



# TASK 7 Smart Lighting in Stockholm 30. March 2023

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Home 2023-03-28



# Agenda

1. 2<sup>nd</sup> Smart Lighting Report 17/11 2022  
Dissemination – Reactions?

2. New Test data

3. Smart Lighting News

4. Co-operation with EDNA

5. IEC/CIE Standardisation

6. Future Activities – Office lamp  
Analysis

7. Expert input and discussion



# 1.1 Dissemination of the 2<sup>nd</sup> Report

1. 18-21/10 2022, IEA Future Buildings Forum Think Tank Workshop, Ottawa, Canada
2. 28/2 2023 National Seminar, DTU Risø, Denmark
3. 27/3 2023 International Seminar, Stockholm, Sweden
4. April 2023 Two IEA SSL Public Seminars on Smart Lighting

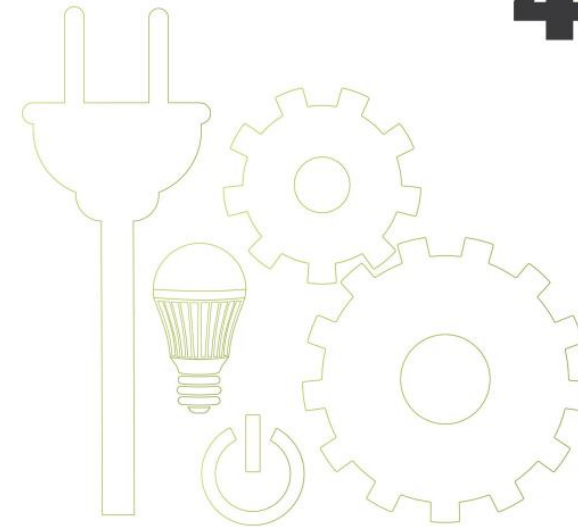


# 1.2 Reactions?

Nice with all the questions/comments 2023.03.27



Energy piano



## Solid State Lighting Annex: Task 7: Smart Lighting – New Features Impacting Energy Consumption

### Second Status Report

Energy Efficient End-Use Equipment (4E)  
International Energy Agency

15 NOVEMBER 2022



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# 2.1 Danish Test: LEDVANCE luminaire Outdoor Round HD Camera DG, 18 cm



- **3000 K, Dimmable, IP44, WiFi, shade sensor, sensor activated sequences saved, HD transmission**
- **Rated 950 lm. Measured 1156 lm**
- **Rated 15 W LED. Measured 14.0 W.**
- **Rated 63 lm/W, Measured 82.7 lm/W**
- **Standby 2.04 W**

## 2.2 Danish Test: EGLO Herrera luminaire 45x45, Zigbee, White tunable 2700-6500K



- Rated 2900 lm. Measured **1700-2023** lm
- Rated 22 W LED. Measured 22-23 W
- Rated 132 lm/W, Measured **83** lm/W
- Standby 0.46 W

# 2.4 Danish Test: EGLO long table Pendle

122 cm, Zigbee, RGB, 2700-6500K



- Rated 3980 lm. Measured **2450 - 2750** lm
- Rated 35 W LED. Measured **37-39** W.
- Rated 114 lm/W, Measured **63-71** lm/W
- Standby **0.348** W

