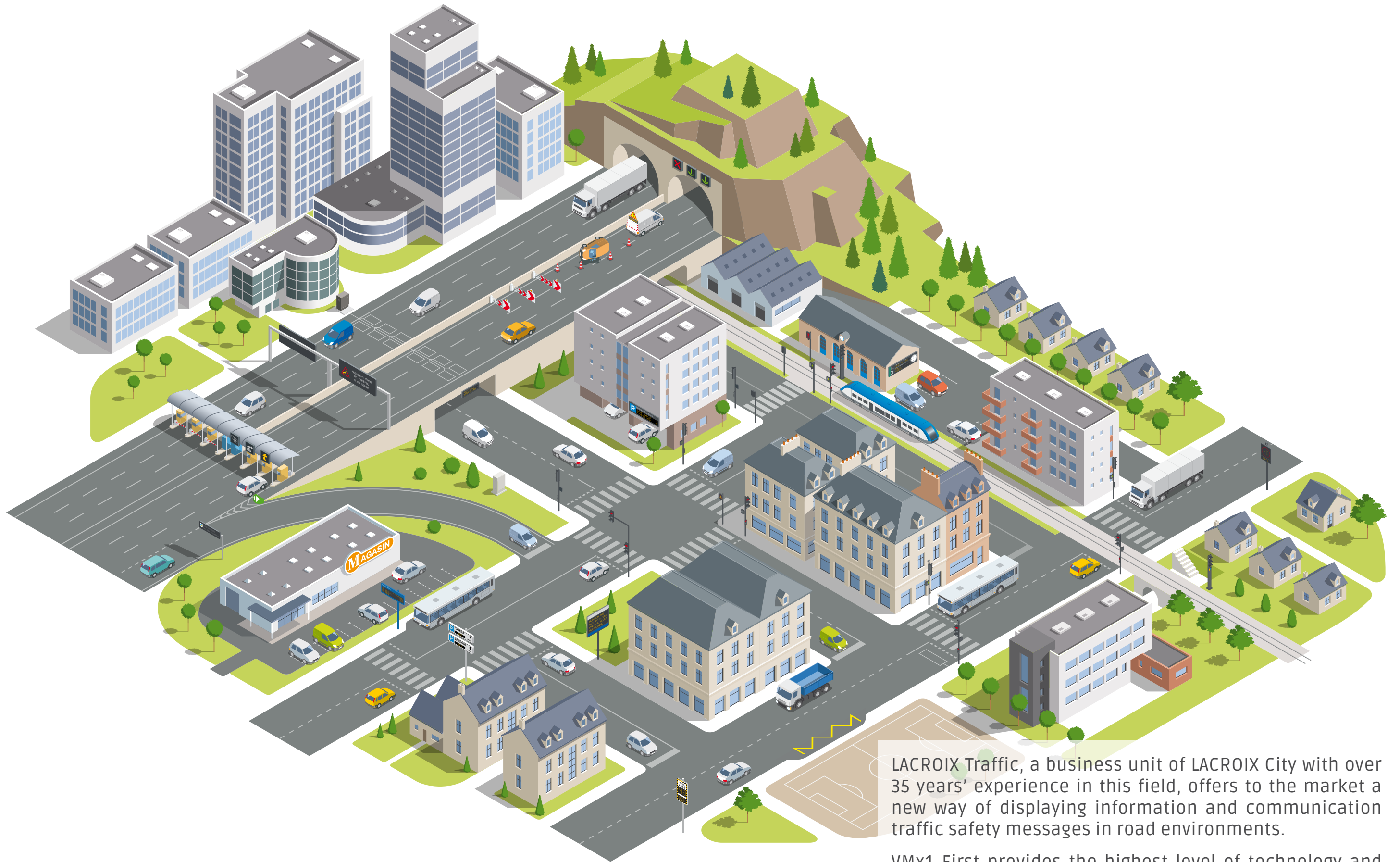# VMx1 First
Variable Message Sign

INNOVATION
ENERGY EFFICIENCY
LOW OPERATION COST

Traffic
LACROIX

LACROIX Traffic, a business unit of LACROIX City with over 35 years' experience in this field, offers to the market a new way of displaying information and communication traffic safety messages in road environments.
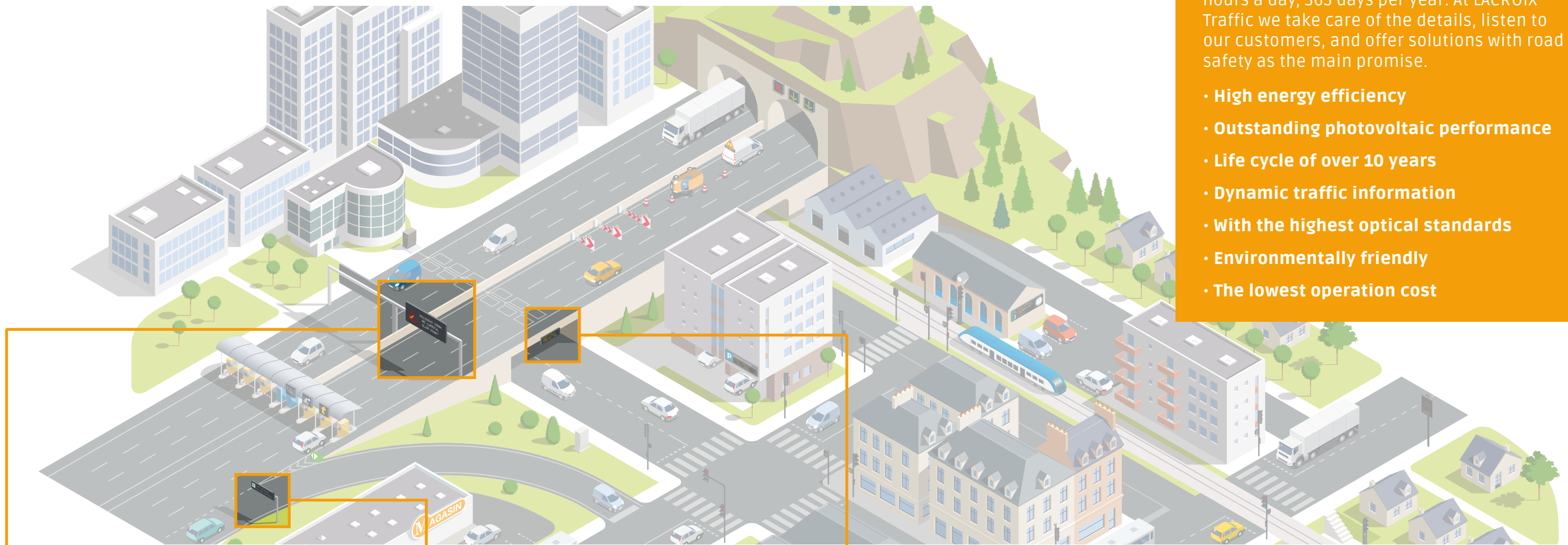
VMx1 First provides the highest level of technology and energy efficiency. We take complete care of our product, applying the latest technological advances and adding our experience in the ITS market.

It's simple, when **your needs** and **functionalities are considered**

HIGHWAY/EXPRESSWAY

High speed and high occupancy roads, with two or more lanes, where the reading time and right message readability are key. The VMx1 family becomes the most intelligent way to manage highway traffic flow, ensuring effective equipment service in any adverse weather condition.

- High readability in high speed roads
- Fullmatrix/Fullcolor technology
- High energy efficiency
- Low operation cost

URBAN ACCESS

Traffic management in large cities presents a challenge for ITS managers. LACROIX Traffic has therefore reinvented the product, increasing readability over short distances and widening the viewing angle; adapting the VMx1 to high traffic densities and medium to high speed situations.

