ARCHITECTURAL EXTERIOR LIGHTING

Underwater
the aluna system, is designed with advanced technical and functional criteria, to meet the need for safe and scenic underwater lighting. The system uses miniaturized low-voltage halogen and the latest high-power LED’s, made of lightweight engineering plastics, resistant to mechanical stresses and corrosion, and has an effective sealing system. A complete range of accessories makes this system highly flexible and able to satisfy any application need.

standard colour: white RAL 9010

fixture features:
• high stress resistant, injection moulded component parts; techno polymer composite
• opening and closing of the fixture using special key (4068469)
• tempered safety glass
• silicone rubber gaskets
• pure aluminum reflector
• pre-wired and sealed 5.5m long cable

aluna W/100 & W/100-K: 2 x 2.5mm² cable with flexible protective sheath
aluna 5P100D: 2 x 2.5mm² cable
aluna W/LED & W/LED-K: 2 x 1.5mm² cable with flexible protective sheath
aluna SP/LED: 2 x 1.5mm² cable
• submerged operation: max 10m deep

accessories

4068470
Gasket for prefabricated pools with vinyl coating

in the case of prefabricated pools with vinyl coating, the underlying structure is not perfectly smooth (for example pool walls with reinforced polyester resin fibreglass) it is necessary to place the gasket in-between the rough wall and the vinyl coating; to prevent water seepage under the coating. The rubber gasket is soft and of a suitable thickness, lending itself perfectly for this purpose.

opening/closing key - 4068469

for aluna/SP, aluna/W and Connection and Transformer box (CT)
- mandatory for mounting and maintenance.

the use of the locking key is necessary to open and close the floodlight correctly in the case of re-lamping.

it is also necessary for any maintenance operation on the connection and transformer box.
tips on lighting swimming pools with aluna/W

applicable to pools that are tiled, or otherwise faced in a light blue shade, with good reflective and diffuse characteristics. The rule of thumb for good lighting is obtained by placing at least one floodlight every 15-20 square metres of water surface. Placing the floodlights along the sides of the swimming pool on both side is also recommended because it generates a more balanced and uniform illumination. This provision is mandatory if the width of the pool is more than 5 metres. Nonetheless, if floodlights are installed in only one side of the pool, they should be positioned in a way as to avoid all chance of glare. Thus, if the pool is situated beside a house, the spots should be placed on the side nearest the house. The illustrations give a useful indication as to the schemes to follow to achieve good lighting.
aluna W/100 underwater

This underwater recessed fixture is a new generation product which combines performance, ease of installation and maintenance. The external surface is perfectly smooth in order to avoid any danger to swimmers. Installation is straightforward with snap-in clutches, to avoid fixing with screws or bolts. The mount is universal and can be done on tiled concrete pools or prefabricated swimming pools with a wall thickness of up to 45mm.

if floodlight is recessed 50/60cm below water line, lamp maintenance can be done without draining pool.
aluna W/100 Kit

W/100-K1: 4068475
W/100-K2: 4068477

The aluna kit is a complete installation pack designed for underwater lighting, designed to offer the user all the pieces needed in a single mounting kit. All the installer has to do is hook up the neutral-phase line cable, usually 1.5mm², to the connection and transformer box.

The power supply of the low voltage underwater floodlight, a special cable in super-flexible Neoprene rubber is supplied, with a cross-section of 2 x 2.5mm². Since the lamp current is limited in this system to 8.35A, there is only a minimal drop in the voltage to the lamp and does not adversely affect the light output. The mechanical protection of the cable is obtained by a heavy flexible sheath, inserted pressure in the special quick-connect fittings that ensure IP68 watertightness inside the connection and transformer box and the recessed floodlight.

assembly kit

complete system for aluna W/100-K1

- one underwater floodlight - aluna W/100
- one connection and transformer box
- 5.5m super flexible neoprene HAR cable - 2x2.5mm² for each floodlight
- 4.5m heavy flexible protective sheath for floodlight

assembly kit

complete system for aluna W/100-K2

- two underwater floodlights - aluna W/100
- one connection and transformer box
- 5.5m super flexible neoprene HAR cable - 2x2.5mm² for each floodlight
- 4.5m heavy flexible protective sheath for each floodlight

