

# Lighting Systems



**REGIOLUX**

# Lighting Systems

functional - effective - efficient

## Exclusion of Liability

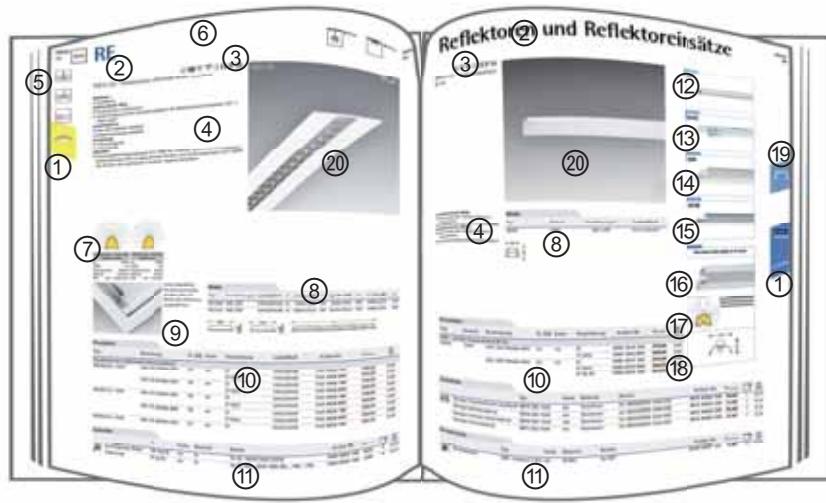
Illustrations, dimensions and weights in our catalogues, price lists and quotations are non-binding. Subject to technical changes, errors and color deviations. All luminaires have been designed for 230V 50Hz mains connection and ambient conditions according to DIN EN 60598 unless otherwise stated, and are supplied without lamps unless otherwise stated. Most of the indications with regard to certifications are presented in our catalogue in a general form. Verification with regard to products can be easily carried out on our website.

Because of the dynamics in the technical development especially in the field of LED modules and their drivers, the information in this paper can only be a snapshot of the current state and are therefore legally not binding. Please refer to our web site for current product specifications.

We point out that the orderer recognises our delivery and payment conditions unless he/she objects in writing when sending his/her order.



# Description of page layout

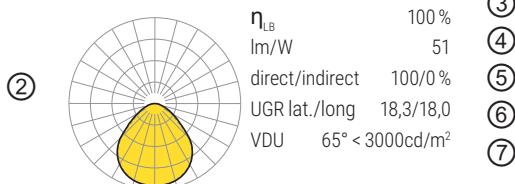


- ① Product group
- ② Luminaire family, type
- ③ Certification: Overview and explanation in Technical information chapter 8: 8.6 Certification, insulation class and protection rating
- ④ Description with regard to lighting technology, housing, miscellaneous
- ⑤ Indications with regard to ceiling systems
- ⑥ Reference to accessories pages and products in other product groups
- ⑦ Light distribution curve (LVK) with data with regard to lighting technology of the reference product.  
Explanations in the following area Explanations
- ⑧ Dimensional table and sectional drawings: Explanations of the variables in the following area Explanations
- ⑨ Detail image with explanation
- ⑩ Product table: Explanations of the abbreviations in the following area Explanations
- ⑪ Table with spare parts / accessories (if available): Explanations of the abbreviations in the following area Explanations
- ⑫ Combination quick-fit mounting system: Component mounting rail
- ⑬ Combination quick-fit mounting system: Component device mount
- ⑭ Combination quick-fit mounting system: Component light direction
- ⑮ Combination quick-fit mounting system: Component light direction insert
- ⑯ Quick-fit mounting system: Combination
- ⑰ Quick-fit mounting system: Light distribution curve of the combination, explanations in the following area Explanations
- ⑱ Quick-fit mounting system: Dimensioned drawing of the combination
- ⑲ Indication to the product area mounting rail / device mount / light direction
- ⑳ Product image with icons and indication for functions and features

# Explanations

## Explanation of lighting technological data

### ① PNEMP/625 IP54 LED 4400 lm 840



#### 1. Configuration

Possible deviations of luminous flux between magnetic ballasts (Llb) and electronic ballasts (ECG) are not considered.

#### 2. Luminous intensity distribution

Luminous intensity distribution curves shown in the catalogue are represented according to DIN 5032. Only both primary planes are displayed: 0°/180° planes (at right angles to luminaire axis) as a continuous line and 90°/270° (parallel to luminaire axis) as a dotted line. Curves are scaled to represent 1000 lumens of lamp luminous flux.

#### 3. Light output ratios η<sub>LB</sub>

Light output ratios specified for each luminaire are calculated from the relation of luminous flux  $\Phi_L(\tau_i)$  emitted from the luminaire with an ambient luminaire temperature  $\tau_L = 25^\circ\text{C}$  and further standardised conditions to the sum of measured luminous flux of the lamps with open distribution transferred individually to the luminaire ballast.

In the case of LED luminaires, the principle of absolute photometry is increasingly applied. In this case, the light output ratio is indicated with 100%. Additionally, the luminous flux is indicated in the form of the measured luminous flux of the luminaire.

#### 4. Luminous efficiency

The luminous efficiency is the luminous flux of a bulb or luminaire related to its electrical power consumption.

In the case of LED luminaires presented according to the principle of absolute photometry (light output ratio 100%), the indication refers to the lumen output of the luminaire which is described by the ratio between luminous flux of the luminaire and system performance of the luminaire.

#### 5. Direct and indirect light components

For evaluating the efficiency and lighting effect of a lighting system within a room, specification of the direct and indirect beam components is helpful.

#### 6. Glare reduction according to UGR method

According to DIN EN 12464-1, not only is reflected glare considered but also direct glare within a specific room. As a standard evaluation system the UGR (Unified Glare Rating) method was introduced in Europe as part of the DIN EN 12464-1 standard. Details concerning the UGR method are described in the CIE 117 publication. The UGR values (lat. and long) of a lighting installation, determined according a table for the position of a standard viewer, are not permitted to exceed the value specified by the standard. In order to compare the direct glare of various luminaires, UGR values of a number of manufacturers are specified with reference to a so-called standard room. Please note that a correct comparison is only possible if all room conditions are identical. In addition it must be noted that UGR values for a real installation may significantly differ to those of the standard room.

Values given are based upon the following definitions.

Room dimensions:

Distance of eye level to luminaire level: H

Room width X = 4H

Room length Y = 8H

Standard reflection factors (0,7 ceiling; 0,5 walls; 0,2 floor)

Luminaire arrangement parallel to Y axis Luminaire distances:

Distance of luminaire to luminaire (spacing) S = 0,25H

Distance of luminaire to wall ½ S = 0,125H

## Explanation of lighting technological data

#### 7. Suitability for VDU workstations

Here, the suitability of luminaires for VDU workstations according to DIN EN 12464-1 is specified. The degree number means that the luminance in all luminaire planes beyond that angle does not exceed certain limitation values. Depending on screen quality and screen visualisation, the norm specifies different limitation values. In case of a positive display on screens with an own luminance (< 200 cd/m<sup>2</sup>), a maximum of 1500 cd/m<sup>2</sup> and in case of screens with a high luminance (> 200 cd/m<sup>2</sup>), a maximum of 3000 cd/m<sup>2</sup> is permissible.

## Control gear

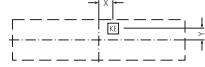
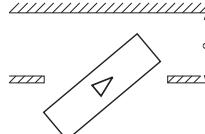
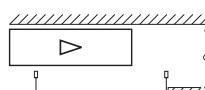
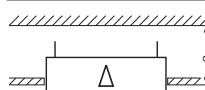
| Abbr.        | Description  |
|--------------|--|
| ECG          | Electronic ballast   |
| Llb          | Low-loss ballast   |
| ind          | Inductive, must be compensated on-site                                     |
| multi        | Multiwatt T5   |
| ED           | Electronic driver, not dimmable  |
| EDM          | Electronic driver Multi, not dimmable (8 or 16 adjustable lighting levels) |
| DALI         | Electronic driver, DALI, dimmable  |
| DALI DT8     | Electronic driver, DALI, dimmable, change of light color (Tunable white)   |
| LC.          | Device with integrated LC components of special type                       |
| M.           | Master unit Typ 1-N  |
| S.           | Sensor unit Typ 1-N  |
| NL-B1, NL-B3 | Emergency light single battery; 1=1h, 3=3h                                 |

# Explanations

## Definition of measurement table variables

| Abbr.            | Description   |
|------------------|---|
| A                | Distance between the individual luminaires  |
| A1               | Fixing distance in case of single mounting  |
| A2               | Fixing distance for first or last luminaire in case of light run mounting                         |
| A3               | Fixing distance for the middle luminaires or between the luminaires in case of light run mounting |
| A4               | Fixing distance (width)   |
| B                | Width   |
| D                | Diameter  |
| DA               | Diameter of cut for recessed luminaires   |
| DA <sub>B</sub>  | Width of cut for recessed luminaires  |
| DA <sub>L</sub>  | Length of cut for recessed luminaires   |
| DS min           | Minimum ceiling thickness with suspended ceiling  |
| DS max           | Maximum ceiling thickness with suspended ceiling  |
| Db               | Sensor detection diameter   |
| Dr               | Sensor detection diameter ideal movement towards the sensor                                       |
| Ds               | Sensor detection diameter seated activity   |
| Dt               | Sensor detection diameter tangential movement parallel towards the sensor                         |
| Et               | Mounting depth (necessary depth for luminaire mounting)   |
| Et min           | Minimum mounting depth (necessary depth for luminaire mounting during ceiling construction)       |
| FB               | Width of luminaire groundplate  |
| FD               | Diameter of luminaire groundplate   |
| FL               | Length of luminaire groundplate   |
| H                | Height  |
| HS               | Installation height of sensor   |
| KB               | Width of luminaire head or ballast box  |
| KD               | Diameter of luminaire head or ballast box   |
| KE               | Cable infeed  |
| KH               | Height of luminaire head or ballast box   |
| KL               | Length of luminaire head or ballast box   |
| L                | Length  |
| L2               | Additional length   |
| MB               | Modul (axes) width  |
| ML               | Modul (axes) length   |
| P                | Suspension length   |
| Pmin             | Minimum suspension length   |
| Pmax             | Maximum suspension length   |
| P <sub>Sys</sub> | Luminaire system performance  |
| T                | Depth   |
| W                | Wall distance   |
| X                | Distance from middle of the luminaire to the electrical feed in (X direction = length)            |
| Y                | Distance from middle of the luminaire to the electrical feed in (Y direction = width)             |

## Description of measurement table variables

1. Positioning of electrical feed in.
- 
2. Required installation depth "Et" for swivelling of luminaire in visible T rail constructions (lay-in luminaires). Required installation depth "Et" for swivelling luminaire and control gear (if applicable) through ceiling cut-out (clamp mounting).
- 
3. Reduced installation depth "Et min" with aligning of luminaire above T rail construction (during ceiling construction).
- 
4. Required installation depth "Et" for swivelling of mounting bracket (clamp mounting).
- 

## Ceiling systems



Ceilings with visible T-rails



For concealed symmetrical rail constructions



For concealed asymmetrical rail constructions



For recessed ceilings



For panel ceilings, module 100, 150, 200

## Cross references



Reference accessories



Reference mounting rail installation



Reference mounting note



Reference product groups

## Icons / functions features



Configuratlon with sensor available



Configuratlon with emergency light unit available



Luminaires for HCL (human Centric Lighting)



Luminaires suitable for Advanced Services



Luminaires suitable for IoT (Internet of Things)



LED (included)



