



# Matrix Signal Generator MSG2w

The MSG2w is a matrix signal generator by which the signal aspect is displayed to the drivers by white LEDs.



## PRODUCT BENEFITS

- Very high degree of reliability. Due to the construction method, the signs remain legible in case of failure of individual LEDs
- Service life of 15 years with guaranteed light output
- High visibility due to LEDs and use of special coating to prevent as far as possible reflection of light sources, such as sunlight
- Up to 4 different characters in one housing
- Can be used in combination with various interlocking systems
- Mean Time Between Failures > 10,000,000 hours (calculated as per IEC 1709)

## MAIN SIGNALS AND DISTANT SIGNALS

The VRS Matrix Signal Generator is the most commonly used light box along Dutch rail tracks. The MSG2w can be placed either in combination with an AY signal or on its own. It can also be attached to a high post, a dwarf post in case of a repeater signal, or to a gantry. All our MSG2w units are made up of LEDs, which ensures great visibility, low energy consumption and a very long service life. The brightness can be adjusted using the night mode.



The lenses are in the form of numbers, letters or symbols for the purpose of conveying information to the driver. An MSG2w can display up to 4 different characters in one housing.



## Technical specifications - general

Voltage	110 ± 10% V AC
Supply voltage, dimmed	80 ± 10% V AC
Frequency	50 and 75 Hz ± 4%
Nominal current	350 mA at 110 VA
Power at rated current	approx. 38.5 VA
Front panel dimensions	approx. 500 x 700mm
Number of LEDs per character	between 40 and 100

## Technical specifications - electrical

dimmer voltage	50-80Vac line voltage
Power usage at 110V	45 Watt ±10% (with maximum cable resistance of 33 Ohm)
Cosine phi	> 0.9
Light rise/fall time	< 50ms
EMC compatibility	as per ENV 50121-4 + RLN00007 version 3
Maximum power-on time	∞

## Technical specifications - optical

Colour of light	complies with CIE S 004/E-2001 white with restriction X ≤ 0.420
Nominal (daytime) lighting intensity	+/- 8,100 cd/m
Dimmer level.	between 150 and 315 cd/m2
Viewing distance	+/-350m
Legibility distance	approx. +/-250m
Luminous intensity distribution	2x5° +/- 0.5°
Phantom ratio	7:1 (as per EN12368)

## Technical specifications - environmental

Ambient temperature	- 30 [°C] to + 55 [°C]
Storage temperature	- 30 [°C] to + 70 [°C]
Climate resistance	as per IEC 68-2-38 (Z/AD test) additional till -30 [°C]
Vibration resistance	as per IEC 721-3-4 4M6 4 - 8.4 [Hz] 7 [mm] amplitude 8.4 - 200 [Hz] 2 [g] sweep rate 1 [oct/min]
Shock resistance	as per IEC-721-3-4 4M6, type 2, acceleration: 25 [g], duration: 6 [ms]

## Technical specifications - RAMS

Hazard rate	< 1x10-8 [1/h]
MTBF	> 10,000,000 hours (calculated as per IEC 1709)
Service life	15 years with guaranteed light output



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