LED LIGHTING

IGLLE Outdoor luminaries
IGLLI Indoor luminaries
Retrofit
Led beacon
Gamelsa is a company that integrates both mechanical and electronic technology applied to metal sheet and tube processes. Gamelsa was created in 1984 as a subsidiary of Televes Enterprises Corporation specialising in metal transformation. In Gamelsa we understand the importance of being up-to-date with research, development and continuous innovation so as to maintain the high level of demand asked of the ever changing market. The establishment of environmentally friendly processes together with the strictest security and hygiene protocol allows us to face the demands of the future with a security and competitiveness guarantee for the European Union.

Gamelsa offers complete solutions for every needs of all types of customers, for small, medium or large series. We perform the whole process in metal transformations until the product is finished.

CERTIFICATIONS
ISO 9001-2008: Quality management system.
LED TECHNOLOGY

LED technology is presented as the technology of the future in lighting thanks to its huge advantages over traditional lighting.

- Low consumption.
- Low maintenance.
- Long lifespan.
- High energy efficiency.
- Low voltage.
- Without electromagnetic interferences.
- Without IR and UV radiation.
- Completely safe.
- High light quality.
- Instant switching-on.
- Switching-on/off does not reduce the product lifespan.
- Low heat emission.
- Vibration resistant.
- Adaptable light intensity.
- Energy saving up to 80% compared with traditional lighting.
- Low CO₂ emissions.
- Without mercury.
- Recyclable.
- No luminic pollution.
- Without maintenance costs.
The energetic saving achieved with our lights can be very significant, depending on the luminary to be replaced and the kind of lighting needed.

Our luminaries have a long life without maintenance, which increases the savings compared to other technologies.

It is always necessary to carry out the study for the replacement of conventional luminaries by equivalent LED ones, according to the lighting requirements of the site.

In the energetic savings calculation mentioned above, those savings generated by light intensity control systems have not been considered. These systems can increase energy savings by 20%.

### Energy Saving

<table>
<thead>
<tr>
<th>CONVENTIONAL STREETLIGHTS</th>
<th>POWER*</th>
<th>MAXIMUM EFFICIENCY MODEL</th>
<th>POWER</th>
<th>SAVINGS IN WATTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compact Fluorescent</td>
<td>40W</td>
<td>IGLLE12com (455mA)</td>
<td>19W</td>
<td>52%</td>
</tr>
<tr>
<td>HPS</td>
<td>80W</td>
<td>IGLLE24com (450mA)</td>
<td>36W</td>
<td>55%</td>
</tr>
<tr>
<td>Mercury</td>
<td>315W</td>
<td>IGLLI48com (450mA)</td>
<td>85W</td>
<td>73%</td>
</tr>
</tbody>
</table>

*Including losses produced by the drivers

<table>
<thead>
<tr>
<th>CONVENTIONAL STREETLIGHTS</th>
<th>POWER*</th>
<th>MAXIMUM EFFICIENCY MODEL</th>
<th>POWER</th>
<th>SAVINGS IN WATTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compact Fluorescent</td>
<td>40W</td>
<td>IGLLE12 (350mA)</td>
<td>15,3W</td>
<td>62%</td>
</tr>
<tr>
<td>HPS</td>
<td>80W</td>
<td>IGLLE24 (350mA)</td>
<td>28,8W</td>
<td>64%</td>
</tr>
<tr>
<td>Mercury</td>
<td>315W</td>
<td>IGLLE60 (350mA)</td>
<td>63W</td>
<td>80%</td>
</tr>
</tbody>
</table>

*Including losses produced by the drivers

Warranty Plan

Our luminaries stand out for their first-class engineering and excellent thermal management. For this reason, Gamelsa offers a full 5 year warranty.

**PLUS WARRANTY**

This warranty may be extendable for an additional period of 2 years.

(Only available for IGLLE models.)

