



PLANNING NOTES

# HEALTHCARE



DEU

### Healthy light for all rooms

Discover the versatile lighting solutions and put every room in the perfect light! Search for and find the right luminaire: choose between different luminaire types, designs and mounting options.



Office and meeting



Corridors and stairs



Nurses' room



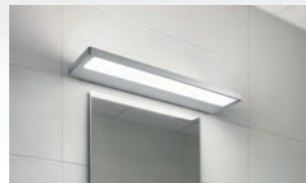
Patient room



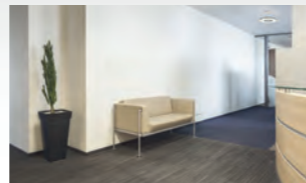
Care bath



Sanitary facilities  
(Bathroom / WC)



Entrance and waiting area



Residents' room



Business and function rooms



Restaurant & lounge areas



# PRODUCTS IN USE

Luminaire	Residents' room	Patient room	Entrance area	Waiting and lounge areas, restaurant, café		Sanitary area	Corridors and stairs	Examination room	Utility and function rooms	Office and meeting rooms
<b>Wall-Mounted Luminaires</b>										
ZERA.bed	●	●								
VANERA.bed	●	○								
<b>Recessed and Surface-Mounted Luminaires</b>										
VIVAA.fit	○	○	●	●			○	○		○
OBLO.fit	○		○			○	●		●	
DOTOO.fit							○	○	●	○
DOTOO.line			○				○			○
<b>Suspended Luminaires</b>										
VIVAA.pendant	○	○	●	●			●	●		●
LAVIGO				○			○	●		●
IDOO.line			○	●			○			●
DOTOO.line			○	○			○			○
<b>Wall-Mounted Luminaires</b>										
ZERA.wall	○	○	●	●			●	●		○
ZERA.bath						●				
<b>Free-Standing Luminaires</b>										
VIVAA.free	●	○	●	●						○
LAVIGO								○		●
<b>Task Luminaires</b>										
PARA.MI	○	○						○		●

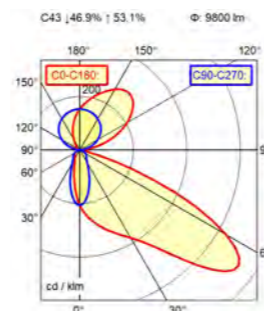
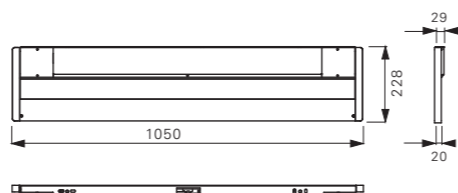
● Ideally suited ○ Well suited

Further variants and technical information online at [www.waldmann.com](http://www.waldmann.com)

# ZERA.bed

ZEW 11000 mit Examination light Intensive care (60W)

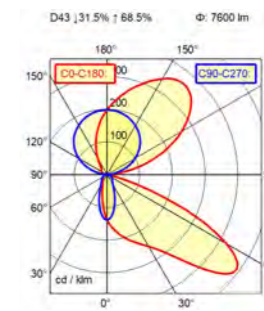
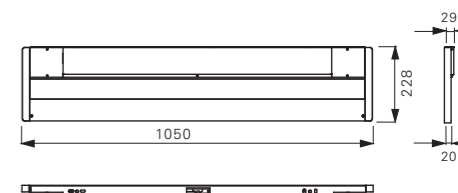
Power consumption	approx 116-128W
Connected loads	220-240 V; AC; 50 Hz; 60 Hz
Rated luminous flux	approx 10.700-11.090 lm
Mains connection	Connection clamp; 5-10-pole
Housing	Aluminium profile; anodised; aluminium-coloured (colourless anodised)
Light source cover	Acryl (PMMA), clear (direct) / opal white (indirect)
Glare control	Freeform optics
Weight	approx 6,9 kg
Protection class	I
Protection type	IP 20
Standards	EN60598-2-25; 2x MOPP according to standard EN 60601-1
Special features	1 000 lx Average illuminance at examination level *DALI variants (.../D): - for general lighting and reading light - Night light by programming a scene of the general light in 3000K or in the HCL curve possible*
Mounting	Wall mounting above a bed Mounting height (lower edge of Luminaire) approx 1.7 - 1.8 m above the floor



# ZERA.bed

ZEW 9000 mit Examination light Normal care (33W)

Power consumption	approx 86-95W
Connected loads	220-240 V; AC; 50 Hz; 60 Hz
Rated luminous flux	approx 8.500-8.960 lm
Mains connection	Connection clamp; 5-10-pole
Housing	Aluminium profile; anodised; aluminium-coloured (colourless anodised)
Light source cover	Acryl (PMMA), clear (direct) / opal white (indirect)
Glare control	Freeform optics
Weight	approx 6,9 kg
Protection class	I
Protection type	IP 20
Standards	EN60598-2-25; 2x MOPP according to EN 60601-1
Special features	*DALI variants (.../D): - Night light by programming a scene of the general light in 3000K or in the HCL curve possible*
Mounting	Wall mounting above a bed Mounting height (lower edge of Luminaire) approx 1.7 - 1.8 m above the floor