Beam angle

# Explanations

| Materials          |   | Colour code |                                |
|--------------------|---|-------------|--------------------------------|
| Abbr.              | Description   | Abbr.       | Colour                         |
| A03S-U             | Recognised national cable type: measurement voltage 300 V to 300 V; Silicone rubber isolation material, heat-resistant to +180° C; Single-wire conductor, round                           | al          | aluminium                      |
| ABS                | Acrylonitrile Butadiene Styrene Copolymerisate  | aeh         | aluminium high gloss           |
| Al                 | Aluminium   | aes         | aluminium matt gloss           |
| AlMgSi             | Aluminium magnesium silicon (extruded section)  | aen         | aluminium natural anodized     |
| Cu                 | Copper  | ap          | aluminium plate finish         |
| EPDM               | Synthetic rubber  | am          | anthracite metallic            |
| Glass              | Glass   | bl          | blue                           |
| Glass matt         | Matt glass  | bl/cr       | blue chrome                    |
| Glass (ESG)        | Tempered single-pane safety glass   | ce          | cream                          |
| H03VV-F            | Harmonised cable: measurement voltage 300 V to 300 V; Isolation material PVC, heat-resistant to +70° C; sheathing material PVC, heat-resistant to +70 °C; fine-strand conductor, flexible | cr          | chrome                         |
| H05HH-F            | Harmonised cable: measurement voltage 300 V to 500 V; Isolation material flat, divisible cable; sheathing material flat, divisible cable; fine-strand conductor, flexible                 | eg          | brushed stainless steel        |
| H05S-U             | Harmonised cable: measurement voltage 300 V to 500 V; silicone rubber isolation material, heat-resistant to +180° C; single-wire conductor, round   | ge          | yellow                         |
| H05V2-U            | Harmonised cable: measurement voltage 300 V to 500 V; Isolation material PVC, heat-resistant to +90° C; single-wire conductor, round  | ge/cr       | yellow chrome                  |
| H05VV-F            | Harmonised cable: measurement voltage 300 V to 500 V; isolation material PVC, heat-resistant to +70° C; sheathing material PVC, heat-resistant to +70 °C; fine-strand conductor, flexible | ga          | grey                           |
| H07V2-U            | Harmonised cable: measurement voltage 450 V to 750 V; isolation material PVC, heat-resistant to +90° C; single-wire conductor, round  | gr          | green                          |
| Inox               | Stainless steel   | hg          | light grey                     |
| Inox V2A           | Stainless steel (alloy type 1.4301 or X5CrNi18-10)  | hgl         | high gloss                     |
| Inox V4A           | Stainless steel (alloy type 1.4401 or X5CrNiMo17-12-2)  | kg          | pebble grey, RAL 7032          |
| Mix                | Diverse materials   | kgm         | pebble grey metallic, RAL 7032 |
| PA                 | Polyamide   | kl          | clear                          |
| PC                 | Polycarbonate   | me          | metallike                      |
| PMMA               | Polymethylmethacrylate (acrylic glass)  | op          | opal white                     |
| Polymer            | plastic (not defined specifically)  | og          | orange                         |
| Polymer clear      | Plastic (crystal clear)   | ro          | red                            |
| Reinforced polymer | Plastic (with admixture of reinforcing materials)   | sw          | black, RAL 9005                |
| PS                 | Polystyrene   | si          | silver                         |
| PVC                | Polyvinyl chloride  | sg          | silver-grey, RAL 9006          |
| St                 | Steel   | tz          | translucent                    |
| StZn               | Steel with zinc coating   | tp          | transparent                    |
|                    |   | vw          | traffic white, RAL 9016        |
|                    |   | ws          | white                          |
|                    |   | wa          | white-aluminium, RAL 9006      |



# Sport hall luminaires



►465  
►466 SOHB LED  
►466 SOHTB LED



►473  
►474 THLA LED  
►476 THLE LED





# sportler



## sportler – a winner for sports halls

- Ball impact-resistant, high-bay flat panel luminaire
- Efficient, anti-glare lighting technology with Individual.Lens.Optic
- Further light characteristics possible
- Output levels from 14,600 to 29,200 lumen
- Variety of mounting options



## Type overview

- ▶ SOHB Individual.Lens.Optic direct wide distribution
- ▶ SOHTB Individual.Lens.Optic direct narrow/wide distribution

# sportler LED



LED A+ ① FV CE IP 40

#### Mounting:

- Suspended
- Ceiling surface
- Mounting rail

#### Housing:

- Sheet steel housing, powder-coated

#### Lighting technology SOHB:

- Individual.Lens.Optic; PMMA plastic
- Lighting characteristic direct wide distribution

#### Lighting technology SOHTB:

- Individual.Lens.Optic; PMMA plastic
- Lighting characteristic direct narrow/wide distribution

#### Lamp:

- LED 50000h L80/B10
- CRI ≥ 80 / 4000K

#### Switching:

- Various switching modes available
- The number of control gears varies according to the version

#### Electronic driver

- 230V 50Hz

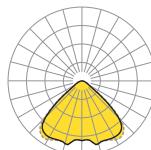
#### Miscellaneous:

- Electrical connection via connection cable 2.3m

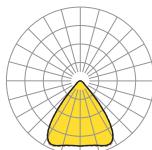
#### Accessories:

- Protection and mounting accessories must be ordered separately

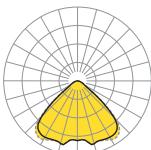
sportler-SOHB/700 LED



SOHB/0700 IP40 LED  
14600 lm 840



SOHTB/1000 IP40  
LED 21900 lm 840



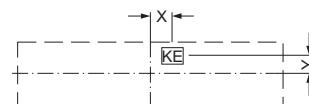
SOHB/1300 IP40 LED  
29100 lm 840

|                     | 100 %     |                     | 100 %     |                     | 100 %     |
|---------------------|-----------|---------------------|-----------|---------------------|-----------|
| $\eta_{LB}$<br>lm/W | 149       | $\eta_{LB}$<br>lm/W | 149       | $\eta_{LB}$<br>lm/W | 149       |
| direct/indirect     | 100/0 %   | direct/indirect     | 100/0 %   | direct/indirect     | 100/0 %   |
| UGR lat./long.      | 22,1/22,3 | UGR lat./long.      | 19,1/19,4 | UGR lat./long.      | 22,1/22,3 |

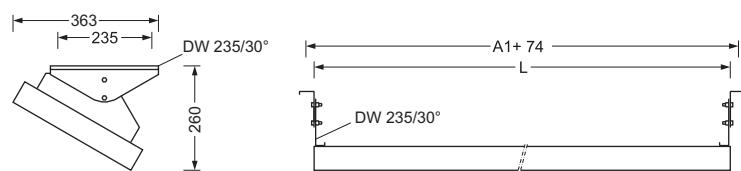
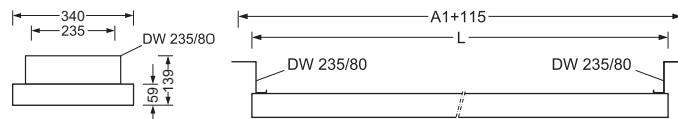
|                     | 100 %     |                     | 100 %     |                     | 100 %     |
|---------------------|-----------|---------------------|-----------|---------------------|-----------|
| $\eta_{LB}$<br>lm/W | 149       | $\eta_{LB}$<br>lm/W | 149       | $\eta_{LB}$<br>lm/W | 149       |
| direct/indirect     | 100/0 %   | direct/indirect     | 100/0 %   | direct/indirect     | 100/0 %   |
| UGR lat./long.      | 22,1/22,3 | UGR lat./long.      | 19,1/19,4 | UGR lat./long.      | 22,1/22,3 |

#### Dimensions

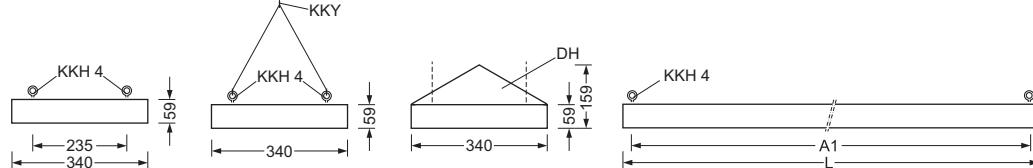
| Type      | Versions | LxBxH/DxH       | A1   | A4  | KE X/Y    |
|-----------|----------|-----------------|------|-----|-----------|
| SOH./0700 | LED      | 688 x 340 x 59  | 655  | 235 | 261 / 0   |
| SOH./1000 | LED      | 1013 x 340 x 59 | 980  | 235 | 423,5 / 0 |
| SOH./1300 | LED      | 1338 x 340 x 59 | 1305 | 235 | 586 / 0   |



#### Surface mounting



#### Suspended mounting



Mounting video





►469



►470



## Products

| Type   | Lamps         | lm/W | P <sub>Sys</sub> [W] | Colour | Ballast | LxBxH/DxH       | Art. no.      | kg    |
|--|---------------|------|----------------------|--------|---------|-----------------|---------------|-------|
| <i>Individual.Lens.Optic direct wide distribution</i>        |               |      |                      |        |         |                 |               |       |
| sportler-SOHB/0700 IP40                                      | LED 14600 840 | 149  | 98                   | vw     | ED      | 688 x 340 x 59  | 3743 0124 110 | 6,40  |
|  |               |      | DALI <sup>1)</sup>   |        |         | 688 x 340 x 59  | 3743 0126 610 | 6,40  |
| <i>Individual.Lens.Optic direct narrow/wide distribution</i> |               |      |                      |        |         |                 |               |       |
| sportler-SOHTB/0700 IP40                                     | LED 14600 840 | 149  | 98                   | vw     | ED      | 688 x 340 x 59  | 3743 0124 130 | 6,40  |
|  |               |      | DALI <sup>1)</sup>   |        |         | 688 x 340 x 59  | 3743 0126 630 | 6,40  |
| sportler-SOHTB/1000 IP40                                     | LED 21900 840 | 149  | 147                  | vw     | ED      | 1013 x 340 x 59 | 3743 0224 110 | 9,00  |
|  |               |      | DALI <sup>1)</sup>   |        |         | 1013 x 340 x 59 | 3743 0226 610 | 9,00  |
| sportler-SOHTB/1300 IP40                                     | LED 29100 840 | 149  | 196                  | vw     | ED      | 1338 x 340 x 59 | 3743 0324 110 | 11,40 |
|  |               |      | DALI <sup>1)</sup>   |        |         | 1338 x 340 x 59 | 3743 0326 610 | 11,40 |

<sup>1)</sup> IoT: Luminaires suitable for IoT (Internet of Things)

Further extremely glare-free variants for all sports according to EN 12193 are shown on [www.regiolux.de](http://www.regiolux.de)

## Accessories

| Type              | Colour     | Material | Details | Art. no.  | kg            |
|-------------------|------------|----------|---------|---|---------------|
| <i>Protection</i> |            |          |         |   |               |
| Roof hood         | DH /0700   | vw       | St      | for sportler, worker  | 3729 0700 100 |
|                   | DH /1000   | vw       | St      | for sportler, worker  | 3729 1000 100 |
|                   | DH /1300   | vw       | St      | for sportler, worker  | 3729 1300 100 |
| <i>Mounting</i>   |            |          |         |   |               |
| Chain suspension  | KK         | me       | St      | Node chain l=30m, for SDT, SDT Basic, ATS, suspended luminaires | 9282 9300 100 |
|                   | KKH 4      | me       | St      | Chain carabiner suspension kit for worker, sportler             | 3729 0004 100 |
|                   | KKY 2      | me       | St      | Chain carabiner set for Y suspension                            | 3729 0005 100 |
| Mounting-ceiling  | DW 235/80  | vw       | St      | Ceiling brackets fix for sportler, worker                       | 3729 0001 100 |
|                   | DW 235/30° | vw       | St      | Ceiling brackets variable for sportler                          | 3729 0006 100 |

# Planning a sports hall

## Gymnasium

In the case of an inclined roof surface an individual lighting calculation is recommended.

