







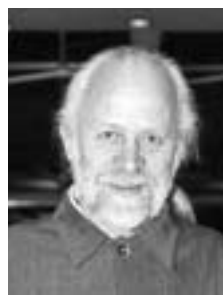


## **COPA I and COPA D** High-bay reflector luminaires

The most striking feature of these high-bay reflector luminaires is the finned surface of the upper part of the housing. With the aid of the aluminium diecasting process, the designer has integrated technology as a formal element of the luminaire design. The volume of the housing has been minimised thanks to excellent heat dissipation.

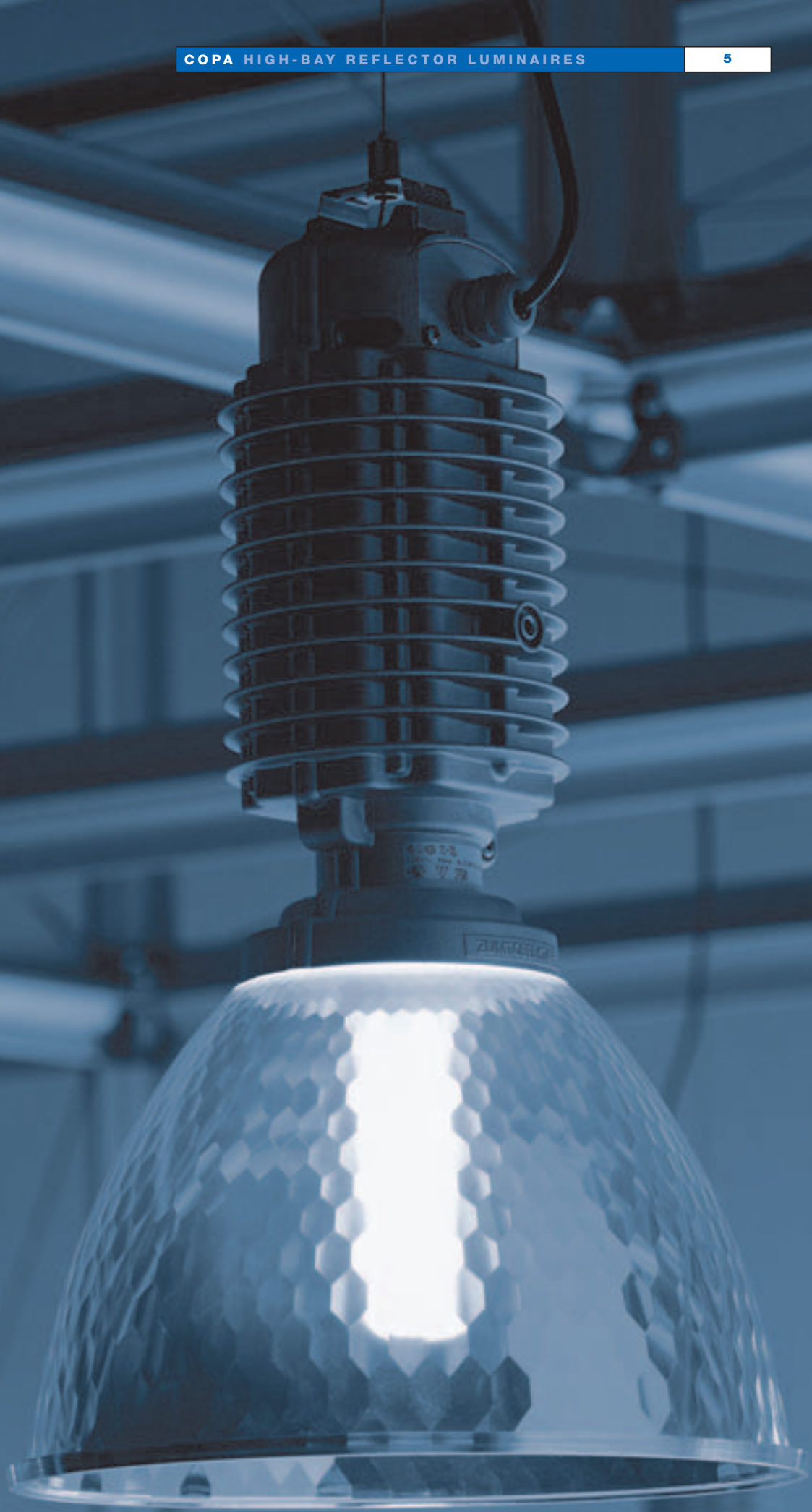
Semi-translucent reflectors made of high-quality polycarbonate allow the light source to gleam through and provide noticeable accent lighting in decorative areas.

### **COPA** DESIGN **CHARLES KELLER**



“A practical design – today’s manufacturing methods and tomorrow’s architectural vision form the basis of the product development process for the COPA I and COPA D high-bay reflector luminaire range.”

At first glance one notices the fascinating, cool elegance of aluminium, the second thing one notices is the technology which has been left exposed. COPA I and COPA D unite technical functionality and a clear design.



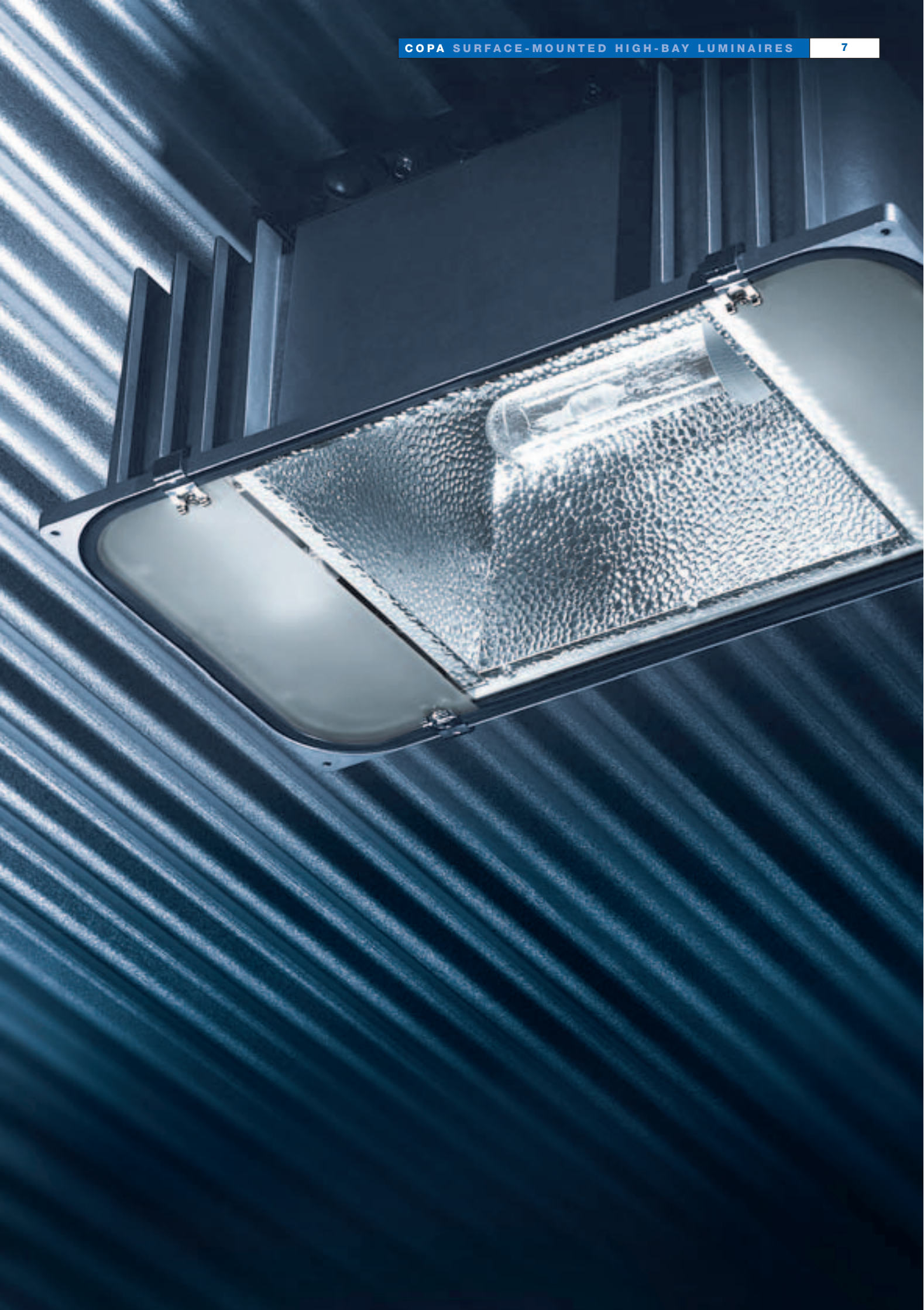


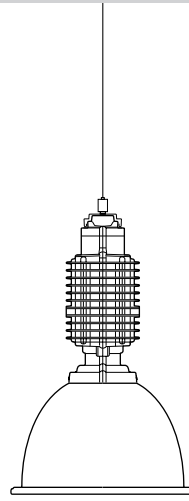
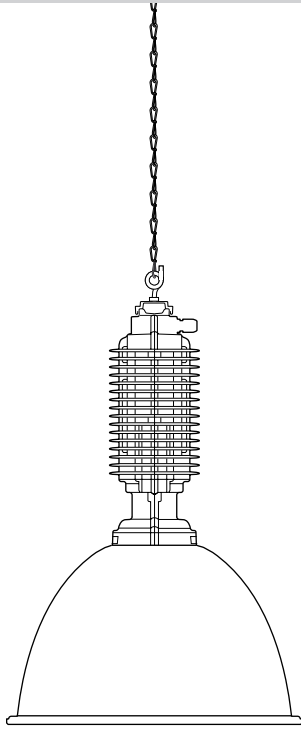
## **COPA A** High-bay reflector luminaires

The technical concept behind COPA A is completely geared towards robust, dependable construction. The materials used – a diecast aluminium housing and a toughened safety glass cover – make the surface-mounted high-bay reflector luminaire a durable, almost maintenance-free product.

**COPA** DESIGN **CHARLES KELLER**

COPA A is designed as a compact, rugged industrial luminaire. The functional nature of this luminaire designed for high bays is underlined by the diecast aluminium housing with symmetrically arranged cooling fins. Its businesslike, technical look makes COPA A also suitable for use in areas where a plain industrial appearance is required.





