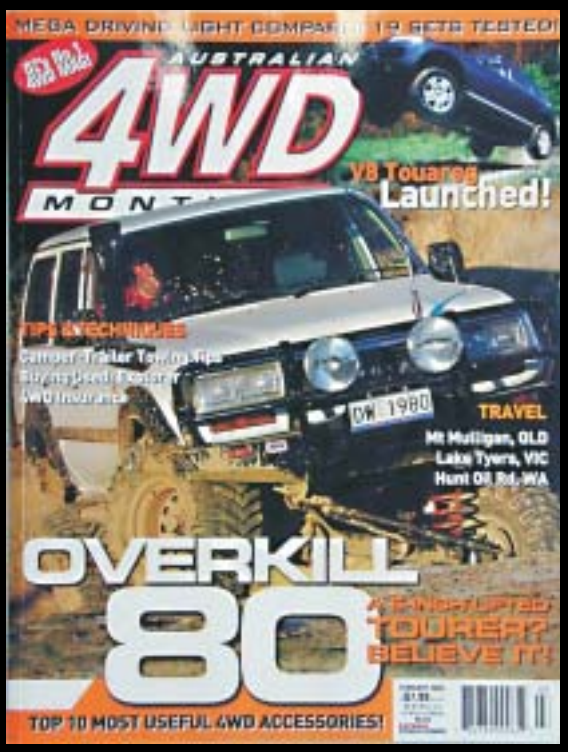
DRIVING LIGHT WARS

"The truth is NOW right here..."



'CLICK' here to SEE the FULL STORY!

19 of the world's best including Hella, Cibie, KC & Narva go head to head with LIGHTFORCE in the ultimate shootout...

If you do even a little extra-urban night driving, chances are you've found your fourby's factory headlights to be inadequate for the task. Back in issue 55, we showed you some ways to improve the performance of your standard lights, but if you really want to see where you're going, there's no better way to do it than by fitting a couple of auxiliary driving lights.

There's a couple of reasons why they'll make driving in the dark a safer, more comfortable experience. Factory headlights normally have 55W or 60W bulbs, while most driving lights have between 100W and 130W, producing much more light. Also, factory driving lights are built to fit in with the style and aerodynamic profile of the vehicle, meaning they're usually fairly small in reflector area. Auxiliary lights, however, normally have a much larger reflector area, meaning more illumination.

We figured it was high time we tested a sample of what's on the market, to see what performs where and for how much. In this first part of our test, we chose 20 pairs of lights ranging between $89 and $551 in price. All the lights tested this month feature halogen or halogen-based technology. A high-intensity discharge xenon (HID) light comparison will appear in next month's issue.

WHAT WE DID

The first step was to collect an assortment of lights to test. We contacted distributors and asked them to supply no more than two pairs of lights (to keep the test manageable) per brand, ideally with one light in each pair being a 'spot' (narrow beam) and the other a 'spread' or 'driving' beam (broad beam).

We focussed on larger-model lights to suit 4WDs, and consequently, many manufacturers provided us with a pair of round and a pair of rectangular lights. Most are fitted with 100W bulbs; however, some have 130W bulbs and one has 65W (wattage is listed in the specification box for each light). All the lights featured are 12V, though some manufacturers offer 24V bulbs if required.

