



Microlux is a limited liability company settled inside the "Scientific, Technological and Communications Park in Scrivia Valley" (STP). The STP is characterized structurally as a settlement for innovative entrepreneurial activities and university laboratories of research and development articulated in 6 blocks of buildings having a total covered surface of 24.000 square meters, dislocated in a land area of 100.000 square meters, placed in the center of the Equipped Industrial Area of Tortona and forehead the Truckport of Rivalta Scrivia. All the companies present in the STP are small and medium dimensions companies operating in technologically advanced and innovative fields and characterized by processes of research and development in continuous evolution.



The same admission to the inside of the STP happens as a result of a procedure of selection executed by the competent authorities and based upon the subsistence of all the conditions of suitabilities previewed with particular attention to the highly innovative character of the technologies developed by the single companies.

The activity of research of Microlux is turned in particular to the study and development of innovative technologies addressed to the improvement of safety in the most varied fields of application. Such technologies, in consideration of their countless positive characteristics, have been used also in very different contexts with regard to the original solutions.

AREAS OF DEVELOPMENT AND MAIN PRODUCTS



● VERTICAL LUMINOUS SIGNALLING

NEW SIGNALLING FOR THE SAFETY OF THE CIRCULATION IN TUNNELS ●



● LUMINOUS EMERGENCY INTERNAL SIGNALLING

LUMINOUS ADVERTISING EXHIBITORS ●



● ALTERNATIVE SOURCES OF ENERGY

● DESIGN AND MANUFACTURE OF ELECTRONIC CARDS

● SOFTWARE DESIGN

● VERTICAL LUMINOUS SIGNALLING

The luminous signal proposed is essentially constituted by a diffusing body in which the light produced by a luminous source is laterally filtered. The light is emitted towards the outside by the diffusing body and filters through a screen on which is applied a special film that is at the same time reflecting and transparent.

White LEDs having 5 millimeters of diameter are used as luminous source. Such source guarantees a continuity of operation and a resistance in the time much greater with regard to luminous sources (neon and diac lamps) till now used for the realization of luminous signalling. Moreover the minimum bulk allows to obtain luminous signals having a much limited lateral bulk assimilable to the one of the traditional not luminous panels. Also the thickness of the signals, thanks to particular technical solutions, is extremely contained (5 cm max).

The use of white leds as luminous source moreover allows to realize luminous signals with not regular shapes (as an example circular and triangular signals), maintaining the characteristics of the limited bulks before pointed out.

The employed reflecting film beyond being transparent and allowing therefore the retrolighting of the signal, assures a reflecting index equal or higher to class 2 films currently employed. The film is applied on a screen in polycarbonate. Such material has been chosen for its characteristics of lightness, unbreakability, good transparency and structural resistance.



The metal support of the panel is realized in aluminum in order to guarantee the maximum resistance to the corrosion and the class of protection of the panels is certified IP65 in order to guarantee their operation under the most difficult environmental conditions.

The final result is therefore a signal with dimensions which can be compared to those of a not luminous traditional panel having an emission of highly uniform light over the whole surface always allowing its clear identification.

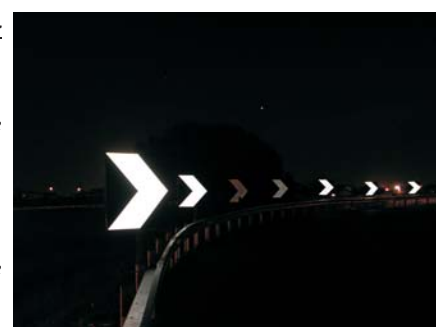
The signal, after passing positively the motorway testing as well as the technological tests provided for by the most recent European rules concerning luminous signalling, has been accredited by the Italian Ministry of Infrastructures and Transports.



A particular application of the aforesaid technology consists in the realization of luminous sequences of modular curve outliners.

The sequence is composed by a series of highly luminous modular outliners piloted by a CPU that allows to vary the speed of the sequence and to select the modality of operation between sequential and intermittent.

The system allows the maximum flexibility and it is possible to modify the parameters set up also on site once the system is installed in order to adapt itself to the various applications.



● NEW SIGNALLING FOR THE SAFETY OF THE CIRCULATION IN TUNNELS

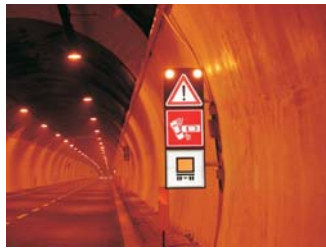
Besides all the usual traffic signals Microlux is in a position to supply also with all the safety components provided for by the new European rules for the circulation in tunnels.

