

Features

TRIAC Dimmable LED Driver

- Triac –dimmable with leading or trailing edge dimmers
- Class II with SELV output (no earth required)
- Extra-large screw terminals and integrated cable clamps for easy installation
- Power factor corrected >0.95
- Dimming range 1..100%
- Compatible with a wide range of dimmers

RACT12

12 Watt TRIAC Dimmable Single Output



Description

The RACT12-xxx series are low cost, triac-dimmable, constant current 12W LED drivers available with either 300mA, 350mA, 500mA or 700mA full-range outputs. The drivers are Class II (double insulated) meaning no earth connection is required. The phase angle dimming works with leading or trailing edge dimmers. The RACT12 is suitable for indoor locations up to 50°C ambient temperature and is certified for building into furniture for applications such as dimmable shelf lighting, cove lighting or accent lighting. It is CE marked (LVD + EMC + RoHS), EAC and has IEC61347-1/IEC61347-2-13 CB report certification.

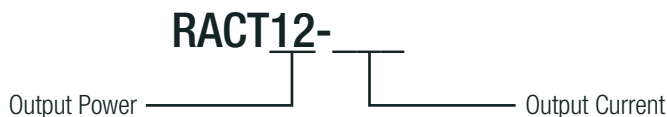
Selection Guide

| Part Number | Input Voltage Range [VAC] | Output Voltage Range [VDC] | Output Current [mA] | Efficiency min. @rated load [%] | Output Power [W] |
|-------------|---------------------------|----------------------------|---------------------|---------------------------------|------------------|
| RACT12-300 | 198-264 | 20-40 | 300 | 82 | 12 |
| RACT12-350 | 198-264 | 18-35 | 350 | 81 | 12 |
| RACT12-500 | 198-264 | 12-24 | 500 | 81 | 12 |
| RACT12-700 | 198-264 | 9-18 | 700 | 81 | 12 |

All LED Drivers may not be used without a load. They must be switched on the primary side only. Noncompliance may damage the LED or reduce its lifetime.



Model Numbering



Specifications (measured @ Ta= 25°C, 240VAC, rated load unless otherwise specified)

| BASIC CHARACTERISTICS | | | | |
|---------------------------|-----------|--------|--------|--------|
| Parameter | Condition | Min. | Typ. | Max. |
| Input Voltage Range | | 198VAC | 230VAC | 264VAC |
| Input Current | | | | 80mA |
| Inrush Current | full load | | | 5A |
| No Load Power Consumption | | | | 1W |
| Input Frequency Range | | 50Hz | | 60Hz |
| Power Factor | full load | 0.95 | | |

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IEC/EN61347 certified
 IEC/EN61347-2-13 certified
 EN61547 certified
 EN62493 certified
 EN55015 compliant
 CB report

Specifications (measured @ Ta= 25°C, 240VAC, rated load unless otherwise specified)

| Parameter | Condition | Min. | Typ. | Max. |
|--------------------------------------|-----------|------|-------|-------|
| THD | full load | | | 25% |
| Start-up Time | | | | 500ms |
| Internal Operating Frequency | | | 60kHz | |
| Output Ripple Current ⁽¹⁾ | | | | 200mA |

Notes:
 Note1: Measured at 20MHz BW by using a 12" twisted pair-wie terminated with a 0.1µF and 47µF capacitor parallel across output

| REGULATIONS | | |
|-----------------|-----------|----------|
| Parameter | Condition | Value |
| Output Accuracy | | ±5% typ. |
| Load Regulation | | 5% max. |
| Line Regulation | | 5% max. |

| PROTECTION | | |
|-----------------------------------|--|---|
| Parameter | Condition | Value |
| Input Fuse | | fusible resistor |
| Short Circuit Protection (SCP) | | Latch OFF, auto recovery after fault condition is removed |
| Over Voltage Protection (OVP) | RACT12-300 RACT12-350 RACT12-500 RACT12-700 | 50VDC max. 42VDC max. 30VDC max. 26VDC max. Latch OFF, auto recovery after fault condition is removed |
| Over Load Protection (OLP) | | Latch OFF, auto recovery after fault condition is removed |
| Over Temperature Protection (OTP) | 110°C | Latch OFF, auto recovery after fault condition is removed |
| Isolation Voltage | I/P to O/P tested for 1 minute | 3.75kVAC |
| Leakage Current | | 5mA max. |