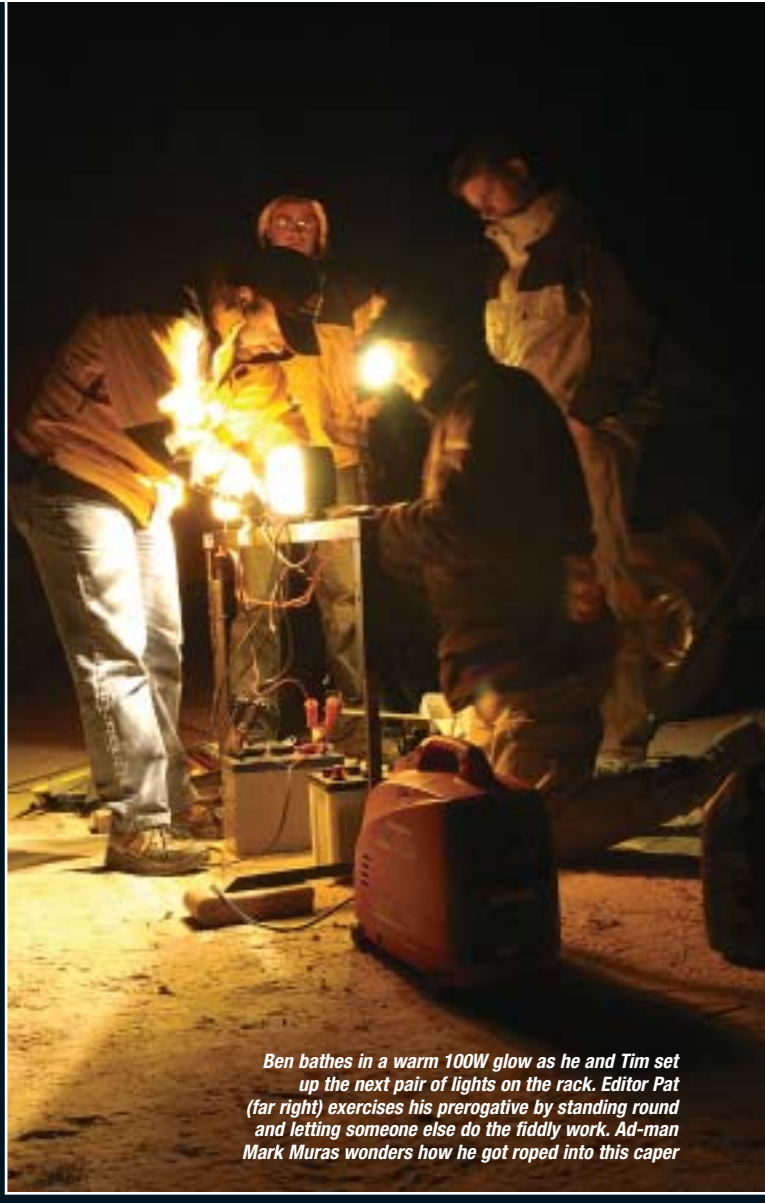
Next, we needed a testing location. We chose a public airstrip with a broad, brown gravel surface on a constant incline. The actual course is about 300m in length, from where the lighting rig was set up, to the large tree in the distance.

Distances were determined by way of a Garmin eTrex handheld GPS. Having settled on a location, we played the waiting game, biding our time in anticipation of a moonless night – that way ambient light levels would be consistent for all lights. The team soon tired of the waiting game and instead opted for Hungry Hungry Hippos.

As with our previous comparison, we enlisted the help of several inflatable kangaroos. I wanted blow-up dinosaurs, but Patski put the kybosh on that idea. They were set up on the sides of the course at 10m, 25m, 50m, and 100m in front of the testing rig.

With the exception of the 10m measurement, points were marked in the middle of the course (ie, directly ahead of the lights) at those exact distances, so that each light would be measured from exactly the same points. For the lateral (10m) measurement, two points were marked out 4m to each side of the rig. Readings were taken at each point, and an average of the two is what you see here.

For accuracy, the positions of the camera tripod and lighting rig were also marked.



Ben bathes in a warm 100W glow as he and Tim set up the next pair of lights on the rack. Editor Pat (far right) exercises his prerogative by standing round and letting someone else do the fiddly work. Ad-man Mark Muras wonders how he got roped into this caper

HOW WE DID IT

With almost military precision, our fearless five worked through till 4:30am, mounting, checking, photographing, measuring and dismantling each set of lights.

The procedure began with bolting the lights to the rig and wiring them to the battery. This caused a few headaches because most had their own sort of connectors and didn't marry straight up to the quick connectors fitted to the rig.