Please refer our distributor.
GAMELSA DRIVER

- Designed and manufactured in Spain by Televes.
- Class II electrical insulation to ensure any contact with active parts. It does not need grounding.
- SELV: output voltage lower than 60V. It does not require special measures to prevent electric shock hazard.
- It has a separate output for each LED module. (See diagram “COMPARISON CONNECTIONS DRIVER / LEDS”).
- Input voltage 196-254Vac.
- Constant output current up to 650mA.
- Short circuit, open circuit, overvoltage and overheating protection, incorporating a system that shuts off the luminary if a certain critical temperature is reached.
- PFC >0.95.
- Easily removable mounting bracket for convenient replacement.

GAMELSA 24V DRIVER

- High efficiency.
- Suitable for applications powered by photovoltaic energy with batteries.
- Suitable for plug-in directly to batteries, without losses associated with the inverters.
- Complies with EN 55015.
- Output: 500mA.

COMPARISON CONNECTIONS DRIVER / LEDS

When LED modules are connected in parallel, if one module fails, the rest will receive a much higher current, causing premature failure of the leds.

When the modules are connected in series, a very high output voltage is required, not been possible to ensure SELV.

The drivers of our luminaries have a separate output for each LED module, ensuring that a constant intensity flow throw all leds.

POWER SUPPLY CERTIFICATIONS

Power supply units comply with the following certifications:


Certified by: ENAC
LEDS

- 12 led modules designed and manufactured in Spain by Televes.
- Quick connector for easy installation and replacement.
- Module efficiency up to 170 lumen / W.
- Protected against electrostatic currents.
- 4000K color temperature. Between 3000 and 7000K on demand.
- Increased lifespan with independent connections.

- IP67 sealed against penetration of water and dust optical system.
- Minimum CRI: 80.
- Light levels of luminaries can be customized:
  - Changing the number of LED modules.
  - Adapting the led performance, adjusting the intensity of current to the appropriate value.

Our led modules are designed and manufactured by Televes
Our lights use high quality Ledil lenses.

Its optical design allows to light only where is needed.

The lenses allow increasing the spacing between luminaries, increasing performance and reducing costs.

They limit the direct view of the LEDs, increasing visual comfort in the view field.

Multiple combinations are offered depending on the application, the width of the track and the mounting height.
Our highly versatile luminaries adapt to any environment.
Easy assembly and maintenance.
Certified by ENAC laboratory for use in street lighting applications and as a projector.
OUTDOOR LED LUMINAIRES

WIDE RANGE OF COLOR TEMPERATURE
From warm white to cool white (3000K-7000K).

CLASS II
Without grounding.

SELV
Works with an output voltage lower than 60V.

INDIVIDUAL OUTPUT FOR EACH LED CIRCUIT
Ensure that always the same amount of current flows through the led.

DIMMING OR INTENSITY REGULATION
Optimizes energy savings.

WIDE RANGE OF OPERATING TEMPERATURE
From -30°C to 45°C*.

IK10
Vandal protection.

SEVERAL ASSEMBLY POSSIBILITIES
It can be adapted to different anchors and positions.

CORROSION RESISTANCE
Made of anodized aluminum and with IP66 protection.

LIGHT POLLUTION PREVENTION
No light emitted to the upper hemisphere.

FINISHING VERSATILITY
Different finishes of anodized or painted in any color from the RAL range.

MULTIPLE APPLICATIONS

URBAN LIGHTING
Streets, avenues, squares, parks, residential areas, industrial estates, roads, highways ...

OUTDOOR AREAS
Industrial buildings, shopping centers, recreational areas, sports facilities ...

PROJECTOR
Historical monuments, facades, commercial ...

* (Maximum range, see model).
FEATURES

FRAME

- **Anodized extruded aluminum** casing, specially designed for a perfect thermal management, maintaining both the driver and the LEDs at a temperature as low as possible.

- It has two separate areas, a **sealed cavity**, where the driver and electrical connections are placed, and a **ventilated cavity** which acts as a heat sink.

