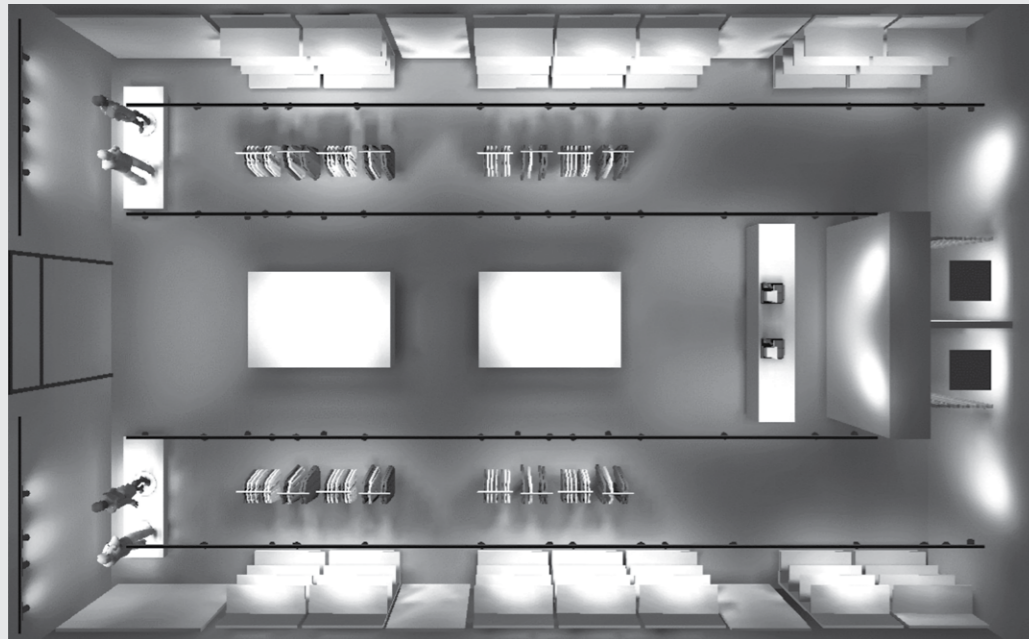



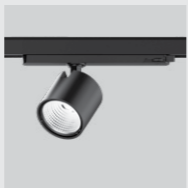
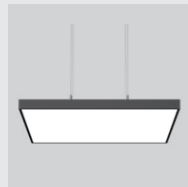
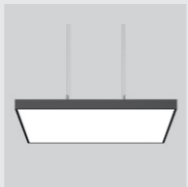
# Planning examples Retail

In this fashion store, old-generation spotlights were replaced with VARO 80 LEDs on the shop floor and with panel luminaires in the changing rooms. This upgrade can reduce energy use by at least 45 percent. Reducing light output at low-traffic times can save an additional 30 percent.



**Room details**  
Floor area: 9.5 × 7.5 m (72m<sup>2</sup>)  
Room height: 3 m

## Comparison: Lighting system luminaires

2012 / 13		2023	
	<b>LED Gen 1 spotlight (LED)</b> 3-phase spotlight		<b>Traditional Spotlight (HIT/CDMT)</b> 3-phase spotlight
38 W / 4000 K / CRI 90	35 W (38.5 W) / 4000 K / CRI 90	20.5 W / 4000 K / CRI 90	2600 lm (127 lm/W)
2360 lm (70 lm/W)	2150 lm (58.5 lm/W)	L95 @ 50.000 h	52 pcs. – 28° – medium 8 pcs. – 38° – flood 8 pcs. – 17° – spot
L70 @ 50.000 h	L70 @ 12.000 h		
	<b>Suspended luminaire LED</b>		<b>Suspended luminaire fluorescent T5/16</b>
72 W / 4000 K / CRI 90	105 W / 4000 K / CRI 90	37 W / 4000 K / CRI 90	5350 lm (145 lm/W)
4930 lm (68.4 lm/W)	4410 lm (42 lm/W)	L90 @ 50.000 h	2 pcs.
L70 @ 50.000 h	L70 @ 50.000 h		
2 pcs.	2 pcs.		
<b>Power consumption:</b> 2728 W – 19.9 W/m <sup>2</sup>	<b>Power consumption:</b> 2828 W – 20.6 W/m <sup>2</sup>	<b>Power consumption:</b> 1468 W – 10.7 W/m <sup>2</sup>	

## Comparison: old lighting system vs. new lighting system

### Lighting system in on/off mode (switch only)

Operating data	Old system (non-dim)	New system (LED)
Lighting system	3-PH STS spotlight (HIT/CDMT or LED Gen1)	VARO 80 S 3-PH STS spotlight
Light output (%)	100 %	100 %
Illuminance E <sub>m</sub> room	350 lx	750 lx
Illuminance E <sub>m-ver</sub> product vertical	1000 lx	1650 lx
Illuminance E <sub>m-hor</sub> product horizontal	1350 lx	2100 lx
Power consumption (W)	2730 W	1468 W
Power consumption area (W/m <sup>2</sup> )	20.1 W/m <sup>2</sup>	10.7 W/m <sup>2</sup>
<b>Energy / CO<sub>2</sub> savings (%)</b>	<b>0 %</b>	<b>46 %</b>

### Lighting system in DALI mode (dimmable)





Operating data	Old system 2012/13 (non-dim)	New system 2023 (LED – DIM DALI)
Lighting system	3-PH STS spotlight (HIT/CDMT or LED Gen1)	VARO 80 S 3-PH STS spotlight
Light output (%)	100 %	75 % (dimmed)
Illuminance E <sub>m</sub> room	350 lx	500 lx
Illuminance E <sub>m-ver</sub> product vertical	1000 lx	1200 lx
Illuminance E <sub>m-hor</sub> product horizontal	1350 lx	1500 lx
Power consumption (W)	2730 W	1100 W
Power consumption area (W/m <sup>2</sup> )	20.1 W/m <sup>2</sup>	8 W/m <sup>2</sup>
<b>Energy / CO<sub>2</sub> savings (%)</b>	<b>0 %</b>	<b>60 %</b>

### Lighting system in DALI mode (dimmable) with presence control concept\*

		8 am to 2 pm / 2 pm to 8 pm (weekdays)
Light output (%)	100 %	50 % / 75 % (dimmed)
Illuminance E <sub>m</sub> room	350 lx	300 / 500 lx
Illuminance E <sub>m-ver</sub> product vertical	1000 lx	800 / 1200 lx
Illuminance E <sub>m-hor</sub> product horizontal	1350 lx	1000 / 1500 lx
Power consumption (W)	2730 W	682 W (average 8 am to 8 pm)
Power consumption area (W/m <sup>2</sup> )	20.1 W/m <sup>2</sup>	5 W/m <sup>2</sup> (average 8 am to 8 pm)
<b>Energy / CO<sub>2</sub> savings (%)</b>	<b>0 %</b>	<b>75 % (average 8 am to 8 pm)</b>

\* Presence control concept: On weekdays between 8 am and 2 pm, the illuminance is lowered due to lower footfall

## Benefits of lighting retrofitting

			
Best performance: CRI90 / 3–4000 K / efficiency ≥122 lm/W	Low maintenance costs and high rated service life L90@50.000h	At least 45% energy / CO <sub>2</sub> savings compared to old systems in on-off mode	Up to 75% energy / CO <sub>2</sub> savings compared to old systems with control concept