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Compact Lights Review 2015

EARLY MORNING DARKNESS PERVADES UNDER WINTER'S STEALTHY APPROACH. HERE'S A LOOK AT SOME LIGHTING OPTIONS TO KEEP YOU RIDING TILL DAWN.

THE EARLY TRAINING OR bunch ride now necessitates front and rear lights, and depending on where you ride, a front light that has enough grunt to allow you to see clearly can be a tempting purchase. Usually an hour and a half or two hours battery life will see you through till dawn, and most lights will operate for this long on their highest output. There are some very powerful lights on the market though many of these come with an entanglement of cables and

batteries to mount.

In this year's lighting review we have gathered dozen or so lights that employ quick, tool-free mounting, an integrated battery design, and have a minimum of 300 lumens output. Small powerful lights with their small internal batteries are benefiting from ongoing battery technology refinements; eg the work of Elon Musk, the driving force behind Tesla electric vehicles. At the same time LED emitters' power and efficiency continues to rise, and most

brands are taking advantage of this, producing brighter lights for similar weight, size and cost.

To give you some markers for comparison we have beam photos of each light, fully charged, set to its brightest, and directed down the road for the most useful beam we could manage. We've also calculated in the summary table a 'lumens per gram' and 'lumens per dollar' figure for each light.

It's worth noting that when travelling at 30kph, you'll

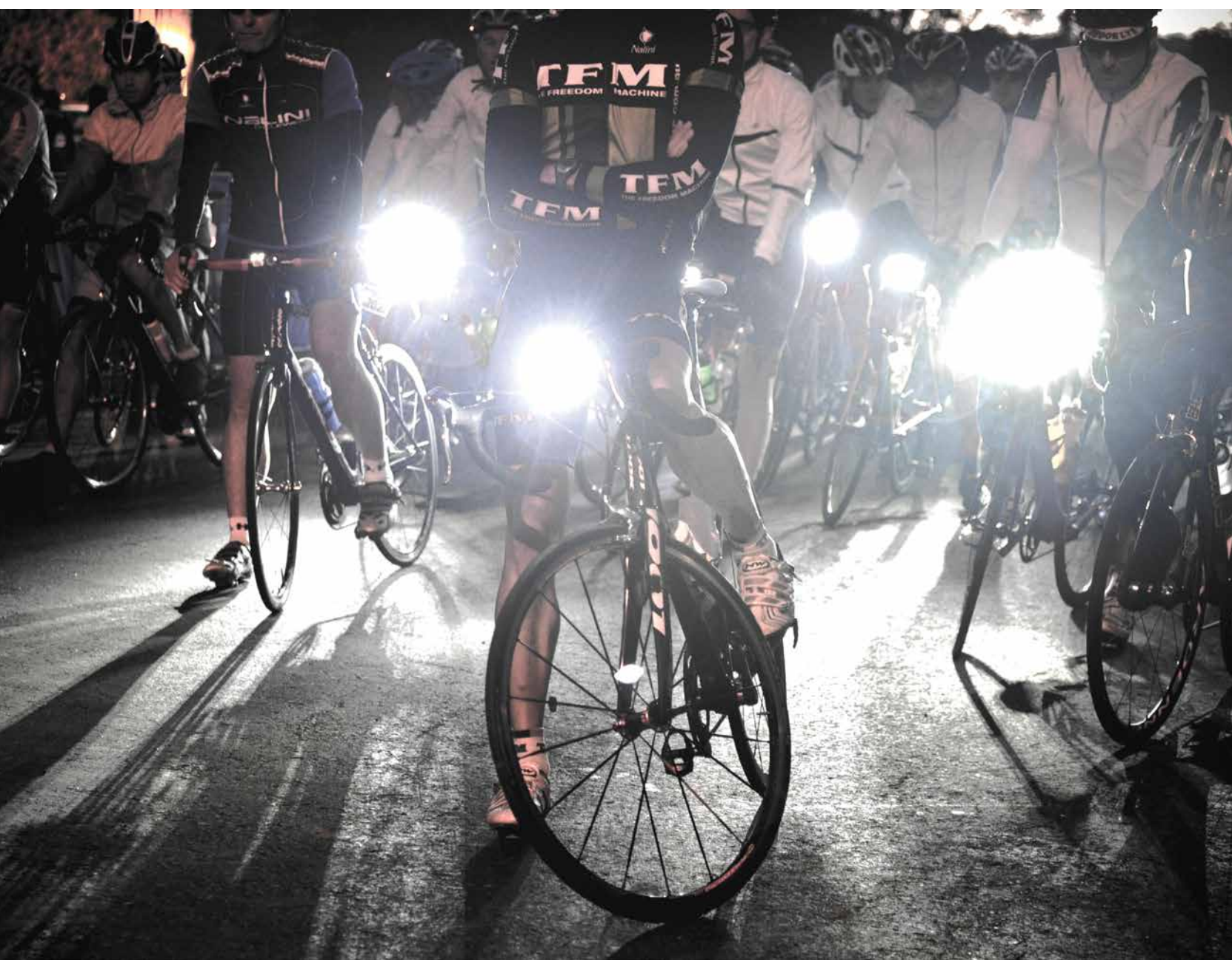
have about one second of visibility for every 8.3 metres of useful light. So if your light provides 16.6 metres you'll have about two seconds of vision at 30 clicks.