Mounting height MH = 7 m

### Calculation basis/legend

E = Nominal illuminance

$E_m$  = Average illuminance (hall)

$E_{m/3}$  = Average illuminance (1/3 hall)

Utilisation plane = 0,0 m

### Reflection values

$\rho = 0,7$  (ceiling)/ 0,5 (wall)/ 0,3 (floor)

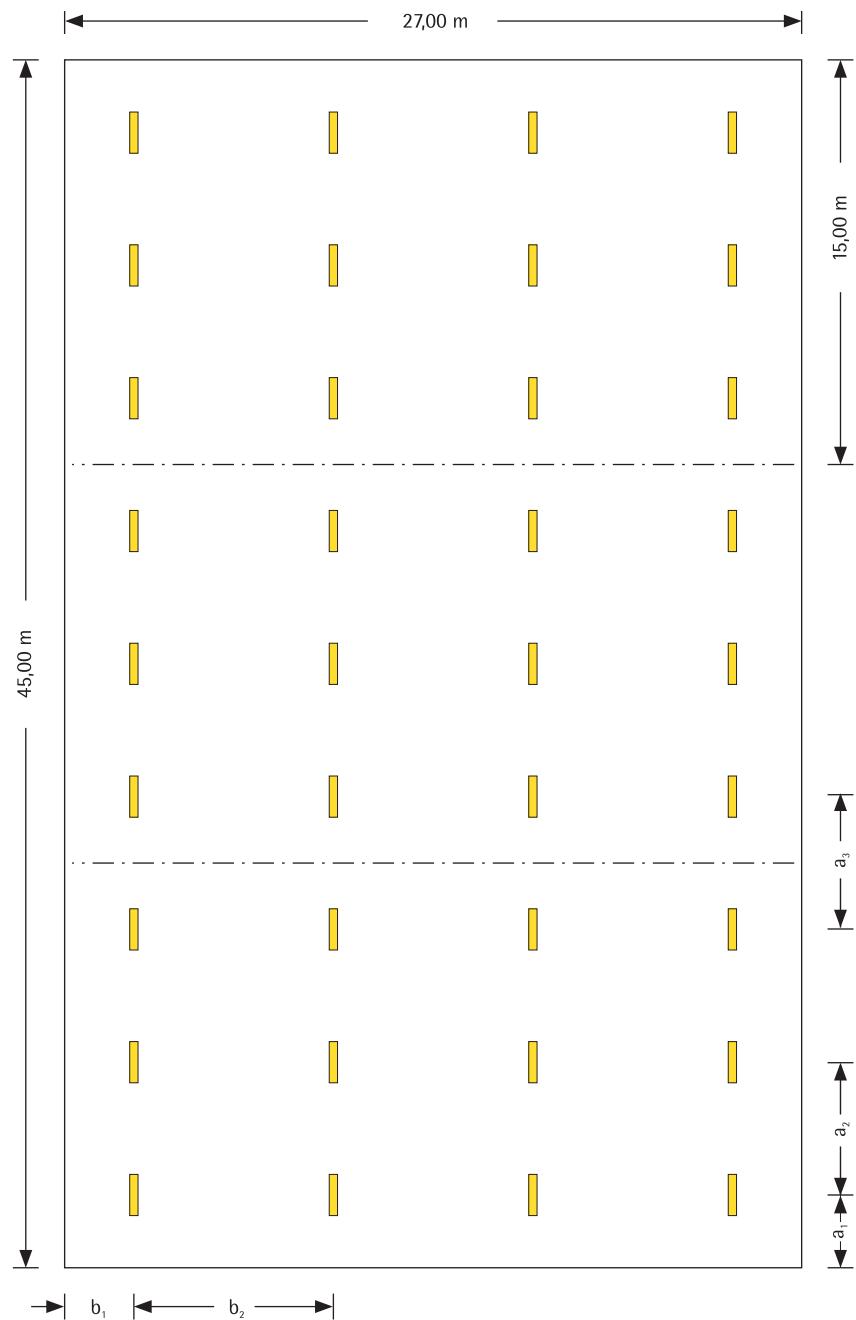
$a_1 / a_2 / a_3$  = Longitudinal spacing

$b_1 / b_2$  = Transverse spacing

$G_1 = E_{min} : E_m$

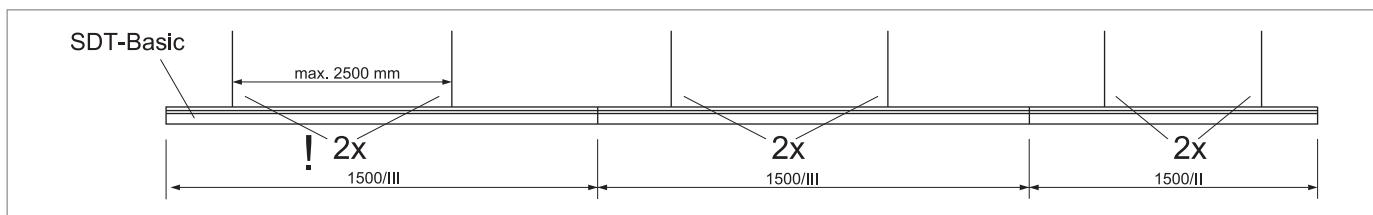
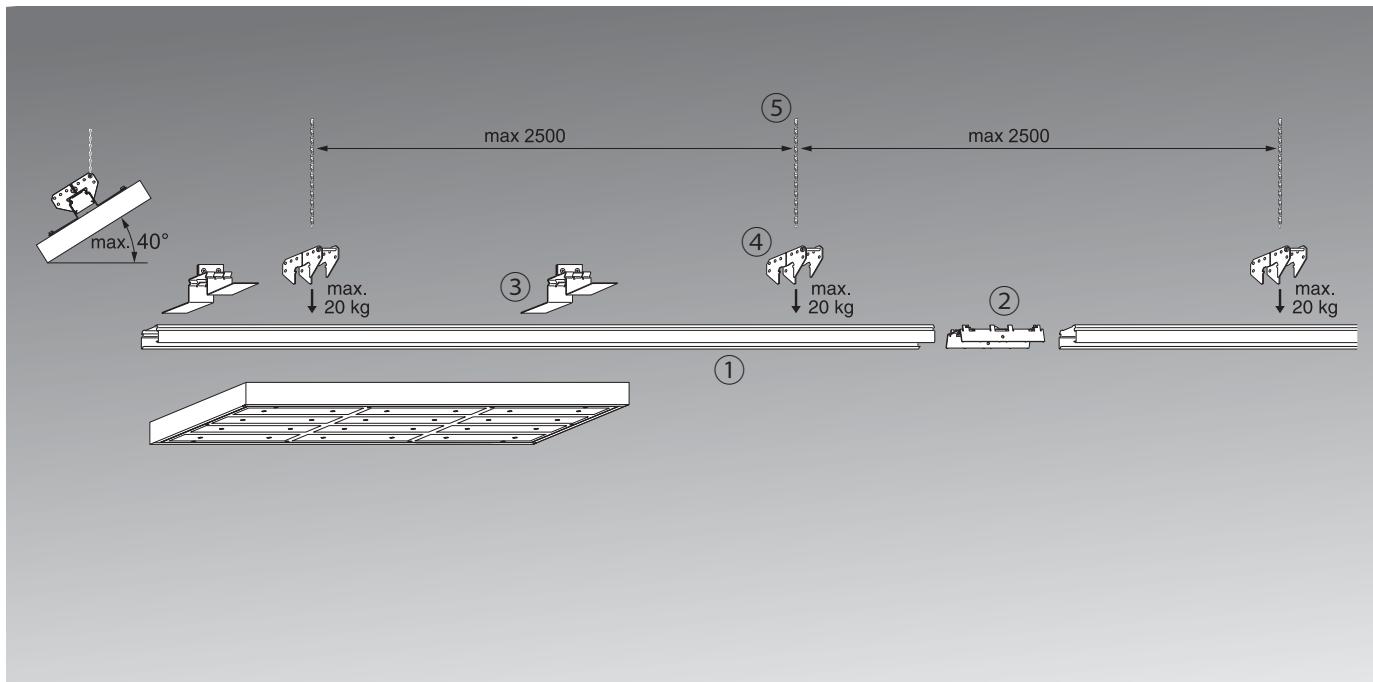
### Lamps:

LED LC 840



| Type       | lamps     | E      | no. of luminaires | Total power consumption<br>(incl. ED) | $a_1$  | $a_2$  | $a_3$  | $b_1$  | $b_2$  | $G_1$   | $E_m$  | $E_{m/3}$ |
|------------|-----------|--------|-------------------|---------------------------------------|--------|--------|--------|--------|--------|---------|--------|-----------|
| SOHB/700   | LED 14600 | 300 lx | 4 x 9 = 36        | 3,525 kW                              | 2,50 m | 5,00 m | 5,00 m | 2,25 m | 7,50 m | 1 : 1,3 | 360 lx | 320 lx    |
| SOHB/700   | LED 14600 | 500 lx | 4 x 12 = 48       | 4,700 kW                              | 1,88 m | 3,75 m | 3,75 m | 2,25 m | 7,50 m | 1 : 1,3 | 500 lx | 420 lx    |
| SOHB/1000  | LED 21900 | 300 lx | 4 x 6 = 24        | 3,526 kW                              | 3,75 m | 7,50 m | 7,50 m | 2,25 m | 7,50 m | 1 : 1,3 | 360 lx | 320 lx    |
| SOHB/1000  | LED 21900 | 500 lx | 4 x 9 = 36        | 5,289 kW                              | 2,50 m | 5,00 m | 5,00 m | 2,25 m | 7,50 m | 1 : 1,3 | 540 lx | 470 lx    |
| SOHB/1300  | LED 29100 | 300 lx | 3 x 6 = 18        | 3,525 kW                              | 3,75 m | 7,50 m | 7,50 m | 4,50 m | 9,00 m | 1 : 1,3 | 370 lx | 320 lx    |
| SOHB/1300  | LED 29100 | 500 lx | 4 x 6 = 24        | 4,700 kW                              | 3,75 m | 7,50 m | 7,50 m | 2,25 m | 7,50 m | 1 : 1,3 | 500 lx | 430 lx    |
| SOHTB/700  | LED 14600 | 300 lx | 4 x 9 = 36        | 3,525 kW                              | 2,50 m | 5,00 m | 5,00 m | 2,25 m | 7,50 m | 1 : 1,3 | 380 lx | 340 lx    |
| SOHTB/700  | LED 14600 | 500 lx | 4 x 12 = 48       | 4,700 kW                              | 1,88 m | 3,75 m | 3,75 m | 2,25 m | 7,50 m | 1 : 1,3 | 500 lx | 450 lx    |
| SOHTB/1000 | LED 21900 | 300 lx | 4 x 6 = 24        | 3,526 kW                              | 3,75 m | 7,50 m | 7,50 m | 2,25 m | 7,50 m | 1 : 1,3 | 380 lx | 350 lx    |
| SOHTB/1000 | LED 21900 | 500 lx | 4 x 9 = 36        | 5,289 kW                              | 2,50 m | 5,00 m | 5,00 m | 2,25 m | 7,50 m | 1 : 1,3 | 560 lx | 510 lx    |
| SOHTB/1300 | LED 29200 | 300 lx | 3 x 6 = 18        | 3,525 kW                              | 3,75 m | 7,50 m | 7,50 m | 4,50 m | 9,00 m | 1 : 1,3 | 390 lx | 350 lx    |
| SOHTB/1300 | LED 29200 | 500 lx | 4 x 6 = 24        | 4,700 kW                              | 3,75 m | 7,50 m | 7,50 m | 2,25 m | 7,50 m | 1 : 1,3 | 510 lx | 460 lx    |

# Accessories mounting rail installation



- ① SDT basic unwired mounting rail
- ② SDTV mounting rail connector
- ③ Luminaire fixing BW-SDT
- ④ Angled bracket SDT-WA
- ⑤ Suspension (chain) KK