The power supply of the low voltage underwater floodlight, a special cable in super-flexible Neoprene rubber is supplied, with a cross-section of 2 x 2.5mm². Since the lamp current is limited in this system to 8.35A, there is only a minimal drop in the voltage to the lamp and does not adversely affect the light output. The mechanical protection of the cable is obtained by a heavy flexible sheath, inserted pressure in the special quick-connect fittings that ensure IP68 watertightness inside the connection and transformer box and the recessed floodlight.
adjustable underwater floodlight. Fountains, decorative pools, water plays and ponds can be lit by using adjustable underwater floodlights. To this aim the SP version was designed and equipped with a support base and bracket, which provides all of the technical and functional features of the aluna system.

**aluna SP/100**

<table>
<thead>
<tr>
<th>Model</th>
<th>IP68 10m</th>
<th>Voltage</th>
<th>Halogen Type</th>
<th>Lumens</th>
</tr>
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<tbody>
<tr>
<td>4068473</td>
<td></td>
<td>100W-12V</td>
<td>GY6.35</td>
<td>2200lm</td>
</tr>
</tbody>
</table>

* delivered with lamp

*low voltage halogen*
aluna CT

Connection and Transformer box (CT)
Electric power should be supplied to the floodlights in compliance with standards (EN 60598-2-18) by means of a 230/12V safety transformer. The CT ground recessed box provides not only the branch line on the primary 230V circuit (through line), but also transformation into low voltage. Under current legislation it has to be installed at a minimum distance of 3.5 metres from the pool (see figure). Using the 2x2.5mm² cable, supplied by us, you can move to a distance of five metres from the floodlight limiting the voltage drop within the value 0.67V with a 100W-12V lamp.

single CT box: 4068479
three way connection and transformer box with security transformer 100VA-230/12V-50Hz suitable to feed one 100W floodlight. Colour: white RAL 9010

double CT box: 4068480
Four way connection and transformer box with security transformer 200VA-230/12V-50Hz suitable to feed two 100W floodlights. Colour: white RAL 9010

• ground recessed installation - walk over
• high resistance composite technopolymer injection moulded construction
• silicone rubber gaskets - dual watertight system
• internal looping facility - 2x4mm² terminal -16A for two core H07RN-F cable Ø max 12mm
• 25mm diameter rigid or flexible hose quick seal couplings
(line entry - line exit - lamp feeding)
• thermal protection against overloading included with fuse against short circuits
• floodlight power supply and flexible protective sheath (supplied with the submergible unit)

according to the regulations in force CEI 64-8/7:2007-01, aluna/CT should be installed at a distance of at least 3.5 metres from the edge of the pool.
The aluna LED kit is an underwater kit ideal for lighting swimming pools and sheets of water with minimum power and several thousand hours of life. A simple innovative solution that does not require an expensive installation.

Complete system for aluna W/LED-K1:
- One underwater floodlight equipped with 3 high emission LED sources - white light total power 9W
- One feeding box ready for through line 230V-50/60Hz with two-core cable max Ø12 mm
- 5.5m of super flexible HAR cable for each floodlight
- 4.5m of heavy flexible protective sheath for floodlight

Complete system for aluna W/LED-K2:
- Two underwater floodlights equipped with 3 high emission LED sources - white light total power 9W per floodlight
- One feeding box ready for through line 230V-50/60Hz with two-core cable max Ø12 mm
- 5.5m of super flexible HAR cable for each floodlight
- 4.5m of heavy flexible protective sheath for each floodlight
aluna SP/LED  

4068474  
3 high emission white light LED 5000K  
4.2W* - 12VDC* * 300lm  

* total power consumption, up to 4 fixtures feedable with one LED CT box: 4068481  
** SELV power supply required, 12V DC  

tilted floodlight

aluna CT/LED  

4068481  
power supply box for aluna SP/LED, ready for through line 230V-50/60Hz with twin-core cable max Ø12 mm  

important: to open and close both the fixture and the box it is essential to use the special tightening key (4068469) to be ordered separately. (see accessories).