Special features	Technology	Model	Length	Order no.
ZEW 11000 mit Examination light Intensive care (60W)				
AL, UL, LL	Switchable	ZEW 11000/830	1050 mm	114487000-00813007
AL, UL, LL, NL	Switchable	ZEW 11000/830	1050 mm	114487000-00813006
AL, UL Switch left, LL, NL	Switchable	ZEW 11000/830	1050 mm	114487000-00813008
AL, UL Switch right, LL, NL	Switchable	ZEW 11000/830	1050 mm	114487000-00813009
AL, UL, LL DALI	DALI	ZEW 11000/830/D	1050 mm	114497000-00813012
AL VTL, UL, LL DALI	DALI	ZEW 11000/VTL/D	1050 mm	114498000-00813013
AL, UL Switch left, LL with LVC, NL	Switchable	ZEW 11000/830	1050 mm	114499000-00813010
AL, UL Switch right, LL with LVC, NL	Switchable	ZEW 11000/830	1050 mm	114499000-00813011

**Legend**  
AL = General light | LL = Reading light | NL = Night light | UL = Examination light | LVC = Low-voltage protective relay/low-voltage controller  
LVC (low-voltage controller): Switching relay for reading light and room light (2-channels) for integration in nurse call system  
Left/right switch: Examination light switch on the side of the luminaire

### Photometric properties

	Colour temperature	Colour rendering	Light distribution	Light yield
General light (AL)	3000 K	≥80	indirect	approx 110-121 lm/W
General light VTL/HCL (AL)	3000 - 6500K	≥80	indirect	approx 110-121 lm/W
Examination light (UL)	4000 K	≥95, R9≥50	direct	approx 70 lm/W
Night light (NL)	2700 K	≥80	indirect	approx 63 lm/W
Reading light (LL)	2700 K	≥90	direct	approx 90 lm/W

Special features	Technology	Model	Length	Order no.
ZEW 9000				
AL, UL, LL	Switchable	ZEW 9000/830	1050 mm	114475000-00812992
AL, UL, LL, NL	Switchable	ZEW 9000/830	1050 mm	114475000-00812991
AL, UL Switch left, LL, NL	Switchable	ZEW 9000/830	1050 mm	114475000-00812993
AL, UL Switch right, LL, NL	Switchable	ZEW 9000/830	1050 mm	114475000-00812994
AL, UL, LL DALI	DALI	ZEW 9000/830/D	1050 mm	114494000-00812997
AL VTL, UL, LL DALI	DALI	ZEW 9000/VTL/D	1050 mm	114492000-00812998
AL, UL Switch left, LL with LVC, NL	Switchable	ZEW 9000/830	1050 mm	114493000-00812995
AL, UL Switch right, LL with LVC, NL	Switchable	ZEW 9000/830	1050 mm	114493000-00812996

**Legend**  
AL = General light | LL = Reading light | NL = Night light | UL = Examination light | LVC = Low-voltage protective relay/low-voltage controller  
LVC (low-voltage controller): Switching relay for reading light and room light (2-channels) for integration in nurse call system  
Left/right switch: Examination light switch on the side of the luminaire DALI: Dimmbares General light

### Photometric properties

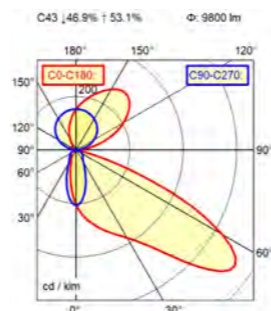
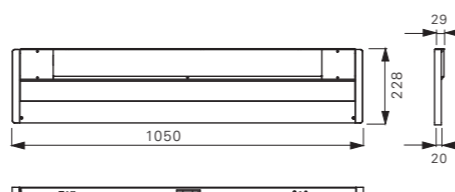
	Colour temperature	Colour rendering	Light distribution	Light yield
General light (AL)	3000 K	≥80	indirect	approx 110-121 lm/W
General light VTL/HCL (AL)	3000 - 6500K	≥80	indirect	approx 110-121 lm/W
Examination light (UL)	4000 K	≥95, R9≥50	direct	approx 70 lm/W
Night light (NL)	2700 K	≥80	indirect	approx 63 lm/W
Reading light (LL)	2700 K	≥90	direct	approx 90 lm/W

Accessories (to be considered at the time of project specification)  
Wall mounting rail with widened support for drywall (227125049-00813536)

# ZERA.bed

ZEW 7000

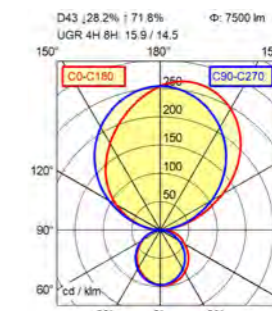
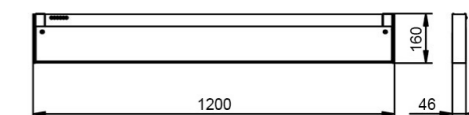
Power consumption	approx 61-64W
Connected loads	220-240 V; AC; 50 Hz; 60 Hz
Rated luminous flux	approx 6.900-7.090 lm
Mains connection	Connection clamp; 5-10-pole
Housing	Aluminium profile; anodised; aluminium-coloured (colourless anodised)
Light source cover	Acryl (PMMA), clear (direct) / opal white (indirect)
Glare control	PMMA opal, satinised
Weight	approx 6,9 kg
Protection class	I
Protection type	IP 20
Standards	EN60598-2-25; 2x MOPP according to EN 60601-1 *DALI variants (.../D): - Night light possible by programming a scene of the general light in 3000K or in the HCL curve possible*
Mounting	Wall mounting above a bed Mounting height (lower edge of Luminaire) approx 1.7 - 1.8 m above the floor



