AccessFixtures
High-Performance Lighting Solutions

SECU Solar Security Bollard Lights

High-Performance Solar Security Lighting



A concrete-core steel security bollard that lights itself — no wiring, no electrician, no utility bill.

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THE CHALLENGE

Your Security Bollards Go Dark Exactly When Risk Is Highest

Security bollards do one job well: they stop vehicles. After sunset they do it invisibly. A dark bollard is a barrier no driver sees and no camera reads — and darkness is when perimeters are tested most. The scale is easy to underestimate.

100+/day	~9%	~91%
U.S. commercial-building and storefront vehicle strikes	Intentional — smash-and-grab and ram-raid	Accidental — pedal error, impairment, medical

Sources: Storefront Safety Council (storefrontsafety.org); storefront crash injury data (storefrontcrashexpert.com, chainlaw.com).



Before: a standard perimeter of unlit steel bollards.

Three costs of an unlit perimeter

- **Invisible barriers.** Unlit bollards disappear at night. Drivers clip them by accident, and intruders read a dark storefront as an easier target.
- **Weak night camera support.** Without ground-level light, perimeter cameras lose the detail that makes footage useful.
- **Wired lighting adds a second project.** Conduit to every bollard, an electrician, and a permanent utility bill — on top of the foundation work the bollards already require.

One Steel Core. One Solar Head. Zero Wiring.

SECU pairs a solar-powered LED head with a die-cast aluminum body sleeve that slides over a 5-inch Schedule 80 steel pipe — 5.563 inches outside diameter (141.3 mm). The concrete-filled steel core does the stopping, built to the ASTM F3016 S20 P1 construction profile. The sleeve carries the LiFePO4 battery and controller; the head charges by day and lights the perimeter dusk to dawn.



The SECU body slides down over the steel core; the solar head seats on top.

5" Sch 80	$0	IP66	5-Year
Concrete-filled steel core	Electricity cost	Ingress rating	Warranty

What that changes

- **No wiring, no electrician.** Solar power means no conduit, no lighting circuit, and no service connection.
- **No utility bill.** SECU is 100% solar and off-grid — it keeps working when grid power fails.
- **Strength where it counts.** The 5-inch Schedule 80 core carries the impact; the SECU body and head add the light.

Perimeter Light That Earns Its Place

A lit bollard does three things a dark one cannot. None of them requires a lighting circuit.

01

Defines and deters

A lit perimeter signals a monitored, fortified property and gives drivers a clear edge — reducing pedal-error collisions and making the property a harder target.

02

Supports night cameras

390 lumens at 130 lm/W of ground-level light adds the perimeter visibility that helps nearby cameras capture usable detail after dark.

03

Stays on off-grid

100% solar with a LiFePO4 battery means the perimeter stays lit through storms, outages, and grid failures.



After: the same perimeter with SECU — bollards visible, ground lit, cameras supported.

Rendering for illustration.

What stops the vehicle. The concrete-filled steel pipe and its engineered foundation stop the vehicle. The SECU body and head add continuous light, camera support, and a visible edge that reduces accidental collisions. Impact performance depends on the foundation a licensed structural engineer specifies for the site.

Engineered for the Long Haul

SECU is built from a die-cast aluminum head and a marine-grade powder-coat finish, sealed to IP66 against dust and powerful water jets. Three ratings matter, and they measure different things:

- **EXTREME-LIFE LEDs — L70 at 270,000 hours.** The light engine holds at least 70% of its output far beyond the life of any wired fixture it replaces.
- **LiFePO4 battery — the service-life driver.** Lithium iron phosphate is a safer, longer-cycling chemistry than standard lithium-ion, rated for roughly 3,000 to 6,000 charge cycles. The battery is replaceable, which extends the useful life.
- **Dark sky friendly — B0-U1-G0.** Full-cutoff optics keep light on the ground, not the sky. 3000K is available for dark sky ordinances, 590 nm amber for turtle-safe and wildlife-sensitive sites, and an optional house-side shield stops light from going where it isn't wanted.