Maximum loading of automatic circuit breakers*

* @ 230VAC, 10hm, 90° phase angle and max. load

| Circuit Breaker | Circuit Breaker Current | | | |
|-----------------|-------------------------|-----|-----|-----|
| | 10A | 16A | 20A | 25A |
| Typ | | | | |
| B | 36 | 57 | 69 | 85 |
| C | 57 | 87 | 109 | 134 |

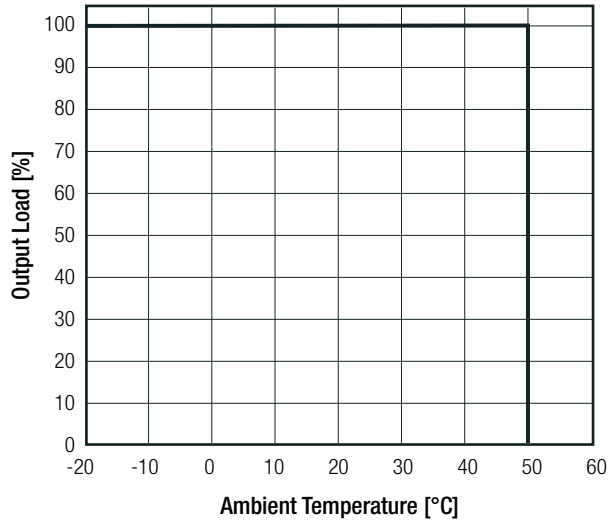
| ENVIRONMENTAL | | |
|-----------------------------|--|--|
| Parameter | Condition | Value |
| Operating Temperature Range | without derating @ natural convection 0.1m/s (see graph) | -20°C to +50°C |
| Max. Case Temperature | at tc point | +80°C max. |
| Operating Humidity | non-condensing | 5-85% RH |
| IP Rating | | IP20 |
| Pollution Degree | | PD2 |
| Design Lifetime | +25°C ambient | RACT12-300 all others |
| | | >40 x 10 ³ hours >30 x 10 ³ hours |

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Specifications (measured @ Ta= 25°C, 240VAC, rated load unless otherwise specified)

Derating Graph

(@ Chamber and natural convection 0.1 m/s)



