**LED VARIABLE MESSAGE SIGNS**

**TECHNICAL DETAILS**

- **Light source**: High Power LEDs from renowned manufacturers.
- **Mounting**
  - Designed in accordance with the latest EU safety requirements.
  - These models are available without the mounting hardware.
- **Protection class**: IP 65.
- **Temperature classes**: T1 (-15°C to +60°C) / T2 (-25°C to +55°C) / T3 (-40°C to +40°C).
- **Mounting options**
  - Easy maintenance access.
  - Optional: photovoltaics, wind turbine, fuel cell.
- **Power supply**: 80 - 265 VAC.
- **Interfaces**: TCP/IP connection via RJ45.
- **Number of colors**: monochrome, traffic colors or RGB.
- **Light distribution**
  - Typical picture rate: 20 frames/second.
  - Number of colors: monochrome, traffic colors or RGB.
- **Protection class**: IP 65.
- **Protocol**: SWARCO FUTURITCOM 2, FUTURITCOM 2 via Profibus.
- **Certification**: BASt-certified CE-certification by SGS/INTRON.
- **Light source**: High Power LEDs from renowned manufacturers.
- **Optic**: Dual port RAM and FPGA technology.
- **Protection class**: IP 65.
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**APPLICATION EXAMPLES**

- **Sweden**: Full color. Fully programmable, full matrix, full color RGB, 16 mm pixel pitch.
- **United Kingdom**: Freely programmable parking guidance signs.
- **Germany**: Variable message signs in tunnel.
- **Russia**: Freely programmable parking guidance signs.
- **The Netherlands**: Freely programmable parking guidance signs.
- **Belgium**: Full color, fully graphical, freely programmable.
- **Germany**: Graphical, yellow text area (right part).
- **United Kingdom**: Freely programmable parking guidance signs.

**BRILLIANT & EFFICIENT DISPLAYS**

SWARCO FUTURIT variable message signs are certified by SIGG/INTRON according to EN 12966. All displays provide brilliant legibility, high energy efficiency and outstanding LED luminosity. Based on the patented mounting technology, the LED lenses are directly inserted into the matrix screens. A unique design is added to all variable message signs. Even at low sun position (< 10°) the variable message signs are clearly legible. SWARCO FUTURIT offers a wide range of variable message signs tailored to the customer’s needs.

**YOUR LOCAL CONTACT:**

**LED VARIABLE MESSAGE SIGNS TRENDSETTING IN LED SIGN TECHNOLOGY**

SWARCO FUTURIT is the leading supplier of high-quality LED variable message signs for traffic guidance and information purposes. SWARCO FUTURIT’s optically outstanding variable message signs are highly reliable components of numerous traffic management systems on motorways, in urban traffic guidance, lane control signaling and tunnel information. Further applications are car parking systems, traffic calming, road safety enhancement, warning of upcoming hazards and traffic routing at customs facilities, toll gates and truck checkpoints.

**TRENDSETTING IN LED SIGN TECHNOLOGY**

SWARCO FUTURIT is the leading global player in LED-based signaling technology. The company specializes in traffic signs, variable message signs, warning lights and traffic signals using the very latest developments in high brightness, solid state technology ideal for traffic guidance and long operating life.

Customers in over 60 countries around the world rely on the outstanding quality of SWARCO FUTURIT products. Made in Austria to the highest standards to support road safety and keep traffic moving.

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OUTSTANDING OPTICAL PERFORMANCE

The optical system "3G" of SWARCO FUTURIT is the new reference in the development of variable message signs. This generation is unique in design, workmanship and performance and thus constitutes the new benchmark for LED variable message signs.

THE REASONS WHY

- One lens system per RGB-LED
- High luminosity due to a perfect self-adjusting LED lens system
- Unbeatable contrast intensity – especially at adverse position of the sun
- Highest perceptibility and legibility
- One lens system per RGB-LED
- Highest performance life, perceptibility and durability

The patented LED optical system: best value for OPE* - the key figure assessing the optical performance, energy consumption, operating cost, performance life, perceptibility and durability

Using the "3G" optical system and a pixel pitch of 20 mm, a luminance of more than 15,000 cd/m² (with 50 % of light dots at full brightness) less than 1000W.

Due to the low LED current and an optimized energy concept for the overall system, the typical power consumption of a limited sign (Signaalgever, NL) is no more than 12 W, that of a freely programmable sign (BermDRIP, NL, United Arab Emirates) 27 pictograms and 4 flashers.

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OPE = \( \frac{L_e}{L_{FBW}} \times \frac{F_{MAX}}{F_B} \times \frac{pp}{F_{L}} \times \frac{a}{a + b} \)

PRODUCTS

- Radar activated/limited variable message sign powered by PV panel, fully graphical, RGB
  - The Netherlands

- Freely programmable, RGB graphical sign (top): white, fully graphical, black, lines (bottom), Sweden

- Limited variable message sign, bicolor, with integrated flashers
  - The Netherlands

- Limited variable message sign, bicolor, integrated flashers
  - United Arab Emirates

- Radar activated limited variable message sign powered by PV panel, bicolor
  - Austria

Key Benefits

- worldwide integration in traffic management systems using different interfaces and protocols for control and data exchange
- The patented LED optical system: provides highest optical performance - ensures LED light is emitted in a way that allows a 90% reduction of LED forward current, maintaining all optical requirements during the whole life cycle of the variable message signs, therefore increased availability and reduced energy consumption
- luminosity losses decreases LED life time and avoids ageing effects and a pulse width modulated constant current at a very low level
- full traceability of all used assemblies in the internal database to the central system provides permanent diagnosis and reports any error status in the onboard operating system of the variable message sign
- a wide range of pixel pitch options from 12 mm to 35 mm, SGS/INTRON LEDs, forward current, etc. have been tested and certified by SGS/INTRON
- conformity to EN 12966: more than 100 class-combinations of control LED status will be reported to the traffic center or to a local control system
- all LEDs are continuously monitored, even when they are off; lowest energy consumption
- allows a 90% reduction of LED forward current, maintaining all optical requirements during the whole life cycle of the variable message signs, therefore increased availability and reduced energy consumption
- highest energy efficiency
- RGB white light fulfilling the requirements of classes L3/L3(*), R3, C2 of EN 12966:2005+A1:2009 and prEN 12966:2013. And this is attained at max. 15% of the allowed LED current.
- Using the "3G" optical system and a pixel pitch of 20 mm, a luminance of more than 15,000 cd/m² (with 50 % of light dots at full brightness) less than 1000W.