Specifications

Specification	SECU
System wattage	3W
Luminaire lumens	390 lm at 130 lm/W (white) · 57 lm (590 nm amber)
Color temperatures	3000K, 4000K, 5000K, 590 nm amber
CRI	80+
Optics	Type IV, Type V
LED rated life	L70 @ 270,000 hrs (EXTREME-LIFE)
Battery	LiFePO4 — 3,000 to 6,000 cycles, replaceable
IP rating	IP66 — dust-tight, powerful water jets
Impact rating	IK07
BUG rating	B0-U1-G0 (dark sky friendly)
Housing / finish	Die-cast aluminum, marine-grade powder coat
Mounting	Slides over 5" Schedule 80 steel pipe — 5.563 in OD (141.3 mm)
Body / overall height	44 in body, 50.5 in overall (36 in pipe) · 56 in body, 62.5 in overall (48 in pipe)
Head / sleeve diameter	Ø9.05 in head · Ø6.50 in sleeve
Controls	House-side shield; solar remote control
Listing	CE
Operating temperature	32°F to 122°F*
Warranty	5 years

All figures per the SECU spec sheet, dimensional drawing, and engineering guide. Confirm the steel core is 5-inch Schedule 80 (5.563 in OD) before ordering.

** Operating temperature is based on optimal battery charging. Lower temperatures during recharging may reduce the life of the replaceable battery.*

The Strength Is in the Core

SECU is engineered around a 5-inch nominal Schedule 80 steel pipe. Filled with concrete over a rebar cage and anchored in an engineered footing, the pipe becomes a composite column built to resist vehicle impact. The SECU body and solar head finish it as a lit, architectural bollard.

Core material specifications

Property	Specification
Pipe	5" nominal Schedule 80 structural steel (ASTM A53 Grade B or equivalent)
Outside diameter	5.563 in (141.3 mm)
Wall thickness	0.375 in (9.53 mm)
Section modulus	7.43 in^3 — 36.3% more bending strength than standard Schedule 40 pipe
Bare steel weight	20.8 lb per linear foot

Two height profiles

Profile	Steel pipe above grade	SECU body height*	Best for
Option 1 — Security (recommended)	36 in	44 in	High-risk sites. The compact profile limits a vehicle's ability to override or climb the post and shortens the lever arm against the foundation.
Option 2 — High visibility	48 in	56 in	Loading docks and entrances with heavy truck traffic. Higher rotational force at grade requires a larger concrete foundation.

** Body height excludes the solar head.*

Spacing and array geometry

Two measurements govern the layout. The **clear gap** is the open space between the outer faces of adjacent SECU bodies. **Center-to-center** is the gap plus one 6.50 in sleeve diameter. The anti-ram and accessibility limits apply to the clear gap; the recommended layout is stated center-to-center so it can be marked out on site.

Rule	Clear gap (face to face)	Center-to-center	Why it matters
Anti-ram maximum	48 in	54.5 in	Wider gaps let a compact car navigate or force its way through the line.
Accessibility minimum	36 in	42.5 in	Keeps an ADA accessible route for wheelchairs, mobility devices, and pedestrians.
Recommended layout	41.5 to 47.5 in	48 to 54 in	Sits inside both limits: a clear walking path that still stops a standard passenger car from bypassing the line.

Match the Foundation to the Soil

The steel pipe transfers impact energy into the ground through a continuous concrete pier footing. Soil load-bearing capacity varies dramatically by site, so the foundation scales with the ground it sits in. Three standard engineering approaches cover the range:

Soil condition	Recommended footing	Minimum depth	When it applies
Standard / cohesive soils (firm clay, compacted glacial till)	16 to 18 in diameter pier	Equal to above-ground height: 36 in (Option 1), 48 in (Option 2)	Stable soils that naturally resist lateral displacement and overturning.
Low-cohesion soils (loose sand, silt, gravel, high water table)	24 in minimum diameter pier	Often 6 to 12 in beyond above-ground height (e.g., 42–48 in for a 36 in pipe)	Ground that lacks the density to keep the foundation from plowing through the soil on impact.
Ultra-low cohesion soils or high-risk storefronts	Continuous concrete trench (grade beam) tying multiple bollards together	Per structural engineer	Unsupportive soil, or where the highest anti-ram performance is required — impact force spreads across the entire line.