In the case of a spot/spread combination, the spread beam light was fitted on the left-hand (passenger's) side with the spot on the right-hand (driver's) side. Editor Pat then stepped in to aim each light, for the sake of consistency. At this point, we checked the battery (which was on a constant charge from the inverter) with a multimeter to ensure voltage didn't drop below 12V, which could affect the brightness of the light being tested.

When the team was satisfied they were correctly fitted and aimed, Michael Ellem photographed each pair of lights at identical exposure settings, and with all other light sources switched off. So what you see in the photographs was the only source of lighting present, besides starlight (and the planet Mars if you want to get really pedantic).

With Ellem satisfied, two staff then began the lonely walk up the course, stopping at all the points marked to

A NATA-calibrated Topcon light meter recorded readings in lux

We used a Powercel gel cell 12V battery to power the lights. A multimeter was used to check the voltage was always above 12V

record the light output. This was done with a NATA-calibrated Topcon IM-2D light meter that reads in 'lux'. Lux is a measure of light hitting a target (in this case, the sensor of the light meter). To put it in perspective, one lux is about the amount of light you get from a full moon on a clear night.

The light meter was attached to a monopod with the sensor a metre above the ground. The monopod was placed on marked points so that measurements were taken from exactly the same points.

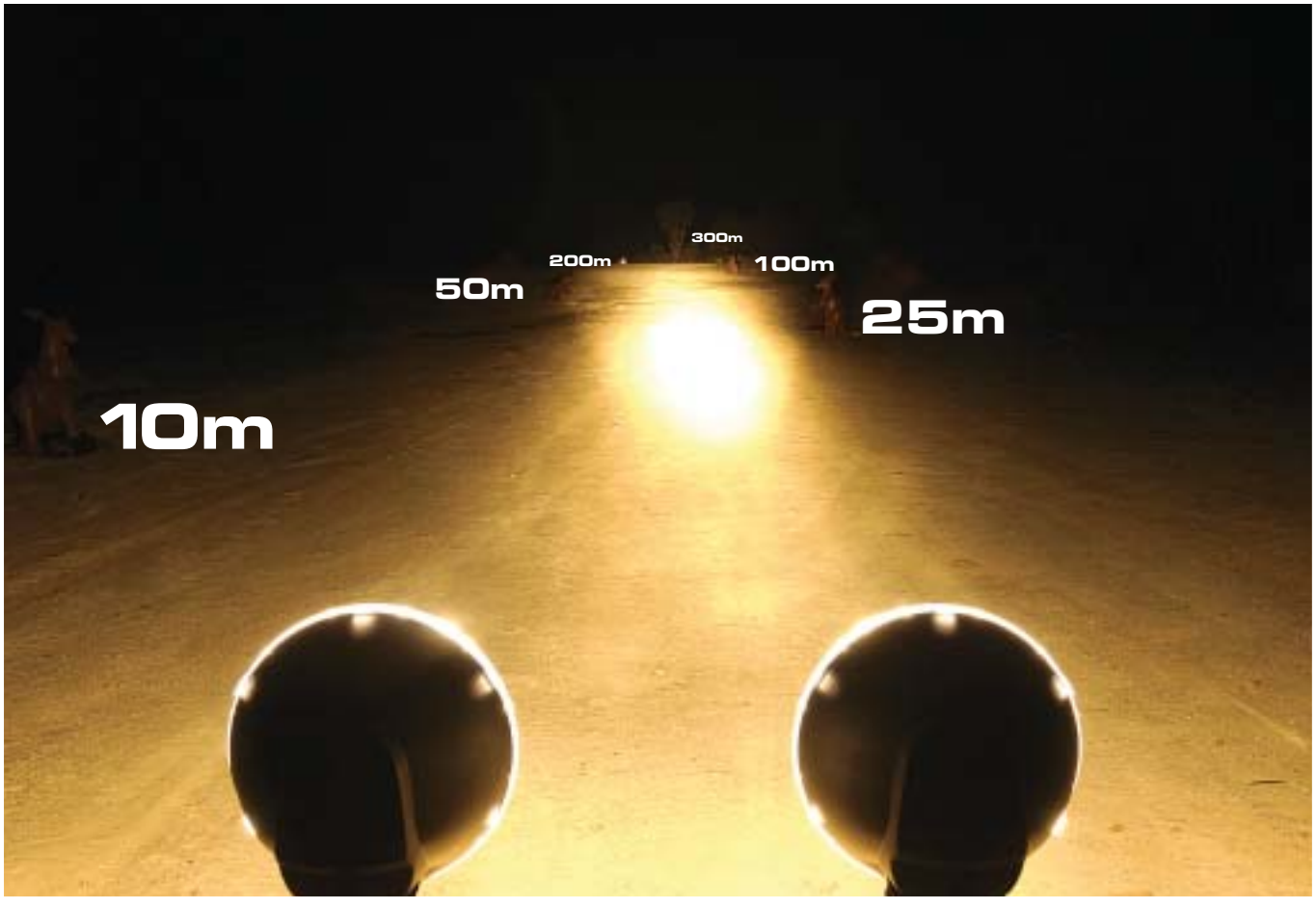
Once all the data had been recorded for each pair of lights, they were dismantled, and the process started over again.