**COPA I.** Application areas of the COPA I high-bay reflector luminaire range from production and warehouse bays through to manufacturing and sales areas and atria with ceiling heights of over 4 m.

Its high lumen output, simple installation procedure, which does not require tools, and easy electrical connections make it a quality product for all industrial applications.

**COPA D.** This smaller high-bay reflector luminaire is particularly suited to decorative areas such as sales areas, art galleries, foyers and corridors with a ceiling height of 3 to 4 m.

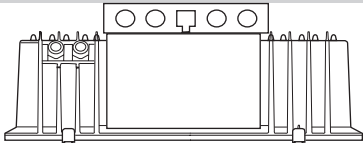
Its smaller diameter, reduced height and the use of semi-translucent plastic reflectors and innovative light sources emphasise the architectural aspects of the luminaire.

**Materials.** Unlike conventional high-bay reflector luminaires which are made of sheet steel, the COPA I and COPA D housing is made of aluminium. This means that the housing can be reduced to a minimum and heat dissipation can be improved. Inoxidation blasting gives the IP 20 housing a fine surface texture. The housing of the IP 54/65 version is stove enamelled in RAL 9006.

**Photometrics.** The use of new materials such as semi-translucent plastic reflectors enables a variety of lighting concepts to be achieved with COPA D. In addition to the version with a closed aluminium reflector, COPA D with a partly translucent reflector creates new impressions in decorative applications.

**Safety.** The whole COPA range of products has ENEC test certification. Depending on application, the luminaire is available with different protection ratings, for high ambient temperatures, with ballproof characteristics or accessories, thus ensuring the required degree of safety in all areas.

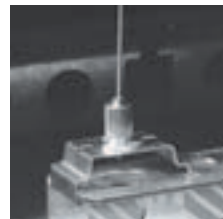




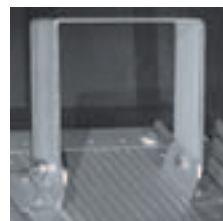
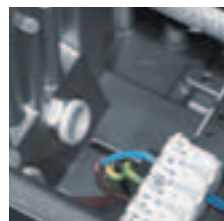
**COPA A.** Typical application areas of COPA A include industrial use in assembly and production areas, workshops, filling stations and warehouse bays. This surface-mounted high-bay reflector luminaire is also suitable for use in indoor tennis courts, sports facilities or riding areas and for lighting relatively large sales areas. Various lighting characteristics and the wide choice of lamps that can be fitted (even QL 165 W induction lamps) deliver perfect lighting in areas with ceiling heights from 4 m to 15 m. High-quality materials and digital ignitors ensure long service life and straightforward maintenance.

**Safety.** The diecast aluminium housing with symmetrically arranged fins and the use of digital ignitors make the COPA A an exceptionally rugged, safe luminaire. With a toughened safety glass cover and durable sealing, it offers protection up to IP 65. The digital ignitor prevents defective lamps from flashing and interfering with radio, computer or alarm systems. COPA A meets ENEC test requirements.

**Installation.** COPA A is available as a surface-mounted or recessed version. Recessed mounting is possible using a mounting frame (accessory). The mounting bracket for direct mounting on the ceiling is preassembled and can be used for chain or cord suspension. Luminaires can be installed on sloping walls or ceilings using a special mounting bracket.



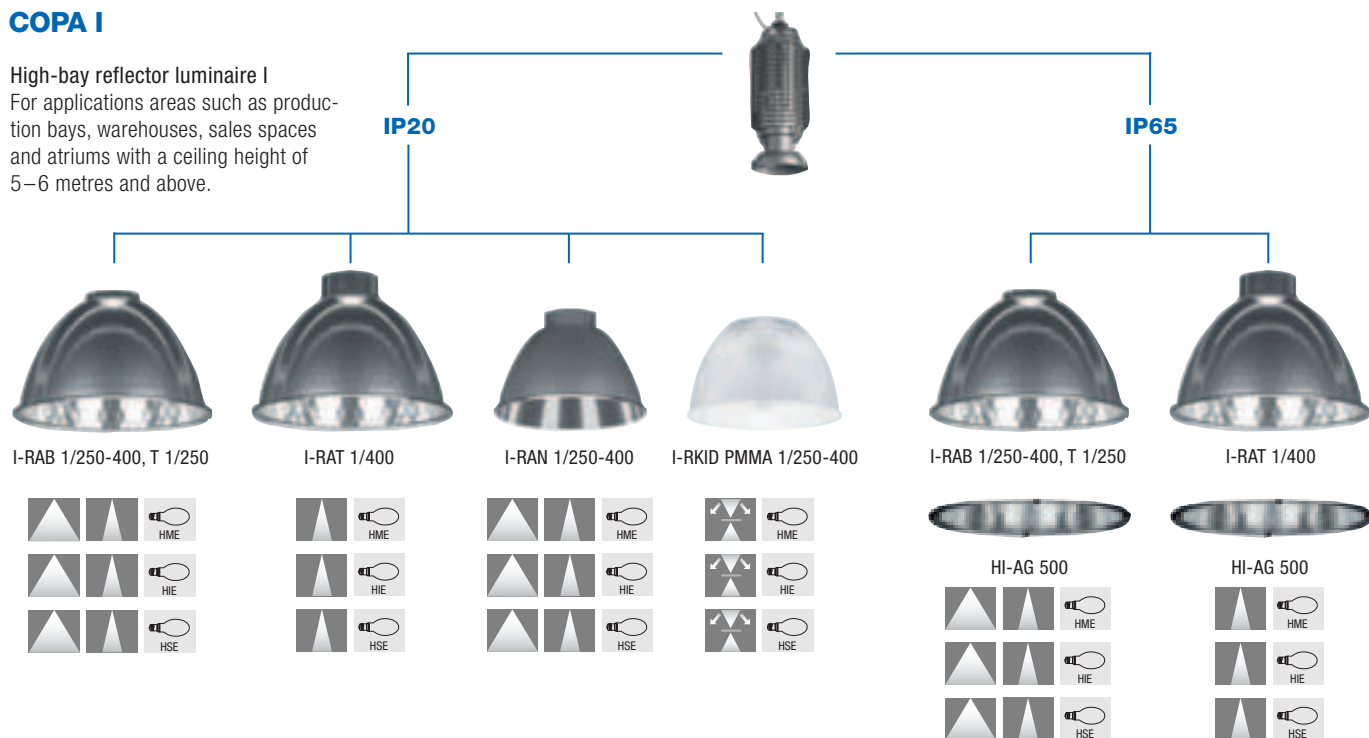
**Maintenance.** A high protection rating (IP 65) and use of a digital ignitors ensure particularly long intervals between maintenance operations. Re-lamping is simple and does not require the use of any tools or the dismantling of any parts.





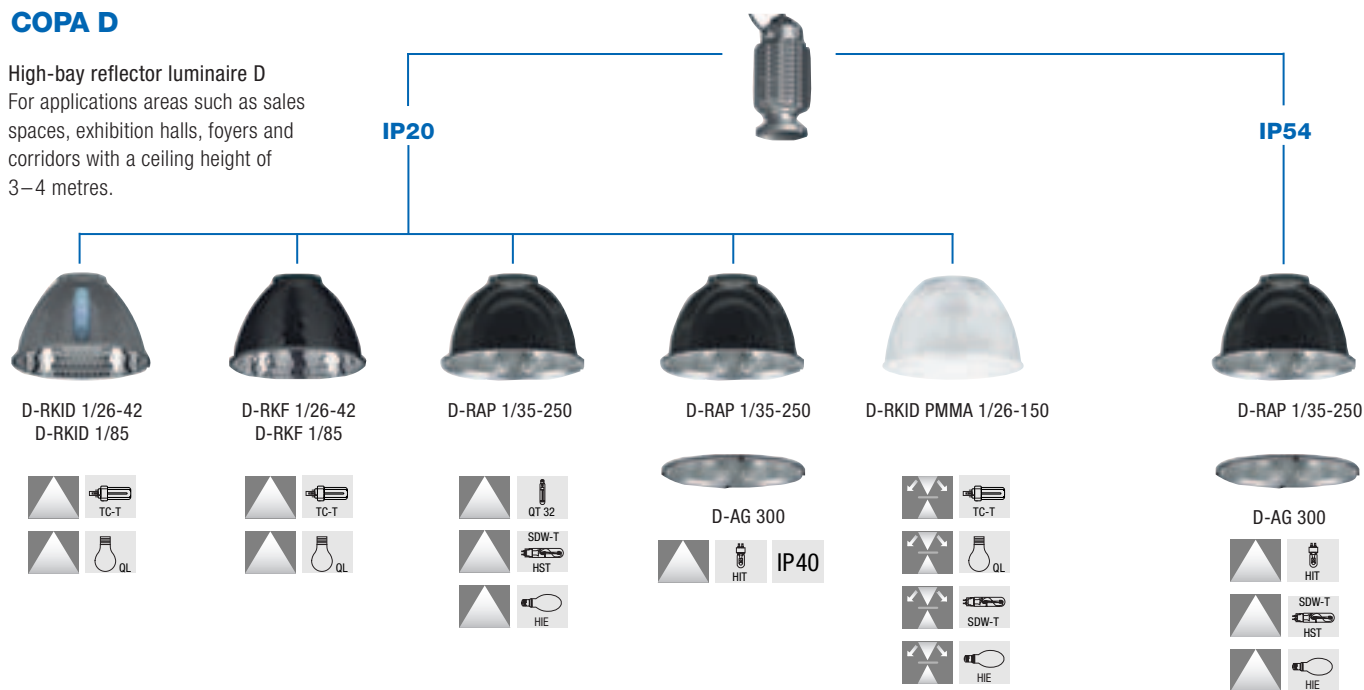
### COPA I

High-bay reflector luminaire I  
For applications areas such as production bays, warehouses, sales spaces and atriums with a ceiling height of 5–6 metres and above.



