Highways LED Lighting Solutions
✓ Cuts Costs
✓ Cuts Carbon
✓ Passively Safe

www.glasdon.com
The Glasdon Group of Companies is a proud Blackpool based company and it seems as if our lighting heritage has helped us take the logical step into illuminated bollards. Glasdon has an extensive range of products and services to help you maintain your road safety commitments.

Glasdon Group has over fifty years’ experience producing impact-absorbing road side safety products and innovative lighting solutions for highways.

With the successful launch of Rebound Signmaster in 2005, Glasdon UK found a gap in the market for a non-illuminated keep left bollard. Our dedicated team of product designers, who are always looking for new product innovation and development, saw the potential in this unique product to replace traditional, rigid keep left bollards.

With an already extensive lit bollard network across the UK, an LED conversion kit was designed to allow Authorities to upgrade their existing illuminated bollard technology to state of the art LEDs and a high performance rebound bollard, whilst keeping their existing underground lightboxes. This meant less initial costs, which is always a benefit!

The attraction of LED illuminated bollards gave additional appeal by reducing ongoing energy and maintenance costs. Compared to traditional lamps, an average saving of 80% on electricity costs can be made by switching to Glasdon LED lighting.

Once the LED Rebound Signmaster range was established, the next venture for Glasdon UK and LED illumination was sign lights. Following a similar path, a gear tray was introduced to the range in 2012 to allow customers to convert their existing sign lights to energy efficient LEDs. This technology was then added to our clever design skills and the Lumino City LED Downlighter was launched in 2013.

Glasdon will remain at the forefront in providing LED Lighting Solutions, which incorporate the latest in LED technology energy saving solutions and low power consumption. Customers will receive a 3-year warranty as standard on all LED lighting products and our LEDs are designed to last a minimum of 50,000 hours - which equates to over 10 years of use when fitted with a Photocell or CMS control device. Through development and continuous improvement Glasdon will ensure its customers receive products that Cut Costs, Cuts Carbon and are Passively Safe.
Passively Safe

Passively safe street furniture is designed to minimise the severity of injury to occupants of a vehicle that collides with it. The European Standard BS EN 12767 defines a universal test that establishes the performance of a passively safe roadside structure.

The performance rating is displayed in the following format:

The first number indicates the class impact speed in Km/h: 50, 70 or 100 Km/h. Tests are conducted with a small (900kg) car in a head-on, frontal impact.

The two letters represent the energy absorbed by the structure: High energy absorbing (HE) support structures slow the vehicle considerably on impact; Low energy (LE) structures measurably slow the vehicle but pose a much lower risk of injury to its occupants; Non-energy absorbing (NE) structures have negligible or nil effect on the speed of the vehicle.

The final number represents the occupant safety level and is based on the Acceleration Severity Index (ASI) and Theoretical Head Impact Velocity (THIV) scales, according to European Standard BS EN 1317-1. The available levels are 1-4, where Level 4 represents the safest and Level 1 the most dangerous.

Glasdon passively safe highways products are tested by accredited independent specialists at MIRA and TRL. Where testing has been conducted, the performance rating will be clearly shown on the page.

High Performance Materials

Glasdon lighting products are manufactured from a range of higher performance materials and undergo stringent checks to ensure durability and best value. Glasdon has ISO 9001:2008 and ISO 14001:2004 accreditation, underlining our commitment to quality.

Durapol® Material
A strong, lightweight material that offers a number of advantages over traditional materials. Durapol material is self-coloured, which means it will never need painting and scratches will not show. The material is totally corrosion-free so it will not chip or rust, is UV stable and vandal resistant.

Passively Safe Impactapol® Material
A flexible material with excellent recovery performance, meaning it will return to its original shape following a drive-through collision. Impactapol products reduce maintenance costs in vulnerable locations by continuing to statutory requirements even after repeated impacts. Impactapol offers all the additional benefits of Durapol - it is self-coloured and totally corrosion-free.

Armortec® Corrosion Resistant Coating
A specially formulated coating to extend the life of Glasdon metal products and components used externally.
Contents

Non-Illuminated Bollards
Exceptional reflectorisation whilst eliminating electricity costs.

Rebound Signmaster™ Bollard ................................................................. 5-14

Illuminated Bollards
A range of LED illuminated options available for existing installations/light boxes or new installations.

