



## Tube

### RECESSED SPOTLIGHTS | DALI SERIES

Tube is our adjustable spotlight with a concentrated beam that creates a bright light effect. Spotlight is highly flexible: rotates through 350° and pivots through 90°. Modern housing that enhances the architectural spaces. Directional beam is perfect for retail shops and commercial spaces, art and exhibition galleries and showrooms.

The modern touch is given by the aluminum housing and three color options: signal white, jet black and white aluminum.

Available in two series, with different add-ons and controls:

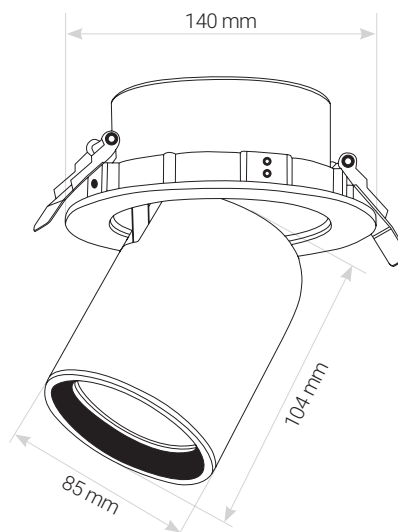
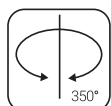
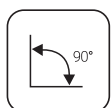
- Tube Non-DALI – the standard for any project in the retail sector
- Tube DALI – with DALI controls for illumination adjustments

### Applications

High End Grocery & Supermarkets | Fashion Retailers | Hospitality | Art & Exhibitions

### Features & Benefits

- CRI 80 as standard, 93 and 95 available
- 9 color temperatures: 2700K, 3000K, 3500K, 4000K, FAS, AGI3000, AGI3500, AGI4000, AMB2200
- Long rated life: L90/B10@50.000h
- Luminaire efficiency: 91lm/W @4000K
- Dimmable



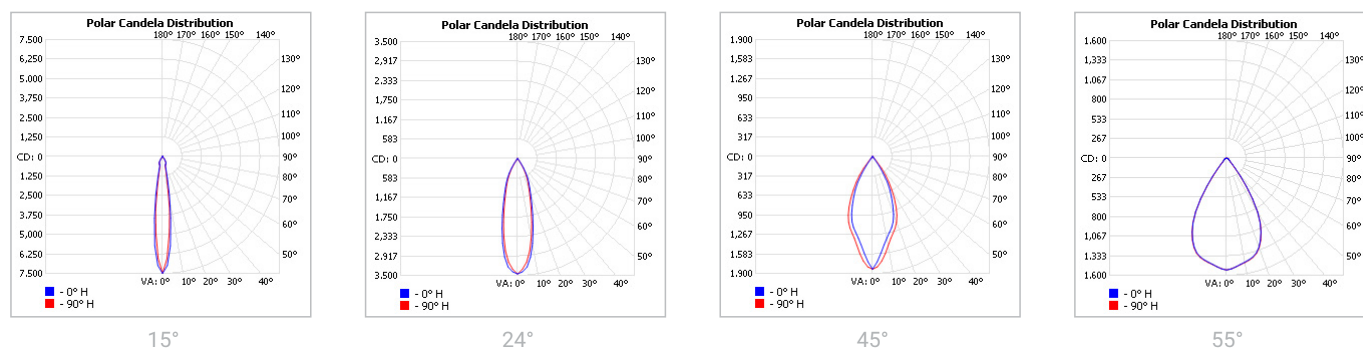
Specifications

|                                |  |
|--------------------------------|--|
| Power consumption              | 14W, 20W   |
| Dimensions                     | Ø140xØ85x104 ± 1mm   |
| Weight                         | 0,8 Kg   |
| Housing materials              | Aluminium, Glass   |
| IK code                        | IK02   |
| THD (at 230V, 50Hz, Full load) | <8%  |
| Protection class               | Safety class 1   |
| Operating temperature [°C]     | -20 ... +45 °C / -4F ... +113F   |
| Operating humidity [%]         | 10 ÷ 85  |
| Power factor                   | ≥0.95  |
| AC Input [Vac]                 | 220 - 240 VAC  |
| Lens angle [°]                 | 15°, 24°, 45°, 55°   |
| Lifespan [h]                   | 50,000   |
| Housing color                  | ○ RAL9003 - Signal white, ● RAL9005 - Jet black, ● RAL9006 White aluminium |
| Lumen maintenance              | L90/B10@50.000h at 25°C  |
| IP factor                      | IP20   |
| Control optional               | DALI   |
| Warranty [years]               | 5  |
| Storage temperature range [°C] | -20...+55°C / -4F ... +131F  |
| Emergency option               | -  |

| #       | Standard                  | Fashion | AGI                    | AMB   |
|---------|---------------------------|---------|------------------------|-------|
| CRI     | CRI80                     | CRI95   | CRI93                  | CRI80 |
| CCT [K] | 2700 / 3000 / 3500 / 4000 | FAS     | AGI 3000 / 3500 / 4000 | 2200  |
| MacAdam | 3                         | 3       | 3                      | 3     |

