

# Features

# LED Driver

- Low Profile Case (13mm height max.)
- 12V and 24V Constant Voltage Outputs
- Terminal Block Input/Output with Cable Clamps
- Fully Protected (OLP, SCP, OCP, OTP)
- Suitable for Class I and Class II Luminaires
- low cost

## Description

These low profile constant voltage LED drivers have been designed for cost-sensitive applications. The SELV outputs are suitable for both independently supplied or built-in power-supply LED luminaires. Their low profile design allows them to be invisibly built into furniture, discreetly mounted under shelves or integrated in space-restricted applications such as coving lighting, strip lighting or troffer lighting systems. The power supplies are short circuit and overload protected and come with a full 3-year warranty.

## Selection Guide

Part Number	nom. Input Voltage [VAC]	Input Current [mA]	Output Voltage [VDC]	Output Current Range [mA]	Efficiency typ. [%]	Output Power max. [W]
RACV20-12-LP	230	210	12	0-1670	82	20W
RACV20-24-LP	230	210	24	0-830	84	20W

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.

## Specifications (measured @ ta= 25°C, 240VAC and rated load)

BASIC CHARACTERISTICS				
Parameter	Condition	Min.	Typ.	Max.
Input Voltage Range		198VAC	230VAC	264VAC
Inrush Current				8.0A
Start-up Time				50ms
Input Frequency Range		47Hz		63Hz
No Load Power Consumption				0.5W
Power Factor	full load, 230VAC			0.55
Internal Operating Frequency	full load	35kHz		140kHz
Output Ripple Voltage <sup>(1)</sup>	12Vout 24Vout			700mVp-p 500mVp-p
<b>Notes:</b>				
Note1: Measured at 20MHz BW using 0.1µF & 47µF parallel capacitor.				

REGULATIONS		
Parameter	Condition	Value
Output Voltage Accuracy		±5% max.
Line Regulation		3% max.
Load Regulation		3% max.

## RACV20-LP

20 Watt  
Constant  
Voltage Single  
Output



IEC/EN61347-1 Certified  
IEC/EN61347-2-13 Certified  
ENEC Certified  
CB Report  
EN55015 Compliant

**Specifications** (measured @  $t_a = 25^\circ\text{C}$ , 240VAC and rated load)

PROTECTION		
Parameter	Condition	Value
Input Fuse	external fuse is recommended	T1A
Open Circuit Protection (OCP)		auto recovery after fault condition is removed
Over Load Protection (OLP)		auto recovery after fault condition is removed
Over Voltage Protection (OVP)		auto recovery after fault condition is removed
Over Temperature Protection (OTP)	110°C Tcase	auto recovery after fault condition is removed
Isolation Voltage	I/P to O/P	3.75kVAC / 1 minute

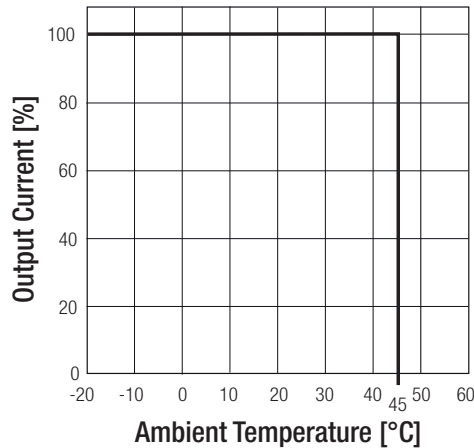
**Maximum loading of automatic circuit breakers**

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

Circuit Breaker	Circuit Breaker Current				
	Typ	10A	16A	20A	25A
B	11	18	23	29	
C	24	39	49	61	

ENVIRONMENTAL		
Parameter	Condition	Value
Operating Temperature Range		-20°C to +45°C, Ambient
Maximum Case Temperature		+85°C
Operating Altitude		2000m
Operating Humidity		5% to 85% RH, non condensing
IP Rating		IP20
Pollution Degree		PD2
Design Lifetime		30 x 10 <sup>3</sup> hours