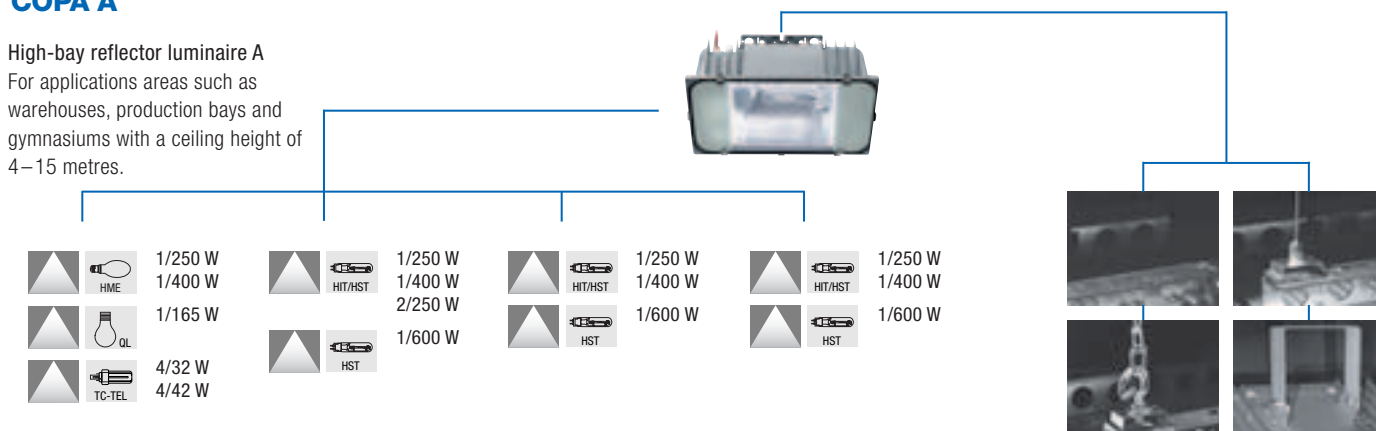
### COPA D

High-bay reflector luminaire D  
For applications areas such as sales spaces, exhibition halls, foyers and corridors with a ceiling height of 3–4 metres.



### COPA A

High-bay reflector luminaire A  
For applications areas such as warehouses, production bays and gymnasiums with a ceiling height of 4–15 metres.





**COPA I high-bay reflector luminaire IP 20**



- Gear unit IP 20
- Die-cast aluminium, untreated with fine texture
- Improved heat dissipation due to peripheral fins
- 1.5 m of black cable 3 x 1.5 mm<sup>2</sup> inserted into gear unit
- Installed using COPA ZAR chain suspension supplied or accessories to be ordered separately



| Cat. no.               | kg  | Order no.     | Order no.     |
|------------------------|-----|---------------|---------------|
| <b>gear tray IP 20</b> |     | <i>l.p.f.</i> | <i>h.p.f.</i> |
| 1/250 W HIE/HSE        | 7.2 | 20 969 091    | 20 969 106    |
| 1/250 W HIE/HSE KSP    | 7.7 |               | 20 969 470    |
| 1/250 W HME            | 6.2 | 20 969 079    | 20 969 085    |
| 1/250 W HME KSP        | 7.0 |               | 20 969 451    |
| 1/400 W HIE            | 7.2 | 20 969 137    | 20 969 143    |
| 1/400 W HIE KSP        | 8.1 |               | 20 969 518    |
| 1/400 W HME            | 7.5 | 20 969 115    | 20 969 121    |
| 1/400 W HME KSP        | 7.2 |               | 20 969 492    |
| 1/400 W HSE            | 8.3 | 20 969 159    | 20 969 162    |
| 1/400 W HSE KSP        | 9.0 |               | 20 969 530    |

NOTE: Sometimes a glass cover must be used with metal halide lamps with ellipsoidal glass bulbs (HIE). (Refer to lamp manufacturer's data). [SP = blocking inductor]

**COPA I high-bay reflector luminaire IP 65**



- Gear unit IP 65
- Die-cast aluminium, stove-enamelled in RAL 9006
- Improved heat dissipation due to peripheral fins
- Inserted hollow section rubber seal for increased protection
- 1.5 m of red silicone cable 3 x 1.5 mm<sup>2</sup> inserted into gear unit
- Inductive models are suitable for high ambient temperatures
- Installed using COPA ZAR chain suspension supplied or accessories to be ordered separately
- IP 65 and FF rating only in conjunction with aluminium reflectors and glass cover



| Cat. no.               | H/Ø     | kg  | Order no.     |
|------------------------|---------|-----|---------------|
| <b>gear tray IP 65</b> |         |     | <i>h.p.f.</i> |
| 1/250 W HIE/HSE ▽▽     | 445/165 | 7.3 | 20 967 967    |
| 1/250 W HIE/HSE KSP ▽▽ | 445/165 | 7.6 | 20 969 486    |
| 1/250 W HME ▽▽         | 445/165 | 7.1 | 20 967 948    |
| 1/250 W HME KSP ▽▽     | 445/165 | 6.9 | 20 969 464    |
| 1/400 W HIE ▽▽         | 445/165 | 8.6 | 20 968 003    |
| 1/400 W HIE KSP ▽▽     | 445/165 | 8.2 | 20 969 524    |
| 1/400 W HME ▽▽         | 445/165 | 6.9 | 20 967 989    |
| 1/400 W HME KSP ▽▽     | 445/165 | 7.3 | 20 969 509    |
| 1/400 W HSE ▽▽         | 445/165 | 8.5 | 20 968 028    |
| 1/400 W HSE KSP ▽▽     | 445/165 | 9.1 | 20 969 546    |

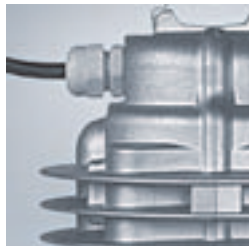
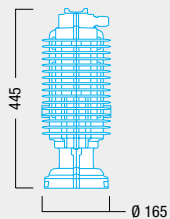
| <b>gear tray IP 65 for high ambient temperatures</b> |         |     | <i>l.p.f.</i> |
|--|---------|-----|---------------|
| 1/250 W HIE/HSE TA 60°C                              | 445/165 | 8.4 | 20 967 954    |
| 1/250 W HME TA 60°C                                  | 445/165 | 7.5 | 20 967 932    |
| 1/400 W HIE TA 55°C                                  | 445/165 | 7.7 | 20 967 995    |
| 1/400 W HME TA 50°C                                  | 445/165 | 8.0 | 20 967 973    |
| 1/400 W HSE TA 40°C                                  | 445/165 | 8.8 | 20 968 012    |

NOTE: Sometimes a glass cover must be used with metal halide lamps with ellipsoidal glass bulbs (HIE). (Refer to lamp manufacturer's data). [SP = blocking inductor]

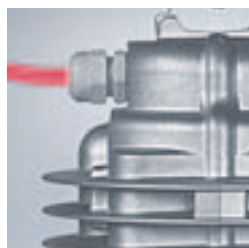
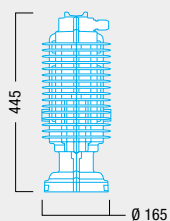
▽▽ If gear units with IP 65 for high ambient temperatures are used at normal temperatures, they, too, have the ▽▽ rating.

To specify e.g.: COPA high-bay reflector luminaire IP 20 1/250 W HIE/HSE 20 969 106

## COPA – structure

**Electric feed**

The gear units in the COPA I range require no additional installation effort because a 1.5 m long cable is already connected at the factory.

**Electric feed**

The gear units in the COPA I range require no additional installation effort because a 1.5 m long cable is already connected at the factory.

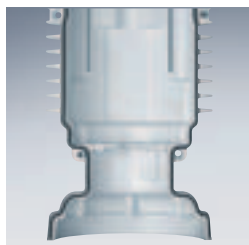
**Lamp(s)**

For HID lamp with E40 lampholder

**HME** = high-pressure mercury-vapour lamp

**HSE** = high-pressure sodium-vapour lamp

**HIE** = metal halide lamp

**IP 65 protection**

An inserted hollow-section seal in the diecast aluminium half-shell ensures protection to IP 65.

**COPA I reflector RAB**



- Specular reflector optic**
- Reflector for 250/400 W wide-angle, 250 W narrow-beam
  - Narrow-beam distribution if lampholder is adjusted on site (250 W)
  - Specular reflector made of pure aluminium with integral faceted structure
  - Anodised in a highly specular finish
  - Fixed via keyholes at the rear of the unit
  - Cover glass as accessory

| Cat. no. | H/Ø | kg | Order no. |
|----------|-----|----|-----------|
|----------|-----|----|-----------|

|   |         |     |            |
|---|---------|-----|------------|
| <b>COPA I Refl RAB 1/250-400, T 1/250</b> | 330/544 | 1.7 | 20 969 348 |
|---|---------|-----|------------|

▽▽ Specular reflector with glass cover combined with IP 65 gear unit has the ▽▽-rating.

⚠ Luminaires with RAB specular reflector and glass cover, and suspended from a cord or chain or installed using a wall bracket, are ballproof according to DIN18032 Part 2.

**COPA I reflector RAT**



- Specular reflector optic**
- Reflector for 400 W narrow-beam
  - Specular reflector made of pure aluminium with integral faceted structure
  - Anodised in a highly specular finish
  - Fixed via keyholes at the rear of the unit
  - Cover glass as accessory

| Cat. no. | H/Ø | kg | Order no. |
|----------|-----|----|-----------|
|----------|-----|----|-----------|

|                              |         |     |            |
|------------------------------|---------|-----|------------|
| <b>COPA I Refl RAT 1/400</b> | 380/544 | 1.8 | 20 969 354 |
|------------------------------|---------|-----|------------|

▽▽ Specular reflector with glass cover combined with IP 65 gear unit has the ▽▽-rating.

⚠ Luminaires with RAT specular reflector and glass cover, and suspended from a cord or chain or installed using a wall bracket, are ballproof according to DIN18032 Part 2.

