



LA SEMAFORICA

# TRAFFIC LIGHTS OVERVIEW



Dear customer,

La Semaforica S.r.l. and TECSEN deal with traffic regulation and the development of ITS systems for Smart Mobility applications. Thanks to their experience and know-how gained in 75 years of experience in traffic regulation and management, today the group presents itself on the market with a complete and cutting-edge product range with the highest levels of quality and professionalism that distinguish us. We offer solutions and systems to improve traffic, safety and quality by integrating our knowledge of electronics, information technology and transport engineering for the design, maintenance and management of these systems.

## PRODUCTS

The **PRODUCTS** division designs and manufactures components for traffic control and regulation according to the highest quality standards:

- 3 lines of traffic lights, two in polycarbonate and one in aluminum
- aluminum traffic light totems
- IP65 retrofit LED modules for traffic lights
- countdown traffic light modules
- pedestrian reservation devices (traditional and touch buttons) and horns (audio guides) for visually impaired people
- 4 lines of traffic light controllers with European standards
- products for traffic detection and classification using different technologies
- systems for detecting bicycles and for displaying the number of passages with an indication of the quantity of CO2 saved
- luminous signs for the protection of pedestrian crossings, warning signs and car park signs

## SYSTEMS

We provide **SYSTEMS** on the **TMacs software PLATFORM** for the management of different integrated devices with the creation of different solutions such as:

- Monitoring and coordination of traffic lighted crossings or intersection grids to reduce waiting times and improve traffic flow
- Traffic light management with priority systems for the city's tramline
- Control and monitoring of urban traffic by means of data acquisition, for the development of campaigns to improve sustainable mobility
- Systems for the management of dynamic alternating one-way streets according to the traffic detected and the type of vehicle
- Dynamic control of simultaneous passage of heavy vehicles and management of one-way traffic on bridges with static problems
- Traffic light priority for public transport with proprietary Safety go system
- Flooding control systems for subways by means of automatic optical alerts with traffic light lanterns, information on VMS or display and closure of traffic by using automatic barriers
- Weather warning systems by means of devices measuring environmental parameters and transferring information on VMS and communication through social channels
- Bicycle detection systems with display of measured data on displays or totems
- Heavy vehicle detection systems
- Monitoring of vehicles in tunnel

### TMacs platform modules:

- MACS TRAFFIC Urban Traffic Control System UTC
- MACS ANALYSIS System for traffic data management and analysis
- MACS TTE Travel time estimation system
- MACS PREDICT Traffic forecasting system
- MACS TRACKING Surveying and priority management system
- MACS VISUAL Complete solution for VMS management
- MACS ACCESS Monitoring system for Restricted- Traffic Areas
- MACS WEATHER TMacs weather monitoring system
- MACS WARNING TMacs weather alert system
- MACS FLOOD Underpass flooding monitoring system
- MACS AIR Air Monitoring System
- MACS PARKING Management and Guidance Car Parks Control System
- MACS NOISE Environmental Noise Monitoring System
- MACS API Multi-platform connection interface
- MACS MMS Maintenance Management System

## SERVICES

The **SERVICES** division, which is divided into different levels, employs specialized and highly experienced personnel able to assist our customers from the installation and laying of materials, through the optimal setting of the devices to post-sales support and service help desk or on site:

### HELP DESK activities:

Support activities for the use of the **TMacs centralization platform** on differentiated service levels.

### ON SITE activities:

- Installation of traffic light systems, variable message panels, traffic monitoring systems, subway flooding control systems, etc.
- Scheduled routine maintenance of traffic light systems in accordance with regulations
- Extraordinary on-call maintenance with on-call service for restoring the equipment in the event of an accident, vandalism and/or accident, vandalism and/or external events of various kinds
- Functional and performance verification of the traffic light systems by verifying the vehicle flows detected in the field, with simulation of the operation of the traffic light system using dynamic microsimulation software.
- Optimization of the operation and plans of traffic light systems: according to the goals to achieve (reduction of queues, maximization of capacity, minimization of the average delay, principle of equalization, etc.), traffic light plans will be redefined both at fixed times and with implemented logic and for coordinated axes with green wave.
- Traffic monitoring campaigns with collection and analysis of vehicle flow data to create origin-destination matrices, average daily and weekly vehicle flow values, peak hours and type of vehicles passing through. The monitoring stations are supplied, installed and calibrated by our technicians
- Analysis of road traffic in road branches: survey of vehicle flows along the road axis, analyzing the flow through the maximum, minimum and average speeds for the different time slots. Thanks to the concentration and density rates, it will be possible to identify queuing phenomena and the times at which they occur.

