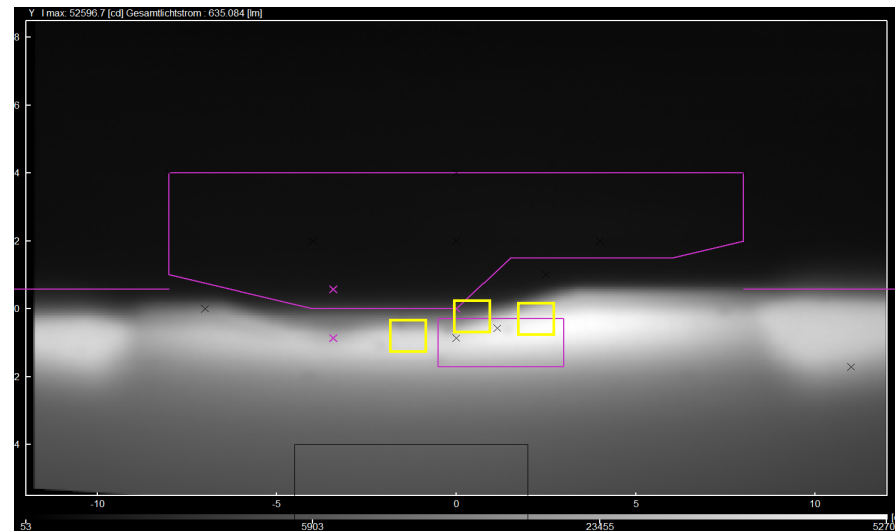


Improved failure provisions for UN R149-01 and including “high definition” headlamps - Main aspects of the approach -

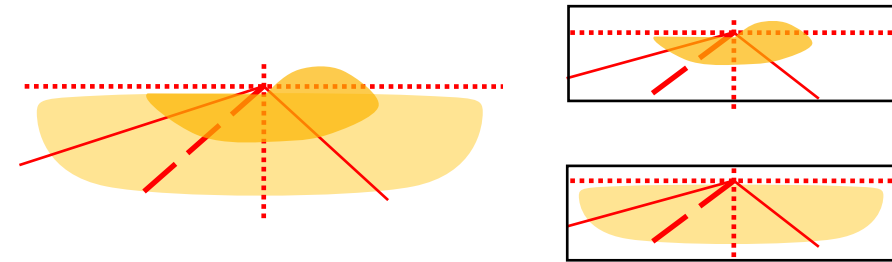
88th GRE session, 25-28 April 2023



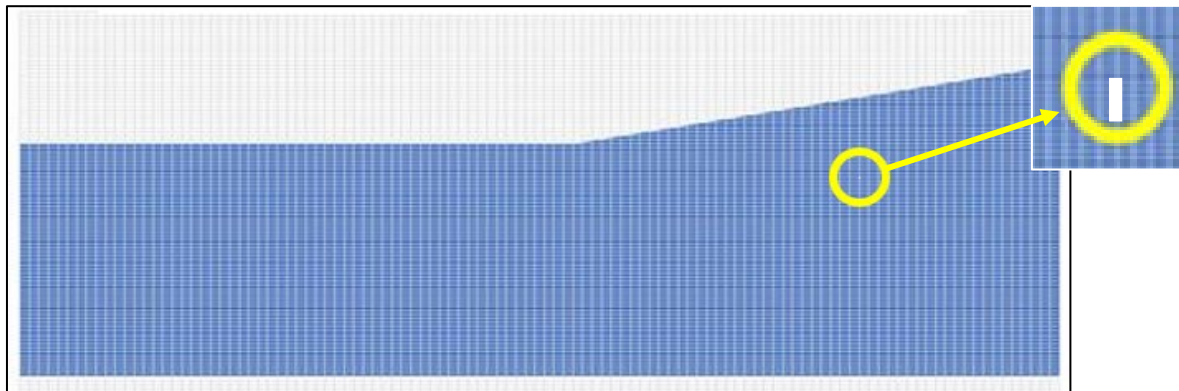
Improved failure provisions of “high definition” headlamps

Motivation

Considering the current regulatory text in UN R48, the failure requirements for principal dipped-beam headlamps using multiple light sources are quite simple and state very generally that, every failure of a LED module shall lead to either switching OFF the LED module(s) of the principal dipped-beam or activating a tell-tale indicating failure.



Failure of one LED module → considerable loss of dipped-beam performance



While new technologies and light sources are available, we now have dipped-beam headlamps constituted of a large number of light-emitting elements where a failure of any first of these does not lead to an essential change of performance in photometric values.

Improved failure provisions for UN R149-01 and including “high definition” headlamps - Details of the concept

For principal dipped-beam headlamps in UN R48:

- the existing requirements are kept and apply to devices type-approved according to UN R112 or to the original series of amendments to UN R149;
- existing requirements are adapted for failure detection at vehicle level to suit devices type-approved according to UN R149 01 series;
- a new option is added for the principal dipped-beam headlamps type-approved according to the 01 and subsequent series of UN R149, if there is a failure signal provided by the device.

At device level, for UN R149-01 series:

- insertion of detailed provisions for providing a failure signal, based on different technologies

UN R48
Failure detected by vehicle
→ extended provisions

UN R149 01 series
Failure detected by device
→ new detailed provisions

Improved failure provisions of “high definition” headlamps

Details of the concept – new provisions UN R149-01 series

Manufacturer shall choose at least one criterion depending on the diagnosis technology to provide a failure signal

