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Page 1 of 2  
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Please reply to  
[roy@lightmare.org](mailto:roy@lightmare.org)

20 January 2016

Dear Mrs. Simpson,

### Blinding vehicle lights

We thank you for your letter of 10 November 2015 advising about the formation of an UNECE Informal Working Group to develop solutions regarding our and the general public's concern about blinding vehicle lights, this is very welcome news.

Please could we ask that independent ophthalmologists are represented on the group, what time scales are envisaged, could we have minutes of meetings and will you be on the group so we have a contact?

Our concern is that the group may be dominated by self interested auto manufacturers, lamp manufacturers and road safety experts who know nothing about the eye. This appears to have been the case with the original UNECE WP29 group who determined present blinding international vehicle lighting standards.

I submit that current research studies are out of touch - I quote from a recent letter 10 December 2015 from Transport Minister Andrew Jones to Stephen Crabb MP on behalf of Martin Davies one of our key supporters:-

**The Department for Transport has done some research and studies which indicate that well-adjusted headlamps do not cause significant levels of disability glare. Many vehicles are equipped with adjustment devices that allow the driver to set the aim of their headlamps according to the loading condition of the vehicle; for example, adjusting the lights down when carrying a load in the rear of the vehicle. Automatic adjustment devices are available but are not mandatory.**

*Yours,*

*Andrew*

This might have been valid a few years ago when most vehicles had sealed beam tungsten-halogen headlamps, but in 2016 when High Intensity Discharge(HID) Bi-Xenon, Light Emitting Diode (LED) and Laser headlamps are in use, even the slightest undulation in road surface causes dangerous visual impairment.

HID Bi-Xenon lamps run on full beam continually and use electro-mechanical shutters for dipped beam but the brow of a hill, or a legal road hump causes blinding dazzle which violates the Highway Code.

We submit to the Working Group that they need to rethink the legality of putting two blinding lights on the front of a vehicle. This is a throwback from horse-drawn carriage days when coach lamps had one candlepower of eye friendly yellow light, not 175 candle power (2,200 lumens) of blinding near blue spectrum light. Youstar China is offering aftermarket lamps emitting 4,800 lumens using Philips Luxeon LED's, no doubt others will soon exceed this.

Please could we promulgate solutions:-

- For dipped headlights, a recessed light source could be beamed out of a vehicle at the typical 1.5degree dip angle so that an oncoming driver cannot see the light source directly. For visibility, electroluminescent paint could depict the whole vehicle without glare
- Use of sidelights (EU term: position lights) in urban areas to minimise sharp transition of light. Avoiding sharp transitions of light is a fundamental lighting design principle and particularly important in the twilight zone when the eye changes from using cones to rods
- Daytime Running Lights (DRL) should be banned and disconnected on existing vehicles
- Existing LED and HID Bi-Xenon 6,500k headlamps replaced with 2,700k warm white colour lamps

We note with alarm recent promotion of laser-based headlights by BMW and Audi prime perpetrators of high intensity headlights. We recognise that this is not about using laser pointers that are directly dangerous (attached Sunday Times article of 10 January 2016:"Ban urged as laser pointers damage eyes of 47 children") but if auto manufacturers mismanage their headlight designers as they have been doing so wantonly over the last decade or so, we cannot but be alarmed at this development. Our fear is that the road safety experts and authorities, who have approved such dangerous developments in the past, will continue to be out of touch with the practical safety of the motoring public, cyclists, and pedestrians.

Tragically, since DRL and HID Bi-Xenon and LED vehicle lights have been permitted increased deaths and serious injuries have occurred across the EU (European Transport Safety Council - June 2015). These statistics must convince the official experts that their thinking and findings about high intensity day and night vehicle lights are flawed.

Besides the thousands of complaints we at Lightmare receive, we know that high intensity lights generate the highest number of complaints to the DfT (Andrew Jones - 10 Dec 2015), and we hope that the Informal Working Group will take the genuine safety concerns of the motoring public, cyclists and pedestrians to heart, and determine speedy remedial actions to eliminate the public menace of mis-regulated vehicle lights.

If the intensity of light permitted on vehicles today was in a workplace, the owner would be prosecuted under environmental health and safety legislation.

The highway is a workplace for many drivers (truck drivers in the USA are starting to complain) therefore the Working Group's first priority must be to determine safe levels of light for the human eye and compel manufacturers to comply including retrospective measures.

We look forward to your response regarding independent ophthalmologists, time scales, minutes and composition of the Informal Working Group.

