H7 lamps in comparison test

Expensive lamp gives worse light

Blue light has become some of a trend. It is said to be better for night driving. The truth is, that it's mostly about styling. The visibility distance is considerably shorter with blue toned lamps than with white standard lamps. The new H7 lamp with three colours is an exception!

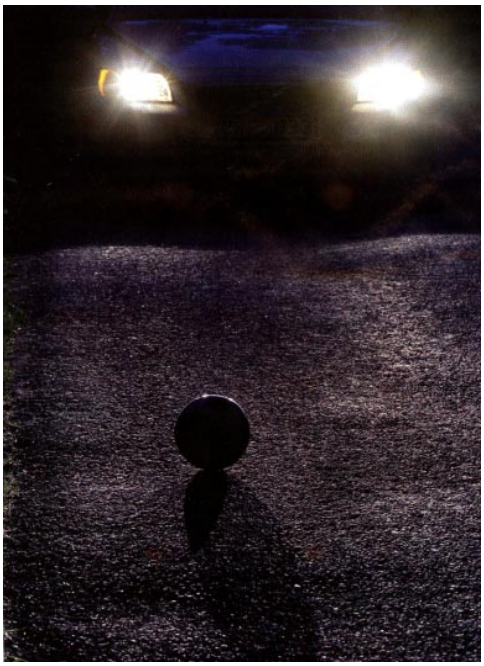
When we drove around the gas stations in Stockholm to buy H7 lamps, "improved visibility" was one of the explanations that we got to the question of why you should buy blue toned lamps instead of regular uncoloured ones.
The idea with blue light is, that you should use the eye's some higher sensibility to blue light when driving in the dark. When going from daylight to twilight vision, there is namely a shifting of the light of the colours. Red is experienced as darker and blue as lighter.
But of course it is in small degrees. And our measurements show "in blue and white", that if you put a colour coating on a lamp the light efficiency decreases. The eye's sensibility to the blue colour in the dark fools us to perceive the light as better than it really is.
We have used bulbs from the different manufacturers respectively, and compared standard with blue toned. And all blue types are poorer than the corresponding standard lamp. The reach of the light decreases with 5 – 20 percent!
A good blue toned lamp, as for example Osram, is subjectively perceived as restful, but with a change between a blue and a white lamp, you note that the blue lamp gives poorer light on the road. Especially when you drive in dense traffic. Then you get more glare and the asphalt seams to eat the light up. The only advantage is that the blue light seams to be less reflective on the road. And when you drive alone at night, the blue light feels more comfortable. But how often do you drive without meeting other cars? The problem is rather to get enough light when meeting another car, so that you have a good visibility distance. And the regular white bulbs are best.

Excellent lighting disappeared

When the most extremely blue lamp, Mega Blue from Biltema, was mounted in our Volvo S40 the result was chocking. The excellent light of the car disappeared. It felt like driving with only parking lights on. On a road in pitch-dark it was possible to at least identify the light pattern, but at every meeting we were strongly glared.
In the light testing equipment of *"Vi Bilägare"*, the limited capacity of the lamp was revealed. The low beam was almost 20 percent worse. The H7 lamp "Mega Blue" from Biltema is not only poor, it is worthless! The reach of the low beam was only 67 meters. To be compared with GE, Philips, Osram and Wurth, those end up at about 95 meters. We bought an extra lot of the bulbs Mega Blue from another Biltema department store and measured again. This time the visibility distance was only 52,5 metres! The second measuring of the first lot gave the same result, 67,5 metres. In other words, the lamps are not only poor. The quality is uneven.
All Ride is a low price lamp from Jula. About this lamp it can be said that you get what you pay for – shorter reach. Micro sells Phoenix, which is a cheap standard version but that gives you lots of light for your money. But one hopes that it will be improved since it went out already after 210 hours at our lifetime testing two years ago, which has to be compared with the best ones in the test that shone around 1 000 hours.
Philips standard bulb 30+ is not unexpectedly the clearly best standard lamp. It provided a reach of impressive 108 meters. But it also has a somewhat shorter lifetime. At our testing of lifetime of H7 lamps two years ago, it managed 558 hours of shining.
Philips new H7 lamp "NightGuide", showed to be a mere lighting firework. The reach, which we measure where the three-flux curve leaves the roadway, ended up at not less than 117,5 meters!

The lamp is based on new technique that is called “3-in-1”. This means that three colours are used. Yellow tone in what is called the “comfort zone” on the left side, and blue tone in what is called “information zone” – the area sideways in front to the right. Straight ahead in the “safety zone”, the light is kept white.
Our light testing clearly shows that white light gives the most efficiency. NightGuide has a long reach but with a proportionately thin light finger. The yellow and blue steal some of the lighting efficiency. But the comfort is really good. The disadvantage is a high price and probably a shorter lifetime.
Our conclusion of the test of standard and blue is, that in any case for the low beam regular bulbs are better, Philips NightGuide excluded. And it is remarkably expensive to buy a poorer lamp!
Possibly can the blue toned colour function better for extra lighting, to which we have reason to return.

