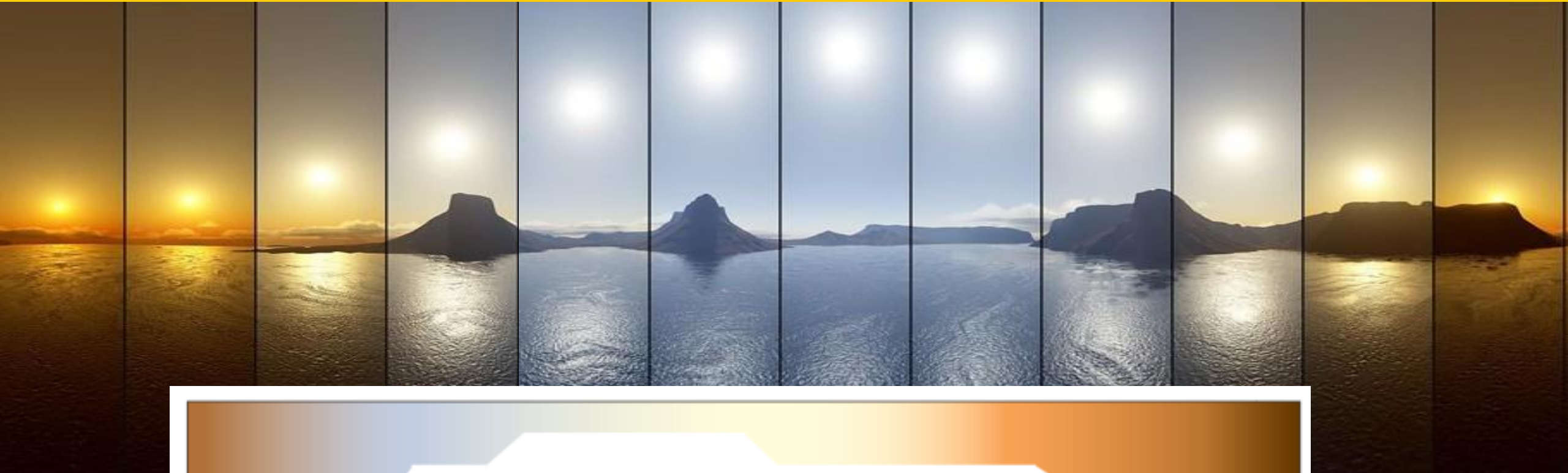
- Tar emot kommando 3000K
- Dimnivå ch 1: 73%
- Dimnivå ch 2: 17%

