SparkBright Eclipse

N.B. This document covers Eclipse models for voltages ranging up to 18v. A datasheet for the higher-voltage (up to 32v) version is available on request.

CONTENTS

1. FEATURES

- dims automatically in response to ambient light
- fully waterproof & shockproof
- available in three LED sizes: 10mm, 8mm or 5mm
- excellent accuracy
- reverse polarity and overload protected
- simple two wire connection to positive & negative
- very low power consumption

2. ELECTRICAL SPECIFICATIONS (NOMINAL 12V VERSION, ALL LED SIZES)

Absolute max. input voltage	21.0v
Max continuous input voltage	18.0v
Max current (in bright light)	8.8ma (green) 13.5ma (amber) <6.0ma (reds)
Min current (in dim light or darkness)	1.4ma (green 1.8ma (amber) <1.0ma (reds)
Power consumption (typical)	max 0.10 W (in bright light) min 0.03 W (in darkness)
Accuracy	+/- 0.03v
Operating temperature	-40°C to +85°C
Reverse polarity protection	Yes
Resolution	10-bit
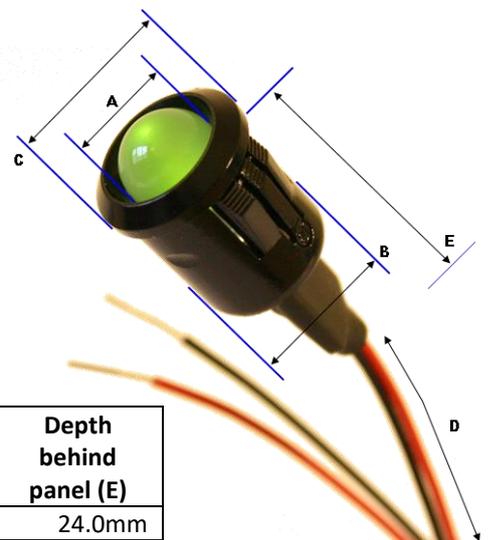
3. KEY DIMENSIONS

Model	LED diameter (A)	Required hole size for bezel (B)	Diameter of bezel's face (C)	Standard lead length (D)	Depth behind panel (E)
Eclipse10	10.0mm	14.0mm	16.1mm	600mm	24.0mm
Eclipse8	8.0mm	12.0mm	14.1mm	600mm	22.0mm
Eclipse5	5.0mm	8.0mm	9.4mm	600mm	12.0mm

4. 12V ECLIPSE – STANDARD VOLTAGE THRESHOLDS, OUTPUTS & INTERPRETATION

Voltage	Output		Engine running	Engine stopped (electrics off)
>15.20v	🟩🟥	green/red alternating	over-charging – regulator problem	not applicable
>13.20v	🟩	green steady	normal charging	exceptional battery charge (uncommon)
>12.45v	🟧	amber steady	under-charging – alternator problem	normal battery, charged and in good health
>12.25v	🟥🟥	red slow flashing	not charging – battery low	fair battery charge
>12.05v	••	red 2 flashes, repeating	not charging – battery low	low battery charge
>11.80v	•••	red 3 flashes, repeating	not charging – battery very low	very low battery charge
<11.80v	••••	red 4 flashes, repeating	not charging – battery very low	consider renewing battery

5. FREQUENTLY ASKED QUESTIONS (FAQ)

1. *How are the Eclipse and Monsoon different?* The Eclipse dims automatically in response to the ambient light levels, the Monsoon has a fixed brightness level regardless of ambient light levels. There are no visible physical differences.
2. *Is the Eclipse suitable for either negative or positive earth vehicles?* Yes, it has no earth connections through its structure so the polarity of the vehicle is irrelevant.
3. *Do I have to have the standard voltage thresholds and output patterns?* No, we can customise the voltages to any values you like and you can have more/fewer/different output patterns if you wish.
4. *Is the Eclipse only suitable for motorcycles and cars?* No, although the *standard* settings are designed for systems with a lead-acid battery and alternator/dynamo, it is simply a voltmeter and can be configured (during build) for any application where you want a visual indication of voltage level. Please see the 'Manufacturing>Design & Development' tab on our website for some example applications.
5. *How do I connect this up?* Simply black to negative, and red to positive. Please see the separate installation guide for details.
6. *Can I connect the Eclipse directly to the battery?* Yes – the monitor will not mind - and if you cover the Eclipse when the vehicle is not being used this will reduce the drain to an insignificant level. However, if the vehicle was not being used for more than a few weeks it would be good practice to isolate the battery to prevent any drain. If the monitor moved into the red zone then you should charge the battery for a suitable period of time depending on the type of charger (e.g. a couple of hours on a fast charger or overnight on a trickle charger).