SAFETY AND CERTIFICATIONS

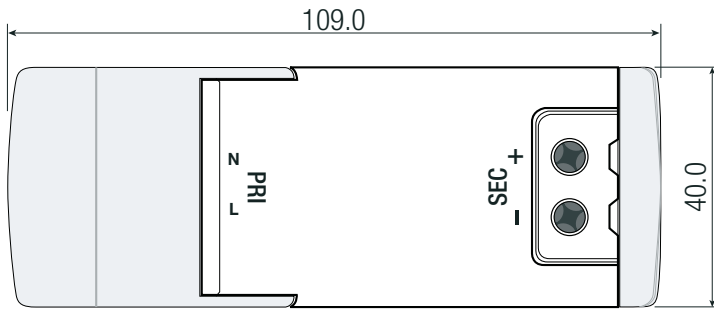
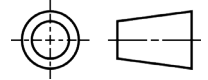
| Certificate Type (Safety) | Report Number | Standard |
|--|--|--|
| Lamp controlgear Part 1: General and safety requirements (CB Scheme) | 325797 | IEC61347-1:2007 2nd Edition + A2:2012 |
| Lamp controlgear Part 2-13: Particular requirements for d.c. or a.c. supplied electronic controlgear for LED modules (CB Scheme) | 325797 | IEC61347-2-13:2014 2nd Edition |
| Lamp controlgear Part 1: General and safety requirements (LVD) | | EN61347-1:2015 |
| Lamp controlgear Part 2-13: Particular requirements for d.c. or a.c. supplied electronic controlgear for LED modules (LVD) | | EN61347-2-13:2014 + A1:2017 |
| Lamp controlgear Part 1: General and safety requirements | 325797 | EN61347-1:2008 + A2:2013 |
| Lamp controlgear Part 2-13: Particular requirements for d.c. or a.c. supplied electronic controlgear for LED modules | 325797 | EN61347-2-13:2014 |
| EAC | RU-AT.49.09571 | TP TC 004/2011 |
| RoHS 2+ | | RoHS 2011/65/EU + AM2015/863 |
| EMC Compliance | Condition | Standard / Criterion |
| Limits and methods of measurement of radio disturbance characteristics of electrical lighting and similar equipment | 305985 | EN55015:2013 + A1:2015 |
| Equipment for general lighting purposes – EMC immunity requirements | | EN61547:2009 |
| Assessment of lighting equipment related to human exposure to electromagnetic fields | | EN62493:2015 |
| ESD Electrostatic discharge immunity test | Air ±8kV, Contact ±4kV | EN61000-4-2:2009, Criteria A |
| Radiated, radio-frequency, electromagnetic field immunity test | 3V/m | EN61000-4-3:2006 + A2:2010, Criteria A |
| Fast Transient and Burst Immunity | AC Power Port: ±1kV DC Power Port: ±0.5kV | EN61000-4-4:2012, Criteria A |
| Surge Immunity | AC Power Port: ±0.5kV | EN61000-4-5:2014, Criteria A |
| Immunity to conducted disturbances, induced by radio-frequency fields | 3V/m | EN61000-4-6:2014, Criteria A |
| Voltage Dips and Interruptions | Voltage Dips >95% | EN61000-4-11:2004, Criteria B |
| Voltage Dips and Interruptions | Voltage Dips 30% | EN61000-4-11:2004, Criteria B |
| Limits of Harmonic Current Emissions | | EN61000-3-2:2014, Class C |
| Limits of Voltage Fluctuations & Flicker | | EN61000-3-3:2013, Clause 5 |

Specifications (measured @ Ta= 25°C, 240VAC, rated load unless otherwise specified)

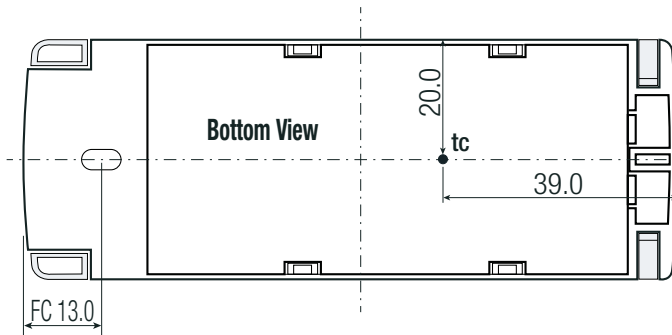
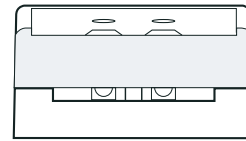
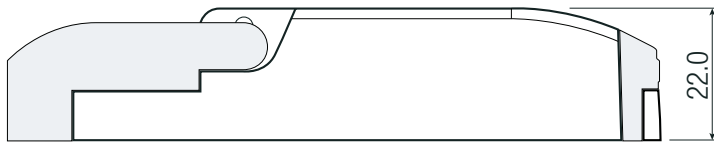
DIMENSION and PHYSICAL CHARACTERISTICS

| Parameter | Type | Value |
|---------------------------|------|-----------------------|
| Material | case | plastic (UL94V-0) |
| | PCB | FR4 (UL94V-0) |
| Package Dimension (LxWxH) | | 109.0 x 40.0 x 22.0mm |
| Package Weight | | 70g typ. |

