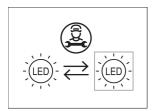
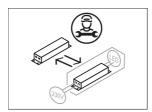


| Colours | Article no. | EAN           |
|---------|-------------|---------------|
| silver  | 660951      | 4043544697684 |















### Description

- light-head rotates through 355° and swivels through 30° by adjusting screw
- individual optics by standard recessed frame or trimless recessed frame and various front reflectors
- outstanding ease of maintenance
- no UV and thermal emissions
- securing with safety rope
- thermal management with passive cooling
- light-head and heat sink made from die-cast
- · main reflector made from plastic
- black anti-glare ring made from polycarbonate for accommodating honeycomb louvre
- · diffuser glass pane
- light-head snaps into mounting frame without tools
- connection to ballast via luminaire cable with Mini-Clamp connector
- ballast (LED converter) included (external placement)

### Standard options





### Special options







### Lighting data / Norms

LED Spot / CRI 80 / 3000 K

EPREL light sources 851239

L90 B50 50.000 h **Lifetime**L80 B50 100.000 h
L80 B20 50.000 h

 System power
 28.0 W

 Luminaire luminous flux
 max. 2350 lm

 System efficiency
 59.28 lm/W

 Module efficiency
 158.91 lm/W

 UGR class
 ≤16

 Beam angle
 20°

 Supply voltage
 220 - 240 V / 50 - 60 Hz

Protection class III

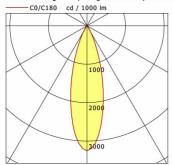
Type of protection IP20

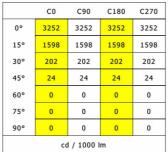
### Dimensions / Weights

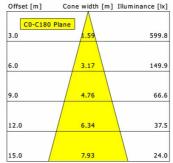
Outer diameter124 mmHeight149 mmRecessed depth200 mmDiameter of light head124 mmNet weight1.26 kgGross weight1.33 kg



#### Dallton Large - Spotlight Insert (DAL-L-RTR 23\_SW-MATT, 1xLED 28W 830/3000K 1660lm 20 °)

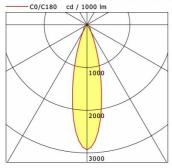




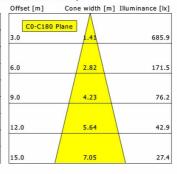


| η                  | LED                |
|--------------------|--------------------|
| Efficiency         | 59 lm/W            |
| Direct/Indirect    | ↓ 100% / ↑ 0%      |
| System Power       | 28 W               |
| UGR                | X=4H, Y=8H         |
| Reflection factors | 70/50/20           |
| UGR C0/C180        | <10.0              |
| UGR C90/C270       | <10.0              |
| CIE Flux Codes     | 98 100 100 100 100 |
| Ra/CRI             | >80                |

Dallton Large - Spotlight Insert (DAL-L-RTQ 13\_WS-MATT, 1xLED 28W 830/3000K 2110lm 20 °)

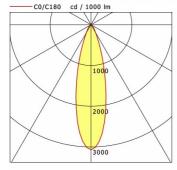


|     | C0   | C90      | C180 | C270 |
|-----|------|----------|------|------|
| 0°  | 2926 | 2926     | 2926 | 2926 |
| 15° | 1214 | 1214     | 1214 | 1214 |
| 30° | 194  | 194      | 194  | 194  |
| 45° | 99   | 99       | 99   | 99   |
| 60° | 53   | 53       | 53   | 53   |
| 75° | 8    | 8        | 8    | 8    |
| 90° | 0    | 0        | 0    | 0    |
|     | co   | 1 / 1000 | m    |      |

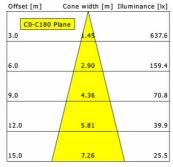


| η                  | LEI               |  |  |
|--------------------|-------------------|--|--|
| Efficiency         | 76 lm/W           |  |  |
| Direct/Indirect    | ↓ 100% / ↑ 0%     |  |  |
| System Power       | 28 W              |  |  |
| UGR                | X=4H, Y=8H        |  |  |
| Reflection factors | 70/50/20          |  |  |
| UGR C0/C180        | 19.2              |  |  |
| UGR C90/C270       | 19.2              |  |  |
| CIE Flux Codes     | 83 96 100 100 100 |  |  |
| Ra/CRI             | >80               |  |  |