THERMAL MANAGEMENT

- Conduction and convection heat in the luminary is favored by dissipation curves that form part of own profile and are placed in a ventilated cavity independent electrical area.

HIGH RESISTANCE TO CORROSION

- The anodized finish increases the hardness and corrosion resistance.

- Tested in salt fog chamber during 528 hours. (Equivalent to 11 years outdoor).

COLORS

- Anodized frame: Matt finish steel or Matt finish Stainless Steel.

- Side covers and arm: RAL 9006 or RAL 1035 lacquered.

- Available in any RAL color on request.
SIDE COVERS
- Made of lacquered aluminum injection.
- They have grilles with an air filter to allow air flow into the ventilated cavity, preventing dust accumulation inside.
- The luminaries can be supplied with blind covers.

BOLTS
- All bolts are corrosion resistant AISI 304 stainless steel.
- It can be supplied in AISI 316 on request, suitable for coastal areas.

PRESSURE COMPENSATOR DEVICE
- IGLLE luminaries have a pressure compensating device to avoid possible dust and moisture absorption that can occur when negative pressure differences between inside and outside space are created.

CONNECTIONS
- The IGLLE luminaries connections provide sealing and electrical safety at any time.
  - M16 cable gland guarantees IP67 grade protection of the sealed cavity.
  - IP68 external connector for Ø6-12mm.
## IGLLE RANGE

**Led: Seoul Z5M2**

<table>
<thead>
<tr>
<th>MODEL</th>
<th>Nº OF LEDS</th>
<th>WEIGHT (Kg)</th>
<th>LENGTH (mm)</th>
<th>INTENSITY (mA)</th>
<th>POWER *** (W)</th>
<th>LIGHT FLUX (Lm)</th>
<th>EFFICIENCY (Lm/W)</th>
</tr>
</thead>
<tbody>
<tr>
<td>IGLLE12</td>
<td>12</td>
<td>4.32</td>
<td>260</td>
<td>650</td>
<td>23.4</td>
<td>3110</td>
<td>132.9</td>
</tr>
<tr>
<td>IGLLE24</td>
<td>24</td>
<td>5.76</td>
<td>340</td>
<td>350/500</td>
<td>25.2/36</td>
<td>3800/5020</td>
<td>150.8/139.4</td>
</tr>
<tr>
<td>IGLLE36</td>
<td>36</td>
<td>6.26</td>
<td>340</td>
<td>350/500</td>
<td>37.8/54</td>
<td>5700/7530</td>
<td>150.8/139.4</td>
</tr>
<tr>
<td>IGLLE48</td>
<td>48</td>
<td>7.44</td>
<td>440</td>
<td>350/500</td>
<td>50.4/72</td>
<td>7600/10040</td>
<td>150.8/139.4</td>
</tr>
<tr>
<td>IGLLE60</td>
<td>60</td>
<td>7.94</td>
<td>440</td>
<td>350/500</td>
<td>63/90</td>
<td>9500/12550</td>
<td>150.8/139.4</td>
</tr>
<tr>
<td>IGLLE72</td>
<td>72</td>
<td>8.88</td>
<td>520</td>
<td>350/500</td>
<td>75.6/108</td>
<td>11400/15060</td>
<td>150.8/139.4</td>
</tr>
<tr>
<td>IGLLE12D</td>
<td>12</td>
<td>4.32</td>
<td>260</td>
<td>650</td>
<td>23.4</td>
<td>3110</td>
<td>132.9</td>
</tr>
<tr>
<td>IGLLE24D</td>
<td>24</td>
<td>5.76</td>
<td>340</td>
<td>350/500</td>
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</tr>
<tr>
<td>IGLLE36D</td>
<td>36</td>
<td>6.26</td>
<td>340</td>
<td>350/500</td>
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</tr>
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<td>IGLLE48D</td>
<td>48</td>
<td>7.44</td>
<td>440</td>
<td>350/500</td>
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<td>7600/10040</td>
<td>150.8/139.4</td>
</tr>
<tr>
<td>IGLLE60D</td>
<td>60</td>
<td>7.94</td>
<td>440</td>
<td>350/500</td>
<td>63/90</td>
<td>9500/12550</td>
<td>150.8/139.4</td>
</tr>
<tr>
<td>IGLLE72D</td>
<td>72</td>
<td>8.88</td>
<td>520</td>
<td>350/500</td>
<td>75.6/108</td>
<td>11400/15060</td>
<td>150.8/139.4</td>
</tr>
</tbody>
</table>