CRI - Color rendering, CCT - Color temperature, MacAdam - Color consistency

Light Distribution



**TOLERANCES**

**Luminous flux tolerances:** -/+ 5%

**Consumption tolerance:** -/+ 5% for Non-DALI | -/+ 10% for Non-DALI & KIT EM | -/+ 10% for DALI | -/+ 15% for DALI & KIT EM

**BATTERY WARRANTY**

**Non-DALI EM & DALI EM:** 12 months warranty

**Non-DALI & DALI:** -

**MAXIMUM NO. OF LUMINAIRES ON A CIRCUIT**

| Luminaire Power(W) | Control type | Circuit Breaker Type |    |    |     |    |    |
|--------------------|--------------|----------------------|----|----|-----|----|----|
|                    |              | B                    |    |    | C   |    |    |
|                    |              | 20                   | 16 | 10 | 20  | 16 | 10 |
| 8-20W              | Non-DALI     | 62                   | 50 | 31 | 104 | 85 | 52 |
| 23-35W             | Non-DALI     | 24                   | 20 | 10 | 47  | 40 | 20 |
| 42W                | Non-DALI     | 20                   | 16 | 8  | 38  | 32 | 16 |
| 8-20W              | DALI         | 62                   | 50 | 31 | 104 | 85 | 52 |
| 23-27W             | DALI         | 25                   | 21 | 13 | 50  | 42 | 26 |
| 34-42W             | DALI         | 17                   | 14 | 9  | 34  | 28 | 18 |

**RISK GROUP**

|                                |     |
|--------------------------------|-----|
| <b>Standard (CRI80)</b>        | RG1 |
| <b>FOOD (BVF, FBS, FSM)</b>    | RG1 |
| <b>FOOD ≤35W (FZM, FSH)</b>    | RG1 |
| <b>FOOD &gt;35W (FZM, FSH)</b> | RG2 |
| <b>FAS</b>                     | RG1 |
| <b>AMB2200</b>                 | RG1 |
| <b>ART</b>                     | RG1 |
| <b>AGI</b>                     | RG1 |
| <b>CRI90</b>                   | RG1 |
| <b>CRI95</b>                   | RG1 |
| <b>ENT</b>                     | RG1 |

**RG1**

The evaluation of photobiological safety is carried out according to the standard IEC 62471:2008 ("Photobiological safety of lamps and lamp systems"). Following the definition of the risk grouping system of the mentioned IEC standard, the LEDs mounted on this family fall into the class "Low Risk (RG1 – No photobiological hazard under normal behavioral limitations)". Under real circumstances (regarding exposure time, pupils, observation distance), it is assumed that there is no endangerment to the eye from these devices. As a matter of principle, however, it should be mentioned that intense light sources have a high secondary exposure potential due to their blinding effect.

**RG2**

The evaluation of photobiological safety is carried out according to the standard IEC 62471:2008 ("Photobiological safety of lamps and lamp systems"). Following the definition of the risk grouping system of the mentioned IEC standard, the LEDs mounted on this family fall into the class "Moderate Risk (RG2)". Under real circumstances (regarding exposure time, pupils, observation distance), it is assumed that there is no endangerment to the eye from these devices. As a matter of principle, however, it should be mentioned that intense light sources have a high secondary exposure potential due to their blinding effect.