Dimensions Drawing (mm)



wire stripping length: 6-7mm
recommended tightening torque: 0.25Nm
tc= case temperature measuring point
FC= fixing centers
Tolerance: xx.x= ±1.0mm
xx.xx= ±0.5mm

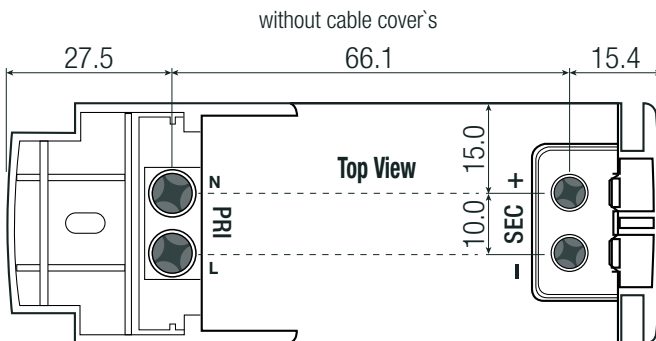


Connection via Screw Terminal

| Function | Solid Wire | Stranded Wire ⁽²⁾ | AWG |
|------------|-------------------------|------------------------------|-------|
| VAC in (N) | 0.75-2.5mm ² | 0.75-2.5mm ² | 20-14 |
| VAC in (L) | 0.75-2.5mm ² | 0.75-2.5mm ² | 20-14 |
| LED+ | 0.5-2.5mm ² | 0.5-2.5mm ² | 21-14 |
| LED- | 0.5-2.5mm ² | 0.5-2.5mm ² | 21-14 |

Notes:

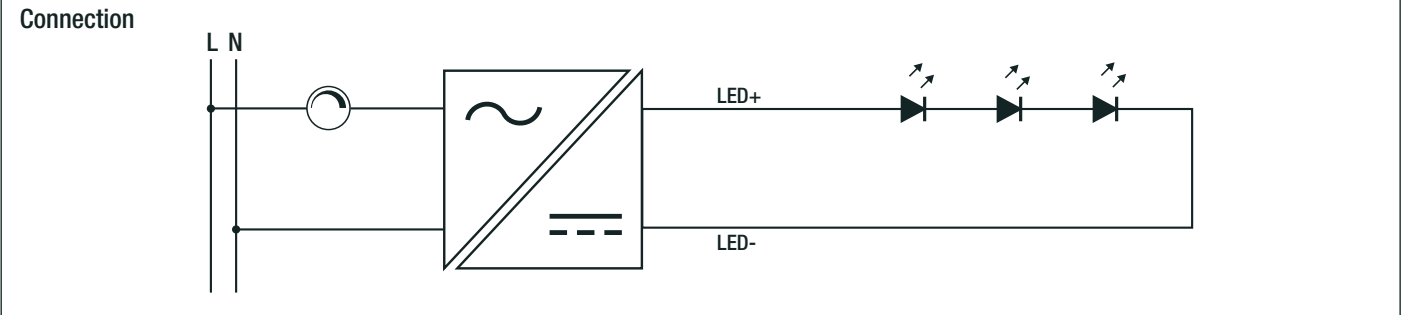
Note2: The use of sleeve or ferrule terminations is recommended



Specifications (measured @ Ta= 25°C, 240VAC, rated load unless otherwise specified)

INSTALLATION and APPLICATION

| Dimming Type | Value |
|--------------|---|
| AC phase-cut | work with leading/trailing edge dimmers |



PACKAGING INFORMATION

| Parameter | Type | Value |
|-----------------------------|----------------|------------------------|
| Packaging Dimension (LxWxH) | cardboard box | 270.0 x 127.0 x 48.0mm |
| Packaging Quantity | | 10pcs |
| Storage Temperature Range | | -20°C to +70°C |
| Storage Humidity | non-condensing | 5-85% RH |

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