

Last information update: April 2024

**Product configuration: Q228**

Q228: rectangular recessed luminaire with 3 optical assemblies - warm white passive dissipation LEDs - integrated DALI control gear - wide flood

**Product code**

Q228: rectangular recessed luminaire with 3 optical assemblies - warm white passive dissipation LEDs - integrated DALI control gear - wide flood **Attention! Code no longer in production**

**Technical description**

Multiple recessed adjustable removable luminaire for LED lamp with passive heat dissipation system. Sheet steel perimeter frame. Main structure made of die-cast aluminium. Steel rotation hinges. Die-cast aluminium lamp bodies with shaped surface for high level radiant effect for effectively reducing the temperature and keeping the long-term LED lamp performance unchanged. Chrome-plated aluminium lamp body closing rings. Reflectors with high efficiency super-pure aluminium optic - wide flood beam angle. Orientamento dei corpi con dispositivi di manovra manuale: interno 29° - esterno 75° - rotazione sull'asse 355°; in fase di orientamento e rotazione i corpi lampada sono soggetti ad alcune limitazioni consultabili sul foglio istruzioni. Supplied with DALI dimmable control gear units connected to the luminaire. Warm white high efficiency LED.

**Installation**

recessed: preparation slot 138 x 386 mm; perimeter frame preliminary fixing on false ceiling (min. thickness 1 mm) with adjustable metal brackets; main structure inserted and mechanically locked on the frame

**Colour**

White / Aluminium (39) | Grey / Black / Aluminium (E1)

**Mounting**

ceiling recessed

**Wiring**

on control gear box with quick-coupling connections; each lamp body has a specific ballast, allowing separate switch ons

**Notes**

the configuration of the lamp bodies causes some limitations during angling and rotation; consult the instructions leaflet

Complies with EN60598-1 and pertinent regulations

**Technical data**

|  |      |                                       |                                 |
|--|------|---------------------------------------|---------------------------------|
| lm system:   | 7014 | CRI:                                  | 80                              |
| W system:  | 73.8 | Colour temperature [K]:               | 3000                            |
| lm source:   | 3000 | MacAdam Step:                         | 2                               |
| W source:  | 22   | Life Time LED 1:                      | > 50,000h - L80 - B10 (Ta 25°C) |
| Luminous efficiency (lm/W, real value):            | 95   | Lamp code:                            | LED                             |
| lm in emergency mode:                              | -    | Number of lamps for optical assembly: | 1                               |
| Total light flux at or above an angle of 90° [Lm]: | 0    | ZVEI Code:                            | LED                             |
| Light Output Ratio (L.O.R.) [%]:                   | 78   | Number of optical assemblies:         | 3                               |
| Beam angle [°]:                                    | 54°  | Control:                              | DALI                            |

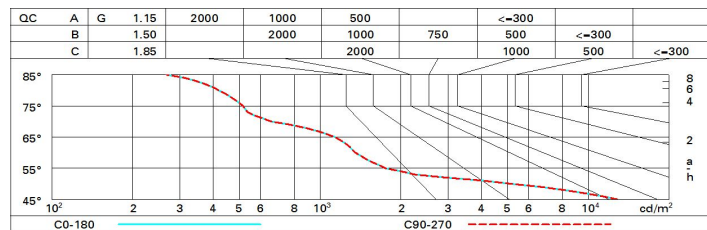
**Polar**

|              |  |                            |  |     |      |
|--------------|--|----------------------------|--|-----|------|
| Imax=3107 cd |  | CIE                        |  | Lux |      |
| 90°          |  | nL 0.78                    |  | h   | d    |
| 180°         |  | 97-100-100-100-78          |  | Em  | Emax |
| 90°          |  | UGR 16.4-16.4              |  | 2   | 2    |
| 3000         |  | DIN                        |  | 4   | 4.1  |
| 0°           |  | A.61                       |  | 6   | 6.1  |
| α=54°        |  | UTE                        |  | 8   | 8.2  |
|              |  | 0.78A+0.00T                |  |     |      |
|              |  | F*1=965                    |  |     |      |
|              |  | F*1+F*2=997                |  |     |      |
|              |  | F*1+F*2+F*3=1000           |  |     |      |
|              |  | CIBSE                      |  |     |      |
|              |  | LG3 L<1500 cd/m² at 65°    |  |     |      |
|              |  | UGR<19   L<1500 cd/mq @65° |  |     |      |

# Utilisation factors

| R    | 77 | 75 | 73 | 71 | 55 | 53 | 33 | 00 | DRR |
|------|----|----|----|----|----|----|----|----|-----|
| K0.8 | 69 | 65 | 63 | 60 | 65 | 62 | 62 | 59 | 76  |
| 1.0  | 72 | 69 | 66 | 65 | 68 | 66 | 66 | 63 | 81  |
| 1.5  | 76 | 74 | 72 | 70 | 73 | 71 | 70 | 68 | 87  |
| 2.0  | 79 | 77 | 75 | 74 | 76 | 75 | 74 | 71 | 92  |
| 2.5  | 80 | 79 | 78 | 77 | 78 | 77 | 76 | 74 | 95  |
| 3.0  | 81 | 80 | 80 | 79 | 79 | 78 | 77 | 75 | 97  |
| 4.0  | 83 | 82 | 81 | 81 | 80 | 80 | 79 | 77 | 98  |
| 5.0  | 83 | 82 | 82 | 82 | 81 | 81 | 79 | 78 | 99  |

