



Lightrider - Rider Illumination

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Whilst at the International Cycle Show in London last September, I had the opportunity to look at some innovative products and speak with their inventors. Tudor Davies and his Lightrider™ LED light was one stall that stood out from the normal "bling, bling" of shiny things. So what's so different and unique about this LED light? Read on.

A bit of background

Over half a decade ago, Tudor asked himself, "What is the best way to illuminate cyclists to make them more visible to other road users?" Picture the scene - it is midnight, and you are cycling home from work at the end of your shift. You've got your lights on and a 20-minute ride ahead of you. The driver of the car heading towards you on the other side of the road sees a small bright light approaching, thinks "it's probably a cyclist" but cannot gauge your speed. Good thing the driver has seen you.

Okay, you're now approaching a stretch of road with a junction to both your left and right, you can see cars about to emerge, but you have the right of way. Feeling a little bit unsure - have the drivers seen you and have they judged your speed correctly? - you scan the scene looking for clues and trying to make eye contact with the drivers. The driver on your left has seen you; she's come to a complete stop and is waiting for you to pass. The driver to the right hasn't; he pulls slowly out in front of you, sees your cycle light at the last minute as it shines through his side window and brakes right in front of you. You swerve past, your heart rate slightly increased, but unharmed. He either didn't see you or misjudged how fast you were going. It is far easier to see things and judge how fast they are travelling when they have form.

Tudor's solution was simple but effective: illuminate the rider. This is what the Lightrider does and why it is totally unique.



How it Works

Lightrider has eight high-performance white LEDs. Five are at the front, split into two distinct beams: i) the first beam, formed by three magnified LEDs, hits the road about 8' in front with a concentrated ball light of about 3' in diameter; and ii) the second beam, resulting from two LEDs, shines horizontally out at the oncoming traffic. The three LED's at the rear shine an 8" diameter circle of light at the rider's chest. To accommodate the three beams, the Lightrider is mounted on the handle bar at an acute downward angle.

The light gets its juice from four AA (LR6) batteries (included in the purchase price) and is fixed onto the handle bar with a sturdy black plastic bracket which is supplied with enough rubber spacers to accommodate the majority of bars. It is clamped together by tightening a metal cross-head screw into a metal thread insert embedded in the clamp. This is a nice touch - no nut to keep in place and lose several times before finally getting the thing tightened! As you tighten the clamp, you notice that the top half can be adjusted for lateral movement thereby giving the opportunity to have the light angled in the horizontal plane slightly to the left or right. The light itself then slides forward onto the bracket and firmly clicks into position. It is removed by pushing in a small lever beneath the light to disengage the simple, yet effective, locking mechanism.

The on/off switch sits on the top, centrally positioned at the front. It has a simple three-stage, push-down rubberised weatherproof switch which follows the following sequence: i) five front LED's; ii) five front LED's + three rear LED's; iii) off.

None of the LEDs on the Lightrider can be put into flash mode. This was a deliberate decision since the primary purpose is to illuminate the rider. The claimed longevity of the batteries is i) 100 hours (low beam) and ii) 40 hours (high beam). I've had the Lightrider on trial for four months this winter, swapping between the two light combinations based on location, lighting conditions and hazards, and these battery times are genuine. LED's have a slower fade out than filaments, so it is harder to tell when you need to replace the batteries. To keep the LED's performing, stick to the above times.

Lighting the Way

The LED's produce a crisp bright pure white light, as you'd expect from modern high-performance white LED's. The three magnified LED's hit the ground about 8' in front of the bike and provide adequate slow speed illumination of the immediate hazards. The remaining two front LED's are aimed squarely at oncoming traffic. They could be seen easily up to 400 metres away. The three rear-facing LED's shine backwards onto the rider's chest, producing a weaker ball of light about 8" in diameter. Now my field is more CID than traffic but the rule "cannot display a white light to the rear" immediately sprang to mind when I



saw the Lightrider on display. However, when you are on the bike the light can't be seen by traffic to the rear.

Results

I've asked other officers for feedback on how effectively the Lightrider achieves its main objective of illuminating the rider, and I've observed other riders using it. When viewing riders head-on, the main five LED's are bright enough to make it impossible to see what is directly behind them (when there's little street lighting around); however, there was a distinct advantage to the observer when viewing from the junction scenario. The rider was far more visible from the side, especially when wearing a hi-viz reflective jacket. Together, the light and the hi-viz jacket alert a driver to the presence of a rider coming in from the periphery much earlier, allowing the driver more time to react safely.

Conclusion

Pros:

- Unique & innovative design
- Nice solid, simple bit of engineering
- As bright as a filament light in traffic
- Longevity of batteries
- Increases rider safety

Cons:

- Design might be seen by some as too plain.
- As it is not a filament bulb, it cannot be used as the sole light source (in the UK).

Performance 8

Value 7