- Wider viewing angle
- Fullmatrix/Fullcolor technology
- Resistance against pollution
- High contrast or brightness ratio

TUNNEL

Tunnels are demanding environments, where where safety is critical. We have adapted our VMx1 equipment to prevent the degradation by pollution that occurs in this environment and have adjusted optical performance to avoid glare and lack of readability in fast changes of brightness and contrast.

- Adaptative luminance
- High resistance against pollution
- Higher resolution
- Low preventive maintenance

pVMx1

Portable Variable Message Sign
The perfect complement to the VMx1 family, increasing road safety where necessary: special operations, road works or utility / maintenance operations, incidents, adverse weather conditions...

A family born to increase road safety with the **highest technical standard**

At LACROIX, we consider Variable Message Signs as the best tool for dynamic driver information and effective traffic management. The VMx1 family is based on our experience and technology, applied to traffic management.

VARIABLE MESSAGE SIGNS
Adaptation to the environment, dynamic messages and readability

Thanks to the market knowledge we have acquired over the last 35 years, we offer ITS Variable Message Signs with the necessary features for proper readability, always according to the regulations in force in each country or region of the world. LACROIX Traffic has designed a new product family, VMx1 First, designed and manufactured to operate in road environments, giving priority to equipment quality and message readability, with a commitment to road safety.

VMX1 PRODUCT RANGE
Optical capabilities, temperature range and mechanical protection

VMx1 First Variable Message Signs are compliant with the highest functional and optical quality standards for Variable Message Signs in traffic management applications. As this equipment must manage traffic on roads of two or more lanes with high average speed such as highways, urban access roads or tunnels, we offer:

· Luminance L3

· Luminance Ratio R3

· Beam Width B4 or B6

· Protection degree IP55 or IP66

· Working temperature range from -40ºC to +60ºC

MAKE YOUR PROJECT STAND OUT
Photovoltaic systems, energy efficiency and operation cost

In a world in which energy cost, operation cost and environmental sustainability are essentials, LACROIX Traffic invests in products that:
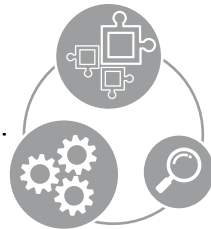
· Operate on solar energy alone

· Require low maintenance

· Are designed to work in harsh environments

· Are prepared for the future and the arrival of V2X environments

· Deploy multiple protocols (NTCIP, DGT, LCR, MODBUS and WebServer)

Easy to install, on road environments, simple to manage **and evolutive**
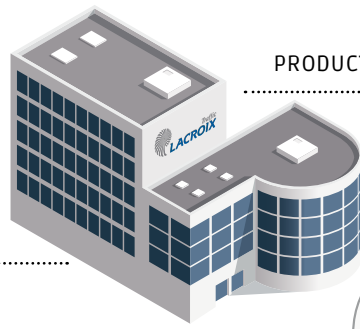
LACROIX Traffic engineering and industrialization team designed and manufatured the VMx1 pannels according to EN12966 standard and implemented the ISO quality standard 9001:2015 in pursuit of product suitability and quality.

PRODUCT DEVELOPMENT

CE
Our Industrial Department fully complies, during manufacturing processes, with environmental ISO14001:2015, environmental standard and the OHSAS18001:2007 certification.

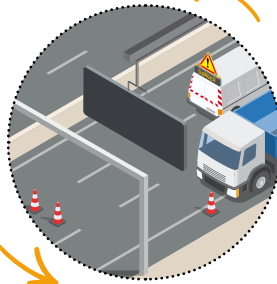As our customer you have all the support from our Logistics Department, in every detail of the shipping.

PRODUCTS SHIPPING
Packaging is specially designed for air, sea or road shipment.

