

# Features Dimmable LED Driver

- Low Cost 230VAC LED Power Supply
- 0-10V dimmable
- Active Power Factor Correction >0.9
- 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 ErP-compliant COB LED drivers are available with three preset output currents: 350mA, 700mA and 1050mA. They are designed to drive COB (Chip On Board) high power LEDs with a forward voltage between 6V and 44VDC from a 230VAC supply (198-264VAC). They operate with efficiencies of up to 84%, feature active PFC and are fully protected against short circuit, output overvoltage, open-circuit and over-temperature conditions. The output current is dimmable over a 0%-100% range with a 0-10V external control voltage. The LED drivers are suitable for both independent and built-in installations and for installation inside furniture.

## Selection Guide

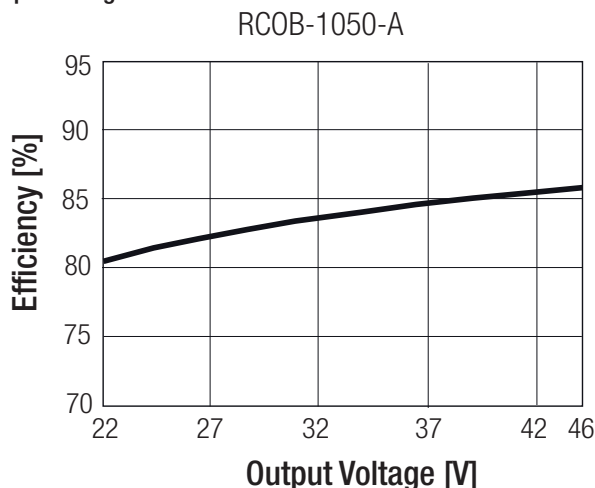
Part Number	Input Voltage Range [VAC]	Output Voltage Range [VDC]	Output Current [mA]	Efficiency typ. [%]	Max. Rated Power [W]
RCOB-350A	198-264	6-44	0-350	80	15
RCOB-700A	198-264	6-44	0-700	84	31
RCOB-1050A	198-264	6-44	0-1050	83	46

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		264VAC
Output Voltage Range	full load	6VDC		44VDC
absolute max. Output Voltage	full load			58VDC
Inrush Current	at 230VAC		5.5A / 10μs	
Start-up Time	at 230VAC		≤0.5 Second	
Input Frequency Range		47Hz		63Hz
Power Factor	full load, 230VAC		0.9	

### Efficiency vs. Output Voltage



**RECOM**  
AC/DC Converter

## RCOB-A

Dimmable  
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)

#### REGULATIONS

Parameter	Condition	Value
Output Current Accuracy	includes: line, load and tolerance	$\pm 6\%$ typ.

#### PROTECTION

Parameter	Condition	Value
Input Fuse	Standard	T1A
Short Circuit Protection (SCP)	230VAC / 50Hz	constant current limit at $I_{\text{nominal}}$ and recovers after fault condition is removed
Over Load Protection (OLP)	230VAC / 50Hz	power limiting, if forward voltage of LED's is higher than 44VDC
Output Over Voltage Protection (OVP)	230VAC / 50Hz	58V max.
Output Over Current Protection (OCP)	230VAC / 50Hz	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

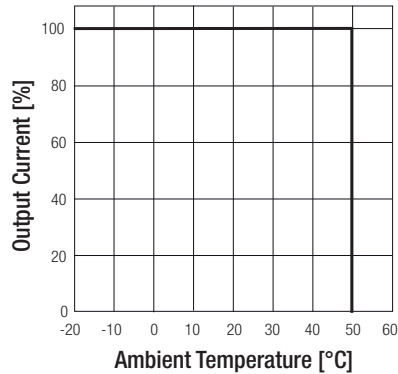
#### ENVIRONMENTAL

Parameter	Condition	Value
Operating Temperature Range max. Case Temperature Range	All Types RCOB-350A RCOB-700A RCOB-1050A	-20°C to +50°C, Ambient 80°C max., Ambient 85°C max., Ambient 90°C max., Ambient
Operating Humidity	RCOB-1050A RCOB-350 and RCOB-700A	45% to 85% RH 5% to 85% RH, non condensing
MTBF	at $T_c = 70^\circ\text{C}$ ; Iout: 350mA at $T_c = 70^\circ\text{C}$ ; Iout: 700mA, 1050mA	45 x 10 <sup>3</sup> hours 50 x 10 <sup>3</sup> hours

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Specifications (measured @ ta= 25°C, 230VAC and rated load)