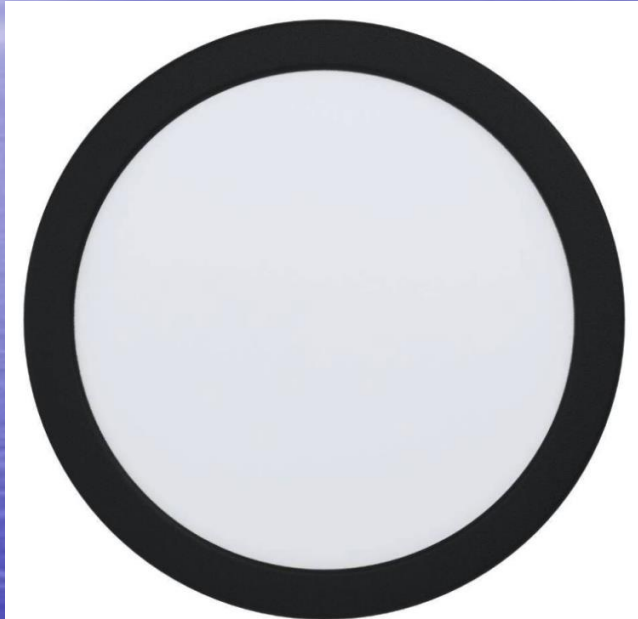


# 2.4 Danish Test: EGLO Saliceto-Z Build-in Spot, ø88 mm, RGB, 2700-6500K



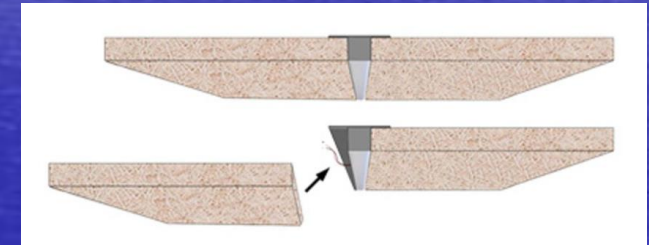
- **Rated 400 lm. Measured 464-484 lm**
- **Rated 5 W LED. Measured 4.4 – 4.5 W.**
- **Rated 80 lm/W, Measured 103-109 lm/W**
- **Standby 0.37 W**

# 2.5 Danish Test: EGLO FUEVA Downlight ø216 mm, Zigbee og Bluetooth , 2700-6500K



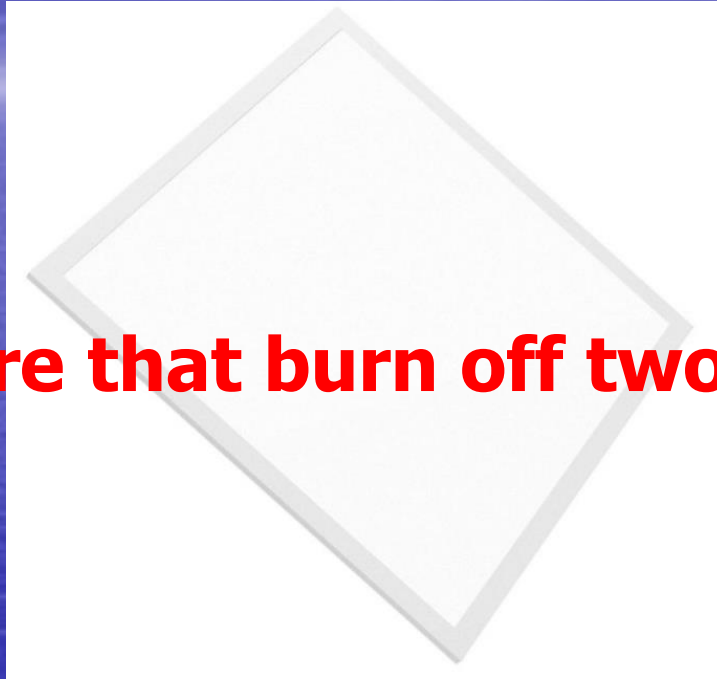
- Rated 2100 lm. Measured **1563-1829** lm
- Rated 16.5 W LED. Measured **17-18** W.
- Rated 127 lm/W, Measured **94-107** lm/W
- Standby 0.38 W

# 2.6 Danish Test: Signify Troldekt Rail 60 cm, RGB, 2700-4000K



- Rated 2100-2400 lm. Measured 1m
- Rated 24 W LED. Measured W.
- Rated 88-100 lm/W, Measured lm/W
- Standby W

## 2.7 Danish Test: CASAMBI Panel 60x60 White Tunable 2700-6500K



**Defect armature that burn off two Casambi drivers**

- Rated 4500 lm. Measured 4500 lm
- Rated 36 W LED. Measured 36 W.
- Rated 125 lm/W, Measured 125 lm/W
- Standby 0.5 W

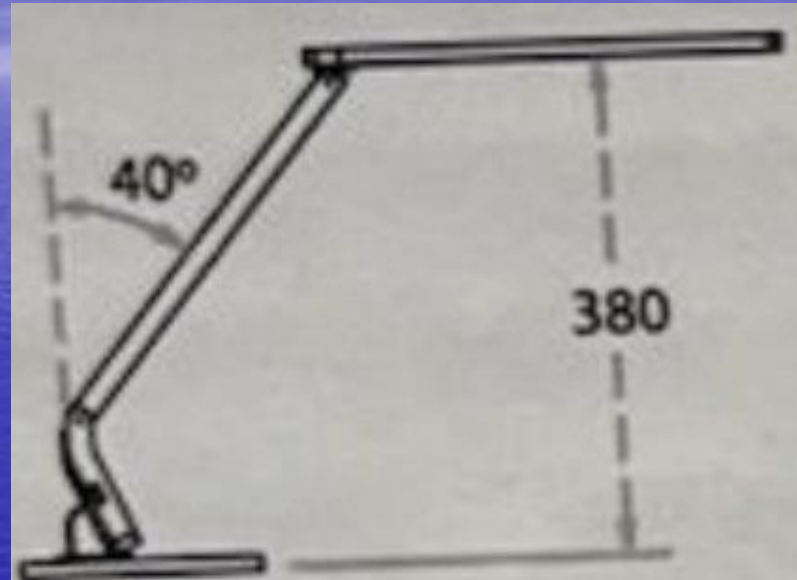


# 2.8 Danish Test: Aigostar Downlight ø220 mm, White tunable 3000-6500K



- Rated 1370 lm. Measured 1500 - 1700 lm
- Rated 18 W LED. Measured 17-18 W.
- Rated 76 lm/W, Measured 83-102 lm/W
- Standby **0.723 W**