Solar Signmaster™ LED Bollard ............................................................... 9
Rebound Signmaster Sublite™ LED Lighting Unit & Underground Box .... 10-11
Rebound Signmaster™ LED 24V Flush Installation Kit ......................... 12
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Sign Lights
A range of LED illuminated options to comply with BS EN 12899-1 for new installations or existing sign lights.

Sublite Lumino™ LED Uplighter ............................................................ 15
Lumino City™ LED Downlighter Range ............................................... 16-18
Eolumino™ LED Downlighter Gear Tray ............................................. 19
Non-illuminated Rebound Signmaster is ideal for locations where no illumination is required. This allows for a consistent bollard installation throughout your traffic schemes, where illuminated and non-illuminated bollards are required. The retroreflective panels and signface give excellent visibility and increase safety.

### Key Features

- **Passively Safe** - Achieves NE4 at 100Km/h (62mph) the highest possible rating for a self righting bollard.
- **Reduces Energy Costs** - Fully reflectorised panels provide exceptional visibility during all hours.
- **Low Maintenance** - Smooth finish and recessed reflectorised panels make it easy to clean.
- **Surface Mounting or Socketed Options** - Range of fixing options and adaptor kits for compatibility with all kinds of installation.

### Design Features

- **Manufactured from Impactapol® Material**
  Double-skinned to ensure exceptional strength and durability.

- **360° Reflectivity**
  Provides excellent all-round visibility making it ideal for use at junctions.

- **Drive-Through Performance Proven at TRL**
  (Bollard meets BS EN 12767 NE4) Rebound Signmaster, Rebound Signmaster Sublite and 24V Flush Installation Kit have proven drive-through performance at 100Km/h (62mph).

- **Anti-Twist Design**
  One piece bollard with integral fixing points.

- **300mm Signface**
  Large retroreflective sign face helps increase safety.

- **Retroreflective**
  Highly visible by day and by night.

- **Visibility**
  Side patches have class-leading size and are angled for a wider side view.

- **Recessed Panels**
  Tamper, vandal and weather resistant.

- **Uniformity**
  Helps to create a co-ordinated street scene. Non-illuminated and illuminated options.

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**Excellent visibility from all angles.**

**Exceptional retroreflective performance.**
Rebound Signmaster Bollard, Rebound Signmaster Sublite and 24V Flush Installation Kit have been tested by TRL Ltd and passed to Performance Standard NE4/100Km/h under BS EN 12767:2007. (Passive safety of support structures for road equipment).

Manufactured in passively safe Impactapol material to help prevent or reduce the severity of personal injury in the event of vehicle impact. If impacted or run through, Rebound Signmaster will return to an upright position ensuring the hazard remains clearly marked, thereby saving on replacement and reinstatement cost.

Passively Safe
To help save a life

PASSED
at 100 Km/h (62mph)

Outperforms traditional illuminated bollards.
Rebound Signmaster™ Surface Mounting Fixing Options

All fixing options allow for quick and easy bollard removal and reinstatement.

**Bolt-down fixing.** Fix directly into an existing or new concrete foundation.

**Fixed depth concrete-in anchor.** Suitable for new concrete foundation.

**Adjustable depth concrete-in anchor.** Flexibility for avoiding services or other underground impediments in new concrete foundations.

**Adaptor plates.** For attaching to pre-existing redundant base boxes. Range of adaptor plates offered to suit most leading industry light boxes.

Galvanised Adaptor Plates

Six different adaptor plates all in Galvanised finish for corrosion resistance and to match the finish of light boxes.

Adaptor Plates available for fitting to:

- Forest City
- Haldo (Domed lens)
- Haldo (Flat lens)
- Haldo Halo
- John Wilkinson
- Morrison
- Pearce Gowshall
- Pudsey Diamond Traffic
- Signature Bibase 12
- Signature Bibase 51
- Signature Budget
- Signature Citybase
- Signature Elite MKIII
- Signature Premium
- Signature Quick Access
- Signature Quick Release
- Signature Safebase
- Signature Superbase
- Signature Superior
- Signature Surebase
- Simmonsigns Global
- Simmonsigns Global Plus
- Truesigns

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Design Features

Small Footprint
Ideal for smaller traffic islands.