## Resultat

# McAdams 9



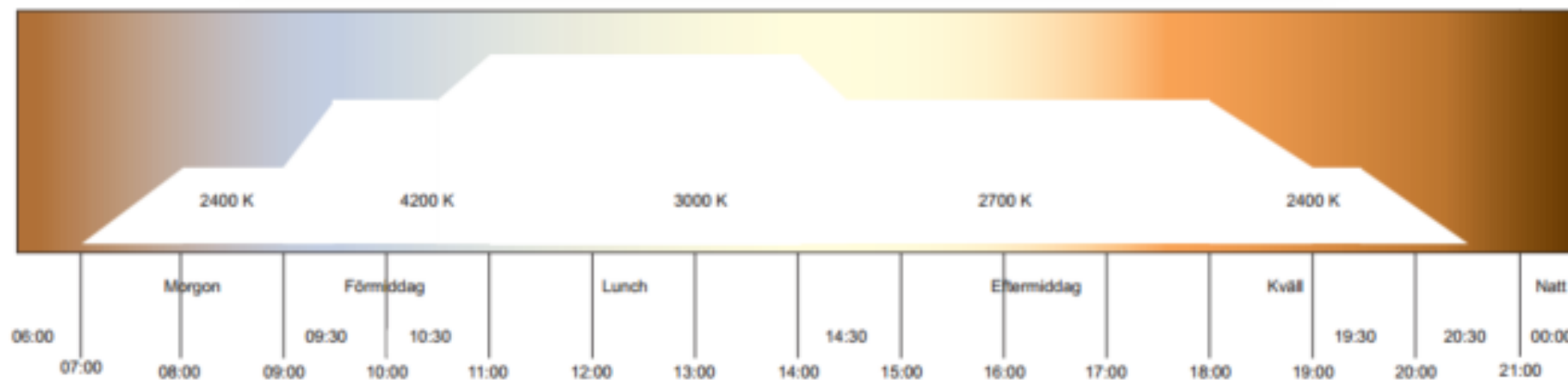


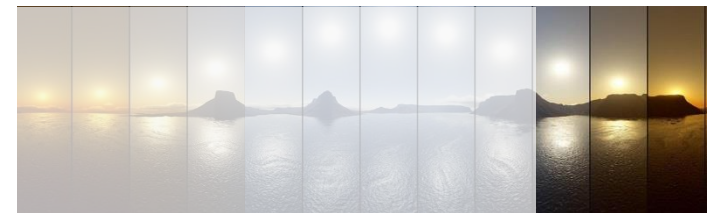


### Edit segment

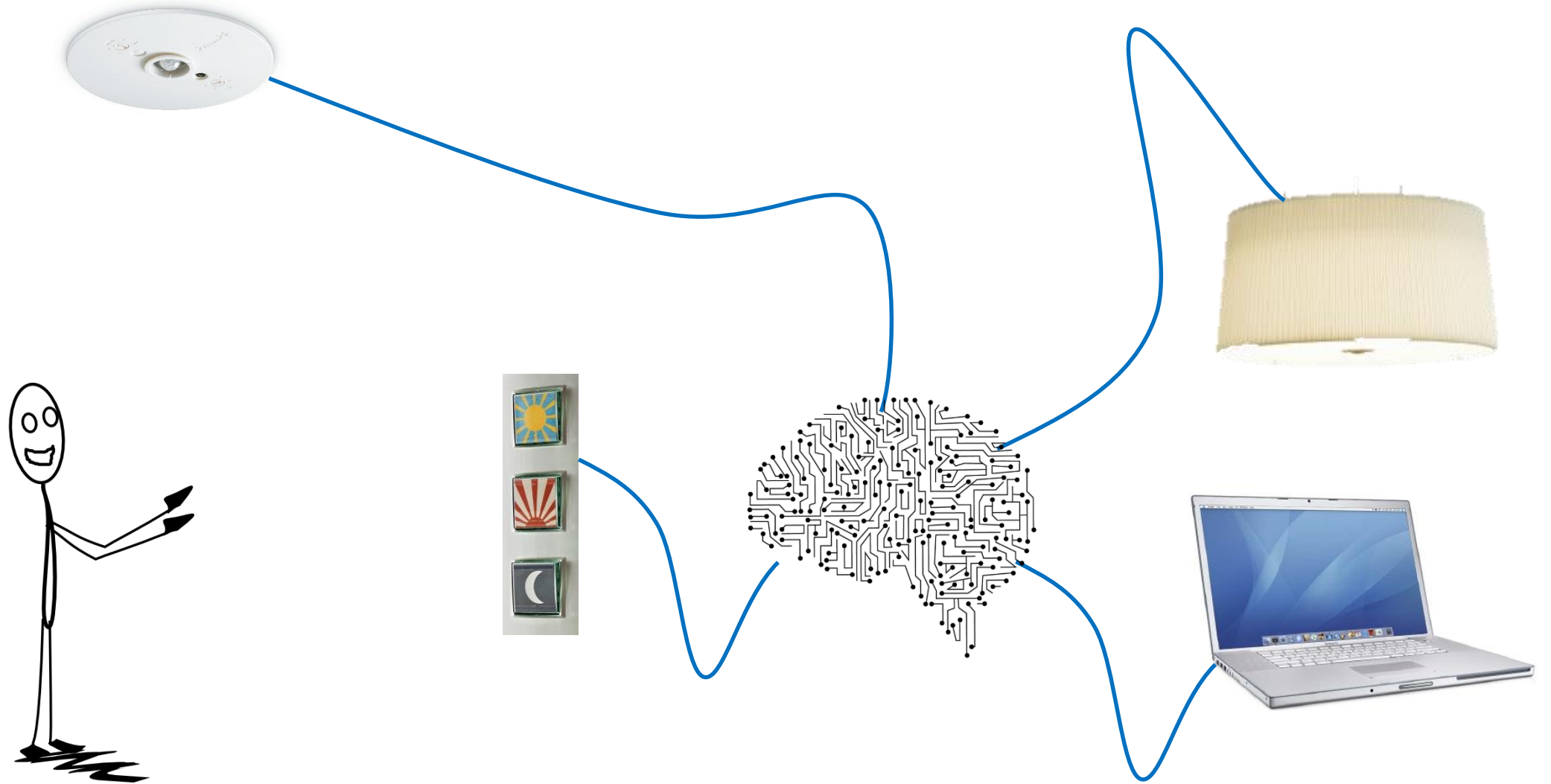
07:00:00

2700K





BELYSNINGSBRANSCHEN



BELYSNINGSBRANSCHEN

## Energy Performance

Logical Areas (Best Performance) ⚙️