In particular Microlux can supply with new composite signals of danger (generic danger + accident + dangerous goods) as well as the relevant cabinets which control their operation and the new signals indicating the distances from the escapes.

The cabinets are subdivided into three main zones and namely:

1. One zone including two alarm push-buttons protected and separated for damage or accident of vehicles that do not transport dangerous goods or for damage or accident of vehicles carrying dangerous goods. The pressure of one of the two push-buttons determines the lighting of proper signalling panels for danger placed to the inside and at the mouths of the tunnels.
2. One zone containing two first aid extinguishers protected by an appropriate breaking slab.
3. One zone containing an intercom equipped with a push-button of call towards the check external intercom.

The breach of a protecting slab of the extinguisher, the opening of the shutter corresponding to the intercom and the pressure of one of the two push-buttons generate an alarm spread to the operating station that may be both local and remote.



The intercom system is realized with devices properly planned for an industrial use and is composed by a series of inner places to be found in the cabinets and by an external place of control.

The external place allows: 1) to call an inner place directly, 2) to manage waiting calls dynamically, 3) to carry a general call to all the inner places. The operation of the inner places devices is extremely simple and consists of a push-button that allows the activation of the call towards the external place of control and a spy of verification of the activation of the communication and as an option they can be equipped an external speaker. Such solution allows to bring back the communications along the tunnel and, in case of general call, to give indications right along the tunnel. The external intercom place can "be replied" in a remote place in order to allow the management of the communications and of the alarms from an eventual operating station.

● LUMINOUS EMERGENCY INTERNAL SIGNALLING

With the same technology used for vertical signalling, Microlux realizes its own emergency internal signalling. The realized devices are planned for both permanent and not permanent use and are equipped with an appropriate battery for the operation in lack of 220V power supply. The lighting system homogeneity guarantees a perfect visibility, while the use of white leds allows to diminish the substitution of luminous sources.



● LUMINOUS ADVERTISING EXHIBITORS

The advertising exhibitors manufactured by Microlux reflect the concept of the "luminous board". Being able to minimize the physical bulks thanks to the use of leds and thicknesses taking advantage of the lateral lighting system, the turning out product, from the point of view of the size, is in fact completely assimilable to a normal picture. Beyond to that the exhibitor has highly homogenous lighting system all over the surface and an absence of alteration of the colors guaranteed from the point of white of the led source used corresponding approximately to the center of the white of the chromatic table.



● PHOTOVOLTAIC MODULE PLANTS

The photovoltaic module plants used by Microlux are composed by a mixed solution between solar paddles in amorphous silicon, (having a low rendering with atmospheric conditions of good solar exposure, but a greater performance in conditions of disturbed weather), and monocrystalline silicon (greater rendering in good atmospheric conditions but more insufficient performance in disturbed conditions).

Such technical solution allows to have the best possible rendering in all weather conditions. As far as storage cells are concerned, sealed storage cells according to the dry-fit technology having inner recombination of gases with electrolyte in gel are used. Such kind of storage cells is particularly suitable for cyclic use of discharge-load and allows moreover a total absence of maintenance and a very low self-discharge.



● FUEL CELL SUPPLY



Fuel cell are electrochemical devices in a position to turn the chemical energy of hydrogen into electric power without producing the minimal form of pollution and injurious residual (the reaction product is distilled water only) and represent at the moment the source of energy "of the future". The main characteristics of these devices are the high thermal efficiency, the ability of supplying with a high power already at the start-up, the absence of mechanical parts in motion (minimization of the breakdowns), silence while operating and the reduced injurious emissions.

Fuel cell experimented by Microlux use as energy source the hydrogen and are available in 100W, 500W, and 1.000W modules and it is possible to match such modules in order to obtain greater powers. The manufacture of such devices is modular and is based upon the use of self-umidificated and air cooled cartridges, independent between each other, which may be excluded singularly and/or be replaced in case they are out of order.

Greater cuts of power are moreover equipped with a management software that makes the use particularly simple and practical and that allows an eventual remote control.

Fuel cell devices may be used both like back-up supply for photovoltaic module plants (therefore like a recharge of backup batteries), and like primary source of energy.

● DESIGN AND MANUFACTURE OF ELECTRONIC CARDS

Microlux is in a position to design and manufacture on its own all the hardware and software components necessary for its own products and on behalf of third parties. The whole process, from the initial prototypes until mass production, is completely managed to the inside of Microlux by using the most modern cad design instruments.