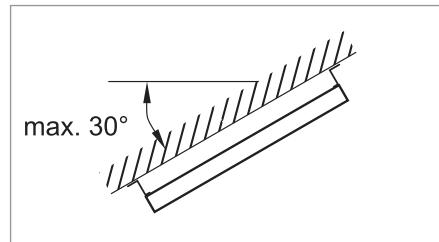
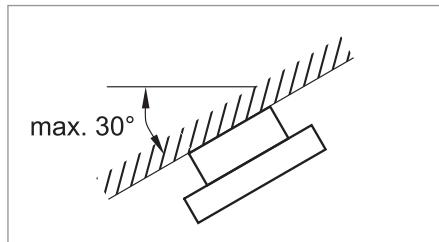
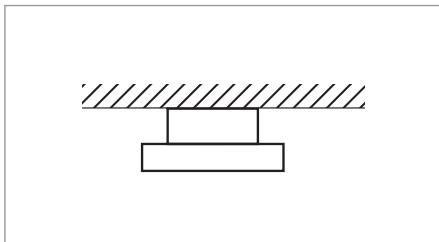
## Accessories

| Type                    | Colour             | Material | Details  | Art. no.  |               |        |
|-------------------------|--------------------|----------|----------|---|---------------|--------|
| <b>Design</b>           |                    |          |          |   |               |        |
| Section cover           | SDBAV 1500         | vw       | St       | I=7x219=1533mm for SDT Basic                                    | 1884 5580 101 | 1 0,85 |
| <b>Mounting</b>         |                    |          |          |   |               |        |
| Chain suspension        | KK                 | me       | St       | Node chain I=30m, for SDT, SDT Basic, ATS, suspended luminaires | 9282 9300 100 | 1 4,60 |
|                         | SDT -WA            | me       | St       | Angled bracket for SDT Basic                                    | 6820 9300 120 | 1 0,25 |
| <b>Structure</b>        |                    |          |          |   |               |        |
| Luminaires fixing       | BW-SDT             | vw       | St       | SDT mounting set for sportler, worker                           | 3729 0009 100 | 2 0,88 |
| Mounting rail           | SDT Basic 1500/II  | vw       | St.galv. | I=3070mm 2.6kg for surface-mounted luminaires                   | 1825 2580 150 | 1 2,60 |
|                         | SDT Basic 1500/III | vw       | St.galv. | I=4605mm 3.9kg for surface-mounted luminaires                   | 1825 3580 150 | 1 3,90 |
| Mounting rail connector | SDTV               | me       | St.galv. | for SDT   | 1820 0020 100 | 1 0,22 |

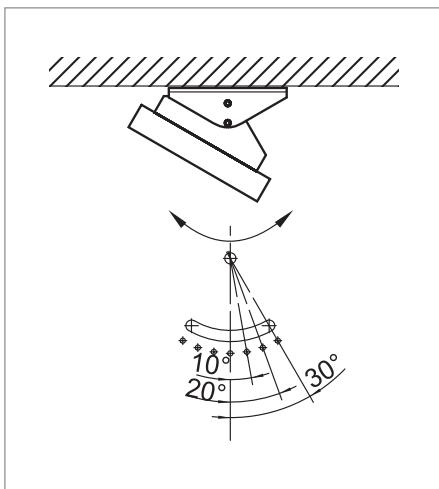
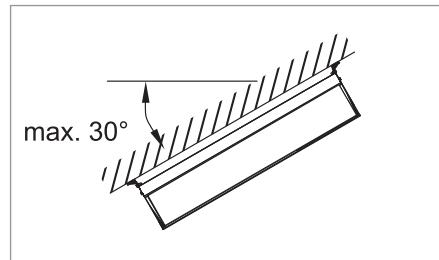
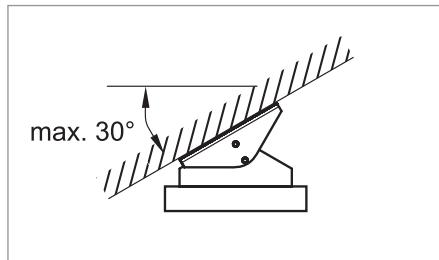
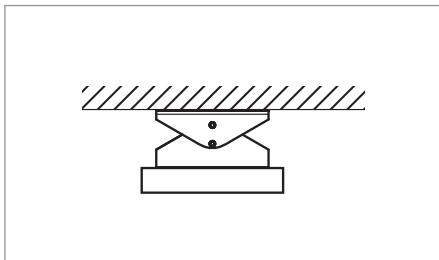
# Mounting note sportler

## Surface mounting

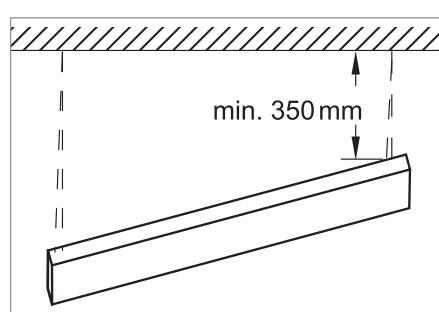
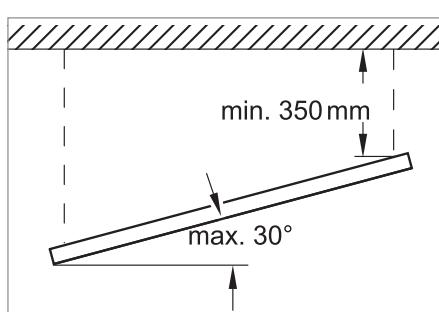
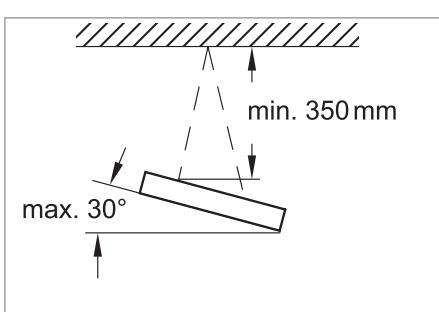
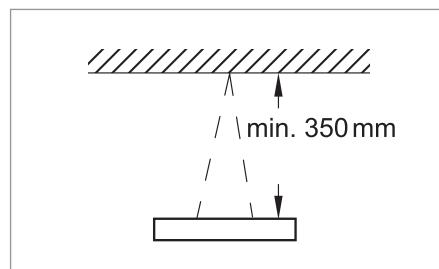
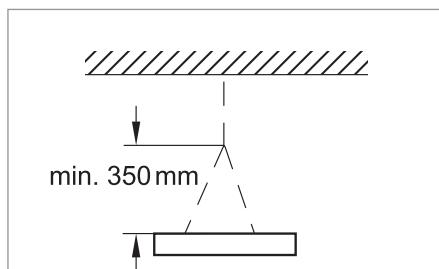
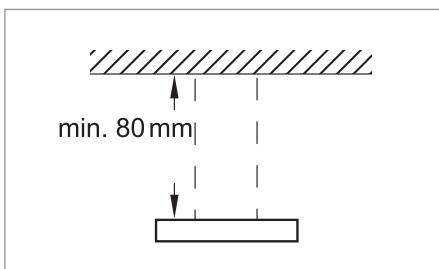
DW 235/80



DW 235/30°



## Suspended mounting







THL



## THL – the athlete among luminaires

- Tennis-compatible sports hall luminaire for LED configurations
- Triple-lamp versions separately switchable and dimmable (inner/outer)
- Excellent glare control



## Type overview

- THLA Louvre, white direct wide distribution
- THLE Louvre, white direct wide distribution

# THLA LED



►482

LED A++ F CE IP 20

**Mounting:**

- Suspended
- Ceiling surface
- Mounting rail

**Housing:**

- Sheet steel housing

**Lighting technology THLA:**

- Louvre, white
- Lighting characteristic direct wide distribution

**Lamp:**

- LED 50000h L80/B10
- CRI ≥ 80 / 4000K

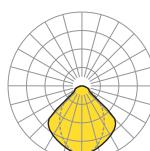
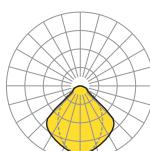
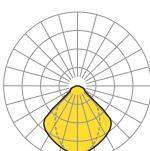
**Switching:**

- Various switching modes available
- The number of control gears varies according to the version
- Electronic driver
- 230V 50Hz

**Accessories:**

- The required accessories for mounting rail or suspended mounting installation must be ordered separately

THLA/1500-1 LED

THLA/1500-1 LED  
5000 lm 840THLA/1500-2 LED  
10000 lm 840THLA/1500-3 LED  
15100 lm 840

| $\eta_{LB}$<br>lm/W | 100 %     | $\eta_{LB}$<br>lm/W | 100 %     | $\eta_{LB}$<br>lm/W | 100 %     |
|---------------------|-----------|---------------------|-----------|---------------------|-----------|
| direct/indirect     | 100/0 %   | direct/indirect     | 100/0 %   | direct/indirect     | 100/0 %   |
| UGR lat./long.      | 19,3/19,6 | UGR lat./long.      | 19,6/19,9 | UGR lat./long.      | 19,3/19,6 |

$\eta_{LB}$   
lm/W      100 %       $\eta_{LB}$   
lm/W      100 %       $\eta_{LB}$   
lm/W      100 %

direct/indirect      100/0 %      direct/indirect      100/0 %      direct/indirect      100/0 %

UGR lat./long.      19,3/19,6      UGR lat./long.      19,6/19,9      UGR lat./long.      19,3/19,6

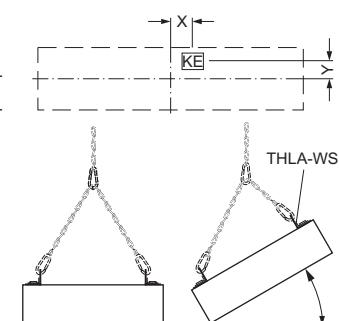
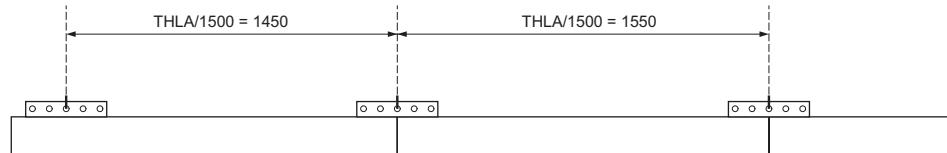
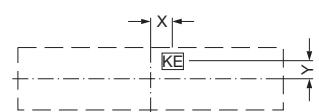
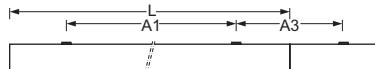
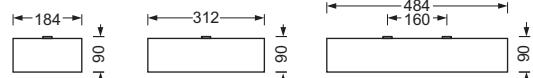


In the case of the upgrade luminaire THLA/1500-3-2 LED the middle luminaire louvre is not fitted with an illuminant. Non-dimmable versions nevertheless retain the advantages of group switching.