By Erik Rönnblom



The visibility distance of low beam with coloured bulbs varies between 52,5 meters and 117,5 meters. Blue is more comfortable, but white provides more light on the road. The measurements are done with a Volvo S40.

Illumination scale	> 15 flux	7 flux	3 flux	1 flux

The measurement concern values where the 3-flux curve leaves the road.

Biltema Standard
Poorest standard bulb
Reach with 3 fluxes at the right hand side 83,1 m
Width with 3 fluxes at 50 m 13,75 m

Biltema Mega Blue
Dangerously poor
Reach with 3 fluxes at the right hand side 67,5 m
Width with 3 fluxes at 50 m 7,5 m

General Electric Standard
Reach with 3 fluxes at the right hand side 101,25 m
Width with 3 fluxes at 50 m 21,25 m

General Electric SuperBlue
Reach with 3 fluxes at the right hand side 97,5 m
Width with 3 fluxes at 50 m 20,0 m

Osram Standard
Reach with 3 fluxes at the right hand side 100,0 m
Width with 3 fluxes at 50 m 21,25 m

Osram Cool Blue
Reach with 3 fluxes at the right hand side 95,0 m
Width with 3 fluxes at 50 m 20,0 m

Philips 30+
The best standard bulb – most expensive
Reach with 3 fluxes at the right hand side 108,75 m
Width with 3 fluxes at 50 m 21,25 m

Philips NightGuide
Best coloured lamp
Reach with 3 fluxes at the right hand side 117,5 m
Width with 3 fluxes at 50 m 15,6 m

Wurth Standard
Reach with 3 fluxes at the right hand side 102,5 m
Width with 3 fluxes at 50 m 22,5 m

Wurth XenonLight
Most expensive coloured lamp
Reach with 3 fluxes at the right hand side 95,0 m
Width with 3 fluxes at 50 m 20,0 m

All Ride
Cheapest
Reach with 3 fluxes at the right hand side 88,1 m
Width with 3 fluxes at 50 m 18,75 m

Phoenix Long Life
Good reaching distance
Reach with 3 fluxes at the right hand side 107,5 m
Width with 3 fluxes at 50 m 22,5 m

Table:

The lamps in figures

	Biltema standard	Biltema Mega Blue	GE Standard	GE SuperBlue	Osram Standard	Osram Cool Blue
Price,SEK/pair	79:80	159	178	356	164	
Reach m, 3 fluxes on the road	83,1	67,5	101,25	97,5	100	
Width m, 3 fluxes, 50 m	13,75	7,5	21,25	20	21,25	
Sight decreasing glaring	1,79	0,7			2,51	
Asymmetric sector illumination, fluxes	1,82	1,26	3,82	3,4	3,43	
Side illumination, fluxes	1,75	1,46	2,14	2,05	2,13	
Close illumination, fluxes	255,8	39,8	128,44	135,48	117,52	1
Far distance illumination, fluxes	5,58	1,35	2,33	2,33	2,43	
Grade low beam	4	2	5	5	5	
Risk of glaring	Acceptable	Low	High	High	High	High

	Philips 30+	Philips NightGuide	Wurth Standard	Wurth XenonLight	All Ride (Jula) Standard	Phoenix (M Long Life
Price,SEK/pair	334	*	199	398	70	
Reach m, 3 fluxes on the road	108,75	117,5	102,5	95	88,1	1
Width m, 3 fluxes, 50 m	21,25	15,6	22,5	20	18,75	
Sight decreasing glaring	2,71	3,59	2,69	2,26	2,41	
Asymmetric sector illumination, fluxes	3,84	4,05	3,38	3,05	2,29	
Side illumination, fluxes	2,15	2,27	2,15	1,99	1,93	
Close illumination, fluxes	139,42	130,73	111,61	130,29	74	1
Far distance illumination, fluxes	2,61	2,86	5,59	2,25	1,97	
Grade low beam	5	5	5	5	4	
Risk of glaring	High	High	High	High	High	High

* Philips NightGuide is a completely new lamp that we got from the general agent. Verifying comparison will be done when it is available.
Scale of grades: 5 = excellent, 4 = very good, 3 = good, 2 = approved, 1= failed. The risk of glaring is judged with the help of a three grade scale: low, acceptable and high.

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Reach m, 3 flux on the road	77
Width m, 3 flux, 50 m	11
Sight decreasing glaring	1,78
Asymmetric sector illumination, fluxes	1,71
Side illumination, Flux	1,72
Close illumination, Flux	114,5
Far distance illumination, Flux	1,5