# VANERA.bed

VAW 8000

Power consumption	approx 61-64W
Connected loads	220-240 V; AC; 50 Hz; 60 Hz
Rated luminous flux	approx 6.900-7.090 lm
Mains connection	Connection clamp; 3-5-pole
Housing	Aluminium profile; anodised; aluminium-coloured (colourless anodised)
Light source cover	Acryl (PMMA), opal white
Glare control	Freeform optics
Weight	approx 4 kg
Protection class	I
Protection type	IP 20
Standards	EN60598-2-25; 2x MOPP according to EN 60601-1 *DALI variants (.../D): - Night light possible by programming a scene of the general light in 3000K or in the HCL curve possible*
Mounting	Wall mounting above a bed Mounting height (lower edge of Luminaire) approx 1.7 - 1.8 m above the floor



Special features	Technology	Model	Length	Order no.
ZEW 7000				
AL, LL	Switchable	ZEW 7000/830	1050 mm	114488000-00813014
AL, LL, NL	Switchable	ZEW 7000/830	1050 mm	114488000-00813015
AL, LL DALI	DALI	ZEW 7000/830	1050 mm	114488000-00813017
AL, LL with LVC	Switchable	ZEW 7000/830	1050 mm	114488000-00813016

**Legend**  
AL = General light | LL = Reading light | NL = Night light | LVC = Protective low-voltage relay/low-voltage controller  
LVC (low-voltage controller): Switching relay for reading light and room light (2 channels) for integration in nurse call system  
DALI: Dimmable general light

## Photometric properties

	Colour temperature	Colour rendering	Light distribution	Light yield
General light (AL)	3000 K	≥80	indirect	approx 110-121 lm/W
Night light (NL)	2700 K	≥80	indirect	approx 63 lm/W
Reading light (LL)	3000 K	≥80	direct	approx 90 lm/W

Accessories (to be considered at the time of project specification)  
Wall mounting rail with widened support for drywall (227125049-00813536)

Special features	Technology	Model	Length	Order no.
VAW 8000   warm white 3000 K				
AL, LL	Switchable	VAW 8000/830	1200 mm	114476000-00812226
AL, LL, NL	Switchable	VAW 8000/830	1200 mm	114476000-00812229
AL, LL DALI	DALI	VAW 8000/830/D	1200 mm	114476000-00812230
AL, LL, LVC	Switchable	VAW 8000/830	1200 mm	114476000-00812228

**Legend**  
AL = General light | LL = Reading light | NL = Night light | LVC = Protective low-voltage relay/low-voltage controller  
LVC (low-voltage controller): Switching relay for reading light and room light (2 channels) for integration in nurse call system  
DALI: Dimmable general light

## Photometric properties

	Colour temperature	Colour rendering	Light distribution	Light yield
General light (AL)	3000 K	≥80	indirect	approx 98 lm/W
Night light (NL)	2700 K	≥80	indirect	approx 98 lm/W
Reading light (LL)	3000 K	≥80	direct	approx 127 lm/W

# 2-BED ROOM

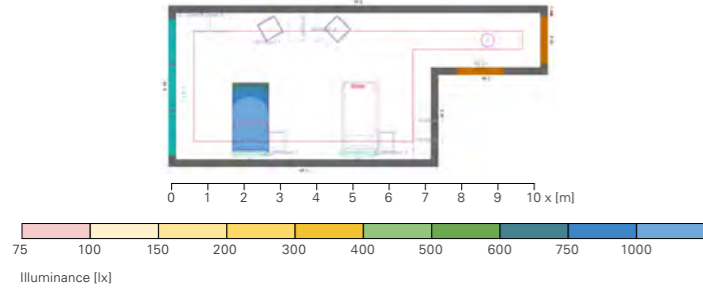
## I. Lighting design according to standard DIN 5035-3

Luminaires used:

- ZERA.bed ZEW 11000 (e.g. 813007) General light + Examination light
- OBLO.fit OBA 2000 (813348)

Wall-mounted luminaires at a height of 1.80 m (upper edge of luminaires)

Result examination level bed  
General light + Examination light



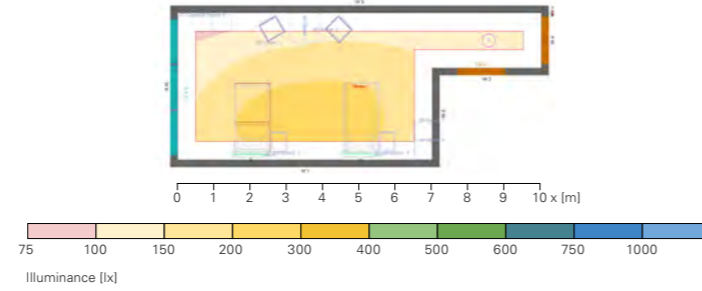
**General**  
 Calculation algorithm used: High indirect share  
 Height of the valuation area: 0.85 m  
 Maintenance factor: 0.80

