

# Features

## LED Driver

- Low Cost 230VAC LED Power Supply
- 350mA to 1050mA Output, 25-44VDC
- Active Power Factor Correction >0.95
- Designed to drive 15W-46W COB LEDs
- Terminal Block Input/Output with Cable Clamps
- Fully Protected (OLP, SCP, OCP, OTP)
- Suitable for Class I and Class II Luminaires

## Description

These COB LED drivers are available with eleven preset output currents between 350mA and 1050mA. They are designed to drive COB (Chip On Board) high power LEDs with a forward voltage between 25V and 44VDC from a 230VAC supply (198-264VAC). They operate with efficiencies of up to 90%, feature active PFC and are fully protected against short circuit, output overvoltage, open-circuit and over-temperature conditions. The LED drivers are suitable for both independent and built-in installations and for installations inside furniture.

## Selection Guide

Part Number	Input Voltage Range [VAC]	Output Voltage Range [VDC]	Output Current [mA]	Efficiency typ. [%]	Rated Power [W]
RCOB-350	198-264	25-44	350	87	15
RCOB-400	198-264	25-44	400	87	17
RCOB-450	198-264	25-44	450	88	20
RCOB-500	198-264	25-44	500	88	22
RCOB-550	198-264	25-44	550	88	24
RCOB-600	198-264	25-44	600	89	26
RCOB-650	198-264	25-44	650	89	28
RCOB-700	198-264	25-44	700	89	31
RCOB-800	198-264	25-44	800	90	35
RCOB-900	198-264	25-44	900	90	40
RCOB-1050	198-264	25-44	1050	90	46

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, 230VAC and rated load)

BASIC CHARACTERISTICS				
Parameter	Condition	Min.	Typ.	Max.
Input Voltage Range		198VAC	230VAC	264VAC
Inrush Current	10µs		8A	
Start-up Time				1s
Input Frequency Range		47Hz		63Hz
Power Factor	full load		0.95	
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**RECOM**  
AC/DC Converter

## RCOB

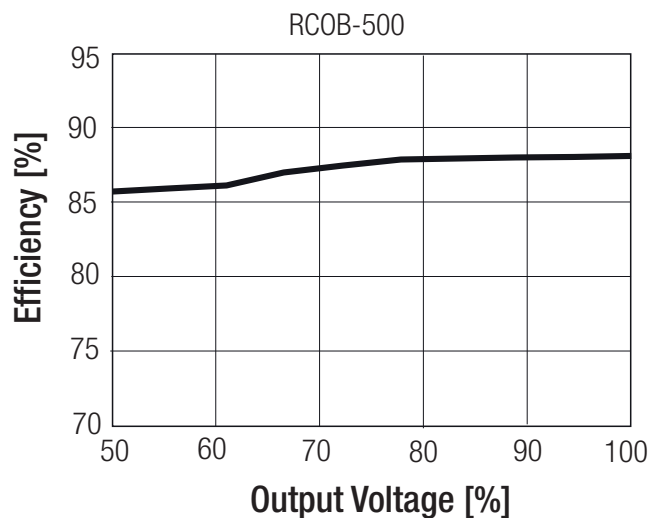
Constant  
Current  
Active PFC  
Single Output



EN-61347-1 Compliant  
EN-61347-2-13 Compliant  
EN-55015 Compliant  
EN-61547 Compliant  
EN-61000-3-2 Compliant  
EN-61000-3-3 Compliant

Specifications (measured @  $t_a = 25^\circ\text{C}$ , 230VAC and rated load)

Efficiency vs. Output Voltage



## REGULATIONS

Parameter	C condition	Value
Output Current Accuracy	includes: line, load and tolerance	$\pm 8\%$ typ.

## PROTECTION

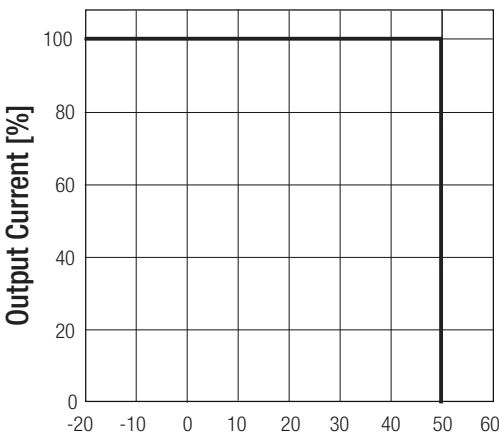
Parameter	Condition	Value
Input Fuse		T1A, slow blow
Short Circuit Protection (SCP)		constant current limit at $I_{\text{nominal}}$ and recovers after fault condition is removed
Over Load Protection (OLP)		power limiting if forward voltage of LED's is higher than 44VDC
Output Over Voltage Protection (OVP)	Zener clamp	56VDC max.
Output Over Current Protection (OCP)		constant current source
Over Temperature Protection (OTP)		automatic recovery after cool down
Isolation Voltage		3kVAC / 1 minute
Surge Capacity	L-N L,N-FG	2kV 4kV