La Semaforica has been awarded ISO 9001 certification for its quality processes in the design, manufacture, installation and maintenance of its products and maintenance of its products, OHSAS 18001 certification for the safety of its workers, and ISO 14001 for respect and protection of the environment.

In order to offer the best possible service, La Semaforica and Tecsen reserve the right to modify at any moment and without any warning the features of the products described in this document. This document has the only purpose of illustrating the products. If you need detailed technical data, please do not hesitate to contact us.

# SINCE 1945 WE DEPLOY SOLUTIONS FOR A BETTER WORLD

*From the visionary idea of our company's founder to LED technology, the path was already set and all we had to do was follow it.*

*Our range of systems and products 100% MADE IN ITALY is synonymous with excellence, quality, expertise and efficient performance.*

*As in Marco Polo's path, our company has grown from a small Venetian business to become the ITALIAN LEADER in the sector and one of the main players in the global market.*

**+30**  
**COUNTRIES**

*We export all over the world and we have customers in more than 30 countries.*

**+75**  
**YEARS**



*Our company is one of the oldest companies in the sector that has managed to keep up with the times and has already successfully completed 2 generational changes, increasing its prestige.*

**+1.500.000**  
**OF LED OPTICS MANUFACTURED**

**90%**

*energy saving thanks to the LED technology that we use in our optics, compared to the traditional ones.*





# TRADITION, TECHNOLOGY AND DESIGN OVER TIME

CVE



GALILEO



GIOTTO



TOTEM



# GALILEO



## Polycarbonate traffic light with slim design

This traffic light has been designed to offer the opportunity to take advantage of multiple advantages: a reduction in weight thanks to its slim design, more than 15% compared to traditional polycarbonate signal heads, a saving in terms of environmental pollution consequently a lower use of polycarbonate, a visual impact reduction by means of its iconic design.

Equipped with the latest generation of LED technology modules called STARLED2, which guarantee better efficiency and reduced energy consumption (over 90% savings compared to traditional optics), complete with all the accessories required by the market and multiple versions.

*“Elegance meets design, a concept of eco-sustainability delivered through the sinuous shape of traffic lights GALILEO”*



