

| Requirements for electronic non-dimmable control gears for fluorescent lamps and LED   |   |  | Version 14                       |
|--|---|--|----------------------------------|
| <b>Manufacturer:</b><br><b>OSRAM GmbH</b><br><b>Marcel-Breuer-Str. 6</b><br><b>D-80807 München</b>   | <b>ECG-type:</b> OTi FIT 35/220-240/700 NFC L( 4062172064002 )<br><b>Date:</b> 09.06.2021   | <b>Manufacturer information</b><br>Complies: YES/NO  |                                  |
| <b>Specifications:</b>   | <b>CEAG data:</b>   | <b>Explanation:</b>  |                                  |
| Control gear suitable for a DC voltage range:  | <b>186V - 260V DC (for Lead-Battery)</b>  | Possible voltage range of the battery in emergency mode.<br>(Not for AT-S+ Systems required)   | <b>YES</b>                       |
| Control gear compatible with the switch-over time of the system?   | <b>Switch-over time:</b><br><b>180 ms - 450 ms</b>  | Typical switch-over time of CEAG systems between mains supply and emergency power supply   | <b>YES</b>                       |
| Starting behavior of the control gear:   | <b>Stable current consumption after less than 1.6 sec. maximum.</b>   | A stable operation of the control gear after 1.6 seconds of start up is required for the right functionality of the individual monitoring. With max. 20 luminaires for one current circuit: $\Delta I$ in sum < 250 mA are allowed   | <b>YES</b>                       |
| Control gear compatible with CEAG STAR-Technology:   | <b>Phase-cut telegram (PAT):</b><br><b>max. 30 phases (half waves) with max. 60° phase-cuts</b>   | During the CEAG STAR switching process, up to 30 half-waves are cut at a maximum of 60°. The control gear must not exhibit any malfunctions such as switching off, flickering  | <b>YES</b>                       |
| <u>only for fluorescent lamps:</u><br>Control gear complies with the standard:   | <b>DIN EN 60929</b>   | AC and/or DC-supplied electronic control gear for tubular fluorescent lamps - Performance requirements   | <b>n/a</b>                       |
| <u>only for fluorescent lamps:</u><br>Control gear complies with the standard:   | <b>DIN EN 61347-2-3 (incl. Attachment J)</b>  | Particular requirements for AC and/or DC supplied electronic control gear for fluorescent lamps  | <b>n/a</b>                       |
| <u>only for LED:</u><br>Control gear complies with the standard:   | <b>DIN EN 62384</b>   | AC or DC supplied electronic control gear for LED modules - Performance requirements   | <b>YES</b>                       |
| <u>only for LED:</u><br>Control gear complies with the standard:   | <b>DIN EN 61347-2-13</b>  | Particular requirements for AC or DC supplied electronic control gear for LED modules  | <b>YES</b>                       |
| Control gear complies with the standard:   | <b>DIN EN 55015 (Measured in AC and DC)</b>   | Limits and methods of measurement of radio disturbance characteristics of electrical lighting and similar equipment  | <b>YES</b>                       |
| Control gear complies with the standard:   | <b>DIN EN 61000-3-2, Pkt. 7.3 a.)</b>   | <b>see *Important note!</b>  | <b>YES</b>                       |
| Control gear complies with the standard:   | <b>DIN EN 61547</b>   | Equipment for general lighting purposes - EMC immunity requirements  | <b>YES</b>                       |
| Note: The labeling "according to VDE 0108" is not meaningful, because this is not a control gear standard!   |   |  |                                  |
| <b>Specifications:</b>   | <b>CEAG data:</b>   | <b>Explanation:</b>  | <b>Manufacturer information:</b> |
| <u>Important for functiontest:</u><br>Voltage-dependent<br>Input current of the control gear incl. LED<br>in DC and AC operation:  | <b>V-CG-S2: &gt;9,4 mA or &gt;12,7 mA = OK</b><br><b>V-CG-S: &gt;16 mA or &gt;47 mA = OK</b><br><b>V-CG-SE: &gt;16 mA or &gt;47 mA = OK</b><br><b>V-CG-SUW: &gt;47 mA = OK</b><br><b>CG-K: &gt;16 mA or &gt;47 mA = OK</b>  | Minimum current of the LED driver with LED module to GOOD detection via the monitoring module.<br>In the voltage range of 189 - 264V AC on AT-S+ or 186 - 260V DC on ZB-S/LP-STAR the input current must be higher than the specified current values.<br><b>see *Important note!</b> | <b>see Table</b>                 |
| <u>Important for functiontest:</u><br>Voltage-dependent<br>No-load current of the control gear (without or defect LED module)<br>in DC and AC - operation*:  | <b>V-CG-S2: &lt;5,8 mA or &lt;7,9 mA = n.OK</b><br><b>V-CG-S: &lt;10 mA or &lt;28 mA = n.OK</b><br><b>V-CG-SE: &lt;10 mA or &lt;28 mA = n.OK</b><br><b>V-CG-SUW: &lt;28 mA = n.OK</b><br><b>CG-K: &lt;10 mA or &lt;28 mA = n.OK</b>   | Maximal current of the LED driver with LED module for BAD detection via the monitoring module.<br>In the voltage range of 189 - 264V AC on AT-S+ or 186 - 260V DC on ZB-S/LP-STAR the input current must be lower than the specified current values.<br><b>see *Important note!</b>  | <b>see Table</b>                 |
| Important for the power consumption of addressable ballast:  | <b>V-CG-S2 = 30 A</b><br><b>V-CG-S = 30 A</b><br><b>V-CG-SE = 30 A</b><br><b>V-CG-SUW = 80 A</b><br><b>CG-K = 30 A</b>  | The max. inrush current of each monitoring module has to be considered!  | <b>see Table</b>                 |
| <b>Note: Important for the planning - Max. no. Of luminaires per circuit</b>   |   |  |                                  |
| <u>Important for the contact load SKU:</u><br>Max. inrush current of each luminaire in AC operation  | <b>Max. permitted inrush current per circuit:</b><br><b>SKU 2 x 3A (CG) =&gt; 120 A</b><br><b>SKU 1 x 6A (CG) =&gt; 180 A</b><br><b>SKU 4 x 1,5A CG-S =&gt; 60 A</b><br><b>SKU 2 x 3A CG-S =&gt; 250 A</b><br><b>SKU 1 x 6A CG-S =&gt; 250 A</b><br><b>SOU CG-S // S+ =&gt; 250 A</b><br><b>SU S+ =&gt; 250 A</b> | <b><math>I_{peak} = &lt;16 A, TH = 100 \mu s</math></b><br><br>The declaration of the inrush current of the luminaire is important, to calculate the max. possible luminaires on one circuit, to consider the max. contact load limitation of the circuit.                           |                                  |
| <b>Luminaires for emergency lighting must comply with DIN EN 60598-2-22 (Particular requirements -Luminaires for emergency lighting)</b>   |   |  |                                  |
| <b>*Important note!</b>  |   |  |                                  |
| <b>For AT-S+ systems and for battery systems (ZB-S / LP-STAR) with active preliminary time for AC about 300 seconds (EOL detection of T5 lamps) for the function test, the current consumption must be sinusoidal, t.m. all control gears (&lt;25W as well) must have an active PFC (Power Factor Correction)!</b><br><b>See DIN EN 61000-3-2, Pkt. 7.3 a.)</b>  |   |  |                                  |
| <b>Note EOL (End of Life) detection (T5 &gt; 14Watt): The AC preliminary time is valid for the complete system (e.g. ZB-S), not possible for individual circuits.</b><br>The modules of the V-CG-S series monitor the current consumption on the primary side of the control gear for LED modules within the specified limits. Failures of individual LEDs (low-impedance) on the secondary side do not inevitably lead to a modification of current consumption on the primary side, and in such cases cannot be detected as a failure. |   |  |                                  |

