External LED Lighting for Rail Vehicles

Presentation of the Company
MSV elektronika is a manufacturer of LED signal lights type BKS02 and LED and reflectors type BKS11.

Both types of lights meet the requirements of colour and luminance according to EN15153 -1 and a UIC534. They have been successfully certified as elements of interoperability according to TSI2011/291/UE LOC & PAS.
LED signal light BKS02

LED signal light is suitable for outdoor lighting of railway vehicles. The Construction uses SMD LED and molded reflectors, achieving precision optical parameters and long life of the light.

The light is equipped with 45 white LEDs and 45 red LEDs, according to the type. Each LED is controlled and diagnosed individually. In case of failure of a given number of LEDs, fault state is indicated on the diagnostic output that can be connected to the master control system. Luminosity of the BKS02_N signal light in red and white colours is adjustable in three levels.

Produced variants:

- BKS02_N/A – red signal light
- BKS02_N/B – white signal light
- BKS02_N – red and white signal light
Signal light type BKS02_N is mounted into an aluminium housing that is compatible with the cover type US006 (manufactured by Progress Žilina) which is standardly used on rail vehicles.

Signal lights of the BKS types are constructed using clear optics. The optical characteristics are ensured by a special reflector made of metallised surface plastics, based on the design principles used in the automotive industry. The electronics and reflector are mounted into aluminium castings. The light is connected using a 9-wire cable.

The technical solution of the light is registered as a utility model in the Czech Republic!

Dimensions: 248 x 106mm
Weight: 3,8kg
Working conditions for operation:

According to the EN 50155 ed. 3 standard

**Altitude:** A1

**Operating temperature:** T1 with an extension to -40 °C

**Ambient temperature range:** -40 °C to +70 °C

**Humidity:** according to requirements of the standard

**Shock and vibration:** Category 1, class A further according to CSN EN 61373

Electrical conditions:

**Power supply:** 16.8 - 60 V, according to CSN EN 50155 ed. 3

**Power consumption at 24 V supply voltage:** max.12 W

Insulation resistance conforming to CSN EN 50155 ed. 3, Article 12.2.9

**Type tests:** according to requirements of the standard CSN EN 50155 ed. 3

**Protection:** according to CSN EN 60529, change . A1
Examples of use of light BKS02_N
Headlight BKS11 uses 10 high-luminosity LEDs in combination with original optics designed to meet the requirements of the standards. BKS11 can be supplied in versions that combine the headlight with white and red signal light.

Besides the control circuits, BKS11 is also equipped with the diagnostics of the LEDs and using communication bus or diagnostic output it can inform about its fault or operational states. BKS11 is also equipped with an adjustment system for easy setting light to the desired position. The light parameters of the light comply with the standard CSN EN 15153-1 and UIC534.

Produced variants:

- BKS11 – Headlight
- BKS11/B – Headlight with white LED signal light
- BKS11/A – Headlight with red and white LED signal light
Mechanical Design of the BKS11 Light

The electronics are placed in aluminium casting, coated by cataphoretic varnish.

BKS11 is connected using Harting Han R 23 connector. Adjusting the light to the desired position is done using a simple adjustment system.

Dimension: 248 x 106
Weight: 3,5kg
Working conditions for operation:

According to standard CSN EN 50155 ed. 3
Altitude: A1
Operating temperature: T1 with an extension to -40 °C
Ambient temperature range: -40 °C to +70 °C
Humidity: according to requirements of the standard
Shock and vibration: Category 1, class A, further according to CSN EN 61373

Electrical conditions:

Power supply: 16.8 - 60 V , according to CSN EN 50155 ed. 3
Power consumption at 24V supply voltage: max 30W
Insulation resistance conforming to CSN EN 50155 ed. 3 , Article 12.2.9
Type tests: according to standard CSN EN 50155 ed. 3
Protection: according to CSN EN 60529 , change . A1
Protection level: IP65
Examples of use of BKS11 headlights
Certification according to TSI standards

For headlight BKS11

For signal light BKS02_N
You know any better?

External LED lighting