* On demand: CRI 90  ** On demand: 3000K-7000K  *** Losses from the driver are not included
The **dimming or lighting control** is what allows turning on and off of each point of light at any time, individually, or its regulation with up to 10 levels of light intensity. This system reduces maintenance costs extending the life of the components and allowing further increase of the energy savings associated with LED lighting.

We offer the following solutions:

- **AUTONOMOUS solution**
  It consists of a controller located in each luminary, with pre-programmed schedule for each lamppost, which controls the light level during the night.

- **ASTRONOMICAL CONTROL FROM ELECTRIC PANEL Solution**
  It consists of these same drivers, with the addition of a portable master controller that can reprogram each electric panel through the power line, changing light levels of the program.

- **POINT TO POINT LIGHTING CONTROL Solution**
  This system allows us to manage remotely from a PC or mobile device, the entire installation, lamppost to lamppost. It comprises, from alarm monitoring and energy consumption, to the change of the operating mode of each point of light. Software consists of web technology that allows access from anywhere to the server that monitors all facilities.

**POINT TO POINT LIGHTING CONTROL SOLUTION**

Its operation is based on the same system as the astronomical control solution (each electric panel has a master controller that communicates with the luminary’s driver via the power line), with the particularity that all boxes are connected via GPRS to a central server that acts as a database, to which users can access.
Our luminaries allow placement in different positions to suit the different environmental needs.

**LOCATION**

According to its power, certain parameters are set for each model to ensure its correct location.

**MOUNTING HEIGHTS**

<table>
<thead>
<tr>
<th>Interdistance</th>
<th>15m</th>
<th>20m</th>
<th>22m</th>
<th>25m</th>
<th>28m</th>
<th>32m</th>
</tr>
</thead>
<tbody>
<tr>
<td>Street width</td>
<td>5m</td>
<td>6m</td>
<td>7m</td>
<td>8m</td>
<td>8m</td>
<td>8m</td>
</tr>
</tbody>
</table>

**TWIN ASSEMBLY**

Only available for models IGLLE12/IGLLE24/IGLLE36

**ASSEMBLY**
**ACCESSORIES**

**ARM**

- **Injection molded aluminum** and lacquered in RAL 9006.
- Available in other colors from the RAL range on request.
- **Adaptable** for coupling to commercial staffs Ø50mm to Ø60mm.
- Allows **rotation** of the luminary **up to 30°**.

**WALL BRACKET**

- Support designed for wall anchoring of the luminaire.
- Made in **lacquered galvanized steel**.
- It may be supplied painted in the colors of the RAL range on request.
- Allows **rotation up to 60°**.

**SPD MODULE**

- Complementary accessory for **extra overvoltage protection** produced by thunderstorms.
- Two models available: maximum current supported **10000A** or **20000A**.
- Under UL1449 and IEC61643-11 standards for class II.
- It reduces maintenance costs and ensures longer product life.
- Protection against ut to 10KV power surge.

**CERTIFICATIONS**

EN-60598-1 & 2-3 & 2-6
UNE-EN-62031:2008
UNE-EN-62471
EN-61000-3-3:2013
UNE-EN-13032-1:2006
EN-62493:2010

**ENAC**

Certified by:
ADVANTAGES THAT MAKE THE DIFFERENCE

- **UNBEATABLE SAVING**
  Energetic saving up to 80%.