**COPA I reflector RAN**



- Specular reflector optic**
- Reflector for 250/400 W wide-angle, 250 W narrow-beam
  - Specular reflector made of pure aluminium with smooth surface
  - Anodised in a highly specular finish
  - Fixed via keyholes at the rear of the unit
  - Reflector only possible for open use (cover glass not possible)

| Cat. no. | H/Ø | kg | Order no. |
|----------|-----|----|-----------|
|----------|-----|----|-----------|

|                                    |         |     |            |
|------------------------------------|---------|-----|------------|
| <b>COPA I Refl RAN 1/250 - 400</b> | 245/420 | 0.8 | 20 969 423 |
|------------------------------------|---------|-----|------------|

**COPA I reflector RKID PMMA**



- Prismatic reflector**
- Reflector for 250 W or 400 W, with indirect/direct light distribution
  - Prismatic reflector made of PMMA
  - Fixed using backplate via keyholes at rear of unit

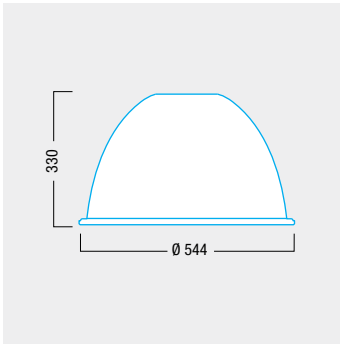
| Cat. no. | H/Ø | kg | Order no. |
|----------|-----|----|-----------|
|----------|-----|----|-----------|

|                                    |         |     |            |
|------------------------------------|---------|-----|------------|
| <b>COPA I Refl RKID 1/250 PMMA</b> | 274/411 | 1.3 | 20 928 332 |
|------------------------------------|---------|-----|------------|

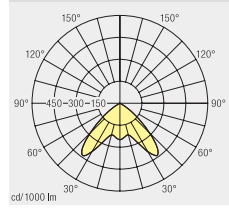
|                                    |         |     |            |
|------------------------------------|---------|-----|------------|
| <b>COPA I Refl RKID 1/400 PMMA</b> | 341/563 | 3.2 | 20 928 348 |
|------------------------------------|---------|-----|------------|

Cover plate available on request.

To specify e.g.: COPA I reflector RAB 1/250-400, T 1/250 20 969 348



1/400W HIE VWG KSP + RAB 1/250-400 + HQ-E



Light output ratio

|      |              |
|------|--------------|
| LOR  | 81%          |
| ULOR | 0%           |
| DLOR | 81%          |
| FFR  | 0,00 (0:100) |
| BLF  | 1,00         |

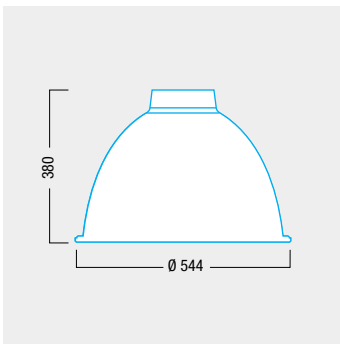
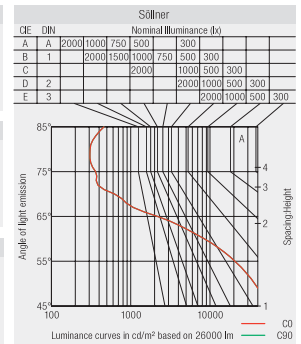
Classification

|      |                     |
|------|---------------------|
| LITG | A50                 |
| LG3  | 75° (<= 1000 cd/m²) |
| BZ   | BZ3/1/BZ2           |
| UTE  | 0,81 C              |

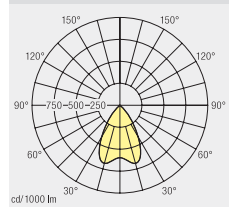
Utilization Factors

| Room Reflectance |       |       | Room Index |      |      |      |      |      |      |      |      |
|------------------|-------|-------|------------|------|------|------|------|------|------|------|------|
| Ceiling          | Walls | Floor | 0,75       | 1,00 | 1,25 | 1,50 | 2,00 | 2,50 | 3,00 | 4,00 | 5,00 |
| 70               | 50    | 20    | 60         | 67   | 72   | 75   | 80   | 82   | 84   | 87   | 88   |

SHR NOM = 1,50    SHR MAX = 1,70    SHR MAX TR = 2,30  
 Calculated in accordance with CBS Technical Memorandum No. 5 1980



1/400W HIE VWG K + RAT 1/400 + HQ-E



Light output ratio

|      |              |
|------|--------------|
| LOR  | 76%          |
| ULOR | 0%           |
| DLOR | 76%          |
| FFR  | 0,00 (0:100) |
| BLF  | 1,00         |

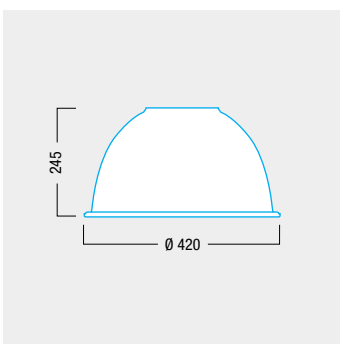
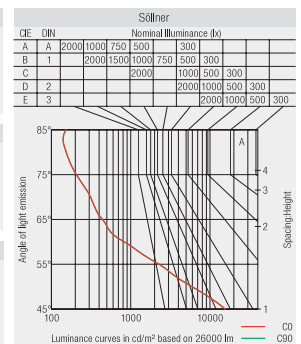
Classification

|      |                     |
|------|---------------------|
| LITG | A70                 |
| LG3  | 65° (<= 1000 cd/m²) |
| BZ   | BZ1                 |
| UTE  | 0,76 A              |

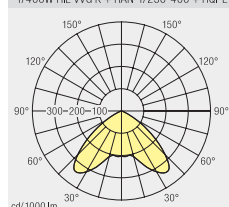
Utilization Factors

| Room Reflectance |       |       | Room Index |      |      |      |      |      |      |      |      |
|------------------|-------|-------|------------|------|------|------|------|------|------|------|------|
| Ceiling          | Walls | Floor | 0,75       | 1,00 | 1,25 | 1,50 | 2,00 | 2,50 | 3,00 | 4,00 | 5,00 |
| 70               | 50    | 20    | 64         | 69   | 72   | 74   | 77   | 79   | 81   | 82   | 83   |

SHR NOM = 1,00    SHR MAX = 1,08    SHR MAX TR = 1,36  
 Calculated in accordance with CBS Technical Memorandum No. 5 1980



1/400W HIE VWG K + RAN 1/250-400 + HQ-E



Light output ratio

|      |              |
|------|--------------|
| LOR  | 80%          |
| ULOR | 0%           |
| DLOR | 80%          |
| FFR  | 0,00 (0:100) |
| BLF  | 1,00         |

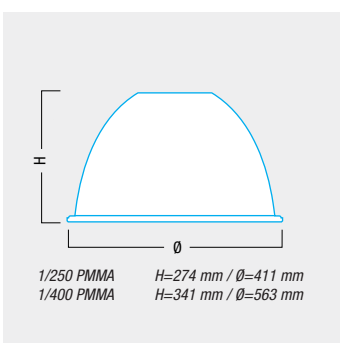
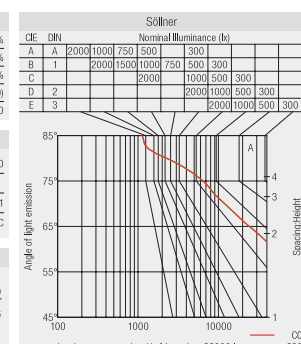
Classification

|      |        |
|------|--------|
| LITG | A50    |
| LG3  |        |
| BZ   | BZ1    |
| UTE  | 0,80 C |

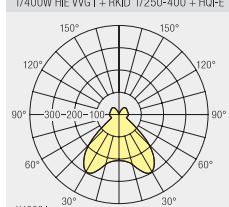
Utilization Factors

| Room Reflectance |       |       | Room Index |      |      |      |      |      |      |      |      |
|------------------|-------|-------|------------|------|------|------|------|------|------|------|------|
| Ceiling          | Walls | Floor | 0,75       | 1,00 | 1,25 | 1,50 | 2,00 | 2,50 | 3,00 | 4,00 | 5,00 |
| 70               | 50    | 20    | NA         | 65   | 69   | 73   | 78   | 80   | 82   | 85   | 86   |

SHR NOM = 1,75    SHR MAX = 1,83    SHR MAX TR = 2,50  
 Calculated in accordance with CBS Technical Memorandum No. 5 1980



1/400W HIE VWG I + RKID 1/250-400 + HQ-E



Light output ratio

|      |              |
|------|--------------|
| LOR  | 97%          |
| ULOR | 24%          |
| DLOR | 74%          |
| FFR  | 0,32 (25:75) |
| BLF  | 1,00         |

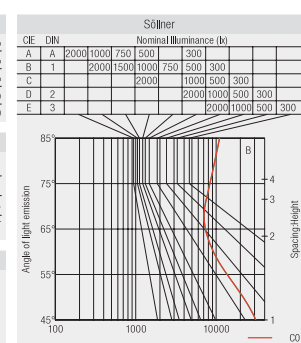
Classification

|      |                 |
|------|-----------------|
| LITG | B41             |
| LG3  |                 |
| BZ   | BZ2/1,5/BZ3/BZ4 |
| UTE  | 0,74 D + 0,24 T |

Utilization Factors

| Room Reflectance |       |       | Room Index |      |      |      |      |      |      |      |      |
|------------------|-------|-------|------------|------|------|------|------|------|------|------|------|
| Ceiling          | Walls | Floor | 0,75       | 1,00 | 1,25 | 1,50 | 2,00 | 2,50 | 3,00 | 4,00 | 5,00 |
| 70               | 50    | 20    | 58         | 65   | 71   | 75   | 80   | 84   | 87   | 90   | 93   |

SHR NOM = 1,50    SHR MAX = 1,63    SHR MAX TR = 2,17  
 Calculated in accordance with CBS Technical Memorandum No. 5 1980



COPA D high-bay reflector luminaire IP 20



Gear unit IP 20

- Die-cast aluminium, untreated with fine texture
- Improved heat dissipation due to peripheral fins
- Electrical connection through cable gland on 3-pole plug-in terminal block (from factory without any cable)
- Installed using fixing components to be ordered separately
- Cable and suspension system are not included in scope of supply

| Cat. no.  | H/Ø     | kg  | Order no.         | Order no.       |
|---|---------|-----|-------------------|-----------------|
| <b>for TC-TEL lamps</b>                                     |         |     |                   |                 |
|   |         |     | <i>electronic</i> | <i>dimnable</i> |
| 1/32 W TC-TEL   | 310/140 | 1.9 | 40 969 227        | 42 148 583      |
| 1/42 W TC-TEL   | 310/140 | 1.9 | 40 969 233        | 42 148 584      |
| <b>for QL induction lamps (incl. lamp/840)</b>              |         |     |                   |                 |
| 1/85 W QL   | 310/140 | 2.7 | 40 969 255        |                 |
| <b>for QT lamps</b>   |         |     |                   |                 |
| 1/60-250 W QT 32  | 310/140 | 1.7 | 20 969 301        |                 |
| <b>for HIE lamps</b>  |         |     |                   |                 |
|   |         |     | <i>l.p.f.</i>     | <i>h.p.f.</i>   |
| 1/70 W HIE  | 310/140 | 3.1 | 20 968 097        | 20 968 102      |
| 1/70 W HIE KSP  | 310/140 | 3.5 |                   | 20 969 571      |
| 1/150 W HIE   | 310/140 | 4.6 | 20 968 133        | 20 968 149      |
| 1/150 W HIE KSP   | 310/140 | 4.9 |                   | 20 969 604      |
| <b>for HIT lamps (only in conjunction with cover glass)</b> |         |     |                   |                 |
|   |         |     | <i>l.p.f.</i>     | <i>h.p.f.</i>   |
| 1/70 W HIT  | 310/140 | 3.0 | 20 969 266        | 20 969 272      |
| 1/70 W HIT KSP  | 310/140 | 3.4 |                   | 20 969 552      |
| 1/150 W HIT   | 310/140 | 4.5 | 20 969 288        | 20 969 294      |
| 1/150 W HIT KSP   | 310/140 | 4.8 |                   | 20 969 587      |
| <b>for HST lamps</b>  |         |     |                   |                 |
|   |         |     | <i>l.p.f.</i>     | <i>h.p.f.</i>   |
| 1/100 W HST (SDW-T)   | 310/140 | 3.9 | 20 969 326        | 20 969 332      |
| 1/100 W HST KSP (SDW-T)                                     | 310/140 | 4.2 |                   | 20 969 408      |

