

Our Purpose Is To Enrich Outdoor Spaces

We believe in the power of design and its ability to influence and elevate the quality of public space. High quality products and outstanding customer experience makes us one of the world's premier designers and manufacturers of outdoor commercial furnishings.

Annapolis™ Bollard Specifications

Annapolis bollards are constructed of structural grade steel for exceptional strength, with cast aluminum top and spun aluminum base ring.

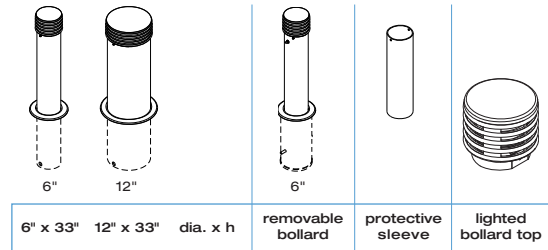
Standard Bollard: Available in 6" and 12" diameter, with or without low-voltage lighting. A protective polyethylene sleeve is available in black or silver. Both sizes are designed to be securely embedded in concrete. For additional site flexibility, the 6" diameter is offered in a removable style; slides into supplied, embedded, galvanized steel socket. A keyed lock secures the bollard when in the socket. Upon removal, a cover plate fits flush with the surface; secured with a chain. Cover plate/chain stores within the bollard base when the bollard is in the socket. The 6" removable bollard may be fitted with the Smart bollard top to provide solar lighting.



Smart Bollard: Available in 6" diameter, may be specified with embedded or removable bollard style. The solar panel, which is encapsulated in patented domed polycarbonate housing, collects energy from the sun and converts it to electrical current. Energy is stored in a sealed lead-acid rechargeable battery that delivers extremely reliable power output over a long period of time. The microprocessor technology automatically turns lights on at dusk, off at dawn. It casts directional light above ground with 360 degree visibility and a range exceeding one mile. For more detailed specifications, refer to Annapolis Smart Bollard Technical Sheet.



Security Bollard: Available in 6" and 12" diameter. 6" dia. security bollard may be specified with Smart solar-powered LED light. Security bollard is designed to be permanently embedded with a reinforced footing and internal concrete/steel reinforcement. Landscape Forms can provide project specific assessment of the ability of the Annapolis Security Bollard to deter vans, pick-ups and SUVs using criteria supplied by the customer. For more detailed specifications, refer to Annapolis Smart Bollard Technical Sheet. Contact your Landscape Forms sales representative to discuss specific project criteria and request customized FEA analysis.



Finishes

Metal is finished with Landscape Forms' proprietary Pangard II® polyester powdercoat, a hard yet flexible finish that resists rusting, chipping, peeling and fading. Call for standard color chart.

To Specify:

Choose 6" or 12" diameter embedded style, or 6" removable style. Specify black or silver protective polyethylene sleeve or without sleeve. Specify with or without lighting based on the following guidelines. 6" embedded, available with low voltage or solar lighting; 6" removable only offered with solar lighting; 12" embedded only offered with low voltage lighting. If low voltage lighting is chosen, specify transformer if desired.

www.landscapeforms.com

Visit our website for product details, color charts, technical sheets, sales office locations. Download JPG images, brochure PDF, CAD details, CSI specifications.

Specifications are subject to change without notice.

Annapolis is designed by Brian Kane, IDSA

Annapolis Bollard is manufactured in U.S.A.

Landscape Forms supports the LAF at the Second Century level.

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Metal is the world's most recycled material and is fully recyclable. Consult our website for recycled content for this product. Powdercoat finish on metal parts contains no heavy metals, is HAPS-free and has extremely low VOCs.

landscapeforms®

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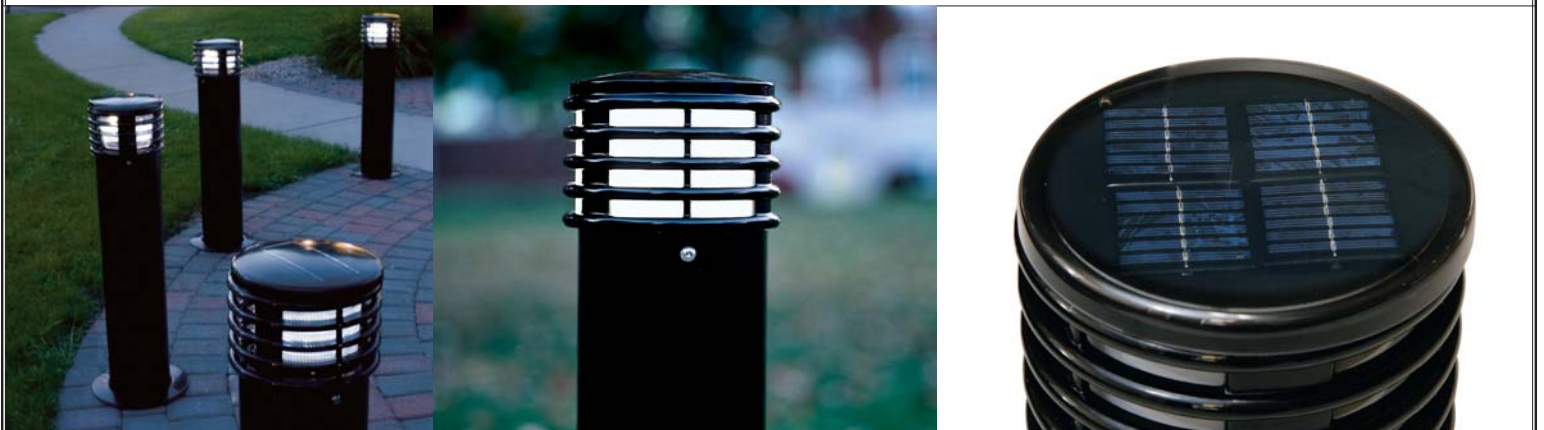
ANNAPOLIS SMART BOLLARD