We've also included a photo of the beam from the venerable Dolphin 6v torch—a beam that most of us have seen.

These photos were taken with a Canon 600D set at five second exposure, f6.3, and 100 ISO. Ten reflectors are positioned in five-metre increments along the left hand side of the road for your reference.

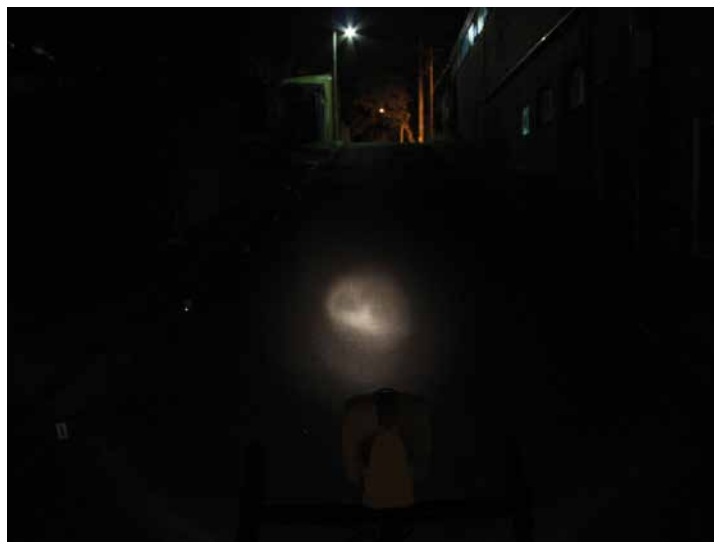
FRONT LIGHTS SPECIFICATIONS

BRAND	MODEL	PRICE	WEIGHT	CLAIMED LUMENS	LUMENS PER GRAM	LUMENS/\$	RUN TIME, FLASH / STEADY	CHARGE TIME	URL
LEZYNE	Power Drive XL	\$129.95	175	600	3.43	4.62	11:20 / 1:30	6	lezyne.com
CYGOLITE	Metro	\$139.00	141	400	2.84	2.88	60:00 / 30:00	5	cygolite.com
CYGOLITE	Expillion 850	\$249.00	175	850	4.86	3.41	22:00 / 1:15	5	cygolite.com
XTECH	Striker	\$69.95	170	320	1.88	4.57	20:00 / 2:00	4	cassons.com.au
SMART	BL185	\$99.95	137	700	5.11	7.00	40:00 / 2:30	6.5	cassons.com.au
EXPOSURE	Joystick Mk9	\$230.00	104	750	7.21	3.26	36:00 / 1:30	-	ultimatesportsengineering.com
EXPOSURE	Diablo Mk6	\$329.00	129	1300	10.08	3.95	24:00 / 1:00	4	ultimatesportsengineering.com
LIGHT & MOTION	Urban 350	\$102.99	117	350	2.99	3.40	12:00 / 1:30	5	jetblackproducts.com.au
LIGHT & MOTION	Urban 800	\$219.95	122	800	6.56	3.64	6:00 / 1:30	5.5	jetblackproducts.com.au
CATEYE	Volt 700	\$149.99	152	800	5.26	5.33	50:00 / 2:00	5	sheppardindustriesltd.com
FULL BEAM	Fusion Speed LED	\$499.00	383	3000	7.83	6.01	25:00 / 3:30	2.5	fullbeam.com.au
SERFAS	USL 305	\$89.99	120	305	2.54	3.39	7:15 / 1:30	3	velovita.net.au
SERFAS	USL 505	\$134.99	141	505	3.58	3.74	11 / 2:15	4	velovita.net.au
SERFAS	True 750	\$209.99	237	750	3.16	3.57	7:30 / 1:00	4	velovita.net.au
ES	Gamma Ray ES 501	\$129.95	143	500	3.50	3.85	8:00 / 1:40	3	echelonsports.com.au



[[Modern LED lights can pack quite a punch, so use some discretion when it comes to high beam and oncoming traffic...]]