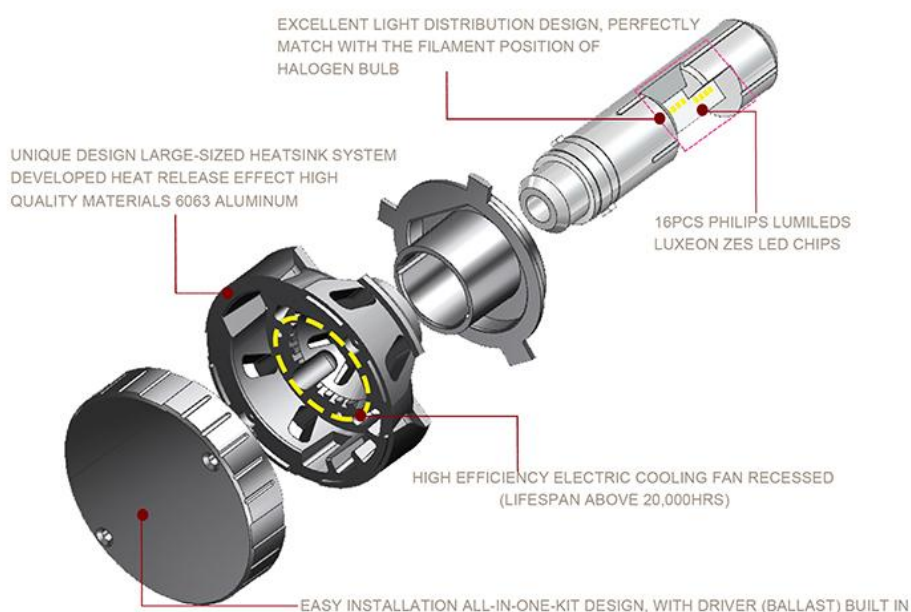
**Yours sincerely,**

**Roy Milnes**



[roy@lightmare.org](mailto:roy@lightmare.org)

This open letter is published  
at [www.lightmare.org](http://www.lightmare.org)



**Name:** **4800Lm Philips Luxeon led headlight**

**Power:** 35W Per bulb.

**LED CHIPS:** PHILIPS LEXEON ZES

**LED QTY:** 16PCS LEXEON ZES LEDS

**Lumen Flux:** 4800LM Per bulb, 9600Lm Per Set.

**Color-temp:** 5700K

**Operation temp:** -40deg~+85deg

**Lifespan:** >30000 HOURS

Please get back to me if you have interested in. Thank you!

Kind regards. Valen

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## Ban urged as laser pointers damage eyes of 47 children

Mark Hookham The Times 10 January 2016



**A scan shows damage to the left eye of William Jackson, 12. It is believed to have occurred when he accidentally shone a laser pen into it**



AT LEAST 47 children have suffered permanent eye damage — including blindness — from hand-held laser pointers in four years, The Sunday Times can reveal.

Many of the injuries have been caused by devices bought as toys. But new laser models, made in China, are on sale that can cause eye damage from hundreds of feet away and burn skin at a distance of 45ft. One online retailer, MegalaserUK, is selling a laser with a blue beam which it claims has a range of 200 miles and is 3,000 times more powerful than the level regarded as safe by government guidelines.

The gold-plated device has its own cooling system and protective glasses and the website boasts that it can “melt plastics with ease”. But the website also warns that it is for commercial use only, is not a toy and should not be used within two miles of an airport.

Some laser pointers are bright enough to dazzle an airline pilot temporarily at more than 3,200ft and be a distraction at more than 146,000ft — far higher than the maximum altitude of airliners. Last week The Sunday Times published a survey in which half of British airline pilots said they had been the victims of lasers in the past year.

A leading eye specialist this weekend called for high- powered lasers to be banned from online sale and treated as “offensive weapons”.