- ground recessed installation - walk over  
- high resistance composite technopolymer injected body  
- silicone rubber gaskets with double sealing system  
- 230V-50/60Hz power feed  
- internal through line, connection block  
  2x4mm² - 16A (use two-core cable type H07RNF max Ø12 mm)  
- 12V DC SELV 1.4A max line output  
- quick-connect fittings for pipe or hose  
  Ø 25mm  
- fixtures to power supply drawing given below

230V-50/60Hz through line

can feed up to 4 aluna SP/LED or 2 aluna W/LED fittings

Concord 395
Standard Terms And Conditions Of Sale

DEFINITIONS

The following definitions shall apply to these terms and conditions:

“Business Day” means a day other than a Saturday, Sunday or public holiday in England;

“Buyer” means the party purchasing goods from the Seller;

“Buyer Specification” means any specification for the Products, including any related plans and drawings, that is supplied to the Seller by the Buyer, or produced by the Seller and agreed in writing by the Buyer;

“Contract” means the contract between the Seller and the Buyer for the sale and purchase of the Products in accordance with these Terms;

“Force Majeure Event” has the meaning given in clause 8;

“Order” means Buyer’s order for the Products, as set out in the Buyer’s Purchase Order Form. The procedure for placing orders is outlined in clause 2.4.

“Products” means the goods purchased by Buyer from the Seller in accordance with these Terms;

“Product Specification” means the specification relating to Products provided by Seller;

“Seller” means Havells Sylvania Europe Limited;

“Terms” means the terms and conditions set out in this document.

In these Terms, the following rules apply:

A person includes a natural person, corporate or unincorporated body (whether or not having separate legal personality);

A reference to a party includes its personal representatives, successors or permitted assigns;

A reference to a statute or statutory provision is a reference to such statute or provision as amended or re-enacted. A reference to a statute or statutory provision includes any subordinate legislation made under that statute or statutory provision, as amended or re-enacted;

Any phrase introduced by the terms including, include, in particular or any similar expression shall be construed as illustrative and shall not limit the sense of the words preceding those terms.

A reference to writing or written includes fax.

CONTRACT FORMATION

In the absence of a written agreement to the contrary executed by Seller, these Terms shall apply to every sale of Products between Seller and Buyer.

A quotation by Seller does not constitute an offer and Seller reserves the right to withdraw or revise any quotation prior to time of its acceptance of Buyer’s purchase order.

An Order constitutes an offer by Buyer to purchase the Products in accordance with these Terms. The Order shall be formed at the time when Buyer’s Order is confirmed in writing or by action by Seller, at which point the Contract shall come into existence.

Orders can be placed with our Sales Office by completing a Purchase Order Form. The procedure for placing orders is outlined in clause 2.4.

In these Terms, the following rules apply:

A person includes a natural person, corporate or unincorporated body (whether or not having separate legal personality);

A reference to a party includes its personal representatives, successors or permitted assigns;

A reference to a statute or statutory provision is a reference to such statute or provision as amended or re-enacted. A reference to a statute or statutory provision includes any subordinate legislation made under that statute or statutory provision, as amended or re-enacted;

Any phrase introduced by the terms including, include, in particular or any similar expression shall be construed as illustrative and shall not limit the sense of the words preceding those terms.

A reference to writing or written includes fax.

PRODUCT SPECIFICATIONS

Seller reserves the right to make any changes to the Product Specification, that is required to conform with any applicable statutory or EU requirements.

Unless otherwise specifically agreed to in writing by the Seller, all descriptive and forwarding specifications, drawings and particulars of weight and dimension issued by Seller are approximate only and are intended to present a general idea of the Products to which they refer and shall not form any part of any contract.

PRICE

The price for Products shall be the price quoted by Seller to Buyer or, when no price is quoted, the Seller’s list price at date of delivery, unless otherwise agreed in writing by the parties.

All costs associated with and/or arising out of implementation of the WEEE Directive on electrical or electronic waste into national law shall be charged to the Buyer separately.

The price of the Products is exclusive of amounts in respect of value added tax (“VAT”).

Any other tax, tariff, duty or charge which Seller may be required to pay or collect, now or hereafter imposed by any governmental authority or agency, foreign or domestic, with respect to the sale, purchase, production, processing, storage, delivery, transportation, use, or consumption of any of the Products or services covered hereby, including all taxes upon or measured by receipts from sales or services will be charged to the Buyer by the Seller.