Dallton Large - Spotlight Insert (DAL-L-RTQ 13\_SI-MATT, 1xLED 28W 830/3000K 1870lm 20 °)

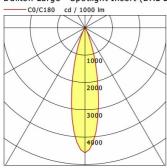


|     | C0           | C90  | C180 | C270 |
|-----|--------------|------|------|------|
| 0°  | 3069         | 3069 | 3069 | 3069 |
| 15° | 1329         | 1329 | 1329 | 1329 |
| 30° | 226          | 226  | 226  | 226  |
| 45° | 79           | 79   | 79   | 79   |
| 60° | 20           | 20   | 20   | 20   |
| 75° | 1            | 1    | 1    | 1    |
| 90° | 0            | 0    | 0    | 0    |
|     | cd / 1000 lm |      |      |      |



| η                  | LEI               |  |  |
|--------------------|-------------------|--|--|
| Efficiency         | 67 lm/W           |  |  |
| Direct/Indirect    | ↓ 100% / ↑ 0%     |  |  |
| System Power       | 28 W              |  |  |
| UGR                | X=4H, Y=8H        |  |  |
| Reflection factors | 70/50/20          |  |  |
| UGR C0/C180        | 14.2              |  |  |
| UGR C90/C270       | 14.2              |  |  |
| CIE Flux Codes     | 90 99 100 100 100 |  |  |
| Ra/CRI             | >80               |  |  |

Dallton Large - Spotlight Insert (DAL-L-RTQ 13\_SW-MATT, 1xLED 28W 830/3000K 1540lm 20 °)



|              | C0   | C00  | C180 | C270 |
|--------------|------|------|------|------|
|              | CU   | C90  | C180 | C270 |
| 0°           | 4571 | 4571 | 4571 | 4571 |
| 15°          | 1630 | 1630 | 1630 | 1630 |
| 30°          | 118  | 118  | 118  | 118  |
| 45°          | 17   | 17   | 17   | 17   |
| 60°          | 1    | 1    | 1    | 1    |
| 75°          | 0    | 0    | 0    | 0    |
| 90°          | 0    | 0    | 0    | 0    |
| cd / 1000 lm |      |      |      |      |

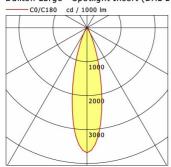
| Offset [m] | Cone width [m] | Illuminance [lx] |
|------------|----------------|------------------|
| C0-C180    |                | # 2507 Sec.      |
| 3.0        | 1.29           | 782.2            |
| 6.0        | 2.59           | 195.6            |
| 9.0        | 3.88           | 86.9             |
| 12.0       | 5.18           | 48.9             |
| 15.0       | 6.47           | 31.3             |

| η                  | LED                |
|--------------------|--------------------|
| Efficiency         | 55 lm/W            |
| Direct/Indirect    | ↓ 100% / ↑ 0%      |
| System Power       | 28 W               |
| UGR                | X=4H, Y=8H         |
| Reflection factors | 70/50/20           |
| UGR C0/C180        | <10.0              |
| UGR C90/C270       | <10.0              |
| CIE Flux Codes     | 99 100 100 100 100 |
| Ra/CRI             | >80                |

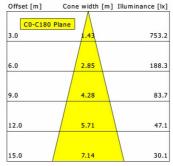
LTS



Dallton Large - Spotlight Insert (DAL-L-RTQ 13\_CH-SW, 1xLED 28W 830/3000K 1840lm 20 °)