## SKU SPECIFICATIONS

| Product Code                          | Dimensions (mm)        | CCT (K) | Lumens (lm) | Power (W) | Eff. (lm/watt) | Lens Angle (°) |
|---------------------------------------|------------------------|---------|-------------|-----------|----------------|----------------|
| <b>CRI 80</b>                         |                        |         |             |           |                |                |
| 293000 Tube R31015/2700/14W/80/A15    | Ø140 x Ø85 x 104 ± 1mm | 2700    | 1200        | 14W       | 86             | 15°            |
| 293001 Tube R31015/3000/14W/80/A15    | Ø140 x Ø85 x 104 ± 1mm | 3000    | 1215        | 14W       | 87             | 15°            |
| 293002 Tube R31015/3500/14W/80/A15    | Ø140 x Ø85 x 104 ± 1mm | 3500    | 1245        | 14W       | 89             | 15°            |
| 293003 Tube R31015/4000/14W/80/A15    | Ø140 x Ø85 x 104 ± 1mm | 4000    | 1270        | 14W       | 91             | 15°            |
| 293004 Tube R31015/2700/14W/80/A24    | Ø140 x Ø85 x 104 ± 1mm | 2700    | 1200        | 14W       | 86             | 24°            |
| 293005 Tube R31015/3000/14W/80/A24    | Ø140 x Ø85 x 104 ± 1mm | 3000    | 1215        | 14W       | 87             | 24°            |
| 293006 Tube R31015/3500/14W/80/A24    | Ø140 x Ø85 x 104 ± 1mm | 3500    | 1245        | 14W       | 89             | 24°            |
| 293007 Tube R31015/4000/14W/80/A24    | Ø140 x Ø85 x 104 ± 1mm | 4000    | 1270        | 14W       | 91             | 24°            |
| 293008 Tube R31015/2700/14W/80/A45    | Ø140 x Ø85 x 104 ± 1mm | 2700    | 1200        | 14W       | 86             | 45°            |
| 293009 Tube R31015/3000/14W/80/A45    | Ø140 x Ø85 x 104 ± 1mm | 3000    | 1215        | 14W       | 87             | 45°            |
| 293010 Tube R31015/3500/14W/80/A45    | Ø140 x Ø85 x 104 ± 1mm | 3500    | 1245        | 14W       | 89             | 45°            |
| 293011 Tube R31015/4000/14W/80/A45    | Ø140 x Ø85 x 104 ± 1mm | 4000    | 1270        | 14W       | 91             | 45°            |
| 293012 Tube R31015/2700/14W/80/A55    | Ø140 x Ø85 x 104 ± 1mm | 2700    | 1200        | 14W       | 86             | 55°            |
| 293013 Tube R31015/3000/14W/80/A55    | Ø140 x Ø85 x 104 ± 1mm | 3000    | 1215        | 14W       | 87             | 55°            |
| 293014 Tube R31015/3500/14W/80/A55    | Ø140 x Ø85 x 104 ± 1mm | 3500    | 1245        | 14W       | 89             | 55°            |
| 293015 Tube R31015/4000/14W/80/A55    | Ø140 x Ø85 x 104 ± 1mm | 4000    | 1270        | 14W       | 91             | 55°            |
| 293016 Tube R31015/2700/20W/80/A15    | Ø140 x Ø85 x 104 ± 1mm | 2700    | 1650        | 20W       | 83             | 15°            |
| 293017 Tube R31015/3000/20W/80/A15    | Ø140 x Ø85 x 104 ± 1mm | 3000    | 1665        | 20W       | 84             | 15°            |
| 293018 Tube R31015/3500/20W/80/A15    | Ø140 x Ø85 x 104 ± 1mm | 3500    | 1710        | 20W       | 86             | 15°            |
| 293019 Tube R31015/4000/20W/80/A15    | Ø140 x Ø85 x 104 ± 1mm | 4000    | 1745        | 20W       | 88             | 15°            |
| 293020 Tube R31015/2700/20W/80/A24    | Ø140 x Ø85 x 104 ± 1mm | 2700    | 1650        | 20W       | 83             | 24°            |
| 293021 Tube R31015/3000/20W/80/A24    | Ø140 x Ø85 x 104 ± 1mm | 3000    | 1665        | 20W       | 84             | 24°            |
| 293022 Tube R31015/3500/20W/80/A24    | Ø140 x Ø85 x 104 ± 1mm | 3500    | 1710        | 20W       | 86             | 24°            |