## Maximum loading of automatic circuit breakers\*

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

Power	Circuit Breaker	Circuit Breaker Current			
	Typ	10A	16A	20A	25A
$\geq 7\text{W}$	B	61	100	121	150
	C	121	164	221	291
$\geq 15\text{W}$	B	35	57	69	85
	C	57	87	109	134
$\geq 25\text{W}$	B	24	38	46	58
	C	38	62	74	92
$\geq 35\text{W}$	B	18	30	35	43
	C	29	46	55	69
$\geq 45\text{W}$	B	17	28	33	41
	C	24	39	47	57

**Specifications (measured @  $t_a = 25^\circ\text{C}$ , 230VAC and rated load)**

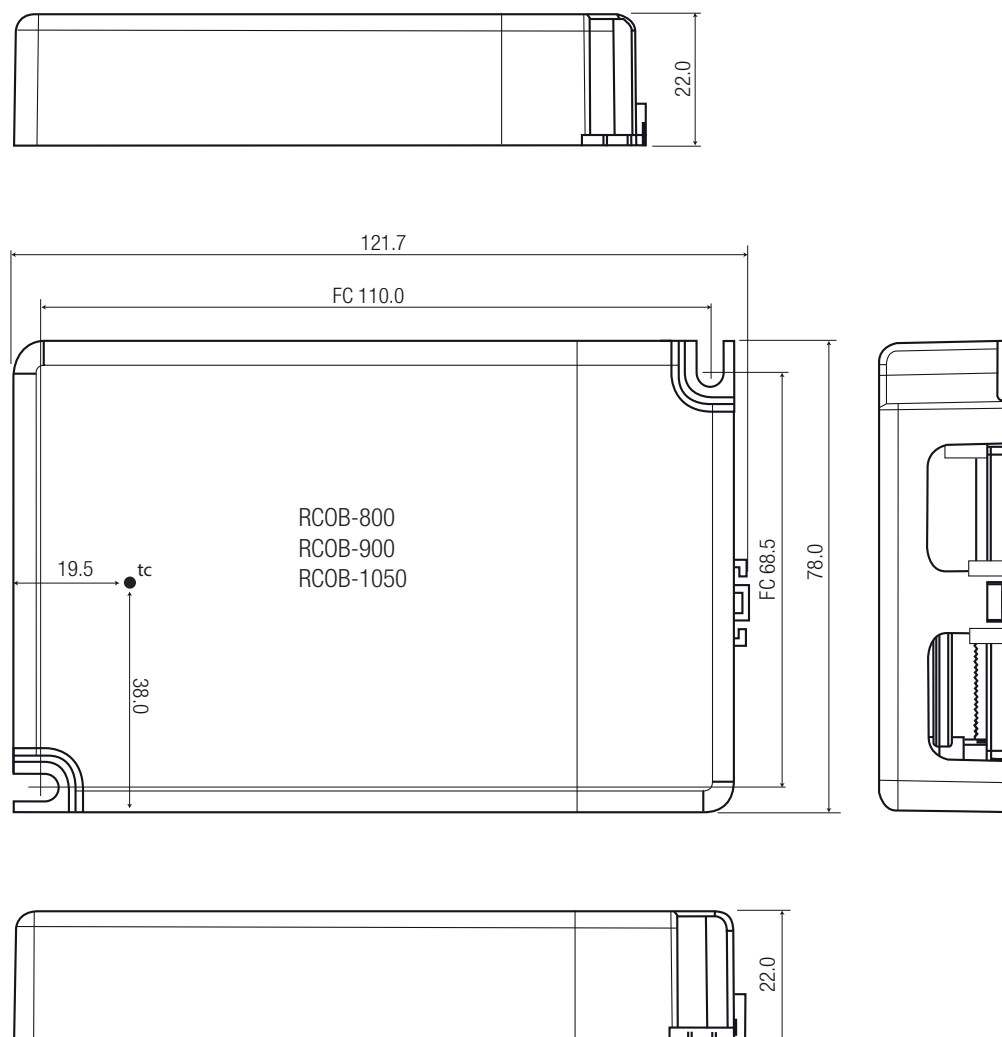
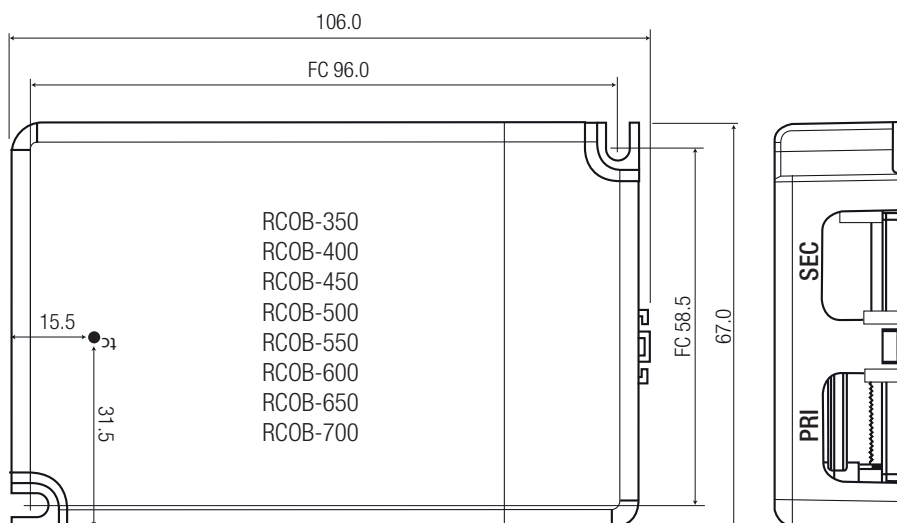
ENVIRONMENTAL		
Parameter	Condition	Value
Operating Temperature Range		$-20^\circ\text{C}$ to $+50^\circ\text{C}$ , Ambient
Max. Case Temperature	RCOB-350 to -500	$80^\circ\text{C}$ max.
	RCOB-550 to -700	$85^\circ\text{C}$ max.
	RCOB-800 to -1050	$90^\circ\text{C}$ max.
Operating Humidity	RCOB-800 to -1050	45% to 85% RH
	RCOB-350 to -700	5% to 85% RH, non condensing
IP Rating		IP20
MTBF	at $T_c = 80^\circ\text{C}$	$50 \times 10^3$ hours
<b>Derating Graph</b>  <p>The graph plots Output Current [%] on the y-axis (0 to 100) against Ambient Temperature [°C] on the x-axis (-20 to 60). A horizontal line at 100% output current extends from -20°C to 50°C. At 50°C, the output current drops sharply to 0% and remains there up to 60°C.</p>		

