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Requirements for electronic non-dimmable control gears for fluorescent lamps and LED

Version 8

Manufacturer:	Type / Description:
OSRAM GmbH **Marcel-Breuer-Str. 6** **D-80807 München**	**Control gear: OT FIT 15 220-240 500 LT2 LP (ident code: AM05122)**

Specifications:	CEAG data:	Explanation:	Fulfilled: (Yes / No)
Control gear suitable for a DC voltage range:	**186V - 260V DC (for Lead-Battery)** **186V - 275V DC (for NiCD-Battery)**	Possible voltage range of the battery in emergency mode. *(Not for AT-S⁺ Systems required)*	**YES**
Control gear compatible with the switch-over time of the system?	**Switch-over time:** **180 ms - 450 ms**	Typical switch-over time of CEAG systems between mains supply and emergency power supply	**YES**
Starting behavior of the control gear:	**Stable current consumption after less than 1.6 sec. maximum.**	Necessary for an individual monitoring. Δ I < 12,5 mA per luminaire, with max. 20 luminaires per circuit Δ I sum < 250 mA	**YES**
only for flourescent lamps: Control gear complies with the standard:	**DIN EN 60929**	AC and/or DC-supplied electronic control gear for tubular fluorescent lamps - Performance requirements	**Not relevant**
only for flourescent lamps: Control gear complies with the standard:	**DIN EN 61347-2-3 (incl. Attachment J)**	Particular requirements for AC and/or DC supplied electronic control gear for fluorescent lamps	**Not relevant**
only for LED: Control gear complies with the standard:	**DIN EN 62384**	AC or DC supplied electronic control gear for LED modules - Performance requirements	**YES**
only for LED: Control gear complies with the standard:	**DIN EN 61347-2-13**	Particular requirements for AC or DC supplied electronic control gear for LED modules	**YES**
Control gear complies with the standard:	**DIN EN 55015** **(Measured in AC and DC)**	Limits and methods of measurement of radio disturbance characteristics of electrical lighting and similar equipment	**YES**
Control gear complies with the standard:	**DIN EN 61000-3-2**	Electromagnetic compatibility (EMC) - Part 3-2: Limits - Limits for harmonic current emissions (equipment input current ≤ 16 A per phase)	**YES**
Control gear complies with the standard:	**DIN EN 61000-3-2, Pkt. 7.3 a.)**	**see *Important note!**	**YES**
Control gear complies with the standard:	**DIN EN 61547**	Equipment for general lighting purposes - EMC immunity requirements	**(*2) YES**

Note: The labeling "according to VDE 0108" is not meaningful, because this is not a control gear standard!

Specifications:	CEAG data:	Explanation:	Manufacturer specification:
Important for functiontest: Voltage-dependent Input current of the control gear incl. LED in DC and AC operation:	**V-CG-S2: >9,4 mA or >12,7 mA = OK** **V-CG-S: >16 mA or >47 mA = OK** **V-CG-SE: >16 mA or >47 mA = OK** **V-CG-SUW: >47 mA = OK** **CG-K: >16 mA or >47 mA = OK**	Selection guide for the monitoring modules as well as for the calculation of the max. number of luminaires per circuit and the necessary battery capacity. In the voltage range of 186 - 275V DC and 189 - 264V AC the input current must be higher. **see *Important note! (*1)**	**AC: see TABLE 1** **DC: see TABLE 1**
Important for functiontest: Voltage-dependent No-load current of the control gear (without or defect LED module) in DC and AC - operation*:	**V-CG-S2: <5,8 mA or <7,9 mA = n.OK** **V-CG-S: <10 mA or <28 mA = n.OK** **V-CG-SK: <10 mA or <28 mA = n.OK** **V-CG-SUW: <28 mA = n.OK** **CG-K: <10 mA or <28 mA = n.OK**	Selection guide for the monitoring modules. In the voltage range of 186 - 275V DC and 189 - 264V AC the no-load current must be lower. **see *Important note! (*1)**	**AC: see TABLE 1** **DC: see TABLE 1**
Important for the contact load SKU: Max. inrush current of each luminaire in AC operation	**Max. permitted inrush current per circuit:** **SKU 2 x 3A (CG) => 120 A** **SKU 1 x 6A (CG) => 180 A** **SKU 4 x 1,5A CG-S => 60 A** **SKU 2 x 3A CG-S => 250 A** **SKU 1 x 6A CG-S => 250 A** **SOU CG-S // S⁺ => 250 A** **SU S⁺ => 250 A**	Describes the max. inrush current of all luminaires in one circuit to calculate the maximum contact load of the circuit.	**Ipeak=13A TH=124µs**
Important for lighting design: Luminous flux ratio: 186 V DC operation in comparison to 230 V AC operation	-	Light output in battery operation is needed for the light calculation.	**100%**

Luminaires for emergency lighting must comply with DIN EN 60598-2-22 (Particular requirements -Luminaires for emergency lighting)

***Important note!**

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 (<25W as well) must have an active PFC! See DIN EN 61000-3-2, Pkt. 7.3 a.)
Note EOL detection (T5 > 14Watt): The AC preliminary time is valid for the complete system (e.g. ZB-S), not possible for individual circuits.

*1) 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.

*2) Not to be used in high risk areas, special release required

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Table1:

Manufacturer: OSRAM GmbH Marcel-Breuer Str. 6 D-80807 München	Product: **OT FIT 15 220-240 500 LT2 LP**	OSRAM

LED controller type	Values for load range	I_N in AC-operation (230V) / mA (trms)	I_N in AC-operation (240V) / mA (trms)	I_N in DC-operation (186V) / mA (trms)	I_N in DC-operation (216V) / mA (trms)	I_N in DC-operation (240V) / mA (trms)	I_N in DC-operation (260V) / mA (trms)
OT FIT 15 220-240 500 LT2 LP	Maximum Load /m Uout= 54V Iout= 1050mA	102,68	99,32	120,54	103,74	93,69	86,67
	Minimum Load /m. Uout= 27V Iout= 800mA		32,44			18,81	
	No Load		21,24	1,72		1,72	1,51
	Short Load		21,19	5,78		2,90	1,56

Maximum inrush current for ECG in AC Operation: I_{peak}=13A T_H=124µs