**Dimensions**

| Type            | Versions | LxBxH/DxH       | A1   | A3  | A4  | KE X/Y |
|-----------------|----------|-----------------|------|-----|-----|--------|
| THLA/1500-1 LED |          | 1548 x 184 x 90 | 1300 | 248 | -   | 0 / 70 |
| THLA/1500-2 LED |          | 1548 x 312 x 90 | 1300 | 248 | -   | 0 / 0  |
| THLA/1500-3 LED |          | 1548 x 484 x 90 | 1300 | 248 | 160 | 0 / 70 |

THL. LED-1    THL. LED-2    THL. LED-3

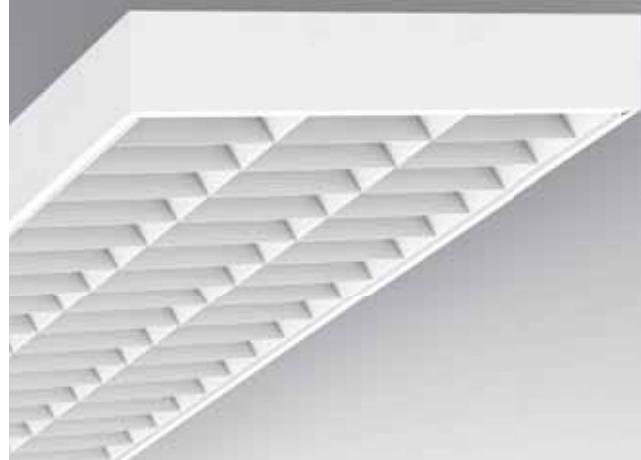




THLA/1500-2 LED



THLA/1500-3 LED



## Products

| Type  | Lamps         | lm/W | P <sub>Sys</sub> [W] | Colour | Ballast            | LxBxH/DxH       | Art. no.      | kg    |
|---|---------------|------|----------------------|--------|--------------------|-----------------|---------------|-------|
| <i>Louvre, white direct wide distribution</i> |               |      |                      |        |                    |                 |               |       |
| THLA/1500-1                                   | LED 5000 840  | 121  | 42                   | vw     | ED                 | 1548 x 184 x 90 | 6811 0014 100 | 9,55  |
|   |               |      |                      |        | DALI <sup>1)</sup> | 1548 x 184 x 90 | 6811 0016 600 | 9,55  |
| THLA/1500-2                                   | LED 10000 840 | 121  | 83                   | vw     | ED                 | 1548 x 312 x 90 | 6812 0024 100 | 15,22 |
|   |               |      |                      |        | DALI <sup>1)</sup> | 1548 x 312 x 90 | 6812 0026 600 | 15,22 |
| THLA/1500-3                                   | LED 15100 840 | 121  | 125                  | vw     | ED                 | 1548 x 484 x 90 | 6813 0034 100 | 21,66 |
|   |               |      |                      |        | DALI <sup>1)</sup> | 1548 x 484 x 90 | 6813 0036 600 | 19,55 |
| THLA/1500-3-2                                 | LED 10000 840 | 121  | 83                   | vw     | ED                 | 1548 x 484 x 90 | 6813 0024 100 | 20,26 |

<sup>1)</sup> IoT: Luminaires suitable for IoT (Internet of Things)

## Accessories

| Type                         | Colour        | Material | Details | Art. no.   | kg            |        |
|------------------------------|---------------|----------|---------|--|---------------|--------|
| <i>Electrical technology</i> |               |          |         |  |               |        |
| Through-wiring cable         | FLVWR 1500    | ws       | H05V2-U | 5x1.5mm <sup>2</sup> for light run-capable LED/T5/T8 surface-mounted and suspended luminaires (ECG versions) | 1945 1580 100 | 1 0,16 |
| <i>Mounting</i>              |               |          |         |  |               |        |
| Chain suspension             | Basic Set -KP | me       | Mix     | Canopy D=123mm for suspended luminaires  | 9282 0000 100 | 1 0,15 |
|                              | KK            | me       | St      | Node chain l=30m, for SDT, SDT Basic, ATS, suspended luminaires  | 9282 9300 100 | 1 4,60 |
|                              | THLA -WS      | me       | St      | Angle section for THLA   | 6810 9200 100 | 2 0,70 |

## THLE LED

 LED A+     IP 20
**Mounting:**

- Ceiling recessed

**Housing:**

- Sheet steel housing
- Suitable for ceiling system: concealed symmetrical rail construction; cut-out ceilings

**Lighting technology THLE:**

- Louvre, white
- Lighting characteristic direct wide distribution

**Lamp:**

- LED 50000h L80/B10
- CRI ≥ 80 / 4000K

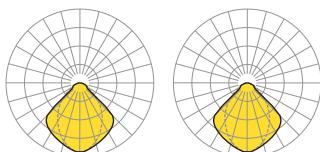
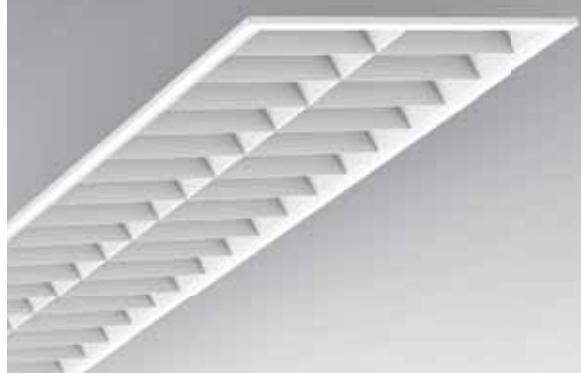
**Switching:**

- Various switching modes available
- The number of control gears varies according to the version
- Electronic driver
- 230V 50Hz

**Accessories:**

- Mounting bracket BBT for concealed symmetrical rail constructions or cut-out ceiling, order separately.

THLE/1500-2 LED



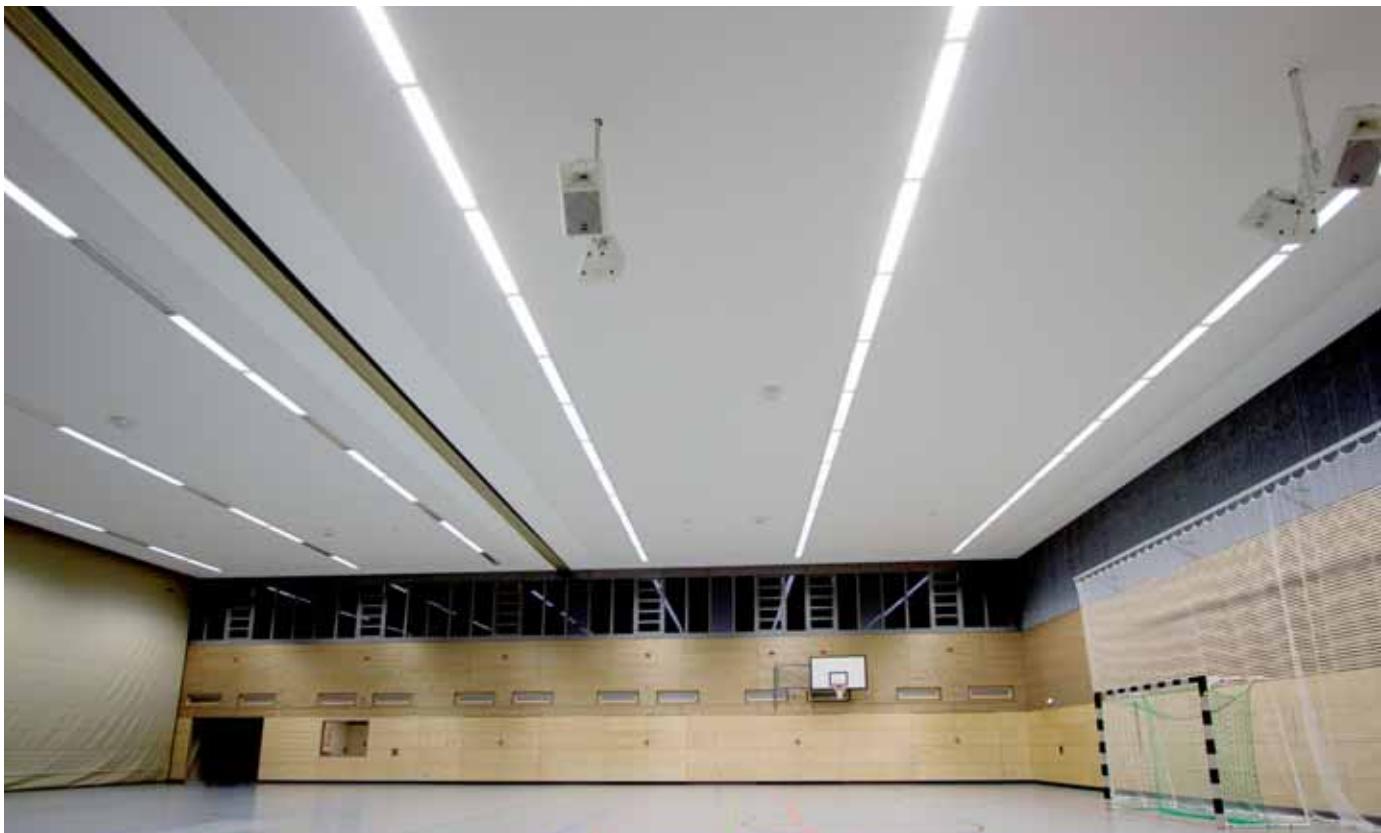
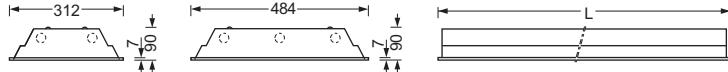
| THLE/1500-2 LED  | 10000 lm 840                       | THLE/1500-3 LED  | 15100 lm 840                       |
|--|------------------------------------|--|------------------------------------|
| $\eta_{LB}$<br>lm/W<br>direct/indirect<br>UGR lat./long. | 100%<br>121<br>100/0%<br>19,6/19,9 | $\eta_{LB}$<br>lm/W<br>direct/indirect<br>UGR lat./long. | 100%<br>121<br>100/0%<br>19,3/19,6 |

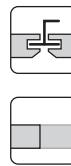
**Dimensions**

| Type        | Versions | LxBxH/DxH       | T  | MLxMB        | Et  | DA <sub>A</sub> xDA <sub>B</sub> | Et  |
|-------------|----------|-----------------|----|--------------|-----|----------------------------------|-----|
| THLE/1500-2 | LED      | 1548 x 312 x 90 | 83 | 1550 x 312,5 | 250 | 1535 x 300                       | 250 |
| THLE/1500-3 | LED      | 1548 x 484 x 90 | 83 | 1550 x 484,5 | 250 | 1535 x 470                       | 250 |

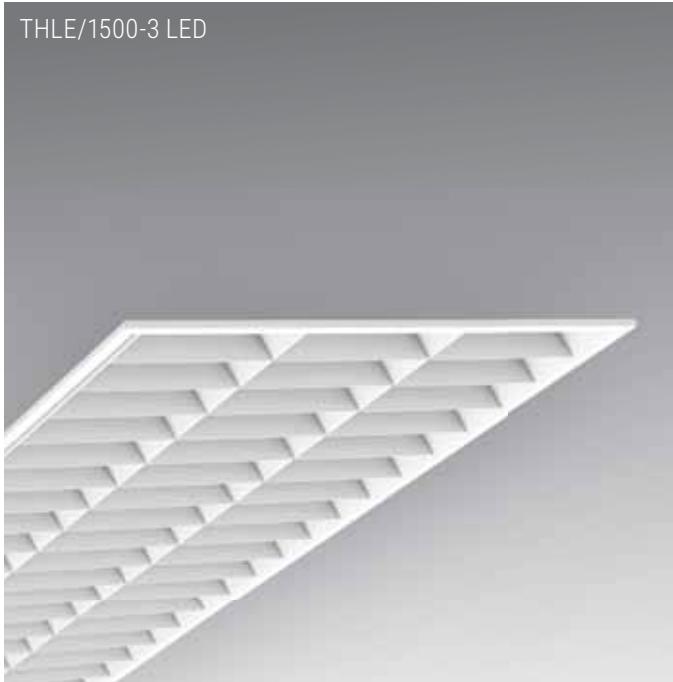
THL.-2

THL.-3





THLE/1500-3 LED

**Products**

| Type  | Lamps         | lm/W | P <sub>Sys</sub> [W] | Colour | Ballast | LxBxH/DxH       | Art. no.      | kg    |
|---|---------------|------|----------------------|--------|---------|-----------------|---------------|-------|
| <i>Louvre, white direct wide distribution</i> |               |      |                      |        |         |                 |               |       |
| THLE/1500-2                                   | LED 10000 840 | 121  | 83                   | vw     | ED      | 1548 x 312 x 90 | 7812 0024 100 | 12,27 |
| THLE/1500-3                                   | LED 15100 840 | 121  | 125                  | vw     | ED      | 1548 x 484 x 90 | 7813 0034 100 | 19,10 |

**Accessories**

| Type              | Colour | Material | Details | Art. no.                | kg            |        |
|-------------------|--------|----------|---------|-------------------------|---------------|--------|
| <i>Mounting</i>   |        |          |         |                         |               |        |
| Fastening bracket | BBT 6  | me       | St      | for THLE/1500-2, 1500-3 | 7997 0006 100 | 6 0,05 |





# Planning a sports hall

## Gymnasium

In the case of an inclined roof surface an individual lighting calculation is recommended.