**Derating Graph**



SAFETY AND CERTIFICATIONS		
Certificate Type	Report Number	Standard
Lamp Controlgear General Requirements for Safety	305987	IEC61347-1, 2nd Edition, 2012 EN61347-1, 2nd Edition 2013
Lamp Controlgear Particular Requirements	+ 305985	IEC61347-2-13, 2nd Edition, 2014 EN61347-2-13, 2014
D.C. or A.C. Controlgears for LED Performance Requirements	305984-1 + 305984-1	IEC/EN62384, 1st Edition, 2009
RoHS 2.1	LCS1606201548R	RoHS-2011/65/EU + AM-2015/863

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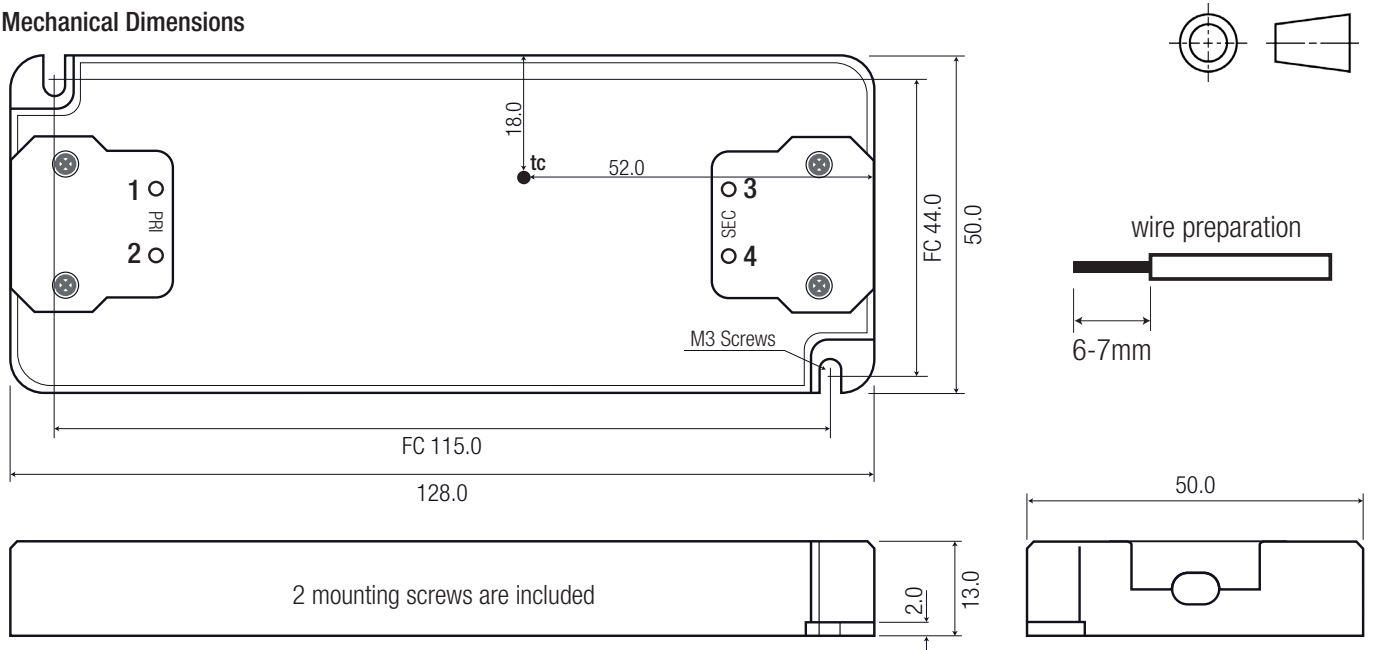
**Specifications** (measured @  $t_a = 25^\circ\text{C}$ , 240VAC and rated load)