Concrete and reinforcement

- **Concrete.** Structural-grade concrete for all below-grade footings: 3,000 PSI minimum compressive strength at 28 days; 4,000 PSI preferred for severe vehicle-threat zones.
- **Core fill.** Fill the steel pipe completely to its top rim with the same structural concrete or a high-strength cement matrix. A full core prevents local wall buckling and inward kinking on impact.
- **Rebar.** An internal rebar cage or heavy center rebar is required to resist tension across the grade-line pivot point.

Performance

Low-speed perimeter barriers are rated to ASTM F3016/F3016M, Standard Test Method for Surrogate Testing of Vehicle Impact Protective Devices at Low Speeds. The test uses a 5,000 lb surrogate vehicle representing a passenger car, large sedan, light truck, or mid-size SUV, and rates results by speed (S10, S20, S30) and by penetration past the barrier face.

Rating	What it means
S20	Impact at 20 mph with the 5,000 lb surrogate vehicle
P1	Less than 1 ft of penetration past the bollard face

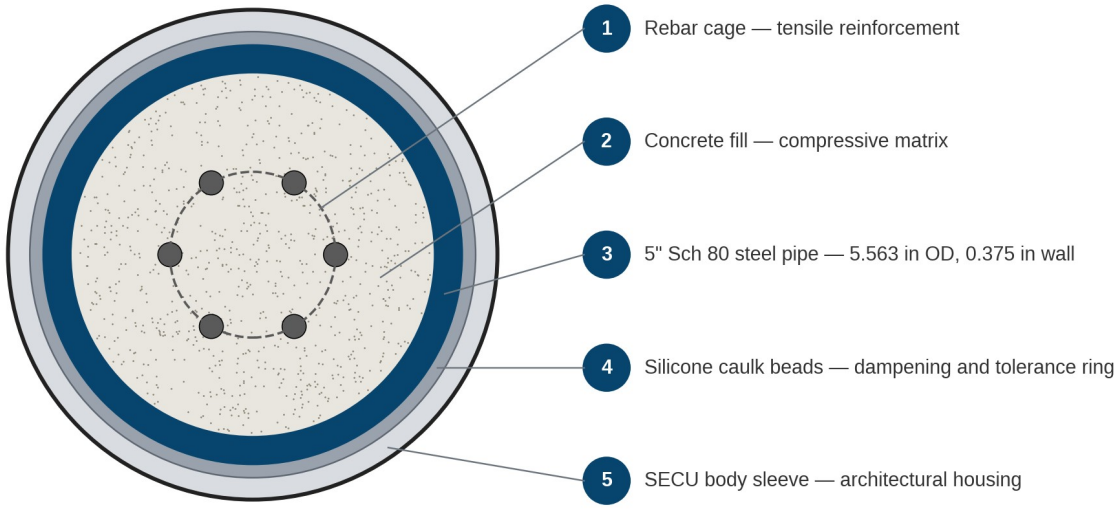
Storefront barrier assemblies built with concrete-filled structural steel of equivalent wall thickness (0.25 to 0.375 in) have obtained certified ASTM F3016 S20 P1 ratings. The 5-inch Schedule 80 core, with its 0.375 in wall, concrete fill, and rebar, matches that construction. When filled and anchored in an engineered footing matched to the soil class, it is engineered to stop a 4,000 to 5,000 lb passenger car or mid-size SUV traveling up to 20 mph. Your structural engineer verifies the site foundation against ASTM F3016 test data.

Mandatory engineering disclaimer and site verification. The data, dimensions, foundation ranges, and performance figures in this guide are general guidelines based on standard engineering principles and controlled crash-testing scenarios. Soil composition, local building codes, vehicle threat vectors, and environmental conditions vary significantly from site to site.