DELIVERY AND SHORTFALL

Delivery shall be made on Ex-Works (Incoterms 2010) basis unless otherwise agreed in writing. Should the Seller agree to deliver Product otherwise than at Seller’s premises, Buyer shall be liable to pay Seller’s charges for transport, packaging and insurance.

Where the Product is to be delivered in instalments, each delivery shall constitute a separate Contract which shall be invoiced and paid for separately. If Seller fails to deliver the Products, its liability shall be limited to the costs and expenses incurred by Buyer in obtaining replacement goods of similar description and quality less the price of the Products.

If Buyer fails to fulfil terms of purchase under this contract including failure to make payment on the due date, Seller may defer further shipments without notice until the breach is remedied, or reserve the right to cancel such shipments if the breach is not cured.

No claim in respect of loss in transit or short delivery will be accepted unless the Seller is advised in writing of such loss or short delivery at the time of delivery. The shortfall must be specified in writing on the Purchase Order Form.

The following details must be stated on the form:

Conditions of packages
Date consignment received
Date Seller was advised
The extent of damage or shortfall.

PASSING OF RISK AND TITLE

All risk in the Products shall pass to Buyer upon completion of delivery.

Notwithstanding delivery and the passing of risk in the Product, all title in and to the Products shall not pass to Buyer until payment for has been received by Seller in full (in cash or cleared funds) until such time as title in the Products passes to Buyer, the Buyer shall:

not be entitled to pledge or in any way charge or otherwise encumber by way of security for any indebtedness any of Product;

hold Product as Seller’s fiduciary agent and bailee;

not remove, deface or obscure any identifying mark or packaging on or relating to the Products;

keep the Product separate from those of Buyer and third parties and properly stored, protected and insured and identified as Seller’s property;

notify Seller immediately if it becomes subject to any of the events set out in clause 12;

provide Seller with such information relating to the Products as Seller may require from time to time, for the avoidance of doubt, nothing in this clause 6.3 shall operate to prevent Buyer from reselling or using the Products in the ordinary course of its business.

Buyer shall bear the risk of any loss or damage to or deterioration of the Products from whatever cause arising following delivery of the Products to Buyer.

If before title to the Products passes to Buyer, Buyer becomes subject to any of the events set out in clause 12, or Seller reasonably believes that any such event is about to happen and notifies Buyer accordingly, then, provided that the Products have not been resold, or irrevocably incorporated into another product, and without limiting any other right or remedy, Seller may at any time require Buyer to deliver the Product back to Seller.

PAYMENT

Buyer shall pay all invoices in full and in cleared funds without any setoff or deduction, within the payment term specified on the invoice and in the currency specified in the invoice, free of exchange collection, or other charges.

If Buyer fails to pay any invoice in full by the due date under the Contract, Seller may suspend production and/or decline to make shipment or delivery of all or part of the unshipped Product. In addition, the Buyer shall pay interest on the overdue amount at the applicable rate in accordance with the Late Payment of Commercial Debts (Interest) Act 1998. Such interest shall accrue on a daily basis from the due date until the date of actual payment of the overdue amount, whether before or after judgment. The Buyer shall pay the interest together with the overdue amount.

Buyer shall not be entitled to assert any credit, set-off or counterclaim against Seller in order to justify withholding payment of any such amount in whole or in part. Seller may at any time, without limiting any other rights or remedies it may have, set off any amount owing to it by Buyer against any amount payable by the Seller to the Buyer.
FORCE MAJEURE

Seller shall not be liable for any failure to perform or delay in performance due to circumstances beyond Seller’s reasonable control, including but not limited to riot, war or hostilities between nations, civil war, civil commotion, acts of terrorism, governmental orders or regulations, import or export regulations or embargoes, acts of God, fire, accidents, strikes, lock-outs, or other industrial actions or trade disputes (whether involving employees of the Seller or of a supplier), lack of transportation facilities, delays of carriers, inability to obtain raw materials, curtailment of or failure in obtaining sufficient electrical power, or any other contingencies beyond the reasonable control of Seller (“Force Majeure Event”). In the case of a Force Majeure Event, Seller may, in its sole discretion, cancel, reduce or modify its deliveries to Buyer without liability for any damages whatsoever.

WARRANTY; CLAIMS; LIMITATION OF LIABILITY.