# DETAILS

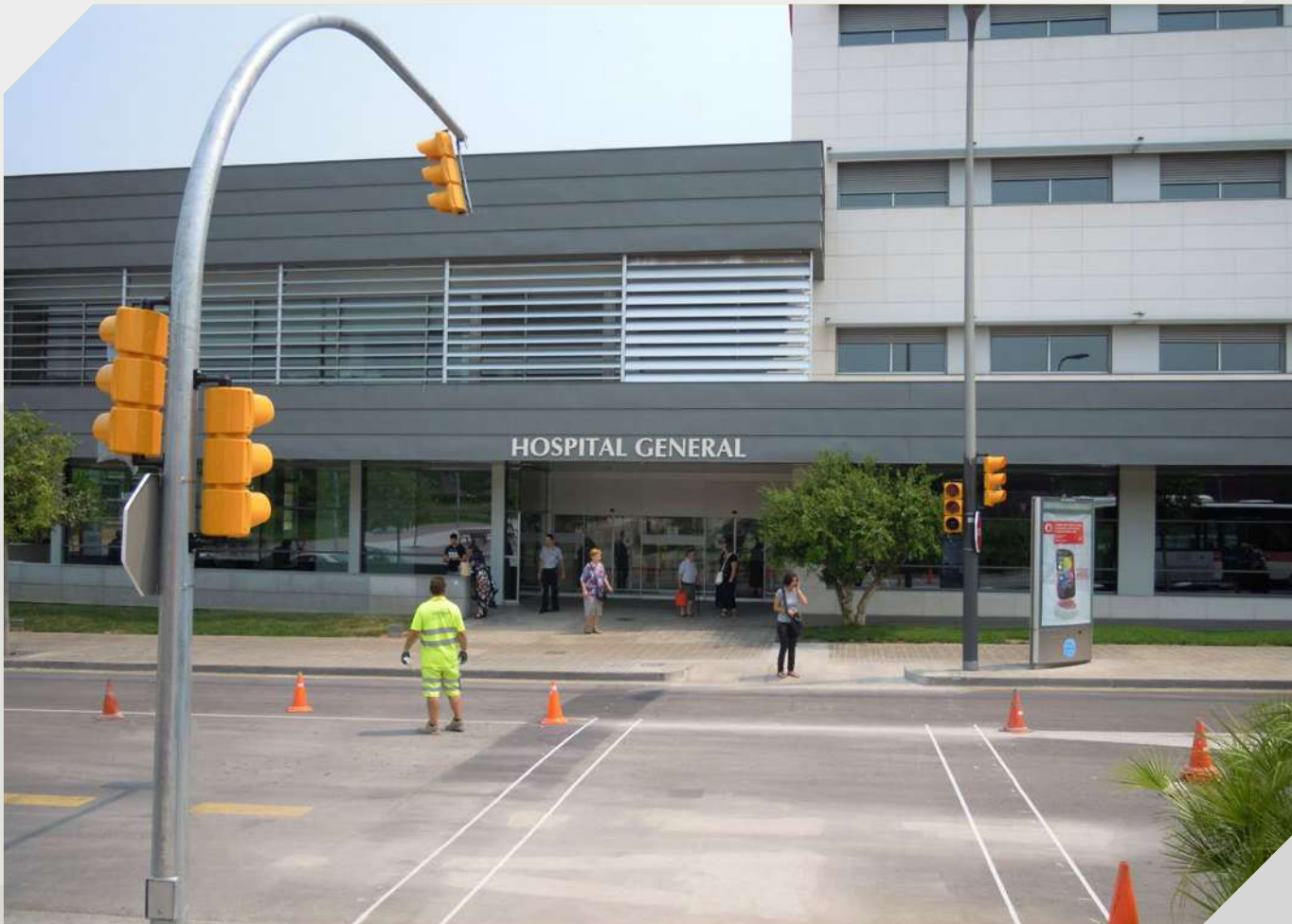
- STARLED2 optics for improved energy efficiency and performance
- Available in diameters d.200 and d.300 mm modular with each other
- Developed according to the principles of eco-sustainability
- Various colors and combinations available
- Elegant and iconic fits into any urban context
- Vandal-proof thanks to hidden door closures
- Practical and resistant thanks to Makrolon® polycarbonate
- Maintenance free and easy installation thanks to its concept

*“Eco-sustainability, practicality of use, efficiency, iconic design, these are the cornerstones of our GALILEO series”*

Diameter	Width	Depth	Height
200	265	110	246
300	363	152	346
G+Y 200mm R 300mm	363	152	865

Measurements in mm for single modules, the hybrid model is quoted for the whole traffic light.

SCAN THIS QR CODE FOR  
MORE DETAILS





# GIOTTO

## Slim aluminium Traffic lights

Giotto is the top of the range, built with an aluminium housing, representing the state of the art in terms of design and robustness. Developed by guaranteeing the principles of anti-vandalism, but with an iconic touch thanks to its unique and inimitable profile, which can be customized to suit your needs. Practical thanks to the opening front doors with double closing hinge.

Equipped with the latest generation of LED technology modules called STARLED2, which guarantee better efficiency and reduced energy consumption (over 90% savings compared to traditional optics), complete with all the accessories required by the market and multiple versions.

*“The GIOTTO traffic lights series, a distinctive icon for your city, vandal-proof, useful, customizable and versatile”*





# DETAILS

- STARLED2 optics for improved energy efficiency and performance
- Available in diameters d.100, d.200 and d.300 mm
- Developed according to the principles of eco-sustainability
- Robust and vandal-proof thanks to its housing totally customizable with colors chosen by the customer through RAL codes
- Useful and easy to maintain, thanks to the opening of the front doors also used for the CVE series, simplifying the management of spare parts
- Available with fixing arms in long or short version and adapter for DSI fastening systems (Dansk Signal Industri)

*“Giotto can be integrated into any urban context, with its unique design that meets maximum strength”*

Diameter	Width	Depth	Height 1	Height 2
100	180	155	150	104
200	327,6	109,5	245	116
300	432,8	130,5	345	116

Measurements in mm for single modules. Height 2 refers to the size of the aluinium heads.