INSTALLATION
You can install or deploy any of our Variable Message Signs on the road by following the VMx1 FIRST installation guide.
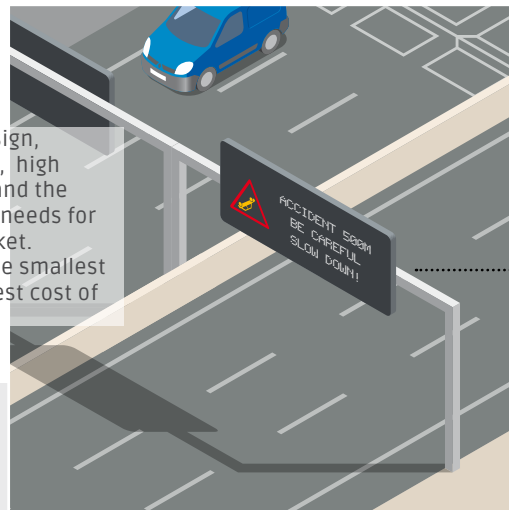
LACROIX Traffic guarantees that the product is delivered in perfect condition to any location in the world.

All you will need is to configure your VMx1 First product IP or serial address and connect to a power supply; except when using our AUTONOMOUS devices, for which no electrical network is necessary.

PRODUCT IN OPERATION
Thanks to the VMx1 First design, sustainable manufacturing, high level of quality inspection, and the knowledge of our customer needs for over 35 years in the ITS market. LACROIX Traffic offers you the smallest spare parts bill and the lowest cost of market development.

LIFE CYCLE
All equipment in the VMx1 family is designed and manufactured to work in highway environments in any weather condition for over 10 years, as demonstrated by our commitment to development and operability costs.

When a product is designed with a commitment to quality, functionality and sustainability

APPLIED STANDARDS
EN 12966
Road Vertical Signs - Variable Message Traffic Signs – VMS

NTCIP 1203 v03
National Transportation Communications for ITS Protocol - VMS

EN 12899
Fixed, vertical road traffic signs

EN 60529
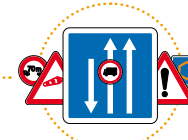Degrees of Protection provided by enclosures

COMPANY CERTIFICATIONS
ISO 9001:2015
Quality management systems

ISO 14001:2015
Environmental management systems

OHSAS 18001:2007
Occupational Health and Safety Assessment Series

CE CERTIFIED

The LACROIX Traffic VMx1 First product range allows you to choose multiple solutions to adapt your signage to your own means of use, placement and management tool.

YOUR CUSTOM VARIABLE MESSAGE SIGNS

VMx1 First

Road traffic signage pictograms 32x32, 48x48 y 64x64

VMx1 equipment supports Asian, Arabic, Hebrew, and Cyrillic characters (with 16 x 16 matrix) and Latin (in traditional resolution) character sets

FULLMATRIX - FULLCOLOR - SIGNAGE
Luminance/Luminance Ratio/Beam Width/Colour

COLOUR @ PIXEL PITCH	OPTICAL PERFORMANCE
RY - RW @ 28,57MM	L3 / R3 / B4 / C2
RGB @ P28,125MM	L3 / R3 / B5-6 / C2
RGBY - RGBW @ P25MM	L3 / R3 / B4-6 / C2
RY - RW @ 23,44MM	L3 / R3 / B4 / C2
RGB @ P21,1MM	L3 / R3 / B4 / C2
RGBY - RGBW @ P20MM	L3 / R3 / B4-6 / C2
RY - RW @ 19,53MM	L3 / R3 / B4 / C2
Y @ P16MM	L3 / R3 / B4 / C2
RGB @ P15MM	L3(T) / R3 / B6 / C2

Adapting the size of your graphical area to the static signage and the freedom to create fullmatrix capabilities.