SAFETY AND CERTIFICATIONS		
Certificate Type	Compliant	Standard
Lamp Controlgear General Requirements for Safety		EN61347-1
Lamp Controlgear Particular Requirements		EN61347-2-13
RoHS		RoHS 6/6
EMC Compliance	Compliant	Standard / Criterion
Equipment for general Lighting Purpose EMC Immunity Requirements		EN61547
Limits and methods of measurement of radio disturbance characteristics of electrical lighting and similar equipment		EN55015, Class B
Limits of Harmonic Current Emissions		EN61000-3-2
Voltage Fluctuations and Flicker in Public Low-Voltage Systems $\leq 16\text{A}$ per phase		EN61000-3-3

DIMENSION and PHYSICAL CHARACTERISTICS		
Parameter	Type	Value
Case Material	with integrated cable clamps	Plastic (UL94V-2)
Package Dimension (LxWxH)	RCOB-350 to 700	106.0 x 67.0 x 22.0mm
	RCOB-800 to -1050	121.70 x 78.0 x 22.0mm
Package Weight	RCOB-350 to 700	108g
	RCOB-800 to -1050	165g
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Specifications (measured @  $t_a = 25^\circ\text{C}$ , 230VAC and rated load)

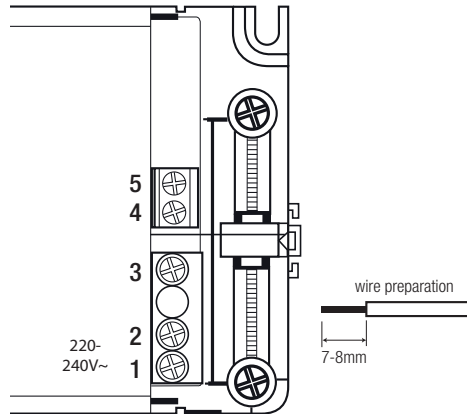
Dimensions Drawing (mm)



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Specifications (measured @  $t_a = 25^\circ\text{C}$ , 230VAC and rated load)

Wiring Diagram



Connection via Screw Terminal

#	Function	Solid Wire	Stranded Wire	AWG
1	VAC in (L)	0.75mm <sup>2</sup> - 2.5mm <sup>2</sup>	0.75mm <sup>2</sup> - 2.5mm <sup>2</sup>	18-14
2	VAC in (N)	0.75mm <sup>2</sup> - 2.5mm <sup>2</sup>	0.75mm <sup>2</sup> - 2.5mm <sup>2</sup>	18-14
3	FG	0.75mm <sup>2</sup> - 1.5mm <sup>2</sup>	0.75mm <sup>2</sup> - 1.5mm <sup>2</sup>	18-16
4	LED+	0.75mm <sup>2</sup> - 1.5mm <sup>2</sup>	0.75mm <sup>2</sup> - 1.5mm <sup>2</sup>	18-16
5	LED-	0.75mm <sup>2</sup> - 1.5mm <sup>2</sup>	0.75mm <sup>2</sup> - 1.5mm <sup>2</sup>	18-16

wire stripping length: 7-8mm

recommended tightening torque: Input: 0.5Nm  
Output: 0.4Nm

FC: fixing center

tc: case temperature measuring point

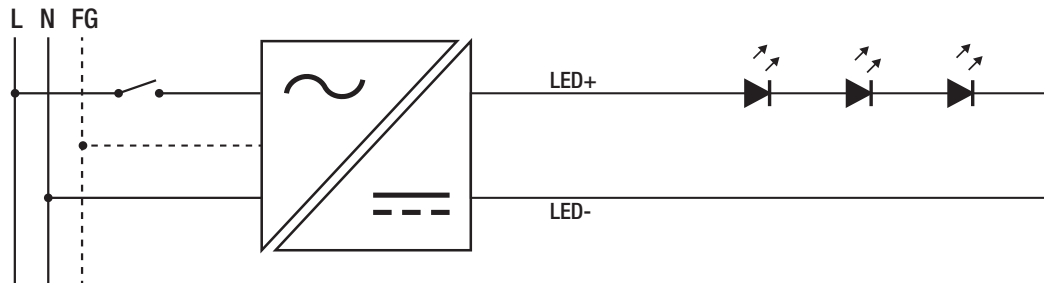
Tolerance: xx.x= ±0.5mm

xx.xx=±0.35mm

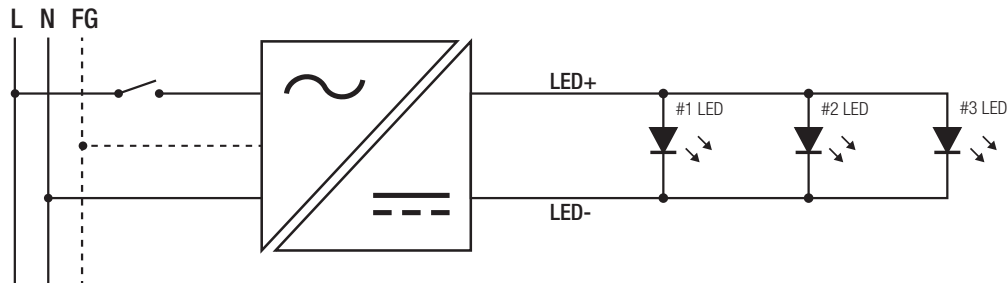
2 mounting screws are included

## INSTALLATION and APPLICATION INSTRUCTION

Standard Connection



Three LED's in parallel <sup>(1,2)</sup>



### Notes:

Note1: System was tested with 3 Osram Duros S10.

Note2: LED's has to be placed on the same heatsink.

## PACKAGING INFORMATION

Parameter	Type	Value
Packaging Dimension (LxWxH)	Cardboard Box	180.0 x 140.0 x 220.0mm
Packaging Quantity		10pcs
Storage Temperature Range		-30°C to +80°C, Ambient
Storage Humidity		30% - 95% RH

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