Moulded Round Stem
Provides excellent drive-through performance from all angles.

Socket Manufactured from Durapol® Material
Corrosion-resistant and impact-resistant material.

Anchor Peg
Secures the bollard into the socket. The peg engages with a lock mechanism to prevent the bollard being removed without the specially designed key. The lock remains operational following a drive-through impact for ease of bollard replacement.

Concrete Shelf
Allows concrete to flow over the shelf of the socket offering anchorage.

Flat Based Socket
For ease of installation.

Keyed Quick Release Mechanism
Allows replacement bollard to be installed in seconds.

Durapol Socket Plug
Allows for easy replacement if a bollard is damaged, secures the bollard into the socket and prevents debris entering the socket.
The smart ‘zero energy’ highway solution has arrived.

Solar Signmaster™ is the ideal solution for new and existing traffic island schemes, offering increased visibility at night without the direct mains electricity costs.

During daylight hours, the solar panel charges the large capacity batteries which are housed in the sealed (IP67 rated) below ground chamber.

The large 300mm LED sign face is operated by LDR for night-time illumination. Powered by a smart ‘Eco Mode’ LED circuit when battery voltage is below 6V (50%) to maximise the run-time of the LED.
Illumination is still required by law for many bollard installations. Sublite LED Lighting Unit features low power consumption and an infrared phototransistor that ensures the unit is only lit during the hours of darkness, significantly reducing energy costs compared to traditional alternatives.

**Key Features**

- **Low Power Consumption** - From as low as 5W.
- **Available in 230V ac or 24V ac** - Low voltage option.
- **Remains Illuminated following a Vehicle Collision** - Concrete anchoring system secures the base box into the ground. Proven at 100Km/h (62mph).
- **Water Ingress Protected (IP67)** - Reduce maintenance resource and associated costs caused by water ingress.
- **Built-in Phototransistor and CMS Equipment Compatibility** - Minimises power consumption and maximises LED lifetime.

**Design Features**

- **Infrared Phototransistor**
  Ensures the unit is only illuminated during the hours of darkness. Set to remain illuminated for an average of 2 hours per day longer than street lighting.

- **50,000 hour minimum LED Lifetime**
  When used with a phototransistor or a CMS device this equates to over 10 years of use.

- **Low Power Consumption, High Power Factor LED Circuit**
  Includes a resettable fuse.

- **Integrated Fixing Points**
  Four fixing points ensure a secure bollard attachment.

- **Sealed LED Housing and Lens**
  IP67 rated offering excellent water and dust protection. The domed polycarbonate lens protects the LED in the event of a drive-over.

- **Sealing Gasket**
  Prevents water and dirt gathering on the lens.

- **Concrete-in Bars**
  Provides additional anchorage offering excellent drive-through performance.

- **Concrete Shelf**
  Provides anchorage when installed into concrete.

**Optional Extras**

- **Ducting Chamber**
  Allows 230V cable to be laid at the legal requirement depth. Multiple boxes can be stacked to add more depth if required.

- **Installation Lid**
  Prevents concrete getting inside the unit during installation.

- **Ducting Splitter**
  Allows 2 ducts to be connected to the unit.

- **Phototransistor Cover Cap**
  For 24 hour illumination (regardless of external light levels).

- **230V ac to 24V ac Transformer**
  Transformer for 24V model available.
Compared to traditional lamps, an average of 80% saving on electricity costs can be made by switching to Rebound Signmaster LED Lighting.

White Mini Ensign™ Illuminated rebound bollard is available with Sublite LED Lighting unit and underground box. Ideal for cycle lane delineation.

Compatible with CMS Telemetry Equipment
Equipment stored safely within the IP67 chamber, attached to the underside of the sealed lid.

Sealing Gasket
Helps seal the unit to IP67 rating.

IP68 Rated Glands
Prevents water entering the chamber and damaging the internal components. Can be sited at the rear of underneath the unit (please specify at point of order).

Spacious Internal Area
Able to house almost any brand of cut out and a transformer if required.

Equipment Mounting Board
Can be specified in 2 positions.

Highly Resilient
100% recycled Durapol® Material (chamber only).