- **WIDE RANGE OF COLOR TEMPERATURE**
  From warm white to cool white (3000K-7000K).

- **CLASS II**
  Without grounding.

- **SELV**
  Works with an output voltage lower than 60V.

- **INDIVIDUAL OUTPUT FOR EACH LED CIRCUIT**
  Ensure that always the same amount of current flows through the led.

- **MINIMIZE MAINTENANCE COSTS**
  Long life.

- **WIDE RANGE OF OPERATING TEMPERATURE**
  From -20°C to 40°C.

- **SEVERAL ASSEMBLY POSSIBILITIES**
  It can be adapted to different anchors and positions.

- **FINISHING VERSATILITY**
  Different finishes of anodized or painted in any color from the RAL range.

MULTIPLE APPLICATIONS

Factories, warehouses, workshops, fairs, high altitude work platforms, logistics, sport centers.
LUMINAIRES IGLLI

FRAME
- Aluminum casing specially designed for a perfect thermal management in order to keep both leds and the driver temperatures as low as possible.

ASSEMBLY
- Direct connection to mains.
- Simple substitution existing light points.

EFFICIENCY
- Final efficiency of up to 130 lumen/W including driver's losses.

COLORS
- RAL 9005 lacquered.
- Available in any RAL color on request.

MAINTENANCE
- Easy replacement of the components.
- Information included in the product manual.

RAL COLORS
IP65
IK07 IK10*
SELV
MADE IN SPAIN

* With screen protection.
 IGLLI RANGE

**IGLLI24** 24 LEDS  
**IGLLI48** 48 LEDS  
**IGLLI72** 72 LEDS

Led: Seoul Z5M2  
CRI > 80*  
CCT-4000K**  

<table>
<thead>
<tr>
<th>MODEL</th>
<th>N** OF LEDS</th>
<th>WEIGHT (Kg)</th>
<th>LENGHT (mm)</th>
<th>INTENSITY (mA)</th>
<th>POWER *** (W)</th>
<th>LIGHT FLUX (Lm)</th>
<th>EFFICIENCY (Lm/W)</th>
</tr>
</thead>
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<tr>
<td>IGLLI24</td>
<td>24</td>
<td>4,1</td>
<td>310</td>
<td>350/500</td>
<td>25,2/36</td>
<td>3800/5020</td>
<td>150,8/139,4</td>
</tr>
<tr>
<td>IGLLI48</td>
<td>48</td>
<td>5,2</td>
<td>450</td>
<td>350/500</td>
<td>50,4/72</td>
<td>7600/10040</td>
<td>150,8/139,4</td>
</tr>
<tr>
<td>IGLLI72</td>
<td>72</td>
<td>6,5</td>
<td>600</td>
<td>350/500</td>
<td>75,6/108</td>
<td>11400/15060</td>
<td>150,8/139,4</td>
</tr>
</tbody>
</table>

* On demand: CRI 90  
** On demand: 3000K-7000K  
*** Losses from the driver are not included

**LOCATION**  
According to its power, certain parameters are set for each model to ensure its correct location.

**CERTIFICACIONES**  
- EN-60598-1 & 2-1:1989 & 2-6  
- UNE-EN-62031:2008  
- UNE-EN-62471  
- EN-61000-3-3:2013  
- EN-62493:2010

Certified by: ENAC

* With protection screen.
Retrofit is the direct replacement of old lighting technologies by newer and more efficient ones, using previous installations. This lighting system is very suitable in cases where a correct equilibrium between the benefits of new technologies in the field of lighting and use of already existing resources is needed, thereby obtaining considerable savings in its implementation.

FEATURES

- **Adaptable** to almost any type of previous installation.
- Seoul LEDs Z5M2 with an **efficiency of up to 170 lumen/W**.
- Grade protection optical zone: **IP67**.
- Led module protection up to **IK10 grade**.
- **Multiple photometric distributions** thanks to the multiple lens combination.
- **Class II** electrical insulation.
- **SELV** output voltage. It guarantees safety regardless of the quality of the facilities.
- Final **module efficiency** (counting losses from the drivers) **up to 130 lumen/W**.
- **Made of anodized aluminum or lacquered** in any color from the RAL range.

