

CAMPING and GEAR

CAMP LIGHTING

GAS FLUORO LED

All three forms of camp lighting; gas, fluoro and LED have their place, but here you can find out which one or which combination is best for you.



Illuminating the campsite used to be a simple operation: you got the kerosene lamp out of its hessian bag, wiped off any overspill, cut off last night's burnt wick tip, wound up some fresh, damp wick and lit it. The flickering glow gave barely enough light to eat by, but it was better than darkness.

The next generation of liquid-fuel lamps used a glass-fibre mantle and kero that was atomised via a hand-pumped pressure tank and fine jet. This hotter flame made the mantle glow brightly, giving much more light.

Today's pressurised liquid fuel and gas-fuel camping lights still use the pressurised fuel and glowing mantle principle.

No-one thought of electric camping lights until portable fridges became part of everyone's travelling kit. To run a fridge a 4x4 needed auxiliary battery power, in the form of a dual-battery system and the second volt-box meant that electric light became an alternative to combustion-generated light.

Conventional incandescent globes, like the ones found in vehicle headlights, gave plenty of campsite illumination, but had fragile glass shells and thin filaments, and used a lot of battery power. The arrival of robust fluorescent tube lights changed that situation.

Fluoro lights have no filaments to break or burn out, provide plenty of light and use a fraction of the conventional globe's power. Fluoros also run cooler than incandescents and pressurised-fuel lights, which are dangerously hot to touch.

Campsites all around the country were lit by golden firelight, bright fluoro and variable-intensity mantle lights until early this century, when commercially viable LEDs blinked to life.

The Pros and Cons of LEDs

LEDs – light emitting diodes - have advantages over other types of camp lighting: they don't have filaments or mantles that burn out or break; their small plastic-bulb construction makes them more durable than glass globes and fluoro tubes; and they're more energy efficient than any other form of camp lighting.

Heat is a by-product of light generation by incandescent bulbs and fuel and gas lights, but this heat indicates wasted energy: the more heat, the less efficient the light source.

The cool-running nature of fluoro and LED lights indicates that much of the consumed electrical power is used to generate light.

This doesn't mean that gas and incandescent lights don't generate plenty of light, but it does mean these 'hot' light sources waste energy in doing so.



On the face of it you'd expect that LEDs would have replaced other camp light forms, but energy consumption isn't the entire picture. For a start, all LEDs are not alike, even if they share a common principle. Some LEDs are deliberately low-light; others are cheaply made and not very brilliant; and the latest flux or chip LED units are increasingly replacing high-powered incandescent bulbs. Also, LEDs are directional, like a torch beam, so multiples are needed in an angled cluster, to provide area lighting in the way an incandescent globe or a fluoro provides.

So, when assessing different camp lights it's best to compare them in a real-world situation, which is what we've done for this report.

Pressurised Fuel Camp Lighting

LPG and petroleum-based liquids are common camping stove fuels. Flame-lit mantles glow a brilliant white at full power, providing excellent area lighting and can be turned down to a gentle yellow glow, for intimate bush dining.

This flexibility is unmatched by portable electric lights. However, LPG and fuel lights must never be used in enclosed spaces, because of the obvious fire risk, plus the potential poisoning effects of combustion emissions.

The downside of fuel combustion lighting is inefficiency, which is shown clearly in heat buildup. Mantle lights often suffer from heat-discoloured caps and cracked glass diffusers. LPG consumption varies, depending on brightness, between 20 grams per hour and 100 g/h. Another disadvantage of LPG and liquid fuel lighting is the fragile nature of mantles.

They need to be 'burnt in' before use and thereafter can easily turn to white powder if touched. It's not uncommon when travelling over rough tracks to find the lamp mantle a pile of dust at the end of the day, requiring a new mantle to be fitted before the light can be used.

Several makers have made gas lights with metal mesh 'mantles' and reflective mirrors, but light output has been far less than from fabric mantle lights.