A note on the scores: You can clearly see that most of the numbers were recorded directly in the centre of the light beam. As a consequence, lights with tighter, more focussed beams (such as where both were spots) will record comparatively higher scores than ones with more spread out beams (those with one or two spot lenses). Accordingly, you should treat the scores as general comparative guide, not the be all and end all in this test.

Also, remember that driving lights are normally assisted by your vehicle's ordinary headlights, so take into consideration what sort of beam they produce when comparing the lights tested here.

THE SHOOTING RANGE

The super-secret testing location used consisted of a stretch of dirt with grass and trees on either side. The range had a constant uphill slope. The kangaroos mark points 10m, 25m, 50m and 100m in front of the camera. The reflector in the distance marks 200m, while the tree in the extreme distance is about 300m away. Measurements were taken 1m off the ground in the centre of the light beam, except for the lateral measurement, which was taken 4m to the left and to the right of the lights, at the 10m mark with an average of the two readings recorded.



AUTOTECNICA MONZA

SPECS

Size	160mm diameter x 65mm deep
Lens	2x driving
Bulb	100W halogen
Material	plastic housing, glass lens
RRP	$89.98/pair

READINGS

Lateral	13.4
25m	51.0
50m	15.4
100m	4.0
200m	0.9
250m	0.4

Found in K-Mart, this was the cheapest light in the comparison but not as bad as we'd expected. The dual spread beam set-up gave good close-range peripheral vision but was hopeless for range. Still, you get what you pay for.

CIBIE OSCAR SC

SPECS

Size	180mm diameter x 122mm deep
Lens	2x driving
Bulb	100W halogen
Material	metal housing, glass lens
RRP	$430/pair

READINGS

Lateral	46.2
25m	109.8
50m	27.0
100m	10.8
200m	2.5
250m	1.7

Spectacular lateral performance from these dedicated spread beams but at the expense of distance illumination. Not cheap, but if you're looking specifically at spread beams, these are the best we tested.

CIBIE TURINI APOLLO

SPECS

Size	225mm diameter x 145mm deep
Lens	1x driving, 1x spot
Bulb	100W halogen
Material	ABS plastic body, glass lens
RRP	$450/pair

READINGS

Lateral	4.4
25m	83.3
50m	23.1
100m	6.5
200m	1.5
250m	0.7

Very disappointing, really. The Turinis were thumped by the smaller, cheaper Oscar SC in both width and range. Hard to recommend based on these results.