Total luminous flux: 21700 lm  
 Overall performance: 240 W  
 Overall performance per area (32.50 m²): 7.36 W/m²

**Illuminance**

Medium Illuminance	Em	1380 lx
Minimum Illuminance	Emin	694 lx
Maximum Illuminance	Emax	1990 lx
Uniformity Uo	Emin/Em	1:1.99 (0.5)
Unevenness Ud	Emin/Emax	1:2.87 (0.35)

Result Assessment area Soil  
General light



**General**  
 Calculation algorithm used: High indirect Maintenance factor  
 High indirect Maintenance factor: 0.80

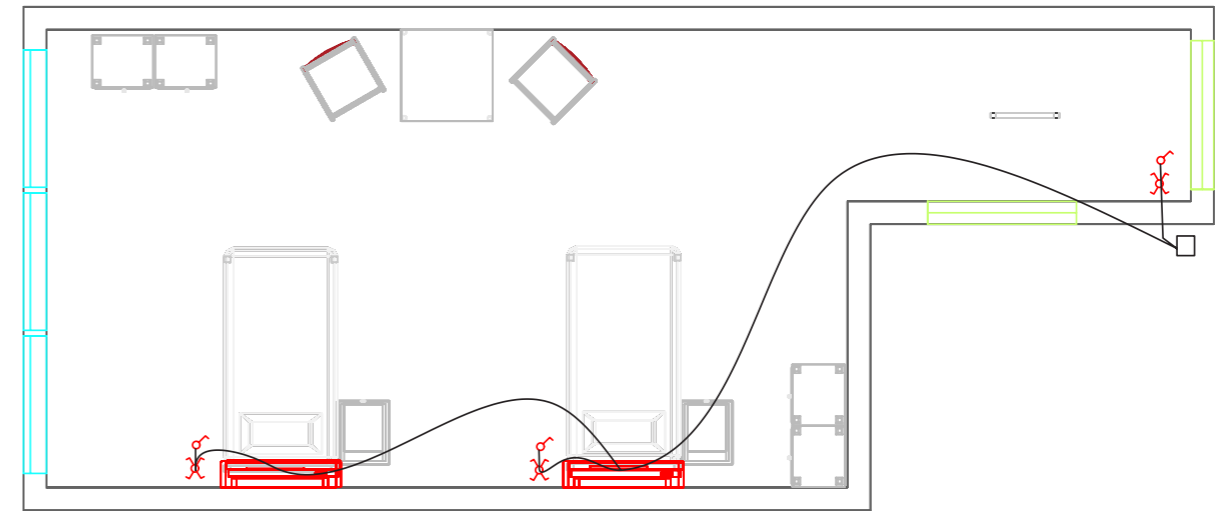
Total luminous flux: 12500.00 lm  
 Overall performance: 108.0 W  
 Overall performance per area (32.50 m²): 3.32 W/m² (1.87 W/m²/100lx)

**Assessment area 1**

<b>Floor</b>	Horizontal
Em	178 lx
Emin	100 lx
Emin/Em (Uo)	0.56
Emin/Emax (Ud)	0.43
Position	0.00 m



## II. Wiring diagram



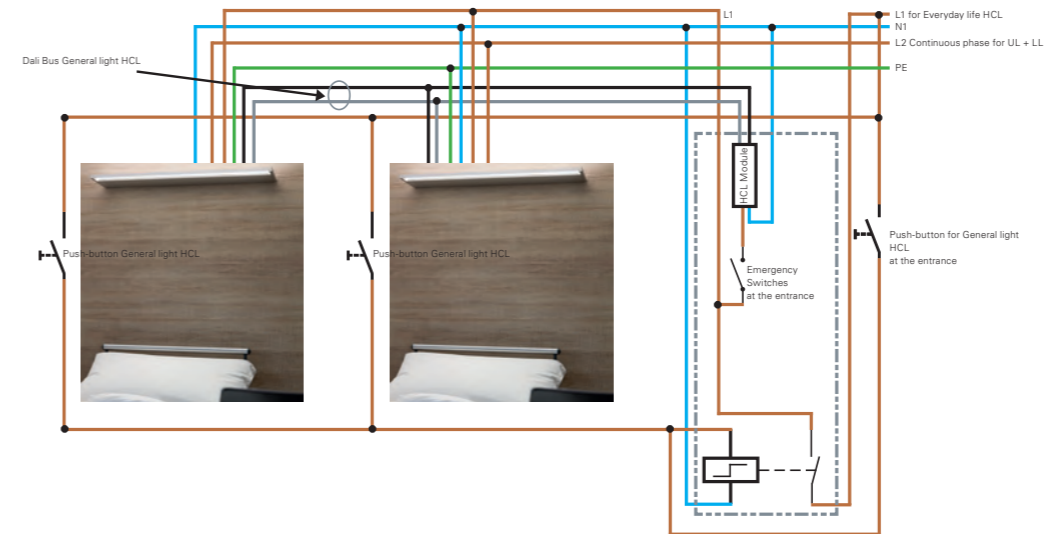
**Legend**

- Switches
- Junction box
- Cross switch

## III. Notes on switch positioning

Light function	Placement
Room light (AL)	Changeover/cross switch on the door (e.g. at a height of 1 m) and on the BedWallPage (e.g. at a height of 1 m) Push-button on the nurse call system (relay/LVC in the Luminaire)
Night light (NL)	Switchable via switches on the door (e.g. at a height of 1.60 m) or centrally in the duty room
Examination light (UL)	Switchable right/left on Luminaire (integrated switches) or via switches on the BettWallPage
Reading light (LL)	Switchable via buttons/switches on the BettWallPage (e.g. at a height of 1 m) Push-button on nurse call system (impulse relay/LVC in the Luminaire)