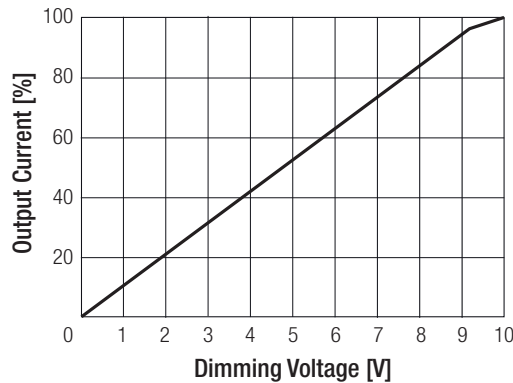
Derating Graph



**DIMMING**

Parameter	Condition	Value
DC Dimming	0-10V	0-100%

Dimming Curve



Output = 100% if dimming input not used (open)

**SAFETY AND CERTIFICATIONS**

Certificate Type		Standard
CE General Safety	compliant	EN-61347-1
CE Safety of AC supplied Control Gear for LED Modules	compliant	EN-61347-2-13
RoHS	compliant	RoHS 6/6
Certificate Type (Environmental)		Standard / Criterion
Electric Lighting, EMC Immunity	compliant	EN-61547
Electric Lighting, EMC Emissions	compliant	EN55015, Class B
Limits for Harmonic Emissions	compliant	EN-61000-3-2
EMC Compatability: Flicker and Voltage Variations	compliant	EN-61000-3-3
IP Rating		IP20

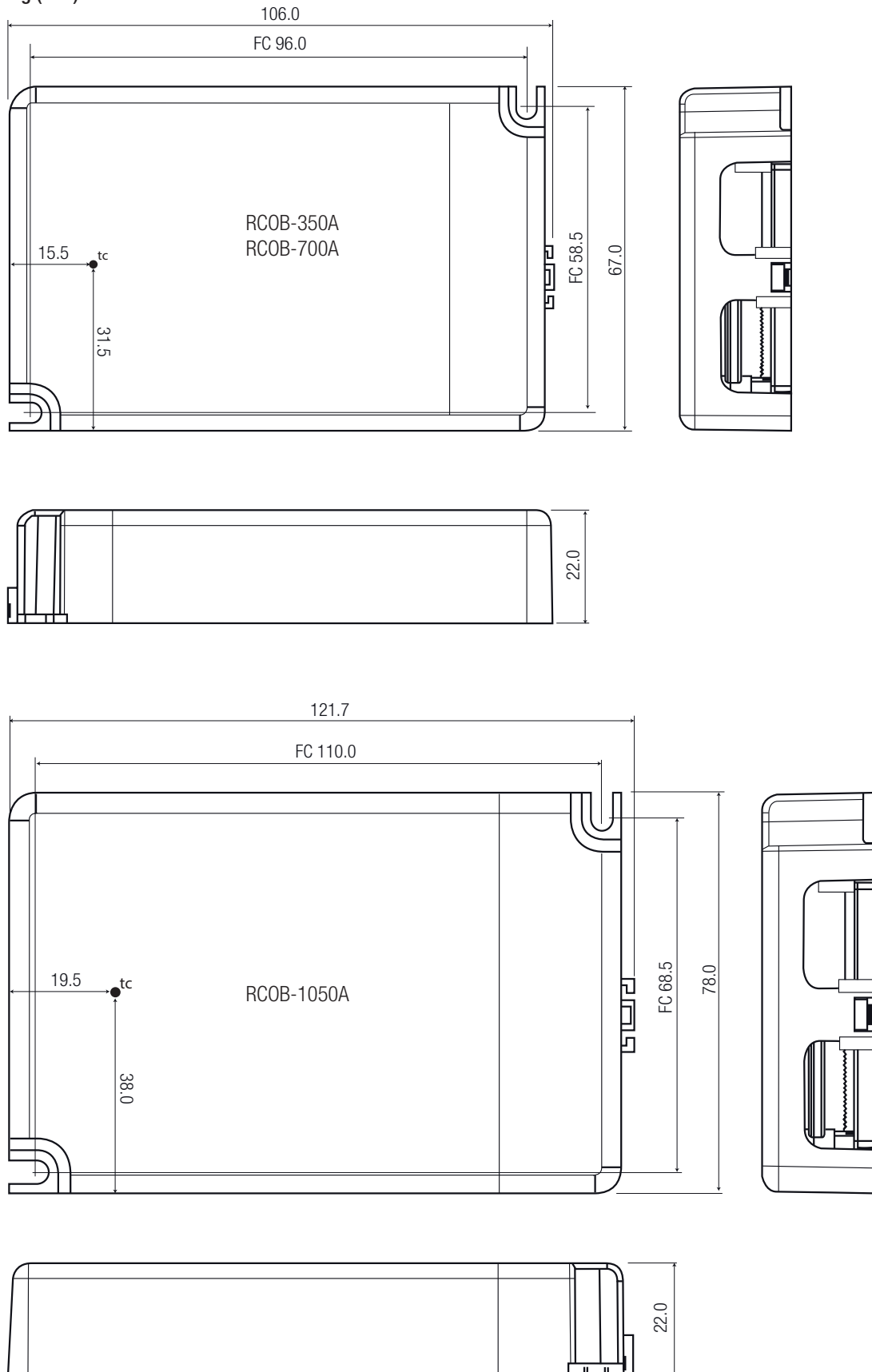
**DIMENSION and PHYSICAL CHARACTERISTICS**

