

Bollards

Defining Low Level Illumination



Contemporary



Concrete



Traditional



Contemporary Relevance

Traditional Elegance

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Size and Optical Styles

Round



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BDA8



HID, LED

HID



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BRA8

BRAL8



HID, LED

HID

Square



15

BSA8



HID, LED

HID

Specialty
Bollards



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TNA

TSA



HID, LED



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BDAR5



HID, LED



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CLXB



HID, LED

HID



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TLB5



LED

Concrete
Round



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BDAC8

BDC8

BRAC8

BRC8

HID, LED

HID



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BDAC12

BDC12

BRAC12

BRC12

HID, LED



25

BDAC18

BDC18

BRAC18

BRC18

HID, LED

Concrete
Square



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BSAC12

BSC12

BPAC12

BPC12

HID, LED

Traditional

Page

Size and Optical Styles

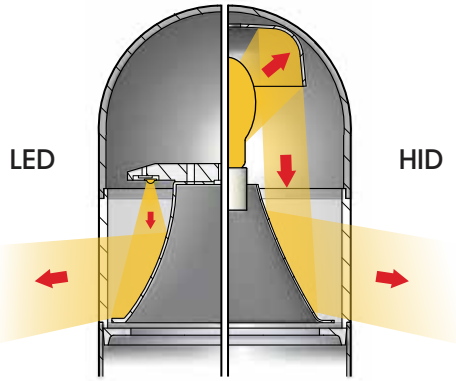
Barrier Variation

27	<p>Colonial Series</p> <p>HID, LED</p>	
29	<p>B100 Series</p> <p>HID, LED</p> <p>HID</p>	
31	<p>B3300 Series</p> <p>HID, LED</p> <p>HID</p>	
33	<p>B3100 Series</p> <p>HID, LED</p> <p>Opal or Clear Diffuser</p>	
35	<p>B300 Series</p> <p>HID, LED</p> <p>Opal or Clear Diffuser</p>	
37	<p>B3200 Series</p> <p>HID, LED</p> <p>Opal or Clear Diffuser</p>	
39	<p>B2100 Series</p> <p>HID, LED</p> <p>Opal or Clear Diffuser</p>	
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45	Additional Lighted Bollards	
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Optical Selection Consideration

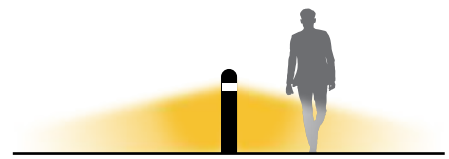
Twin Reflector System

The radial LED module aims light at the lower reflector, reducing brightness and providing a wide illumination pattern.



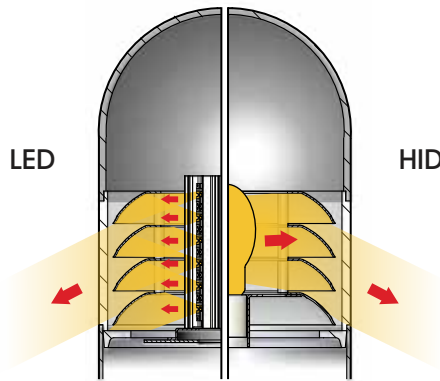
Suitable for clear or coated lamps.

The **Twin Reflector** system produces a wide light distribution with very low brightness at eye level. It is ideal for areas close to the architecture where other outdoor lighting such as building flood lighting and landscape lighting must also be seen and appreciated. Referred to as Parabolic Reflector in LED systems.



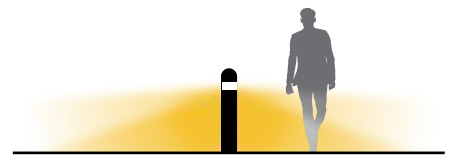
Internal Louver

The LED Vertical Power Array always uses diffuse lenses in bollard optics.



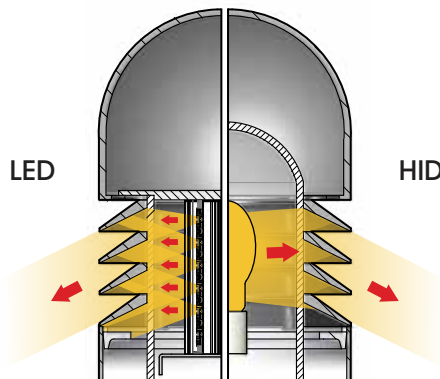
Coated lamps recommended.

The **Internal Reflector Louver** system consists of four louvers polished on both the upper and lower surfaces. This optical system produces a wide light distribution with substantial vertical fill light for areas requiring greater visual security.



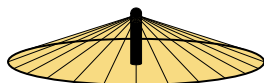
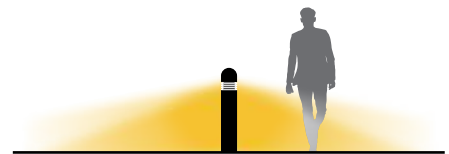
External Cast Louver

The LED Vertical Power Array always uses diffuse lenses in bollard optics.

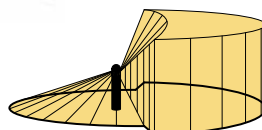


Coated lamps recommended.

The **External Cast Louver** system provides both low brightness and vandal resistance. Louvers are heavy cast aluminum set at a 30° cutoff angle for reduced brightness, surrounding and protecting the internal glass lamp enclosure. This system is ideal for pedestrian areas in public spaces.



The **CL louver** provides **360° of horizontal** illumination to evenly light large areas from a low optical height.

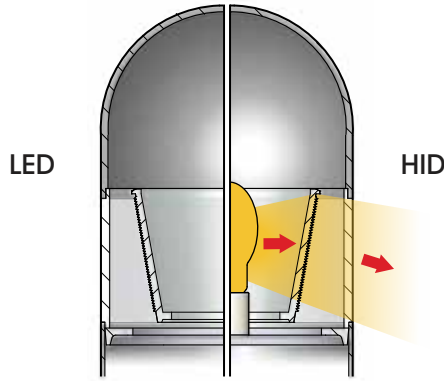


The **dual function CL-HV louver** provides **180° of horizontal and 180° of vertical** illumination to provide path lighting and illuminate buildings or landscape opposite the path or provide vertical illumination as security to large open areas around the walkway.



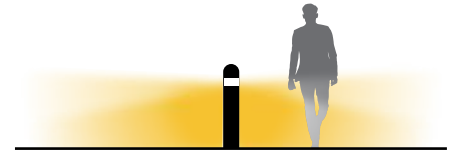
Internal Prismatic Glass Refractor

N/A in LED



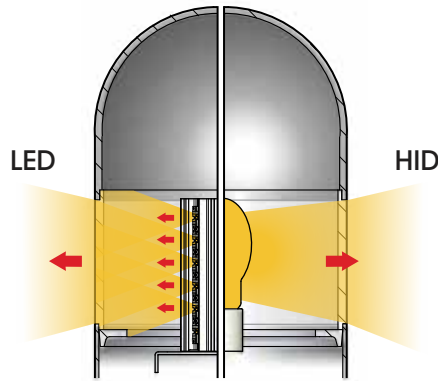
Suitable for clear or coated lamps.

The **Internal Prismatic Glass Refractor** system consists of a high performance glass refractor inside the flush mounted clear acrylic enclosure. It produces a very wide light distribution with vertical fill for visual security. An optional clear Polycarbonate external enclosure is available for greater vandal resistance.



External Opal White Acrylic

The LED Vertical Power Array always uses diffuse lenses in bollard optics.

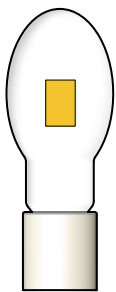


Suitable for clear or coated lamps.

While the **External Opal White Acrylic** lens provides has no specific optical control, it does have a logical place in the architectural setting. Narrow spaces between buildings can pose security concerns with pedestrians, and this model can fill these spaces with both horizontal and vertical illumination. Optional Polycarbonate is available.



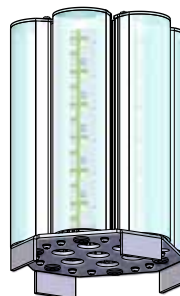
Recommended Illumination Resources



Clear Lamp



Coated Lamp



Vertical Power Array

While clear HID lamp and clear lensing of LED's provides the most controllable sources of illumination, 2 other elements are critical factors in selecting the illumination source: (1) Optical Mechanics and, (2) Visual Comfort.

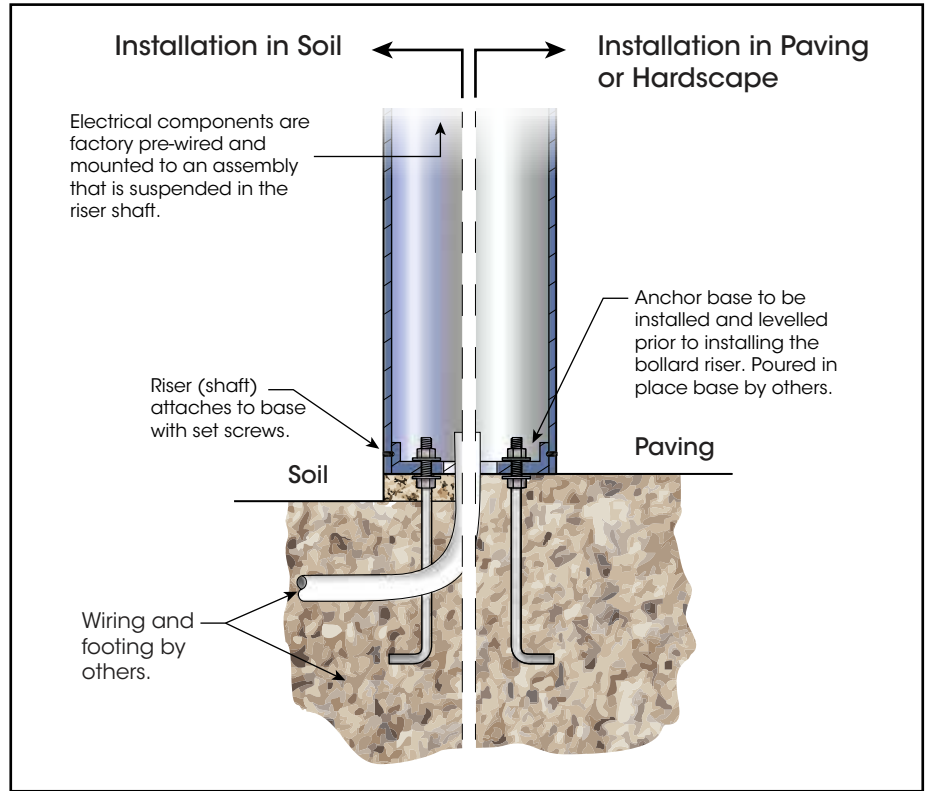
Coated lamps and/or diffuse lenses spread the point source (in HID) or sources (in LED) over the entire surface of the bulb or "light engine" reducing the "edginess" or harshness of the optical compartment.

This diffusing of the lamp or LED's also reduces the shadowing and striations of the mechanical components of the optical system (such as support rods, louvers, etc.) producing a smooth, aesthetically pleasing appearance to the illumination pattern.

Installation Recommendations

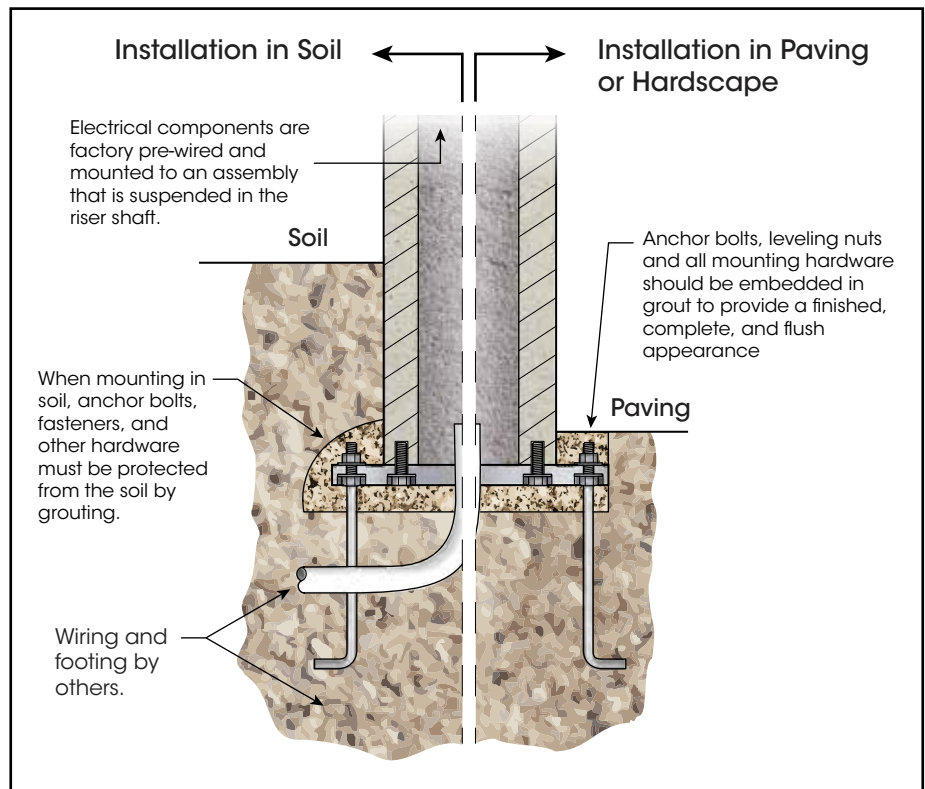
Aluminum Bollards

The primary objectives when detailing aluminum bollard installations are twofold: Avoid direct contact with soil, and avoid standing water when installed in paving. In soil, the concrete footing should be raised about 2" above grade. In paving, the footing can be flush with the finished surface, but not in a low point where water can collect. These details are recommended for maximum longevity of the product.



Concrete Bollards

The primary objective with concrete bollards is to achieve a flush looking mounting whether in soil or paving. To achieve this look in soil, the footing must be below finished grade to conceal the mounting hardware. Grout should be packed around the steel mounting hardware to protect them from soil contaminants, allowing the finished grade to be in contact with the concrete shaft. In paving, the footing should also be far enough below finished grade to allow the paving material (concrete, stone, brick, etc.) to cover the mounting hardware and achieve a flush look.



Application Considerations



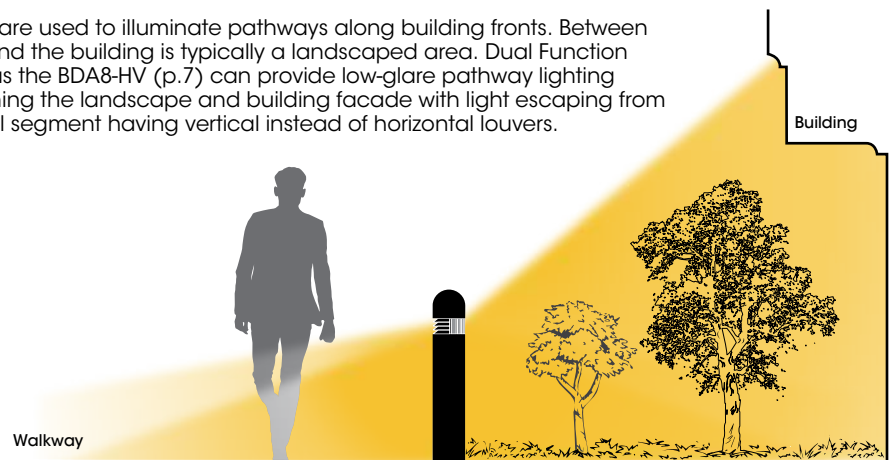
Day/Night Relationship

Bollards must be viewed as part of, and complementary to their surrounding architecture. During the day they should enhance the building geometry, while at night providing security and direction.



Dual Lighting Function

Often bollards are used to illuminate pathways along building fronts. Between the pathway and the building is typically a landscaped area. Dual Function Bollards such as the BDA8-HV (p.7) can provide low-glare pathway lighting while also bathing the landscape and building facade with light escaping from the rear optical segment having vertical instead of horizontal louvers.



Function of Unlighted Bollards

Throughout this catalog are various lighted and matching unlighted bollard designs. Unlighted bollards are designed to create visual barriers to vehicular traffic, or to delineate pedestrian paths. Both lighted and unlighted bollards can also be used in alternating sequences where illumination is required, but spacing is too close for every bollard to be lighted. Note: The unlighted bollards in this catalog are not suitable to be used as vehicle security barriers.

Tornado Bollards

Cast Aluminum



Illumination Characteristics



Unlike any bollard available in today's design pallet, Tornado offers a new form and character for pedestrian scale lighting. Tornado adds an "exclamation point" to its surrounding architecture because of its unique inverted shape that is sculptural, dynamic, and functional. The TNA model produces an asymmetric light distribution which is clearly expressed by its form. It is ideal for pathways and driveways where illumination is desired from the perimeters. These bollards define visual direction and boundaries for both people and vehicles. The light source, whether LED, HID or compact fluorescent, is concealed from any view above horizontal. The angled face glows, establishing visual direction or boundaries as defined by the bollard locations.



The TNS model is a direct companion to the TNA, as both models are typically used on the same project. The TNS produces a symmetric light pattern for open areas where illumination is required on all sides of the bollard. Even when located along pathways, the TNS can illuminate both hardscape on one side, and landscape on the opposite side. Both the TNA and TNS models have no visible mounting base due to their unique structural internal mounting stanchion. This adds to the uniqueness and mystique of the design.

Specifications

Housing - Durable corrosion resistant low copper cast aluminum alloy A356 (<0.2% Cu) having a minimum wall thickness of .250". Body secures to Mounting Stanchion by means of a cast aluminum wedge lock secured by a single stainless steel bolt and accessed through the access panel. Top Cover is crowned for water run-off, and retainer screw cavities are open for drainage. Top is fully gasketed and secured by (4) stainless steel socket head capscrews. Access Panel(s) is fully gasketed and retained by (2) stainless steel socket head screws located below the lens.

Lens - Tempered Micro-Prism glass, fully gasketed, and retained by aluminum clips.

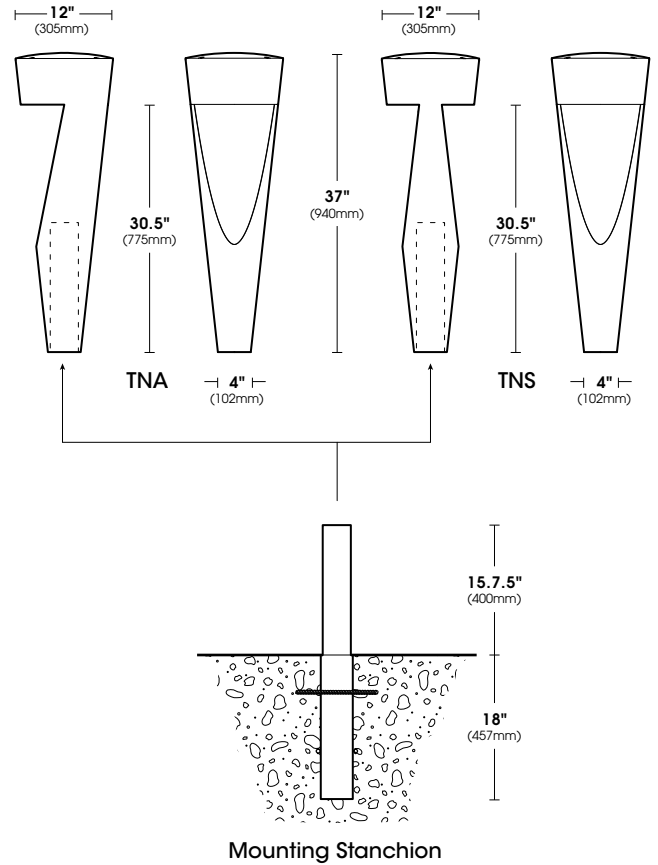
Mounting Stanchion - 3½" SCH40 steel pipe (below grade) welded to 3" SCH 40 steel pipe (above grade). (4) sections of reinforcing bar welded to lower pipe for tie-in to paving and footing steel by others. Entire assembly is hot dipped galvanized.

Electrical Module - All electrical components are UL and cUL recognized and are mounted on a single plate and factory prewired with quick-disconnect plugs. All HID lamps are medium base (E26) or Bi-pin Base (G12). **Electronic MH ballasts** have a power factor of >.95 (35/39W - 100W) -20°F starting, 120-277V and have lamp End-of-life protection. 347V option utilizes a step down transformer to the electronic ballast. **Magnetic MH ballasts** are high power factor (35/39W - 100W), -20°F starting, multi-tap 120-277V, 60Hz. All HPS ballasts are core and coil, high-reactance, high power factor (35/39W - 100W), -40°F starting. **Electronic CFL ballasts** are high power factor 120 - 277 voltage sensing. GX24-q4 socket supplied for all 18w - 42w triple tube lamps.

LED Driver - UL and cUL recognized High Power Factor, Constant Current LED drivers operate on input voltages from 120-277VAC, 50/60hz and is mechanically fastened to a retaining bracket. 347V option may utilize a step down transformer to the LED driver. Driver. Main power quick disconnect provided. Driver has a minimum 4KV of internal surge protection. Consult factory for other voltages. Dimming and High-Low Driver options available. 10KV & 20KV Surge Protector optional.

Finish - Electrostatically applied TGIC Polyester Powder Coat on substrate prepared with 20 PSI power wash at 140°F. Four step media blast and iron phosphate pretreatment for protection and paint adhesion. 400°F bake for maximum hardness and durability.