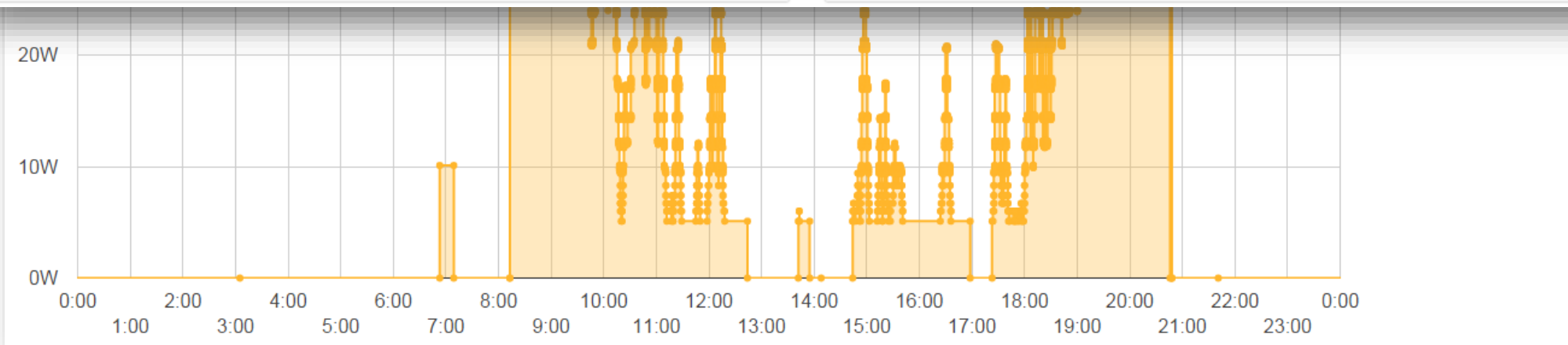
Logical Area	Benchmark	Actual Usage	Saving	% Used
Butik Gbg	40.00kWh	1.70kWh	38.30kWh	4.26%
Butik Gbg	42.00kWh	5.74kWh	36.26kWh	13.67%
Butik Sthlm	54.00kWh	14.32kWh	39.68kWh	26.52%
Showroom Sthlm	84.00kWh	42.51kWh	41.49kWh	50.61%
Kontor Sthlm	112.00kWh	106.32kWh	5.68kWh	94.93%