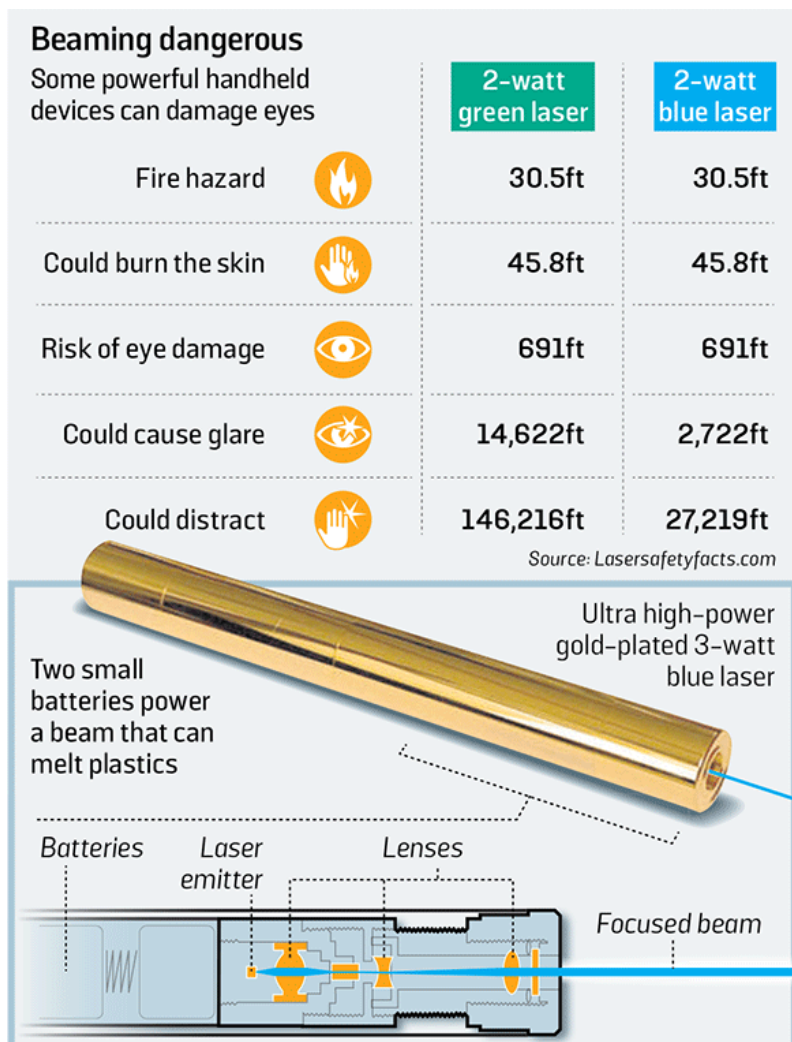
Fahd Quhill, a consultant ophthalmologist at the Royal Hallamshire Hospital in Sheffield, said: “As an eye doctor I don’t want to see any more children, pilots or anybody being injured because of these devices.” Since 2012 Quhill has treated 10 children who have suffered permanent damage after laser beams were shone in their eyes. When he contacted other ophthalmologists in the UK he discovered at least another 37 cases during the same period.

“Unfortunately there are no medical or surgical treatments that can reverse laser retinal injuries,” he said. In the most recent case a month ago, an unnamed 10-year-old boy from Sheffield was injured after he shone the beam from a laser pen that had been bought during a holiday in Egypt onto a mirror. Under Public Health England guidelines, only lasers with a maximum power output of one milliwatt (mW) — one thousandth of a watt — should be sold to the public.

Trading standards officers can confiscate devices if they deem them unsafe. However, it is not illegal to import powerful lasers after buying them online from foreign sellers.

Research has shown that many cheap laser pens and pointers are much more powerful than 1mW. Ben and Celine Jackson bought their nine-year-old son William three laser pens as a stocking filler for Christmas two years ago.

On Boxing Day William complained of problems with his vision and it is now believed that he accidentally shone one of the lasers, which each cost about £5, into his left eye.



An analysis of the devices, which were made in China, later revealed that they were between 42mW and 72mW.

William, who is now 12, was born with a lazy right eye and had worn an eye patch for about four years. The laser caused severe damage to his other eye, leaving him unable to read. His vision has improved since the accident but doctors have said his body could still have an immune response which could lead to a dramatic deterioration.

“They have said it could be quite devastating and they are not sure whether they could do anything about it,” Ben Jackson, 47, a GP, said.

The couple are angry that the packaging did not make it clear that the laser pens were unsuitable for children. A blue laser was last week being sold on the Amazon website for £84.95 and claimed to have a maximum output power of 1mW.

However, Colin Swift, an expert on radiation protection at the Christie NHS Foundation Trust in Manchester, told The Sunday Times that it looked “identical” to a 1,600mW (1.6 watts) device that he had previously tested.

“If it was shone into someone’s eye you wouldn’t stand much of a chance of recovering from it,” he said. Amazon removed the device from its website on Friday after being contacted by The Sunday Times. “All marketplace sellers must follow our selling guidelines and those who don’t will be subject to action, including potential removal of their account,” a spokesman said.