Dimensions



Spec/Order Example: TNA/24LEDWW/480/RAL-7004-S

MODEL	OPTICS	LAMP/LED MODE	VOLTAGE	FINISH	OPTIONS				
<input type="checkbox"/> TNA <input type="checkbox"/> TNS	<p>TNA MODEL IS ALWAYS ASYMMETRIC DISTRIBUTION</p> <p>TNS MODEL IS ALWAYS SYMMETRIC DISTRIBUTION</p>	<table border="0"> <tr> <td> WATTAGE <input type="checkbox"/> 100 <input type="checkbox"/> 70T¹ <input type="checkbox"/> 70 <input type="checkbox"/> 57CFL² <input type="checkbox"/> 50T³ <input type="checkbox"/> 50 <input type="checkbox"/> 42CFL³ <input type="checkbox"/> 39T PSMH <input type="checkbox"/> 35HPS </td> <td> TYPE <input type="checkbox"/> PSMH <input type="checkbox"/> HPS <input type="checkbox"/> CFL NOTES: 3 - AVAILABLE IN 8" BOLLARD ONLY 4 - TUBULAR LAMP, G12 BASE 5 - GX24q-4 BASE SUITABLE FOR 18 THRU 42 WATT TRIPLE TUBE LAMPS 6 - N/A FOR 35HPS ANFD 50HPS 7 - N/A FOR 35HPS 8 - GX24q-5 BASE </td> </tr> <tr> <td> NO. LEDs <input type="checkbox"/> 24LED <small>(28 Watts) TNA MODELS</small> <input type="checkbox"/> 28LED <small>(32 Watts) TNS MODELS</small> </td> <td> COLOR TEMP - CCT <input type="checkbox"/> NW (4000K)⁴ <small>*STANDARD</small> <input type="checkbox"/> CW (5000K) <input type="checkbox"/> WW (3000K) <small>OTHER LED COLORS AVAILABLE CONSULT FACTORY</small> </td> </tr> </table>	WATTAGE <input type="checkbox"/> 100 <input type="checkbox"/> 70T ¹ <input type="checkbox"/> 70 <input type="checkbox"/> 57CFL ² <input type="checkbox"/> 50T ³ <input type="checkbox"/> 50 <input type="checkbox"/> 42CFL ³ <input type="checkbox"/> 39T PSMH <input type="checkbox"/> 35HPS	TYPE <input type="checkbox"/> PSMH <input type="checkbox"/> HPS <input type="checkbox"/> CFL NOTES: 3 - AVAILABLE IN 8" BOLLARD ONLY 4 - TUBULAR LAMP, G12 BASE 5 - GX24q-4 BASE SUITABLE FOR 18 THRU 42 WATT TRIPLE TUBE LAMPS 6 - N/A FOR 35HPS ANFD 50HPS 7 - N/A FOR 35HPS 8 - GX24q-5 BASE	NO. LEDs <input type="checkbox"/> 24LED <small>(28 Watts) TNA MODELS</small> <input type="checkbox"/> 28LED <small>(32 Watts) TNS MODELS</small>	COLOR TEMP - CCT <input type="checkbox"/> NW (4000K) ⁴ <small>*STANDARD</small> <input type="checkbox"/> CW (5000K) <input type="checkbox"/> WW (3000K) <small>OTHER LED COLORS AVAILABLE CONSULT FACTORY</small>	<input type="checkbox"/> 120 <input type="checkbox"/> 208 ⁵ <input type="checkbox"/> 240 <input type="checkbox"/> 277 ⁶ <input type="checkbox"/> 347 <input type="checkbox"/> 480	STANDARD TEXTURED FINISH <input type="checkbox"/> BLACK RAL-9005-T <input type="checkbox"/> WHITE RAL-9003-T <input type="checkbox"/> GREY RAL-7004-T <input type="checkbox"/> DARK BRONZE RAL-8019-T <input type="checkbox"/> GREEN RAL-6005-T <small>FOR SMOOTH FINISH REPLACE SUFFIX "T" WITH REPLACE SUFFIX "S" (EXAMPLE: RAL-9005-S)</small> <small>CONSULT FACTORY FOR CUSTOM COLORS</small>	<p>INTERNAL HOUSE SIDE SHIELD</p> <input type="checkbox"/> 90° HS90 <input type="checkbox"/> 135° HS135 <input type="checkbox"/> 180° HS180 <input type="checkbox"/> DIMMABLE DRIVER(S) (0-10V) DIM <input type="checkbox"/> HIGH-LOW DIMMING FOR HARDWIRED SWITCHING OR NON-INTEGRATED MOTION SENSOR ... HLSW <input type="checkbox"/> DUPLEX RECEPTACLE DUP <input type="checkbox"/> GROUND FAULT RECEPTACLE GFI <input type="checkbox"/> 10KV SURGE PROTECTOR 10SP <input type="checkbox"/> 20KV SURGE PROTECTOR (277V & 480V Only) . . . 20SP <input type="checkbox"/> RAISED RIBS ON ACCESS PANEL(S) RAP <input type="checkbox"/> OPTIONAL SIGNATURE MEDALLION OSM <small>(CONSULT FACTORY)</small>
WATTAGE <input type="checkbox"/> 100 <input type="checkbox"/> 70T ¹ <input type="checkbox"/> 70 <input type="checkbox"/> 57CFL ² <input type="checkbox"/> 50T ³ <input type="checkbox"/> 50 <input type="checkbox"/> 42CFL ³ <input type="checkbox"/> 39T PSMH <input type="checkbox"/> 35HPS	TYPE <input type="checkbox"/> PSMH <input type="checkbox"/> HPS <input type="checkbox"/> CFL NOTES: 3 - AVAILABLE IN 8" BOLLARD ONLY 4 - TUBULAR LAMP, G12 BASE 5 - GX24q-4 BASE SUITABLE FOR 18 THRU 42 WATT TRIPLE TUBE LAMPS 6 - N/A FOR 35HPS ANFD 50HPS 7 - N/A FOR 35HPS 8 - GX24q-5 BASE								
NO. LEDs <input type="checkbox"/> 24LED <small>(28 Watts) TNA MODELS</small> <input type="checkbox"/> 28LED <small>(32 Watts) TNS MODELS</small>	COLOR TEMP - CCT <input type="checkbox"/> NW (4000K) ⁴ <small>*STANDARD</small> <input type="checkbox"/> CW (5000K) <input type="checkbox"/> WW (3000K) <small>OTHER LED COLORS AVAILABLE CONSULT FACTORY</small>								

BDA6 & 8

6" and 8" Dia. Aluminum



BDA series bollards are contemporary round bollards in their most basic and straight forward form. Available in both 6" and 8" diameters, they provide tremendous application flexibility by offering six different optical configurations. See pages 1, 2 and 4 for more detailed illustrations of these optical choices. The simplicity and softness of this design integrates well with architectural elements such as round columns, adding continuity to the overall site. They can also be used as opposing shapes to soften rectilinear architecture and add visual interest.

Available Optics



TWIN REFLECTOR TR



INTERNAL LOUVER IL



PRISMATIC GLASS PG



OPAL ACRYLIC WA



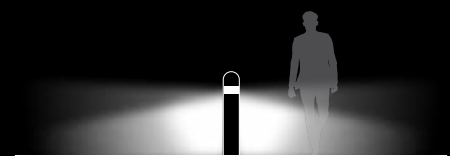
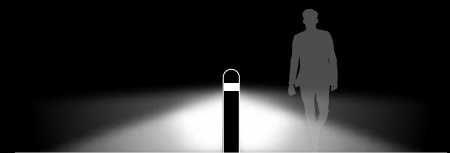
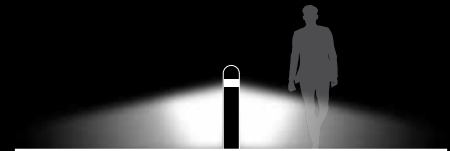
CAST LOUVER (360° HORIZ.) CL



CAST LOUVER (180° HORIZ./180° VERT.) CL-HV

Illumination Characteristics

see pages 1-2



CL-HV AVAILABLE FOR 8" BOLLARD ONLY

Specifications

Housing - Durable corrosion resistant extruded (minimum .125" wall thickness) and cast aluminum (minimum .188" wall thickness) construction.

Internal Louver (IL) - A specular louver stack conceals the inner lamp module and provides uplight and glare control through the external clear polycarbonate lens.

Cast Louver (CL and CL-HV) - Cast aluminum (A356 alloy, <0.2%Cu) louver stack protects the internal lamp module (with diffuse glass enclosure) or LED Power Array Module (with opal diffuse lenses). Horizontal louvers create a 30° cut-off angle. All horizontal louvers provide 360° of downlight (CL) or combine with vertical louvers to provide 180° of downlight and 180° of vertical illumination (CL-HV).

Opal Lens (WP) - Opal polycarbonate lens protects the internal lamp or LED Power Array Module (with opal diffuse lenses) and provides uniform illumination.

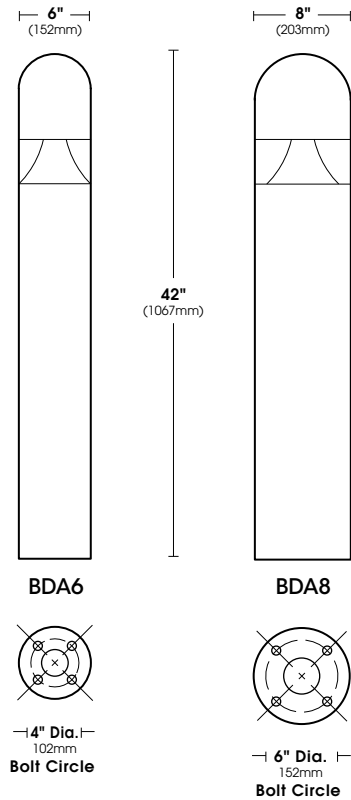
Twin Reflector (TR) - Two piece reflector cuts off view of the HID lamp and redirects light downward towards a parabolic reflector that projects even illumination around the bollard through a clear polycarbonate enclosure. For LED sources, a radial LED assembly directs light toward the parabolic reflector element.

Prismatic Glass Refractor (PG) - HID only - Clear polycarbonate lens surrounds a prismatic glass refractor (Type III and Type V).

Electrical Module - All electrical components are UL and cUL recognized are mounted on a single plate and factory prewired with quick-disconnect plugs. All HID lamps are medium base (E26) or Bi-pin Base (G12). **Electronic MH ballasts** have a power factor of >.95 (35/39W - 100W) -20°F starting, 120-277V and have lamp End-of-life protection. 347V option utilizes a step down transformer to the electronic ballast. **Magnetic MH ballasts** are high power factor (35/39W - 100W), -20°F starting, multi-tap 120-277V, 60Hz. All HPS ballasts are core and coil, high-reactance, high power factor (35/39W - 100W), -40°F starting. **Electronic CFL ballasts** are high power factor 120 - 277 voltage sensing. GX24-q4 socket supplied for all 18w - 42w triple tube lamps.

LED Driver - UL and cUL recognized High Power Factor, Constant Current LED drivers operate on input voltages from 120-277VAC, 50/60hz and is mechanically fastened to a retaining bracket. 347V option may utilize a step down transformer to the LED driver. Driver. Main power quick disconnect provided. Driver has a minimum 4KV of internal surge protection. Consult factory for other voltages. Dimming and High-Low Driver options available. 10KV & 20KV Surge Protector optional.

Dimensions



LED Power Array - Three-dimensional array consisting of 6 individual LED tubes fastened to a retaining plate equally spaced to provide 360° of even illumination output. Each LED tube consists of a circuit board populated with a multiple of LED's which is fastened to a radial aluminum heat sink. A white polycarbonate lens and end caps protect each LED tube's internal components and provides diffusion to prevent shadowing and striations.

Finish - Electrostatically applied TGIC Polyester Powder Coat on substrate prepared with 20 PSI power wash at 140°F. Four step media blast and iron phosphate pretreatment for protection and paint adhesion. 400°F bake for maximum hardness and durability.

Spec/Order Example: BDA8-TR/70PSMH480/RAL-8019-T/10SP

MODEL	OPTICS	LAMP/LED MODE	VOLTAGE	FINISH	OPTIONS	
<input type="checkbox"/> BDA8 <input type="checkbox"/> BDA6 <input type="checkbox"/> BRAL8 (HID ONLY) FOR ADDITIONAL LED BOLLARDS, REFERENCE MODEL TR8 ON PAGES 17 & 18	HID <input type="checkbox"/> TWIN REFLECTOR TR (NOT AVAILABLE FOR BRAL8) <input type="checkbox"/> INTERNAL LOUVER IL <input type="checkbox"/> CAST LOUVER - 360° HORIZ. CL <input type="checkbox"/> CAST LOUVER - 180° HORIZ./180° VERT. CL-HV ¹ <input type="checkbox"/> PRISMATIC GLASS TYPE-V. PG-V <input type="checkbox"/> PRISMATIC GLASS TYPE-III. PG-III <input type="checkbox"/> OPAL ACRYLIC WA	WATTAGE <input type="checkbox"/> 100 ² <input type="checkbox"/> 70 ² <input type="checkbox"/> 70 <input type="checkbox"/> 50 ² <input type="checkbox"/> 50 <input type="checkbox"/> 42CFL ³ <input type="checkbox"/> 35HPS	TYPE <input type="checkbox"/> PSMH <input type="checkbox"/> HPS	VOLTAGE <input type="checkbox"/> 120 <input type="checkbox"/> 208 ⁶ <input type="checkbox"/> 240 <input type="checkbox"/> 277 ⁷ <input type="checkbox"/> 347 <input type="checkbox"/> 480	STANDARD TEXTURED FINISH <input type="checkbox"/> BLACK RAL-9005-T <input type="checkbox"/> WHITE RAL-9003-T <input type="checkbox"/> GREY RAL-7004-T <input type="checkbox"/> DARK BRONZE RAL-8019-T <input type="checkbox"/> GREEN RAL-6005-T FOR SMOOTH FINISH REPLACE SUFFIX 'T' WITH REPLACE SUFFIX 'S' (EXAMPLE: RAL-9005-S) CONSULT FACTORY FOR CUSTOM COLORS	INTERNAL HOUSE SIDE SHIELD <input type="checkbox"/> 90° HS90 <input type="checkbox"/> 135° HS135 <input type="checkbox"/> 180° HS180 <input type="checkbox"/> DIMMABLE DRIVER(S) (0-10V) DIM <input type="checkbox"/> HIGH-LOW DIMMING FOR HARDWIRED SWITCHING OR NON-INTEGRATED MOTION SENSOR HLSW <input type="checkbox"/> DUPLEX RECEPTACLE DUP <input type="checkbox"/> GROUND FAULT RECEPTACLE GFI <input type="checkbox"/> 10KV SURGE PROTECTOR 10SP <input type="checkbox"/> 20KV SURGE PROTECTOR (277V & 480V Only) 20SP OPTIONAL HEIGHTS: <input type="checkbox"/> 30" Overall height. 30-OAH <input type="checkbox"/> 36" Overall height. 36-OAH
	VERTICAL POWER ARRAY <input type="checkbox"/> INTERNAL LOUVER IL <input type="checkbox"/> CAST LOUVER - 360° HORIZ. CL <input type="checkbox"/> CAST LOUVER - 180° HORIZ./180° VERT. CL-HV ¹ <input type="checkbox"/> OPAL POLYCARBONATE WP	NO. LEDs <input type="checkbox"/> 36LED (42 Watts) 8" BOLLARD ONLY <input type="checkbox"/> 24LED (28 Watts) <input type="checkbox"/> 18LED (21 Watts) -PR ONLY <input type="checkbox"/> 16LED (19 Watts)	COLOR TEMP - CCT <input type="checkbox"/> NW (4000K) [*] *STANDARD <input type="checkbox"/> CW (5000K) <input type="checkbox"/> WW (3000K) OTHER LED COLORS AVAILABLE CONSULT FACTORY			

BDAR5

8" Dia. Aluminum with Polycarbonate Refractor
5" Dia. Shaft



The BDAR5 bollard design expresses both a nautical and structural theme. As a nautical design, it is ideal for coastal developments or any building with a nautical motif. As a structural design, it can complement structurally expressive architecture. The four optical configurations all center around the standard polycarbonate fresnel lens, offering different looks and shielding characteristics. Because the shaft is only 5" in diameter, the BDAR5 is more slender and delicate looking than a full 8" bollard.

Available Optics



VERTICAL RIBS VR



FLAT RING FR



ANGLED REFLECTOR AR



ANGLED REFLECTOR WITH 2 FLAT RINGS AR-FR2

Illumination Characteristics

see pages 1-2



Specifications

Housing - Durable corrosion resistant extruded aluminum Riser with a minimum wall thickness of .125". Top cap and vertical support flanges are cast aluminum (A356 alloy; <0.2% copper) construction and compress silicone gaskets top and bottom of the injection molded clear Fresnel lens. Base Plate cover is spun aluminum.

Vertical Supports - Solid aluminum rod drilled and tapped to accept stainless hex head screws.

Shields/Reflectors

Angled Reflector (AR) is spun aluminum construction of .080" heavy wall finished thickness.

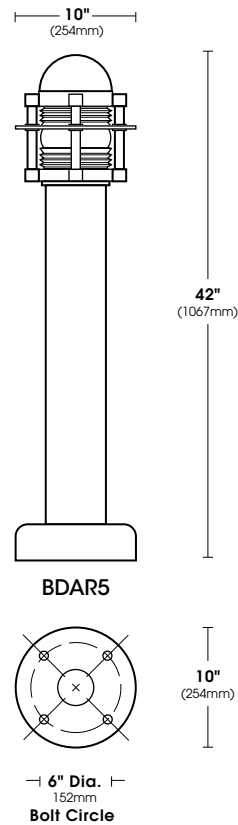
Flat Rings (FR) are cast aluminum (A356 alloy; < 0.2% copper) construction, .125" thickness.

Electrical Module - All electrical components are UL and cUL recognized are mounted on a single plate and factory prewired with quick-disconnect plugs. All HID lamps are medium base (E26) or Bi-pin Base (G12). **Electronic MH ballasts** have a power factor of >.95 (35/39W - 100W) -20°F starting, 120-277V and have lamp End-of-life protection. 347V option utilizes a step down transformer to the electronic ballast. **Magnetic MH ballasts** are high power factor (35/39W - 100W), -20°F starting, multi-tap 120-277V, 60Hz. All HPS ballasts are core and coil, high-reactance, high power factor (35/39W - 100W), -40°F starting. **Electronic CFL ballasts** are high power factor 120 - 277 voltage sensing. GX24-q4 socket supplied for all 18w - 42w triple tube lamps.

LED Driver - UL and cUL recognized High Power Factor, Constant Current LED drivers operate on input voltages from 120-277VAC, 50/60hz and is mechanically fastened to a retaining bracket. 347V option may utilize a step down transformer to the LED driver. Driver. Main power quick disconnect provided. Driver has a minimum 4KV of internal surge protection. Consult factory for other voltages. Dimming and High-Low Driver options available. 10KV & 20KV Surge Protector optional.

LED Power Array - Three-dimensional array consisting of 6 individual LED tubes fastened to a retaining plate equally spaced to provide 360° of even illumination output. Each LED tube consists of a circuit board populated with a multiple of LED's which is fastened to a radial aluminum heat sink. A white polycarbonate lens and end caps protect each LED tube's internal components and provides diffusion to prevent shadowing and striations.

Dimensions



Finish - Electrostatically applied TGIC Polyester Powder Coat on substrate prepared with 20 PSI power wash at 140°F. Four step media blast and iron phosphate pretreatment for protection and paint adhesion. 400°F bake for maximum hardness and durability.

Spec/Order Example: BDAR5-WP/70TPSMH347/RAL-6005-S/HS180

MODEL	OPTICS	LAMP/LED MODE	VOLTAGE	FINISH	OPTIONS	
<input type="checkbox"/> BDAR5	<input type="checkbox"/> VERTICAL RIBS VR <input type="checkbox"/> FLAT RING FR <input type="checkbox"/> ANGLED REFLECTOR. AR <input type="checkbox"/> ANGLED REFLECTOR WITH 2 RINGS. AR-FR2	WATTAGE <input type="checkbox"/> 70T ¹ <input type="checkbox"/> 70 <input type="checkbox"/> 50T ¹ <input type="checkbox"/> 50 <input type="checkbox"/> 42CFL ⁵ <input type="checkbox"/> 35HPS	TYPE <input type="checkbox"/> PSMH <input type="checkbox"/> HPS	VOLTAGE <input type="checkbox"/> 120 <input type="checkbox"/> 208 ² <input type="checkbox"/> 240 <input type="checkbox"/> 277 ⁷ <input type="checkbox"/> 347 <input type="checkbox"/> 480	STANDARD TEXTURED FINISH <input type="checkbox"/> BLACK RAL-9005-T <input type="checkbox"/> WHITE RAL-9003-T <input type="checkbox"/> GREY RAL-7004-T <input type="checkbox"/> DARK BRONZE RAL-8019-T <input type="checkbox"/> GREEN RAL-6005-T <small>FOR SMOOTH FINISH REPLACE SUFFIX "T" WITH REPLACE SUFFIX "S" (EXAMPLE: RAL-9005-S)</small>	INTERNAL HOUSE SIDE SHIELD <input type="checkbox"/> 90° HS90 <input type="checkbox"/> 135° HS135 <input type="checkbox"/> 180° HS180 <input type="checkbox"/> DIMMABLE DRIVER(S) (0-10V) DIM <input type="checkbox"/> HIGH-LOW DIMMING FOR HARDWIRED SWITCHING OR NON-INTEGRATED MOTION SENSOR HLSW <input type="checkbox"/> DUPLEX RECEPTACLE DUP <input type="checkbox"/> GROUND FAULT RECEPTACLE GFI <input type="checkbox"/> 10KV SURGE PROTECTOR 10SP <input type="checkbox"/> 20KV SURGE PROTECTOR (277V & 480V Only) 20SP OPTIONAL HEIGHTS: <input type="checkbox"/> 30" Overall height. 30-OAH <input type="checkbox"/> 36" Overall height. 36-OAH
		NO. LEDs LED (VERTICAL POWER ARRAY ONLY) <input type="checkbox"/> 36LED (42 Watts) <input type="checkbox"/> 24LED (28 Watts)	COLOR TEMP - CCT <input type="checkbox"/> NW (4000K) *STANDARD <input type="checkbox"/> CW (5000K) <input type="checkbox"/> WW (3000K) <small>OTHER LED COLORS AVAILABLE CONSULT FACTORY</small>	<small>NOTES: 3 - AVAILABLE IN 8" BOLLARD ONLY 4 - TUBULAR LAMP, G12 BASE 5 - GX24q-4 BASE SUITABLE FOR 18 THRU 42 WATT TRIPLE TUBE LAMPS 6 - N/A FOR 35HPS ANFD 50HPS 7 - N/A FOR 35HPS 8 - GX24q-5 BASE</small>	<small>CONSULT FACTORY FOR CUSTOM COLORS</small>	

CLXB

8" Dia. Aluminum



Available Optics



INTERNAL LOUVER IL



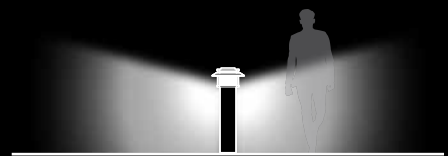
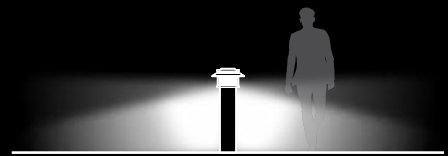
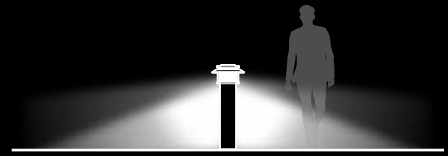
PRISMATIC GLASS PG



OPAL ACRYLIC WA

Illumination Characteristics

see pages 1-2



At first glance, the CLXB may seem to be a more robust interpretation of the BDAR5, both utilizing exposed structural elements as part of their visual language, but the CLXB put a much greater emphasis on structural expressiveness seen in much of today's more dynamic architecture. The CLXB complements the Circulux pedestrian scale luminaire family in both its design and optical offerings. As a standalone bollard, the CLXB makes a bold statement even though a low-level luminaire and when used in conjunction with the Circulux family of pedestrian scale luminaires it unifies the site both with its 'look' and illumination.