| 293023 Tube R31015/4000/20W/80/A24    | Ø140 x Ø85 x 104 ± 1mm | 4000    | 1745        | 20W       | 88             | 24°            |
| 293024 Tube R31015/2700/20W/80/A45    | Ø140 x Ø85 x 104 ± 1mm | 2700    | 1650        | 20W       | 83             | 45°            |
| 293025 Tube R31015/3000/20W/80/A45    | Ø140 x Ø85 x 104 ± 1mm | 3000    | 1665        | 20W       | 84             | 45°            |
| 293026 Tube R31015/3500/20W/80/A45    | Ø140 x Ø85 x 104 ± 1mm | 3500    | 1710        | 20W       | 86             | 45°            |
| 293027 Tube R31015/4000/20W/80/A45    | Ø140 x Ø85 x 104 ± 1mm | 4000    | 1745        | 20W       | 88             | 45°            |
| 293028 Tube R31015/2700/20W/80/A55    | Ø140 x Ø85 x 104 ± 1mm | 2700    | 1650        | 20W       | 83             | 55°            |
| 293029 Tube R31015/3000/20W/80/A55    | Ø140 x Ø85 x 104 ± 1mm | 3000    | 1665        | 20W       | 84             | 55°            |
| 293030 Tube R31015/3500/20W/80/A55    | Ø140 x Ø85 x 104 ± 1mm | 3500    | 1710        | 20W       | 86             | 55°            |
| 293031 Tube R31015/4000/20W/80/A55    | Ø140 x Ø85 x 104 ± 1mm | 4000    | 1745        | 20W       | 88             | 55°            |
| 293032 Tube R31015/AMB2200/14W/80/A15 | Ø140 x Ø85 x 104 ± 1mm | AMB2200 | 915         | 14W       | 66             | 15°            |
| 293033 Tube R31015/AMB2200/14W/80/A24 | Ø140 x Ø85 x 104 ± 1mm | AMB2200 | 915         | 14W       | 66             | 24°            |
| 293034 Tube R31015/AMB2200/14W/80/A45 | Ø140 x Ø85 x 104 ± 1mm | AMB2200 | 915         | 14W       | 66             | 45°            |
| 293035 Tube R31015/AMB2200/14W/80/A55 | Ø140 x Ø85 x 104 ± 1mm | AMB2200 | 915         | 14W       | 66             | 55°            |
| 293036 Tube R31015/AMB2200/20W/80/A15 | Ø140 x Ø85 x 104 ± 1mm | AMB2200 | 1270        | 20W       | 64             | 15°            |
| 293037 Tube R31015/AMB2200/20W/80/A24 | Ø140 x Ø85 x 104 ± 1mm | AMB2200 | 1270        | 20W       | 64             | 24°            |
| 293038 Tube R31015/AMB2200/20W/80/A45 | Ø140 x Ø85 x 104 ± 1mm | AMB2200 | 1270        | 20W       | 64             | 45°            |
| 293039 Tube R31015/AMB2200/20W/80/A55 | Ø140 x Ø85 x 104 ± 1mm | AMB2200 | 1270        | 20W       | 64             | 55°            |
| <b>CRI 93</b>                         |                        |         |             |           |                |                |
| 293040 Tube R31015/AGI3000/14W/93/A15 | Ø140 x Ø85 x 104 ± 1mm | AGI3000 | 835         | 14W       | 60             | 15°            |
| 293041 Tube R31015/AGI3500/14W/93/A15 | Ø140 x Ø85 x 104 ± 1mm | AGI3500 | 885         | 14W       | 64             | 15°            |
| 293042 Tube R31015/AGI4000/14W/93/A15 | Ø140 x Ø85 x 104 ± 1mm | AGI4000 | 940         | 14W       | 68             | 15°            |
| 293043 Tube R31015/AGI3000/14W/93/A24 | Ø140 x Ø85 x 104 ± 1mm | AGI3000 | 835         | 14W       | 60             | 24°            |
| 293044 Tube R31015/AGI3500/14W/93/A24 | Ø140 x Ø85 x 104 ± 1mm | AGI3500 | 885         | 14W       | 64             | 24°            |
| 293045 Tube R31015/AGI4000/14W/93/A24 | Ø140 x Ø85 x 104 ± 1mm | AGI4000 | 940         | 14W       | 68             | 24°            |
| 293046 Tube R31015/AGI3000/14W/93/A45 | Ø140 x Ø85 x 104 ± 1mm | AGI3000 | 835         | 14W       | 60             | 45°            |
| 293047 Tube R31015/AGI3500/14W/93/A45 | Ø140 x Ø85 x 104 ± 1mm | AGI3500 | 885         | 14W       | 64             | 45°            |