Subject to the conditions set out below, Seller warrants that on delivery and for a period of 24 months from the date of delivery, the Products shall:

- correspond to the Product Specifications agreed to in writing by Seller; and be free from defects in design, material and workmanship, unless otherwise indicated by Seller in the product specification or elsewhere.
- Subject to clause 9.3 if: Buyer gives notice in writing to Seller during the warranty period set out in clause 9.1 above and within a reasonable time of discovery that some or all of the Products do not comply with the warranty set out in clause 9.1;
- Seller is given a reasonable opportunity of examining such Products;
- Buyer (if asked to do so by Seller) returns such Products to Seller’s place of business at Buyer’s cost.
- Where we consider that the Product is covered by this warranty, we will repair and/or replace ONE (1) of the defective lamp(s) within a reasonable period of time. Further warranty is excluded unless compulsory required by law. For the avoidance of doubt, “repair or replace the defective lamps” does not include any removal or reinstallation activities, costs or expenses, including without limitation, labor costs or expenses.
- Seller shall be under no liability in respect of any defect in the Products arising from:
  - any drawing, design or any Buyer Specification supplied by Buyer;
  - Buyer making any further use of the Products after giving notice in accordance with clause 9.2;
  - normal wear and tear, willful damage, negligence, abnormal storage or working conditions, improper handling, third party interference (e.g. improper installation, overuse, excess voltage or frequency oscillations);
  - failure to follow Seller’s instructions (whether oral or in writing) as to the storage, commissioning, installation, use and maintenance of the Products or (if there are none) good trade practice;
  - misuse, alteration or repair of the Products without the Seller’s approval.
- For the avoidance of doubt, the above warranty does not extend to parts, materials or equipment not manufactured by Seller, in respect of which Buyer shall only be entitled to the benefit of any such warranty or guarantee as is given to Seller by the third party manufacturer.
- Except as set out in these Terms, all warranties, conditions and other terms implied by statute or common law are, to the fullest extent permitted by law, excluded from the Contract.
- These Terms shall also apply to any repaired or replacement Products supplied by Seller.
- Nothing in these Terms shall limit or exclude Seller’s liability for:
  - death or personal injury caused by its negligence; or fraud or fraudulent misrepresentation.
  - Subject to clause 9.6, Seller shall not be liable to Buyer, whether in contract, tort (including negligence), breach of statutory duty, or otherwise, for any loss of profit or indirect or consequential loss or damages arising under or in connection with the Contract.

PATENTS

Between the Buyer and the Seller, all Intellectual Property Rights and all other rights in the Deliverables and materials shall be owned by the Seller.

Where necessary, the Seller licenses all such rights limited to the Buyer free of charge and on a non-exclusive, royalty free rights of the IP to the extent as is necessary to enable the Buyer to make reasonable use of the Deliverables and the Services.

Should Products sold by Seller be the subject to a claim for patent infringement, Seller may, at its sole option and expense, either procure for Buyer the right to continue using said Product, or modify same so that it becomes non-infringing, or replace it with non-infringing Product, or remove the Product and refund the purchase price paid by Buyer.

Buyer agrees to defend and indemnify Seller from and against any liability for or on account of any infringement or alleged infringement of any patented or unpatented inventions or trade secret with respect to (i) any use of Products by Buyer or their customers, including without limitation use of Products alone or in combination with other components or (ii) Products furnished, or methods used by Seller, in accordance with specifications or instructions furnished by or expressly or implicitly prescribed by Buyer.

DESIGN OWNERSHIP

Any specifications, drawings, or other technical information, data, tools, dies, patterns, masks, test equipment, software and any other item designed, supplied, or created by Seller in performance of Buyer’s order, (the “Creative Elements”) shall remain the exclusive property of Seller, and no right, title or license in any such item or design is hereby granted to Buyer and Buyer is prohibited from copying or using the Creative Elements without Seller’s prior written consent.

INSOLVENCY

Either party shall have the right to cancel any order in the event that the other party is insolvent (or as applicable, bankrupt) according to the law, or has made any arrangements with its creditors or under the law with a view to avoiding an impending insolvency (or as applicable, bankruptcy), or has had any person appointed by its creditors or under law as a consequence of debts which have fallen, or which are about to fall, due and which the relevant party is unable to properly repay.