NOTE: Sometimes a glass cover must be used with metal halide lamps with ellipsoidal glass bulbs (HIE). (Refer to lamp manufacturer's data). [SP = blocking inductor]

COPA D high-bay reflector luminaire IP 54



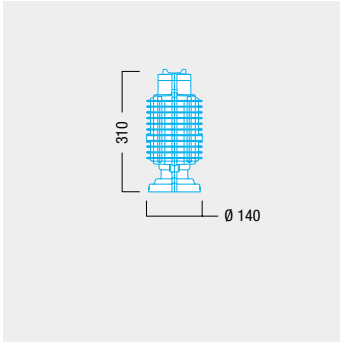
Gear unit IP 54

- Die-cast aluminium, stove-enamelled in RAL 9006
- Inserted hollow section rubber seal for increased protection
- Improved heat dissipation due to peripheral fins
- Electrical connection through cable gland on 3-pole plug-in terminal block (from factory without any cable)
- Installed using fixing components to be ordered separately
- Cable and suspension system are not included in scope of supply
- IP 54 and FF rating only in conjunction with aluminium reflector and glass cover

| Cat. no.                | H/Ø     | kg  | Order no.     | Order no.     |
|-------------------------|---------|-----|---------------|---------------|
| <b>for HIT lamps</b>    |         |     |               |               |
|                         |         |     | <i>l.p.f.</i> | <i>h.p.f.</i> |
| 1/70 W HIT              | 310/140 | 3.1 | 20 968 075    | 20 968 081    |
| 1/70 W HIT KSP          | 310/140 | 3.5 |               | 20 969 565    |
| 1/150 W HIT             | 310/140 | 4.6 | 20 968 111    | 20 968 127    |
| 1/150 W HIT KSP         | 310/140 | 4.9 |               | 20 969 593    |
| <b>for HST lamps</b>    |         |     |               |               |
|                         |         |     | <i>l.p.f.</i> | <i>h.p.f.</i> |
| 1/100 W HST (SDW-T)     | 310/140 | 4.0 | 20 968 168    | 20 968 174    |
| 1/100 W HST KSP (SDW-T) | 310/140 | 4.3 |               | 20 969 417    |

NOTE: Sometimes a glass cover must be used with metal halide lamps with ellipsoidal glass bulbs (HIE). (Refer to lamp manufacturer's data). [SP = blocking inductor]

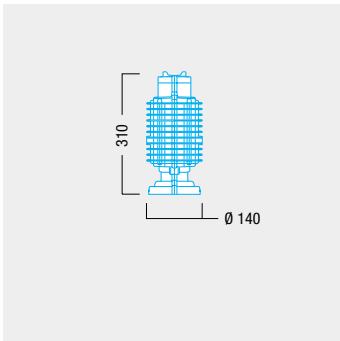




#### Reflector attachment

The aluminium reflectors are attached using screws through keyhole slots. The special screws built into the gear unit have a captive plain washer.

Always use a glass cover in the case of tubular metal halide lamps (HIT) (follow lamp manufacturer's instructions)!



#### Seal ring between reflector and housing

A rubber seal ring (gasket) is fitted between the gear unit and aluminium reflector to ensure that the entire luminaire achieves the appropriate degree of protection IP 54 (COPA D) or IP 65 (COPA I).

COPA D reflector RKID



- Specular reflector optic**
- Reflector for TC-TEL compact lamps, QL induction lamps
  - Plastic reflector made of polycarbonate with faceted structure
  - Semi-translucent aluminised
  - Visible photometrics with 97 % – 98 % direct light
  - Fixed using “CLIX” mechanism
  - Reflector optimised for coated lamps



| Cat. no.  | H/Ø     | kg  | Order no.  |
|---|---------|-----|------------|
| <a href="#">for TC-TEL / QL induction lamps</a> |         |     |            |
| COPA D Refl RKID 1/26-42                        | 193/315 | 0.5 | 20 968 040 |
| COPA D Refl RKID 1/85                           | 193/315 | 0.5 | 20 968 056 |

COPA D reflector RKF



- Specular reflector optic**
- Reflector for TC-TEL compact lamps, QL induction lamps
  - Plastic reflector made of polycarbonate with faceted structure
  - 100 % aluminised with a highly specular finish
  - Fixed using “CLIX” mechanism
  - Reflector optimised for coated lamps



| Cat. no.  | H/Ø     | kg  | Order no.  |
|---|---------|-----|------------|
| <a href="#">for TC-TEL / QL induction lamps</a> |         |     |            |
| COPA D Refl RKF 1/26-42                         | 193/315 | 0.5 | 20 969 373 |
| COPA D Refl RKF 1/85                            | 193/315 | 0.5 | 20 968 034 |

COPA D reflector RAP



- Specular reflector optic**
- Reflector made of pure aluminium with faceted structure
  - Ergonomically designed thanks to disassembly of lighting point
  - Anodised in a highly specular finish
  - Fixed via keyholes
  - Optimised for point-shaped lamps



| Cat. no.                                      | H/Ø     | kg  | Order no.  |
|---|---------|-----|------------|
| <a href="#">for QT, HIE, HIT, SDW-T lamps</a> |         |     |            |
| COPA D Refl RAP 1/35-250                      | 205/340 | 0.5 | 20 969 367 |

*NOTE: A glass cover must always be used with metal halide lamps with tubular glass bulbs (HIT). (Requirement of the lamp manufacturer)*

▽▽▽ Specular reflector with glass cover combined with IP 54 gear unit has the ▽▽-rating.

⚽ Luminaires with RAP specular reflector and glass cover, and suspended from a cord or chain or installed using a wall bracket, are ballproof according to DIN18032 Part 2.

COPA D reflector RKID PMMA

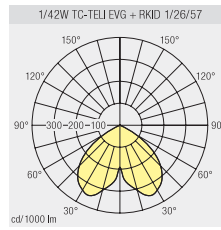
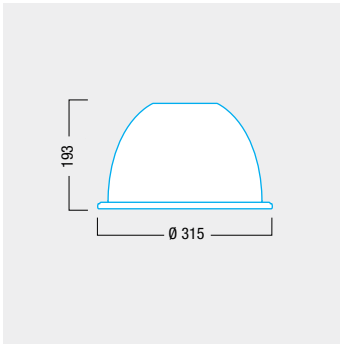


- Prismatic reflector**
- Reflector for all lamp types of COPA D
  - Prismatic reflector made of PMMA
  - Direct/indirect light distribution
  - Fixed using backplate via keyholes at rear of unit
  - Please note: not approved for 150 W HIT model (HIT only with PC reflector and cover panel)



| Cat. no.                       | H/Ø     | kg  | Order no.  |
|--------------------------------|---------|-----|------------|
| COPA D Refl RKID 1/26-150 PMMA | 190/315 | 0.8 | 22 055 267 |

To specify e.g.: COPA D reflector RKID 1/26-42 W 20 968 040



**Light output ratio**

|      |             |
|------|-------------|
| LOR  | 86%         |
| ULOR | 1%          |
| DLOR | 85%         |
| FFR  | 0,01 (1:99) |
| BLF  | 1,00        |

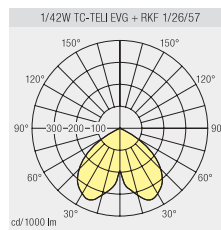
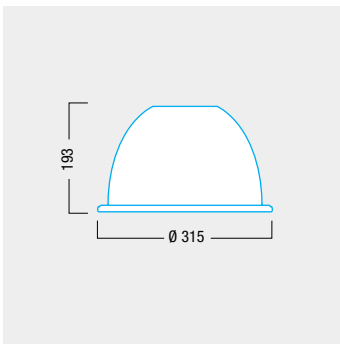
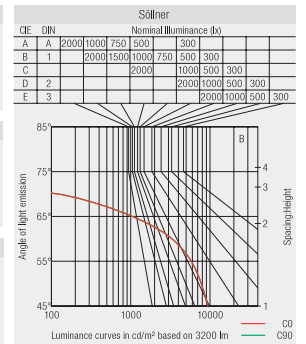
**Classification**

|      |                  |
|------|------------------|
| LITG | A52              |
| LG3  | 75° (<200 cd/m²) |
| BZ   | B21              |
| UTE  | 0,85 C + 0,1 T   |

**Utilization Factors**

| Room Reflectance |       |       |    | Room Index |      |      |      |      |      |    |    |
|------------------|-------|-------|----|------------|------|------|------|------|------|----|----|
| Ceiling          | Walls | Floor |    | 1,50       | 2,00 | 2,50 | 3,00 | 4,00 | 5,00 |    |    |
| 70               | 50    | 20    | NA | 70         | 76   | 79   | 84   | 87   | 89   | 91 | 93 |

SHR NOM = 1,75    SHR MAX = 1,90    SHR MAX TR = 2,63  
 Calculated in accordance with CBS Technical Memorandum No. 5 1980



**Light output ratio**

|      |              |
|------|--------------|
| LOR  | 85%          |
| ULOR | 0%           |
| DLOR | 85%          |
| FFR  | 0,00 (0:100) |
| BLF  | 1,00         |