Room height  $R_H = 7\text{ m}$

### Calculation basis/legend

$E$  = Nominal illuminance

$E_m$  = Average illuminance (hall)

$E_{m1/3}$  = Average illuminance (1/3 hall)

Utilisation plane = 0,0 m

### Reflection values:

$\rho = 0,7$  (ceiling)/ 0,5 (wall)/ 0,3 (floor)

$a_1 / a_2 / a_3$  = Longitudinal spacing

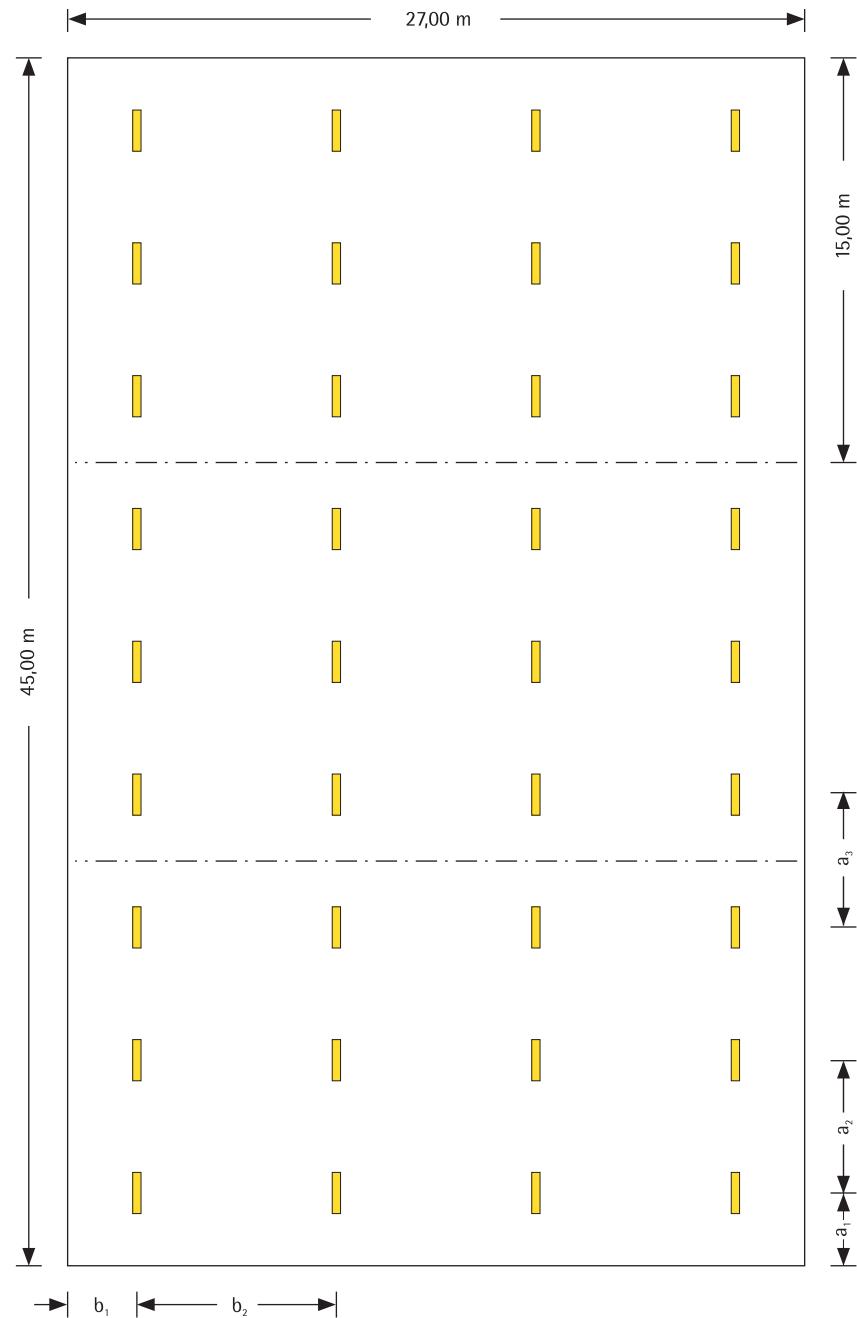
$b_1 / b_2$  = Transverse spacing

$G_1 = E_{min} : E_m$

### Lamps:

LED LC 840

1500/1-LED = 4800 lm net



| Type             | lamps     | E      | no. of luminaires | Total power consumption | $a_1$  | $a_2$  | $a_3$  | $b_1$  | $b_2$  | $G_1$   | $E_m$  | $E_{m1/3}$ |
|------------------|-----------|--------|-------------------|-------------------------|--------|--------|--------|--------|--------|---------|--------|------------|
| THLA/1500-1      | LED 4900  | 300 lx | 4 x 24= 96        | 4,032 kW                | 0,94 m | 1,88 m | 1,88 m | 2,25 m | 7,50 m | 1 : 1,3 | 310 lx | 270 lx     |
| THLA/THLE/1500-2 | LED 9700  | 500 lx | 4 x 21= 84        | 6,972 kW                | 1,07 m | 2,15 m | 2,15 m | 2,25 m | 7,50 m | 1 : 1,3 | 550 lx | 470 lx     |
| THLA/THLE/1500-2 | LED 9700  | 300 lx | 4 x 12= 48        | 3,984 kW                | 1,88 m | 3,75 m | 3,75 m | 2,25 m | 7,50 m | 1 : 1,3 | 310 lx | 270 lx     |
| THLA/THLE/1500-3 | LED 14600 | 500 lx | 4 x 15= 60        | 7,500 kW                | 1,50 m | 3,00 m | 3,00 m | 2,25 m | 7,50 m | 1 : 1,3 | 590 lx | 510 lx     |
| THLA/THLE/1500-3 | LED 14600 | 300 lx | 4 x 9= 36         | 4,500 kW                | 2,50 m | 5,00 m | 5,00 m | 2,25 m | 7,50 m | 1 : 1,3 | 350 lx | 310 lx     |

# Planning of a tennis hall



## Tennis hall

In the case of an inclined roof surface an individual lighting calculation is recommended.

### Calculation basis/legend

Average illuminance (playing field)

$$E_m = 587 \text{ lx}$$

Utilisation plane = 0,0 m

Mounting height = 5 m

Maintenance factor = 0,8

### Reflection values:

$\rho = 0,5$  (ceiling)/ 0,3 (Face walls )/  
0,0 (Side Walls)/ 0,1 (floor)

In tennis halls with several courts no reflection surfaces on the lateral playing sides

### Lamps:

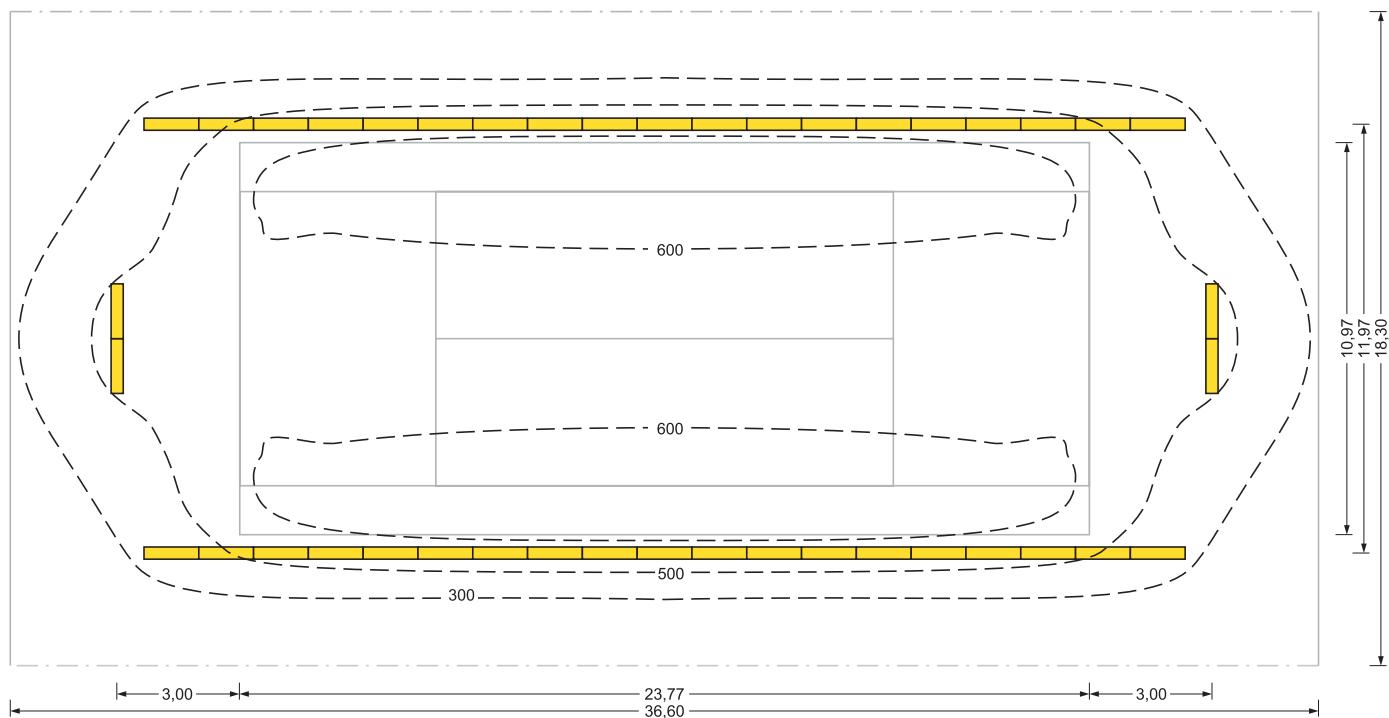
LED LC 840

1500/1-LED = 4800 lm net

| Lighting class           | I   | II  | III |
|--------------------------|-----|-----|-----|
| Average illuminance (lx) | 750 | 500 | 300 |
| Uniformity               | 0,7 | 0,7 | 0,5 |