R = RED / G = GREEN / B = BLUE / Y = AMBER / W = WHITE

CHARACTER SET
Luminance/Luminance Ratio/Beam Width/Colour

HEIGHT - COLOUR @ CHARACTER SET	OPTICAL PERFORMANCE
125MM-Y @ 5x7*	L3 / R3 / B4 / C2
160MM-Y @ 5x7*	L3 / R3 / B4 / C2
200MM-Y @ 5x7	L3 / R3 / B4 / C2
220MM-YW @ 7x11	L3 / R3 / B4-6 / C2
250MM-Y @ 5x7	L3 / R3 / B4 / C2
320MM-Y @ 5x7	L3 / R3 / B4 / C2
320MM-YW @ 11x16	L3 / R3 / B4-6 / C2
400MM-Y @ 5x7	L3 / R3 / B4 / C2
400MM-YW @ 11x16	L3 / R3 / B4-6 / C2

The best way to adapt the readability of your equipment to your location and usage.

*available in L3 /R2 / B7 / C2 for urban environments

CENTRAL PROCESSING UNIT

· **Local management interface**
· **Multiple communications links**
· **Easy to update**
· **Up to 4 light sensors**

ENVIRONMENTAL

· **IP55 / IP66** (optional)   · **Temperature T1 / T2 / T3**
· **Snow Load DSL4**   · **Pollution D4**
· **Wind Load WL7 / WL9** (optional)
· **Temporary Deformations TDB2**

PROTOCOLS
Highest standard protocols embedded

· **NTCIP - worldwide**
· **LCR - France and Magreb**
· **DGT - Latin America and Spain**
· **MODBUS - Tunnel environments**

HOUSING
According EN12899 normative

· **Alluminium / Galvanized Steel**
· **UV Filter in all cover parts**
· **Rear access for maintenance**
· **No ventilation system needed**

VMx1 First AUTONOMOUS
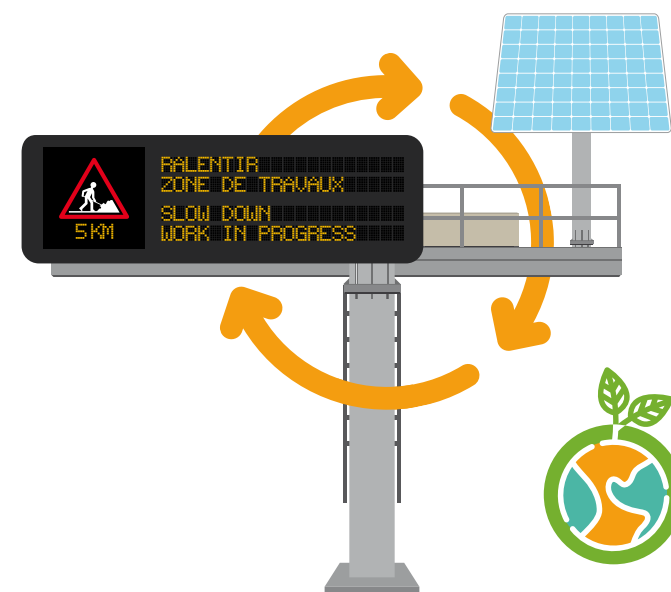## LACROIX City's sustainable proposal

More than 200 units deployed worldwide, using solar energy alone

As a result of the consolidation of different technologies, LACROIX invested for a more sustainable, clean and energy efficient world: we have developed a completely standalone Variable Message Sign. VMx1 First AUTONOMOUS range needs only solar energy to work, without sacrificing any of the VMx1 First family benefits or features and achieving unprecedented energy efficiency.

We invest to make our world more sustainable and in addition we offer the following differentiators against traditional technology products:

• Significant reduction of the costs of deployment and civil engineering

• Adaptive photovoltaic system that improves the system's autonomy

• All-in-one easy installation and commissioning

• Lower maintenance cost

Optional features, to adapt the device to special highway needs

🛜 CONNECT

Technology allowing wireless communication links with VMx1 product range via Bluetooth, Wi-Fi, 3G or 4G. This makes all configuration and maintenance tasks more accessible and simple to integrate in our customer ITS architecture services, providing more flexibility to our product family.