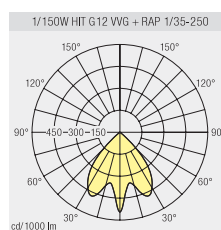
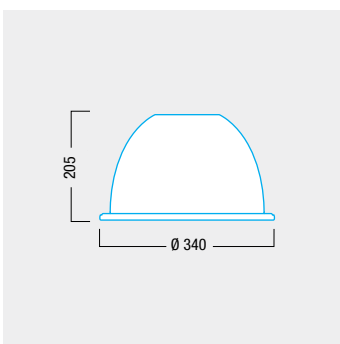
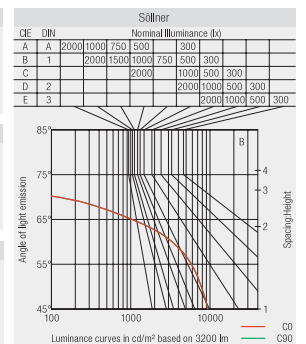
**Classification**

|      |                  |
|------|------------------|
| LITG | A50              |
| LG3  | 75° (<200 cd/m²) |
| BZ   | B21              |
| UTE  | 0,85 C           |

**Utilization Factors**

| Room Reflectance |       |       |    | Room Index |      |      |      |      |      |    |    |
|------------------|-------|-------|----|------------|------|------|------|------|------|----|----|
| Ceiling          | Walls | Floor |    | 1,50       | 2,00 | 2,50 | 3,00 | 4,00 | 5,00 |    |    |
| 70               | 50    | 20    | NA | 71         | 76   | 79   | 84   | 87   | 89   | 91 | 93 |

SHR NOM = 1,75    SHR MAX = 1,89    SHR MAX TR = 2,62  
 Calculated in accordance with CBS Technical Memorandum No. 5 1980



**Light output ratio**

|      |              |
|------|--------------|
| LOR  | 74%          |
| ULOR | 0%           |
| DLOR | 74%          |
| FFR  | 0,00 (0:100) |
| BLF  | 1,00         |

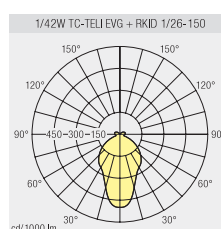
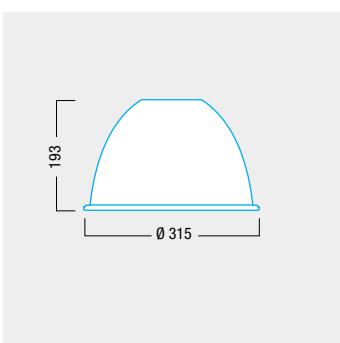
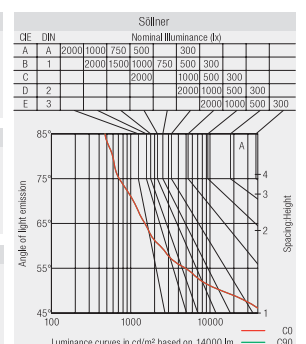
**Classification**

|      |                   |
|------|-------------------|
| LITG | A60               |
| LG3  | 75° (<1000 cd/m²) |
| BZ   | B21               |
| UTE  | 0,74 A            |

**Utilization Factors**

| Room Reflectance |       |       |    | Room Index |      |      |      |      |      |    |    |
|------------------|-------|-------|----|------------|------|------|------|------|------|----|----|
| Ceiling          | Walls | Floor |    | 1,50       | 2,00 | 2,50 | 3,00 | 4,00 | 5,00 |    |    |
| 70               | 50    | 20    | 60 | 65         | 69   | 71   | 75   | 77   | 78   | 80 | 81 |

SHR NOM = 1,25    SHR MAX = 1,27    SHR MAX TR = 1,80  
 Calculated in accordance with CBS Technical Memorandum No. 5 1980



**Light output ratio**

|      |              |
|------|--------------|
| LOR  | 102%         |
| ULOR | 16%          |
| DLOR | 85%          |
| FFR  | 0,19 (16:84) |
| BLF  | 1,00         |

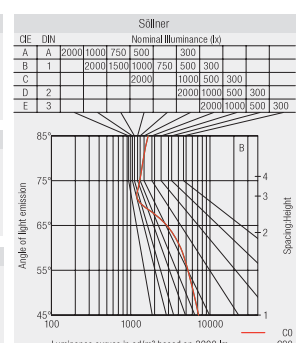
**Classification**

|      |                 |
|------|-----------------|
| LITG | B41             |
| LG3  |                 |
| BZ   | B24             |
| UTE  | 0,85 D + 0,16 T |

**Utilization Factors**

| Room Reflectance |       |       |    | Room Index |      |      |      |      |      |    |     |
|------------------|-------|-------|----|------------|------|------|------|------|------|----|-----|
| Ceiling          | Walls | Floor |    | 1,50       | 2,00 | 2,50 | 3,00 | 4,00 | 5,00 |    |     |
| 70               | 50    | 20    | 57 | 66         | 73   | 78   | 85   | 89   | 93   | 97 | 100 |

SHR NOM = 1,00    SHR MAX = 1,11    SHR MAX TR = 1,09  
 Calculated in accordance with CBS Technical Memorandum No. 5 1980



## COPA I/D installation



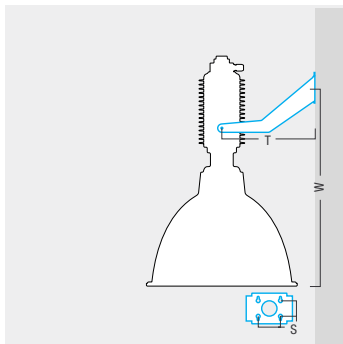
### Installation Copa I/D

- Individual suspension facility using chain, cord, pendant, wall bracket, or surface-mounting on ceiling
- COPA ZAR chain suspension bracket included in COPA I scope of supply
- Ceiling bracket and pendant suspension are unsuitable for dynamic loads or wind loads

| Cat. no.                                    | H    | Order no.  |
|---|------|------------|
| <b>ceiling bracket</b>                      |      |            |
| ZAD V2A Fixing component ceiling            |      | 20 935 067 |
| <b>chain suspension</b>                     |      |            |
| COPA ZAR                                    | 31   | 20 969 635 |
| <b>cord suspension</b>                      |      |            |
| ASI 1000 O-L Suspension system cord 1000 mm | 1000 | 20 934 934 |
| ASI 2000 O-L Suspension system cord 2000 mm | 2000 | 20 934 956 |
| ASI 4000 O-L Suspension system cord 4000 mm | 4000 | 20 936 436 |
| <b>pendant suspension</b>                   |      |            |
| API 500 E-L RAL 9006                        | 500  | 20 934 969 |
| API 1000 E-L RAL 9006                       | 1000 | 20 934 975 |
| API 1500 E-L RAL 9006                       | 1500 | 20 934 981 |
| API 2000 E-L RAL 9006                       | 2000 | 20 934 997 |
| <b>mounted on ZT/ZTH trunking</b>           |      |            |
| ZTB-HK (For chain)                          |      | 20 969 629 |
| ZTB-HS (For cord)                           |      | 20 969 613 |
| <b>auxiliary fastening device</b>           |      |            |
| COPA ZB 500                                 |      | 20 969 657 |
| COPA ZB 1500                                |      | 20 969 660 |
| <b>feed-in ceiling rose</b>                 |      |            |
| PRO-BALDACHIN                               |      | 20 668 728 |

*The ceiling bracket is not designed for dynamic loads or wind loads.*

## COPA I/D wall bracket



| Cat. no. | L/W/H | kg | Order no. |
|----------|-------|----|-----------|
|----------|-------|----|-----------|

## wall bracket

|           |             |     |            |
|-----------|-------------|-----|------------|
| COPA D-WA | 302/151/215 | 1.3 | 20 968 196 |
| COPA I-WA | 351/181/215 | 1.7 | 20 968 180 |

Fixing materials for wall-mounting not included in supply.

## Accessories

- Made of 4 mm sheet steel, stove-enamelled in RAL 9006
- Two installation positions
- Fixed to wall via keyholes
- Fastening screws for attachment to the rear of the unit included in scope of supply

## Dimensions for wall mounting

|                              | T   | W   | S  |
|------------------------------|-----|-----|----|
| COPA I RAN 1/250-400         | 334 | 580 | 80 |
| COPA I RAB 1/250-400, T1/250 | 334 | 665 | 80 |
| COPA I RAT 1/400             | 334 | 715 | 80 |
| COPA D RAP 1/35-250          | 288 | 470 | 80 |
| COPA D RKF 1/26-42, 1/85     | 288 | 458 | 80 |
| COPA D RKID 1/26-42, 1/85    | 288 | 458 | 80 |

## COPA I/D glass cover



## Accessories

- Made of safety glass
- Surrounding gasket for higher type of protection (Copa I IP 65, Copa D IP 54)
- V2A catches
- Can be hinged down for relamping
- Zumtobel Staff generally recommends the use of a glass cover when using high-pressure lamps

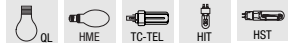
| Cat. no. | Ø | Order no. |
|----------|---|-----------|
|----------|---|-----------|

## glass cover

|  |     |            |
|--|-----|------------|
| COPA D Glas AG 300 For higher protection | 335 | 20 969 445 |
| COPA I Glas AG 500 For higher protection | 535 | 20 969 439 |

*NOTE: Guaranteed ball proof only when used with glass covers and cord, chain or wall-bracket suspension. A glass cover must be used sometimes with metal halide lamps (HIE). (Refer to lamp manufacturer's data).*

**COPA A surface-mounted high-bay luminaire**



**High bay reflector luminaire IP 65**

- Housing made of die-cast aluminium, unmachined with fine texture
- Specially dimensioned reflectors for more light
- Digital igniter increases safety and maintenance intervals
- Diffuser made of safety glass
- Pre-assembled ceiling bracket for especially easy installation
- 4 fixing points are needed for a suspended luminaire
- Versatile lamp technology
- Luminaire is ballproof to DIN standard 18032 Part 2

Cat. no. L/W/H kg Order no. Order no.