THLA/1500-2 LED 9700lm

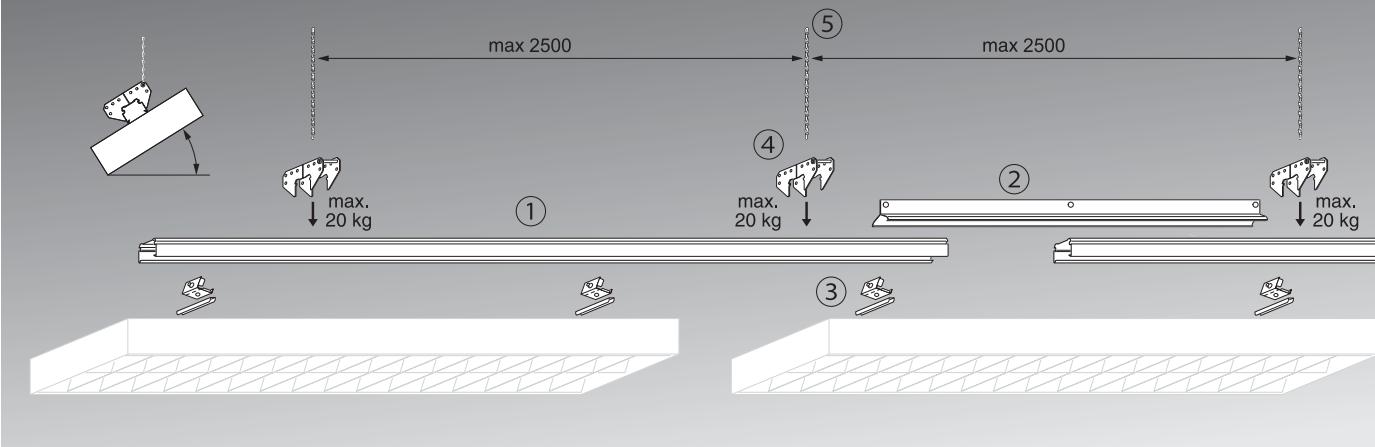
$E_m = 587 \text{ lx}$



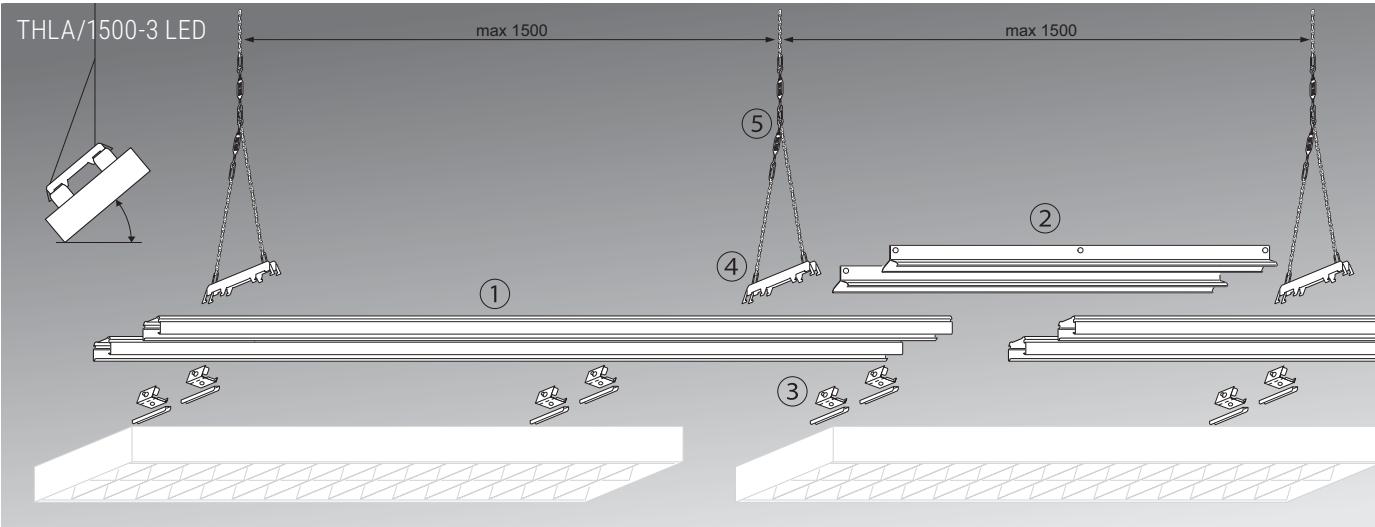
| Type        | lamps     | no. of luminaires               | $E_m$  | $E_{m2/3}$ | $E_{m1/3}$ | G    |
|-------------|-----------|---------------------------------|--------|------------|------------|------|
| THLA/1500-2 | LED 9700  | $2 \times 19 + 2 \times 2 = 42$ | 587 lx |            | 0,85       |      |
| THLA/1500-3 | LED 14900 | $2 \times 19 + 2 \times 2 = 42$ | 881 lx | 587 lx     | 294 lx     | 0,85 |

# Accessories for mounting rail installation

THLA/1500-1 LED



THLA/1500-3 LED



- ① SDT basic unwired mounting rail
- ② SDT-AP mounting rail connector
- ③ Luminaire hanger SDLAD
- ④ Suspension set SDT -WA or SDTT
- ⑤ Suspension set SDTTK for SDTT respectively chain suspension KK

## Accessories

|                      | Type               | Colour | Material | Details   | Art. no.      |   |      |
|----------------------|--------------------|--------|----------|---|---------------|---|------|
| <i>Design</i>        |                    |        |          |   |               |   |      |
| Section cover        | SDBAV 1500         | vw     | St       | I=7x219=1533mm for SDT Basic  | 1884 5580 101 | 1 | 0,85 |
| <i>Mounting</i>      |                    |        |          |   |               |   |      |
| Chain suspension     | KK                 | me     | St       | Node chain l=30m, for SDT, SDT Basic, ATS, suspended luminaires                     | 9282 9300 100 | 1 | 4,60 |
|                      | SDT -AP            | me     | St       | Suspension profile, mounting rail connector for SDT; suspension spacing up to 4.5 m | 1890 0022 100 | 1 | 0,93 |
|                      | SDT -WA            | me     | St       | Angled bracket for SDT Basic  | 6820 9300 120 | 1 | 0,25 |
|                      | SDTTK              | me     | Mix      | 0°-40° for SDTT   | 1890 0056 100 | 1 | 0,30 |
| <i>Structure</i>     |                    |        |          |   |               |   |      |
| Luminaires fixing    | SDLAD              | me     | St.galv. | for SDT Basic, KE-Y > 0mm und 2x for THLA+SDTT                                      | 1890 0068 100 | 1 | 0,07 |
| Mounting rail        | SDT Basic 1500/II  | vw     | St.galv. | I=3070mm 2.6kg for surface-mounted luminaires                                       | 1825 2580 150 | 1 | 2,60 |
|                      | SDT Basic 1500/III | vw     | St.galv. | I=4605mm 3.9kg for surface-mounted luminaires                                       | 1825 3580 150 | 1 | 3,90 |
| Mounting rail spacer | SDTT T2-120        | me     | St.galv. | dist.=120mm for THLA 2x...  | 1890 0057 100 | 1 | 0,30 |
|                      | SDTT T3-160        | me     | St       | dist.=160mm for THLA 3x..., 1500-3  | 1890 0055 100 | 1 | 0,35 |



# Application pictures

| Photographer   | Project   | Page |
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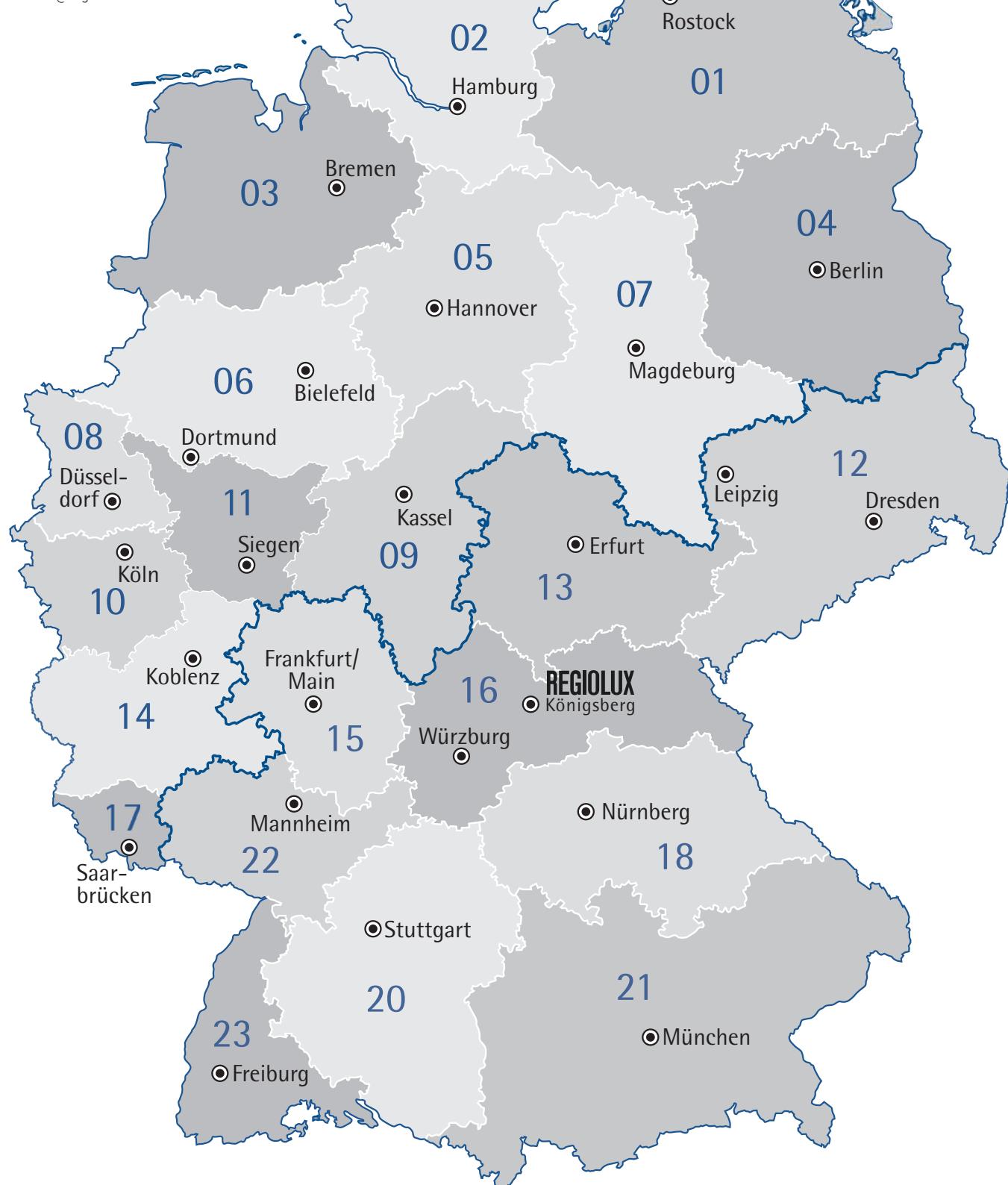
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F 09525 89-261  
service@regiolux.de



## ► Nord

### 01 Mecklenburg-

#### Vorpommern

Gritt Schlemminger  
M 0151 14733968  
gritt.schlemminger@regiolux.de

### 02 Hamburg, Schleswig-Holstein

Marina Koch  
M 0160 7177746  
marina.koch@regiolux.de

Michael Brott  
M 0160 7177747  
michael.brott@regiolux.de

### 03 Bremen

Thomas Meyer Lichtberatung  
Hans-Mohrmann-Str. 19  
28357 Bremen  
T 0421 20076166  
t.meyer-licht@t-online.de

### 04 Berlin, Brandenburg

ELLUX Vertriebs GmbH  
Fritschestraße 27/28  
1. OG, Aufgang C  
10585 Berlin-Charlottenburg  
T 030 772035-0  
info@ellux.de

### 05 Hannover

Detlef Sikora GmbH  
Lägenfeldstraße 7  
30952 Ronnenberg  
T 0511 43804-0  
F 0511 43804-49  
hannover@sikora.de

Ralf Reichel  
M 0160 7177738  
ralf.reichel@regiolux.de

### 06 Bielefeld

scharkon Lichtkonzepte GmbH  
Kruppstraße 47  
59227 Ahlen  
T 02382 96868-0  
F 02382 96868-29  
info@scharkon.de

### 07 Sachsen-Anhalt

Detlef Sikora GmbH  
Gewerbegebiet Süd Nr. 2  
39443 Staßfurt  
T 039266 931-0  
F 039266 931-15  
stassfurt@sikora.de

## ► Süd

### 08 Düsseldorf

Daniel Pangritz  
M 0160 7177745  
daniel.pangritz@regiolux.de

Andre Schäuble  
M 0160 7177737  
andre.schaeuble@regiolux.de

### 09 Kassel

Jörg Wenderoth  
Industrieviertel  
Platz des Friedens 8  
34225 Baunatal  
T 0561 949371-0  
info@wenderoth-iv.de

### 10 Köln

Wolfgang Küsgen  
Industrieviertelungen GmbH  
Immendorfer Straße 1  
50354 Hürth-Efferen  
T 02233 80803-0  
F 02233 80803-29  
info@kuesgen-gmbh.de

### 11 Wipperfürth

Martin Rösken  
Industrieviertelungen  
Julius-Doms-Straße 15  
51373 Leverkusen  
T 0214 6026555  
info@ivroesgen.de