HELLA RALLYE FF 1000

SPECS

Size	175mm diameter x 109mm deep
Lens	1x driving, 1x spot
Bulb	100W H1 halogen
Material	plastic housing, glass lens
RRP	$150/each

READINGS

Lateral	8.8
25m	236.0
50m	71.2
100m	18.4
200m	4.6
250m	2.2

Very good all-round performer, combining a broad, usable beam with good long-range punch. Plastic housing makes it feel flimsy compared with metal-bodied Hella lights. Produces good, quality light.

HELLA HYDROLUX

SPECS

Size	185mm diameter x 145mm deep
Lens	1x driving, 1x spot
Bulb	100W halogen
Material	cast alloy housing, magnesium reflector, glass lens
RRP	$385/each

READINGS

SEE HELLA RALLYE FF 1000

The HydroLUX is designed for extreme conditions, featuring a multi-chamber isobaric construction (equalising pressure within the light with the outside pressure) with Gore-Tex membrane. With its cast alloy housing, it's built like the proverbial brick outhouse. Hella claims the light can operate while submerged 1m. Due to time constraints, we weren't able to test the HydroLUX, but given its identical reflector and bulb, performance is comparable with the Rallye FF 1000.

HELLA RALLYE FF 4000

SPECS

Size	222mm diameter x 130mm deep
Lens	1x driving, 1x spot
Bulb	100W halogen
Material	zinc alloy housing, glass lens
RRP	$260/each

READINGS

Lateral	8.9
25m	287.0
50m	63.8
100m	29.4
200m	6.6
250m	3.9

The numbers really don't do justice to the Rallye FF 4000. A superb all-rounder, the spot/spread combo gave a broad, very usable beam with excellent distance illumination. With its heavy-duty zinc alloy construction and sturdy mounting system, we highly recommend it.

IPF 800 DSCS

SPECS

Size	214 x 124 x 112mm [WxHxD]
Lens	1x driving, 1x spot
Bulb	130W H3 halogen
Material	steel body, steel reflector, hardened glass lens
RRP	$352/pair

READINGS

Lateral	2.8
25m	103.4
50m	35.2
100m	6.5
200m	1.8
250m	1.0

Very mediocre performance from the 800s, which failed to produce much of a lateral spread or pierce the darkness up the road – surprising, given their large size and 130W bulbs.

IPF 900 DSCS

SPECS

Size	200mm diameter x 120mm deep
Lens	1x driving, 1x spot
Bulb	130W H3 halogen
Material	steel body, steel reflector, hardened glass lens
RRP	$338/pair

READINGS

Lateral	3.8
25m	156.9
50m	38.7
100m	12.3
200m	2.7
250m	1.7

A much better performer than its rectangular stablemates, and cheaper to boot, but still a bit average overall.

IPF 740 DDCS SUPER RALLY HIR

SPECS

Size	200mm diameter x 120mm deep (round)
Lens	1x driving, 1x spot
Bulb	65W 12V halogen infra-red
Material	Steel body, steel reflector, hardened glass lens
RRP	$551/pair

READINGS

Lateral	2.8
25m	331.0
50m	82.4
100m	24.1
200m	5.9
250m	3.5

A great light, with the second highest average score. Excellent illumination at close range with very good performance over longer distances, all from half the wattage of the other IPF lights. We reckon if you're going to buy an IPF light, they're worth the extra dollars.

KC HILITES 69 SERIES LONG RANGE

SPECS

Size	219 x 149 x 121mm [WxHxD]
Lens	1x driving, 1x spot
Bulb	100W H3 halogen
Material	steel housing, glass lens
RRP	$175/each

READINGS

Lateral	4.5
25m	205.0
50m	55.9
100m	14.0
200m	3.5
250m	2.0

A good performer all round. Decent lateral spread combined with above-average distance performance makes the 69 Series an effective light for most applications.

