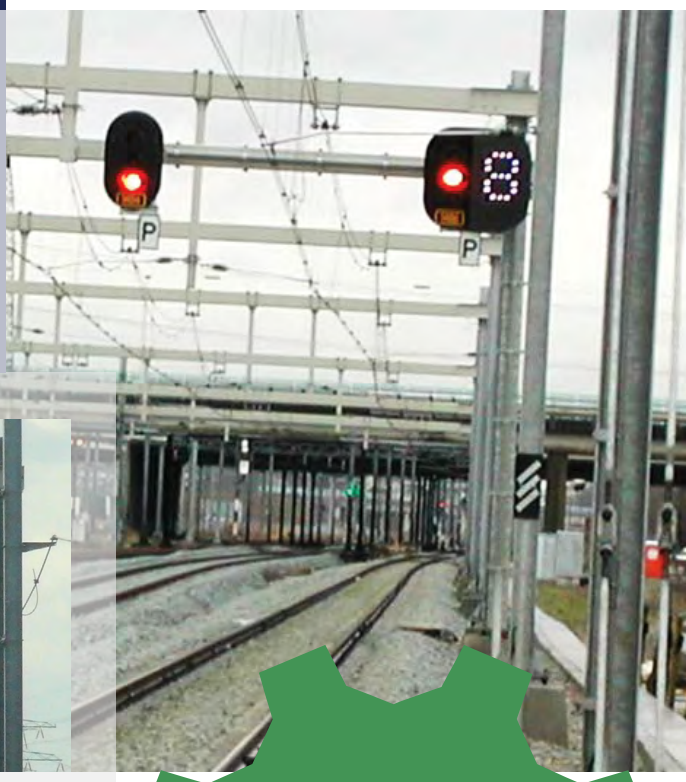
Transport System Solutions

SIGNALS
LED MATRIX

LED Matrix Signals

Matrix signals are used in combination with conventional signals to provide additional information to the train driver, for example on the turnout speed limit. For this reason, it is important that the signals offer optimum visibility under all weather circumstances and all angles of vision, in addition to optimum operational safety. Transport System Solutions has developed a LED matrix signal, in combination with the optical system, for this type of application.



highly visible, extremely durable

High visibility, low maintenance costs

The Transport System Solutions LED matrix signal has unprecedented operational safety thanks to LED technology. Redundancy in the design ensures high availability. Compared to applications equipped with bulbs, the Transport System Solutions LED matrix signal needs no technical maintenance. One inspection every ten years is sufficient, resulting in considerably lower maintenance costs. The LED technology ensures a very clear picture. The brightness of the lights can be set to day or night levels by adjusting the supply voltage, so as not to dazzle the train drivers at night time.