Every final installation — foundation type, pier diameter, depth, concrete PSI, and rebar schedule — must be reviewed, adapted, and confirmed for the specific site by a licensed Professional Structural Engineer (PE) who has analyzed local conditions before excavation or procurement.

Five Layers. One Composite Column.

At the grade line, SECU is a concentric material stack. Each layer has one job, moving from the core outward:



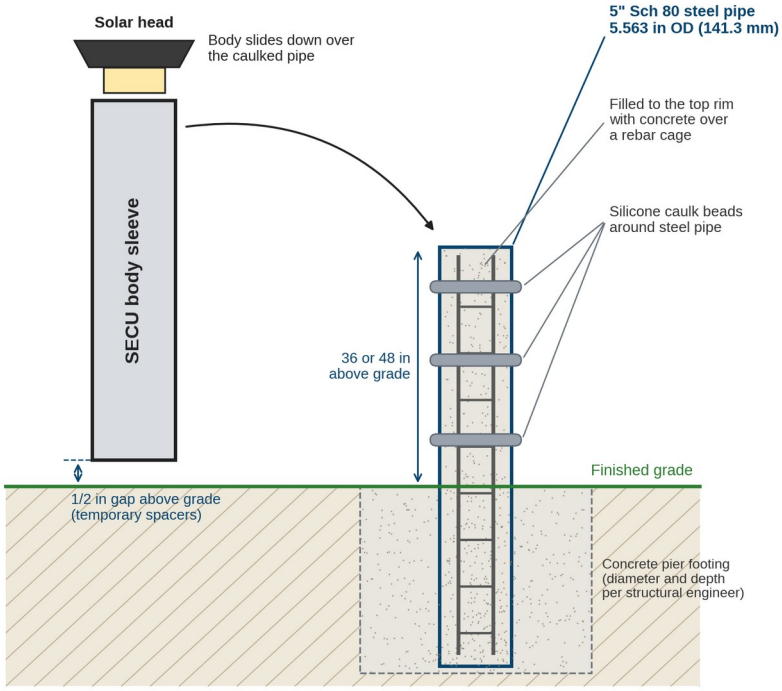
Plan section at the grade-line plane. Not to scale.

1	**Rebar cage — tensile reinforcement** A structural steel rebar cage sits dead-center in the pipe. It absorbs tensile stress opposite the point of impact and keeps the concrete from shearing or snapping at the grade-line pivot.
2	**Concrete fill — compressive matrix** Structural concrete or high-strength cement encases the rebar and fills the pipe to its inner walls. It resists compression and keeps the steel from ovaling or collapsing inward under impact.
3	**5" Schedule 80 steel pipe — primary structural shield** 5.563 in OD (141.3 mm). The structural anchor of the assembly: it holds the concrete core and takes the impact force transferred through the outer body.
4	**Silicone caulk beads — dampening and tolerance ring** Heavy beads of flexible silicone caulk around the pipe, above grade. They fill the tolerance gap, dampen vibration, and stop metal-on-metal rattle and moisture between pipe and sleeve.
5	**SECU body sleeve — architectural housing** Slides down over the caulked pipe. The bottom rests 1/2 in above finished grade to prevent moisture pooling; the top extends 8-1/2 in above the pipe rim to receive the recessed base of the solar head.

Three Phases. Nine Steps. No Wiring.