KC HILITES DAYLIGHTER

SPECS

Size	156mm diameter x 127mm deep
Lens	1x driving, 1x spot
Bulb	130W halogen
Material	steel housing, glass lens
RRP	$175/each

READINGS

Lateral	3.1
25m	98.1
50m	26.9
100m	7.2
200m	1.8
250m	0.9

So retro it almost hurts! Sadly, the Daylighter's performance seems to hark back a few decades to match its styling. With average lateral illumination and a distinct lack of punch over a long distance, it finished near the bottom of the field.

LIGHTFORCE 170 STRIKER

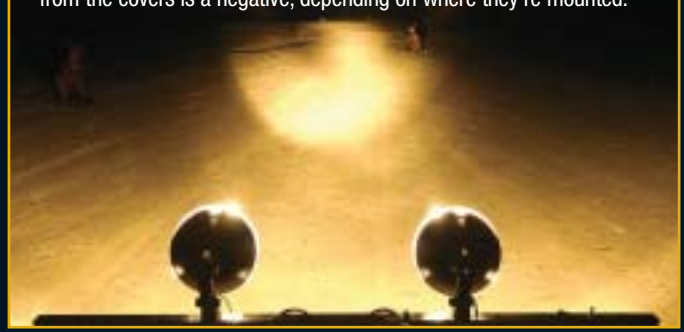
SPECS

Size	168mm diameter x 151mm deep
Lens	2x spot (as tested)
Bulb	100W Xenophot halogen
Material	polycarbonate body, Lexcen lens
RRP	$359/pair

READINGS

Lateral	2.6
25m	302.0
50m	80.0
100m	22.7
200m	5.3
250m	3.0

The 170s were tested with two clear (spot) covers fitted, but with the left-hand-side light focussed to give a spread beam. Typical LIGHTFORCE performance with unmatched long-distance illumination in the medium-sized class, but only average lateral performance. Glare from the covers is a negative, depending on where they're mounted.



LIGHTFORCE 240 XGT

SPECS

Size	247mm diameter x 170mm deep
Lens	2x spot (as tested)
Bulb	100W Xenophot halogen
Material	polycarbonate body, Lexcen lens
RRP	$247.50/each

READINGS

Lateral	2.9
25m	646.0
50m	176.0
100m	52.3
200m	13.0
250m	6.2

For straight-line illumination, nothing came close to LIGHTFORCE's new 240 Xenon Grande Turismo – the XGT produced a concentrated beam that nearly scorched the grass. It has the added flexibility of optional spread, combination and coloured covers, so you can tailor the light spread to your needs.

NANE 7100 SERIES

SPECS

Size	225mm diameter x 140mm deep
Lens	1x driving, 1x spot
Bulb	100W halogen
Material	steel body, glass lens
RRP	$199/pair

READINGS

Lateral	2.9
25m	176.3
50m	47.2
100m	12.0
200m	3.0
250m	1.8

A better-than-average light. Good spread, particularly in the middle distance, and good long-distance illumination. Well priced at only $199 a pair.

NANE 7700 SERIES

SPECS

Size	215 x 145 x 160mm [WxHxD]
Lens	1x driving, 1x spot
Bulb	100W halogen
Material	steel body, glass lens
RRP	$230/pair

READINGS

Lateral	3.3
25m	112.3
50m	32.0
100m	6.1
200m	1.7
250m	1.0

Disappointing when compared with the 7100 Series. The beam was narrower and produced significantly less lux on all but the lateral measurement. At least pricing is still pretty sharp.

NARVA ULTIMA 175

SPECS

Size	180mm diameter x 90mm deep
Lens	1x driving, 1x spot
Bulb	100W halogen H3
Material	ABS impact-resistant plastic, glass lens
RRP	$178/pair

READINGS

Lateral	2.9
25m	214.0
50m	46.1
100m	16.3
200m	3.7
250m	2.3

Good performer, especially for a smaller light. Fiddly mounting system and glare from clear covers detracted from result. Very good value for money.