## SKU SPECIFICATIONS

| Product Code                          | Dimensions (mm)        | CCT (K) | Lumens (lm) | Power (W) | Eff. (lm/watt) | Lens Angle (°) |
|---------------------------------------|------------------------|---------|-------------|-----------|----------------|----------------|
| <b>CRI 93</b>                         |                        |         |             |           |                |                |
| 293048 Tube R31015/AGI4000/14W/93/A45 | Ø140 x Ø85 x 104 ± 1mm | AGI4000 | 940         | 14W       | 68             | 45°            |
| 293049 Tube R31015/AGI3000/14W/93/A55 | Ø140 x Ø85 x 104 ± 1mm | AGI3000 | 835         | 14W       | 60             | 55°            |
| 293050 Tube R31015/AGI3500/14W/93/A55 | Ø140 x Ø85 x 104 ± 1mm | AGI3500 | 885         | 14W       | 64             | 55°            |
| 293051 Tube R31015/AGI4000/14W/93/A55 | Ø140 x Ø85 x 104 ± 1mm | AGI4000 | 940         | 14W       | 68             | 55°            |
| 293052 Tube R31015/AGI3000/20W/93/A15 | Ø140 x Ø85 x 104 ± 1mm | AGI3000 | 1080        | 20W       | 54             | 15°            |
| 293053 Tube R31015/AGI3500/20W/93/A15 | Ø140 x Ø85 x 104 ± 1mm | AGI3500 | 1145        | 20W       | 58             | 15°            |
| 293054 Tube R31015/AGI4000/20W/93/A15 | Ø140 x Ø85 x 104 ± 1mm | AGI4000 | 1220        | 20W       | 61             | 15°            |
| 293055 Tube R31015/AGI3000/20W/93/A24 | Ø140 x Ø85 x 104 ± 1mm | AGI3000 | 1080        | 20W       | 54             | 24°            |
| 293056 Tube R31015/AGI3500/20W/93/A24 | Ø140 x Ø85 x 104 ± 1mm | AGI3500 | 1145        | 20W       | 58             | 24°            |
| 293057 Tube R31015/AGI4000/20W/93/A24 | Ø140 x Ø85 x 104 ± 1mm | AGI4000 | 1220        | 20W       | 61             | 24°            |
| 293058 Tube R31015/AGI3000/20W/93/A45 | Ø140 x Ø85 x 104 ± 1mm | AGI3000 | 1080        | 20W       | 54             | 45°            |
| 293059 Tube R31015/AGI3500/20W/93/A45 | Ø140 x Ø85 x 104 ± 1mm | AGI3500 | 1145        | 20W       | 58             | 45°            |
| 293060 Tube R31015/AGI4000/20W/93/A45 | Ø140 x Ø85 x 104 ± 1mm | AGI4000 | 1220        | 20W       | 61             | 45°            |
| 293061 Tube R31015/AGI3000/20W/93/A55 | Ø140 x Ø85 x 104 ± 1mm | AGI3000 | 1080        | 20W       | 54             | 55°            |
| 293062 Tube R31015/AGI3500/20W/93/A55 | Ø140 x Ø85 x 104 ± 1mm | AGI3500 | 1145        | 20W       | 58             | 55°            |
| 293063 Tube R31015/AGI4000/20W/93/A55 | Ø140 x Ø85 x 104 ± 1mm | AGI4000 | 1220        | 20W       | 61             | 55°            |
| <b>CRI 95</b>                         |                        |         |             |           |                |                |
| 293064 Tube R31015/FAS/14W/95/A15     | Ø140 x Ø85 x 104 ± 1mm | FAS     | 1045        | 14W       | 75             | 15°            |
| 293065 Tube R31015/FAS/14W/95/A24     | Ø140 x Ø85 x 104 ± 1mm | FAS     | 1045        | 14W       | 75             | 24°            |
| 293066 Tube R31015/FAS/14W/95/A45     | Ø140 x Ø85 x 104 ± 1mm | FAS     | 1045        | 14W       | 75             | 45°            |
| 293067 Tube R31015/FAS/14W/95/A55     | Ø140 x Ø85 x 104 ± 1mm | FAS     | 1045        | 14W       | 75             | 55°            |
| 293068 Tube R31015/FAS/20W/95/A15     | Ø140 x Ø85 x 104 ± 1mm | FAS     | 1430        | 20W       | 72             | 15°            |
| 293069 Tube R31015/FAS/20W/95/A24     | Ø140 x Ø85 x 104 ± 1mm | FAS     | 1430        | 20W       | 72             | 24°            |
| 293070 Tube R31015/FAS/20W/95/A45     | Ø140 x Ø85 x 104 ± 1mm | FAS     | 1430        | 20W       | 72             | 45°            |
| 293071 Tube R31015/FAS/20W/95/A55     | Ø140 x Ø85 x 104 ± 1mm | FAS     | 1430        | 20W       | 72             | 55°            |