# Luminance curve limit



# UGR diagram

| Corrected UGR values (at 3000 lm bare lamp luminous flux)               |      |                     |      |      |      |      |                   |      |      |      |      |
|---|------|---------------------|------|------|------|------|-------------------|------|------|------|------|
| Reflect.:<br>ceiling/cav<br>walls<br>work pl.<br>Room dim<br>x        y |      | 0.70                | 0.70 | 0.50 | 0.50 | 0.30 | 0.70              | 0.70 | 0.50 | 0.50 | 0.30 |
|   |      | 0.50                | 0.30 | 0.50 | 0.30 | 0.30 | 0.50              | 0.30 | 0.50 | 0.30 | 0.30 |
|   |      | 0.20                | 0.20 | 0.20 | 0.20 | 0.20 | 0.20              | 0.20 | 0.20 | 0.20 | 0.20 |
|   |      | viewed<br>crosswise |      |      |      |      | viewed<br>endwise |      |      |      |      |
| 2H  | 2H   | 17.0                | 17.6 | 17.2 | 17.8 | 18.1 | 17.0              | 17.6 | 17.2 | 17.8 | 18.1 |
|   | 3H   | 16.8                | 17.4 | 17.1 | 17.7 | 17.9 | 16.8              | 17.4 | 17.1 | 17.7 | 17.9 |
|   | 4H   | 16.8                | 17.3 | 17.1 | 17.6 | 17.9 | 16.8              | 17.3 | 17.1 | 17.6 | 17.9 |
|   | 6H   | 16.7                | 17.2 | 17.0 | 17.5 | 17.8 | 16.7              | 17.2 | 17.0 | 17.5 | 17.8 |
|   | 8H   | 16.7                | 17.1 | 17.0 | 17.4 | 17.8 | 16.6              | 17.1 | 17.0 | 17.4 | 17.8 |
|   | 12H  | 16.6                | 17.1 | 17.0 | 17.4 | 17.7 | 16.6              | 17.1 | 17.0 | 17.4 | 17.7 |
| 4H  | 2H   | 16.8                | 17.3 | 17.1 | 17.6 | 17.9 | 16.8              | 17.3 | 17.1 | 17.6 | 17.9 |
|   | 3H   | 16.6                | 17.1 | 17.0 | 17.4 | 17.8 | 16.6              | 17.1 | 17.0 | 17.4 | 17.8 |
|   | 4H   | 16.5                | 16.9 | 16.9 | 17.3 | 17.7 | 16.5              | 16.9 | 16.9 | 17.3 | 17.7 |
|   | 6H   | 16.4                | 16.8 | 16.9 | 17.2 | 17.6 | 16.4              | 16.8 | 16.9 | 17.2 | 17.6 |
|   | 8H   | 16.4                | 16.7 | 16.8 | 17.1 | 17.6 | 16.4              | 16.7 | 16.8 | 17.1 | 17.6 |
|   | 12H  | 16.4                | 16.6 | 16.8 | 17.1 | 17.5 | 16.4              | 16.6 | 16.8 | 17.1 | 17.5 |
| 8H  | 4H   | 16.4                | 16.7 | 16.8 | 17.1 | 17.6 | 16.4              | 16.7 | 16.8 | 17.1 | 17.6 |
|   | 6H   | 16.3                | 16.6 | 16.8 | 17.0 | 17.5 | 16.3              | 16.6 | 16.8 | 17.0 | 17.5 |
|   | 8H   | 16.3                | 16.5 | 16.7 | 16.9 | 17.4 | 16.3              | 16.5 | 16.7 | 16.9 | 17.4 |
|   | 12H  | 16.2                | 16.4 | 16.7 | 16.9 | 17.4 | 16.2              | 16.4 | 16.7 | 16.9 | 17.4 |
| 12H   | 4H   | 16.4                | 16.6 | 16.8 | 17.1 | 17.5 | 16.4              | 16.6 | 16.8 | 17.1 | 17.5 |
|   | 6H   | 16.3                | 16.5 | 16.7 | 16.9 | 17.4 | 16.3              | 16.5 | 16.7 | 16.9 | 17.4 |
|   | 8H   | 16.2                | 16.4 | 16.7 | 16.9 | 17.4 | 16.2              | 16.4 | 16.7 | 16.9 | 17.4 |
| Variations with the observer position at spacing:                       |      |                     |      |      |      |      |                   |      |      |      |      |
| S =   | 1.0H | 5.1 / -13.5         |      |      |      |      | 5.1 / -13.5       |      |      |      |      |
|   | 1.5H | 7.9 / -14.7         |      |      |      |      | 7.9 / -14.7       |      |      |      |      |
|   | 2.0H | 9.9 / -15.9         |      |      |      |      | 9.9 / -15.9       |      |      |      |      |