NARVA TARGA 240

SPECS

Size	245 x 130 x 90mm [WxHxD]
Lens	1x driving, 1x spot
Bulb	100W halogen H3
Material	ABS impact-resistant plastic, glass lens
RRP	$148.50/each

READINGS

Lateral	7.1
25m	149.1
50m	37.8
100m	9.9
200m	2.4
250m	1.5

Good spread and lots of illumination directly in front of the 'vehicle', but fell away over longer distances. Quite a lot of glare from clear plastic covers.

NITESTALKER 170 SERIES

SPECS

Size	170mm diameter x 108mm deep
Lens	1x driving, 1x spot
Bulb	100W halogen
Material	metal housing, glass lens
RRP	$139/pair

READINGS

Lateral	4.0
25m	293.0
50m	73.7
100m	22.0
200m	5.4
250m	2.9

A real giant-killer. Despite its smaller size and bargain-basement price, the 170 Series out-scored all but three of the lights tested. Quite a concentrated beam with especially good long-range performance. Rated best value for money.

NITESTALKER 215 SERIES

SPECS

Size	215 x 145 x 170mm [WxHxD]
Lens	1x driving, 1x spot
Bulb	100W halogen
Material	metal housing, glass lens
RRP	$210/pair

READINGS

Lateral	3.2
25m	252.0
50m	64.9
100m	16.7
200m	4.4
250m	2.7

A very good light, even if it is overshadowed (pun intended) by the 170 Series. Better illumination than the 170 at very close range, although the beam narrowed over the longer distance.

NIGHT VISION

SPECS

Size	180mm diameter
Lens	2x spot
Bulb	100W halogen
Material	steel body, rubber mounting
RRP	$149/pair

READINGS

Lateral	3.3
25m	145.6
50m	38.9
100m	13.0
200m	3.2
250m	1.8

Not as bad as we'd expected from a 'no-name' brand we picked up in Super Cheap Auto. It scored okay in the lower half of the field, but keep in mind that this was with two spot lenses, which resulted in quite a narrow beam. We'd be sceptical about its durability, mainly because of its flimsy rubber mounting system.

THE RESULTS

BEST HALOGEN LIGHT – LIGHTFORCE 240 XGT

The Xenon Grande Turismo is a cannon among pistols when it comes to halogen driving lights. It simply made everything else in the test look dim by comparison.

As with all the LIGHTFORCE range, it has the added flexibility of swappable covers, offering spread and combination beams, as well as coloured filters.

The other major feature of the XGT is its Gore-Tex membrane (see inset), which allows air in and out to equalise pressure inside the light, while preventing water and dust ingress, making the light waterproof to a claimed 1m depth. The polycarbonate housing and Lexcen lens mean it's both light and very strong, too.

A terrific example of Australian design and manufacturing ingenuity.

RUNNER-UP – HELLA RALLYE FF 4000

In many ways, the Rallye 4000 is the conceptual opposite to the LIGHTFORCE XGT. Constructed from zinc alloy, it feels heavy and very strong. Glass lenses give a fixed spot/spread combination. In operation, it offers a wonderfully broad, deep, high-quality beam with no dim spots or 'holes', rather than going for maximum range honours as the XGT does.

It really reflects its forest-racing heritage, where being able to see everything clearly in a wide field of vision is crucial to not becoming one with the scenery. Its more compact dimensions means it can be mounted in places where the XGT simply won't fit.

In this case, it is the quality of light produced, rather than outright quantity, that earns it the runner-up spot.

BEST BUDGET CHOICE – NITESTALKER 170 SERIES

This one was a real surprise. The Nitestalker was the second cheapest light tested, and fell in the medium-sized class with lights like the Narva Ultima 175, Hella Rallye FF 1000 and LIGHTFORCE 170, but managed to out-score everything besides the IPF 740 and the two LIGHTFORCE lights. The beam was on the narrow side, but was still broad enough to be usable.

For a $139, you can't go wrong!