SCAN THIS QR CODE FOR MORE DETAILS





# LUMINA giotto



## Technological progress turns into emotion

The perfect synthesis of avant-garde design and cutting-edge technology, Giotto Lumina is the ultimate expression and style icon of our traffic light production.

Colours and components: feel free to customise the design according to the style of your city to make it even more unique and recognisable.

The ambition to revisit the concept of traffic lights is reflected in a design inspired by minimalism and simple beauty that is inevitably meant to become an icon of its surrounding environment.

Impressive details emphasise the main features of the GIOTTO LUMINA: such as the slim body, the minimalist shaped hoods and the flush door closing systems.



## MAIN FEATURES

- Unique design available with 200 and 300 mm lenses
- 100% aluminium alloy body and external structure
- Customisable on customer request
- In compliance with EN12368
- Available with fixing systems in compliance with the most common EU standards
- Complete with accessories: background contrast panels and directional masks etc.
- Durable over time and with low maintenance costs

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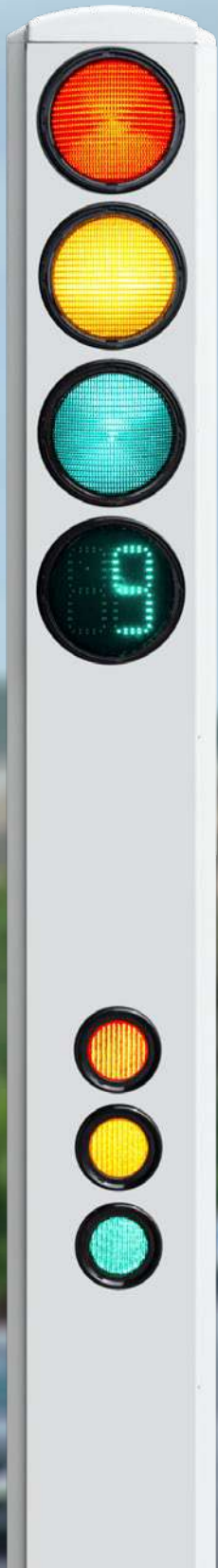
# TOTEM giotto

## Traffic light totem made in aluminium

The GIOTTO series is enriched by traffic light totems, totally customizable with colors chosen by the customer with RAL codes, they represent an exclusive vertical signaling method, replaces the classic pole or characterizing the urban context of your city. Multiple heights, colors, versions and options available.

Equipped with the latest generation of LED technology modules called STARLED2, which guarantee better efficiency and reduced energy consumption (over 90% savings compared to traditional optics), complete with all the accessories required by the market and multiple versions.

*“Totem Giotto with its unique design is the most authentic solution to distinguish yourself”*





# DETAILS

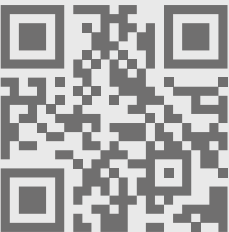
- STARLED2 optics for improved energy efficiency and performance
- Available in diameters d.100, d.200 and d.300 mm
- Developed according to the principles of eco-sustainability
- Robust and vandal-proof housing, with customizable height and available with colors chosen by the customer (with RAL codes)
- Useful and easy to maintain thanks to the simplified front sectional opening
- “Ready to use” is supplied with everything needed for its installation
- Available with RGB light strips on the sides to increase the visual impact

*“Totem Giotto can also be used to define pedestrian areas, parking lots, pedestrian crossings, restricted zones, etc.”*

Diameter	Width	Depth	Height
100	180	155	1265
200	327,6	109,5	3600
300	432,8	130,5	4000

Measurements in mm, referred to standard configurations.

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Totem 100

# CVE led

## Classic polycarbonate traffic lights

This series of traffic light has been deployed to meet the needs of an old-fashion design, combining characteristics of strength and practicality, thanks to the MAKROLON® polycarbonate used for its production, and to the front opening of the easy and durable double-hinged doors closing, interchangeable with the Giotto aluminium series.

Equipped with the latest generation of LED technology modules called STARLED2, which guarantee better efficiency and reduced energy consumption (over 90% savings compared to traditional optics), complete with all the accessories required by the market and multiple versions.