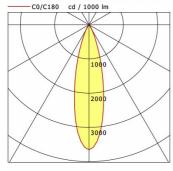


|     | C0   | C90      | C180 | C270 |
|-----|------|----------|------|------|
| 0°  | 3684 | 3684     | 3684 | 3684 |
| 15° | 1548 | 1548     | 1548 | 1548 |
| 30° | 175  | 175      | 175  | 175  |
| 45° | 36   | 36       | 36   | 36   |
| 60° | 5    | 5        | 5    | 5    |
| 75° | 0    | 0        | 0    | 0    |
| 90° | 0    | 0        | 0    | 0    |
| 90° | 100  | 1 / 1000 | m    | U    |

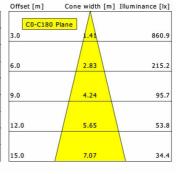


| <b>η</b>           | LED                |
|--------------------|--------------------|
| Efficiency         | 66 lm/W            |
| Direct/Indirect    | ↓ 100% / ↑ 0%      |
| System Power       | 28 W               |
| UGR                | X=4H, Y=8H         |
| Reflection factors | 70/50/20           |
| UGR C0/C180        | <10.0              |
| UGR C90/C270       | <10.0              |
| CIE Flux Codes     | 96 100 100 100 100 |
| Ra/CRI             | >80                |

Dallton Large - Spotlight Insert (DAL-L-RTQ 13\_CH, 1xLED 28W 830/3000K 2120lm 20 °)

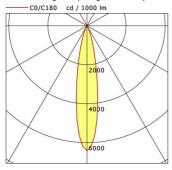


|     | C0   | C90      | C180 | C270 |
|-----|------|----------|------|------|
| 0°  | 3655 | 3655     | 3655 | 3655 |
| 15° | 1517 | 1517     | 1517 | 1517 |
| 30° | 177  | 177      | 177  | 177  |
| 45° | 42   | 42       | 42   | 42   |
| 60° | 8    | 8        | 8    | 8    |
| 75° | 0    | 0        | 0    | 0    |
| 90° | 0    | 0        | 0    | 0    |
|     | co   | 1 / 1000 | m    |      |



| η                  | LED                |  |
|--------------------|--------------------|--|
| Efficiency         | 76 lm/W            |  |
| Direct/Indirect    | ↓ 100% / ↑ 0%      |  |
| System Power       | 28 W               |  |
| UGR                | X=4H, Y=8H         |  |
| Reflection factors | 70/50/2            |  |
| UGR C0/C180        | 10.2               |  |
| UGR C90/C270       | 10.2               |  |
| CIE Flux Codes     | 95 100 100 100 100 |  |
| Ra/CRI             | >80                |  |

Dallton Large - Spotlight Insert (DAL-L-RFQ 13, 1xLED 28W 830/3000K 2040lm 20 °)

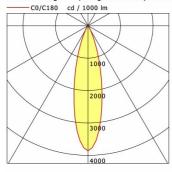


|     | C0           | C90  | C180 | C270 |
|-----|--------------|------|------|------|
| 0°  | 6417         | 6417 | 6417 | 6417 |
| 15° | 1440         | 1440 | 1440 | 1440 |
| 30° | 57           | 57   | 57   | 57   |
| 45° | 19           | 19   | 19   | 19   |
| 60° | 2            | 2    | 2    | 2    |
| 75° | 0            | 0    | 0    | 0    |
| 90° | 0            | 0    | 0    | 0    |
|     | cd / 1000 lm |      |      |      |

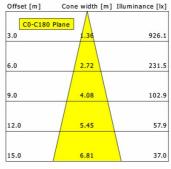
| Offset [m] | Cone width [m | ] Illuminance [lx] |
|------------|---------------|--------------------|
| C0-C180    | Plane 1.02    | 1454.6             |
| 3.0        | 7.02          | 1434.0             |
| 6.0        | 2.04          | 363.7              |
| 9.0        | 3.06          | 161.6              |
| 12.0       | 4.08          | 90.9               |
| 15.0       | 5.11          | 58.2               |

| η                  | LED                |
|--------------------|--------------------|
| Efficiency         | 73 lm/W            |
| Direct/Indirect    | ↓ 100% / ↑ 0%      |
| System Power       | 28 W               |
| UGR                | X=4H, Y=8H         |
| Reflection factors | 70/50/20           |
| UGR C0/C180        | <10.0              |
| UGR C90/C270       | <10.0              |
| CIE Flux Codes     | 98 100 100 100 100 |
| Ra/CRI             | >80                |