## IV. Wiring diagram for HCL/VTL Variants



**usable products:**  
 ZERA.bed: ZEW 11000/VTL/D  
 114498000-813214  
 114498000-813213  
 114498000-813215  
 114498000-813013  
  
 ZERA.bed: ZEW 9000/VTL/D  
 114492000-813318  
 114492000-813319  
 114492000-812998  
  
 HCL-Modul: 309580010-803145

**Note**  
 The Reading light can be switched via the nurse call system or via an additional switch. There is a toggle switch (right/left) on the side of the Luminaire for the Examination light. When using an NotSwitchess in conjunction with HCL/VTL variants, we recommend using a luminaire switch on the door with a mounting height of 1.80 metres.

# 1-BETT-PFLEGEZIMMER

## I. Lighting design according to standard DIN 5035-3

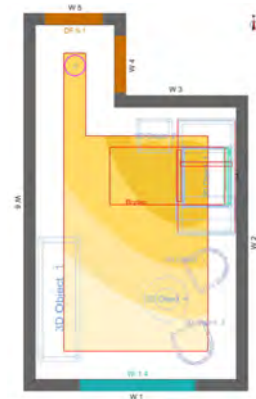
Luminaires used:

- ZERA.bed ZEW 7000 (813014) General light
- OBLO.fit OBA 2000 (813348)

Wall-Mounted Luminaires at a height of 1.80 m (upper edge of luminaires)

Result Assessment area floor with  $\geq 100$  lx (Em)

General light



### General

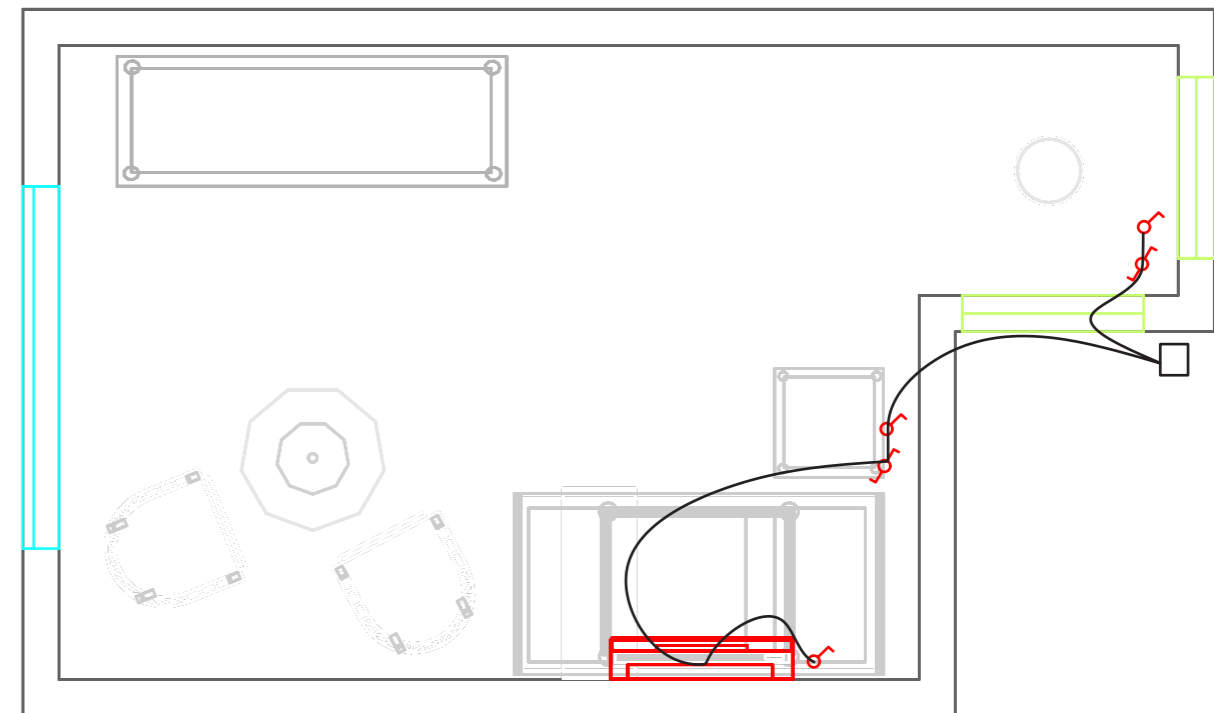
Calculation algorithm used  
High indirect share Maintenance factor 0.80

