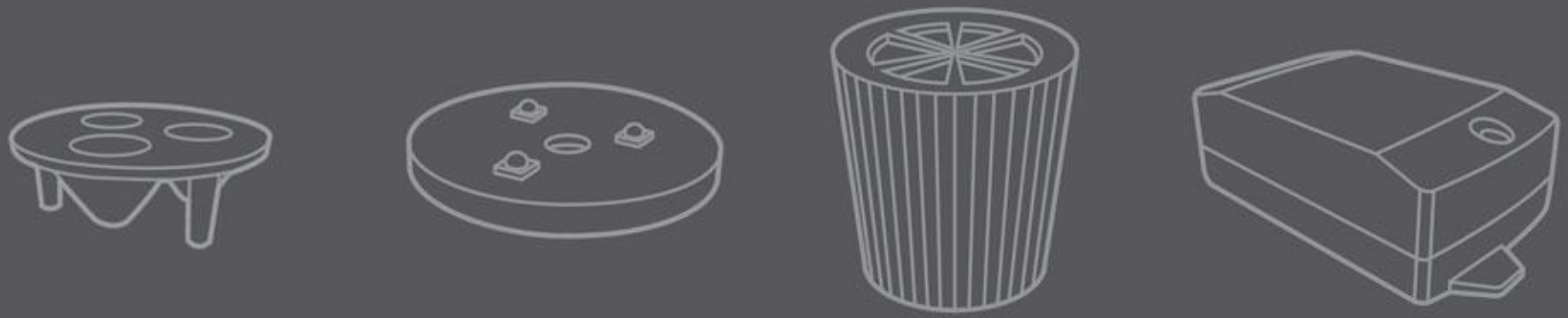
Product Training Module

RBD-12



RECOM LIGHTING

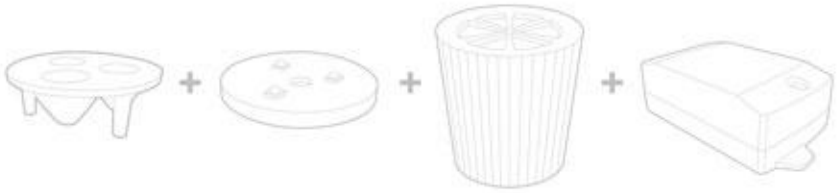
- **PURPOSE:**

  To understand the benefits of RECOM´s RBD-12 series and how they work

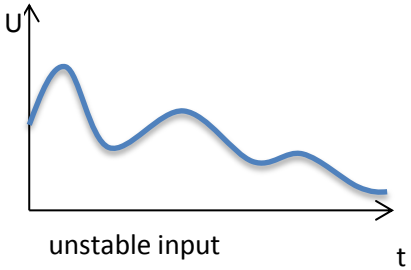
- **OBJECTIVE:**

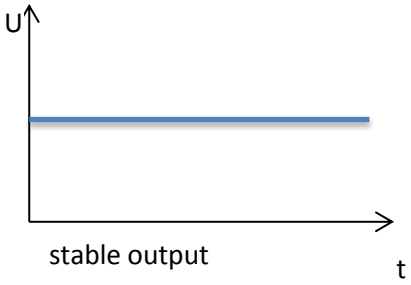
  To learn how to use RECOM´s RBD-12 series in typical applications

- **CONTENT:** 12 pages
- **LEARNING TIME:** 10 min

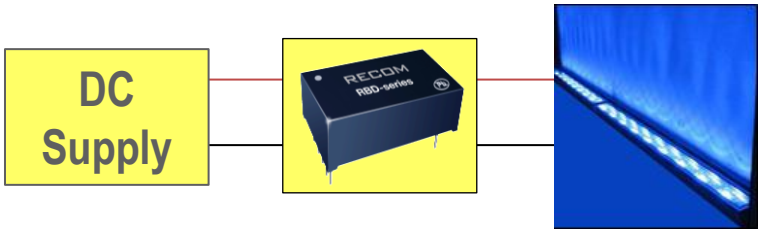


WHY A BOOST TOPOLOGY IS NEEDED

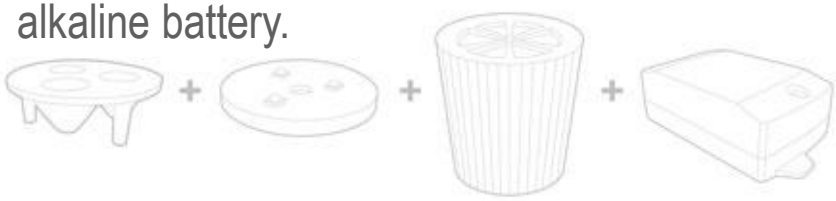




- Varying voltage power sources
- Low voltage battery powered applications
- Increasing the voltage



A boost converter is used with low voltage battery application to increase the voltage (for example, a solar powered application). This higher voltage is used for integrated circuits or longer LED strings that require this higher voltage. A boost converter may extract energy from a battery when the voltage is reduced due to a decrease in power. This voltage decrease occurs as batteries become depleted and is a characteristic of the ubiquitous alkaline battery.