**COPA A-N reflector with standard distribution (medium-angle) *I.p.f.* *h.p.f.***

|                             |             |      |            |            |
|-----------------------------|-------------|------|------------|------------|
| 1/165 W QL incl. lamp/840 ▽ | 580/334/260 | 11.4 | 42 124 881 |            |
| 1/250 W HME                 | 580/334/260 | 12.2 | 32 123 049 |            |
| 1/250 W HME KSP             | 580/334/260 | 12.6 |            | 32 123 055 |
| 1/400 W HME                 | 580/334/260 | 13.5 | 32 123 068 |            |
| 1/400 W HME KSP             | 580/334/260 | 13.9 |            | 32 123 074 |
| 4/32 W TC-TEL ▽             | 580/334/260 | 11.1 | 42 125 068 |            |
| 4/42 W TC-TEL ▽             | 580/334/260 | 11.1 | 42 124 897 |            |

**COPA A-B wide-angle reflector**

|                     |             |      |            |            |
|---------------------|-------------|------|------------|------------|
| 1/250 W HIT/HST     | 580/334/260 | 14.0 | 32 123 080 |            |
| 1/250 W HIT/HST KSP | 580/334/260 | 14.4 |            | 32 123 096 |
| 1/400 W HIT/HST     | 580/334/260 | 15.3 | 32 123 101 |            |
| 1/400 W HIT/HST KSP | 580/334/260 | 15.8 |            | 32 123 110 |
| 1/600 W HST         | 580/334/260 | 17.6 | 32 124 805 |            |
| 1/600 W HST KSP     | 580/334/260 | 18.1 |            | 32 124 814 |
| 2/250 W HIT+HST     | 580/334/260 | 20.5 | 32 124 861 |            |
| 2/250 W HIT+HST KSP | 580/334/260 | 21.5 |            | 32 124 877 |

**COPA A-T narrow-beam reflector**

|                     |             |      |            |            |
|---------------------|-------------|------|------------|------------|
| 1/250 W HIT/HST     | 580/334/260 | 14.0 | 32 123 126 |            |
| 1/250 W HIT/HST KSP | 580/334/260 | 14.4 |            | 32 123 132 |
| 1/400 W HIT/HST     | 580/334/260 | 15.3 | 32 123 148 |            |
| 1/400 W HIT/HST KSP | 580/334/260 | 15.8 |            | 32 123 154 |
| 1/600 W HST         | 580/334/260 | 17.6 | 32 124 820 |            |
| 1/600 W HST KSP     | 580/334/260 | 18.1 |            | 32 124 836 |

**COPA A-ASQ reflector with asymmetrical distribution**

|                     |             |      |            |            |
|---------------------|-------------|------|------------|------------|
| 1/250 W HIT/HST     | 580/334/260 | 14.0 | 32 123 167 |            |
| 1/250 W HIT/HST KSP | 580/334/260 | 14.4 |            | 32 123 173 |
| 1/400 W HIT/HST     | 580/334/260 | 15.3 | 32 123 189 |            |
| 1/400 W HIT/HST KSP | 580/334/260 | 15.8 |            | 32 123 195 |
| 1/600 W HST         | 580/334/260 | 17.6 | 32 124 842 |            |
| 1/600 W HST KSP     | 580/334/260 | 18.1 |            | 32 124 858 |

**COPA A wall bracket**



**Wall bracket**

- Mounting bracket made of bright 3 mm V2A steel
- Pivots through +/-90°
- Installed on luminaire using 4 screws included
- 2-point wall fixing via keyhole
- Fixing material for wall/ceiling not included in the supply

Cat. no. L/W/H kg Order no.

**wall bracket**

|                        |            |     |            |  |
|------------------------|------------|-----|------------|--|
| COPA A-WA Wall bracket | 215/180/60 | 1.2 | 22 125 072 |  |
|------------------------|------------|-----|------------|--|

**COPA A recessed frame**

Cat. no. Order no.

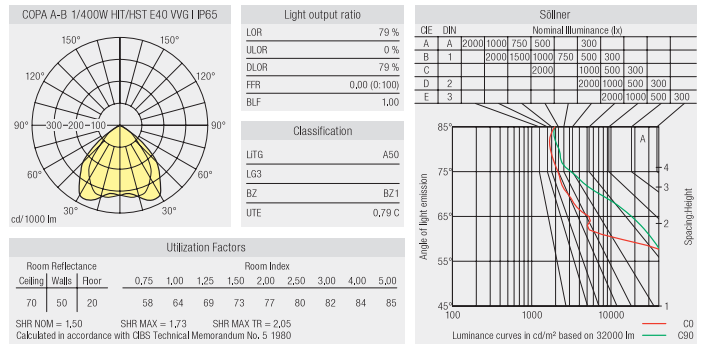
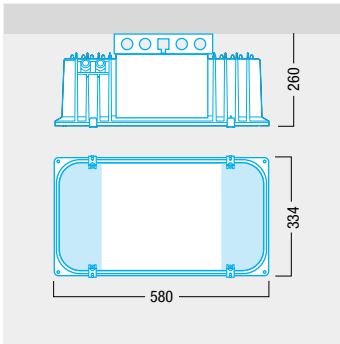
**Mounting frame**

- Mounting frame made of white painted sheet steel
- For flush recess into ceiling of all COPA A models
- Frame fastened on lower ceiling via cords or threaded rods (not included in supply)
- The luminaire is installed in the frame using the two fixing brackets supplied
- Kit comprises frame, two mounting brackets and screws

**accessories**

|                          |  |  |            |  |
|--------------------------|--|--|------------|--|
| COPA A-ER Recessed frame |  |  | 22 125 094 |  |
|--------------------------|--|--|------------|--|

To specify e.g.: COPA A surface-mounted high bay 1/165 W QL incl. lamp/840 42 124 881



**COPA A chain suspension**



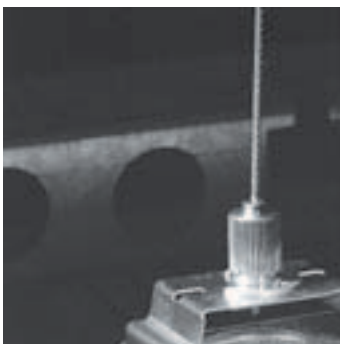
- Chain suspension**
- Chain suspension bracket with V2A spring clip
  - Galvanised S hook with integral sleeve for easy height adjustment
  - Installed using CLIX mechanism

| Cat. no. | kg | Order no. |
|----------|----|-----------|
|----------|----|-----------|

|                         |     |            |
|-------------------------|-----|------------|
| <b>chain suspension</b> |     |            |
| <b>COPA-ZAR</b>         | 0.1 | 20 969 635 |

*Note: Please order order 4 suspension units per luminaire*

**COPA A cord suspensions**



- Cord suspension**
- With zinc-plated steel cord, 1.8 mm diameter
  - V2A spring clip
  - Cord suspension length continuously height-adjustable also after installation
  - Cord can be cut to length without using any special tool
  - Fixed using "CLIX" mechanism

| Cat. no. | kg | Order no. |
|----------|----|-----------|
|----------|----|-----------|

|  |     |            |
|--|-----|------------|
| <b>cord suspension</b>                             |     |            |
| <b>ASI 1000 O-L Suspension system cord 1000 mm</b> | 0.1 | 20 934 934 |
| <b>ASI 2000 O-L Suspension system cord 2000 mm</b> | 0.2 | 20 934 956 |
| <b>ASI 4000 O-L Suspension system cord 4000 mm</b> | 0.1 | 20 936 436 |

*Note: Please order 4 suspension units per luminaire*

To specify e.g.: **COPA A chain suspension** COPA-ZAR 20 969 635

COPA A Z02



Cat. no.

kg

Order no.

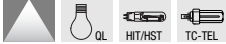


High bay reflector luminaire Z02

- Housing made of die-cast aluminium, unmachined with fine texture
- Digital igniter increases safety and maintenance intervals
- Diffuser made of safety glass
- Pre-assembled ceiling bracket for especially easy installation
- 4 fixing points are needed for a suspended luminaire
- Luminaire is ballproof to DIN standard 18032 Part 2
- -20 °C to +40 °C

surface-mount. high-bay luminaire IP65

|   |      |            |
|---|------|------------|
| 1/165W QL Z02 IP65 EEx nA II 3G T4          | 11.4 | 42 127 779 |
| 1/250W HIT/HST KSP Z02 IP65 EEx nA II 3G T3 | 14.4 | 32 127 752 |
| 4/42W TC-TEL Z02 IP65 EEx nA II 3G T5       | 11.1 | 42 127 763 |



COPA I Z02



Cat. no.

kg

Order no.



High bay reflector luminaire Z02

- Die-cast aluminium, stove-enamelled in RAL 9006
- Improved heat dissipation due to peripheral fins
- Inserted hollow section rubber seal for increased protection
- 1.5 m of red silicone cable 3 x 1.5 mm<sup>2</sup> inserted into gear unit
- Installed using COPA ZAR chain suspension supplied or accessories to be ordered separately
- Fitted with RAB reflector and cover glass
- -20 °C to +40 °C

rotationally symmetrical IP65 high-bay refl. luminaire

|   |     |            |
|---|-----|------------|
| 1/250W HIE/HSE KSP Z02 IP65 EEx nA II 3G T4 | 7.3 | 32 127 985 |
| 1/400W HIE KSP Z02 IP65 EEx nA II 3G T4     | 7.7 | 32 127 991 |



COPA D Z02



Cat. no.

kg

Order no.