RIGHT: The good old Eveready Dolphin with springy terminated six volt battery and xenon globe. 'Pales into insignificance' is the phrase I think you're looking for.



LEZYNE POWER DRIVE XL

RPP	\$129.95
LUMENS	600 Lumens



MICKI KOZUSCHEK'S LEZYNE BRAND has developed a neat range of lights, and the Power Drive XL is a good example of the quality and expertise they offer. The beam is quite powerful when set to its highest output; Overdrive, and it will last for an hour and a half at this level when fully charged. The beam reaches beyond 25m giving around three seconds of vision at 30kph, and fades from the central spot gradually back to the bike and sides providing some peripheral vision. Overdrive setting allows switching between full and low beam only, rather than the alternative, full sequence of medium, high, low and flashing. Its machined alloy casing, rechargeable and swappable battery, fuel gauge built into the on/off switch, sturdy and easily adjustable quick release mount,

along with the bright and useful output make the Power Drive XL an attractive light for bunch riders.



CYGOLITE METRO

RPP	\$139.00
LUMENS	400 Lumens



PUSHING A CONSTANT 400 LUMENS, and 500 while flashing the Metro is a compact unit with a single LED emitter. The mount is sturdy quick release unit and will fit a 31.8mm handlebar. The Metro has six modes and with each press of the illuminated on/off switch scrolls through medium, high, low, steady pulse, and 'day lightning', and it will remember the last mode used. The day lightning setting has a steady beam with bursts of light for increased visibility—Cygolite caution this setting should be used during daylight hours only. A walk setting is also available outside this sequence. The Metro's beam is focussed to a diffuse central spot around which the light fades away rapidly leaving a low level of light for minimal vision that will give reasonable vision out to about 20m.



CYGOLITE EXPILION 850

RPP	\$249.00
LUMENS	850 Lumens



BIG BROTHER TO THE METRO AND several other models in the range, the Expilion has an impressive and confidence inspiring output. Again from just a single emitter this relatively compact light provides a strong, broad beam, flooding the road ahead with light out to around 30m. There are no dim spots or shadows near the bike or to the sides. In bicycle mode the Expilion has five settings; medium, high, boost, low, and '2 in 1' a constant with flash setting. The on /off switch pulses slowly when you have chosen the boost setting—a handy feature. The alternate special mode has 'day flash', walk, and SOS settings. There's a 'power remaining' feature built in—the power button will flash indicating around 15 minutes run time remaining. Both USB and wall charging

is possible here and there's also a helmet mount in the box. This is a powerful well designed light.



XTECH STRIKER

RPP	\$69.95
LUMENS	320 Lumens



THE XTECH STRIKER IS THE LOWEST COST light on review. It provides a medium intensity beam from its single LED, directing all available light forward into a tight round spot pattern reaching around 15m. The beam is slightly brighter at the edges than in the centre which accentuates the sharp drop off in light outside the beam. The Striker has a solid alloy case and a handy cowl over the lens which stops direct glare of the light when you are leaning forward or climbing out of the saddle. Mounting the light is a little fiddly, but in the end effective and secure. The mount will cope with bars up to 36mm diameter and includes three stages of direction of the beam; straight ahead or 10 degrees left/right. You can choose from five modes of output high, medium, low, fast flash

and slow flash and you'll know when you need to recharge the li-ion battery via the change of colour of the on/off switch.



SMART BL185

RPP	\$99.95
LUMENS	700 Lumens



PUNCHING OUT 700 LUMENS AND A BROAD useful beam, there's nothing dull about the Smart BL185. Granted the name is not so catchy but the performance of this light across our criteria is very good.