👁 EXTENDED VISIBILITY

The technology implemented in the VMx1 products gives wider viewing angle, increased visibility, readability, and exploitation of ITS systems with LACROIX Traffic technology.

☼ CRITICAL ENVIRONMENTS

Better performance in adverse weather conditions, which require greater resistance of the Variable Message Signs, such as tunnels, deserts, bridges, marine environments or locations at altitudes above 2000 meters. This technology allows us to increase the degree of protection of the VMx1 family, increasing the IP degree to IP66, in aluminium or steel, resisting increased wind speeds of up to WL9/TDB2.
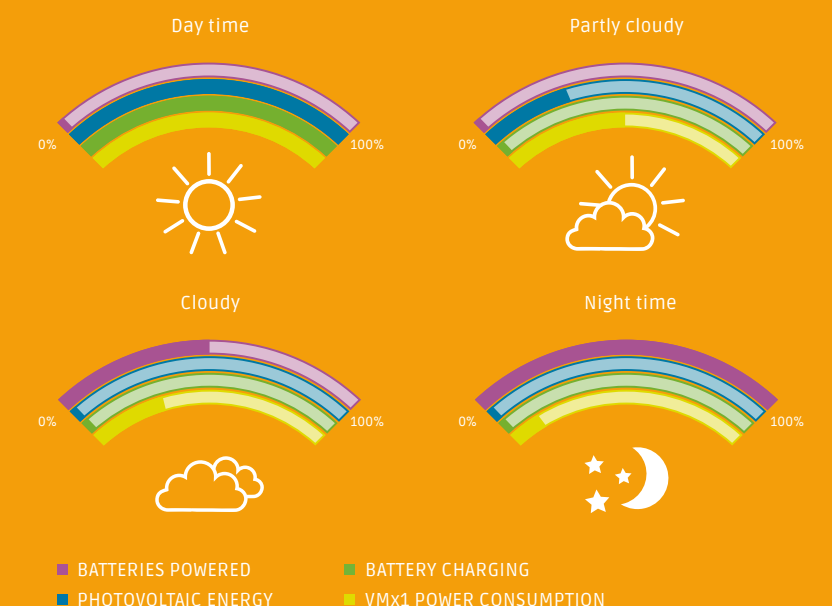
🔋 UPS

Uninterruptible power source with storage system, allowing:
· temporary operation without mains power supply
· full operation during: 1 hour, 2 hours or 4 hours
· work in unstable mains electric power environments

⊞ AUTONOMOUS

Autonomous systems specially designed for ITS products that allow VMx1 First family to be installed anywhere:
· without constraints on placement or installation location
· without existing energy network
· without existing communications network
· powered only by the energy of the sun

Day time   Partly cloudy

Cloudy   Night time

■ BATTERIES POWERED   ■ BATTERY CHARGING
■ PHOTOVOLTAIC ENERGY   ■ VMx1 POWER CONSUMPTION

LACROIX Traffic, traffic business unit of LACROIX City

City
LACROIX

8, impasse du Bourrelier • BP 30004
44801 Saint-Herblain cedex • France
Tel. +33(0) 2 40 92 37 30
lacroix@lacroix.fr

LACROIX Traffic SAS
ZI de Carros • 1ère avenue, 11ème rue
BP 525 • 06516 Carros Cedex • France
Tel. +33(0) 4 92 08 43 00
info@lacroix-city.com

LACROIX Traffic SAU
C/ Francisco Gervás, 12
28108 Alcobendas • Madrid • España
Tel. + 34(0) 91 804 99 70
contact.lxtsau@lacroix-city.com

www.lacroix-city.com

CONNECTED
TECHNOLOGIES
FOR **SMARTER
MOBILITY**