Total luminous flux 7300.00 lm  
Overall performance 65.0 W  
Overall performance per area (16.60 m<sup>2</sup>) 3.49 W/m<sup>2</sup> (2.36 W/m<sup>2</sup>/100lx)

Assessment area 1	Floor
Em	Horizontal
Emin	148 lx
Emin/Em (Uo)	54 lx
Emin/Emax (Ud)	0.36
Position	0.23
RUG (2.8H 4.9H)	0.00 m
Luminaire:	$\leq 18.6$
(OBLO.fit - OBA 2000/830, 114503000-00813348)	



## II. Wiring diagram



### Legend

- Switches
- Junction box
- Cross switch

## III. Notes on switch positioning

Light function	Placement
Room light (AL)	Changeover switches on the door (e.g. at a height of 1 m) and on the BedWallPage (e.g. at a height of 1 m) Push-button on the nurse call system (relay/LVC in the Luminaire)
Night light (NL)	Switchable durch Push-button/Switches at the door (e.g. at the height of 1,60 m)
Examination light (UL)	Simultaneous switching on of the room and reading lights
Reading light (LL)	Switchable via buttons/switches on the side of the bed wall (e.g. at a height of 1 m) Push-button on nurse call system (relay/LVC in the Luminaire)

# LOUNGE/HALLWAY

## I. Lighting design according to standard DIN 5035-3

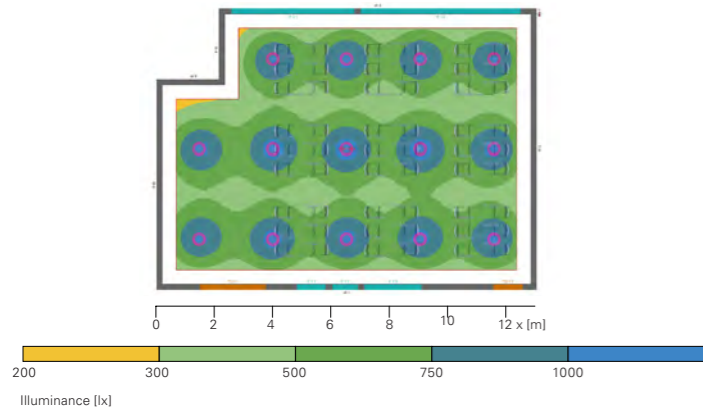
Luminaires used:

VIVAA.pendant VIP 7000 /VTL/D (812835)

Suspended luminaires at 2.5 m (lower edge of luminaires), approx. 50 cm ceiling distance

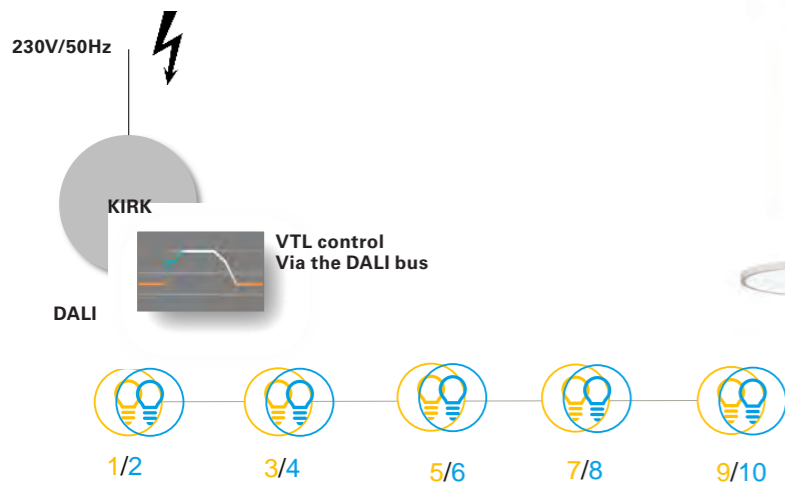
Result Assessment area Floor with  $\geq 500$  lx (Em)

10.00 - 13.15 and 15.00 - 17.00 within the recommended HCL sequence



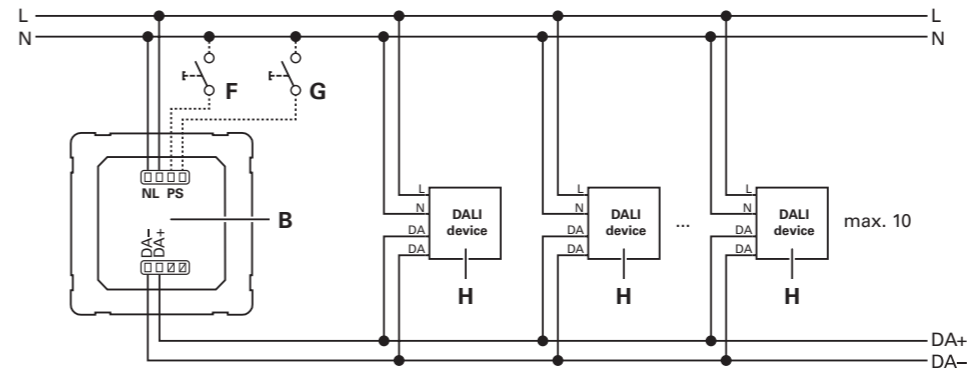
<b>Time of day</b>	10.00 - 13.15 und 15.00 - 17.00 h
Em	626 lx
Emin	284 lx
Emin/Em (Uo)	0.45
Emin/Emax (Ud)	0.31
Position	0.75 m horizontal
Area	118 m <sup>2</sup>
Overall performances/Area	7.59 W/m <sup>2</sup>