NOTABLE MENTION – CIBIE OSCAR SC

The Oscar SC gets a mention for offering such a broad, even beam that lit up objects that were as good as invisible to every other light tested. It averaged 46.2 lux on the lateral measurement, while the next closest light only managed 13.4 and the majority scored between 2.8 and 4 lux.

What was more impressive was how they out-scored the larger, spot/spread Turini Apollo even at 250m away. If you find yourself driving tight winding roads, or where animals venture into your path, the Oscar SC will give you more immediate warning than a narrower-beamed light, while still giving you a reasonable preview of what lies 30 seconds in your future.

AVERAGE LIGHT READINGS (LUX)

1. LIGHTFORCE 240 XGT	149.4
2. IPF 740 DDCS HIR	75.0
3. LIGHTFORCE 170 Striker	69.3
4. Nitestalker 170 Series	66.8
5. Hella Rallye FF 4000	66.6
6. Nitestalker 215 Series	57.3
7. Hella Rallye FF 1000	56.9
=8. KC HiLiTES 69 Series	47.5
=8. Narva Ultima 175	47.5
10. Nane 7100 Series	40.5
11. IPF 900 DSCS	36.0
12. Narva Targa	34.6
13. Nightvision 180	34.3
14. Cibie Oscar SC	33.0
15. Nane 7700 Series	26.1
16. IPF 800 DSCS	25.1
17. KC HiLiTES Daylighter	23.0
18. Cibie Turini Apollo	19.9
19. Autotecnica Monza	14.2

No actual kangaroos were interfered with in the course of this test

CONCLUSION

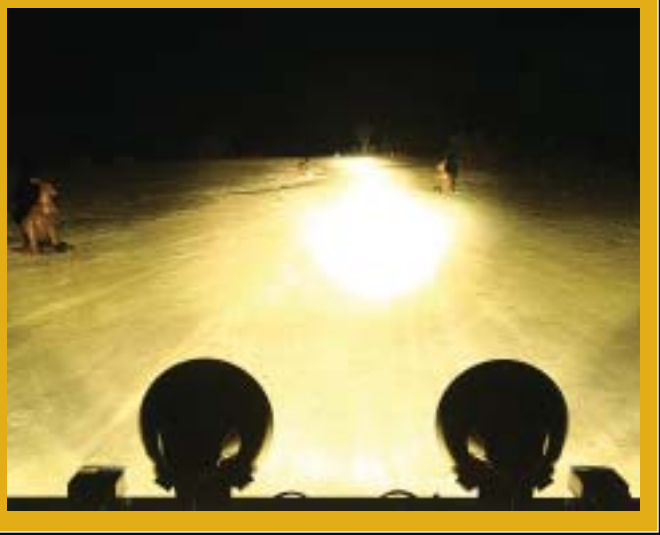
Every one of the lights tested will significantly improve your night-time visibility and, accordingly, safety. No light was perfect, and it was obvious that performance in a particular aspect (for example, long distance) is usually at the expense of another aspect.

Whereas some of our previous tests (such as our recent snatch strap test) have been rated on a pass/fail basis, here we have tried to make an objective evaluation of how each light performs in comparison to the others tested.

What light you choose to buy is a subjective judgment based on factors such as your budget, the type of beam you need, size and weight considerations, and personal preference. Look at the results in that context – don't think of it as 'what is the best light?', but rather 'what is the best light for me?'. 4WD

THANK YOU

Next month, we let the big bangers out to play, as five sets of super-bright xenon HID lights scorch the earth. Plus, we dunk two 'waterproof' lights and show you how to stop lowlifes from pinching your lights in our theft-prevention story.



THANK YOU

A big thankyou goes out to staffers Tim Scott, Mark Muras, Pat Callinan and uber-snapper Michael Ellem for standing out in the freezing cold all night to conduct the test. Their efforts ensured testing progressed as smoothly and accurately as possible.

Also to Slav Stefanuik and Scott from 4WD Warehouse at Kings Park, for supplying the stand the lights were all mounted to, as well as fashioning a connector to hook our Honda generator up to the battery used.