Parameter	Type	Value
Case Material		integrated cable clamps, Plastic
Package Dimension (LxWxH)	RCOB-350A; RCOB-700A RCOB-1050A	106 x 67 x 22mm 121.7 x 78 x 22mm
Package Weight	RCOB-350A; RCOB-700A RCOB-1050A	130g 180g

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

Dimension Drawing (mm)

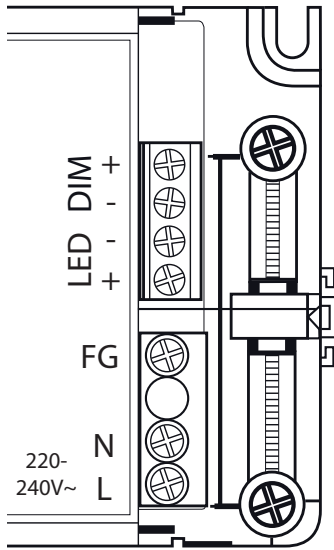


2 Mounting screws are included

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

**Wiring Diagram**



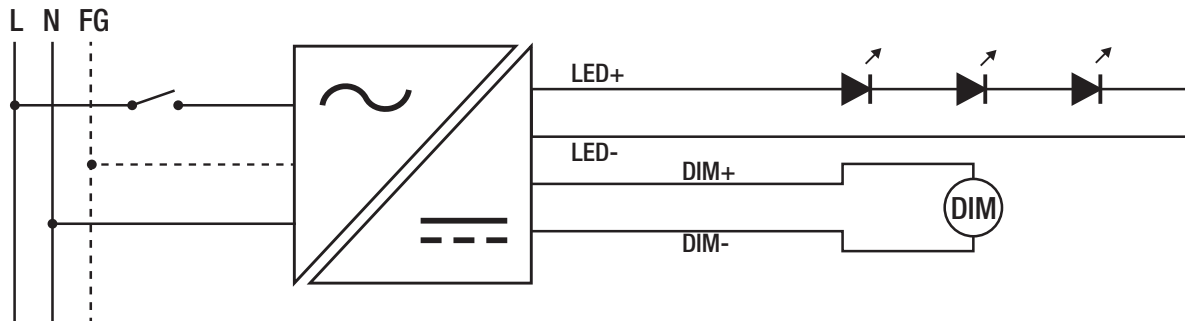
**Screw Terminal Connection**

Function	Type	Diameter
AC N	Screw Terminal	0.75mm <sup>2</sup> - 1.5mm <sup>2</sup>
AC L	Screw Terminal	0.75mm <sup>2</sup> - 1.5mm <sup>2</sup>
FG	Screw Terminal	0.75mm <sup>2</sup> - 1.5mm <sup>2</sup>
LED+	Screw Terminal	0.75mm <sup>2</sup> - 1.5mm <sup>2</sup>
LED-	Screw Terminal	0.75mm <sup>2</sup> - 1.5mm <sup>2</sup>
DIM-	Screw Terminal	0.75mm <sup>2</sup> - 1.5mm <sup>2</sup>
DIM+	Screw Terminal	0.75mm <sup>2</sup> - 1.5mm <sup>2</sup>

FC: fixing center  
 tc: case temperature measuring point  
 Tolerance: xx.x= ±0.5mm  
 xx.xx=±0.35mm

**INSTALLATION and APPLICATION INSTRUCTION**

**Standard Connection**



**PACKAGING INFORMATION**

Parameter	Type	Value
Packaging Dimension (LxWxH)	Cardboard Box	180 x 140 x 220mm
Packaging Quantity		10pcs
Storage Temperature Range		-30° to +80°C, Ambient
Storage Humidity		30% - 95% RH

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