## II. Wiring diagram with ceiling sensor KIRK

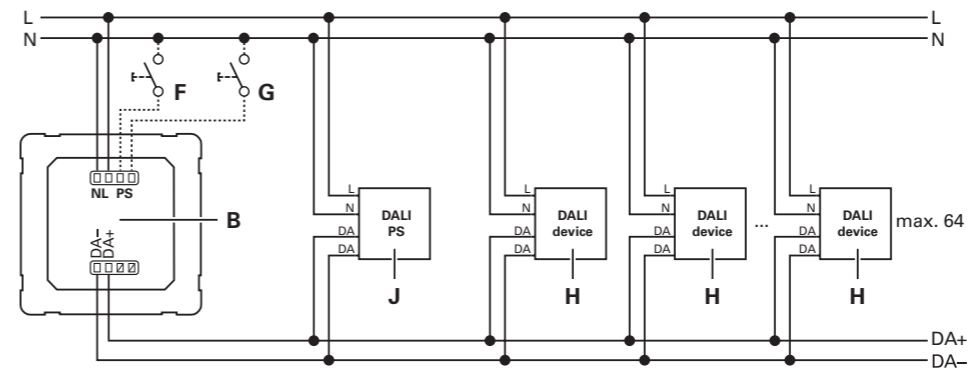


The exact KIRK configuration variant (DT6/DT8; broadcast; internal power supply on/off; HCL/constant colour temperature) must be determined in the project.

## Wiring diagram KIRK



## Wiring diagram KIRK >10 DALI-Lasten

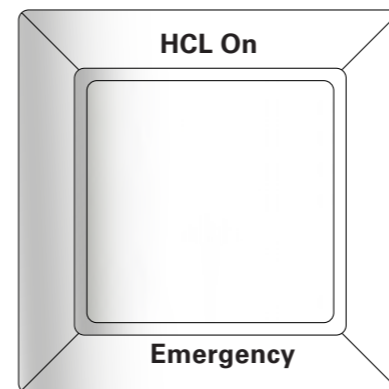


Additional external power supply required for >10 DALI loads.  
The number of loads per luminaires can vary.

## III. Notes on switch positioning

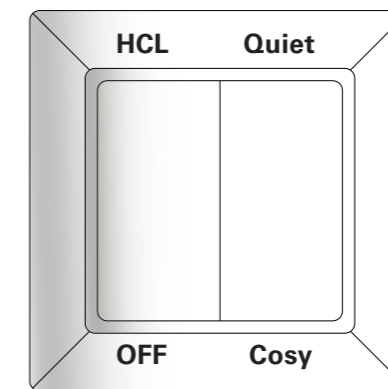
It is advisable to place the buttons either at the entrance door to the lounge or centrally in the duty room. If required, additional buttons can be connected to the Kirk.

Example of button assignment for a single radio wall transmitter for duty room/corridor area



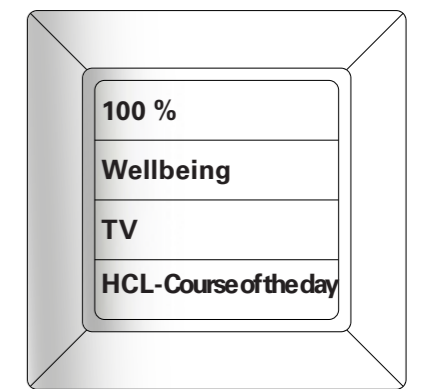
Emergency situation - All ON (100%)

Example of the button assignment of a double radio wall transmitter for a common area:



HCL ON  
OFF - Light OFF  
Quiet - e.g. approx 60% warm tone only  
Cosy - e.g. 100% warm tone only

Example of the button assignment of a quadruple radio wall transmitter for an occupied zone:



We recommend installing the scene switches in the service area or in an area that is not accessible to residents. Several scenes must be taken into account



### Electrotechnical supply in hospitals

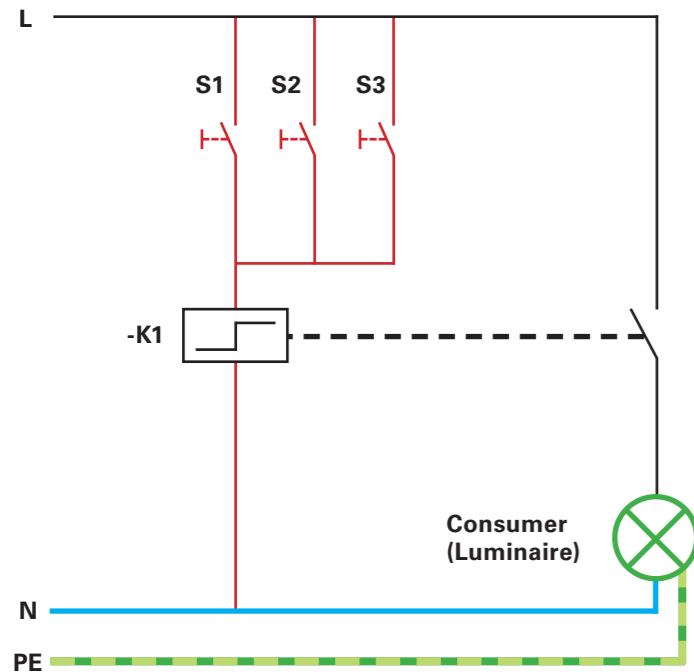
The electrical supply of a hospital places special demands on the structure of the main supply systems. In order to ensure the electrical supply in the event of a power failure, two separate supply systems are required, which must be „connected“ despite their separation. Suitable luminaires on request.