Specifications

Housing - Durable corrosion resistant extruded aluminum Riser with a minimum wall thickness of .125". Top cap and vertical support flanges are cast aluminum (A356 alloy; <0.2% copper) construction and compress silicone gaskets top and bottom of the injection molded clear polycarbonate lens. Base Plate cover is spun aluminum.

Vertical Supports - Solid aluminum rod drilled and tapped to accept stainless hex head screws.

Internal Louver (IL) - A specular louver stack conceals the inner lamp module and provides uplight and glare control through the external clear polycarbonate lens.

Prismatic Glass Refractor (PG) - HID only - Clear polycarbonate lens surrounds a prismatic glass refractor (Type III and Type V).

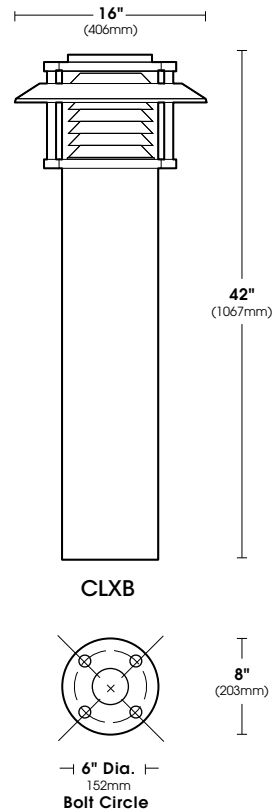
Opal Lens (WP) - Opal polycarbonate lens protects the internal lamp or LED Power Array Module (with opal diffuse lenses) and provides uniform illumination.

Electrical Module - All electrical components are UL and cUL recognized are mounted on a single plate and factory prewired with quick-disconnect plugs. All HID lamps are medium base (E26) or Bi-pin Base (G12). **Electronic MH ballasts** have a power factor of >.95 (35/39W - 100W) -20°F starting, 120-277V and have lamp End-of-life protection. 347V option utilizes a step down transformer to the electronic ballast. **Magnetic MH ballasts** are high power factor (35/39W - 100W), -20°F starting, multi-tap 120-277V, 60Hz. All HPS ballasts are core and coil, high-reactance, high power factor (35/39W - 100W), -40°F starting. **Electronic CFL ballasts** are high power factor 120 - 277 voltage sensing. GX24-q4 socket supplied for all 18w - 42w triple tube lamps.

LED Driver - UL and cUL recognized High Power Factor, Constant Current LED drivers operate on input voltages from 120-277VAC, 50/60hz and is mechanically fastened to a retaining bracket. 347V option may utilize a step down transformer to the LED driver. Driver. Main power quick disconnect provided. Driver has a minimum 4KV of internal surge protection. Consult factory for other voltages. Dimming and High-Low Driver options available. 10KV & 20KV Surge Protector optional.

LED Power Array - Three-dimensional array consisting of 6 individual LED tubes fastened to a retaining plate equally spaced to provide 360° of even illumination output. Each LED tube consists of a circuit board populated with a multiple of LED's which is fastened to a radial aluminum heat sink. A white polycarbonate lens and end caps protect each LED

Dimensions



tube's internal components and provides diffusion to prevent shadowing and striations.

Finish - Electrostatically applied TGIC Polyester Powder Coat on substrate prepared with 20 PSI power wash at 140°F. Four step media blast and iron phosphate pretreatment for protection and paint adhesion. 400°F bake for maximum hardness and durability.

Spec/Order Example: CLXB-IL/50THPS208/RAL-9003-S/GFI

MODEL	OPTICS	LAMP/LED MODE	VOLTAGE	FINISH	OPTIONS	
<input type="checkbox"/> CLXB	HID <input type="checkbox"/> INTERNAL LOUVER IL <input type="checkbox"/> PRISMATIC GLASS TYPE-V PG-V <input type="checkbox"/> PRISMATIC GLASS TYPE-III PG-III <input type="checkbox"/> OPAL ACRYLIC WA	WATTAGE <input type="checkbox"/> 70T ⁴ <input type="checkbox"/> 70 <input type="checkbox"/> 50T ⁴ <input type="checkbox"/> 50 <input type="checkbox"/> 42CFL ⁵ <input type="checkbox"/> 35HPS	TYPE <input type="checkbox"/> PSMH <input type="checkbox"/> HPS	VOLTAGE <input type="checkbox"/> 120 <input type="checkbox"/> 208 ⁶ <input type="checkbox"/> 240 <input type="checkbox"/> 277 ⁷ <input type="checkbox"/> 347 <input type="checkbox"/> 480	STANDARD TEXTURED FINISH <input type="checkbox"/> BLACK RAL-9005-T <input type="checkbox"/> WHITE RAL-9003-T <input type="checkbox"/> GREY RAL-7004-T <input type="checkbox"/> DARK BRONZE RAL-8019-T <input type="checkbox"/> GREEN RAL-6005-T FOR SMOOTH FINISH REPLACE SUFFIX "T" WITH REPLACE SUFFIX "S" (EXAMPLE: RAL-9005-S)	INTERNAL HOUSE SIDE SHIELD <input type="checkbox"/> 90° HS90 <input type="checkbox"/> 135° HS135 <input type="checkbox"/> 180° HS180 <input type="checkbox"/> DIMMABLE DRIVER(S) (0-10V) DIM <input type="checkbox"/> HIGH-LOW DIMMING FOR HARDWIRED SWITCHING OR NON-INTEGRATED MOTION SENSOR HLSW <input type="checkbox"/> DUPLEX RECEPTACLE DUP <input type="checkbox"/> GROUND FAULT RECEPTACLE GFI <input type="checkbox"/> 10KV SURGE PROTECTOR 10SP <input type="checkbox"/> 20KV SURGE PROTECTOR (277V & 480V Only) 20SP
	VERTICAL POWER ARRAY <input type="checkbox"/> INTERNAL LOUVER IL <input type="checkbox"/> OPAL ACRYLIC WA	NO. LEDs <input type="checkbox"/> 36LED (42 Watts) 8" BOLLARDS ONLY <input type="checkbox"/> 24LED (28 Watts)	COLOR TEMP - CCT <input type="checkbox"/> NW (4000K)* *STANDARD <input type="checkbox"/> CW (5000K) <input type="checkbox"/> WW (3000K) OTHER LED COLORS AVAILABLE CONSULT FACTORY		CONSULT FACTORY FOR CUSTOM COLORS	OPTIONAL HEIGHTS: <input type="checkbox"/> 30" Overall height. 30-OAH <input type="checkbox"/> 36" Overall height. 36-OAH

BRA6 & 8

6" and 8" Dia.
Aluminum

BRAL8

8" Dia. Aluminum
with Uplight



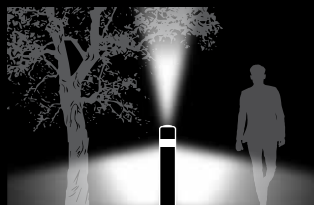
BRA8



BRAL8

With its flat top the BRA6 & 8 expresses a much sharper and more linear look making it more harmonious with contemporary architecture having strong linear geometry. Application flexibility is offered by six different optical configurations. See pages 1, 2 and 4 for more detailed illustrations of these optical choices. The BRAL8 version offers an up light feature for locations under trees, canopies or overhangs, providing accent lighting without having to add ground mounted landscape or flood lighting.

* The BRAL8 up light bollard is available with these optical configurations. The top is fitted with a clear convex lens that is sealed to prevent moisture, dust and insects from contaminating the optical compartment.



Available Optics



TWIN REFLECTOR TR



INTERNAL LOUVER IL



PRISMATIC GLASS PG



OPAL ACRYLIC WA



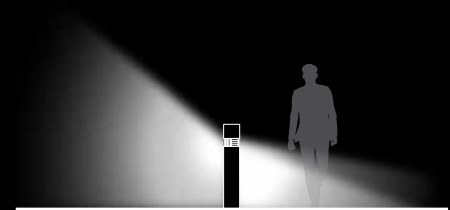
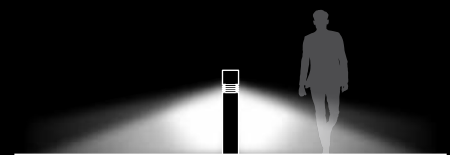
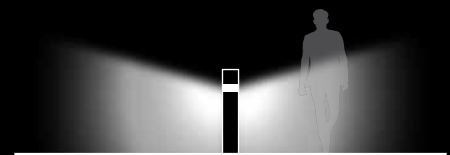
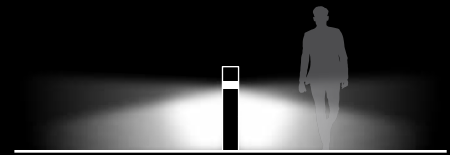
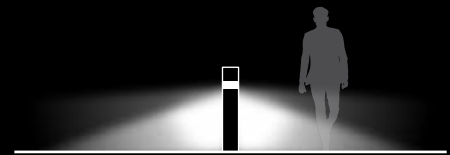
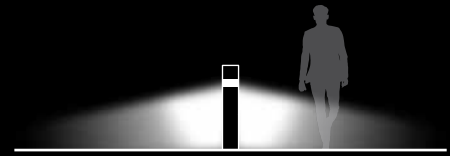
CAST LOUVER (360° HORIZ.) CL



CAST LOUVER (180° HORIZ./180° VERT.) CL-HV

Illumination Characteristics

see pages 1-2



CL-HV AVAILABLE FOR 8" BOLLARD ONLY

Specifications

Housing - Durable corrosion resistant extruded (minimum .125" wall thickness) and cast aluminum (minimum .188" wall thickness) construction.

BRAL8 Housing - Includes clear or opal polycarbonate lens for uplight.

Internal Louver (IL) - A specular louver stack conceals the inner lamp module and provides uplight and glare control through the external clear polycarbonate lens.

Cast Louver (CL and CL-HV) - Cast aluminum (A356 alloy, <0.2%Cu) louver stack protects the internal lamp module (with diffuse glass enclosure) or LED Power Array Module (with opal diffuse lenses). Horizontal louvers create a 30° cut-off angle. All horizontal louvers provide 360° of downlight (CL) or combine with vertical louvers to provide 180° of downlight and 180° of vertical illumination (CL-HV).

Opal Lens (WP) - Opal polycarbonate lens protects the internal lamp or LED Power Array Module (with opal diffuse lenses) and provides uniform illumination.

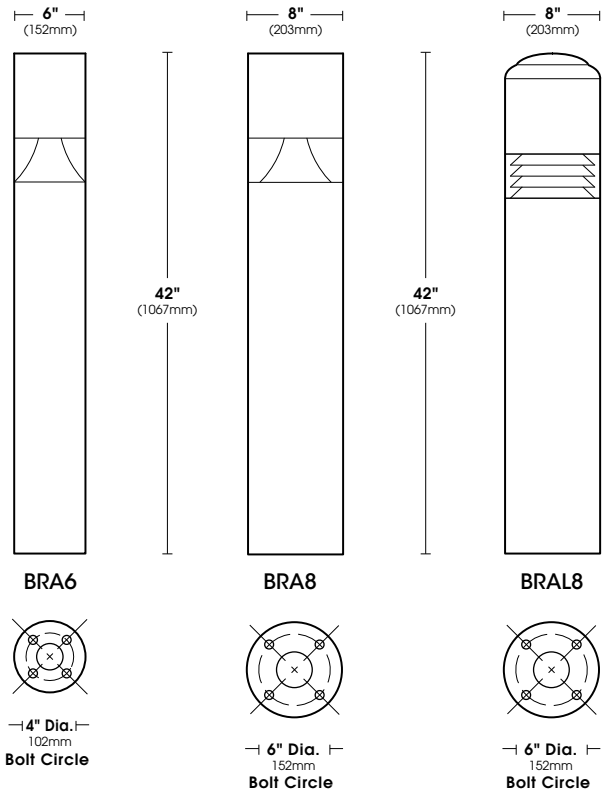
Twin Reflector (TR) - Two piece reflector cuts off view of the HID lamp and redirects light downward towards a parabolic reflector that projects even illumination around the bollard through a clear polycarbonate enclosure. For LED sources, a radial LED assembly directs light toward the parabolic reflector element. **Not available on BRAL8 models.**

Prismatic Glass Refractor (PG) - HID only - Clear polycarbonate lens surrounds a prismatic glass refractor (Type III and Type V).

Electrical Module - All electrical components are UL and cUL recognized are mounted on a single plate and factory prewired with quick-disconnect plugs. All HID lamps are medium base (E26) or Bi-pin Base (G12). **Electronic MH ballasts** have a power factor of >.95 (35/39W - 100W) -20°F starting, 120-277V and have lamp End-of-life protection. 347V option utilizes a step down transformer to the electronic ballast. **Magnetic MH ballasts** are high power factor (35/39W - 100W), -20°F starting, multi-tap 120-277V, 60Hz. All HPS ballasts are core and coil, high-reactance, high power factor (35/39W - 100W), -40°F starting. **Electronic CFL ballasts** are high power factor 120 - 277 voltage sensing. GX24-q4 socket supplied for all 18w - 42w triple tube lamps.

LED Driver - UL and cUL recognized High Power Factor, Constant Current LED drivers operate on input voltages from 120-277VAC, 50/60hz and is mechanically fastened to a retaining bracket. 347V option may utilize a step down transformer to the LED driver. Driver. Main power quick disconnect provided. Driver has a minimum 4KV of internal surge protection. Consult factory for other voltages. Dimming and High-Low Driver options available.

Dimensions



LED Power Array - Three-dimensional array consisting of 6 individual LED tubes fastened to a retaining plate equally spaced to provide 360° of even illumination output. Each LED tube consists of a circuit board populated with a multiple of LED's which is fastened to a radial aluminum heat sink. A white polycarbonate lens and end caps protect each LED tube's internal components and provides diffusion to prevent shadowing and striations.

Finish - Electrostatically applied TGIC Polyester Powder Coat on substrate prepared with 20 PSI power wash at 140°F. Four step media blast and iron phosphate pretreatment for protection and paint adhesion. 400°F bake for maximum hardness and durability.

Spec/Order Example: BRA5-IL/50HPS270/RAL-7004-S/DUP

MODEL	OPTICS	LAMP/LED MODE	VOLTAGE	FINISH	OPTIONS
<input type="checkbox"/> BRA8 <input type="checkbox"/> BRA6 <input type="checkbox"/> BRAL8 (HID ONLY) FOR ADDITIONAL LED BOLLARDS, REFERENCE MODEL TRB ON PAGES 17 & 18	HID <input type="checkbox"/> TWIN REFLECTOR TR (NOT AVAILABLE FOR BRAL8) <input type="checkbox"/> INTERNAL LOUVER IL <input type="checkbox"/> CAST LOUVER - 360° HORIZ. CL <input type="checkbox"/> CAST LOUVER - 180° HORIZ./180° VERT. CL-HV ¹ <input type="checkbox"/> PRISMATIC GLASS TYPE-V. PG-V <input type="checkbox"/> PRISMATIC GLASS TYPE-III. PG-III <input type="checkbox"/> OPAL ACRYLIC WA	WATTAGE <input type="checkbox"/> 100 ² <input type="checkbox"/> 70T ⁴ <input type="checkbox"/> 70 <input type="checkbox"/> 50T ⁴ <input type="checkbox"/> 50 <input type="checkbox"/> 42CFL ⁵ <input type="checkbox"/> 35HPS	VOLTAGE <input type="checkbox"/> 120 <input type="checkbox"/> 208 ⁶ <input type="checkbox"/> 240 <input type="checkbox"/> 277 ⁷ <input type="checkbox"/> 347 <input type="checkbox"/> 480	STANDARD TEXTURED FINISH <input type="checkbox"/> BLACK RAL-9005-T <input type="checkbox"/> WHITE RAL-9003-T <input type="checkbox"/> GREY RAL-7004-T <input type="checkbox"/> DARK BRONZE RAL-8019-T <input type="checkbox"/> GREEN RAL-6005-T FOR SMOOTH FINISH REPLACE SUFFIX "T" WITH REPLACE SUFFIX "S" (EXAMPLE: RAL-9005-S)	INTERNAL HOUSE SIDE SHIELD <input type="checkbox"/> 90° HS90 <input type="checkbox"/> 135° HS135 <input type="checkbox"/> 180° HS180 <input type="checkbox"/> DIMMABLE DRIVER(S) (0-10V) DIM <input type="checkbox"/> HIGH-LOW DIMMING FOR HARDWIRED SWITCHING OR NON-INTEGRATED MOTION SENSOR . . . HLSW <input type="checkbox"/> DUPLEX RECEPTACLE DUP <input type="checkbox"/> GROUND FAULT RECEPTACLE GFI <input type="checkbox"/> 10KV SURGE PROTECTOR 10SP <input type="checkbox"/> 20KV SURGE PROTECTOR (277V & 480V Only) . . . 20SP OPTIONAL HEIGHTS: <input type="checkbox"/> 30" Overall height. . . 30-OAH <input type="checkbox"/> 36" Overall height. . . 36-OAH
	VERTICAL POWER ARRAY <input type="checkbox"/> INTERNAL LOUVER IL <input type="checkbox"/> CAST LOUVER - 360° HORIZ. CL <input type="checkbox"/> CAST LOUVER - 180° HORIZ./180° VERT. CL-HV ¹ <input type="checkbox"/> OPAL POLYCARBONATE WP RADIAL LED MODULE <input type="checkbox"/> PARABOLIC REFLECTOR . . . PR ²	NO. LEDs <input type="checkbox"/> 36LED (42 Watts) 8" BOLLARD ONLY <input type="checkbox"/> 24LED (28 Watts) <input type="checkbox"/> 18LED (21Watts) -PR ONLY <input type="checkbox"/> 16LED (19Watts)	LED <input type="checkbox"/> NW (4000K)* *STANDARD <input type="checkbox"/> CW (5000K) <input type="checkbox"/> WW (3000K) OTHER LED COLORS AVAILABLE CONSULT FACTORY	COLOR TEMP - CCT <input type="checkbox"/> NW (4000K)* *STANDARD <input type="checkbox"/> CW (5000K) <input type="checkbox"/> WW (3000K)	FINISH <input type="checkbox"/> BLACK RAL-9005-T <input type="checkbox"/> WHITE RAL-9003-T <input type="checkbox"/> GREY RAL-7004-T <input type="checkbox"/> DARK BRONZE RAL-8019-T <input type="checkbox"/> GREEN RAL-6005-T FOR SMOOTH FINISH REPLACE SUFFIX "T" WITH REPLACE SUFFIX "S" (EXAMPLE: RAL-9005-S)

BSA6 & 8

6" and 8" Square Aluminum



BSA series bollards offer a more linear and sharp edged form where the surrounding architecture demands a precision look. Available in 6" and 8" square models, they offer tremendous application flexibility with five different optical configurations. See pages 1, 2 and 4 for more detailed illustrations of these optical choices. The square shafts present a more massive form than round shafts, as the corner-to-corner dimensions are 41% greater than the side dimensions. If greater mass is desired, see the concrete bollards offered in this catalog.

Available Optics



TWIN REFLECTOR TR



INTERNAL LOUVER IL



PRISMATIC GLASS PG



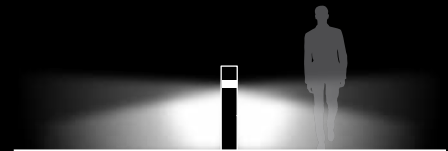
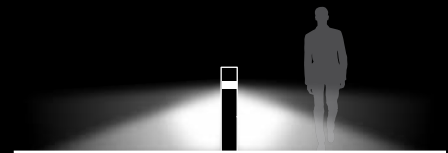
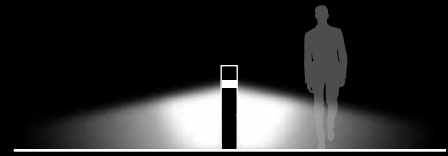
OPAL ACRYLIC WA



CAST LOUVER (360° HORIZ.) CL

Illumination Characteristics

see pages 1-2



Specifications

Housing - Durable corrosion resistant extruded (minimum .125" wall thickness) and cast aluminum (minimum .188" wall thickness) construction.

Internal Louver (IL) - A specular louver stack conceals the inner lamp module or LED Power Array Module (with opal diffuse lens) and provides uplight and glare control through the external clear acrylic lens.

Cast Louver (CL) - Cast aluminum (A356 alloy, <0.2%Cu) louver stack protects the internal lamp module (with diffuse glass enclosure) or LED Power Array Module (with opal diffuse lenses) and provides 360° of downlight.

Opal Lens (WP) - Opal acrylic lens protects the internal lamp or LED Power Array Module (with opal diffuse lenses) and provides uniform illumination.

Twin Reflector (TR) - Two piece reflector cuts off view of the HID lamp and redirects light downward towards a parabolic reflector that projects even illumination around the bollard through a clear acrylic enclosure. For LED sources, a radial LED assembly directs light toward the parabolic reflector element.