High bay reflector luminaire Z02

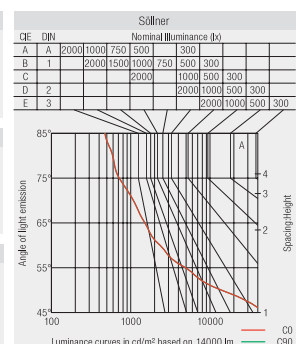
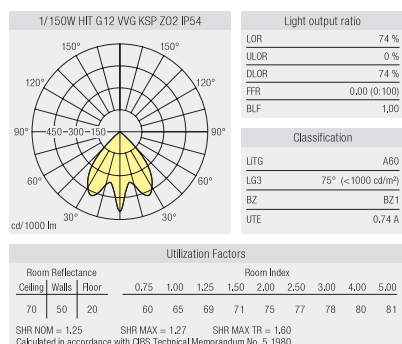
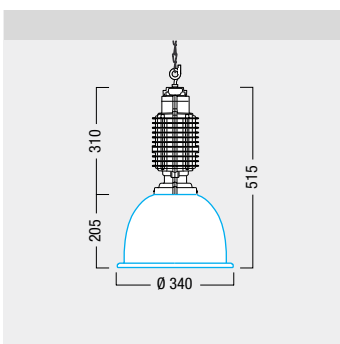
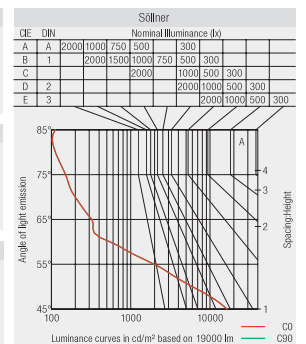
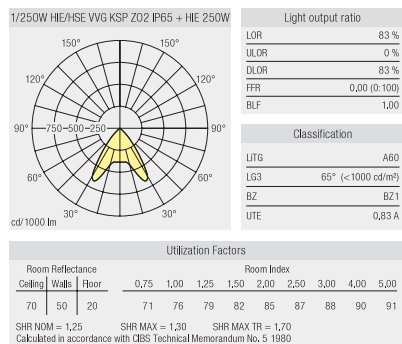
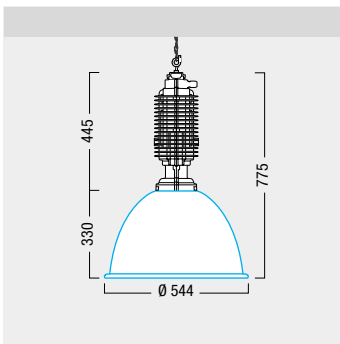
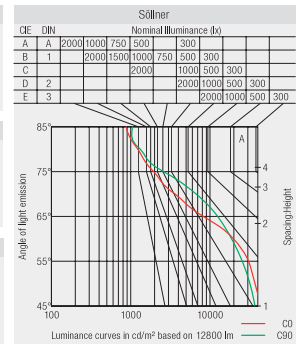
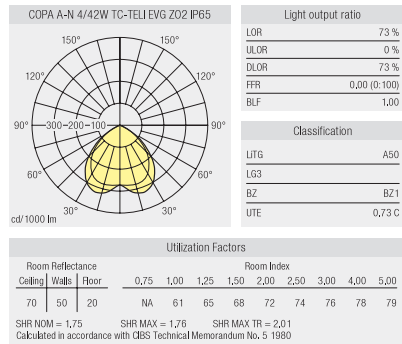
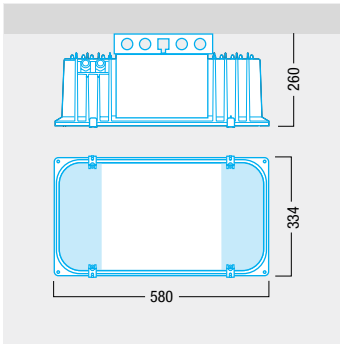
- Die-cast aluminium, stove-enamelled in RAL 9006
- Inserted hollow section rubber seal for increased protection
- Improved heat dissipation due to peripheral fins
- Electrical connection through cable gland on 3-pole plug-in terminal block (from factory without any cable)
- Installed using fixing components to be ordered separately
- Fitted with RAP reflector and cover glass
- -20 °C to +40 °C

rotationally symmetrical IP54 high-bay refl. luminaire

|   |     |            |
|---|-----|------------|
| 1/42W TC-TEL Z02 IP54 EEx nA II 3G T6 h.f. electronic ballast | 3.2 | 42 065 227 |
| 1/70W HIT KSP Z02 IP54 EEx nA II 3G T5                        | 3.1 | 32 065 204 |
| 1/150W HIT KSP Z02 IP54 EEx nA II 3G T5                       | 4.6 | 32 065 213 |







# COPA HIGH-BAY REFLECTOR LUMINAIRE

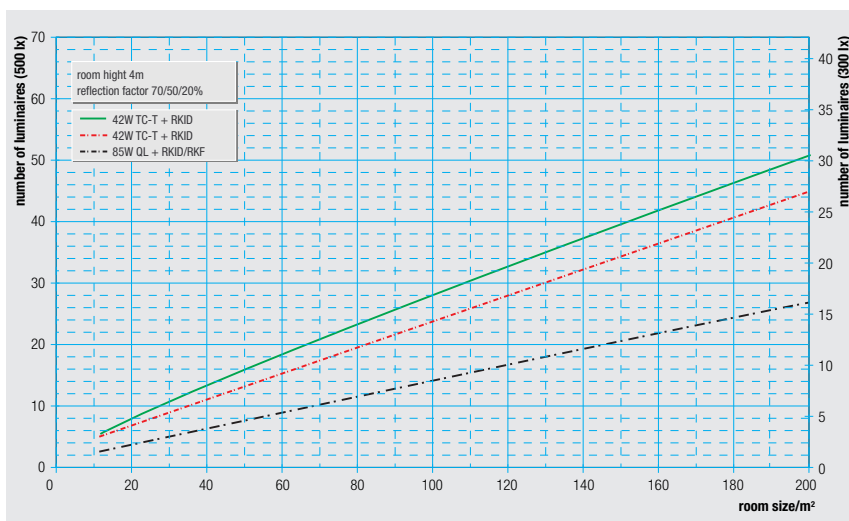
## Planning guidelines

### COPA D RKF/RKID plastic reflector with TC-TEL or QL light source

**Correction factors:**

|                                  |     |
|----------------------------------|-----|
| Dark room:                       | 1.1 |
| Room height 5 m                  |     |
| Floor area $\leq 50 \text{ m}^2$ | 1.2 |
| Floor area $> 50 \text{ m}^2$    | 1.1 |
| Room height 6 m                  |     |
| Floor area $\leq 50 \text{ m}^2$ | 1.4 |
| Floor area $> 50 \text{ m}^2$    | 1.2 |

Adequate uniformity with row spacings up to 5.6 m (TC-TEL) and 5.1 m (QL).

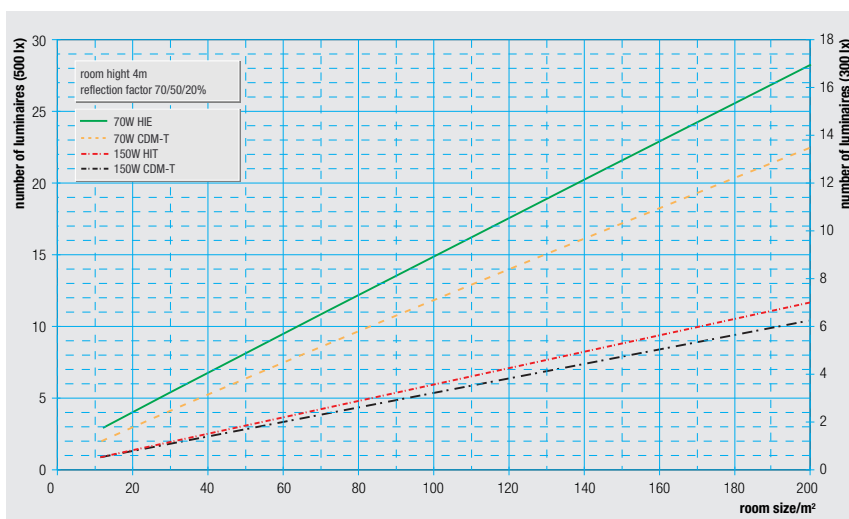


### COPA D RAP aluminium reflector with HIT or CDM-T light source

**Correction factors:**

|                                  |     |
|----------------------------------|-----|
| Dark room:                       | 1.1 |
| Room height 5 m                  |     |
| Floor area $\leq 50 \text{ m}^2$ | 1.2 |
| Floor area $> 50 \text{ m}^2$    | 1.1 |
| Room height 6 m                  |     |
| Floor area $\leq 50 \text{ m}^2$ | 1.4 |
| Floor area $> 50 \text{ m}^2$    | 1.2 |

Adequate uniformity with row spacings up to 4.4 m.

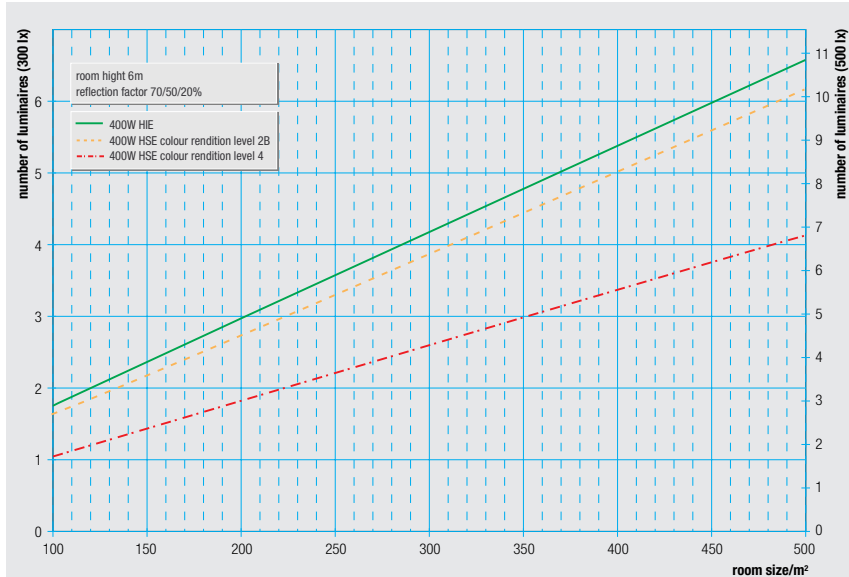





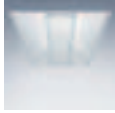

### COPA I RAB/RAN aluminium reflector with HSE/HIE light source

**Correction factor:**

|            |     |
|------------|-----|
| Dark room: | 1.1 |
|------------|-----|

Adequate uniformity with row spacings up to 9.5 m/6.2 m (RAB/RAT) and up to 10.5 m (RAN)



|   |   |
|---|---|
|   |    |
| Track and spots                                 |   |
|   |    |
| Lighting systems                                |   |
|   |    |
| Downlights/uplights                             |   |
|   |    |
| Recessed luminaires                             |   |
|   |   |
| Surface-mounted and pendant luminaires          |   |
|   |  |
| Wallwashers                                     |   |
|   |  |
| Uplights, wall lights and task lights           |   |
|   |  |
| Batten luminaires and continuous row luminaires |   |
|   |  |
| High-bay reflector luminaires                   |   |
|   |  |
| Luminaires of higher protection                 |   |
|   |  |
| Lighting management                             |   |
|   |  |
| Emergency lighting                              |   |
|   |  |
| Hospital trunking                               |   |

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**COPA**  
High-bay luminaires



**COPA**  
High-bay luminaires



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