Horses for Courses

We took a pile of different electric camping lights – major brands and 'cheapies' - and pitted them against a gas fuel light. We tested 12-volt fluoro and LED lights that had either inbuilt battery power or cables with 12V socket plugs

We assessed each light's output in terms of brightness and area coverage, and we've tabulated the results. Rather than being viewed as a direct comparison this table shows the lights that are best for area lighting and for localised lighting.

LIGHT TEST – DECEMBER 2009

BRAND	DESCRIPTION	FUEL TYPE	BRIGHTNESS	AREA COVERAGE	RRP \$
NARVA # 71312	LED LAMP	RECHARGEABLE 240v & 12/24v	****	**	\$139
NARVA # 71302	LED COMPACT INSPECTION LAMP	RECHARGEABLE 240v & 12v	****	*	\$99
NARVA # 71210	FLUORESCENT LIGHT INSPECTION & LEISURE	12/24v	***	***	\$109
ARB #0819	LED 4X4 ADVENTURE LIGHT	12v	****	***	\$109
ARB # 0745	FLUORESCENT 4X4 ADVENTURE LIGHT	12v	***	****	\$88
PIRAHNA (Black)	FLUORESCENT PREMIUM	12v	****	****	\$ 130
PIRAHNA (Black)	LED PREMIUM	12v	***	***	\$ 160
PIRAHNA (Orange)	LED WORK LIGHT	240v & 12v	***	***	\$ 95
COLEMAN	FAMILY SIZE LED LANTERN (160 lumens)	RECHARGEABLE 240v & 12v	****	*	\$100
COLEMAN RETRO	RETRO FLUORESCENT LANTERN (280 lumens)	RECHARGEABLE 240v & 12v	****	****	\$120
COLEMAN NORTHSTAR	NORTHSTAR LPG LANTERN & HARD CASE	LIGHTWEIGHT LPG CANISTERS or LPG GAS BOTTLE	*****	*****	\$120
COLEMAN QUAD	LED QUAD LANTERN (190 lumens)	(8 x 'D') BATTERIES and RECHARGEABLE SECTIONS – NIMH only	***	***	\$130
TRS TRADING ROUND	SUPER BRIGHT LED (24) ROUND HANGING LIGHT	(4 x 'AA') BATTERIES	***	*	\$5 - \$20
UNBRANDED (Black)	LED WORK LIGHT	RECHARGEABLE 12v	***	***	\$ 50

We tried to work out a cost of running comparison between the different forms of camp lighting, but it proved impossible: how do you assess the duration and amount of vehicle alternator power you're using to power up a rechargeable light and determine the extra petrol or diesel the engine needs to do so?

We discovered that fluoro lights and the LPG light gave better area coverage than LED lights, which were ideal for smaller area, localised lighting, such as above a tailgate or a camp stove, or inside a tent or camper trailer.

Only the turned-down LPG light was considered convenient for use as a table lamp: the others were uncomfortably bright, unless they were suspended above the table, mounted on a pole or hanging from a branch.

So, what should you buy?



If you want to illuminate a large camp area the best choices are LPG or fluoro lights.

For work lights over the tailgate or stove, LED or fluoro lights are ideal and you have a choice of plug-in or rechargeable types.

If you're driving every day, touring, camping overnight and then moving on the next day, battery drain isn't a problem, so plug-in lights are fine.

If you're camping for two or three days at a time, without running your 4x4 engine, your best choices may be rechargeable or D-cell battery-powered LED lights.

Rechargeable work lights won't give you large-area coverage, but they run for 10-30hrs on a charge, so there's no nightly battery drain and they operate for virtually nothing. D-cell battery LED lights run for up to 75 hours, for an outlay of around \$25.

We found that rechargeable LED work lights supplied by Narva and Piranha charged well from car sockets, but Coleman lanterns needed 240V charging for optimum lasting power.