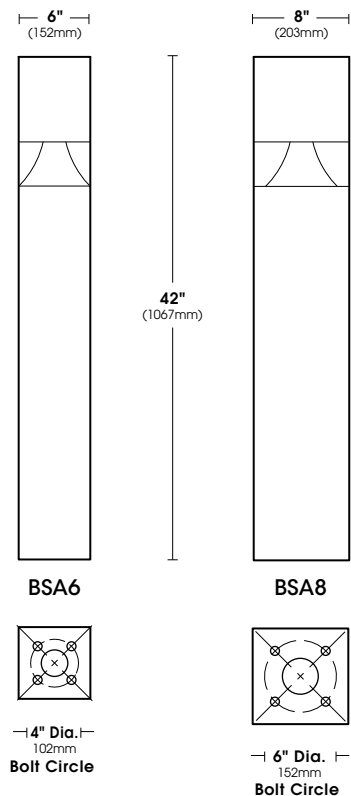
Prismatic Glass Refractor (PG) - HID only - Clear acrylic lens surrounds a prismatic glassrefractor (Type III and Type V).

Electrical Module - All electrical components are UL and cUL recognized are mounted on a single plate and factory prewired with quick-disconnect plugs. All HID lamps are medium base (E26) or Bi-pin Base (G12). **Electronic MH ballasts** have a power factor of >.95 (35/39W - 100W) -20°F starting, 120-277V and have lamp End-of-life protection. 347V option utilizes a step down transformer to the electronic ballast. **Magnetic MH ballasts** are high power factor (35/39W - 100W), -20°F starting, multi-tap 120-277V, 60Hz. All HPS ballasts are core and coil, high-reactance, high power factor (35/39W - 100W), -40°F starting. **Electronic CFL ballasts** are high power factor 120 - 277 voltage sensing. GX24-q4 socket supplied for all 18w - 42w triple tube lamps.

LED Driver - UL and cUL recognized High Power Factor, Constant Current LED drivers operate on input voltages from 120-277VAC, 50/60hz and is mechanically fastened to a retaining bracket. 347V option may utilize a step down transformer to the LED driver. Driver. Main power quick disconnect provided. Driver has a minimum 4KV of internal surge protection. Consult factory for other voltages. Dimming and High-Low Driver options available. 10KV & 20KV Surge Protector optional.

LED Power Array - Three-dimensional array consisting of 6 individual LED tubes fastened to a retaining plate equally spaced to provide 360° of even illumination output. Each LED tube consists of a circuit board populated with a

Dimensions



multiple of LED's which is fastened to a radial aluminum heat sink. A white polycarbonate lens and end caps protect each LED tube's internal components and provides diffusion to prevent shadowing and striations.

Finish - Electrostatically applied TGIC Polyester Powder Coat on substrate prepared with 20 PSI power wash at 140°F. Four step media blast and iron phosphate pretreatment for protection and paint adhesion. 400°F bake for maximum hardness and durability.

Spec/Order Example: BSA8-WA/35HPS120/RAL-9005-T/DIM36-OAH

MODEL	OPTICS	LAMP/LED MODE	VOLTAGE	FINISH	OPTIONS	
<input type="checkbox"/> BSA8 <input type="checkbox"/> BSA6 <small>FOR ADDITIONAL LED BOLLARDS, REFERENCE MODEL TRB ON PAGES 17 & 18</small>	HID <input type="checkbox"/> TWIN REFLECTOR TR <input type="checkbox"/> INTERNAL LOUVER IL <input type="checkbox"/> CAST LOUVER - 360° HORIZ. CL <input type="checkbox"/> PRISMATIC GLASS TYPE-V. PG-V <input type="checkbox"/> PRISMATIC GLASS TYPE-III. PG-III <input type="checkbox"/> OPAL ACRYLIC WA	WATTAGE <input type="checkbox"/> 100 ⁷ <input type="checkbox"/> 70 ⁷ <input type="checkbox"/> 70 <input type="checkbox"/> 50 ⁷ <input type="checkbox"/> 50 <input type="checkbox"/> 42CFL ⁵ <input type="checkbox"/> 35HPS LED <input type="checkbox"/> 36LED (42 Watts) 8" BOLLARDS ONLY <input type="checkbox"/> 24LED (28 Watts) <input type="checkbox"/> 18LED (21 Watts) <input type="checkbox"/> 16LED (19Watts)	TYPE <input type="checkbox"/> PSMH <input type="checkbox"/> HPS LED <input type="checkbox"/> NW (4000K)* *STANDARD <input type="checkbox"/> CW (5000K) <input type="checkbox"/> WW (3000K) OTHER LED COLORS AVAILABLE CONSULT FACTORY	VOLTAGE <input type="checkbox"/> 120 <input type="checkbox"/> 208 ⁶ <input type="checkbox"/> 240 <input type="checkbox"/> 277 ⁷ <input type="checkbox"/> 347 <input type="checkbox"/> 480	STANDARD TEXTURED FINISH <input type="checkbox"/> BLACK RAL-9005-T <input type="checkbox"/> WHITE RAL-9003-T <input type="checkbox"/> GREY RAL-7004-T <input type="checkbox"/> DARK BRONZE RAL-8019-T <input type="checkbox"/> GREEN RAL-6005-T <small>FOR SMOOTH FINISH REPLACE SUFFIX "T" WITH REPLACE SUFFIX "S" (EXAMPLE: RAL-9005-S)</small>	INTERNAL HOUSE SIDE SHIELD <input type="checkbox"/> 90° HS90 <input type="checkbox"/> 135° HS135 <input type="checkbox"/> 180° HS180 <input type="checkbox"/> DIMMABLE DRIVER(S) (0-10V) DIM <input type="checkbox"/> HIGH-LOW DIMMING FOR HARDWIRED SWITCHING OR NON-INTEGRATED MOTION SENSOR HLSW <input type="checkbox"/> DUPLEX RECEPTACLE DUP <input type="checkbox"/> GROUND FAULT RECEPTACLE GFI <input type="checkbox"/> 10KV SURGE PROTECTOR 10SP <input type="checkbox"/> 20KV SURGE PROTECTOR (277V & 480V Only) 20SP OPTIONAL HEIGHTS: <input type="checkbox"/> 30" Overall height. 30-OAH <input type="checkbox"/> 36" Overall height. 36-OAH

TLB3, 4 & 5

LED Bollards, Aluminum 3 Sizes



TLB5
Scale: 1" = 1'-0"

Available Optics



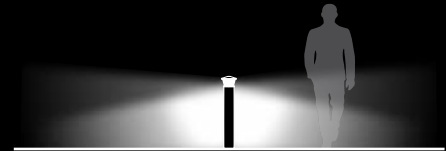
CLEAR OPTIC CP



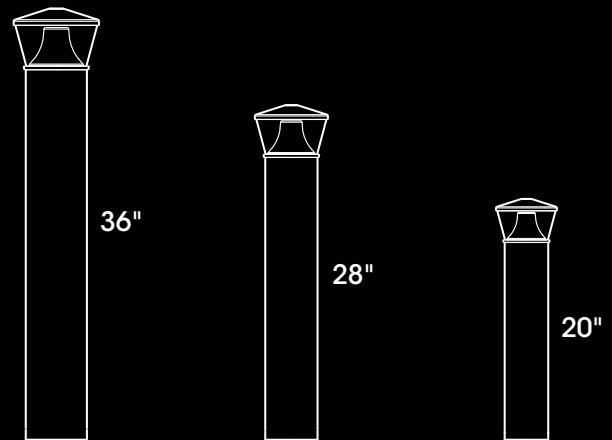
DIFFUSE OPTIC DP

Illumination Characteristics

see pages 1-2



TLB series bollards are LED-only, small scale fixtures designed for intimate areas such as garden pathways, small courtyards, or wherever minimum fixture presence is appropriate. Available in two optical configurations depending on the amount of brightness control desired. The clear polycarbonate lens model produces a wide light distribution with very low brightness from the parabolic reflector. The frosted lens model is ideal for general illumination where more visual security is needed.



Scale: 3/4" = 1'-0"

Specifications

Housing - Durable corrosion resistant extruded riser (minimum .125" wall thickness) and cast aluminum top cap (minimum .188" wall thickness) construction.

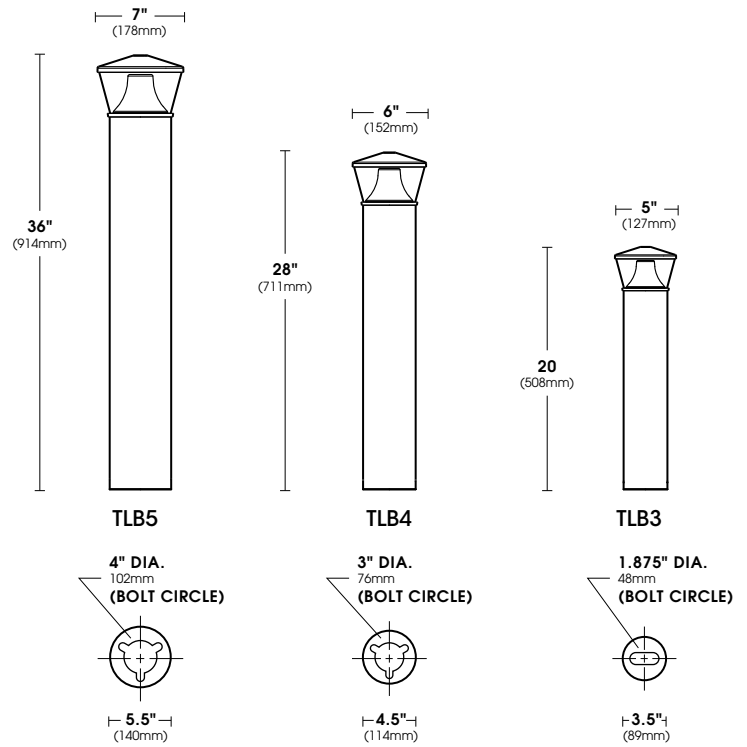
Optics - Parabolic cone-shaped reflector directs light downward and out through a tapered, clear, UV stabilized polycarbonate enclosure. A radial LED assembly directs light toward the parabolic reflector element. (Opal diffuse lens available)

LED Radial Array - High Output LED's are equidistantly spaced in a radial array and driven at 350mA for nominal 1 Watt output each. 70CRI Minimum. LED's are available in standard Neutral White (4000K), or optional Cool White (5000K) or Warm White (3000K). Consult Factory for other LED options.

LED Driver - UL and cUL recognized High Power Factor, Constant Current LED drivers operate on input voltages from 120-277VAC, 50/60hz and is mechanically fastened to a retaining bracket. 347V option may utilize a step down transformer to the LED driver. Driver. Main power quick disconnect provided. Driver has a minimum 4KV of internal surge protection. Consult factory for other voltages. Dimming and High-Low Driver options available. 10KV & 20KV Surge Protector optional.

Finish - Electrostatically applied TGIC Polyester Powder Coat on substrate prepared with 20 PSI power wash at 140°F. Four step media blast and iron phosphate pretreatment for protection and paint adhesion. 400°F bake for maximum hardness and durability.

Dimensions



Spec/Order Example: TLB3-PR/PD/12LEDWW120/RAL-7004-S

MODEL	OPTICS	LED MODE	VOLTAGE	FINISH	OPTIONS	
<input type="checkbox"/> TLB5 <input type="checkbox"/> TLB4 <input type="checkbox"/> TLB3	<p>HID</p> <input type="checkbox"/> PARABOLIC REFLECTOR WITH CLEAR POLYCARBONATE LENS PR/CP <input type="checkbox"/> PARABOLIC REFLECTOR WITH DIFFUSE POLYCARBONATE LENS PR/DP	<p>NO. LEDs</p> <input type="checkbox"/> 18LED (21 Watts) TLB5 ONLY <input type="checkbox"/> 12LED (14 Watts) TLB4 ONLY <input type="checkbox"/> 8LED (10Watts) TLB3 ONLY OTHER LED COLORS AVAILABLE CONSULT FACTORY	<p>COLOR TEMP - CCT</p> <input type="checkbox"/> NW (4000K)* *STANDARD <input type="checkbox"/> CW (5000K) <input type="checkbox"/> WW (3000K)	<p>VOLTAGE</p> <input type="checkbox"/> 120 <input type="checkbox"/> 208 <input type="checkbox"/> 240 <input type="checkbox"/> 277 <input type="checkbox"/> 347 <input type="checkbox"/> 480	<p>STANDARD TEXTURED FINISH</p> <input type="checkbox"/> BLACK RAL-9005-T <input type="checkbox"/> WHITE RAL-9003-T <input type="checkbox"/> GREY RAL-7004-T <input type="checkbox"/> DARK BRONZE RAL-8019-T <input type="checkbox"/> GREEN RAL-6005-T FOR SMOOTH FINISH REPLACE SUFFIX 'T' WITH REPLACE SUFFIX 'S' (EXAMPLE: RAL-9005-S) CONSULT FACTORY FOR CUSTOM COLORS	<p>INTERNAL HOUSE SIDE SHIELD</p> <input type="checkbox"/> 90° HS90 <input type="checkbox"/> 135° HS135 <input type="checkbox"/> 180° HS180 <input type="checkbox"/> DUPLEX RECEPTACLE DUP <input type="checkbox"/> GROUND FAULT RECEPTACLE GFI <input type="checkbox"/> 10KV SURGE PROTECTOR 10SP <input type="checkbox"/> 20KV SURGE PROTECTOR (277V & 480V Only) . . . 20SP

8" Dia.

Concrete and Cast Aluminum

Lighted

*Shown with -CL Option

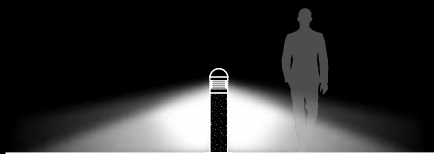
Un-Lighted



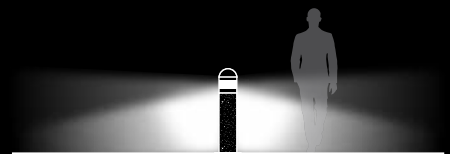
Available Optics for Lighted Models



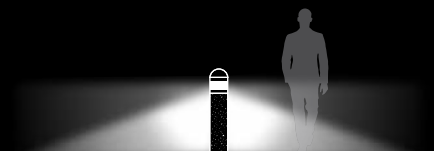
CAST LOUVER (360° HORIZ.) CL



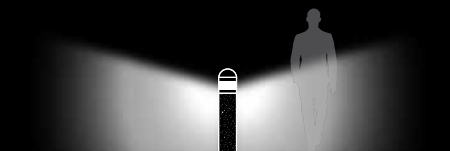
PRISMATIC GLASS PG



INTERNAL LOUVER IL



OPAL ACRYLIC WA



Specifications

Concrete Riser - Natural precast concrete body with light sandblast finish. A graffiti resistant sealer is applied to the surface. Internal electro-zinc plated steel cage provides additional strength for the structure and has threaded inserts welded to it for mounting the base plate and optical assembly. Base plate is 1/4" galvanized steel.

Top Cap

Concrete (Ex.: BRC8) - Natural precast concrete body with light sandblast finish. A graffiti resistant sealer is applied to the surface. Internal electro-zinc plated steel cage provides additional strength for the structure.

Aluminum (EX.: BDAC8) - Durable, corrosion resistant cast aluminum (A356 alloy; <0.2% copper) construction.

Internal Louver (IL) - A specular louver stack conceals the inner lamp module and provides uplight and glare control through the external clear polycarbonate lens.

Cast Louver (CL and CL-HV) - Cast aluminum (A356 alloy, <0.2%Cu) louver stack protects the internal lamp module (with diffuse glass enclosure) or LED Power Array Module (with opal diffuse lenses). Horizontal louvers create a 30° cut-off angle. All horizontal louvers provide 360° of downlight (CL) or combine with vertical louvers to provide 180° of downlight and 180° of vertical illumination (CL-HV).

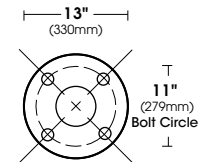
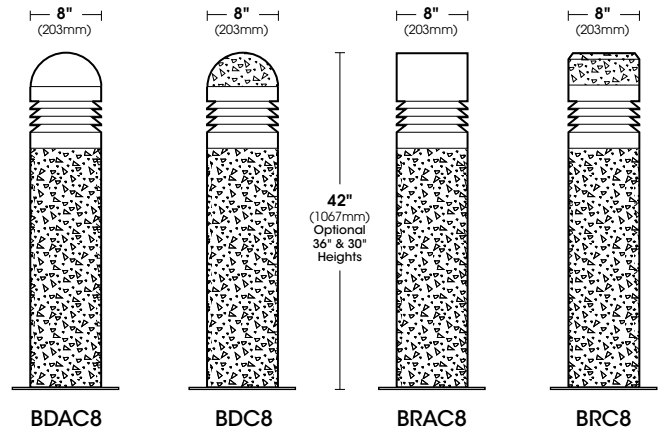
Opal Lens (WP) - Opal polycarbonate lens protects the internal lamp or LED Power Array Module (with opal diffuse lenses) and provides uniform illumination.

Prismatic Glass Refractor (PG) - HID only - Clear polycarbonate lens surrounds a prismatic glass refractor (Type III and Type V).

Electrical Module - All electrical components are UL and cUL recognized are mounted on a single plate and factory prewired with quick-disconnect plugs. All HID lamps are medium base (E26) or Bi-pin Base (G12). **Electronic MH ballasts** have a power factor of >.95 (35/39W - 100W) -20°F starting, 120-277V and have lamp End-of-life protection. 347V option utilizes a step down transformer to the electronic ballast. **Magnetic MH ballasts** are high power factor (35/39W - 100W), -20°F starting, multi-tap 120-277V, 60Hz. All HPS ballasts are core and coil, high-reactance, high power factor (35/39W - 100W), -40°F starting. **Electronic CFL ballasts** are high power factor 120 - 277 voltage sensing. GX24-q4 socket supplied for all 18w - 42w triple tube lamps.

LED Driver - UL and cUL recognized High Power Factor, Constant Current LED drivers operate on input voltages from 120-277VAC, 50/60hz and is mechanically fastened to a retaining bracket. 347V option may utilize a step

Dimensions



Typical Mounting Base for all Models

down transformer to the LED driver. Driver. Main power quick disconnect provided. Driver has a minimum 4KV of internal surge protection. Consult factory for other voltages. Dimming and High-Low Driver options available. 10KV & 20KV Surge Protector optional.

LED Power Array - Three-dimensional array consisting of 6 individual LED tubes fastened to a retaining plate equally spaced to provide 360° of even illumination output. Each LED tube consists of a circuit board populated with a multiple of LED's which is fastened to a radial aluminum heat sink. A white polycarbonate lens and end caps protect each LED tube's internal components and provides diffusion to prevent shadowing and striations.

Finish - Electrostatically applied TGIC Polyester Powder Coat on substrate prepared with 20 PSI power wash at 140°F. Four step media blast and iron phosphate pretreatment for protection and paint adhesion. 400°F bake for maximum hardness and durability.

Spec/Order Example: BDC8-CL/24LED347/RAL-8019-S/GFI

Order/Specify Unit models as per: BRC8/NAT

MODEL	OPTICS	LAMP/LED MODE	VOLTAGE	FINISH	OPTIONS
<input type="checkbox"/> BDAC8	<input type="checkbox"/> TWIN REFLECTOR TR*	<input type="checkbox"/> 100 ¹	<input type="checkbox"/> 120	<input type="checkbox"/> BLACK RAL-9005-T	INTERNAL HOUSE SIDE SHIELD <input type="checkbox"/> 90° HS90
<input type="checkbox"/> BDC8	<input type="checkbox"/> INTERNAL LOUVER IL	<input type="checkbox"/> 70 ¹	<input type="checkbox"/> 208 ²	<input type="checkbox"/> WHITE RAL-9003-T	<input type="checkbox"/> 135° HS135
	<input type="checkbox"/> CAST LOUVER - 360° HORIZ. CL	<input type="checkbox"/> 70	<input type="checkbox"/> 240	<input type="checkbox"/> GREY RAL-7004-T	<input type="checkbox"/> 180° HS180
	<input type="checkbox"/> CAST LOUVER - 180° HORIZ./180° VERT. . CL-HV	<input type="checkbox"/> 50 ¹	<input type="checkbox"/> 277 ⁷	<input type="checkbox"/> DARK BRONZE RAL-8019-T	<input type="checkbox"/> DIMMABLE DRIVER(S) (0-10V) DIM
<input type="checkbox"/> BRAC8	<input type="checkbox"/> PRISMATIC GLASS TYPE-V PG-V	<input type="checkbox"/> 50	<input type="checkbox"/> 347	<input type="checkbox"/> GREEN RAL-6005-T	<input type="checkbox"/> HIGH-LOW DIMMING FOR HARDWIRED SWITCHING OR NON-INTEGRATED MOTION SENSOR HLSW
<input type="checkbox"/> BRC8	<input type="checkbox"/> PRISMATIC GLASS TYPE-III PG-III	<input type="checkbox"/> 42CFL ⁵	<input type="checkbox"/> 480	<input type="checkbox"/> NATURAL CONCRETE NAT	<input type="checkbox"/> DUPLEX RECEPTACLE DUP
	<input type="checkbox"/> OPAL ACRYLIC WA	<input type="checkbox"/> 35HPS			<input type="checkbox"/> GROUND FAULT RECEPTACLE GFI
	VERTICAL POWER ARRAY	NO. LEDs	COLOR TEMP - CCT		<input type="checkbox"/> 10KV SURGE PROTECTOR 10SP
	<input type="checkbox"/> INTERNAL LOUVER IL	<input type="checkbox"/> 36LED (42 Watts)	<input type="checkbox"/> NW (4000K)* *STANDARD		<input type="checkbox"/> 20KV SURGE PROTECTOR (277V & 480V Only) 20SP
	<input type="checkbox"/> CAST LOUVER CL	<input type="checkbox"/> 24LED (28 Watts)	<input type="checkbox"/> CW (5000K)		
	<input type="checkbox"/> OPAL POLYCARBONATE WP	<input type="checkbox"/> 18LED (21Watts)	<input type="checkbox"/> WW (3000K)		OPTIONAL HEIGHTS:
	RADIAL LED MODULE				<input type="checkbox"/> 30" Overall height. 30-OAH
	<input type="checkbox"/> PARABOLIC REFLECTOR PR				<input type="checkbox"/> 36" Overall height. 36-OAH
	*AVAILABLE WITH CONCRETE TOP CAP ONLY				
		LED			
					OTHER LED COLORS AVAILABLE CONSULT FACTORY
					FOR SMOOTH FINISH REPLACE SUFFIX "T" WITH REPLACE SUFFIX "S" (EXAMPLE: RAL-9005-S)
					CONSULT FACTORY FOR CUSTOM COLORS AND FOR OTHER CONCRETE COLORS

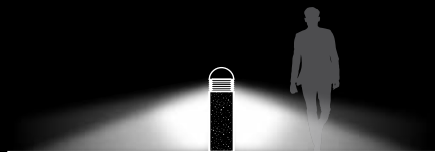
12" Dia.