The beam pattern is an even flood, with the wall and fence of our laneway well lit, and there's a decent throw down the road (around 20m) and back to the bike as well. You can choose from a simple and effective four options of output: high, medium, low and flash, with runtime claimed to be two and a half hours on high and 40 hours on flash. The Smart uses Panasonic or Sanyo brand li-ion batteries which they claim charge in around six and a half hours. Two mount options are included in the pack; a simple rubber strap and a sturdier plastic clamp. The Smart light is bright, light and simple to use.



EXPOSURE JOYSTICK MK9

RPP	\$230.00
LUMENS	750 Lumens



SLICK AND REFINED. THE JOYSTICK MK9 punches well above its 104g. The gleaming black alloy case raises your expectations as soon as you see it; the switch, lens and mount are also quite refined. A single LED pushes 750 lumens in a bright broad beam, with decent reach down the road to around 25m. The mount is very simple and effective; a stretchy rubber strap attaches the mount, into and from which the light itself can be pressed, or removed.

Exposure have developed a range of 'programs' for their lights which allows you to choose the brightness /runtime of each of the two or three outputs in that program. So you might choose Program 1 which has three settings—1.5 hours runtime in high beam, four hours in medium, and 10 hours in low. Or perhaps Program 5 with just two settings—three

hours of high beam and 10 hours of low. This means you can go with a high output for when you are on the front of the bunch and low for when you're in the pack ... or a different set of output levels for other scenarios.



EXPOSURE DIABLO MK6

RPP	\$329.00
LUMENS	1300 Lumens



THE SECOND HIGHEST LUMEN OUTPUT

on review has the Diablo illuminating the road effectively beyond 40 metres. Its three LED emitters produce 1300 lumens of strong and well-directed light. It uses the same simple and effective strap design as the Joystick, and is likewise recharged via USB or wall socket. As well as the selection of programs with their respective power output settings, Exposure has some extra trickery in the switching of the Diablo to make it easy for you to access high beam if you need. At the outset of a ride you can choose Tap Activated Power (TAP) which will let you select or deselect high beam by merely tapping the light, rather than having to search for and press the switch. As we have come to expect from Exposure this is a well-made, high performing and very bright light.



LIGHT & MOTION URBAN 350

RPP	\$102.99
LUMENS	350 Lumens



COMING FROM A LARGE FAMILY OF LIGHTS that caters to all cycling applications, lights from the Urban range acquit themselves well on the road. The Urban 350 is modestly priced and performs reasonably well in the output stakes. Its 350 lumen beam is well directed into a broad diffuse central area that reaches 10 to 15 metres and fades slowly away to the edges. There are orange side ports to provide more visibility to traffic approaching you from the left or right. The Urban 350 is at the lower end of the spectrum here in terms of brightness and while it will give you light to see by it is better suited to lower speed and city riding. The mounting is very good; just a simple rubber strap and easy side to side adjustment, while the switching is also simple and effective with just four modes; high, medium, low and flashing.



LIGHT & MOTION URBAN 800

RPP	\$219.95
LUMENS	800 Lumens



THE LARGER OF THE TWO URBAN UNITS in this review the 800 provides a quantum leap in brightness over the 350. It's the same shape and size, uses the same switching pattern and mounting system as the 350 but has an upgraded battery and LED emitter to produce a pleasingly bright and well-spread flood of light that reaches to around 25m. The 800 includes a helmet mount for those who like to see where they are looking. The Light and Motion Urban lights score well for clean, simple, functional design and effective, useful light output.



CATEYE VOLT 700

RPP	\$149.99
LUMENS	700 Lumens



A SURPRISE PACKET OF BRIGHTNESS

the Volt 700 uses its available output well, redirecting light that would have fallen close and to the sides of the bike, to throw a longer, brighter beam. That's not to say the light closer in is poor or problematic—it's quite adequate; overall it is clever use of the 700 lumens on hand. The beam effectively reaches to over 20m. Mounting of the Volt is unchanged from previous years and a little rudimentary but solid and effective. Shallow cutaway sections on the side of the case allow light to shine out to the left and right for increased visibility when in traffic. Switching between high, medium, low and two flashing modes in sequence is simple.



FULL BEAM FUSION SPEED LED

RPP	\$499.00
LUMENS	3000 Lumens



THE BIGGEST, HEAVIEST AND EASILY THE

brightest light in the mix this year is the Fusion Speed LED. We have included this as an option for those looking for out and out brightness. Its three LEDs are capable of 3,000 lumens output, though toning it down to 1,600 is what they recommend for use in road cycling applications. There is some clever circuitry available in this light wherein it will sense your speed (via a fork mounted wheel magnet, which yes, with its wire, is outside the criteria of the test) and adjust the light accordingly, brighter for faster speed of course. Or you can run without the speed sensor and just use the high and low settings accessed via the on/off switch.

