Light Source Requirements

- In general for UN approved light sources
- OEM situation and AFTM situation

- Requirements clustered in
  - Safety
  - Performance
  - Consumer / Customer

SAFETY REQUIREMENTS (UN ECE)
- Technical
  - Luminous flux incl. tolerances
  - Maximum power
  - “Geometry”
  - ...
- Information / Communication
  - Rated voltage (and wattage)
  - Category name

PERFORMANCE REQUIREMENTS and TEST METHODS (IEC 60810)
- Technical
  - Minimum lifetime
  - Minimum vibration resistance
- Information / Communication
  - Restricted white
  - ...

CONSUMER / CUSTOMER REQUIREMENTS
- E.g. higher lifetime specifications
- E.g. heavy duty performance
- E.g. limited color coordinates
LED Replacement Light Source (LEDr) acc. to R37

- Photometric parameters
  - Same as for LED Substitutes

- Electrical parameters
  - Voltage range
  - FailureDetectionSystem-compatibility
  - PWM operation
  - EMC

- Mechanical parameters
  - Size
  - Mass

- Thermal parameters
  - Behavior under high ambient T.

**PERFORMANCE REQUIREMENTS (IEC 60810)**
- Technical
  - ...
- Information / Communication
  - ...

**SAFETY REQUIREMENTS (UN ECE R37 / RE5)**
- Technical
  - ...
- Information / Communication
  - ...
Question:
Does the LEDr have the same voltage - flux behavior as the filament light source?

Answer:
The electronics of the LEDr is designed so that the voltage – flux behavior is equivalent, or more stable, than the filament light source.