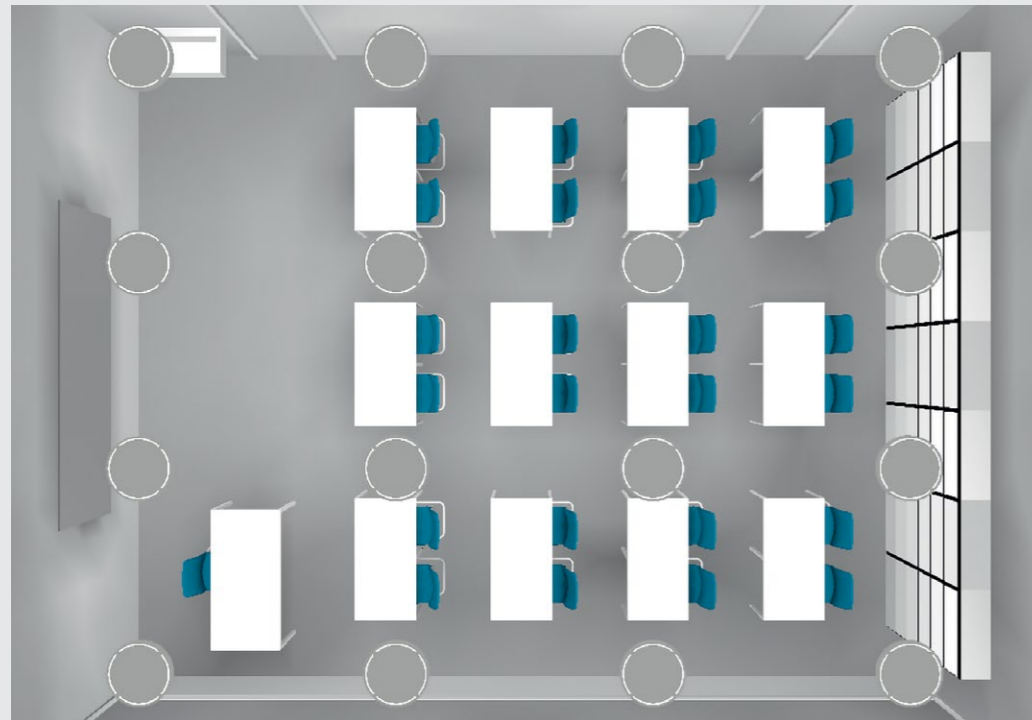


Planning examples Education

In this classroom, the first step was to replace the fluorescent lamps with circular LED luminaires, producing an energy saving of 49 percent. If the luminaire is controlled in DIM DALI mode, up to 75 percent energy and CO₂ can be saved.



Room details
Floor area: 9.35 x 7.5 m (70.1m²)
Room height: 3m

Comparison: old lighting system vs. new lighting system

Lighting system in on/off mode (switch only)

Operating data	Old system (fluorescent) on/off switch only	New system (LED) switched on/off	New system 2 (LED) switched on/off
Lighting system	VELA 600 MP surf – T16-R	VELA 600 MP D/I surf DALI	MITA circle 450 D/I ceiling DALI
Light output (%)	100 %	100 % (not dimmed)	100 % (not dimmed)
Illuminance E _m *	500 lx	790 lx	1000 lx
Uniformity U ₀ *	0.77	0.83	0.80
Power consumption (W)	976 W	496 W	480 W
Power consumption area (W/m ²)	13.9 W/m ²	7.1 W/m ²	6.8 W/m ²
Energy / CO₂ savings (%)	0 %	49 %	51 %

Lighting system in DALI mode (dimmable)

Operating data	Old system (fluorescent) on/off switch only	New system (LED) dimmed	New system 2 (LED) dimmed
Lighting system	VELA 600 MP surf – T16-R	VELA 600 MP D/I surf DALI	MITA circle 450 D/I ceiling DALI
Light output (%)	100 %	64 % (dimmed)	50 % (dimmed)
Illuminance E _m *	500 lx	500 lx	500 lx
Uniformity U ₀ *	0.77	0.83	0.80
Power consumption (W)	976 W	312 W	240 W
Power consumption area (W/m ²)	13.9 W/m ²	4.5 W/m ²	3.4 W/m ²
Energy / CO₂ savings (%)	0 %	69 %	76 %

* Maintenance value of 500 lx illuminance – The E_m specifications refer to the standard-compliant illumination of the visual task within a room-related lighting design according to DIN EN 12464-1

Comparison: Lighting system luminaires

Old system



New system 1



New system 2



Operating data	VELA Fluorescent	VELA LED	MITA LED
Luminous flux	3160 lm	4390 lm	4880 lm
Light colour (CRI)	4000 K (CRI 80)	4000 K (CRI 80)	4000 K (CRI 80)
UGR	≤ 19	≤ 19	≤ 19
Power consumption	61 W	31 W	30 W
Efficiency	51.8 lm/W	142 lm/W	163 lm/W
Controls	switchable on/off	DIM DALI	DIM DALI
Dimensions	D 600 mm / H 112 mm	D 600 mm / H 92 mm	D 426 mm / H 72 mm
Light distribution	direct	direct / indirect soft	direct / indirect soft
Quantity	16 pcs.	16 pcs.	16 pcs.

Benefits of lighting retrofitting



Low maintenance costs and high rated service life L90 @ 50.000 h



Up to 75 % energy / CO₂ savings compared to old systems with dimming and 500 lx maintenance value