### General (AV) and safety power supply (SV)

The AV system is supplied from the grid operator’s medium-voltage network. An emergency power unit is on standby for the SV system. This genset takes over the supply of the SV system if the public medium-voltage grid fails. Suitable luminaires on request.

### Functionality of LVC (impulse relay)

Pressing a push-button once closes the circuit until a second press of the push-button interrupts the circuit again. When pressed, the impulse switch (impulse relay) receives a current pulse that changes the switching state of the load - it is switched on or off. A dimming function can be realised in conjunction with special LVCs (e.g. EFE GmbH) if the push-button is held for a long time.

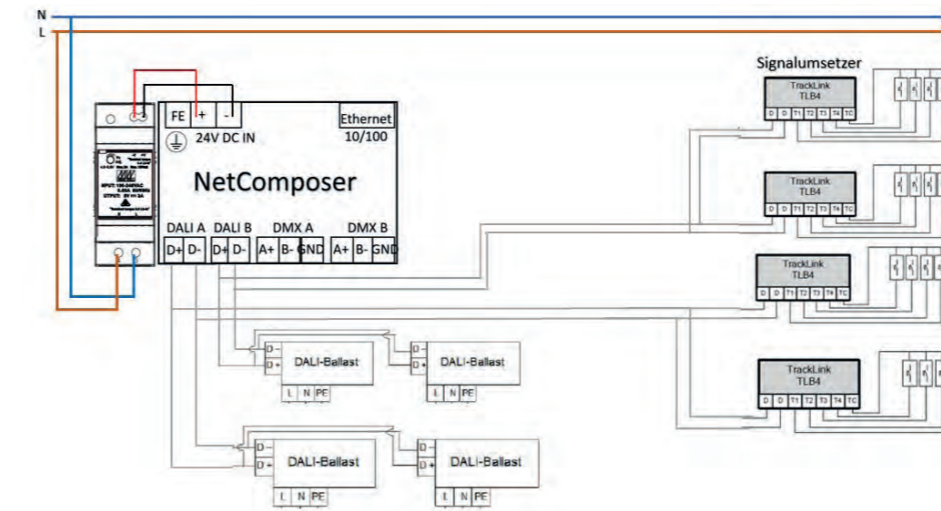


Herbert Waldmann GmbH & Co. KG uses its own 2-channel impulse relay (814511) in the wall-mounted luminaires ZERA.bed. Impulse relays from EFE GmbH are integrated into luminaires with a dimmable function.

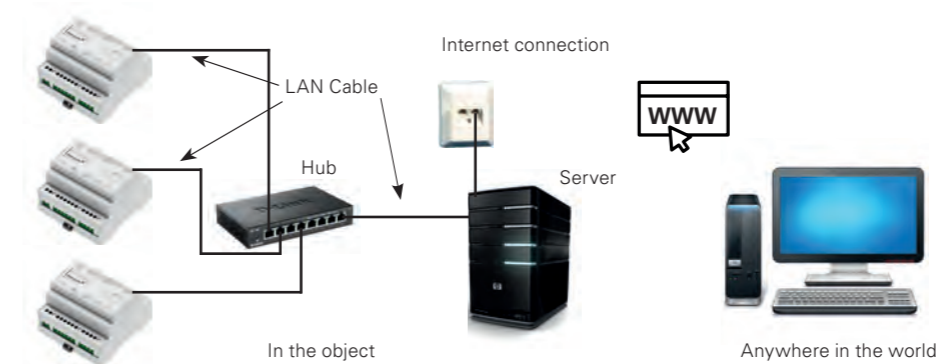
The LVCs used fulfil the requirements for SELV safety extra-low voltage in accordance with EN 60669-2-2 and the 2x MOPP safety requirement in accordance with EN 60601-1.

### Wiring diagram NCR DALI control

For more complex HCL systems, we recommend our NCR DALI control. A wiring diagram with NCR control can look like this:



### System architecture „NetComposer communication with server“ for remote maintenance



### Light management components

Model	Special feature	Order no.
NCR NetComposer	Up to 128 DALI devices (mounting on top hat rail)	336673010-00533603
Power supply for 1x control unit	Mounting on top-hat rail	336391020-00808293
Signal converter for flush-mounted installation	Scenes and sequence module (up to 4 commands)	336388010-00485696
DALI PS	DALI power supply e.g. for KIRK	336200010-0092385

Stock up on inspiration and recharge with brilliant ideas! Our EMIL 28 showroom radiates the spirit of company founder Emil Waldmann.

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