DIMMING OR LIGHTING CONTROL

We offer the following solutions, adapted to our customers:

- **Autonomous Solution**: preprogrammed controller located in each luminary.
- **Astronomical Control From Electric Panel Solution**: Multilevel scheduled control from the electric panel.
- **Point To Point Lighting Control Solution**: Telematic managing throw web.

See details in section: Outdoor Led Luminaires IGLLE.

<table>
<thead>
<tr>
<th>Led: Seoul Z5M2</th>
<th>CRI &gt; 80*</th>
<th>CCT-4000K**</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>MODEL</strong></td>
<td><strong>N° OF LEDS</strong></td>
<td><strong>INTENSITY (mA)</strong></td>
</tr>
<tr>
<td>IGMLI12C0M</td>
<td>12</td>
<td>700</td>
</tr>
<tr>
<td>IGMLI24C0M530</td>
<td>24</td>
<td>530</td>
</tr>
<tr>
<td>IGMLI12CDM</td>
<td>12</td>
<td>700</td>
</tr>
<tr>
<td>IGMLI24CD5300</td>
<td>24</td>
<td>530</td>
</tr>
</tbody>
</table>

* On demand: CRI 90  
** On demand: 3000K-7000K  
*** Losses from the driver are not included  
**** Measured at 230Vac and maximum load
ADVANTAGES

- **WIDE RANGE OF COLOR TEMPERATURE**
  From warm white to cool white (3000K-7000K).

- **INDIVIDUAL OUTPUT FOR EACH LED CIRCUIT**
  Ensure that always the same amount of current flows through the led.

- **DIMMING OR INTENSITY REGULATION**
  Optimizes energy savings.

- **LIGHT POLLUTION PREVENTION**
  No light emitted to the upper hemisphere.

- **SEVERAL ASSEMBLY POSSIBILITIES**
  It can be adapted to almost any existing luminaire.

- **CORROSION RESISTANCE**
  Made of anodized aluminum.

- **FINISHING VERSATILITY**
  Different finishes of anodized or painted in any color from the RAL range.

LUMINANCE DISTRIBUTION

![Luminance Distribution Graph]

**CERTIFICATIONS**

- EN-60598-1 & 2-3 & 2-6
- UNE-EN-62031:2008
- UNE-EN-62471
- EN-61000-3-3:2013
- UNE-EN-13032-1:2006
- EN-62493:2010

Other lighting distributions available.

Certified by: ENAC
FEATURES

- Designed for lighting roads and pedestrian areas.
- Made of extruded and lacquered aluminum.
- Optic zone: IP65.
- Voltage: 220-240 VAC.
- Working temperatures: From -20°C to 35°C.
- Upper hemispheric flow <0.5%.
- Power factor >0.95.
- Color temperature: 3000K or 4000K.

CERTIFICATIONS

EN-60598-1 & 2-3 & 2-6
UNE-EN-62031:2008
UNE-EN-62471
EN-61000-3-3:2013
UNE-EN-13032-1:2006
EN-62493:2010

Certified by: ENAC
Our commitment to quality is one of our fundamental pillars that ensure our products meet the highest demands of our customers. We develop the product from scratch to manufacturing. As a result, we can offer a lot of versatility and customization in design to meet the needs of each customer.

In the laboratory of Televes Corporation, rigorous testing of electromagnetic compatibility and electrical safety, exposure to heat and excessive moisture and freezing temperatures tests are made. We also perform extreme component aging tests that validate the correct product behavior in the most extreme environments.

As a result of all this, our luminaires exceed the expectations of a market that demands products of high efficiency and high quality that meet all established requirements.

Spanish technology, made in Spain, from design to manufacturing.