Annapolis™ Smart Bollard is the first bollard with integrated solar powered lighting provided by advanced light-emitting diode (LED) technology. This bollard is not just the smartest in its class. It's in a class all its own.

Smart Bollard was developed in response to customer requests for a lighted bollard designed for use in areas where wiring is unfeasible or inconvenient, or where security concerns demand lighting that is off the grid. It is a reliable, economical, energy-saving solution for marking pathways, dividing pedestrian and vehicular traffic, and providing security in settings ranging from corporate and university campuses to urban streetscapes.

Smart Bollard adds new function to a familiar form. It integrates a completely self-contained solar-powered LED lighting unit, encapsulated in a durable weatherproof UV-resistant polycarbonate housing, into the standard 6" diameter Annapolis bollard.

Smart Bollard casts diffused light above the ground. Its high output white LEDs provide 360° visibility. Because it requires no wiring, Smart Bollard breaks new ground as the first removable bollard with integrated lighting.



The Benefits of Being Smart:

- **Smart Bollard is solar powered.** It is environmentally responsible in its reliance on sustainable energy. And the absence of wiring saves on installation, maintenance and energy costs.
- **Smart Bollard is off the grid.** In case of power emergencies due to natural or man-made causes, it just glows on.
- **Smart Bollard is intelligent.** Microprocessor technology automatically turns lights on at dusk and off at dawn. An "intelligent energy management system" calibrates light output to the amount of energy in storage to ensure uninterrupted function.
- **Smart Bollard is efficient.** LED light is generated by tiny silicon chips which require a much smaller electrical current than incandescent bulbs and waste almost no energy through heat dissipation. And high-intensity LEDs typically enjoy over 100,000 hours of life, and last about 20 times longer than incandescent bulbs.
- **Smart Bollard is state of the art.** The completely unitized light, which has no internal moving parts, is environmentally sealed in a clear UV-resistant polycarbonate dome that traps sunlight and protects the solar panel from damage and dirt.

How the Annapolis Smart Bollard Works:

The solar panel in the light collects energy from the sun and converts it to electrical current. Energy is stored in a sealed lead-acid rechargeable battery that provides a large energy capacity for its size and delivers extremely reliable power output over a long period of time. *(battery can be replaced after expected life of five years)* The solar panel begins charging at dawn and stops at dusk when the light automatically goes on.

Location Selection

Smart Bollard requires adequate sunlight and suitable ambient temperature to function effectively. It is a viable solution for areas with an average of at least 4 hours or more sunlight per day year round, at latitudes within 50° North or South, and at a temperature range of -40° F to 115° F. Care must be taken in the placement of units. Even in sunny locations the light will not function if the bollard is in the shade for most of the day. Under typical conditions, Smart Bollard will run for up to 14 hours per day and require four hours of daylight to recharge. Under extreme weather conditions, Smart Bollard can operate for up to 150 hours without recharging.

Warranty

Smart Bollard is a Landscape Forms product that meets the company's stringent standards of quality, durability and performance. It is covered by the Landscape Forms three-year warranty.

Specifications:

Sizes	6" diameter x 33" high
Bollard Tube	structural steel
Bollard Top	aluminum casting
Optional Protective Sleeve	polyethylene
Metal Finish	Pangard II® Powdercoat. Standard, optional and customs colors available.
Mounting	surface mount, embedded or removable with embedded socket.

Solar Light Specifications:

LED Output	20 lumens
Horizontal Output	360°
Average Direct Sunlight Exposure to Maintain Function	4 hours
Latitude Range	50° S to 50° N
Illumination Technology	3 white LEDs
Lifespan of LEDs	up to 100,000 hours
Solar Cells	multi-crystalline/potted and UV-protected
Solar Panel	sealed under clear UV-resistant polycarbonate dome
Solar Deprivation Limit	12 days
Maximum Power	0.5 watts
Efficiency	14%
Battery	value regulated lead-acid
Nominal Voltage	6 volts
Capacity	7.2 amp-hr at 20-hr discharge rate
Lens Material	translucent acrylic
Ambient Temperature Range	-40° F to 115° F
Maximum Operation Time	14 hours
Weatherproof	