



landscapeforms®

annapolis™ bollard



The Annapolis™ bollard is a handsome sentinel that performs multiple maneuvers with style. The standard bollard, security bollard and smart bollard share basic design and construction characteristics, specialize in their features and functions. Annapolis offers distinctive solutions in scope and detail for path making and wayfinding, safety and security in outdoor environments.





standard

Annapolis standard stands as a defining element to mark pathways, direct pedestrian flow, and create safety barriers between pedestrian and vehicular traffic. It is available in 6" and 12" diameters. A removable bollard option for the 6" diameter style provides on-site flexibility. And a lighted option combines the fixed standard bollard with low-voltage lighting that sheds a soft glow after dark. Like all Annapolis bollards, the standard bollard is constructed of structural grade sheet steel for exceptional strength, with a cast aluminum top. Its polyester powdercoat finish resists rusting, peeling and fading, and an optional polyethylene sleeve provides protection from nicks and scratches.



smart

Annapolis smart bollard is the industry's first bollard with integrated solar-powered lighting based on advanced lighting-emitting diode (LED) technology. Designed for use in areas where hard wiring is unfeasible or inconvenient, it is a reliable, economical, energy-saving solution for dividing pedestrian and vehicular traffic, and providing the security of uninterrupted illumination in outdoor spaces, from campuses to streetscapes. This smart bollard integrates a completely self-contained solar-powered LED lighting unit into the 6" diameter fixed or removable Annapolis Standard Bollard and casts directional light above ground with 360° visibility and a range exceeding one mile.

The Benefits of Being Smart

Annapolis smart bollard uses sustainable solar energy, saving on wiring-related installation, maintenance and energy costs. It is off the grid, so in case of power emergencies, it just glows on. The LED lights are highly efficient, requiring a much smaller electrical current than incandescent bulbs while lasting about 20 times longer. Its microprocessor technology automatically turns lights on at dusk and off at dawn and its "intelligent energy management system" calibrates light output to ensure uninterrupted function. Its crystalline solar panel was designed for commercial applications and to withstand extreme environmental conditions. And it can help facilities earn LEED Renewable Energy credit. Refer to our technical data sheet for details.



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.

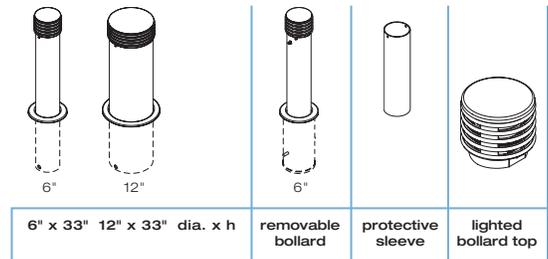
Annapolis™ Bollard Specifications

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. All 6" styles, including 6" removable bollard may be fitted with the Smart bollard top to provide solar powered 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.



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 and surface mount, available with hard wired or solar powered lighting; 6" removable only offered with solar lighting; 12" embedded only offered with hard wired lighting.

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

Annapolis Smart Bollard is protected by U.S. Patent Nos. D6,573,659; D6,013,985. 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.

ANNAPOLIS SMART BOLLARD

Annapolis™ smart bollard is the first bollard using solar technology to power LED lighting. The smart bollard integrates a completely self-contained solar-powered LED light into the standard 6" diameter Annapolis bollard. This bollard is not just the smartest in its class. It's in a class all its own.

The 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.

The smart bollard casts diffused light above the ground. Its high output white LEDs provide 360° visibility. Because it requires no wiring, it 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.** Digital 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 LED light, which has no internal moving parts, is environmentally sealed in a clear tempered glass 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 three 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 of direct 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.

Warranty

Landscape Forms, Inc. warrants all products (other than noted exceptions) to be free from defects in material and/or workmanship for a period of three years from date of invoice. Noted exceptions: LED lighting products are warranted for six years.

Specifications:

Sizes	6" diameter x 33" high
Bollard Tube	structural steel pipe
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:

Lamp	4 Nichia LEDspice
Color Temp	3,500° K
LED Luminous Flux	76 lumens
LED Energy Consumption	.43 watt max
TM21 LED Lifespan	Up to 60,000 hours
Solar Top	tempered Borosilicate glass top with Mono-Crystalline PV cells
Diffused Lens	translucent acrylic I
Protection Rating	P66 for solar light assembly
Horizontal Output	360°
Average Direct Sunlight Exposure to Maintain Function	4 hours
Latitude Range	50° S to 50° N
Battery	valve regulated lead-acid
Nominal Battery Voltage	6 volts
Capacity	7.0 amp-hr at 20-hr discharge rate
Temperature Range	-40°F to 115°F
Maximum Operation	14 hours