Dallton Large - Spotlight Insert (DAL-L-RTR 23\_SI-MATT, 1xLED 28W 830/3000K 2160lm 20°)



|     | C0   | C90  | C180 | C270 |
|-----|------|------|------|------|
| 0°  | 3859 | 3859 | 3859 | 3859 |
| 15° | 1533 | 1533 | 1533 | 1533 |
| 30° | 148  | 148  | 148  | 148  |
| 45° | 44   | 44   | 44   | 44   |
| 60° | 10   | 10   | 10   | 10   |
| 75° | 1    | 1    | 1    | 1    |
| 90° | 0    | 0    | 0    | 0    |

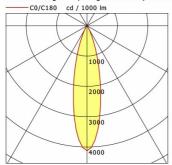


| η                  | LED               |
|--------------------|-------------------|
| Efficiency         | 77 lm/W           |
| Direct/Indirect    | ↓ 100% / ↑ 0%     |
| System Power       | 28 W              |
| UGR                | X=4H, Y=8H        |
| Reflection factors | 70/50/20          |
| UGR C0/C180        | 11.8              |
| UGR C90/C270       | 11.8              |
| CIE Flux Codes     | 95 99 100 100 100 |
| Ra/CRI             | >80               |

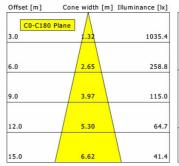
LTS



### Dallton Large - Spotlight Insert (DAL-L-RTR 23\_CH-SW, 1xLED 28W 830/3000K 2260lm 20 °)



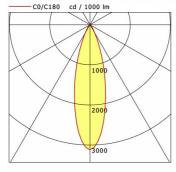
|     | C0           | C90  | C180 | C270 |
|-----|--------------|------|------|------|
| 0°  | 4123         | 4123 | 4123 | 4123 |
| 15° | 1576         | 1576 | 1576 | 1576 |
| 30° | 142          | 142  | 142  | 142  |
| 45° | 34           | 34   | 34   | 34   |
| 60° | 0            | 0    | 0    | 0    |
| 75° | 0            | 0    | 0    | 0    |
| 90° | 0            | 0    | 0    | 0    |
|     | cd / 1000 lm |      |      |      |



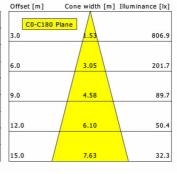
| η                  | LED                |
|--------------------|--------------------|
| Efficiency         | 81 lm/W            |
| Direct/Indirect    | ↓ 100% / ↑ 0%      |
| System Power       | 28 W               |
| UGR                | X=4H, Y=8H         |
| Reflection factors | 70/50/20           |
| UGR C0/C180        | <10.0              |
| UGR C90/C270       | <10.0              |
| CIE Flux Codes     | 97 100 100 100 100 |
| Ra/CRI             | >80                |

LTS

#### Dallton Large - Spotlight Insert (DAL-L-RTR 23\_CH, 1xLED 28W 830/3000K 2330lm 20 °)

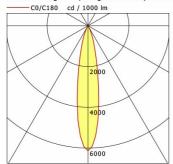


|     | C0   | C90  | C180 | C270 |
|-----|------|------|------|------|
| 0°  | 3117 | 3117 | 3117 | 3117 |
| 15° | 1459 | 1459 | 1459 | 1459 |
| 30° | 229  | 229  | 229  | 229  |
| 45° | 56   | 56   | 56   | 56   |
| 60° | 0    | 0    | 0    | 0    |
| 75° | 0    | 0    | 0    | 0    |
| 90° | 0    | 0    | 0    | 0    |



| η                  | LED<br>83 lm/W<br>↓ 100% / ↑ 0% |  |
|--------------------|---------------------------------|--|
| Efficiency         |                                 |  |
| Direct/Indirect    |                                 |  |
| System Power       | 28 W                            |  |
| UGR                | X=4H, Y=8H                      |  |
| Reflection factors | 70/50/20                        |  |
| UGR C0/C180        | 12.8                            |  |
| UGR C90/C270       | 12.8                            |  |
| CIE Flux Codes     | 95 100 100 100 100              |  |
| Ra/CRI             | >80                             |  |