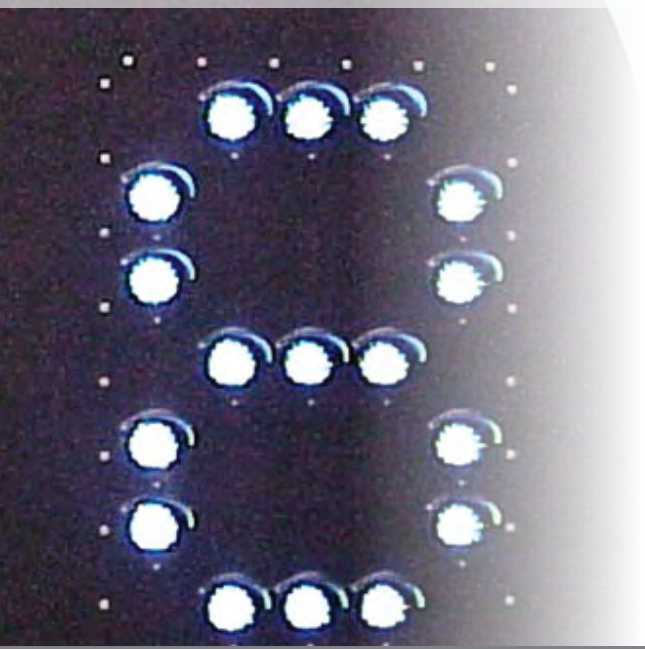
Long lifespan, extremely durable

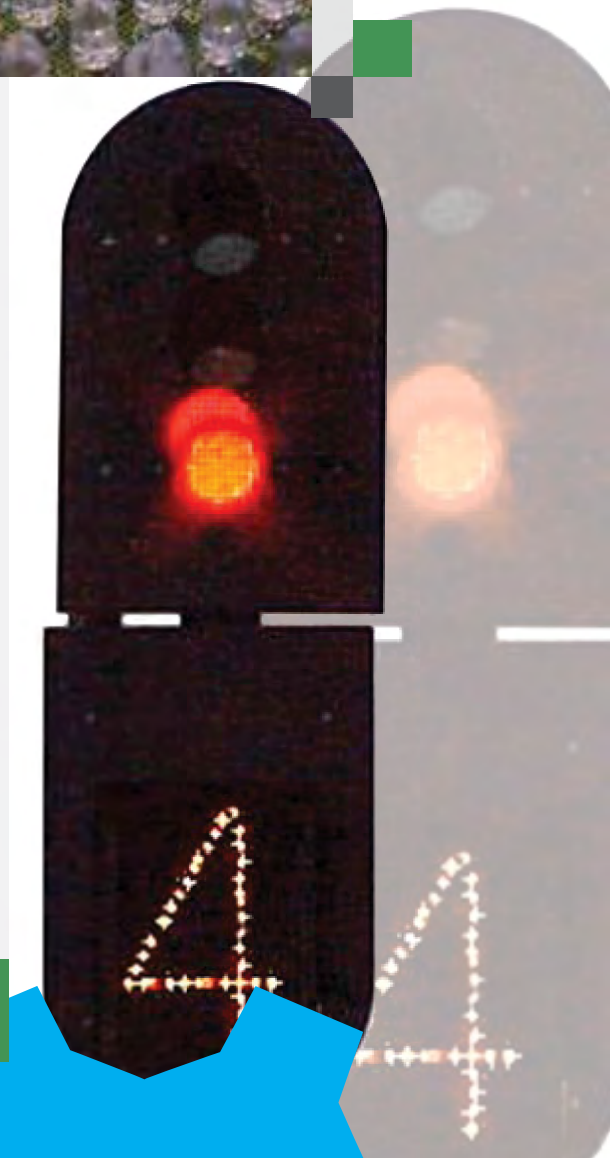
One of the biggest advantages of LED technology, compared to conventional incandescent bulbs, is the long lifespan of LEDs. LED enclosures are impermeable and have an integrated angle of vision. An additional advantage is that there is hardly any phantom effect that could lead to a wrongly interpreted signal. The LED system is resistant to all kinds of circumstances, such as extreme heat and severe cold.

- Virtually maintenance free
- Extremely long lifespan
- Low energy consumption
- Vandal-proof
- Adjustable to day and night levels
- Minimum phantom aspect

Specifications

Maximum number of signal images	4
Supply voltage	100 V AC (-30% +10%) / 50 to 75 Hz
Dim voltage	70 V AC (-30% +10%) / 50 to 75 Hz
Weight	29.3 kg
Voltage range	80 to 120 V in increments of 5 V
Energy consumption	25 VA when showing a ‘4’ signal image
Colour of light	In accordance with NEN-EN 12966 class C1/C2 white/yellow (592 nm amber)
Brightness	In accordance with NEN-EN 12966 class L3 white/yellow
Brightness when dimmed (at approximately 70 V)	10% of nominal brightness
Contrast ratio	NEN-EN 12966
Equableness	NEN-EN 12966
Visibility distance	> 350 m
Readability distance	> 250 m
Temperature range	-30 °C to +65 °C
MTBF	> 5.11 x 10^6 hours
Electro Magnetic Compatibility (EMC)	EN 50121-4 plus additional requirement RLN00007
Dimensions	734 mm x 490 mm x 221 mm





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