*“Quality, robustness, versatility, dressed in a classic and timeless design, CVE is the answer to your needs”*





# DETAILS

- STARLED2 optics for improved energy efficiency and performance
- Available in diameters d.100, d.200 \* and d.300 \* mm (\* modular to each other)
- Different versions, colors and combinations available
- Useful and easy to maintain, thanks to the opening of the double closing hinged front doors, reducing waste in terms of managing spare parts
- Classic design that adapts to any urban context and goes beyond fashion
- Developed according to the principles of eco-sustainability

*“From Northern Europe to the Arabian Peninsula, quality and durability make the CVE the most versatile traffic light in our lineup”*

Diameter	Width	Depth	Height
100	150	110	170
200	265	185	245
300	365	185	345
G+Y 200mm R 300mm	365	185	843

Measurements in mm for single modules, the hybrid model is quoted for the whole traffic light.

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# Sentinel

## Sentinel, the first “Smart” traffic light

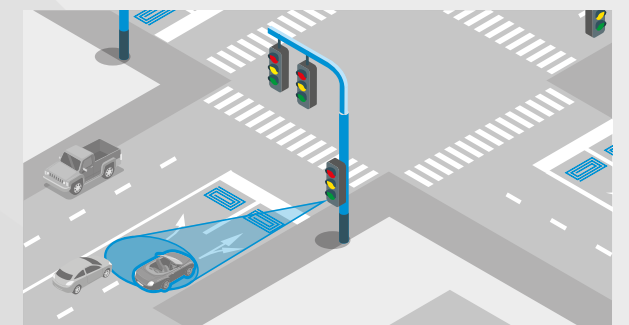
Sentinel is the first “Smart” traffic light currently available on the market.

Built inside the traffic light’s housing Giotto vandal-proof, made entirely of aluminum to be durable and at the same time aesthetically very stylish and refined.

Sentinel integrates a camera with high technical characteristics which thanks to the dedicated algorithm is able to detect vehicular traffic on real time and to adapt the traffic light signalisation with adaptive mode.

The system is fully integrated into the TMacs platform using all its potentiality adjustments and thanks to the management interface AUT is able to configure the vehicle detection zones and set all configurations remotely in addition to provide the whole operating parameters for continuous monitoring of the performance.

Remote configuration and timing implementation with adaptive traffic lights mode make it a easy to integrate and modern product, that combines with the highest levels of ITS standards.





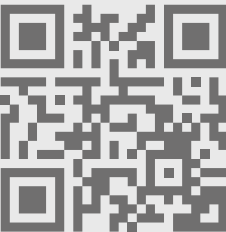
# ADVANTAGES

- Robust and unobtrusive
- Design aesthetics to meet the standards of most demanding urban architecture
- Adaptive
- Configurable remotely thanks to the platform TMacs
- Avoid installing sensors outside the system which can be vandalized
- Provides vehicle traffic flow data
- Available for 200 and 300 mm traffic lights on GIOTTO's series

Thanks to the **SAFETY GO APP** it is able to guarantee the preference of the associated vehicles within it and authorized by the platform.

Diameter	Width	Depth	Height	Height2
200	327,6	109,5	245	116
300	432,8	130,5	345	116

SCAN THIS QR CODE FOR  
MORE DETAILS



Measurements in mm for single modules. Height 2 refers to the size of the aluinium heads.

Camera	
Image sensor	1 / 2.9 "(effective) RGB CMOS Progressive Scan
Lens	Horizontal field of view: 111° Vertical field of view: 61°
Minimum lighting	Color: 0,22 lux
Video	
Video compression	H.264 (MPEG-4 Part 10 / AVC) basic profiles, main and high Motion JPEG
Resolution	1080p 25/30 fps (50/60 Hz)
Network	
Safety	Password protection, IP address filtering, HTTPS encryption, IEEE 802.1X network access control (EAP-TLS), digest authentication, user access log, centralized certificate management, signed firmware
General	
Power supply	Power over Ethernet IEEE 802.3af / 802.3at Type 1 Class 2 Max 4 W, typical 2.5 W
Operating conditions	From -20 ° C to 50 ° C Relative humidity between 10% and 85% (without condensation)
Dimensions	Sensor Unit: 29 mm ø 20 mm
Warranty	3 year warranty



# RSL

## RED SAFE LIGHT

RED SAFE LIGHT is the solution designed to increase the safety of pedestrians on the road that allows you to display the red light present on the pedestrian traffic lights on the pavement and make it clearly visible even to those who walk distracted by smartphone.