Concrete and Cast Aluminum

Lighted



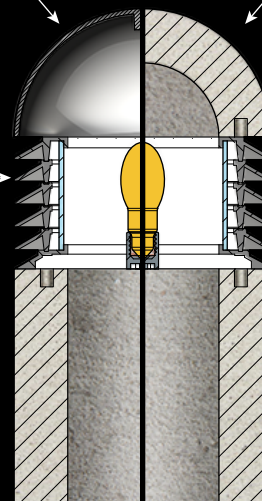
Un-Lighted



Robust cast louver vanes are set at a 30° cutoff angle to provide generous horizontal illumination 360° around the bollard and make the entire assembly highly vandal-resistant.

Aluminum Top Cap is robust, corrosion resistant, low copper content alloy in all -AC models

Louver Vanes are corrosion resistant low copper alloy indexed for alignment and bolted together to create a unified element



Concrete Top Cap is internally reinforced with an electro-zinc plated steel cage.

Concrete Riser is internally reinforced with an electro-zinc plated steel cage and has a light sandblasted surface, sealed with an anti-graffiti protectant.

Specifications

Concrete Riser - Natural precast concrete body with light sandblast finish. A graffiti resistant sealer is applied to the surface. Internal electro-zinc plated steel cage provides additional strength for the structure and has threaded inserts welded to it for mounting the base plate and optical assembly. Base plate is 1/4" galvanized steel.

Top Cap

Concrete (Ex.: BRC12) - Natural precast concrete body with light sandblast finish. A graffiti resistant sealer is applied to the surface. Internal electro-zinc plated steel cage provides additional strength for the structure.

Aluminum

(EX.: BPAC12)
Durable, corrosion resistant cast aluminum (A356 alloy; <0.2% copper) construction.

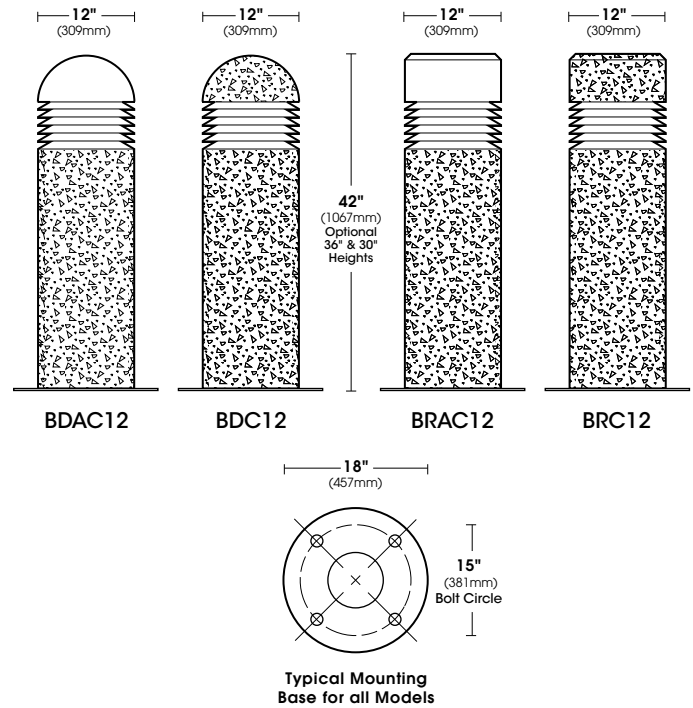
Cast Louver (CL) - Cast aluminum (A356 alloy, <0.2%Cu) louver stack (with diffuse acrylic lens) protects the internal lamp module or LED Power Array Module (with opal diffuse lenses). Horizontal louvers create a 30° cut-off angle and provide 360° of downlight.

Electrical Module - All electrical components are UL and cUL recognized are mounted on a single plate and factory prewired with quick-disconnect plugs. All HID lamps are medium base (E26) or Bi-pin Base (G12). **Electronic MH ballasts** have a power factor of >.95 (35/39W - 100W) -20°F starting, 120-277V and have lamp End-of-life protection. 347V option utilizes a step down transformer to the electronic ballast. **Magnetic MH ballasts** are high power factor (35/39W - 100W). -20°F starting, multi-tap 120-277V, 60Hz. All HPS ballasts are core and coil, high-reactance, high power factor (35/39W - 100W), -40°F starting. **Electronic CFL ballasts** are high power factor 120 - 277 voltage sensing. GX24-q4 socket supplied for all 18w - 42w triple tube lamps.

LED Driver - UL and cUL recognized High Power Factor, Constant Current LED drivers operate on input voltages from 120-277VAC, 50/60hz and is mechanically fastened to a retaining bracket. 347V option may utilize a step down transformer to the LED driver. Driver. Main power quick disconnect provided. Driver has a minimum 4KV of internal surge protection. Consult factory for other voltages. Dimming and High-Low Driver options available. 10KV & 20KV Surge Protector optional.

LED Power Array - Three-dimensional array consisting of 6 individual LED tubes fastened to a retaining plate equally spaced to provide 360° of

Dimensions



even illumination output. Each LED tube consists of a circuit board populated with a multiple of LED's which is fastened to a radial aluminum heat sink. A white polycarbonate lens and end caps protect each LED tube's internal components and provides diffusion to prevent shadowing and striations.

Finish - Electrostatically applied TGIC Polyester Powder Coat on substrate prepared with 20 PSI power wash at 140°F. Four step media blast and iron phosphate pretreatment for protection and paint adhesion. 400°F bake for maximum hardness and durability.

Spec/Order Example: BDC12-CL/18LED208/RAL-9005-T/20SP

Order/Specify Unlit models as per: BRC12/NAT

MODEL	OPTICS	LAMP/LED MODE	VOLTAGE	FINISH	OPTIONS
<input type="checkbox"/> BDAC12 <input type="checkbox"/> BDC12 FLAT TOP <input type="checkbox"/> BRAC12 <input type="checkbox"/> BRC12	<input type="checkbox"/> CAST LOUVER - 360° HORIZ. CL	WATTAGE <input type="checkbox"/> 100 ³ <input type="checkbox"/> 70T ⁴ <input type="checkbox"/> 70 <input type="checkbox"/> 50T ⁵ <input type="checkbox"/> 50 <input type="checkbox"/> 42CFL ⁶ <input type="checkbox"/> 35HPS NO. LEDs <input type="checkbox"/> 48LED (53 Watts) <input type="checkbox"/> 36LED (42 Watts) <input type="checkbox"/> 24LED (28 Watts) <input type="checkbox"/> 18LED (21 Watts)	HID <input type="checkbox"/> PSMH <input type="checkbox"/> HPS LED <input type="checkbox"/> NW (4000K)* *STANDARD <input type="checkbox"/> CW (5000K) <input type="checkbox"/> WW (3000K) OTHER LED COLORS AVAILABLE CONSULT FACTORY	VOLTAGE <input type="checkbox"/> 120 <input type="checkbox"/> 208 ⁶ <input type="checkbox"/> 240 <input type="checkbox"/> 277 ⁷ <input type="checkbox"/> 347 <input type="checkbox"/> 480 STANDARD TEXTURED FINISH <input type="checkbox"/> BLACK RAL-9005-T <input type="checkbox"/> WHITE RAL-9003-T <input type="checkbox"/> GREY RAL-7004-T <input type="checkbox"/> DARK BRONZE RAL-8019-T <input type="checkbox"/> GREEN RAL-6005-T FOR SMOOTH FINISH REPLACE SUFFIX "T" WITH REPLACE SUFFIX "S" (EXAMPLE: RAL-9005-S) <input type="checkbox"/> NATURAL CONCRETE NAT CONSULT FACTORY FOR CUSTOM COLORS AND FOR OTHER CONCRETE COLORS	INTERNAL HOUSE SIDE SHIELD <input type="checkbox"/> 90° HS90 <input type="checkbox"/> 135° HS135 <input type="checkbox"/> 180° HS180 <input type="checkbox"/> DIMMABLE DRIVER(S) (0-10V) DIM <input type="checkbox"/> HIGH-LOW DIMMING FOR HARDWIRED SWITCHING OR NON-INTEGRATED MOTION SENSOR . . . HLSW <input type="checkbox"/> DUPLEX RECEPTACLE DUP <input type="checkbox"/> GROUND FAULT RECEPTACLE GFI <input type="checkbox"/> 10KV SURGE PROTECTOR 10SP <input type="checkbox"/> 20KV SURGE PROTECTOR (277V & 480V Only) . . . 20SP OPTIONAL HEIGHTS: <input type="checkbox"/> 30" Overall height. . 30-OAH <input type="checkbox"/> 36" Overall height. . 36-OAH

12" Square

Concrete and Cast Aluminum

Lighted

*Shown with -CL Option



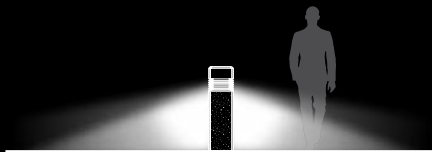
Un-Lighted



BSC12



BPC12



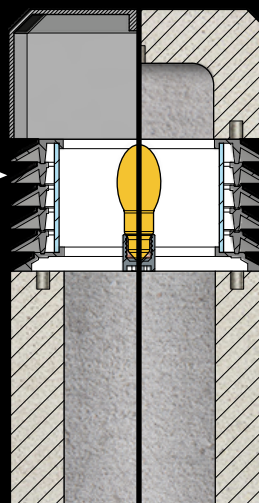
Robust cast louver vanes are set at a 30° cutoff angle to provide generous horizontal illumination 360° around the bollard and make the entire assembly highly vandal-resistant.

Aluminum Top Cap is robust, corrosion resistant, low copper content alloy in all -AC models

Louver Vanes are corrosion resistant low copper alloy indexed for alignment and bolted together to create a unified element

Concrete Top Cap is internally reinforced with an electro-zinc plated steel cage.

Concrete Riser is internally reinforced with an electro-zinc plated steel cage and has a light sandblasted surface, sealed with an anti-graffiti protectant.



Specifications

Concrete Riser - Natural precast concrete body with light sandblast finish. A graffiti resistant sealer is applied to the surface. Internal electro-zinc plated steel cage provides additional strength for the structure and has threaded inserts welded to it for mounting the base plate and optical assembly. Base plate is 1/4" galvanized steel.

Top Cap

Concrete (Ex.: BPC12-CL) - Natural precast concrete body with light sandblast finish. A graffiti resistant sealer is applied to the surface. Internal electro-zinc plated steel cage provides additional strength for the structure.

Aluminum (EX.: BSAC12-CL)

Durable, corrosion resistant cast aluminum (A356 alloy; <0.2% copper) construction.

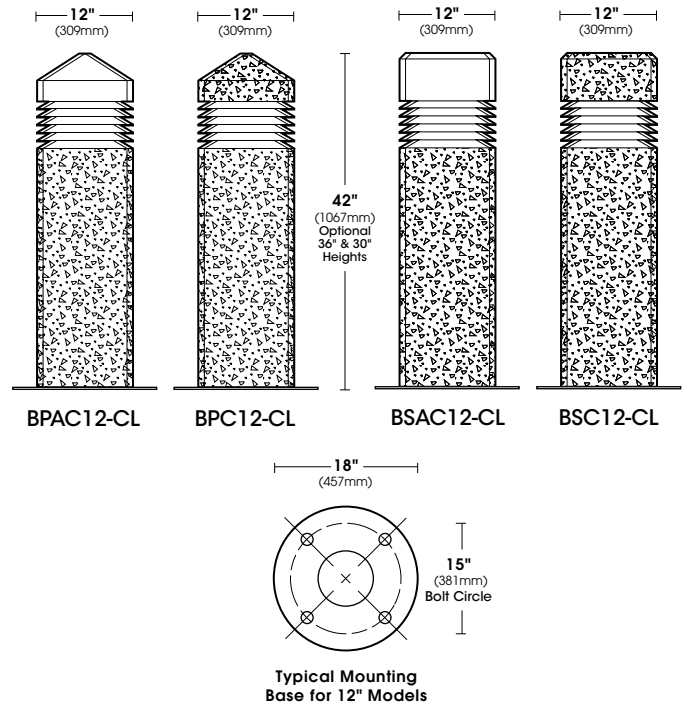
Cast Louver (CL) - Cast aluminum (A356 alloy, <0.2%Cu) louver stack (with diffuse acrylic lens) protects the internal lamp module or LED Power Array Module (with opal diffuse lenses). Horizontal louvers create a 30° cut-off angle and provide 360° of downlight.

Electrical Module - All electrical components are UL and cUL recognized are mounted on a single plate and factory prewired with quick-disconnect plugs. All HID lamps are medium base (E26) or Bi-pin Base (G12). **Electronic MH ballasts** have a power factor of >.95 (35/39W - 100W) -20°F starting, 120-277V and have lamp End-of-life protection. 347V option utilizes a step down transformer to the electronic ballast. **Magnetic MH ballasts** are high power factor (35/39W - 100W), -20°F starting, multi-tap 120-277V, 60Hz. All HPS ballasts are core and coil, high-reactance, high power factor (35/39W - 100W), -40°F starting. **Electronic CFL ballasts** are high power factor 120 - 277 voltage sensing, GX24-q4 socket supplied for all 18w - 42w triple tube lamps.

LED Driver - UL and cUL recognized High Power Factor, Constant Current LED drivers operate on input voltages from 120-277VAC, 50/60hz and is mechanically fastened to a retaining bracket. 347V option may utilize a step down transformer to the LED driver. Driver. Main power quick disconnect provided. Driver has a minimum 4KV of internal surge protection. Consult factory for other voltages. Dimming and High-Low Driver options available. 10KV & 20KV Surge Protector optional.

LED Power Array - Three-dimensional array consisting of 6 individual LED tubes fastened to a retaining plate equally spaced to provide 360° of

Dimensions



even illumination output. Each LED tube consists of a circuit board populated with a multiple of LED's which is fastened to a radial aluminum heat sink. A white polycarbonate lens and end caps protect each LED tube's internal components and provides diffusion to prevent shadowing and striations.

Finish - Electrostatically applied TGIC Polyester Powder Coat on substrate prepared with 20 PSI power wash at 140°F. Four step media blast and iron phosphate pretreatment for protection and paint adhesion. 400°F bake for maximum hardness and durability.

Spec/Order Example: BPC12-CL/18LED208/RAL-9005-T/20SP

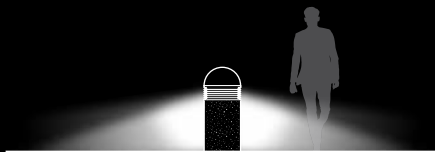
Order/Specify Unit models as per: BSC12/NAT

MODEL	OPTICS	LAMP/LED MODE	VOLTAGE	FINISH	OPTIONS
SQUARE TOP	HID AND VERTICAL POWER ARRAY	WATTAGE	VOLTAGE	STANDARD TEXTURED FINISH	INTERNAL HOUSE SIDE SHIELD
<input type="checkbox"/> BSAC12	<input type="checkbox"/> CAST LOUVER - 360° HORIZ. CL	<input type="checkbox"/> 100 ³	<input type="checkbox"/> 120	<input type="checkbox"/> BLACK RAL-9005-T	<input type="checkbox"/> 90° HS90
<input type="checkbox"/> BSC12		<input type="checkbox"/> 70 ^T	<input type="checkbox"/> 208°	<input type="checkbox"/> WHITE RAL-9003-T	<input type="checkbox"/> 135° HS135
PYRAMID TOP		<input type="checkbox"/> 70	<input type="checkbox"/> 240	<input type="checkbox"/> GREY RAL-7004-T	<input type="checkbox"/> 180° HS180
<input type="checkbox"/> BPAC12		<input type="checkbox"/> 50 ^T	<input type="checkbox"/> 277 ⁷	<input type="checkbox"/> DARK BRONZE RAL-8019-T	<input type="checkbox"/> DIMMABLE DRIVER(S) (0-10V) DIM
<input type="checkbox"/> BPC12		<input type="checkbox"/> 50	<input type="checkbox"/> 347	<input type="checkbox"/> GREEN RAL-6005-T	<input type="checkbox"/> HIGH-LOW DIMMING FOR HARDWIRED SWITCHING OR NON-INTEGRATED MOTION SENSOR ... HLSW
		<input type="checkbox"/> 42CFL ⁵	<input type="checkbox"/> 480	<input type="checkbox"/> FOR SMOOTH FINISH REPLACE SUFFIX "T" WITH REPLACE SUFFIX "S" (EXAMPLE: RAL-9005-S)	<input type="checkbox"/> DUPLEX RECEPTACLE DUP
		<input type="checkbox"/> 35HPS		<input type="checkbox"/> NATURAL CONCRETE NAT	<input type="checkbox"/> GROUND FAULT RECEPTACLE GFI
		NOTES:			<input type="checkbox"/> 10KV SURGE PROTECTOR 10SP
		3 - AVAILABLE IN 8" BOLLARD ONLY			<input type="checkbox"/> 20KV SURGE PROTECTOR (277V & 480V Only) ... 20SP
		4 - TUBULAR LAMP, G12 BASE			OPTIONAL HEIGHTS:
		5 - GX24q-4 BASE SUITABLE FOR 18 THRU 42 WATT TRIPLE TUBE LAMPS			<input type="checkbox"/> 30" Overall height... 30-OAH
		6 - N/A FOR 35HPS ANFD 50HPS			<input type="checkbox"/> 36" Overall height... 36-OAH
		7 - N/A FOR 35HPS			
		8 - GX24q-5 BASE			
		NO. LEDs	COLOR TEMP - CCT		
		<input type="checkbox"/> 48LED (53 Watts)	<input type="checkbox"/> NW (4000K) * *STANDARD		
		<input type="checkbox"/> 36LED (42 Watts)	<input type="checkbox"/> CW (5000K)		
		<input type="checkbox"/> 24LED (28 Watts)	<input type="checkbox"/> WW (3000K)		
		<input type="checkbox"/> 18LED (21Watts)	OTHER LED COLORS AVAILABLE CONSULT FACTORY		

18" Dia.

Concrete and Cast Aluminum

Lighted

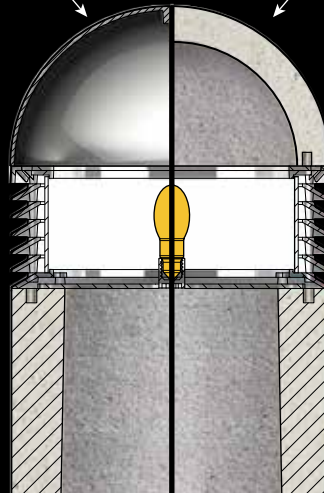


Robust cast louver vanes are set at a 30° cutoff angle to provide generous horizontal illumination 360° around the bollard and make the entire assembly highly vandal-resistant.

Aluminum Top Cap is robust, corrosion resistant, low copper content alloy in all -AC models.

Concrete Top Cap is internally reinforced with an electro-zinc plated steel cage.

Louver Vanes are corrosion resistant low copper alloy indexed for alignment and bolted together to create a unified element.



Concrete Riser is internally reinforced with an electro-zinc plated steel cage and has a light sandblasted surface, sealed with an anti-graffiti protectant.

Specifications

Concrete Riser - Natural precast concrete body with light sandblast finish. A graffiti resistant sealer is applied to the surface. Internal electro-zinc plated steel cage provides additional strength for the structure and has threaded inserts welded to it for mounting the base plate and optical assembly. Base plate is 1/4" galvanized steel.

Top Cap

Concrete (Ex.: BRC18-CL) - Natural precast concrete body with light sandblast finish. A graffiti resistant sealer is applied to the surface. Internal electro-zinc plated steel cage provides additional strength for the structure.

Aluminum

(EX.: BDAC18-CL)
Durable, corrosion resistant cast aluminum (A356 alloy; <0.2% copper) construction.

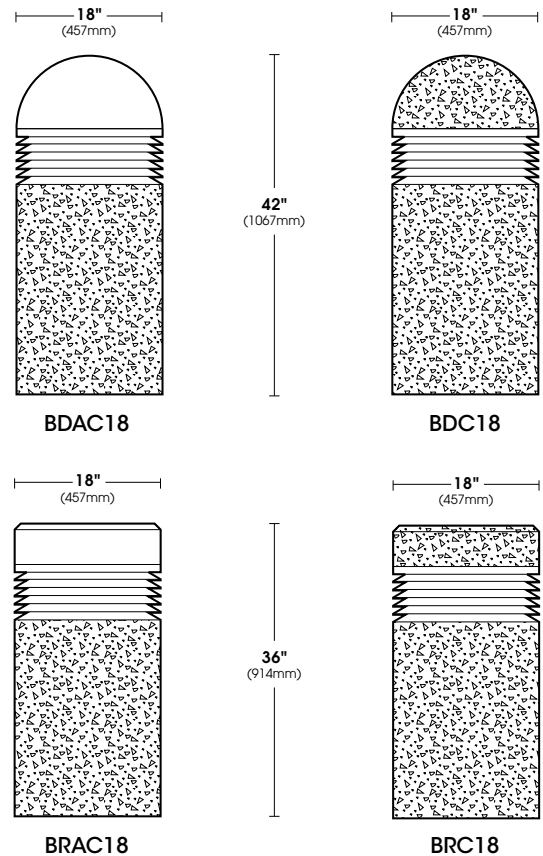
Cast Louver (CL) - Cast aluminum (A356 alloy, <0.2%Cu) louver stack (with diffuse acrylic lens) protects the internal lamp module or LED Power Array Module (with opal diffuse lenses). Horizontal louvers create a 30° cut-off angle and provide 360° of downlight.

Electrical Module - All electrical components are UL and cUL recognized are mounted on a single plate and factory prewired with quick-disconnect plugs. All HID lamps are medium base (E26) or Bi-pin Base (G12). **Electronic MH ballasts** have a power factor of >.95 (35/39W - 150W) -20°F starting, 120-277V and have lamp End-of-life protection. 347V option utilizes a step down transformer to the electronic ballast. **Magnetic MH ballasts** are high power factor (35/39W - 150W), -20°F starting, multi-tap 120-277V, 60Hz. All HPS ballasts are core and coil, high-reactance, high power factor (35/39W - 150W), -40°F starting. **Electronic CFL ballasts** are high power factor 120 - 277 voltage sensing. GX24-q4 socket supplied for all 18w - 42w triple tube lamps.