Technical Specifications:

<table>
<thead>
<tr>
<th></th>
<th>230V ac</th>
<th>24V ac</th>
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<tbody>
<tr>
<td>Power Use (ON)</td>
<td>5.0W</td>
<td>6.5W</td>
</tr>
<tr>
<td>Power Use (STANDBY)</td>
<td>0.33W</td>
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<tr>
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</table>

(24V ac Transformer is IP68 rated and will run up to 3 Bollards)
LED 24V Flush Installation Kit

The LED 24V Flush Installation Kit is designed without a light box for quick installation into concrete, it can accommodate 50mm or 100mm ducting to suit your requirements.

Key Features

- **Low Power Consumption** - 6.5W.
- **Quick and Easy Installation** - Slot-cut a low-voltage cable supply without costly carriageway closures.
- **Flush Installation** - Added safety as no hazard is created if the bollard is removed.
- **Remains Illuminated Following a Vehicle Collision** - Proven at 100km/h (62mph).

Design Features

- **Stainless Steel LED Housing Cover**
  Will not rust or corrode.

- **Infrared Phototransistor**
  Ensures the unit is only illuminated during the hours of darkness. Set to remain illuminated for an average of 2 hours per day longer than street lighting.

- **50,000 hour minimum LED Lifetime**
  When used with a phototransistor or a CMS device this equates to over 10 years of use.

- **IP67 Rated LED Housing**
  Offers excellent water and dust protection.

- **Integrated Fixing Points**
  Ensures secure bollard installation.

- **Sealing Gasket**
  Prevents water and dirt gathering on the lens.

- **Aluminium Chamber**
  Reduces the risk of corrosion.

- **Zinc Coated Mild Steel Concrete-in Bars**
  Provides anchorage into the ground offering excellent drive-through performance.

- **Passive Safety tested at TRL**
  The LED 24V Flush Installation Kit remained illuminated after drive-through at 100km/h (62mph).

- **Ducting Compatibility**
  Aluminium funnel fits both 50mm and 100mm Ducting.

Optional Extras

- **Phototransistor Cover Cap**
  For 24 hour illumination (regardless of external light levels).
  100mm Bend (see above)

- **230V ac to 24V ac Transformer**
  Transformer for 24V model available.

- **Installation Lid**
  Protects the unit and fixing points during installation.

Technical Specifications

<table>
<thead>
<tr>
<th></th>
<th>24V ac</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power Use (ON)</td>
<td>6.5W</td>
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<tr>
<td>Power Use (STANDBY)</td>
<td>1.5W</td>
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<tr>
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<tr>
<td>Power Factor</td>
<td>0.48</td>
</tr>
</tbody>
</table>

(24V ac Transformer is IP68 rated and will run up to 3 Bollards)

Telephone: 01253 600411
IP68 LED Gear Tray & Conversion Kits

Upgrade your existing installations to low-energy illumination and a high-performance Signmaster bollard with a Glasdon LED Gear Tray and Conversion Kit. Our LED Gear Trays are available for the majority of underground light boxes in use in the UK.

**Key Features**

- **IP68 (Ingress Protection) Rated Pod** - Protects the LED circuit in case of ingress protection failure of the chamber it is housed in.
- **Low Power Consumption** - From 5W (230V). Low voltage (24V) version also available.
- **Interchangeable Gear Tray Plates** - Compatible with more than 20 industry-leading light chambers.
- **Snap-Fit Gear Tray Plates** - Trays can be fitted during installation to ensure compatibility with the chamber and reduces the risk of wasted call-outs.

**Design Features**

- **Low Power Consumption, High Power Factor LED Circuit**
  
  Includes a resettable fuse.

- **50,000 hour minimum LED Lifetime**

  When used with a phototransistor or a CMS device this equates to over 10 years of use.

- **Infrared Phototransistor**

  Ensures the bollard is only lit during the hours of darkness. Set to remain illuminated for an average of 2 hours per day longer than street lighting.

- **Connection Plug**

  Choice of 3-pin plug or supplied without a plug for wiring directly into an IP rated cut out. IP68 rated plug available as an optional extra.

**Four Standard Gear Tray Conversion Kits Available**

Most leading industry light boxes can be converted to Rebound Signmaster LED. Check with our Sales Office for compatibility if your adaptor plate model is not listed here.