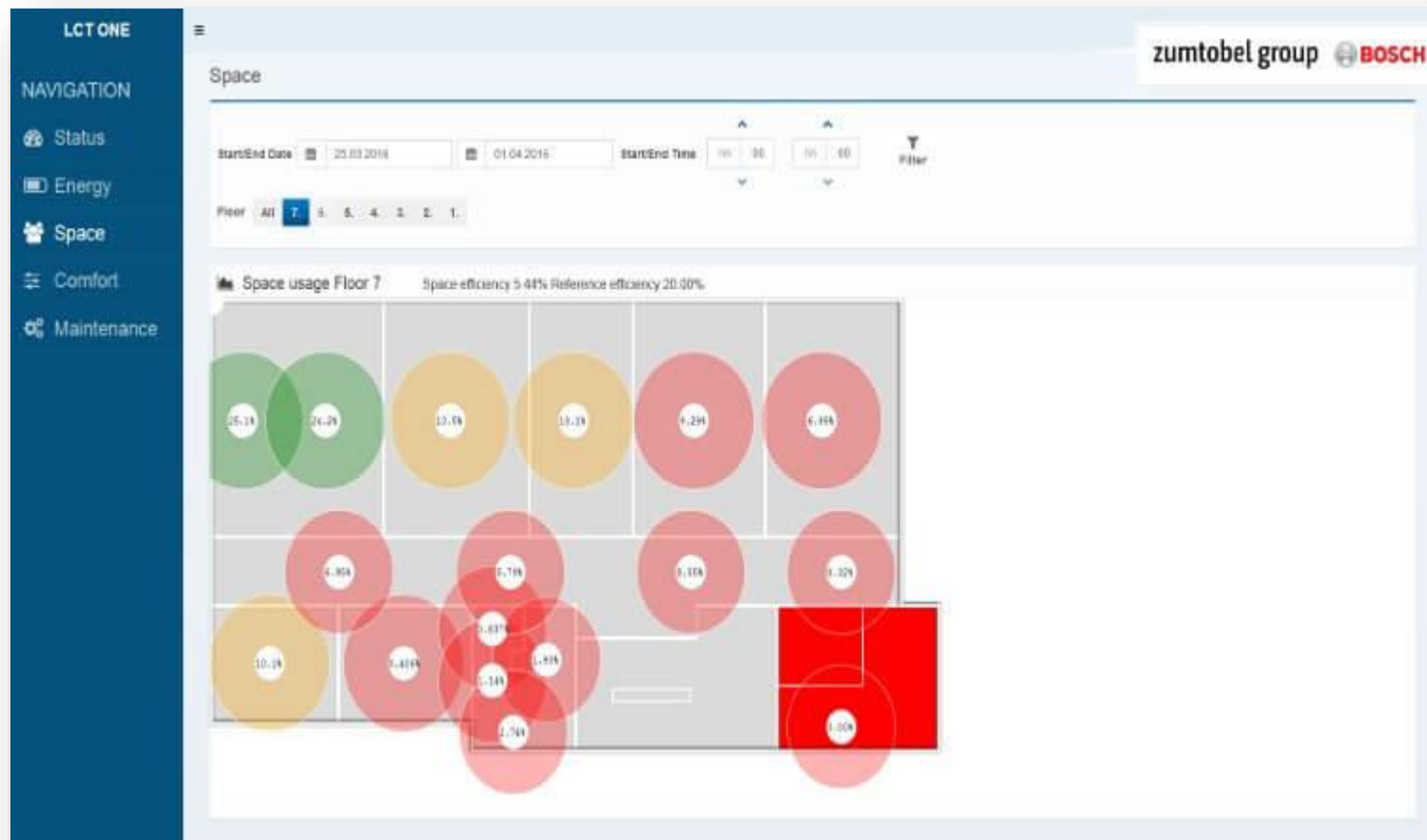
« < 1 2 > »

Logical Areas (Worst Performance) ⚙️

Logical Area	Benchmark	Actual Usage	Saving	% Used
Kontor Gbg	252.00kWh	116.52kWh	135.48kWh	46.24%
Kontor Sthlm	112.00kWh	106.32kWh	5.68kWh	94.93%
Showroom Sthlm	84.00kWh	42.51kWh	41.49kWh	50.61%
Butik Sthlm	54.00kWh	14.32kWh	39.68kWh	26.52%
Butik Gbg	42.00kWh	5.74kWh	36.26kWh	13.67%