LED Driver - UL and cUL recognized High Power Factor, Constant Current LED drivers operate on input voltages from 120-277VAC, 50/60hz and is mechanically fastened to a retaining bracket. 347V option may utilize a step down transformer to the LED driver. Driver. Main power quick disconnect provided. Driver has a minimum 4KV of internal surge protection. Consult factory for other voltages. Dimming and High-Low Driver options available. 10KV & 20KV Surge Protector optional.

LED Power Array - Three-dimensional array consisting of 6 individual LED tubes fastened to a retaining plate equally spaced to provide 360° of even illumination output. Each LED tube consists of a circuit board populated with a multiple of LED's which is fastened to a radial aluminum heat sink. A

Dimensions



white polycarbonate lens and end caps protect each LED tube's internal components and provides diffusion to prevent shadowing and striations.

Finish - Electrostatically applied TGIC Polyester Powder Coat on substrate prepared with 20 PSI power wash at 140°F. Four step media blast and iron phosphate pretreatment for protection and paint adhesion. 400°F bake for maximum hardness and durability.

Spec/Order Example: BDAC18-CL/150PSMH480/RAL-7004-S/DIM

Order/Specify Unlit models as per: BRC18/NAT

MODEL	OPTICS	LAMP/LED MODE	VOLTAGE	FINISH	OPTIONS	
DOMED TOP	HID AND VERTICAL POWER ARRAY	WATTAGE	TYPE	VOLTAGE	STANDARD TEXTURED FINISH	
<input type="checkbox"/> BDAC18	<input type="checkbox"/> CAST LOUVER - 360° HORIZ. CL	<input type="checkbox"/> 150	<input type="checkbox"/> PSMH	<input type="checkbox"/> 120	<input type="checkbox"/> BLACK RAL-9005-T	INTERNAL HOUSE SIDE SHIELD <input type="checkbox"/> 90° HS90 <input type="checkbox"/> 135° HS135 <input type="checkbox"/> 180° HS180
<input type="checkbox"/> BDC18		<input type="checkbox"/> 100 ³	<input type="checkbox"/> HPS	<input type="checkbox"/> 208 ⁶	<input type="checkbox"/> WHITE RAL-9003-T	<input type="checkbox"/> DIMMABLE DRIVER(S) (0-10V) DIM
FLAT TOP		<input type="checkbox"/> 70 ¹		<input type="checkbox"/> 240	<input type="checkbox"/> GREY RAL-7004-T	<input type="checkbox"/> HIGH-LOW DIMMING FOR HARDWIRED SWITCHING OR NON-INTEGRATED MOTION SENSOR . . . HLSW
<input type="checkbox"/> BRAC18		<input type="checkbox"/> 70		<input type="checkbox"/> 277 ⁷	<input type="checkbox"/> DARK BRONZE RAL-8019-T	<input type="checkbox"/> DUPLEX RECEPTACLE DUP
<input type="checkbox"/> BRC18		<input type="checkbox"/> 50 ⁴		<input type="checkbox"/> 347	<input type="checkbox"/> GREEN RAL-6005-T	<input type="checkbox"/> GROUND FAULT RECEPTACLE GFI
		<input type="checkbox"/> 50		<input type="checkbox"/> 480		<input type="checkbox"/> 10KV SURGE PROTECTOR 10SP
		<input type="checkbox"/> 42CFL ⁵				<input type="checkbox"/> 20KV SURGE PROTECTOR (277V & 480V Only) . . . 20SP
		<input type="checkbox"/> 35HPS				OPTIONAL HEIGHTS:
						<input type="checkbox"/> 30" Overall height. . 30-OAH
						<input type="checkbox"/> 36" Overall height. . 36-OAH
		NO. LEDs	COLOR TEMP - CCT			
		<input type="checkbox"/> 48LED (53 Watts)	<input type="checkbox"/> NW (4000K) * *STANDARD			
		<input type="checkbox"/> 36LED (42 Watts)	<input type="checkbox"/> CW (5000K)			
		<input type="checkbox"/> 24LED (28 Watts)	<input type="checkbox"/> WW (3000K)			
		<input type="checkbox"/> 18LED (21Watts)				
			OTHER LED COLORS AVAILABLE CONSULT FACTORY			
					FOR SMOOTH FINISH REPLACE SUFFIX 'T' WITH REPLACE SUFFIX 'S' (EXAMPLE: RAL-9005-S)	
					<input type="checkbox"/> NATURAL CONCRETE NAT	
					CONSULT FACTORY FOR CUSTOM COLORS AND FOR OTHER CONCRETE COLORS	

Colonial Bollards

Cast Aluminum



COLB1

COLB2

Available Optics



CLEAR FLAT GLASS
(OPEN FRAME)



OPAL WHITE DIFFUSER WA

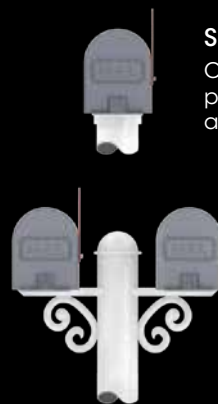


CLEAR PATTERNED
ENCLOSURE CPA

Illuminating Characteristics



Accessories



Single or Double Cast Aluminum Mailbox

Cast mailboxes may be mounted in a post top or side mount fashion. Mailboxes are made of a durable, corrosion resistant, cast aluminum alloy and painted to match the decorative bollard. Mailboxes include non-locking pull latch and cast flag.

Duplex or GFI Receptacle with Cover

Specify the style of receptacle to mount in the outlet provision. Standard cover supplied.

Eyebolt

Eyebolts may be specified to attach barrier chain or cord. Specify the height of eyebolt location.

Specifications

Fixture Housing - One piece low copper heavy wall aluminum casting (A356 alloy; <.02Cu). Hood is fastened to the Housing with a stainless steel hinge and secured with a tool-less stainless steel latch 180° opposite the hinge. Housing and Hood is sealed with an extruded closed cell silicone gasket.

Lenses

COL HID and LED models - See HID Lamp/Electrical and **VLED** for lens specification.

COL-WA - Opal White Acrylic is standard. Lenses are gasketed at housing.

COL-CPA - Clear Patterned Acrylic is standard. Lenses are gasketed at housing.

Electrical Module - All electrical components are UL and cUL recognized, mounted on a single plate and factory prewired with quick-disconnect plugs. Standard electronic MH ballasts have power factor of >.95 (70W - 150W) -20°F starting, 120-277V or >.90 (250W), -20°F starting, 200-277V, 50Hz/60Hz and have lamp End-of-life protection. 347V option utilizes a step down transformer to the electronic ballast. Electronic MH ballast has a power factor of >.90 (210W), -4°F starting, 200 - 277V, 50Hz/60Hz and has lamp End-of-life protection. Magnetic MH ballasts are high reactance, high power factor (70W - 150W) or CWA (250W), -20°F starting, multi-tap 120-277V, 60Hz. All HPS ballasts are core and coil, high-reactance, high power factor (70W - 150W) or CWA (200W - 250W), -40°F starting.

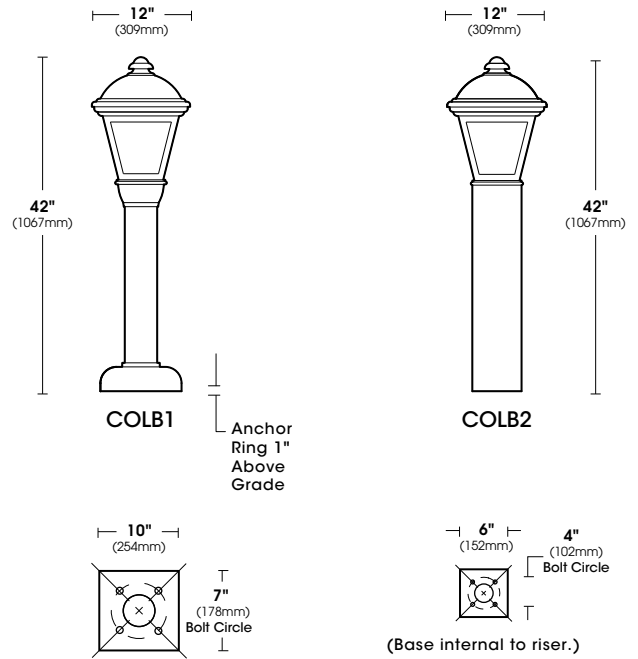
LED Driver - UL and CUL recognized Constant Current LED drivers operate on input voltages from 120 - 277VAC, 50/60Hz and are mounted to an aluminum bracket secured to the barrier plate. Driver is independently sealed and UL Listed for wet location. Consult Factory for High-Low and dimming options. (Consult factory for dimming applications and alternate voltages.)

LED Power Array - Three-dimensional array consisting of 6 individual LED tubes fastened to a retaining plate equally spaced to provide 360° of even illumination output. Each LED tube consists of a circuit board populated with a multiple of LED's which is fastened to a radial aluminum heat sink. A white polycarbonate lens and end caps protect each LED tube's internal components and provides diffusion to prevent shadowing and striations.

Finish - Electrostatically applied TGIC Polyester Powder Coat on substrate prepared with 20 PSI power wash at 140°F. Four step media blast and iron phosphate pretreatment for protection and paint adhesion. 400°F bake for maximum hardness and durability.

VLED Optical Module - Low copper A356 alloy (<.2% copper) cast aluminum housing. Integrated clear tempered 3/16" glass lens sealed with a

Dimensions



continuous silicone gasket protects emitters (LED's) and emitter Reflector-Prism optics, and seals the module from water intrusion and environmental contaminants. Entire module meets an IP67 rating. Emitters (LED's) are high output, standard Neutral White nominal 4000K CCT for the entire module (Warm white 3000K CCT and Cool White 5000K CCT also available). Each emitter is optically controlled by a Reflector-Prism injection molded from H12 acrylic (3 types per module; one from 0° - 50°; one from 50° - 65°; one from 65° - 72°). Each Reflector-Prism has indexing pins for aiming and is secured to an optical plate made of matte black anodized aluminum. The optical plate locates every Reflector-Prism over an emitter. The Reflector-Prisms are arrayed to produce IES Type II, IES Type III, IES Type IV or IES Type V-SQ light distributions. The entire Optical Module is field rotatable in 90° increments. Both module and drivers are factory wired using water resistant, insulated cord. Lens, module and drivers are field replaceable.

Spec/Order Example: 8456-NLF/60INC120/RAL-9003-T

MODEL	OPTICS	LAMP/LED MODE	VOLTAGE	FINISH	OPTIONS	
<input type="checkbox"/> COLB1 <input type="checkbox"/> COLB2 <input type="checkbox"/> COLB1-WA <input type="checkbox"/> COLB2-WA <input type="checkbox"/> COLB1-CPA <input type="checkbox"/> COLB2-CPA	HORIZONTAL SEGMENTED REFLECTOR HID & CFL (FOR COLB & COLB-CPA) <input type="checkbox"/> TYPE ASYMMETRIC . . . HR-ASY <input type="checkbox"/> TYPE SYMMETRIC . . . HR-SYM (COLB-WA ONLY) <input type="checkbox"/> TYPE SYMMETRIC . . . VL-SYM GLASS REFRACTOR HID & CFL (COLB-CPA ONLY) <input type="checkbox"/> TYPE I III PG - III <input type="checkbox"/> TYPE V PG - V LED VLED (COLB ONLY) <input type="checkbox"/> TYPE ASYMMETRIC . . VLED-ASY <input type="checkbox"/> TYPE SYMMETRIC . . . VLED-SYM VERTICAL POWER ARRAY LED (COLB-CPA & COLB-WA ONLY) <input type="checkbox"/> TYPE SYMMETRIC . . . VPA-SYM *NOTE: For Asymmetric distribution, use VPA-SYM with house side shield option.	WATTS <input type="checkbox"/> 70 <input type="checkbox"/> 70T ⁷ <input type="checkbox"/> 50 <input type="checkbox"/> 50T ⁷ <input type="checkbox"/> 42 CFL ⁹ <input type="checkbox"/> 39T ⁷ PSMH <input type="checkbox"/> 35 HPS NO. LEDs <input type="checkbox"/> 24LED (28 Watts) <input type="checkbox"/> 12LED (14 Watts) LED <input type="checkbox"/> NW (4000K)* *STANDARD <input type="checkbox"/> CW (5000K) <input type="checkbox"/> WW (3000K) OTHER LED COLORS AVAILABLE CONSULT FACTORY	HID <input type="checkbox"/> PSMH <input type="checkbox"/> HPS NOTES FOR ELECTRONIC BALLASTS: -ADD SUFFIX -E AFTER VOLTAGE FOR ELECTRONIC -39W - 175W ARE 120 - 277VOLT -ABOVE 175W ARE 200 - 277VOLT -PSMH ONLY NOTES: 1 - TUBULAR LAMP, PG218 BASE, -E BALLAST ONLY 2 - TUBULAR LAMP, G12 BASE 3 - FOR PSMH, HOR POSITION LAMP REQUIRED 4 - E39 BASE, HOR POSITION LAMP REQUIRED 5 - PSMH ONLY 6 - E BALLAST NOT AVAILABLE 7 - N/A for 35HPS and 50HPS 8 - N/A for 35HPS 9 - GX24Q-4 BASE 10 - AVAILABLE IN LED ONLY	VOLTAGE <input type="checkbox"/> 120 <input type="checkbox"/> 208 ⁷ <input type="checkbox"/> 240 <input type="checkbox"/> 277 ⁸ <input type="checkbox"/> 347 <input type="checkbox"/> 480 ¹⁰	STANDARD TEXTURED FINISH <input type="checkbox"/> BLACK RAL-9005-T <input type="checkbox"/> WHITE RAL-9003-T <input type="checkbox"/> GREY RAL-7004-T <input type="checkbox"/> DARK BRONZE RAL-8019-T <input type="checkbox"/> GREEN RAL-6005-T FOR SMOOTH FINISH REPLACE SUFFIX "T" WITH REPLACE SUFFIX "S" (EXAMPLE: RAL-9005-S) CONSULT FACTORY FOR CUSTOM COLORS AND FOR OTHER CONCRETE COLORS	<input type="checkbox"/> HOUSE SIDE SHIELD HS <input type="checkbox"/> DIMMABLE DRIVER(S) (0-10V) DIM <input type="checkbox"/> HIGH-LOW DIMMING FOR HARDWIRED SWITCHING OR NONINTEGRATED MOTION SENSOR . . . HLSW <input type="checkbox"/> 10KV SURGE PROTECTOR 10SP <input type="checkbox"/> 20KV SURGE PROTECTOR (277V & 480V Only) . . . 20SP <input type="checkbox"/> PHOTO CELL + VOLTAGE (EXAMPLE: PC120V) . . . PC+V <input type="checkbox"/> SINGLE FUSE (120V, 277V) SF <input type="checkbox"/> DOUBLE FUSE (208V, 240V) DF <input type="checkbox"/> CLEAR SMOOTH POLYCARBONATE DIFFUSER CP

B100 Series

Cast Aluminum

Lighted



Un-Lighted



Available Optics



INTERNAL LOUVER CL

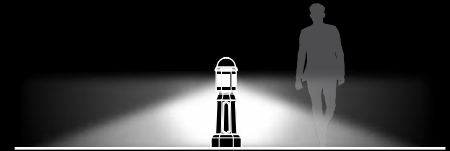


PRISMATIC GLASS PG

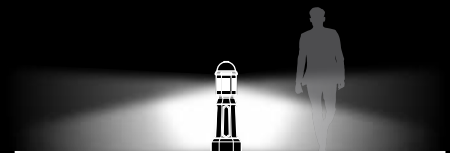


VERT. LAMP VL-SYM
VERT. LED ARRAY VPA-SYM

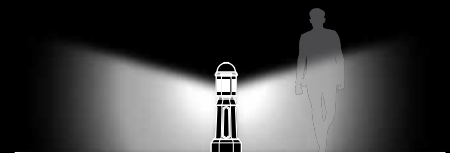
Illuminating Characteristics



FOR USE W/ CLEAR OR CLEAR PATTERNED LENSES ONLY



FOR USE W/ CLEAR OR CLEAR PATTERNED LENSES ONLY



FOR USE W/ CLEAR PATTERNED OR OPAL DIFFUSE LENSES ONLY

Accessories



Single or Double Cast Aluminum Mailbox

Cast mailboxes may be mounted in a post top or side mount fashion. Mailboxes are made of a durable, corrosion resistant, cast aluminum alloy and painted to match the decorative bollard. Mailboxes include non-locking pull latch and cast flag.

Duplex or GFI Receptacle with Cover

Specify the style of receptacle to mount in the outlet provision. Standard cover supplied.

Eyebolt

Eyebolts may be specified to attach barrier chain or cord. Specify the height of eyebolt location.

B3300 Series

Cast Aluminum

Lighted



Un-Lighted



Available Optics



INTERNAL LOUVER CL

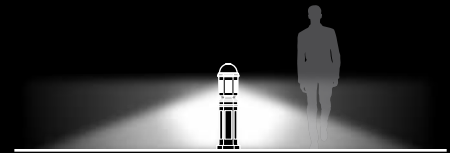


PRISMATIC GLASS PG



VERT. LAMP VL-SYM
VERT. LED ARRAY VPA-SYM

Illuminating Characteristics



FOR USE W/ CLEAR OR CLEAR PATTERNED LENSES ONLY

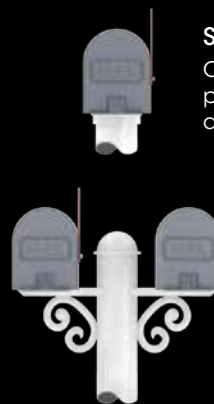


FOR USE W/ CLEAR OR CLEAR PATTERNED LENSES ONLY



FOR USE W/ CLEAR PATTERNED OR OPAL DIFFUSE LENSES ONLY

Accessories



Single or Double Cast Aluminum Mailbox

Cast mailboxes may be mounted in a post top or side mount fashion. Mailboxes are made of a durable, corrosion resistant, cast aluminum alloy and painted to match the decorative bollard. Mailboxes include non-locking pull latch and cast flag.



Duplex or GFI Receptacle with Cover

Specify the style of receptacle to mount in the outlet provision. Standard cover supplied.



Eyebolt

Eyebolts may be specified to attach barrier chain or cord. Specify the height of eyebolt location.

Specifications

Housing and Riser - Durable, corrosion resistant cast aluminum (A356 alloy; < 0.2% Cu) base, riser and top cap, minimum .250" wall thickness. All visible welds are blended, all exposed hardware is stainless steel.

Lens - Tempered Micro-Prism glass, fully gasketed, and retained by aluminum clips.

Internal Louver (IL) - A specular louver stack conceals the inner lamp/LED Power Array (with opal diffuse lens) module and provides uplight and glare control through the external clear injection molded polycarbonate lens.

Opal Lens (WP) - Injection molded opal polycarbonate lens protects the internal lamp or LED Power Array Module (with opal diffuse lenses) and provides uniform illumination.

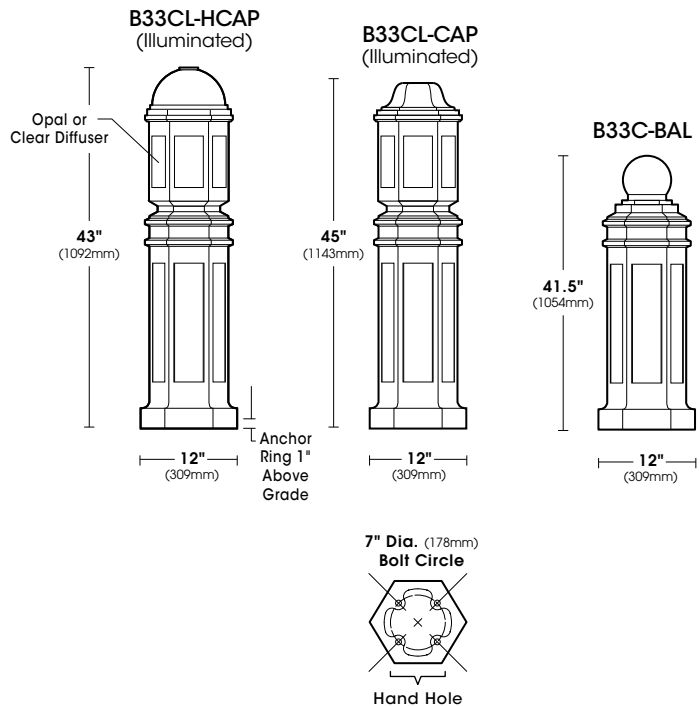
Prismatic Glass Refractor (PG) - HID only - Clear polycarbonate lens surrounds a prismatic glass refractor (Type III and Type V).

Electrical Module - All electrical components are UL and cUL recognized are mounted on a single plate and factory wired with quick-disconnect plugs. All HID lamps are medium base (E26) or Bi-pin Base (G12). Electronic MH ballasts have a power factor of >.95 (35/39W - 100W) -20°F starting, 120-277V and have lamp End-of-life protection. 347V option utilizes a step down transformer to the electronic ballast. Magnetic MH ballasts are high power factor (35/39W - 100W), -20°F starting, multi-tap 120-277V, 60Hz. All HPS ballasts are core and coil, high-reactance, high power factor (35/39W - 100W), -40°F starting. Electronic CFL ballasts are high power factor 120 - 277 voltage sensing. GX24-q4 socket supplied for all 18w - 42w triple tube lamps.

LED Driver - UL and cUL recognized High Power Factor, Constant Current LED drivers operate on input voltages from 120-277VAC, 50/60hz and is mechanically fastened to a retaining bracket. 347V option may utilize a step down transformer to the LED driver. Driver. Main power quick disconnect provided. Driver has a minimum 4KV of internal surge protection. Consult factory for other voltages. Dimming and High-Low Driver options available. 10KV & 20KV Surge Protector optional.

LED Power Array - Three-dimensional array consisting of 6 individual LED tubes fastened to a retaining plate equally spaced to provide 360° of even illumination output. Each LED tube consists of a circuit board

Dimensions



populated with a multiple of LED's which is fastened to a radial aluminum heat sink. A white polycarbonate lens and end caps protect each LED tube's internal components and provides diffusion to prevent shadowing and striations.

Finish - Electrostatically applied TGIC Polyester Powder Coat on substrate prepared with 20 PSI power wash at 140°F. Four step media blast and iron phosphate pretreatment for protection and paint adhesion. 400°F bake for maximum hardness and durability.