## 2.9 Danish Test: ELINI Table Lamp White tunable 3000-6500K



- **Rated 530 lm. Measured 686 (read), 530 (study), 365 (Relax) and 269 (sleep) lm**
- **5191K 6190K 3576K 3027K**
- **Rated 6.3 W LED. Measured 8.7, 6.8, 4.8 and 3.7 W.**
- **Rated 84 lm/W, Measured 79, 78, 76 and 73 lm/W**
- **Standby 0.33 W**

# 2.10 Danish Test: Philips Sceneswitch 2200K, 2500K or 2700K



- Rated 355 lm. Measured **54, 200** and 450 lm
- Rated 6.3 W LED. Measured 1.4, 3.4 and 4.6 W.
- Rated 74 lm/W, Measured **37, 59** and 98 lm/W
- Standby **0 W (controlled by ON/OFF)**

# 2.11 Test data from other countries?

Any data in the pipeline?





# 3.1 Market news:

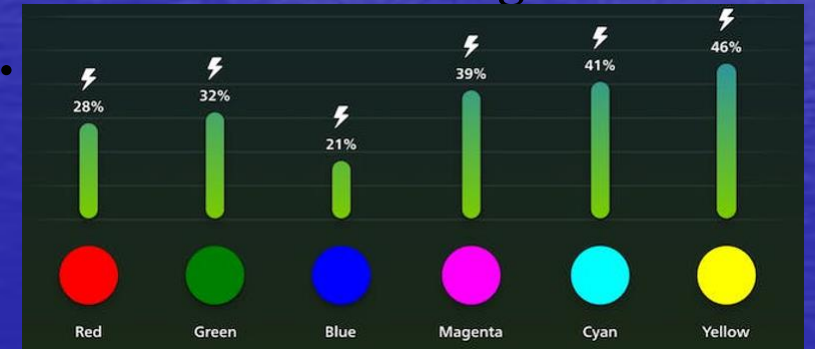
2022 11 21 ledsmagazine.com did bring an article

## Personalized Philips Hue lighting helps to save energy

”Signify is committed to doubling its positive impact on the environment and society by 2025.

Signify did inform:

- **HUE Scenes** as Savanna sunset, Tropical twilight, Arctic aurora, Spring Blossom and Soho **saves up to 88%** by creating a unique ambiance for dinner with friends or relaxing.
- **HUE dimming to 70%** of maximum brightness, **saves 51%**.  
Dimming to **50%** saves **75%**.
- **Select color light instead of white.** Blue light e.g. saves up to 79%.



Signify reference for the above mentioned savings (EU market): “**Difference achieved in wattage consumption on new HUE A60 White and color ambiance E27 1100 bulbs compared to 4000K at 100% brightness. Actual savings will vary depending on product specifications and dimming level.**”