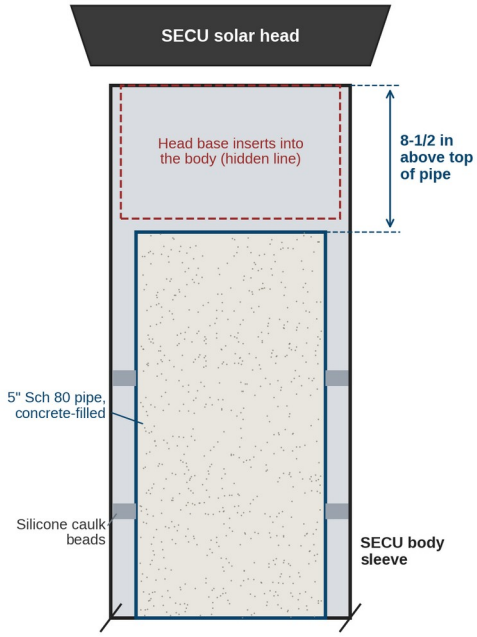
SECU installs as part of the bollard foundation, not after it. The contractor sets and fills the steel core — pipe, rebar, and concrete are purchased separately — and the SECU body and solar head go on once the concrete cures. The light itself needs no conduit, no wiring, and no electrician.

A. Installation sequence (exploded elevation)



Not to scale. Embedment depth, pier size, and foundation type set by a licensed structural engineer (PE).

B. Head detail (top of SECU body)



Phase 1 — Foundation and core placement

1
Excavate and anchor

Excavate to the depth and diameter your structural engineer specifies — at minimum, the above-ground pipe height. Set the 5" Schedule 80 pipe in the hole.

2
Verify grade clearance

Confirm the pipe extends to the chosen design height, 36 or 48 in above finished grade. Pour the below-grade concrete foundation, leaving the pipe exposed above grade.

3
Pour the reinforced core

Lower the prefabricated rebar cage into the center of the pipe. Fill the pipe to the top rim with structural concrete or cement matrix, strike it flush, and let it cure fully.

Phase 2 — Sleeve preparation and interface

1
Clean and prep

Make sure the cured pipe exterior is free of concrete splatter, dust, and grease.

2
Apply the caulk rings

Run heavy, concentric beads of structural silicone caulk around the pipe at spaced intervals above grade, as shown in the schematic.

3
Set the base gap

Place temporary 1/2 in non-marring spacers or shims flat on the finished grade around the base of the pipe.

Phase 3 — Body sleeve and luminaire

1
Mount the SECU body

Lower the body sleeve straight down over the caulked pipe until it rests on the 1/2 in spacers. The caulk compresses into an internal weather seal and a snug fit.

2
Install the solar head

Insert the recessed base of the solar head into the top of the body. It seats in the 8-1/2 in clearance between the top of the pipe and the upper rim of the body.

3
Lock and clean

Secure the head to the body with the tamper-resistant hardware provided. Remove the spacers and wipe away excess caulk. The solar sensor takes over: dusk-to-dawn light.

Reminder: foundation profiles, embedment depths, and concrete dimensions must always be cross-referenced with local soil conditions and certified by a licensed structural engineer (PE).

Wired bollard lighting vs. SECU

Factor	Wired bollard light	SECU
Bollard foundation	Required	Required — the same structural work
Power to each bollard	Trench, conduit, and wire	None
Electrical work	Licensed electrician	None
Utility connection	Required, with an ongoing bill	None — 100% solar
During a grid outage	Goes dark	Stays lit on its LiFePO4 battery

Talk to a lighting specialist: 800-468-9925 | Sales@AccessFixtures.com



The Right Answer for Everyone Who Owns the Perimeter

One bollard, three wins. SECU gives each stakeholder what they measure — without a lighting circuit, an electrician, or a utility bill.

Facility managers

No lighting circuit

No conduit, no wiring, no electrician. The light rides on the bollard foundation already being poured, and there is no utility bill to carry afterward.

Security directors

Stop, deter, record

A concrete-filled steel core built to the ASTM F3016 S20 P1 construction profile, a lit perimeter that reads as monitored, and ground-level light that helps existing cameras after dark.

Property owners & CFOs

No operating cost

$0 electricity, no utility connection, and a replaceable battery — behind a 5-year warranty on a fixture built for long outdoor service.

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Where SECU fits

Retail centers & storefronts	**Parking structures & lots**	**ATM & drive-thru lanes**
Hospitals & campuses	**Warehouses & loading docks**	**Municipal & civic property**

Any perimeter that needs steel bollards and light is a candidate. Segments per the Access Fixtures SECU segment list.