The Fusion Speed is seriously bright and more than capable of dazzling oncoming traffic, so just as you would in a car you'll need to show discretion when using high beam. It's solidly

built with an alloy casing and alloy mount and at 50mm diameter it's chunkier than the other lights here. This light is bright enough for high speed rides and poorly lit or country roads clearly lighting the road ahead to over 50m.



SERFAS USL 305

RPP	\$89.99
LUMENS	305 Lumens



OUR LOWEST CLAIMED OUTPUT LIGHT

on test, the Serfas 305 puts in a respectable performance. The beam is well directed with a moderate intensity central mass of light that reaches 10-15 metres, fades away at the edges and also diminishes closer to the bike. Side light ports provide extra traffic safety. Its mounting is very solid, the same as that which effectively hold the larger 750 lumen Serfas. Switching is good with a simple three levels low, medium, and high on offer, plus a flashing setting on its own. A good quality light from Serfas that provides enough light to see your way home though better suited to street lit and lower speed rides.



SERFAS USL 505

RPP	\$134.99
LUMENS	505 Lumens



SHARING A SIMILAR DESIGN AND THE same mounting bracket at 305 and 750 Serfas lights, the 505 creates a strong beam which dissipates smoothly around the edges so there are no distracting shadows or artefacts in the beam. Useful light reaches out to 25m or about three seconds of vision at 30kph. The 505 has a sequence of four modes of constant light, and the option to choose a flashing mode as well. It's a quality light that provides a good level of light for commuting and training rides.



SERFAS TRUE 750

RPP	\$209.99
LUMENS	750 Lumens



PRODUCING AN EFFECTIVE BEAM OF LIGHT that stretches around 30m ahead with an intense central spot that fades evenly to the sides and remains even back to the bike, the Serfas True 750 is a solid performer. Its bright output is a significant drain on the battery though which will last just an hour on high, but it has a removable, replaceable battery in case you are looking for extra run time. The blue on/off switch will change colour to red indicating 20% charge remaining; it also indicates charging status. The 750 has a large heatsink and air cooling channels to maintain a cooler operating temperature for better lumen output. Charging is via USB or wall socket. The 750 offers four levels of constant light and a flashing mode and comes with helmet mount and wall socket.



ES GAMMA RAY ES 501

RPP	\$129.95
LUMENS	500 Lumens



THE GAMMA RAY IS A COMPACT SINGLE LED unit that pushes out a 500 lumen beam and effective lighting to around 25m. It has a fairly narrow central spot that steps down to a lower level of light outside the central beam, effectively directing its light forward rather than spreading it wide where it's of little use. The mount is strong and secure and will fit bars up to 31.8mm and there's a helmet mount in the kit as well. The on/off switch glows red when it has 30 minutes lighting left, and blue while charging. The battery is removable so you have the option to carry and swap in spare battery to get through longer night rides. The Gamma Ray offers five levels of light, chosen by scrolling through overdrive, high, standard, low and flashing and off.



Top Tail Lights

A QUEENSLAND UNIVERSITY STUDY HAS FOUND THAT CYCLISTS OVERESTIMATE THEIR VISIBILITY TO DRIVERS BY A WHOPPING 700%! HERE'S A SELECTION OF TAIL LIGHTS CURRENTLY AVAILABLE THAT WILL MAKE YOUR PRESENCE MORE OBVIOUS TO TRAFFIC APPROACHING FROM BEHIND.