The aim is to prevent road accidents where pedestrians who are too busy with phone are involved.

Red Safe Light for the projection of red linear light on the floor, a few meters in front of the pedestrian crossing.

*“Special attention to pedestrians distracted by the increasingly frenetic world of today”*



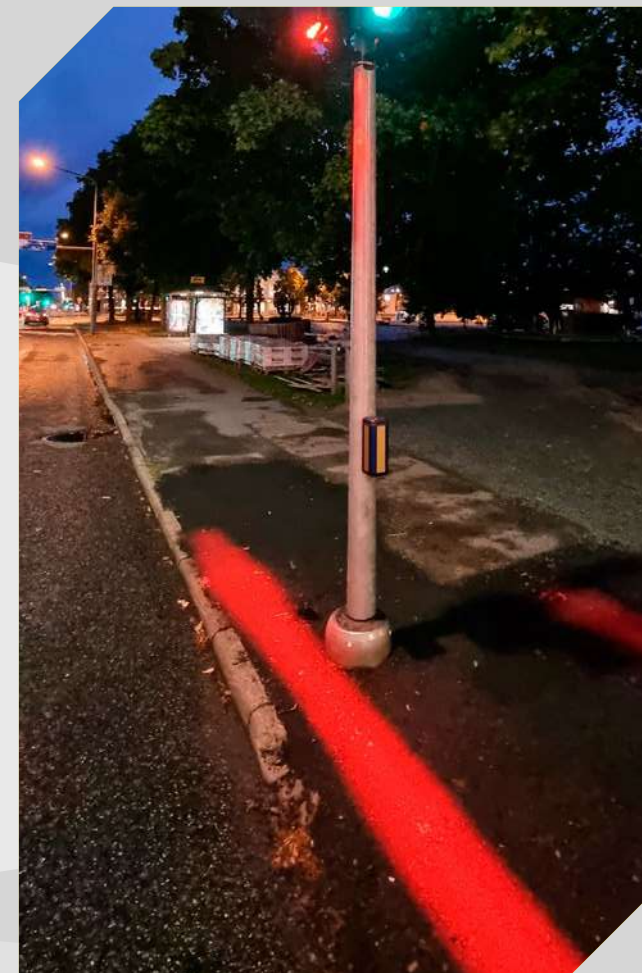
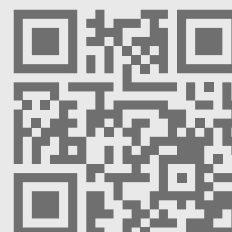


# SPECIFICATIONS

- Voltage: DC 9V-60V
- Lighting Angle: Narrow Spot With Inline Light Effect
- Number of LEDs: 6 Cree 5W LEDs
- Color: RED light
- Lighting Power: about 1400Lum
- Water resistance: IP67
- Working temperature: -40 ° ~ + 80 °
- Lifespan: about 30,000 hours

*“Ease of installation and the possibility of retrofitting make it quick and easy to implement”*

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# MATRIX

## Dynamic display with LED graphic matrix

The new Matrix lantern is equipped with a revolutionary graphic matrix communication system through which it is possible to operate by means of a local command and control system or, in the 'plus' version, by remote connection.

Through the remote connection on the TMACS platform it is possible to use Matrix as a dynamic communication display with the outside world.

In the extended concept of SMART CITIES, it is possible to range from the ordinary use as a dynamic traffic light countdown display to the possibility of transmitting information related to vehicle, pedestrian and cycle mobility.

High resolution and prestigious technical features make it suitable for a wide range of uses, such as the management of moving or variable images depending on the level values to be displayed, such as hourglasses, stopwatches, animated pedestrians, etc.

## MAIN FEATURES

- Dynamic display capable of performing animations
- Available with 300 mm lenses
- High resolution
- Remote management through the TMACS platform
- Wide choice of image databases
- Integrated on STARLED housings and on the various traffic light frames from our range of products.

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# Starled3

## The continuous evolution of excellence

Starled3 represents the technological innovation in the field of one-piece traffic lights LED optics.

Developed on the basis of the previous model produced in millions of units, the new Starled3 derives from the previous models, combining characteristics of the highest quality from both the electrical and luminous point of view.