Dallton Large - Spotlight Insert (DAL-L-RFR 23, 1xLED 28W 830/3000K 2150lm 20 °)

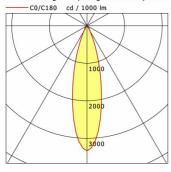


|     | C0           | C90  | C180 | C270 |
|-----|--------------|------|------|------|
| 0°  | 6132         | 6132 | 6132 | 6132 |
| 15° | 1430         | 1430 | 1430 | 1430 |
| 30° | 69           | 69   | 69   | 69   |
| 45° | 16           | 16   | 16   | 16   |
| 60° | 1            | 1    | 1    | 1    |
| 75° | 0            | 0    | 0    | 0    |
| 90° | 0            | 0    | 0    | 0    |
|     | cd / 1000 lm |      |      |      |

| Offset [m] | Cone width [m | ] Illuminance [lx] |
|------------|---------------|--------------------|
| C0-C180    |               |                    |
| 3.0        | 1/.03         | 1464.9             |
| 6.0        | 2.05          | 266.2              |
| 6.0        | 2.05          | 366.2              |
| 9.0        | 3.08          | 162.8              |
| 12.0       | 4.10          | 91.6               |
| 15.0       | 5.13          | 58.6               |

| η                  | LED<br>77 lm/W<br>↓ 100% / ↑ 0% |  |
|--------------------|---------------------------------|--|
| Efficiency         |                                 |  |
| Direct/Indirect    |                                 |  |
| System Power       | 28 W                            |  |
| UGR                | X=4H, Y=8H                      |  |
| Reflection factors | 70/50/20                        |  |
| UGR C0/C180        | <10.0                           |  |
| UGR C90/C270       | <10.0                           |  |
| CIE Flux Codes     | 99 100 100 100 100              |  |
| Ra/CRI             | >80                             |  |

#### Dallton Large - Spotlight Insert (DAL-L-RTR 23\_WS-MATT, 1xLED 28W 830/3000K 2350lm 20 °)



|              | C0   | C90  | C180 | C270 |
|--------------|------|------|------|------|
| 0°           | 3333 | 3333 | 3333 | 3333 |
| 15°          | 1388 | 1388 | 1388 | 1388 |
| 30°          | 160  | 160  | 160  | 160  |
| 45°          | 72   | 72   | 72   | 72   |
| 60°          | 33   | 33   | 33   | 33   |
| 75°          | 6    | 6    | 6    | 6    |
| 90°          | 0    | 0    | 0    | 0    |
| cd / 1000 lm |      |      |      |      |

| Offset [m] | Cone width [m] II | luminance [lx] |
|------------|-------------------|----------------|
| C0-C180    | Plane             |                |
| 3.0        | 1.41              | 870.2          |
| 6.0        | 2.82              | 217.5          |
| 9.0        | 4.23              | 96.7           |
| 12.0       | 5.63              | 54.4           |
| 15.0       | 7.04              | 34.8           |

| η                  | LED<br>84 lm/W    |  |  |
|--------------------|-------------------|--|--|
| Efficiency         |                   |  |  |
| Direct/Indirect    | ↓ 100% / ↑ 0%     |  |  |
| System Power       | 28 W              |  |  |
| UGR                | X=4H, Y=8H        |  |  |
| Reflection factors | 70/50/20          |  |  |
| UGR C0/C180        | 18.0              |  |  |
| UGR C90/C270       | 18.0              |  |  |
| CIE Flux Codes     | 88 97 100 100 100 |  |  |
| Ra/CRI             | >80               |  |  |

LTS

### Recessed Spotlights · Dallton Large System

# DAL-L-LK 101.830.20

### Accessories



DAL-L-ZBW 13.23 honeycomb louvre