**Optional Extras**

- **Phototransistor Cover Cap**

  For 24 hour illumination (regardless of external light levels).

- **230V ac to 24V ac Transformer**

  Transformer for 24V model available.

- **IP68 Rated Plug**

  Offers an IP68 rated plug connection to the cut out.

**Technical Specifications**

<table>
<thead>
<tr>
<th></th>
<th>230V ac</th>
<th>24V ac</th>
</tr>
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<tbody>
<tr>
<td>Power Use (ON)</td>
<td>5.0W</td>
<td>6.5W</td>
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<td>40 0005 0012 100</td>
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<td>96 0001 0003 100</td>
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</tr>
<tr>
<td>Power Factor</td>
<td>0.91</td>
<td>0.48</td>
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</table>
**Rebound Signmaster™ Bollard Specifications**

### Dimensions

<table>
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<tr>
<th>Surface Mounting</th>
<th>Socketed</th>
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<tbody>
<tr>
<td>Overall Height</td>
<td>1046mm</td>
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<tr>
<td>Max. Bollard Width</td>
<td>398mm</td>
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<tr>
<td>Max. Bollard Depth</td>
<td>200mm</td>
</tr>
<tr>
<td>Bolt-down Foot Detail</td>
<td>328 x 328mm</td>
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<tr>
<td>Fixing Centres</td>
<td>228 x 228mm</td>
</tr>
<tr>
<td>Socket Width</td>
<td>-</td>
</tr>
<tr>
<td>Socket Length</td>
<td>-</td>
</tr>
<tr>
<td>Socket Depth</td>
<td>-</td>
</tr>
<tr>
<td>Sign Face</td>
<td>300mm diameter</td>
</tr>
<tr>
<td>Front/Rear Patch True Visibility Area</td>
<td>165,183mm²</td>
</tr>
<tr>
<td>Side Patch Area</td>
<td>26,820mm² per patch</td>
</tr>
<tr>
<td>Total Side Patch Area</td>
<td>53,840mm²</td>
</tr>
<tr>
<td>Weight of Bollard</td>
<td>6kg</td>
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</table>

(LED Illuminated Rebound Signmaster available in White only.)

### Retroreflective Patch Options

1. 1 x Fluorescent Yellow retroreflective front panel.  
   2 x Fluorescent Yellow retroreflective side panels.  
   1 x 300mm Signface.

2. 1 x Fluorescent Yellow retroreflective front panel.  
   4 x Fluorescent Yellow retroreflective side panels.  
   1 x 300mm Signface.

3. 1 x Fluorescent Yellow retroreflective front panel.  
   1 x Fluorescent Yellow retroreflective back panel.  
   4 x Fluorescent Yellow retroreflective side panels.  
   1 x 300mm Signface.

4. 1 x Fluorescent Yellow retroreflective front panel.  
   1 x Fluorescent Yellow retroreflective back panel.  
   4 x Fluorescent Yellow retroreflective side panels.  
   2 x 300mm Signfaces.

### Sign Options

Rebound Signmaster has the option to carry one or two signs.  
Rebound Signmaster LED Legal Sign Options (for use on highways).

Other Sign Options are available on request.  
Please contact our Sales Office for details.

### Materials

- **Bollard:** Impactapol® Material  
- **Socket:** Durapol® Material  
- **Fixings:** Stainless Steel  
- **Sublite:** Underground Box, Ducting Chamber and Splitter: 100% Recycled Durapol  
- **LED Lighting Unit:** Durapol  
- **Concrete-in Bars:** Mild Steel BZP  
- **Installation Lid:** 100% Recycled ABS  
- **Retroreflective Sign/Patches:** Avery Dennison Fluorescent Yellow and Translucent White
**LED Uplighter**

Lighting the Diagram 606 sign face on a Roundabout chevron installation is a legal requirement. Sublite Lumino LED Uplighter is designed to provide excellent levels of illumination while retaining the passive safety features of our Chevroflex Ultra™ Sign System.

### Key Features

- **Improves Road Safety** - Flush installation means no need for posts to mount luminaires to - reducing the hazard severity.
- **Low Power Consumption** - 11W.
- **Water Ingress Protected (IP67)** - Reduce maintenance resource and associated costs caused by water ingress.

