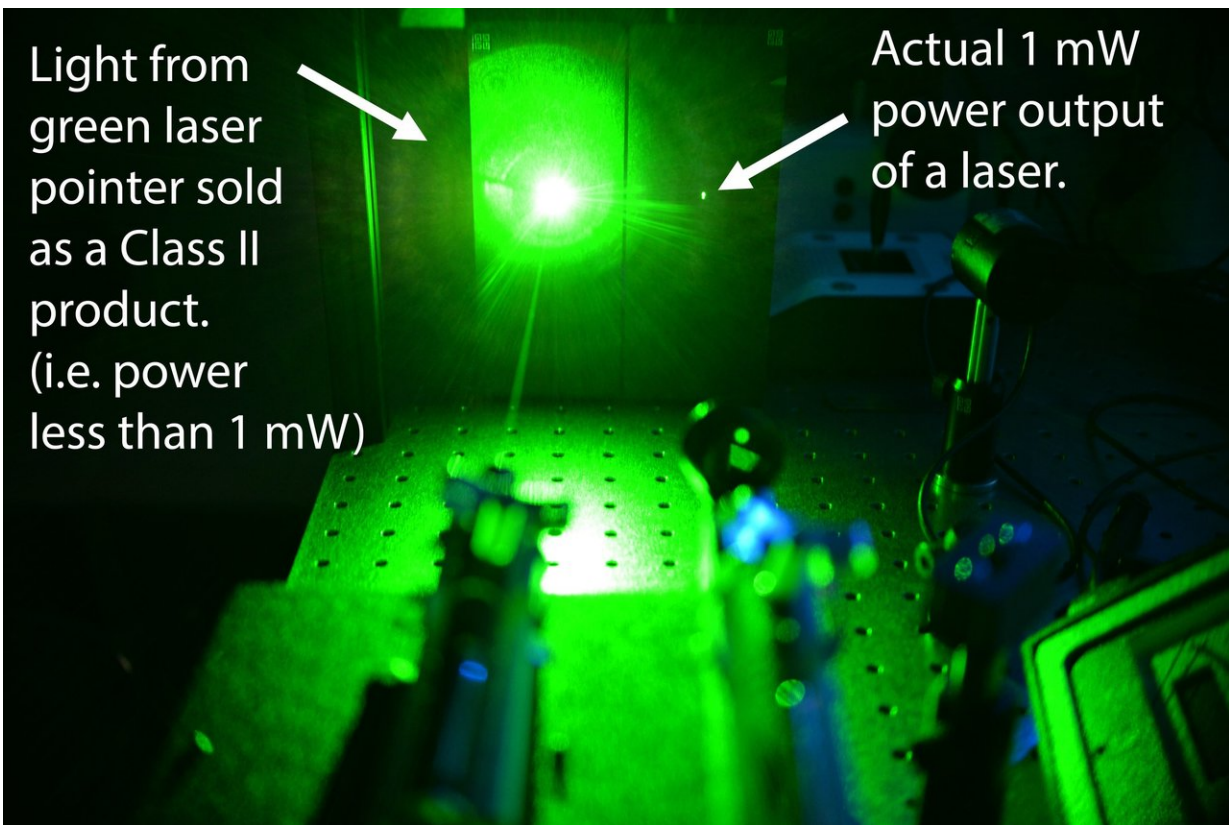


Public unwittingly buying dangerous laser pointers, warn scientists

October 10 2017, by Chris Melvin



Some lasers are much more powerful than advertised. Credit: Ventsi Valev

Dangerous laser pointers are being sold to the public which unwittingly believes them to be safe, scientists from the University of Bath have warned.

Misleading and mistaken labelling, drastic variations in [laser](#) strength under different conditions, and emissions of invisible infrared light all pose risks they say.

The researchers have responded to a Government consultation on [laser pointers](#) calling for better labelling and new easy-to-understand warning signs for all laser pointers.

Physicist Dr Ventsislav Valev, who has experienced a laser pointer attack, and who led tests at the University of Bath on a range of laser pointers, said: "Our main concern is laser pointers which seem safe to the user but are in fact very powerful. These lasers can lull people into a false sense of security and lead to injury.

"Some lasers that are labelled as safe turn out to be highly dangerous because they can emit highly powerful invisible laser light. Moreover, the visible laser [power](#) can vary a lot, depending on temperature.

"Other labels are mistaken, and the maximum power output of the laser is often higher than the safety class on the label, again putting the user and others in danger."

Dr Valev and PhD student Christian Kuppe in the University of Bath Department of Physics, collaborated with Dr Dimitar Slavov from the Bulgarian Academy of Sciences to develop scientific equipment for carefully testing the laser diodes in the heart of every pointer.

"Our results show that the so-called 'frequency doubled' laser pointers, usually green, blue and violet pointers, can be particularly dangerous even if they seem safe to the user," he said.

"For example, some laser pointers can output widely different laser power depending on the temperature. They can appear perfectly safe at

room temperature only to become much more dangerous outside and vice-versa. Moreover, as pointers are being used they heat up, so a pointer that initially seems safe can subsequently become highly powerful and dangerous.

"Other lasers can produce safe levels of coloured light, but at the same time emit high power invisible infrared light. A person looking at the visible green light would estimate the laser to be safe and the much greater power and danger would go unnoticed until injury occurs."

Laser pointers have been controversial, in particular because they have been shined into the eyes of plane and helicopter pilots and train drivers, with an average of 1,500 reported attacks per year in the UK. They can cause permanent or temporary eye damage, and it is a criminal offence to do so.

Dr Valev added: "I know from personal experience what it is like to be the victim of a laser pointer attack. The circumstances were particularly aggravating as I had my baby daughter in my arms at the time and so she was exposed too. Fortunately she was just falling asleep so she had her eyes closed.

"The pointer was powerful, but poor quality so the laser spot was about a meter in size when it reached me and my daughter. Because of this huge spread, the amount of laser [light](#) entering my eyes was much reduced from the original laser pointer output. So, I got only momentarily dazed, but suddenly everything became red. I was thinking that perhaps I was experiencing a medical condition, but my wife saw someone shining a pointer at me from outside our home.

"Then I got very angry that someone would direct a high power laser pointer at a person holding a baby. These are not toys and can be very dangerous, especially to babies' eyes. We need to make sure laser

pointers being sold are properly labelled and safe to use."

Provided by University of Bath

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