



MIRAM™ Lighting System for bill-boards

COMPARATIVE TABLE FOR A 6 X 3 mt BILL-BOARD

The following comparative table between a traditional lighting system of a 6x3mt bill-board connected to the grid and the newest stand-alone system **Istar Solar® MIRAM™**, gives prominence to the efficacy of this system and its duration over time, but also to the savings, zeroing the bill and most of all the profit after only some months of investment.

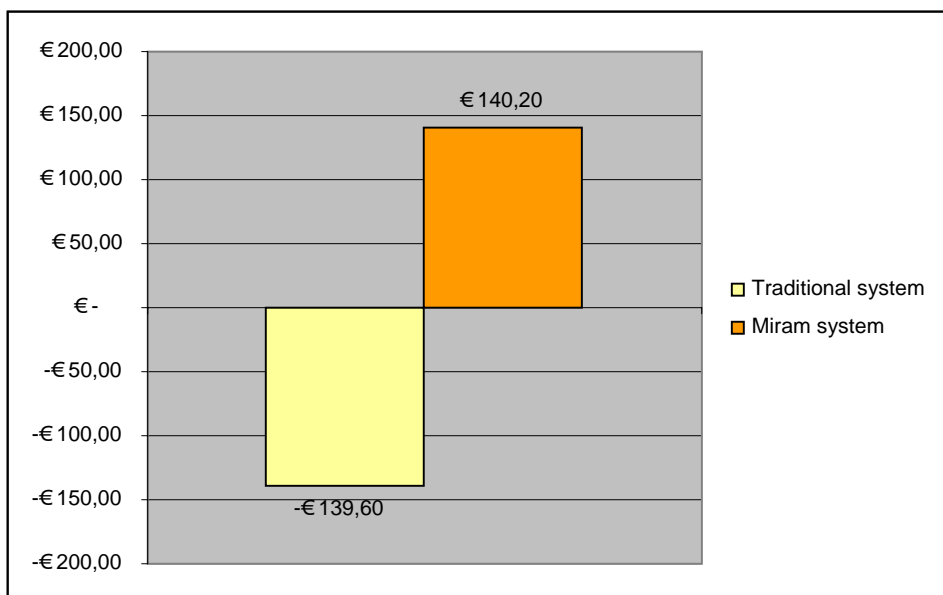
The quick pay-back time gives immediate economic benefits without waiting many years.

The system **MIRAM™** is composed by new generation, innovative, high luminous concentration and very low consumption Led lamps with a self-stabilizer circuit, developed by Istar Solar after many years of studies and researches in the field of high intensity led lighting. These lamps are powered by high efficiency PV modules.

In order to make a true comparison and calculate the pay-back time, we have compared here below the 2 systems considering, as reference, the lighting of a standard 6 x 3 mt bill-board lighted up by 6 lights of 300Wh each.

6 x 3 mt BILL-BOARD

	Traditional system	Miram™ system
Lamp	Halogen lamp	Ultrabright LED
Average lifetime of lamps in hours	4000-5000 (1 year)	100.000 (22 year)
Working voltage	220	12
Power and lamp consumption in Wh	300	8
Hours of night-light	12	12
Power in KWh absorbed by 6 lights	1.800,00	48
Power in KWh absorbed in 12h	21.600,00	576
Power in KWh absorbed in 1 month	648,00	17
Monthly mainenance (change lamp and/or batteries)	€ 10,00	€ 0,60
Total cost of energy consumptions in 1 month	€ 129,60	ANY COST
Total monthly cost: consumes + maintenance	€ 139,60	€ 0,60
Monthly profit	LOSS €139,60	€ 140,20



As we can see from this table the amortization time of MIRAM system is very quick and the profit starts already from the second year.

It is also important to note that we have not included on the costs of bill electricity all the charges such as revenue taxes, transport costs, additional taxes, but most of all the percentage of increase in the cost of energy already planned for the next years. All these things reduce the pay-back time that can be of just a few months.



Advantages of MIRAM™ system

- Completely autonomous and works also in case of black out;
- Switch on and off of lamps with morning-light function built-in on the electronic circuit;
- Immediate switch on of lamps without pre-heating;
- Cool white light without flickering;
- In case some Led of our lamp MIRAM™ do not function, all other led are on and keep lighting;
- Long lifetime of our lamps: over 20 years;
- Long lifetime of our PV modules: over 30 years;
- Very useful where the grid is missing;
- High savings of money and time due to the absence of works for excavations, cables connections, etc...
- Non dangerous system: it functions at 12Volts, therefore no risk of electric shock for high voltages, short circuit, electric discharge, etc.
- All components are light-weight;
- No bills to pay;
- Quick pay-back time;
- Higher profit on contracts

..... and after all.... we use the clean energy from the Sun, thus further contribute to reduce the pollution of the planet...

**“with our system MIRAM we avoid to emit on the atmosphere about
5.000Kg of CO2 every year!!”**