# 3.1 (2) "Dim to 70% saves 51% + Dim to 50% saves 75%"

		Lighting Output	100%	75%	50%	25%	100%	75%	50%	25%	
<b>South Korea</b> <b>2020</b>	19	0 HUE WA	4000	103	100	97	93	100%	97%	94%	90%
	20	HUE WC	4000	98	96	90	85	100%	98%	92%	87%
	21	Merlotlab W	3000	77	73	70	60	100%	95%	91%	78%
	22	Hanssem Palette	4000	86	83	78	61	100%	97%	91%	71%
	23	Ledvance	4000	79	78	77	73	100%	99%	97%	92%
	24	Yeelight	4000	99	96	94		100%	97%	95%	
<b>Sweden</b> <b>2018-20</b>	25	3077 Philips HUE white/color	2700	42	45	35	20	100%	109%	85%	48%
	26	3076 Philips HUE white/color	2700	74		52		100%		70%	
	27	3011 IKEA Trådfri LED	2700	91		95		100%		104%	
	28	3012 IKEA Trådfri LED	2700	86		99		100%		116%	
	29	3015 IKEA Floalt luminaire	2700	49		44		100%		89%	
	30	3248 Sengled Boost	3000	61	56	50	36	100%	93%	82%	60%
	31	3249 Osram Smart+ Classic	2700	85	87	82	71	100%	102%	96%	84%
	32	3266 Mipow Playbulb Rainbow BTL200_v7	3300	73	72	71	62	100%	99%	96%	85%
	33	3317-1 Clas Ohlsc WIFI Smart Bulb 38-8774	2700	92	95	97	91	100%	103%	105%	99%
	34	3316-3 Clas Ohlsc LED Speaker Bulb	3000	80	79	77	73	100%	99%	96%	91%
	35	3313-1 Philips Hue Iris luminaire	1100	31	27	20	12	100%	88%	65%	40%
36	3315-1 Philips Hue Go Luminaire	2700	50	43	28	9	100%	86%	56%	18%	
37	3312-1 Clas Ohlsc Table Luminiare RGB 36-6401		16	16	17	15	100%	99%	106%	94%	
<b>Denmark</b> <b>2020</b>	38	CK01 Philips HUE dimming	2700	87	90	80	53	100%	104%	93%	61%
	39	CK02 Philips HUE White tunable	2700	92	86	70	34	100%	92%	76%	36%
	40	CK03 Philips HUE Colour tunable	2700	79	78	63	28	100%	99%	80%	36%
	41	CK04 Philips HUE dimming	2100	88	87	79	49	100%	99%	90%	56%
	42	CK05 Philips HUE GU10 dimming	2700	95	93	84	53	100%	98%	88%	56%
	43	CK06 Philips HUE GU10 white tunable	2700	53	46	35	12	100%	86%	65%	23%
	44	CK07 Philips HUE GU10 colour tunable	2700	80	74	57	24	100%	92%	71%	29%
	45	CK08 WiZ (Philij 60 W compatible)	4500	105	107	102	82	100%	102%	97%	78%
	46	CK09 WiZ (Philij 60W compatible)	2700	108	108	107	89	100%	100%	99%	83%
	47	CK10 WiZ (Philij 40W compatible)	2700	99	100	96	64	100%	101%	98%	65%
48	CK11 WiZ (Philij 60W compatible)	4200	123	123	118	100	100%	99%	95%	81%	
49	CK12 WiZ (Philij Amber, 50W compatible)	3200	107	105	100	81	100%	98%	94%	76%	
50	CK13 Philips Bloom Table lamp	2700	47	46	45	38	100%	99%	97%	81%	
51	CK14 Philips Wellness Table lamp	2700	67	61	50	25	100%	92%	75%	38%	
52	CK15 WiZ (own Hero Table lamp)	2700	51	49	47	35	100%	97%	91%	69%	
53	CK16 Philips Resonate (outdoor)	2600	18	18	17	15	100%	100%	94%	81%	
54	CK17 Philips Impress (outdoor)	2700	42	42	41	29	100%	99%	98%	70%	



## 3.2 Market news:

### Zigbee Direct

Simplifying Integration with  
Bluetooth Low Energy Devices



January 2023, CSA (Connectivity Standards Alliance – earlier Zigbee Alliance) announced release of Zigbee Direct for communication directly with Bluetooth units **without a gateway.**



# 3.3 Market news: Connected IoT Lighting

*LEDs Magazine.com 2023 03 13*



Fagerhult has played a key role in making the Utrecht headquarters of online retailer bol.com the most smart office building in the Netherlands with luminaires and the lighting infrastructure including about 6,000 sensors and communication chips that gather and send information about room occupancy, human presence, climate, lighting conditions, and other operations. "It's still in the early stages" due to Fagerhults CEO Bodil Sonesson.



# 4. Co-operation with EDNA

- Last week, Steven Belitich informed EDNA has not been doing much on smart lighting in recent time.
- EDNA will have an in-person meeting in Toulouse, middle of May 2023.



# 5. Standardisation



- Steve has found there appears to have been a Proposed Work Item (**PWI 34-2 ED1**) *Intelligent lighting products for lighting systems* which started Dec. 2017 but was stopped in August 2022.

Steve seek information about this and what they intended to include in this standardisation.

Maybe this could be taking up again either as next amendments to the new standards or as a new performance standard?



# 6. Future Activities

- Office lamps/luminaires Analysis – so far we have done very detailed measurements for 9 products including dimming variation (light output 100%, 75%, 50% and 25%) and CCT variation (2200 K, 2700K, 4000K, 5000 and 6500K).  
**More Data are very welcome! 3 luminaires more would be good.**
- Small Consumer Guide on What to be aware of when you buy smart lighting



# 7. Expert Input and Discussion