### Design Features

- **Infrared Phototransistor**
  Ensures the unit is only illuminated during the hours of darkness.

- **IP67 Rated LED Housing**
  Offers excellent water and dust protection for the light unit.

- **Concrete Shelf**
  Provides anchorage when installed into concrete.

- **Versatile Configurations**
  Multiple ducting options and optional extension chambers can be used to adapt the Sublite Lumino to meet your requirements (see Optional Extras).

- **Highly Resilient**
  100% recycled Durapol® Material (chamber only).

- **Compatible with CMS Telemetry Equipment**
  Equipment stored safely within the IP67 chamber attached to the underside of the sealed lid. *Please contact our Sales Office for details.*

### Technical Specifications

<table>
<thead>
<tr>
<th>Sublite Lumino</th>
<th>230V ac</th>
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<td>Compatible Sign Sizes (mm)</td>
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<tr>
<td>Power Factor</td>
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</tbody>
</table>

### Optional Extras

- **Installation Lid**
- **Ducting Splitter**
- **Ducting Chamber**
- **Phototransistor Cover Cap**
- **Overgrowth Restricting Surround**
Lumino City offers reduced power consumption (as low as 3W) without compromising on luminance performance. Available in two sizes for signs from 600mm to 1500mm diameter, Lumino City is manufactured from our impact absorbing Impactapol® Material to withstand vehicle impacts and improve longevity.

**Key Features**

- **Low Power Consumption** - From as low as 3W.
- **Remains Operational Following a Vehicle Sideswipe Collision** - Flexible housing manufactured from impact absorbent Impactapol.
- **Water Ingress Protected (IP66)** - To reduce maintenance time, resource and associated costs.
- **Range of Mounting Options** - Brackets available to fit a variety of post diameters, top or mid point of post and single or double sided.
- **Innovative 4 in 1 Fixing Bracket Option available** - see page 18 for details.

**Can Absorb Vehicle Sideswipe**

Impactapol material housing will flex if impacted by a vehicle and return to its normal position afterwards.

**Optional Extras**

**Infrared Photocell 0.25W**
Ensures the unit is only active during the hours of darkness. UMSUG Code 94 0001 1000 100

**Photocell Options**

| Model (lux) | 70 | 55 |

*Please contact our Sales Office for details.*

**Central Management System (CMS) Internal Cradle**
CMS devices can be installed inside the housing. The telecell is completely enclosed for maximum protection, reducing the risk of vandalism or damage and ensuring interference-free operation of the telecell.

*Please contact our Sales Office for details on compatible equipment.*
Technical Specifications

<table>
<thead>
<tr>
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<th>Lumino City 750</th>
<th>Lumino City 1500</th>
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<tr>
<td>Uniformity of Luminance</td>
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<td>UE2</td>
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</tr>
<tr>
<td>Power Factor</td>
<td>0.91</td>
<td>0.82</td>
</tr>
</tbody>
</table>

Design Features

- **High Grade Aluminium Bracket** - Manufactured from durable and robust Armortec® coated aluminium.
- **Energy Efficient Mains Powered LED** - Reduces energy costs, maintenance and carbon footprint.
- **State of the Art LEDs** - Provide a minimum expected lifespan of 50,000 hours when used with a phototransistor or CMS device this equates to over 10 years of use.
- **Resettable Fuse** - Protects the circuit.
- **High Performance Optics** - Optimal light spread and uniformity using the fewest LEDs possible for better reliability and lower power usage.
- **Aluminium Heatsink** - Regulates the heat output from the LEDs to maximise the lifespan of the LEDs.
- **Lightweight** - Easier and safer handling during overhead installation.
- **Complies with BS EN 12899-1:2007** - Class UE2 for uniformity of illuminance, and Class E2 for mean illuminance.

Specifications

- **Weights (with brackets)**
  - Single Unit: 2.5kg
  - Double Unit: 4.6kg
  - Universal Single Unit: 2.1kg

- **Conformity to BS EN 12899-1:2007**
  - Mean Illuminance Class: E2
  - Uniformity of Illuminance Class: UE3/UE2*

- **Materials**
  - Signlight Arm: Impactapol® Material
  - Brackets and Heatsink: High Grade Aluminium
  - Cap and Conversion Collar: Impactapol
  - All Fixings: Stainless Steel

- **Colours**
  - Aircraft Grey, Black.