Spec/Order Example: B33C-CL-HCAP-PG-III/50HPS240/RAL-9003-S/BEB/HS90SP

Unlit Example: B33CL-BAL/RAL-7004-T

MODEL	OPTICS	LAMP/LED MODE	VOLTAGE	FINISH	ACCESSORIES	OPTIONS
<input type="checkbox"/> LIGHTED <input type="checkbox"/> B33CL-CAP-CP <input type="checkbox"/> B33CL-CAP-WP <input type="checkbox"/> B33CL-CAP-CPA <input type="checkbox"/> B33CL-HCAP-CP <input type="checkbox"/> B33CL-HCAP-WP <input type="checkbox"/> B33CL-HCAP-CPA <input type="checkbox"/> UN-LIGHTED <input type="checkbox"/> B33CL-BAL <small>TO CONFIGURE, SHOW MODEL, FINISH AND ANY PERTINENT ACCESSORIES</small>	HID <input type="checkbox"/> INTERNAL LOUVER IL ¹ <input type="checkbox"/> PRISMATIC GLASS TYPE-V... PG-V ⁹ <input type="checkbox"/> PRISMATIC GLASS TYPE-III... PG-III ⁹ <input type="checkbox"/> VERTICAL LAMP VL-SYM ¹⁰ VERTICAL POWER ARRAY <input type="checkbox"/> INTERNAL LOUVER IL ¹¹ <input type="checkbox"/> VERTICAL ARRAY VPA-SYM ¹¹ <small>NOTES: 9 - -CP AND -CPA ONLY 10 - -WP ONLY 11 - -CPA AND -WP ONLY</small>	WATTAGE <input type="checkbox"/> 100 ³ <input type="checkbox"/> 70T ⁴ <input type="checkbox"/> 70 <input type="checkbox"/> 50T ⁴ <input type="checkbox"/> 50 <input type="checkbox"/> 42CFL ⁵ <input type="checkbox"/> 35HPS <small>NOTES: 3 - AVAILABLE IN 8" BOLLARD ONLY 4 - TUBULAR LAMP, G12 BASE 5 - GX24q-4 BASE SUITABLE FOR 18 THRU 42 WATT TRIPLE TUBE LAMPS 6 - N/A FOR 35HPS ANFD 50HPS 7 - N/A FOR 35HPS 8 - GX24q-5 BASE</small> NO. LEDs <input type="checkbox"/> 36LED (42 Watts) <input type="checkbox"/> 24LED (28 Watts) <input type="checkbox"/> 12LED (14Watts) COLOR TEMP - CCT <input type="checkbox"/> NW (4000K)* *STANDARD <input type="checkbox"/> CW (5000K) <input type="checkbox"/> WW (3000K) <small>OTHER LED COLORS AVAILABLE CONSULT FACTORY</small>	<input type="checkbox"/> 120 <input type="checkbox"/> 208 ⁶ <input type="checkbox"/> 240 <input type="checkbox"/> 277 ⁷ <input type="checkbox"/> 347 <input type="checkbox"/> 480	STANDARD TEXTURED FINISH <input type="checkbox"/> BLACK RAL-9005-T <input type="checkbox"/> WHITE RAL-9003-T <input type="checkbox"/> GREY RAL-7004-T <input type="checkbox"/> DARK BRONZE RAL-8019-T <input type="checkbox"/> GREEN RAL-6005-T <small>FOR SMOOTH FINISH REPLACE SUFFIX "T" WITH REPLACE SUFFIX "S" (EXAMPLE: RAL-9005-S)</small> <small>CONSULT FACTORY FOR CUSTOM COLORS</small>	<input type="checkbox"/> MAILBOX - SINGLE MBS <input type="checkbox"/> MAILBOX-DOUBLE MBD <input type="checkbox"/> BANNER EYE BOLT <input type="checkbox"/> SINGLE BEB <input type="checkbox"/> DOUBLE BEB/2-180	INTERNAL HOUSE SIDE SHIELD <input type="checkbox"/> 90° HS90 <input type="checkbox"/> 135° HS135 <input type="checkbox"/> 180° HS180 <input type="checkbox"/> DIMMABLE DRIVER(S) (0-10V) DIM <input type="checkbox"/> HIGH-LOW DIMMING FOR HARDWIRED SWITCHING OR NON-INTEGRATED MOTION SENSOR... HLSW <input type="checkbox"/> DUPLEX RECEPTACLE DUP <input type="checkbox"/> GROUND FAULT RECEPTACLE GFI <input type="checkbox"/> 10KV SURGE PROTECTOR 10SP <input type="checkbox"/> 20KV SURGE PROTECTOR (277V & 480V Only) ... 20SP

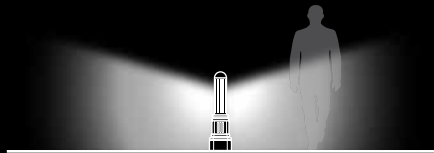
B3100 Series

Cast Aluminum

Lighted

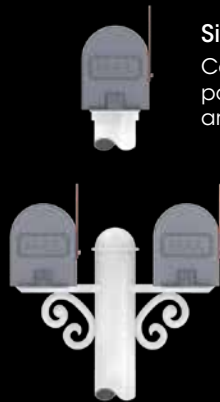


Un-Lighted



The Opal Diffuse lens provides even illumination with no striations or shadowing. The generous opening height creates soft vertical illumination to light objects and people transitioning the illuminated area.

Accessories



Single or Double Cast Aluminum Mailbox

Cast mailboxes may be mounted in a post top or side mount fashion. Mailboxes are made of a durable, corrosion resistant, cast aluminum alloy and painted to match the decorative bollard. Mailboxes include non-locking pull latch and cast flag.



Duplex or GFI Receptacle with Cover

Specify the style of receptacle to mount in the outlet provision. Standard cover supplied.



Eyebolt

Eyebolts may be specified to attach barrier chain or cord. Specify the height of eyebolt location.

Specifications

Housing and Riser - Durable, corrosion resistant cast aluminum (A356 alloy; < 0.2% Cu) base, unit riser and top cap, minimum .250" wall thickness. Lift riser is extruded, minimum .188" wall thickness. All visible welds are blended, all exposed hardware is stainless steel.

Opal Lens (WA) - Opal acrylic lens is located at the recess of the vertical flutes, protects the internal lamp/LED Module and provides uniform, diffuse illumination.

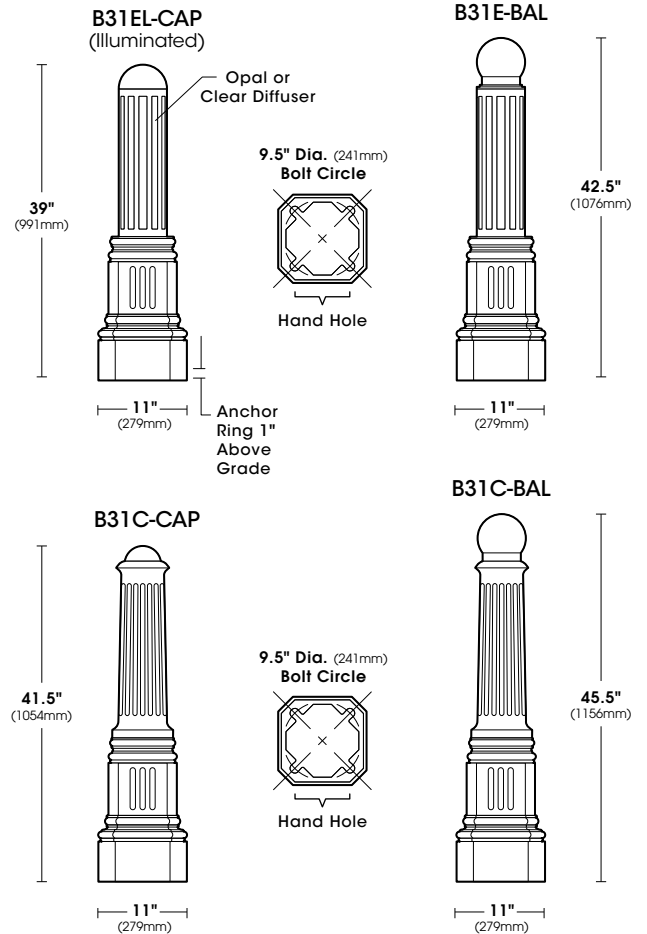
Electrical Module - All electrical components are UL and cUL recognized are mounted on a single plate and factory prewired with quick-disconnect plugs. All HID lamps are medium base (E26) or Bi-pin Base (G12). Electronic MH ballasts have a power factor of >.95 (35/39W - 100W) -20°F starting, 120-277V and have lamp End-of-life protection. 347V option utilizes a step down transformer to the electronic ballast. Magnetic MH ballasts are high power factor (35/39W - 100W), -20°F starting, multi-tap 120-277V, 60Hz. All HPS ballasts are core and coil, high-reactance, high power factor (35/39W - 100W), -40°F starting. Electronic CFL ballasts are high power factor 120 - 277 voltage sensing. GX24-q4 socket supplied for all 18w - 42w triple tube lamps.

LED Driver - UL and cUL recognized High Power Factor, Constant Current LED drivers operate on input voltages from 120-277VAC, 50/60hz and is mechanically fastened to a retaining bracket. 347V option may utilize a step down transformer to the LED driver. Driver. Main power quick disconnect provided. Driver has a minimum 4KV of internal surge protection. Consult factory for other voltages. Dimming and High-Low Driver options available. 10KV & 20KV Surge Protector optional.

LED Power Array - Three-dimensional array consisting of 6 individual LED tubes fastened to a retaining plate equally spaced to provide 360° of even illumination output. Each LED tube consists of a circuit board populated with a multiple of LED's which is fastened to a radial aluminum heat sink. A white polycarbonate lens and end caps protect each LED tube's internal components and provides diffusion to prevent shadowing and striations.

Finish - Electrostatically applied TGIC Polyester Powder Coat on substrate prepared with 20 PSI power wash at 140°F. Four step media blast and iron phosphate pretreatment for protection and paint adhesion. 400°F bake for maximum hardness and durability.

Dimensions



Spec/Order Example: B31EL-CAP-VL-SYM/35HPSPSMH/240/RAL-9005-T/HS135

Unit Example: B31E-BAL/RAL-7004-T

MODEL	OPTICS	LAMP/LED MODE	VOLTAGE	FINISH	ACCESSORIES	OPTIONS
<input type="checkbox"/> B31EL-CAP <input type="checkbox"/> B31E-BAL <input type="checkbox"/> B31C-CAP <input type="checkbox"/> B31C-BAL <small>TO CONFIGURE, SHOW MODEL FINISH AND ANY PERTINENT ACCESSORIES</small>	<input type="checkbox"/> HID <input type="checkbox"/> VERTICAL LAMP . . . VL-SYM <input type="checkbox"/> VERTICAL POWER ARRAY <input type="checkbox"/> VERTICAL ARRAY . . . VPA-SYM	WATTAGE <input type="checkbox"/> 100 <input type="checkbox"/> 70T ³ <input type="checkbox"/> 70 <input type="checkbox"/> 50T ⁴ <input type="checkbox"/> 50 <input type="checkbox"/> 42CFL ⁵ <input type="checkbox"/> 35HPS TYPE <input type="checkbox"/> PSMH <input type="checkbox"/> HPS <small>NOTES: 3 - AVAILABLE IN 8" BOLLARD ONLY 4 - TUBULAR LAMP, G12 BASE 5 - GX24q-4 BASE SUITABLE FOR 18 THRU 42 WATT TRIPLE TUBE LAMPS 6 - N/A FOR 35HPS ANFD 50HPS 7 - N/A FOR 35HPS 8 - GX24q-5 BASE</small>	VOLTAGE <input type="checkbox"/> 120 <input type="checkbox"/> 208 ⁶ <input type="checkbox"/> 240 <input type="checkbox"/> 277 ⁷ <input type="checkbox"/> 347 <input type="checkbox"/> 480	STANDARD TEXTURED FINISH <input type="checkbox"/> BLACK RAL-9005-T <input type="checkbox"/> WHITE RAL-9003-T <input type="checkbox"/> GREY RAL-7004-T <input type="checkbox"/> DARK BRONZE RAL-8019-T <input type="checkbox"/> GREEN RAL-6005-T <small>FOR SMOOTH FINISH REPLACE SUFFIX "T" WITH REPLACE SUFFIX "S" (EXAMPLE: RAL-9005-S)</small> <small>CONSULT FACTORY FOR CUSTOM COLORS</small>	<input type="checkbox"/> MAILBOX - SINGLE . . . MBS <input type="checkbox"/> MAILBOX-DOUBLE . . . MBD BANNER EYE BOLT <input type="checkbox"/> SINGLE . . . BEB <input type="checkbox"/> DOUBLE . . . BEB/2-180	INTERNAL HOUSE SIDE SHIELD <input type="checkbox"/> 90° . . . HS90 <input type="checkbox"/> 135° . . . HS135 <input type="checkbox"/> 180° . . . HS180 <input type="checkbox"/> DIMMABLE DRIVER(S) (0-10V) . . . DIM <input type="checkbox"/> HIGH-LOW DIMMING FOR HARDWIRED SWITCHING OR NON-INTEGRATED MOTION SENSOR . . . HLSW <input type="checkbox"/> DUPLEX RECEPTACLE . . . DUP <input type="checkbox"/> GROUND FAULT RECEPTACLE . . . GFI <input type="checkbox"/> 10KV SURGE PROTECTOR . . . 10SP <input type="checkbox"/> 20KV SURGE PROTECTOR (277V & 480V Only) . . . 20SP
		NO. LEDs <input type="checkbox"/> 36LED (42 Watts) <input type="checkbox"/> 24LED (28 Watts)	COLOR TEMP - CCT <input type="checkbox"/> NW (4000K)* <small>*STANDARD</small> <input type="checkbox"/> CW (5000K) <input type="checkbox"/> WW (3000K) <small>OTHER LED COLORS AVAILABLE CONSULT FACTORY</small>			

B300 Series

Cast Aluminum

Lighted



B3EL-CAP

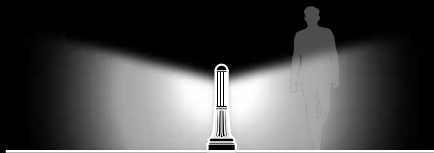
Un-Lighted



B3E-BAL

B3C-CAP

B3C-BAL

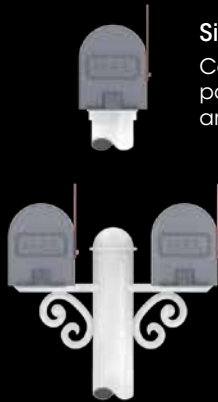


The Opal Diffuse lens provides even illumination with no striations or shadowing. The generous opening height creates soft vertical illumination to light objects and people transitioning the illuminated area.

Accessories

Single or Double Cast Aluminum Mailbox

Cast mailboxes may be mounted in a post top or side mount fashion. Mailboxes are made of a durable, corrosion resistant, cast aluminum alloy and painted to match the decorative bollard. Mailboxes include non-locking pull latch and cast flag.



Duplex or GFI Receptacle with Cover

Specify the style of receptacle to mount in the outlet provision. Standard cover supplied.



Eyebolt

Eyebolts may be specified to attach barrier chain or cord. Specify the height of eyebolt location.



Specifications

Housing and Riser - Durable, corrosion resistant cast aluminum (A356 alloy; < 0.2% Cu) base, unlit riser and top cap, minimum .250" wall thickness. Lit riser is extruded, minimum .188" wall thickness. All visible welds are blended, all exposed hardware is stainless steel.

Opal Lens (WA) - Opal acrylic lens is located at the recess of the vertical flutes, protects the internal lamp/LED Module and provides uniform, diffuse illumination.

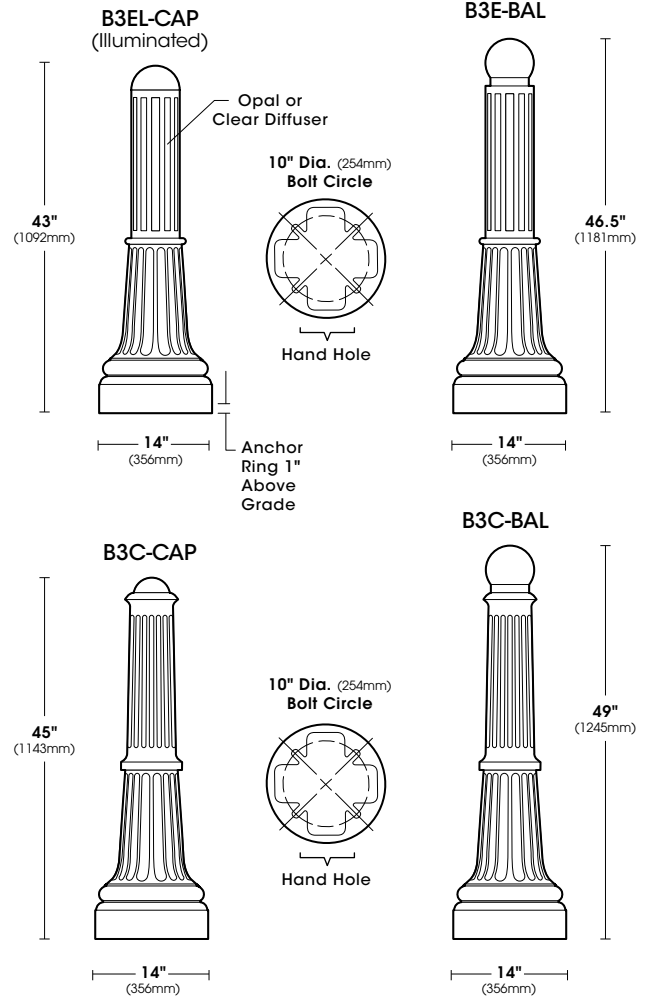
Electrical Module - All electrical components are UL and cUL recognized are mounted on a single plate and factory prewired with quick-disconnect plugs. All HID lamps are medium base (E26) or Bi-pin Base (G12). Electronic MH ballasts have a power factor of >.95 (35/39W - 100W) -20°F starting, 120-277V and have lamp End-of-life protection. 347V option utilizes a step down transformer to the electronic ballast. Magnetic MH ballasts are high power factor (35/39W - 100W), -20°F starting, multi-tap 120-277V, 60Hz. All HPS ballasts are core and coil, high-reactance, high power factor (35/39W - 100W), -40°F starting. Electronic CFL ballasts are high power factor 120 - 277 voltage sensing. GX24-q4 socket supplied for all 18w - 42w triple tube lamps.

LED Driver - UL and cUL recognized High Power Factor, Constant Current LED drivers operate on input voltages from 120-277VAC, 50/60hz and is mechanically fastened to a retaining bracket. 347V option may utilize a step down transformer to the LED driver. Driver. Main power quick disconnect provided. Driver has a minimum 4KV of internal surge protection. Consult factory for other voltages. Dimming and High-Low Driver options available. 10KV & 20KV Surge Protector optional.

LED Power Array - Three-dimensional array consisting of 6 individual LED tubes fastened to a retaining plate equally spaced to provide 360° of even illumination output. Each LED tube consists of a circuit board populated with a multiple of LED's which is fastened to a radial aluminum heat sink. A white polycarbonate lens and end caps protect each LED tube's internal components and provides diffusion to prevent shadowing and striations.

Finish - Electrostatically applied TGIC Polyester Powder Coat on substrate prepared with 20 PSI power wash at 140°F. Four step media blast and iron phosphate pretreatment for protection and paint adhesion. 400°F bake for maximum hardness and durability.