EMI Compliance		Standard / Criterion
Equipment for general Lighting Purpose - EMC Immunity Requirements	305984 + 305985	EN61547, 2009
Limits and methods of measurement of radio disturbance characteristics of electrical lighting and similar equipment		EN55015, 2015
Assessment of lighting equipment related to human exposure to electromagnetic fields		EN61493, 2015
ESD Electrostatic discharge immunity test	$\pm 8\text{kV}$ Air Discharge, $\pm 4\text{kV}$ Contact Discharge	EN61000-4-2, 2009, Criteria B
Radiated, radio-frequency, electromagnetic field immunity test	3V/m	EN61000-4-3, 2010, Criteria A
Fast Transient and Burst Immunity	$\pm 0.5\text{kV}$ (DC Output) $\pm 1\text{kV}$ (AC Input)	EN61000-4-4, 2012, Criteria B
Surge Immunity	$\pm 0.5\text{kV}$ (AC Input)	EN61000-4-5, 2014, Criteria C
Immunity to conducted disturbances, induced by radio-frequency fields	3V	EN61000-4-6, 2014, Criteria A
Voltage Dips and Interruptions	95% reduction 30% reduction	EN61000-4-11, 2014, Criteria B EN61000-4-11, 2014, Criteria C
Limits of Harmonic Current Emissions		EN61000-3-2, Class C, 2014
Voltage Fluctuations and Flicker in Public Low-Voltage Systems $\leq 16\text{A}$ per phase		EN61000-3-3, 2013

**DIMENSION and PHYSICAL CHARACTERISTICS**

Parameter	Type	Value
Material	Case	Plastic (UL94V-2)
Package Dimension (LxWxH)		128.0 x 50.0 x 13.0mm
Package Weight		75g

**Mechanical Dimensions**



**Connection via Screw Terminal**

#	Function	Solid Wire	Stranded Wire <sup>(2)</sup>	AWG
1	VAC in (N)	0.75-1.5mm <sup>2</sup>	0.75-1.5mm <sup>2</sup>	20-16
2	VAC in (L)	0.75-1.5mm <sup>2</sup>	0.75-1.5mm <sup>2</sup>	20-16
3	LED+	0.5-1.5mm <sup>2</sup>	0.5-1.5mm <sup>2</sup>	21-16
4	LED-	0.5-1.5mm <sup>2</sup>	0.5-1.5mm <sup>2</sup>	21-16

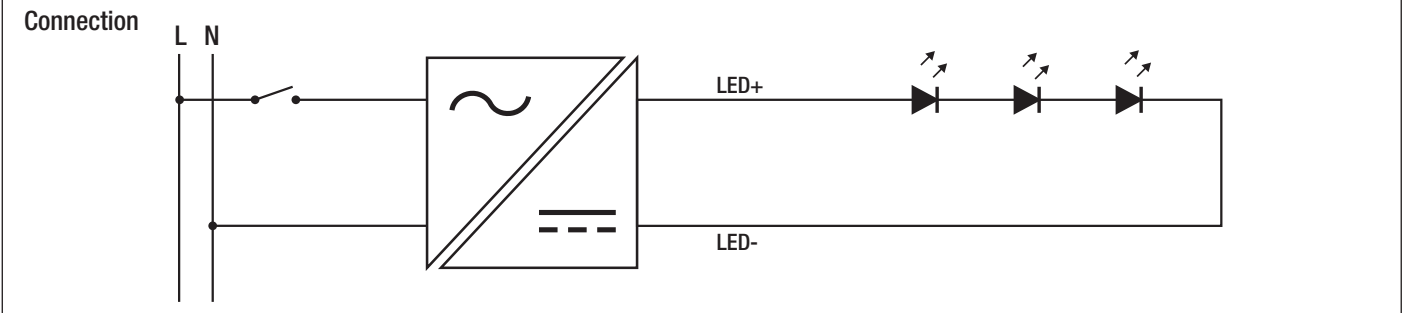
**Notes:**

Note2: The use of sleeve or ferrule terminations is recommended.

wire stripping length: 6-7mm  
recommended tightening torque: 0.25Nm  
tc= case temperature measuring point  
FC= fixing centers  
NC= no connection  
Tolerance: xx.x=  $\pm 0.5\text{mm}$   
xx.xx=  $\pm 0.35\text{mm}$

Specifications (measured @  $t_a = 25^\circ\text{C}$ , 240VAC and rated load)

### INSTALLATION and APPLICATION



### PACKAGING INFORMATION

Parameter	Type	Value
Packaging Dimension (LxWxH)	Cardboard Box	265.0 x 139.0 x 62.0mm
Packaging Quantity		10pcs
Storage Temperature Range		$-20^\circ\text{C}$ to $+70^\circ\text{C}$
Storage Humidity		5% - 85% RH