Starled3, thanks to the new microprocessor management, offers different power supply options according to the highest European standards in traditional and/or dimming configuration.

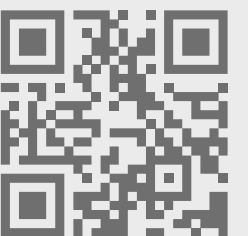
The real revolution of this LED optic, thanks to the use of materials of extraordinary quality, is its exceptional ability to communicate information as well as operating parameters to Macs Traffic using a TMACS platform.



## MAIN FEATURES

- Contemporary and distinctive design with materials
- Reliability and efficiency
- Exceptional remote connection capabilities and ease of use
- Improved visibility, security and resolution with minimal power consumption levels
- Symbol templates available in every configuration according to clients' requests
- Coloured and neutral lenses
- EN12368 compliance

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MORE DETAILS



# LED Modules

- Energy saving more than 90% compared to the traditional lamp system and consequent economic savings
- Greater duration of about 20 times the traditional system (10 years)>
- 100,000 hours
- No maintenance needed
- Easy interchangeability with the traditional lamp system
- Official 5-year warranty
- Available with many versions, colors, drivers and accessories
- They can also be adapted to other traffic lights as a retrofit
- Totally configurable Countdown series and adaptive / dynamic versions to traffic plans
- Countdown with RGB LED technology, totally customizable even in operation



Countdown RGB



STOP-GO module

## STARLED2

The company know-how, the result of continuous development started more than 75 years ago, has allowed us to create and produce LED technology modules with unimaginable efficiencies even just a few years ago. Now in its second generation, STARLED2 represents the state of the art in the field of vertical signage optics. Installed globally in more than 1.5 MLN of units from its first version,

from cold in Northern Europe, to the warmer ones of the Arabian peninsula and the Moroccan desert areas lapping the Sahara, chosen by the largest European capitals such as Rome, Lisbon, Copenhagen, Dublin, Belgrade and many others. Many versions available, adaptable as traffic light retrofit, Countdown with RGB LED technology and customizable.

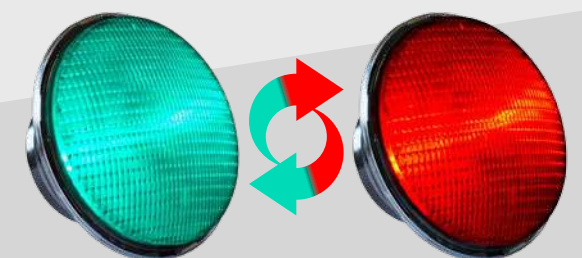
*“A global product, which with over 1 MLN of units sold, represents the business card of our LED modules”*



Starled2



Starled100



Starled R+V





H  
HOSPITAL

macs  
TTE  
TRAVEL TIME ESTIMATION

macs  
warning  
WEATHER ALERT SYSTEM

macs  
noise  
noise monitoring system

macs  
visual  
VMS management system

macs  
Traffic  
URBAN TRAFFIC CONTROL SYSTEM

macs  
analysis  
TRAFFIC ANALYSIS SYSTEM

macs  
Predict  
TRAFFIC PREVISIONAL SYSTEM

macs  
air  
air monitoring

macs  
PARKING  
Info & Guidance System

macs  
weather  
weather monitoring system

macs  
Tracking  
TRAFFIC PRIORITY SYSTEM

macs  
access  
restricted area system

macs  
FLOOD  
Flood monitoring system



TMacs is an open ITS platform and is an essential and powerful tool for traffic control and management.

The system configuration is completely customizable and TMacs offers the maximum performance in every Infomobility application.

The open architecture of TMacs allows to control different devices (traffic controllers, sensors, control devices for the lighting of the country, variable message signs, weather stations, parking lots, etc.) and offers local authorities the possibility to delegate the management and maintenance of the various subsystems.



Smacs is the ITS Web Platform for the management of centralized traffic junctions and devices with the TMacs and SMacs Platform.

The purpose of SMacs is to display all the data obtained from the centralized devices with the TMacs Software on a web page, which can be consulted from your web PC.

Smacs is the ideal solution for the constant control of its centralized systems.


SMACS allows you to control and interact with the Platform's systems, without the need to install software or dedicated applications.







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