### 14 Koblenz

bernd oedekoven gmbh  
gebäudetechnik & licht  
Rudolf-Diesel-Straße 11  
56220 Urmitz  
T 02630 9635-0  
F 02630 9635-35  
info@oedekovengmbh.de

### 17 Saarbrücken

bernd oedekoven gmbh  
gebäudetechnik & licht  
Außenbüro Trier/Saarbrücken  
54421 Reinsfeld  
M 0176 19635502  
fjk@oedekovengmbh.de

### 12 Sachsen

Jürgen Bergmann  
M 0172 8670049  
juergen.bergmann@regiolux.de

Jörg Irmisch  
T 03771 3650910  
M 0172 8670062  
F 03771 3650909  
joerg.irmisch@regiolux.de

### 13 Thüringen

Jens Schlothauer  
T 036077 933587  
M 0151 14733955  
F 036077 933588  
jens.schlothauer@regiolux.de

### 15 Rhein-Main

Markus Schimmer  
M 0151 14733980  
markus.schimmer@regiolux.de

### 16 Nordbayern

Peter Gröger  
T 09722 944826  
M 0172 8670045  
F 09722 944827  
peter.groeger@regiolux.de

### 17 Saarbrücken

Stephan Althaus  
T 0921 98008087  
M 0160 7177731  
F 0921 80029426  
stephan.althaus@regiolux.de

### 18 Bayern-Mitte

Bernhard Zirkelbach  
T 09528 950103  
M 0172 8670047  
F 09528 950163  
bernhard.zirkelbach@regiolux.de

### 20 Stuttgart

Frank Bossert e.Kfm.  
Industrieviertelungen  
Industriegelände Aldingen  
Hofener Weg 17  
71686 Remseck  
T 0711 577669-60  
F 0711 577669-66  
info@bossert-weissinger.de

### 21 Südbayern

Stephan Schlatzer  
Lichtberatung  
Thalhammerstraße 12  
83075 Bad Feilnbach - Au  
T 08064 909495  
F 08064 909496  
Schlatzer@DieLichtberater.de

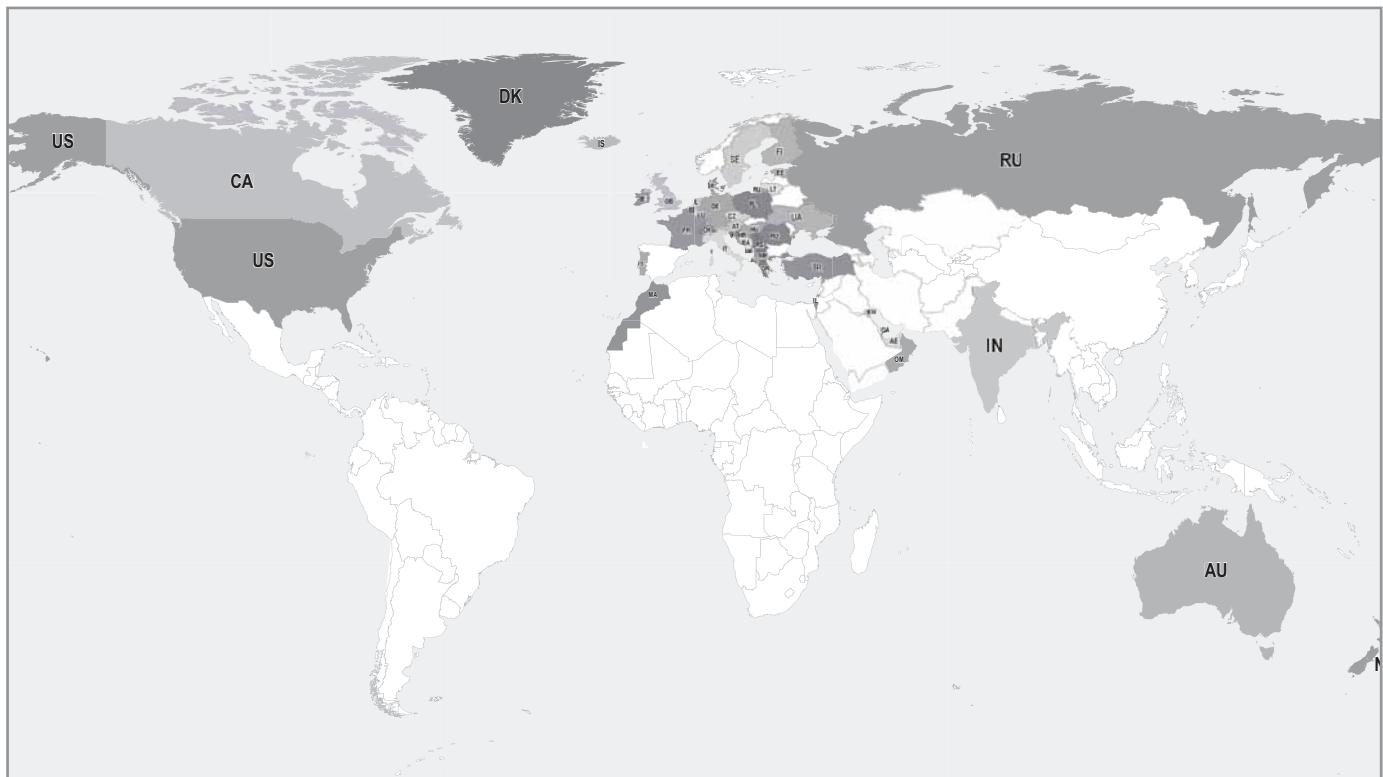
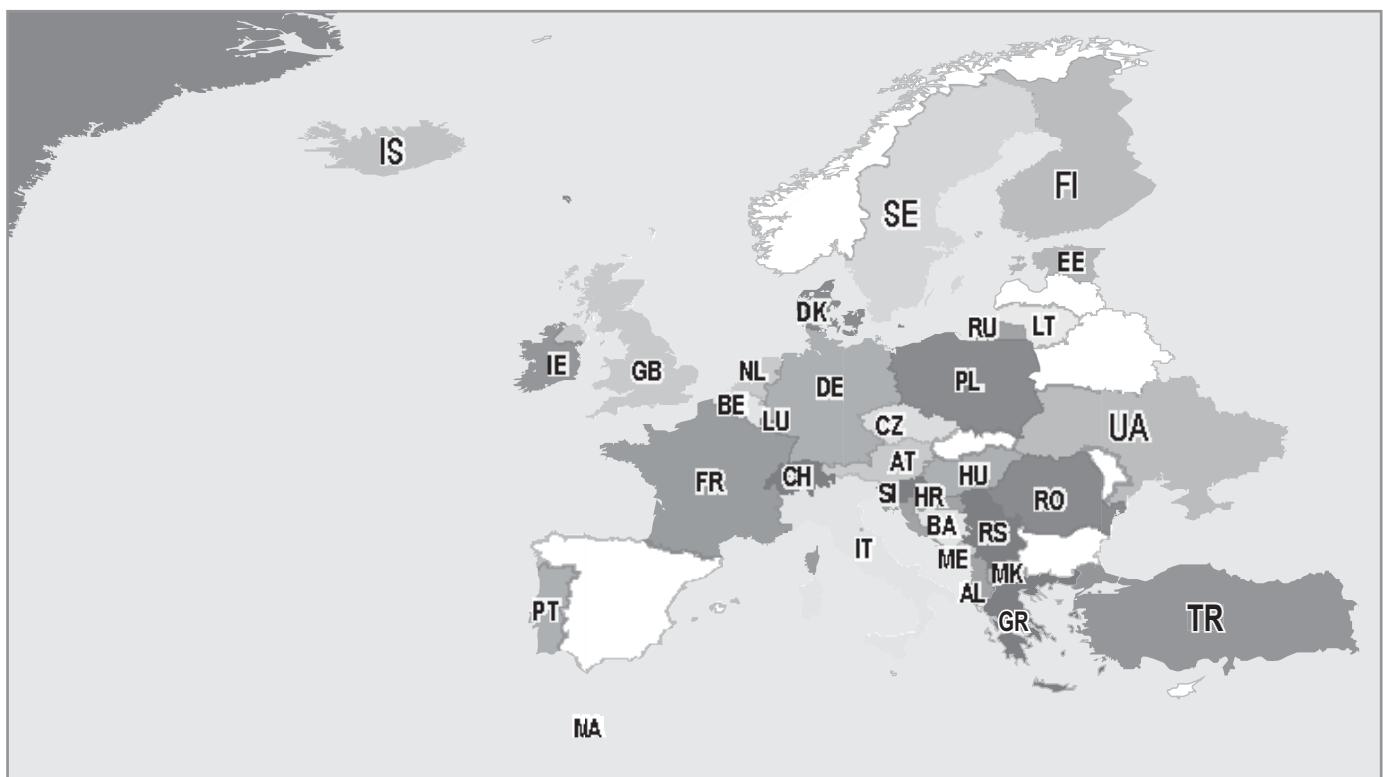
### 22 Mannheim.

#### Nordbaden-Pfalz

Licht-Team Handels-  
vertretungen OHG  
Birkenweg 7  
67346 Speyer  
T 06232 606910  
F 06232 606915  
info@das-licht-team.de

### 23 Südbaden

Fred Abel GmbH  
Vertretungen der  
Elektro-Industrie  
Im Ebnet 1  
79238 Ehrenkirchen  
T 07633 9501-0  
F 07633 9501-30  
info@fredabel.de



# ►International

**Headquarter**

Regiolux GmbH  
Hellinger Straße 3  
D 97486 Königsberg  
T +49 9525 89 0  
F +49 9525 89 7  
info@regiolux.de  
www.regiolux.de

**Orders and Offers**  
T +49 9525 89-220  
F +49 9525 89-444  
export@regiolux.de

**Technical Support**  
T +49 9525 89-260  
F +49 9525 89-261  
service@regiolux.de

**Lighting Design**  
T +49 9525 89-260  
F +49 9525 89-261  
lightingdesign@regiolux.de

**Sales branch Poland**

Regiolux Polska Sp.z o.o.  
ul. Długosza 48-60  
51-162 Wrocław  
T +48 608 693 716  
www.regiolux.pl  
biuro@regiolux.pl

**Local Contact Partners:** You can find the contact data for your local contact partners always up-to-date on the internet at [www.regiolux.de](http://www.regiolux.de)

**Sales Managers**

Daniel Hau  
T +49 9525 89-657  
F +49 9525 89-444  
M +49 160 7177734  
daniel.hau@regiolux.de

Belgium, Finland, France, Israel, Italy,  
Luxembourg, Middle East, Morocco, Sweden,  
Turkey

Stefan Nestmann  
T +49 9525 89-438  
F +49 9525 89-444  
M +49 172 8670054  
stefan.nestmann@regiolux.de

Bulgaria, Czech Republic, Denmark,  
Hungary, Netherlands, Poland,  
Slovakia

Torsten Kiesslich-Koecher  
T +49 9525 89-450  
F +49 9525 89-444  
M +49 172 8682620  
torsten.kiesslich@regiolux.de

Australia, Canada, Cyprus, Estonia, Greece,  
India, Ireland, Latvia, Lithuania, New Zealand,  
Portugal, Romania, Russian Federation/CIS,  
Slovenia, Spain, Ukraine, United Kingdom, USA

Reinhold Pfister  
T +49 9525 89-451  
F +49 9525 89-444  
M +49 172 8670050  
reinhold.pfister@regiolux.de

Austria, Croatia, Iceland,  
Montenegro, Norway, Serbia,  
Switzerland

For countries not specified above, please refer to: T +49 9525 89220, export@regiolux.de



**REGIOLUX**

Regiolux GmbH  
Hellinger Straße 3  
D 97486 Königsberg  
T +49 9525 89 0  
F +49 9525 89 7  
[info@regiolux.de](mailto:info@regiolux.de)  
[www.regiolux.de](http://www.regiolux.de)