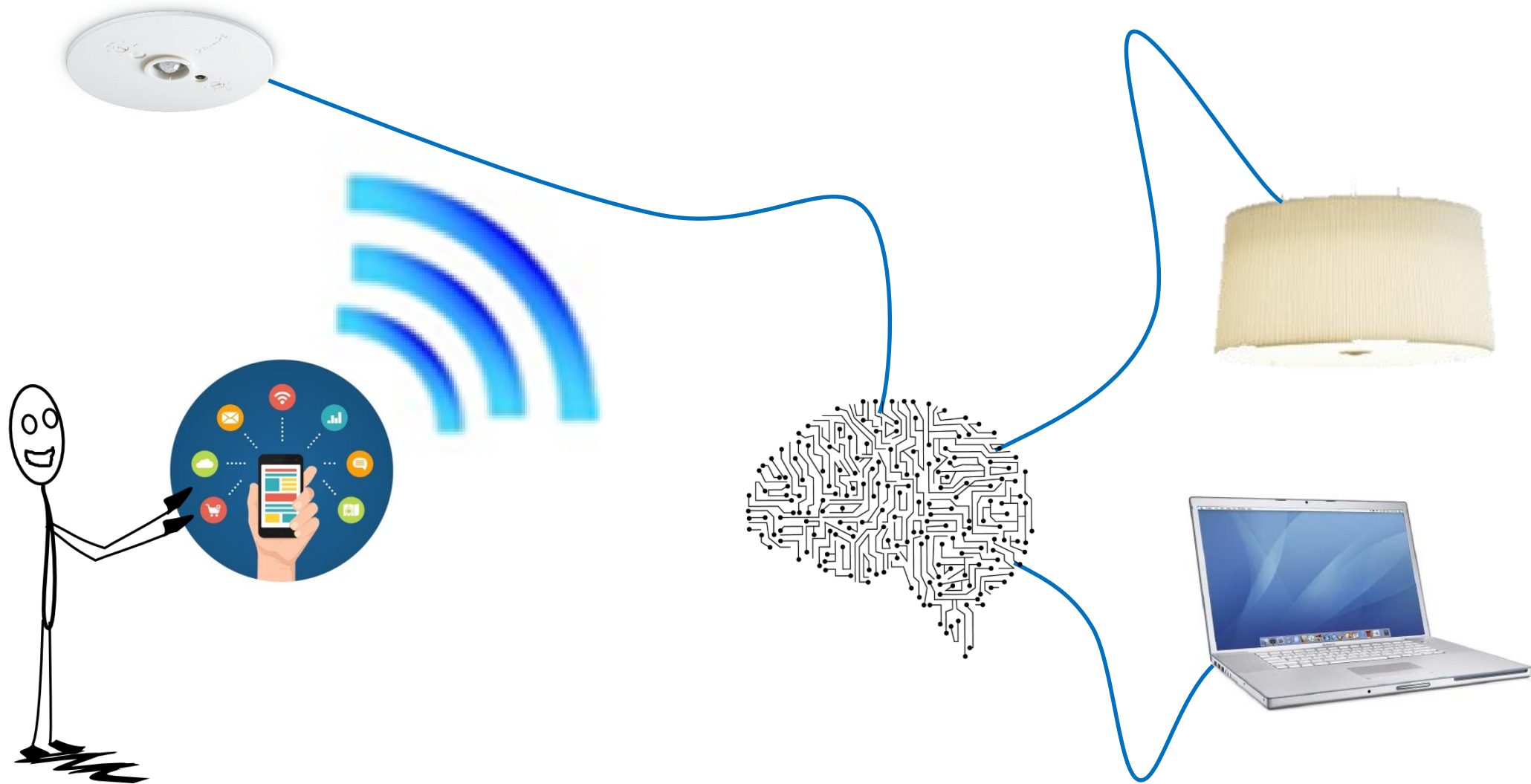
« < 1 2 > »





## Site Summary

	Emergency Devices	M-Sensors	Lights	Other	Total
On/Presence Detected	0	10	55	1	66
Failures	0	0	0	0	0
Predictive Warnings	0	18	53	1	72
Installed Units	0	18	82	1	101



BELYSNINGSBRANSCHEN





# Ljusstyrning – en självklarhet!