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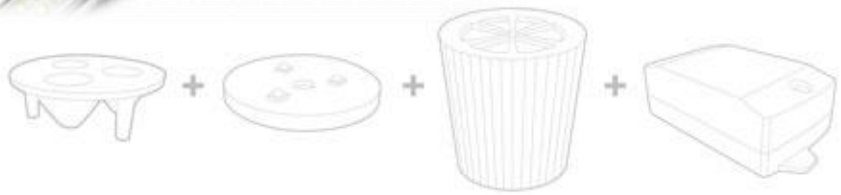
How can a buck-boost driver improve performance

- Reduce the number of drivers
- No need for high currents and strings in parallel
- Flexibility on design of LED configuration
- Powered by a 12V battery, the RBD-12-0.35 can drive up to 10 LEDs (3.3Vf), instead of 3 LEDs with a buck driver
- Video: Driving many LEDs from a 12V battery using a buck boost driver

By using the RECOM RBD-12 you have the flexibility to drive 5, 6, 7 or even 10 LEDs by using only 1 driver. For this reason it is possible to reduce the number of drivers you need for your application.



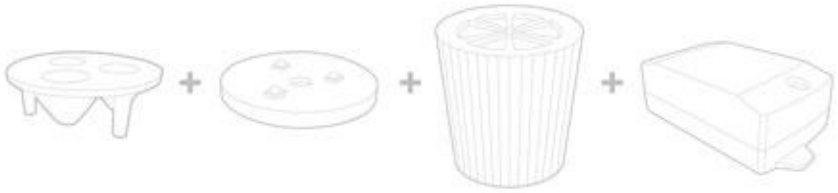
RECOM LIGHTING

RECOM RBD-12 SERIES - MAIN FEATURES

BUCK-BOOST DC LED DRIVER

The RBD-12 has many interesting features. The unique buck-boost topology allows a wide input voltage (8VDC to 36VDC) and up to 40VDC output. Like our other DC/DC LED drivers, the RBD-12 has high efficiency, PWM and analog dimming and PCB mount or flying wire package options. It is certified with EN/UL safety standards and comes with a 5 year warranty.

- ✓ Buck-boost topology
- ✓ Up to 20W / up to 40VDC output
- ✓ Wide input voltage range 8~36VDC
- ✓ Constant currents 350mA / 500mA
- ✓ High efficiencies up to 92%
- ✓ PWM and analog dimming
- ✓ Temperature range from -40°C to +80°C
- ✓ Pinned or flying wired version
- ✓ 5 year warranty



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APPLICATION:
SOLAR OFF-GRID STREET LIGHTING

- No need to lay mains cable
- Solar panel will charge battery during the day
- Battery will power the light during the night

Solar off-grid street lighting offers a lighting solution in areas where it would be inconvenient or too expensive to lay a mains cable. A solar PV panel can be mounted on top of a pole to collect energy during the day and charge a battery. The battery then powers the street light during the night. The light is switched on based on a timer or a light sensor which detects when light levels fall.

The wide input voltage range and 92% efficiency of the RECOM LED driver extracts the maximum energy from even partially charged batteries, so that even in areas without continuous sunshine, the solar-powered light gives reliable illumination the whole night long.

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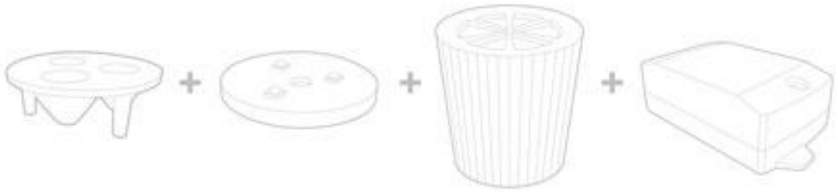
APPLICATION:
SOLAR TRAFFIC SIGNS

- Ideal for temporary road work
- Can be installed far away from the power grid
- Very positive impact on road safety

Solar-powered traffic signs are ideal for temporary road works such as solar-powered traffic lights. Modern high-efficiency solar-powered signs allow lit signs to be installed in locations that were previously considered too far from the power grid. The signs have a very positive impact on road safety because they can be quickly installed even for temporary hazards.



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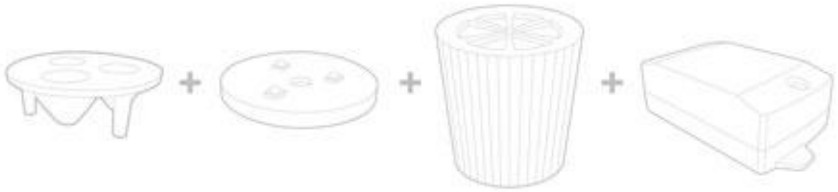
APPLICATION: TRANSPORTATION

- Courtesy lighting in cars, buses, trains, caravans,…
- Reading lamps in busses, airplanes, trains,…
- Exterior lighting for yachts and boats

The RECOM RBD-12 series is perfect for many mobile applications such as courtesy lighting or reading lamps in cars, busses, trains or caravans. Since the RBD-12 Series is available in a water resistant wired package, it is ideal for applications in wet areas - for example exterior lighting for yachts.