1 **BONTRAGER FLARE R**
Price: \$74.95 | Lumens: 65
bontrager.com.au



2 **LEZYNE FEMTO DRIVE**
Price: \$19.95 | Lumens: 7
lezyne.com



3 **LEZYNE ZECTO DRIVE**
Price: \$64.95 | Lumens: 20
lezyne.com



4 **LEZYNE KTV DRIVE**
Price: \$27.95 | Lumens: 7
lezyne.com

REAR LIGHTS SPECIFICATIONS

BRAND	MODEL	PRICE	WEIGHT	URL	MAX RUN TIME HRS	MAX LUMENS
BONTRAGER	Flare R	\$74.95	58g	bontrager.com.au	25	65
LE ZYNE	Femto Drive	\$19.95	31g	lezyne.com	60	7
LEZYNE	Zecto Drive	\$64.95	53g	lezyne.com	7	20
LEZYNE	KTV Drive	\$27.95	48g	lezyne.com	8.5	7
LIGHT N MOTION	Vis 180 Micro	\$65.95	60g	jetblackproducts.com	12	25
EXPOSURE	Tracer	\$79.00	47g	ultimatesportsengineering.com	24	75
EXPOSURE	Blaze	\$150.00	89g	ultimatesportsengineering.com	48	80
SERFAS	Thunderbolt	\$54.99	47g	serfas.com	7.5	35
SERFAS	TL80	\$99.99	80g	serfas.com	5.5	80
NITEFLUX	Red Zone 8	\$149.99	87g	fullbeam.com.au	100+	400
CY GOLITE	Hotshot Micro	\$74.95	40g	cygolite.com	100	2watt
CYCLIQ	Fly6	\$299.95	144g	jetblackproducts.com	6	30
ES	Flare	\$29.95	36g	echelonsports.com.au	7	-
ES	Beacon	\$59.95	54g	echelonsports.com.au	7	60
SEE SENSE	Elite	\$137.00	57g	fullbeam.com.au	12	155
GUEE	Tadpole	\$34.95	18g	kwt.net.au	7	20
GUEE	CobX	\$39.95	45g	kwt.net.au	15	25
ASKLEN	TL32c	\$27.95	90g	draft.bicyclepartswholesale.com.au	90	-
DOSUN	Line LR260	\$69.95	49g	draft.bicyclepartswholesale.com.au	6	26
D-LIGHT	D-Light	\$42.95	22g	draft.bicyclepartswholesale.com.au	25	-

Top Tail Lights | Winter Safety

BY GARY HUNT

6

EXPOSURE TRACER

Price: \$79.00 | Lumens: 75
ultimatesportsengineering.com



7

EXPOSURE BLAZE

Price: \$150.00 | Lumens: 80
ultimatesportsengineering.com

5

LIGHT N MOTION VIS 180 MICRO

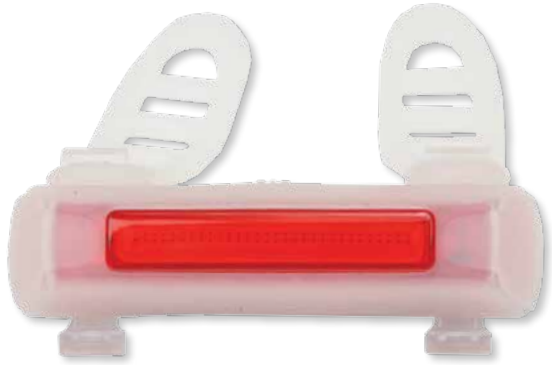
Price: \$65.95 | Lumens: 25
jetblackproducts.com



8

SERFAS THUNDERBOLT

Price: \$54.99 | Lumens: 35
serfas.com



9

SERFAS TL80

Price: \$99.99 | Lumens: 80
serfas.com



10

NITEFLUX RED ZONE 8

Price: \$149.99 | Lumens: 400
fullbeam.com.au



11

CYGOLITE HOTSHOT MICRO

Price: \$74.95 | Watts: 2
cygolite.com



12

CYCLIQ FLY6

Price: \$299.95 | Lumens: 30
jetblackproducts.com



Top Tail Lights | Winter Safety

BY GARY HUNT

13

ES FLARE

Price: \$29.95 | Lumens: N/A
echelonsports.com.au



14

ES BEACON

Price: \$59.95 | Lumens: 60
echelonsports.com.au



15

SEE SENSE ELITE REAR

Price: \$137.00 | Lumens: 155
fullbeam.com.au



16

GUEE TADPOLE

Price: \$34.95 | Lumens: 20
kwt.net.au



17

GUEE COBX

Price: \$39.95 | Lumens: 25
kwt.net.au



19

DOSUN LINE LR260

Price: \$69.95 | Lumens: 26
draft.bicyclepartswholesale.com.au



18

ASKLEN TL32C

Price: \$27.95 | Lumens: N/A
draft.bicyclepartswholesale.com.au

20

D-LIGHT

Price: \$42.95 | Lumens: N/A
draft.bicyclepartswholesale.com.au

