

Maximum visibility and high reliability

The VIRLU160 LED-unit for dwarf signals from VRS Railway Industry

Maximum visibility

The VIRLU160 LED-units are specially designed for dwarf signals. LED-technology applied in these signals means optimal visibility under all-weather conditions and from all visibility angles. The electronic driver ensures that the LED's always illuminate optimally. On a track with curves the visible distance can be up to 200 meters. The LED-module has redundant LED-strings. This guarantees extra safety; so when one string fails, the signal will still have optimum visibility.

The VIRLU160 LED-unit has a guaranteed light output throughout 12 years.

High reliability

Another important advantage is the high reliability of the VIRLU160 LED-light technology. Furthermore, the VIRLU160 LED requires little maintenance; only the front of the VIRLU160 LED needs to be cleaned once every 2 years. This reduces the total cost of ownership considerably during the operational life.

Specifications



Optical

Light colour:	fulfils CIE S 004/E-2001 red class A, yellow class A, green class A, and white class A
Nominal (day) light intensity :	220 [cd] for red, 260 [cd] yellow and 150 [cd] green and white (in zero-axis)
Night intensity:	5%-10% of the daylight intensity
Maximum visible distance:	200 [m] (on the basis of 1mlux eye illuminance)
Angle visibility:	usable on straight track and curves with a radius of 200 [m] to ∞ , positioned right or left.
Phantom ratio (Is/lph):	> 16 (according to EN12368)

Electrical

Supply voltage:	10.2 [Vac] (by 110 [Vac] line voltage)
Night voltage:	7.4 [Vac] (by 80 [Vac] line voltage)
Power consumption at 10.2 [V] :	30 Watt \pm 15%

cosine phi: > 0.9
 Switch on current: < 6 [A]
 Ignition/extinction time: < 50 [ms]
 EMC-compatibility: acc. to EN 50121-4
 Switch on duration: infinite
 Insulation value: 2 kV between electrical conductors and metal front plate

MTTF: > 10,000,000 hour (calculated according to SN 29500)
 Lifespan: 12 years with guaranteed light output

Environment

Ambient temperature: - 30 [°C] to + 55 [°C]
 storage temperature: - 30 [°C] to + 70 [°C]
 Climate test: according EN60721 (Z/AD test) supplementary -30 [°C]
 Vibration test: according to EN60721-3-4 4M6 4 - 8.4 Hz @7mm amplitude 8.4 – 200 Hz @2g sweep rate 1 oct/min
 Shock test: fulfils EN60721-3-4 4M6, type 2, 25 g @ 6ms

More information?

For more information about the products and services of VRS Railway Industry, contact our sales department. Our people are happy to help! You can reach us every workday between 8 AM and 5.30 PM at: +31 30 694 3954.

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RAMS

hazard rate: < 1x10⁻⁸ [1/h]

