

# whipFlash™

## Flashing Brake Lights

### Background

As well known several accidents where cars are driven into from behind by another vehicle is a very common reason for so called "Whiplash" injuries. In Sweden there is approximately 70 000 such accidents every year. Around 40 000 of these accidents leads to Whiplash injuries. In Germany there is 250 000 whiplash injuries reported yearly and for USA the figure is 1 milj.

It is also a well known fact that the human eye is far more sensitive for changes and movements than it is for static sights.

We have taken these two facts as components to develop a device for reducing the risk of Whiplash injuries.

Scientific studies has showed that a flashing light reduces the length of a brake distance at a speed of 90km/h by 5.5 meter. That could be vital, in a traffic situation, to avoid an accident.

The European commission has recently approved of the usage of flashing brake lights.

### Introduction

WhipFLASH is a patented indicator that is sensitive for acceleration and deceleration. It uses a relative new technique for measuring such phenomenon that's relates to nanotechnologies. The WhipFLASH devise is a stand alone unit that is to be applied in the back of a car window in a way so that it's easy to see from the traffic behind. It's easy to mount and connect to the ordinary car power supply.

The function is that when the vehicle is braking, the devise senses the deceleration and send a flashing light via a LED board to the traffic behind. These flashes differ from each other depending on how "hard" the vehicle brakes.

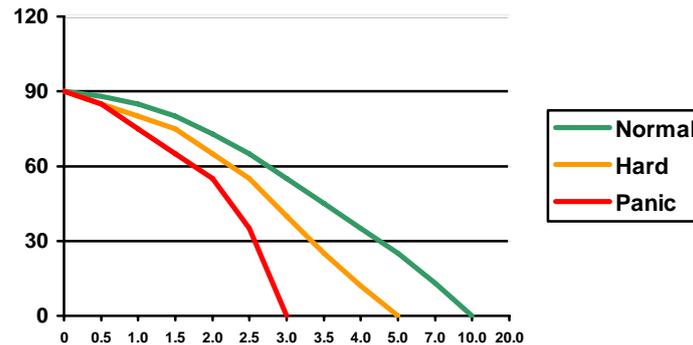


*whipFLASH outfit example (Dimension 450 x 40 x 40 mm)*

## Technical Solution

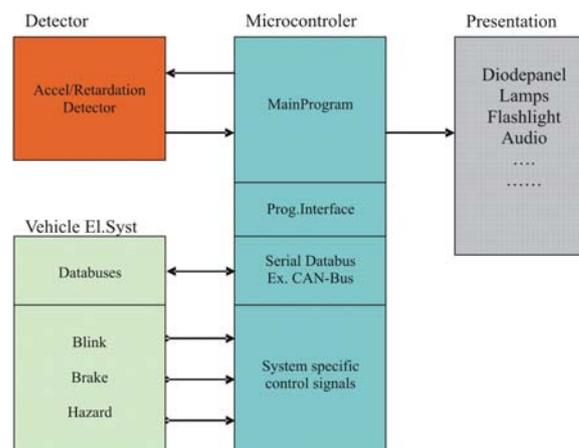
The WhipFLASH indicates in different ways how “hard” you brake by flashing with different frequencies. This version is set to measure three steps of deceleration.

- **NORMAL**                    The LED shows a static light as the vehicles ordinary brake lights.
- **HARD**                        The LED flashes at 3 Hz (flashes/sec.)
- **PANIC**                        The LED flashes at 10 Hz (flashes/sec.)



There are also a function that indicate impact situations in a way were the LED flashes in a high frequented mode. As an add on or alternative the unit also indicates standing vehicles were the LED flashes with 1Hz frequency and that can be connected to the vehicles ordinary warning system.

The block diagram below shows the components and technical solution in a schematic way.



### Technical Specifications

Dimensions	40 x 40 x 450 mm incl. holders
Voltage	12V
Power	Passive; >10mA, active; max 250mA
Effect	2,5W

WhipFLASH is protected and under patent and trademark procedures.