PRIVACY POLICY

The Customer acknowledges and agrees that details of the Customer’s name, address and payment record may be submitted to a credit reference agency, and personal data will be processed by and on behalf of the Seller in connection with the Services. Information may also be used for marketing activity and will be held on our customer database.

Havells Sylvania endeavours to respect the confidentiality of any personal data provided and to use them in line with the UK Data Protection Act 1998. This policy also applies to the above mentioned credit reference agencies Havells Sylvania works with. For further information please consult our privacy policy which is accessible on our company website www.havells-sylvania.com or upon request a copy will be provided.

ASSIGNMENT AND SUBCONTRACTING

Seller may at any time assign, transfer, charge, subcontract or deal in any other manner with all or any of its rights or obligations under the Contract. This includes an assignment of the Contract or parts of it made under these Terms at any time to an affiliate its right to receive payment; Buyer may not assign any of its rights or obligations hereunder without the previous written consent of Seller, which will not be unreasonably withheld.

GOVERNING LAW AND JURISDICTION

The Contract, and any dispute or claim arising out of or in connection with it or its subject matter or formation (including non-contractual disputes or claims), shall be governed by, and construed in accordance with, English law, and the parties irrevocably submit to the exclusive jurisdiction of the courts of England and Wales.

MISCELLANEOUS

No waiver by Seller of any breach of the contract by Buyer shall be considered as a waiver of any subsequent breach of the same or any other provision.

If any provision of these Terms is held by any competent authority to be invalid or unenforceable in whole or in part, the validity of the other provisions of these Terms and the remainder of the provision in question shall not be affected.

No variation to this Contract shall be valid unless agreed to in writing and signed by an authorized representative of Seller and Buyer.

16.4 The Seller may, from time to time and without notice, change the Products in order to comply with any applicable safety or statutory requirements, provided that such changes do not materially affect the nature, scope of, or the charges for the Products. If the Seller requests a change to the scope of the Products for any other reason, the Customer shall not unreasonably withhold or delay consent to it.

EXCLUSION OF THIRD PARTY RIGHTS

The Contracts (Rights of Third Parties) Act 1999 shall not apply to these Terms nor any contract made under them and no person other than Buyer and Seller shall have any rights there under, nor shall any such contract or these Terms be enforceable under that Act by any other person.
Although every effort has been made to ensure accuracy in the compilation of the technical detail within this publication, specifications and performance data are constantly changing. Current details should therefore be checked with Havells-Sylvania Europe Ltd.
symbol key (EN 60598-1)

Class I  
simple insulation: earth required

Class II  
double insulation: no earth required

Class III  
very low voltage feeding with security transformer - no earth required

IPX3  
proof

IPX4  
splash-proof from any direction

IPX5  
water jet-proof from any direction

IPX6  
water-proof on ships' decks

IPX7  
will operate if occasionally submerged

IPX8 …_m  
indefinite submerged operation - max allowed depth in meters

IP2X  
protection against entry of objects larger than Ø 12mm (fingers)

IP3X  
protection against entry of objects larger than Ø 2.5mm

IP4X  
protection against entry of objects larger than Ø 1mm

IP5X  
satisfactory operation in dust conditions

IP6X  
totally dust-proof

minimum distance between fitting and lighted object

installation on normally inflammable surfaces allowed

not suitable for mounting on normally inflammable surfaces

fixture wired for discharge lamps with external ignitor

fixture wired for discharge lamps with internal ignitor

danger: high voltage

replace the damaged protective glass screen

operation with security transformer only

heavy-duty can withstand impacts up to 6.5Nm

European Norms Electrical Certification-ENEC approved Products manufactured and certified according to European Norms

product in compliance with the European Community Directories

housing protection degree against mechanical shocks (EN 50102)

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<th>IK index</th>
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<th>IK07</th>
<th>IK08</th>
<th>IK09</th>
<th>IK10</th>
</tr>
</thead>
<tbody>
<tr>
<td>impact energy in Joule</td>
<td>1</td>
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<td>0.2</td>
<td>0.35</td>
<td>0.5</td>
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* unprotected

regulation 2002/96/CE (EN 50419)

disposing of as urban waste is forbidden, separate collection is mandatory when the product is at the end of its life