Two Heights. One Simple Order.

SECU comes in two heights to match the two steel-pipe profiles. Every model slides over 5-inch Schedule 80 steel pipe — 5.563 in OD (141.3 mm).

Model	Color	Body / overall height	Steel pipe above grade
AF59XBL04-003-50.5	White (3000/4000/5000K)	44 in / 50.5 in	36 in
AF59XBL04-003-62.5	White (3000/4000/5000K)	56 in / 62.5 in	48 in
AF59XBL04-003-50.5-AMB	590 nm amber	44 in / 50.5 in	36 in
AF59XBL04-003-62.5-AMB	590 nm amber	56 in / 62.5 in	48 in

Color temperatures

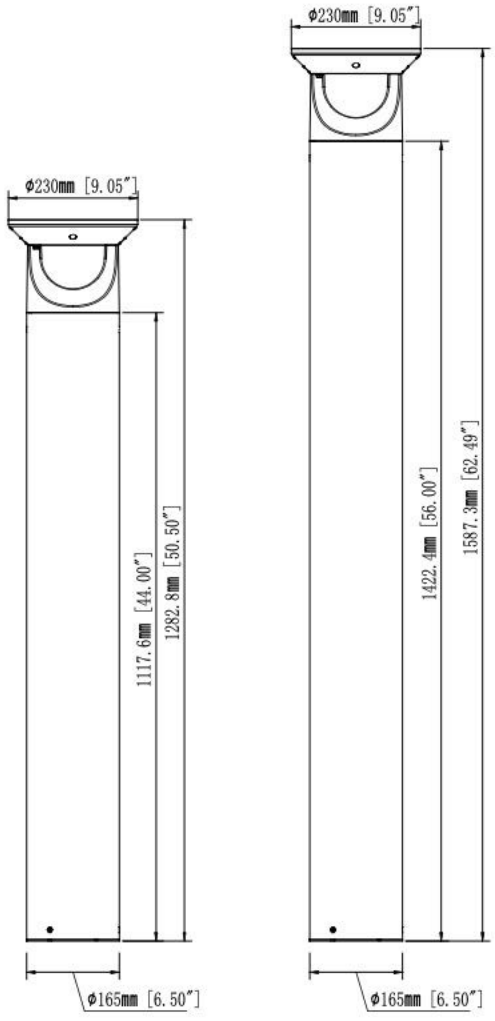
- 3000K — warm white
- 4000K — neutral white
- 5000K — bright white (closely mimics daylight)
- 590 nm amber — dark-sky-sensitive and wildlife-sensitive sites

Add-ons

- House-side shield — controls spill toward buildings or neighbors
- Solar remote control — adjust modes wirelessly
- Custom RAL housing colors available (minimum order applies)

Purchased separately

The SECU package includes the body sleeve and solar head. The 5" Schedule 80 steel pipe, rebar, and concrete are purchased separately and are not included.



44 in body (50.5 in overall) or 56 in body (62.5 in overall). Head Ø9.05 in; sleeve Ø6.50 in.

Your Perimeter Needs Steel. Give It Light.

Every new steel bollard line is a SECU opportunity — with no lighting circuit, no electrician, and no utility bill. Whether you are specifying a new perimeter or upgrading an existing one, a lighting specialist will match the right model to your bollards and your site.

Building a new perimeter

- Specify 5" Schedule 80 pipe at 36 or 48 in, then finish it with SECU.
- Design in perimeter light without a lighting circuit.
- Choose amber or a house-side shield for sensitive sites.

Upgrading an existing perimeter

- Existing 5" Schedule 80 bollards may qualify.
- A lighting specialist confirms pipe size and height above grade before ordering.
- Light the line without touching the grid.





Call	Shop	Quote
800-468-9925	**AccessFixtures.com**	**Sales@AccessFixtures.com**
Speak with a lighting specialist	Browse SECU and download spec sheets	Custom quantities and project sizing