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| Manufacturer:<br>OSRAM GmbH<br>Marcel-Breuer Str. 6<br>D-80807 München | Product:<br><br><b>OT FIT 35/220-240/700 NFC L</b><br><b>( 4062172064002 )</b> | <b>OSRAM GmbH</b> |
|--|--|-------------------|

Table 1

| Values for load range        | AC-operation                   |                                |                                |                                | DC-Operation              |                           |                           |                           |
|------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|---------------------------|---------------------------|---------------------------|---------------------------|
|                              | 189VAC/50Hz<br>Itrms_in ( mA ) | 230VAC/50Hz<br>Itrms_in ( mA ) | 240VAC/50Hz<br>Itrms_in ( mA ) | 264VAC/50Hz<br>Itrms_in ( mA ) | 186VDC<br>Itrms_in ( mA ) | 216VDC<br>Itrms_in ( mA ) | 240VDC<br>Itrms_in ( mA ) | 260VDC<br>Itrms_in ( mA ) |
| Min. Load /mA<br>P_out= 5 W  | not supported<br>(51)          | 52                             | 52                             | 54                             | 40                        | 37                        | 35                        | 33                        |
| Mid. Load /mA<br>P_out= 15 W | not supported<br>(103)         | 90                             | 88                             | 85                             | 98                        | 85                        | 77                        | 73                        |
| Max. Load /mA<br>P_out= 35 W | not supported<br>(221)         | 183                            | 175                            | 161                            | 217                       | 186                       | 168                       | 155                       |
| Short/Open Load              | not supported<br>(28)          | 32                             | 33                             | 35                             | 18                        | 17                        | 17                        | 17                        |

**Remarks:**

- 1.) This table shows the currents consumption of the driver at three different operating points (Pmax, Pmid, Pmin) for AC and DC operation.
- 2.) This table is intended for rough design decisions . It is not a replacement for individual functional measurements!