The pick of the 12V Coleman lanterns was the excellent D-cell battery Quad unit.

LPG Lamp

The **Coleman NorthStar LPG lantern** came in a plastic clamshell carry case, complete with folding base. It screwed easily onto a disposable LPG 465-gram cartridge that can also be used to fuel some Coleman camping stoves.

Cartridges cost around \$8-\$10 from hardware and camping stores. Gas life depends on light intensity, but we managed 20+ hours easily, varying light intensity from area coverage to table lighting.



The plastic case proved handily shock-absorbent and the mantle coped with a week's spirited driving over indifferent surfaces without fracture.

The **Coleman LPG lantern** was the most versatile of all the lights we tested, being by far the most variable in light intensity and with the greatest area coverage.

Fluoro Lamps

The **Coleman Retro Rechargeable lantern** is designed to look like an old-style 'kero' lamp. It even has a dummy fuel tank cap that works as a yellow night light!

The curly, fluoro globe illuminated a large area, but its claimed running time of up to nine hours assumes a powerful charge that's best achieved with 240V input: fine for caravanners who visit powered sites every few days.

There's a warning that the globe may blacken if the light is used with a flattening battery.

We wouldn't recommend this light for remote-area travellers.



ARB's Adventure Light and **Piranha's Fluorescent Premium** are twin-fluoro tube types and Narva's Inspection & Leisure light is a single-tube unit. All three are hook-up and plug-in types, but the twin-tubes give slightly wider area coverage than the single-tube. Current draw is 0.9 amps for the Narva and one amp for the twin-tube lights.



LED - Plug-In Lights

ARB's LED Adventure Light and **Piranha's LED Premium** are LED equivalents of the hook-up and plug-in fluoro types, using virtually the same housings and power leads. In exchange for less area coverage they had lower current draws: 0.3A for the ARB and 0.39 for the slightly brighter Piranha.



LED - Rechargeables

We checked out a wide range of these lights, from Narva's belt-clip Compact Inspection Lamp, up to Coleman's Family Size LED Lantern.

The Narva lights come with water-resistant housings and on/off switches, and 12V/240V chargers. They're intended for rugged use in workshops and over work stations. Area coverage is limited, but brightness is excellent.

Our evaluation unbranded \$50 unit worked well, but its 12V charge lead broke off at the plug, after a minimal amount of rough handling, rendering it useless. You get what you pay for in rechargeable LED lighting!



Piranha's bright orange LED Work Light is the only light on test to have a magnet in its plastic housing, making it easy to attach to vehicle panels. It also can switch between 10 LED and 30 LED operation. The downside is the fact that the light cannot be used while it's charging, from either 12V or 240V power.

Coleman's Family Size LED lantern is disappointing. It uses a single, super-bright LED and a reflector, but area coverage is poor and the light is painfully bright to look at.

Cell Battery-Powered LEDs

We checked out a couple of small tent lights – one vertical type and the other that could give rise to sightings of mini flying saucers – and Coleman's breakthrough Quad unit.



The 24-LED round light is available under at least two different brands – Hengtai and TRS Trading – and varies in price between \$5 and \$20.

It needs four non-rechargeable AA batteries and hangs from a central hook, making it an almost flush-mount tent light.

This mini light works well illuminating small spaces. Claimed battery life is 30 hours and our testing confirmed close to that duration from premium alkaline AAs.



The **Coleman Quad** swallows eight D-cell batteries and these, in turn, power up nickel metal hydride rechargeables in each of four LED modules.



As well, each of the four LED modules can be taken from the lamp and used remotely for at least an hour, before needing to be returned to the housing for recharge.

Literally brilliant! The Quad is ideal for family camping, where a central light is needed, as well as individual bedtime or 'dunny trip' lights.

This camp lighting survey shows the variety of lighting that's on the market today, making it easy for bush travellers to specify exactly what they need. Pricing varies from \$5 up to \$140, so there's something for every budget!