GRE-OVIG-Working Paper No. **2007-03**
(1st session of the GRE Informal
Group on Operating Voltage, 19-20 June 2007)

Light Sources

Input IEC delegation to GRE
to OVIG, 19,20 June 2007

Design of Light Sources

Bound to:

- Laws of physics
- Defined operating conditions
- Specified performance requirements
- Unavoidable compromises

Voltage conditions

R37

- Test voltage Head Lighting: 13,2V*
- Test voltage Signalling: 13,5V*
- DC

*other regions mostly lower

R99

- Test voltage 13,5V
- Electronic light source control gear (ballast)

Control gear (ballast)

R48

2. 7. 1. 2. "Electronic light source control gear" means one or more components *between supply and light source* to control voltage and/ or electrical current of the light source;

R99

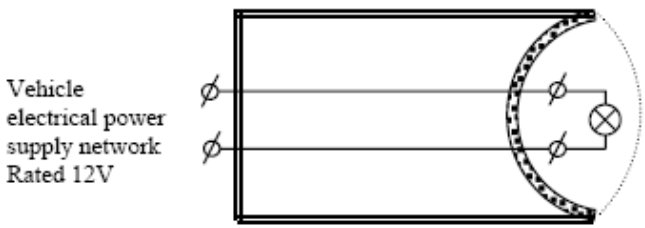
3. 1. 2. " Ballast ": Specific electrical supply for the gas-discharge light source.

GENERIC MODEL APPLIED
Status Nov 2005

CVG-2006-17

Replaceable R37 Filament light source

"Traditional" R37

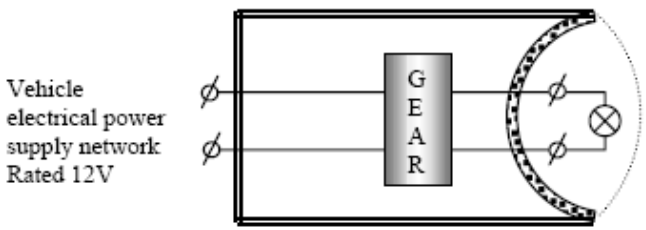


Light source(s):

- **Approved R37**
- Objective luminous flux at test voltage 13.2V / 13.5V
- Reference luminous flux at around 12V (13.2V) / 13.5V
- Voltages are not specified but by default DC

Replaceable R99 Gas-discharge light source

"Traditional" R99



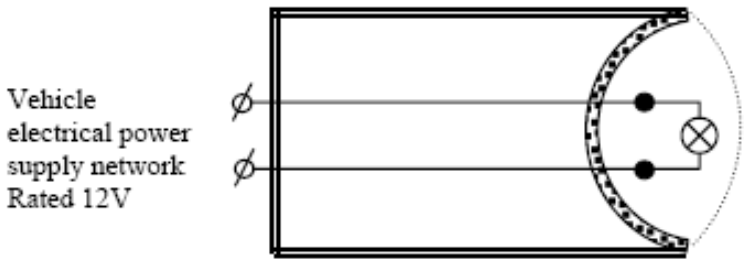
Light source(s):

- **Approved R99**, the ballast taken into account
- Objective luminous flux at test voltage 13.5V
- Voltages are not specified, but at input terminals of the ballast by default "DC" (?)
- Applied voltages at the input terminals of the ballast may differ from rated voltage of 12V

CVG-2006-17

Non-replaceable light sources re the lamp

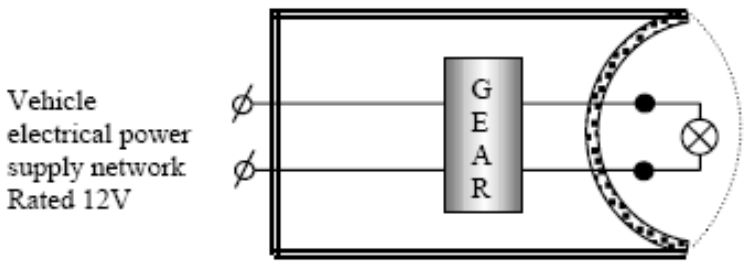
for instance filament lamp



Light source(s):

- **Non-approved** (sometimes approved, made non-removable)
- Voltages at terminals of the lamp specified by lamp regulation

for instance LED



Light source(s):

- **Non-approved** (sometimes approved, made non-removable)
- Voltages at terminals of the lamp specified by lamp regulation

Conclusion

Specified performance requirements

need

Defined operating conditions