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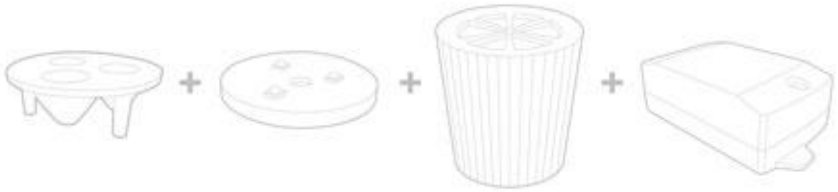
Application: Outdoor mobile

- Flashlights
- Battery-powered camping lights

The RECOM RBD-12 Series is ideal for outdoor handheld applications such as flashlights or battery-powered camping lights. Its small size and low weight make it ideal for designing into handheld lights.

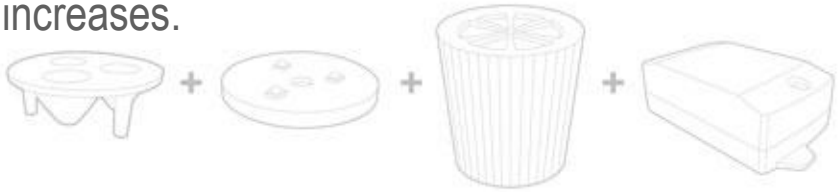


RECOM LIGHTING

SUMMARY

- Boost input voltage by a factor of 3
  - » Can drive more LEDs in one string in series
- Increase voltage of nearly depleted batteries
  - » Ensure a constant performance
- Demand for buck-boost drivers is growing
  - » Solar-powered applications is increasing

In summary, the RBD-12 series is able to boost the input voltage by a factor of 3. Therefore, it is possible to drive more LEDs in just one string. It also can increase the voltage of nearly depleted batteries. For this reason it is possible to ensure a constant performance even as the battery voltage decreases. The demand for buck-boost drivers like the new RBD-12 is growing - especially as the demand for solar-powered applications increases.



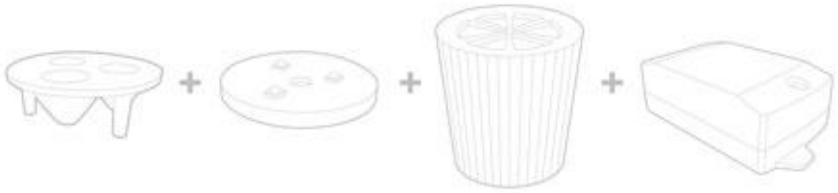
RECOM LIGHTING

Part Numbers

Part Number	Input Range (VDC)	Output Current (mA)	Output Voltage (VDC)	Case	Dimming Control
RBD-12-0.35	8-36	0-350	2-40	DIP	Digital + Analog
RBD-12-0.35/W	8-36	0-350	2-40	DIP wired	Digital + Analog
RBD-12-0.50	8-36	0-500	2-40	DIP	Digital + Analog
RBD-12-0.50/W	8-36	0-500	2-40	DIP wired	Digital + Analog

RBD-12 Datasheet

For more information on these products visit the RECOM Lighting website:
www.recom-lighting.com



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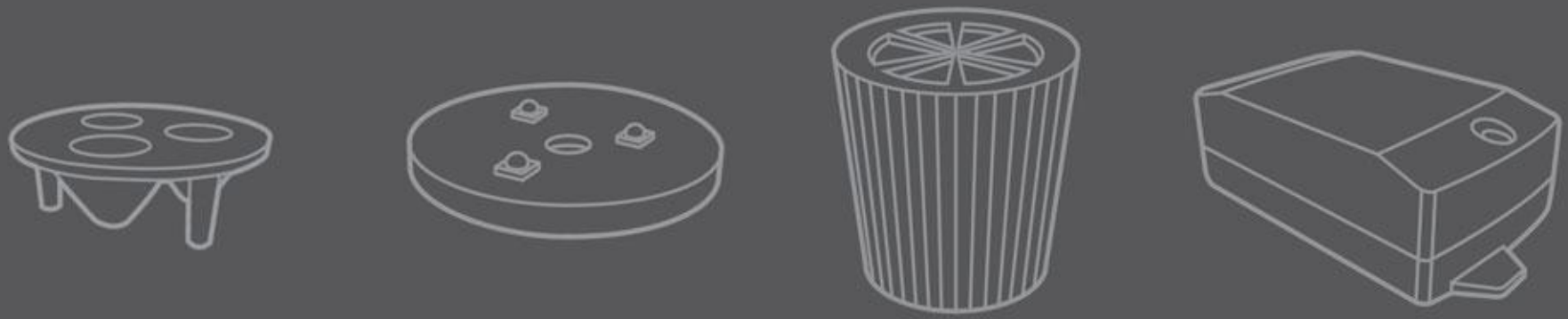
THANKS FOR YOUR ATTENTION!



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