*Uniformity value varies based upon sign size and shape.

www.glasdon.com
1. **Single Top and Mid Post Fixing Kit**
   - 76mm or 89mm posts.

2. **Double Top and Mid Post Fixing Kit**
   - For mounting two sign lights back-to-back.
   - 76mm or 89mm posts.
   - Complete with cap for mounting the light onto the top of the post.

3. **Universal Bracket for Post Fixing Kit**
   - Complete with cap for mounting the light onto the top of the post.

4. **Universal Bracket for Wall Fixing Kit**
   - For larger diameter posts (114mm, 140mm, 168mm), and lamp posts.
   - Fitted with Tamtorque banding.

5. **Offset Bracket Fixing Kit**
   - 76mm posts only.
   - Requires a Universal Bracket for post fixing kit to attach Lumino City to the Offset Bracket.

6. **Clamp Bracket**
   - For fitting without Tamtorque banding.
   - Requires a Universal Bracket for Post Fixing Kit to attach Lumino City to the Clamp Bracket.

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**Fixing Options**

- **Single Sided Open Top**
  - 76mm or 89mm posts.
  - Without cap for mounting the light part way down the post.

- **Double Sided Open Top**
  - 76mm or 89mm posts.
  - Without cap for mounting the light part way down the post.

- **Single Sided Closed Top**
  - 76mm or 89mm posts.

- **Double Sided Closed Top**
  - For mounting two sign lights back-to-back.
  - 76mm or 89mm posts.

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**Lumino City™**

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Telephone: 01253 600411
LED Downlighter Gear Tray

Upgrade your existing sign light housings to LED illumination with Ecolumbino retrofit gear trays.

**Key Features**

- **Low Power Consumption** - From as low as 2.8W.
- **Low cost route to Energy Efficiency** - Upgrade existing sign light housings to the latest energy efficient LEDs.
- **Easy Installation** - Compatible with most common types of sign light housing.
- **Two models available** - Minimise power consumption on a range of signs from 600mm to 1500mm diameter.

**Ecolumbino 750**

**To illuminate signs up to 750mm**

Type 1 - To fit Signature Exlite LA/Exlite Titan*/Forest City/Pearce Gowshall
Type 2 - To fit Signature Delta
Type 3 - To fit Simmonsigns LUA
* Requires an additional conversion fixing kit.

**Design Features**

- **Low Power Consumption Circuit and Driver**
  2.8W for Ecolumbino 750 and 4.2W for 1500.
- **State of the Art LEDs**
  Provide a minimum expected lifespan of 50,000 hours when used with a phototransistor this equates to over 10 years of use.
- **State of the Art Optics**
  Use the minimum number of LEDs to distribute light evenly over the sign, to fully comply with regulations at maximum energy efficiency.
- **Complies with BS EN 12899-1: 2007**
  Ecolumbino will externally illuminate a sign to a mean luminance level between 100-400 LUX, as described in Table 22, Class E2.

**Optional Extras**

- **Infrared Photocell 0.25W**
  Ensures the unit is only active during the hours of darkness.
  UMSUG Code 94 0001 1000 100

**Photocell Options**

Model (lux): 70 55
*Please contact our Sales Office for details.*

**Technical Specifications**

<table>
<thead>
<tr>
<th>Ecolumbino 750</th>
<th>Ecolumbino 1500</th>
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</thead>
<tbody>
<tr>
<td><strong>230V ac</strong></td>
<td><strong>230V ac</strong></td>
</tr>
<tr>
<td>Compatible Sign Sizes (mm)</td>
<td>600</td>
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<tr>
<td>Mean Illuminance</td>
<td>E2</td>
</tr>
<tr>
<td>Uniformity of Luminance</td>
<td>UE3</td>
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<tr>
<td>Power Use (ON)</td>
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<tr>
<td>UMSUG Code (ON)</td>
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<tr>
<td>Power Factor</td>
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</tbody>
</table>
Visit our website to see our full range of passively safe, low-maintenance road safety products including illuminated and non-illuminated bollards, verge marker posts and chevron sign systems. Individual model specification sheets are available on most Glasdon Bollards and Traffic Safety Products. Please phone 01253 600411 for details.