Dimensions



Spec/Order Example: B3EL-CAP-VPA-SYM/36CW/208/RAL-8019-S/BEB/2-180/DIM300AH

Unlit Example: B3C-BAL/RAL-9003-T

MODEL	OPTICS	LAMP/LED MODE	VOLTAGE	FINISH	ACCESSORIES	OPTIONS										
<input type="checkbox"/> B3EL-CAP <input type="checkbox"/> B3E-BAL <input type="checkbox"/> B3C-CAP <input type="checkbox"/> B3C-BAL <small>TO CONFIGURE, SHOW MODEL, FINISH AND ANY PERTINENT ACCESSORIES</small>	<input type="checkbox"/> HID <input type="checkbox"/> VERTICAL LAMP VL-SYM <input type="checkbox"/> VERTICAL POWER ARRAY <input type="checkbox"/> VERTICAL ARRAY VPA-SYM	<table border="0"> <tr> <td>WATTAGE</td> <td>TYPE</td> </tr> <tr> <td> <input type="checkbox"/> 100 <input type="checkbox"/> 70T¹ <input type="checkbox"/> 70 <input type="checkbox"/> 50T² <input type="checkbox"/> 50 <input type="checkbox"/> 42CFL⁵ <input type="checkbox"/> 35HPS </td> <td> <input type="checkbox"/> HID <input type="checkbox"/> PSMH <input type="checkbox"/> HPS <small>NOTES: 3 - AVAILABLE IN 8" BOLLARD ONLY 4 - TUBULAR LAMP, G12 BASE 5 - GX24q-4 BASE SUITABLE FOR 18 THRU 42 WATT TRIPLE TUBE LAMPS 6 - N/A FOR 35HPS ANFD 50HPS 7 - N/A FOR 35HPS 8 - GX24q-5 BASE</small> </td> </tr> <tr> <td>NO. LEDs</td> <td>COLOR TEMP - CCT</td> </tr> <tr> <td> <input type="checkbox"/> 36LED (42 Watts) <input type="checkbox"/> 24LED (28 Watts) </td> <td> <input type="checkbox"/> NW (4000K)[*] *STANDARD <input type="checkbox"/> CW (5000K) <input type="checkbox"/> WW (3000K) </td> </tr> <tr> <td colspan="2">OTHER LED COLORS AVAILABLE CONSULT FACTORY</td> </tr> </table>	WATTAGE	TYPE	<input type="checkbox"/> 100 <input type="checkbox"/> 70T ¹ <input type="checkbox"/> 70 <input type="checkbox"/> 50T ² <input type="checkbox"/> 50 <input type="checkbox"/> 42CFL ⁵ <input type="checkbox"/> 35HPS	<input type="checkbox"/> HID <input type="checkbox"/> PSMH <input type="checkbox"/> HPS <small>NOTES: 3 - AVAILABLE IN 8" BOLLARD ONLY 4 - TUBULAR LAMP, G12 BASE 5 - GX24q-4 BASE SUITABLE FOR 18 THRU 42 WATT TRIPLE TUBE LAMPS 6 - N/A FOR 35HPS ANFD 50HPS 7 - N/A FOR 35HPS 8 - GX24q-5 BASE</small>	NO. LEDs	COLOR TEMP - CCT	<input type="checkbox"/> 36LED (42 Watts) <input type="checkbox"/> 24LED (28 Watts)	<input type="checkbox"/> NW (4000K) [*] *STANDARD <input type="checkbox"/> CW (5000K) <input type="checkbox"/> WW (3000K)	OTHER LED COLORS AVAILABLE CONSULT FACTORY		<input type="checkbox"/> 120 <input type="checkbox"/> 208 ⁶ <input type="checkbox"/> 240 <input type="checkbox"/> 277 ⁷ <input type="checkbox"/> 347 <input type="checkbox"/> 480	STANDARD TEXTURED FINISH <input type="checkbox"/> BLACK RAL-9005-T <input type="checkbox"/> WHITE RAL-9003-T <input type="checkbox"/> GREY RAL-7004-T <input type="checkbox"/> DARK BRONZE RAL-8019-T <input type="checkbox"/> GREEN RAL-6005-T <small>FOR SMOOTH FINISH REPLACE SUFFIX "T" WITH REPLACE SUFFIX "S" (EXAMPLE: RAL-9005-S)</small> CONSULT FACTORY FOR CUSTOM COLORS	<input type="checkbox"/> MAILBOX - SINGLEMBS <input type="checkbox"/> MAILBOX-DOUBLEMBD BANNER EYE BOLT <input type="checkbox"/> SINGLEBEB <input type="checkbox"/> DOUBLEBEB/2-180	INTERNAL HOUSE SIDE SHIELD <input type="checkbox"/> 90° HS90 <input type="checkbox"/> 135° HS135 <input type="checkbox"/> 180° HS180 <input type="checkbox"/> DIMMABLE DRIVER(S) (0-10V) DIM <input type="checkbox"/> HIGH-LOW DIMMING FOR HARDWIRED SWITCHING OR NON-INTEGRATED MOTION SENSOR HLSW <input type="checkbox"/> DUPLEX RECEPTACLE DUP <input type="checkbox"/> GROUND FAULT RECEPTACLE GFI <input type="checkbox"/> 10KV SURGE PROTECTOR 10SP <input type="checkbox"/> 20KV SURGE PROTECTOR (277V & 480V Only) 20SP
WATTAGE	TYPE															
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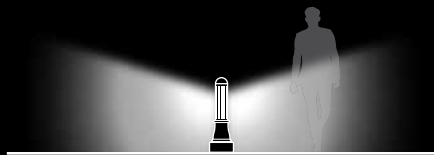
B3200 Series

Cast Aluminum

Lighted

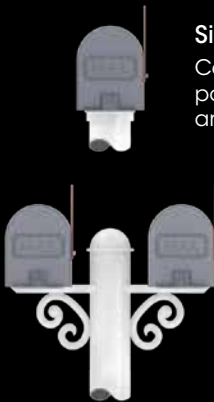


Un-Lighted



The Opal Diffuse lens provides even illumination with no striations or shadowing. The generous opening height creates soft vertical illumination to light objects and people transitioning the illuminated area.

Accessories



Single or Double Cast Aluminum Mailbox

Cast mailboxes may be mounted in a post top or side mount fashion. Mailboxes are made of a durable, corrosion resistant, cast aluminum alloy and painted to match the decorative bollard. Mailboxes include non-locking pull latch and cast flag.



Duplex or GFI Receptacle with Cover

Specify the style of receptacle to mount in the outlet provision. Standard cover supplied.



Eyebolt

Eyebolts may be specified to attach barrier chain or cord. Specify the height of eyebolt location.

Specifications

Housing and Riser - Durable, corrosion resistant cast aluminum (A356 alloy; < 0.2% Cu) base, unlit riser and top cap, minimum .250" wall thickness. Lit riser is extruded, minimum .188" wall thickness. All visible welds are blended, all exposed hardware is stainless steel.

Opal Lens (WA) - Opal acrylic lens is located at the recess of the vertical flutes, protects the internal lamp/LED Module and provides uniform, diffuse illumination.

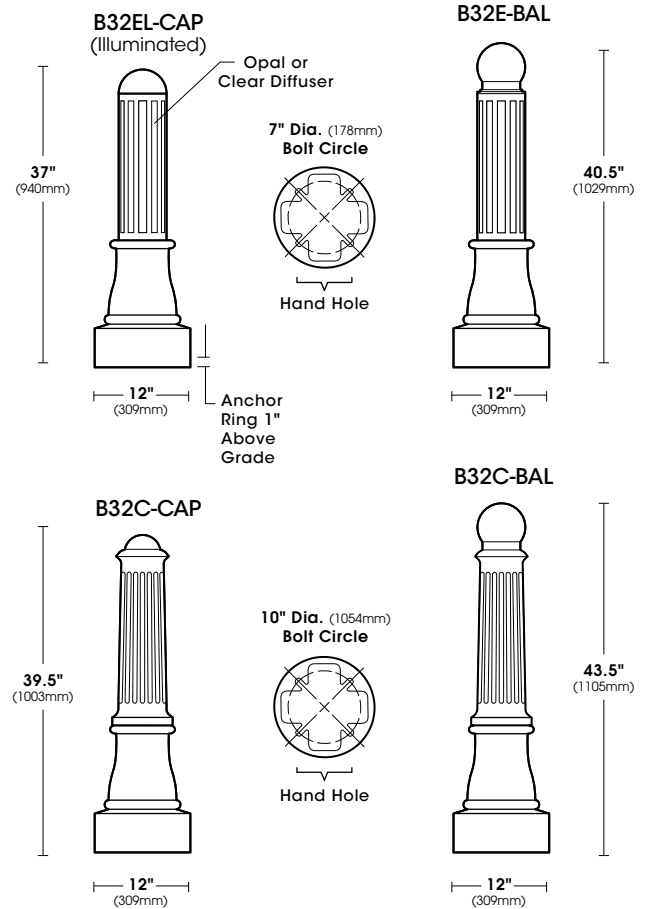
Electrical Module - All electrical components are UL and cUL recognized are mounted on a single plate and factory prewired with quick-disconnect plugs. All HID lamps are medium base (E26) or Bi-pin Base (G12). Electronic MH ballasts have a power factor of >.95 (35/39W - 100W) -20°F starting, 120-277V and have lamp End-of-life protection. 347V option utilizes a step down transformer to the electronic ballast. Magnetic MH ballasts are high power factor (35/39W - 100W), -20°F starting, multi-tap 120-277V, 60Hz. All HPS ballasts are core and coil, high-reactance, high power factor (35/39W - 100W), -40°F starting. Electronic CFL ballasts are high power factor 120 - 277 voltage sensing. GX24-q4 socket supplied for all 18w - 42w triple tube lamps.

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Finish - Electrostatically applied TGIC Polyester Powder Coat on substrate prepared with 20 PSI power wash at 140°F. Four step media blast and iron phosphate pretreatment for protection and paint adhesion. 400°F bake for maximum hardness and durability.

Dimensions



Spec/Order Example: B32EL-CAP-VL-SYM/70THPS/277/RAL-9005-T/10SP36OAH

Unlit Example: B32C-BAL/RAL-6005-T

MODEL	OPTICS	LAMP/LED MODE	VOLTAGE	FINISH	ACCESSORIES	OPTIONS				
LIGHTED <input type="checkbox"/> B32EL-CAP UN-LIGHTED <input type="checkbox"/> B32E-BAL <input type="checkbox"/> B32C-CAP <input type="checkbox"/> B32C-BAL <small>TO CONFIGURE, SHOW MODEL, FINISH AND ANY PERTINENT ACCESSORIES</small>	HID <input type="checkbox"/> VERTICAL LAMP . . . VL-SYM VERTICAL POWER ARRAY <input type="checkbox"/> VERTICAL ARRAY . . . VPA-SYM	<table border="0"> <tr> <td>WATTAGE</td> <td>TYPE</td> </tr> <tr> <td> <input type="checkbox"/> 100 <input type="checkbox"/> 70T¹ <input type="checkbox"/> 70 <input type="checkbox"/> 50T¹ <input type="checkbox"/> 50 <input type="checkbox"/> 42CFL⁵ <input type="checkbox"/> 35HPS </td> <td> <input type="checkbox"/> PSMH <input type="checkbox"/> HPS <small>NOTES: 3 - AVAILABLE IN 8" BOLLARD ONLY 4 - TUBULAR LAMP, G12 BASE 5 - GX24q-4 BASE SUITABLE FOR 18 THRU 42 WATT TRIPLE TUBE LAMPS 6 - N/A FOR 35HPS ANFD 50HPS 7 - N/A FOR 35HPS 8 - GX24q-5 BASE</small> </td> </tr> </table>	WATTAGE	TYPE	<input type="checkbox"/> 100 <input type="checkbox"/> 70T ¹ <input type="checkbox"/> 70 <input type="checkbox"/> 50T ¹ <input type="checkbox"/> 50 <input type="checkbox"/> 42CFL ⁵ <input type="checkbox"/> 35HPS	<input type="checkbox"/> PSMH <input type="checkbox"/> HPS <small>NOTES: 3 - AVAILABLE IN 8" BOLLARD ONLY 4 - TUBULAR LAMP, G12 BASE 5 - GX24q-4 BASE SUITABLE FOR 18 THRU 42 WATT TRIPLE TUBE LAMPS 6 - N/A FOR 35HPS ANFD 50HPS 7 - N/A FOR 35HPS 8 - GX24q-5 BASE</small>	<input type="checkbox"/> 120 <input type="checkbox"/> 208 ⁶ <input type="checkbox"/> 240 <input type="checkbox"/> 277 ⁷ <input type="checkbox"/> 347 <input type="checkbox"/> 480	STANDARD TEXTURED FINISH <input type="checkbox"/> BLACK RAL-9005-T <input type="checkbox"/> WHITE RAL-9003-T <input type="checkbox"/> GREY RAL-7004-T <input type="checkbox"/> DARK BRONZE RAL-8019-T <input type="checkbox"/> GREEN RAL-6005-T <small>FOR SMOOTH FINISH REPLACE SUFFIX "T" WITH REPLACE SUFFIX "S" (EXAMPLE: RAL-9005-S)</small> <small>CONSULT FACTORY FOR CUSTOM COLORS</small>	<input type="checkbox"/> MAILBOX - SINGLE MBS <input type="checkbox"/> MAILBOX-DOUBLE MBD BANNER EYE BOLT <input type="checkbox"/> SINGLE <input type="checkbox"/> . . . BEB <input type="checkbox"/> DOUBLE . . . BEB/2-180	INTERNAL HOUSE SIDE SHIELD <input type="checkbox"/> 90° HS90 <input type="checkbox"/> 135° HS135 <input type="checkbox"/> 180° HS180 <input type="checkbox"/> DIMMABLE DRIVER(S) (0-10V) DIM <input type="checkbox"/> HIGH-LOW DIMMING FOR HARDWIRED SWITCHING OR NON-INTEGRATED MOTION SENSOR . . . HLSW <input type="checkbox"/> DUPLEX RECEPTACLE DUP <input type="checkbox"/> GROUND FAULT RECEPTACLE GFI <input type="checkbox"/> 10KV SURGE PROTECTOR 10SP <input type="checkbox"/> 20KV SURGE PROTECTOR (277V & 480V Only) . . . 20SP
WATTAGE	TYPE									
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B2100 Series

Cast Aluminum

Lighted



B21EL-CAP

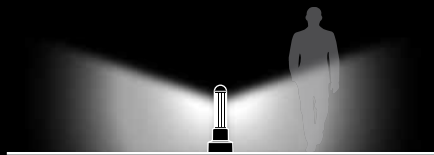
Un-Lighted



B21E-BAL

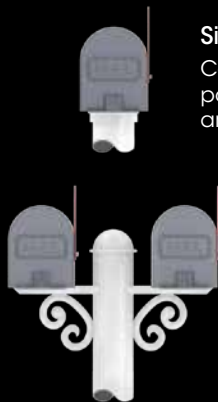
B21C-CAP

B21C-BAL



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Accessories



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Specifications

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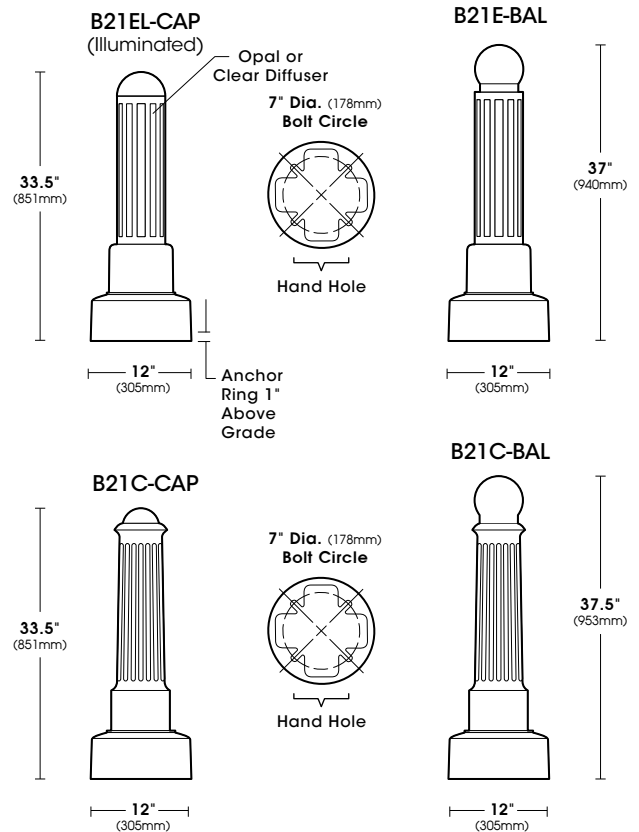
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Finish - Electrostatically applied TGIC Polyester Powder Coat on substrate prepared with 20 PSI power wash at 140°F. Four step media blast and iron phosphate pretreatment for protection and paint adhesion. 400°F bake for maximum hardness and durability.

Dimensions



Spec/Order Example: B21EL-CAP-VL-SYM/35HPSPSMH/240/RAL-6005-T/HS135

Unlit Example: B21C-CAP/RAL-8019-S

MODEL	OPTICS	LAMP/LED MODE	VOLTAGE	FINISH	ACCESSORIES	OPTIONS				
LIGHTED <input type="checkbox"/> B21EL-CAP UN-LIGHTED <input type="checkbox"/> B21E-BAL <input type="checkbox"/> B21C-CAP <input type="checkbox"/> B21C-BAL <small>TO CONFIGURE, SHOW MODEL, FINISH AND ANY PERTINENT ACCESSORIES</small>	HID <input type="checkbox"/> VERTICAL LAMP . . . VL-SYM VERTICAL POWER ARRAY <input type="checkbox"/> VERTICAL ARRAY . . . VPA-SYM	<table border="0"> <tr> <td> WATTAGE <input type="checkbox"/> 100 <input type="checkbox"/> 70T⁴ <input type="checkbox"/> 70 <input type="checkbox"/> 50T⁴ <input type="checkbox"/> 50 <input type="checkbox"/> 42CFL⁵ <input type="checkbox"/> 35HPS </td> <td> HID <input type="checkbox"/> PSMH <input type="checkbox"/> HPS <small>NOTES: 3 - AVAILABLE IN 8" BOLLARD ONLY 4 - TUBULAR LAMP, G12 BASE 5 - GX24q-4 BASE SUITABLE FOR 18 THRU 42 WATT TRIPLE TUBE LAMPS 6 - N/A FOR 35HPS ANFD 50HPS 7 - N/A FOR 35HPS 8 - GX24q-5 BASE</small> </td> </tr> <tr> <td> NO. LEDs <input type="checkbox"/> 36LED (42 Watts) <input type="checkbox"/> 24LED (28 Watts) </td> <td> LED <input type="checkbox"/> NW (4000K)* *STANDARD <input type="checkbox"/> CW (5000K) <input type="checkbox"/> WW (3000K) <small>OTHER LED COLORS AVAILABLE CONSULT FACTORY</small> </td> </tr> </table>	WATTAGE <input type="checkbox"/> 100 <input type="checkbox"/> 70T ⁴ <input type="checkbox"/> 70 <input type="checkbox"/> 50T ⁴ <input type="checkbox"/> 50 <input type="checkbox"/> 42CFL ⁵ <input type="checkbox"/> 35HPS	HID <input type="checkbox"/> PSMH <input type="checkbox"/> HPS <small>NOTES: 3 - AVAILABLE IN 8" BOLLARD ONLY 4 - TUBULAR LAMP, G12 BASE 5 - GX24q-4 BASE SUITABLE FOR 18 THRU 42 WATT TRIPLE TUBE LAMPS 6 - N/A FOR 35HPS ANFD 50HPS 7 - N/A FOR 35HPS 8 - GX24q-5 BASE</small>	NO. LEDs <input type="checkbox"/> 36LED (42 Watts) <input type="checkbox"/> 24LED (28 Watts)	LED <input type="checkbox"/> NW (4000K)* *STANDARD <input type="checkbox"/> CW (5000K) <input type="checkbox"/> WW (3000K) <small>OTHER LED COLORS AVAILABLE CONSULT FACTORY</small>	<input type="checkbox"/> 120 <input type="checkbox"/> 208 ⁶ <input type="checkbox"/> 240 <input type="checkbox"/> 277 ⁷ <input type="checkbox"/> 347 <input type="checkbox"/> 480	STANDARD TEXTURED FINISH <input type="checkbox"/> BLACK RAL-9005-T <input type="checkbox"/> WHITE RAL-9003-T <input type="checkbox"/> GREY RAL-7004-T <input type="checkbox"/> DARK BRONZE RAL-8019-T <input type="checkbox"/> GREEN RAL-6005-T <small>FOR SMOOTH FINISH REPLACE SUFFIX "T" WITH REPLACE SUFFIX "S" (EXAMPLE: RAL-9005-S)</small> <small>CONSULT FACTORY FOR CUSTOM COLORS</small>	<input type="checkbox"/> MAILBOX - SINGLE . . . MBS <input type="checkbox"/> MAILBOX-DOUBLE . . . MBD BANNER EYE BOLT <input type="checkbox"/> SINGLE . . . BEB <input type="checkbox"/> DOUBLE . . . BEB/2-180	INTERNAL HOUSE SIDE SHIELD <input type="checkbox"/> 90° HS90 <input type="checkbox"/> 135° HS135 <input type="checkbox"/> 180° HS180 <input type="checkbox"/> DIMMABLE DRIVER(S) (0-10V) DIM <input type="checkbox"/> HIGH-LOW DIMMING FOR HARDWIRED SWITCHING OR NON-INTEGRATED MOTION SENSOR . . . HLSW <input type="checkbox"/> DUPLEX RECEPTACLE DUP <input type="checkbox"/> GROUND FAULT RECEPTACLE GFI <input type="checkbox"/> 10KV SURGE PROTECTOR 10SP <input type="checkbox"/> 20KV SURGE PROTECTOR (277V & 480V Only) . . . 20SP
WATTAGE <input type="checkbox"/> 100 <input type="checkbox"/> 70T ⁴ <input type="checkbox"/> 70 <input type="checkbox"/> 50T ⁴ <input type="checkbox"/> 50 <input type="checkbox"/> 42CFL ⁵ <input type="checkbox"/> 35HPS	HID <input type="checkbox"/> PSMH <input type="checkbox"/> HPS <small>NOTES: 3 - AVAILABLE IN 8" BOLLARD ONLY 4 - TUBULAR LAMP, G12 BASE 5 - GX24q-4 BASE SUITABLE FOR 18 THRU 42 WATT TRIPLE TUBE LAMPS 6 - N/A FOR 35HPS ANFD 50HPS 7 - N/A FOR 35HPS 8 - GX24q-5 BASE</small>									
NO. LEDs <input type="checkbox"/> 36LED (42 Watts) <input type="checkbox"/> 24LED (28 Watts)	LED <input type="checkbox"/> NW (4000K)* *STANDARD <input type="checkbox"/> CW (5000K) <input type="checkbox"/> WW (3000K) <small>OTHER LED COLORS AVAILABLE CONSULT FACTORY</small>									

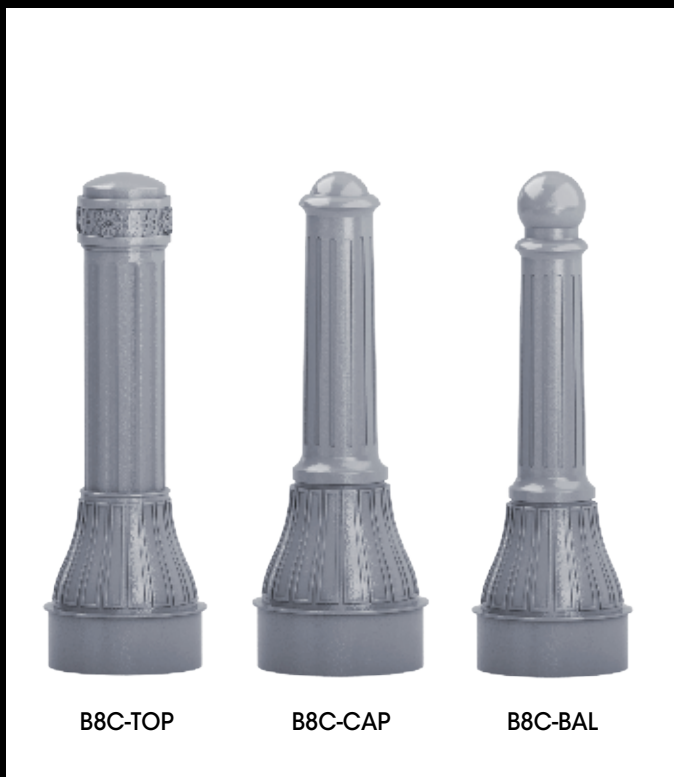
B800 Series

Cast Aluminum

Lighted



Un-Lighted



Available Optics



INTERNAL LOUVER IL



PRISMATIC GLASS PG

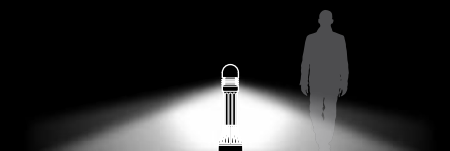
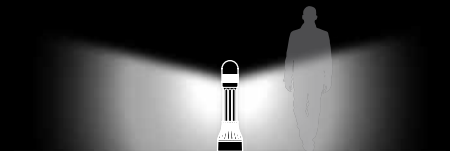
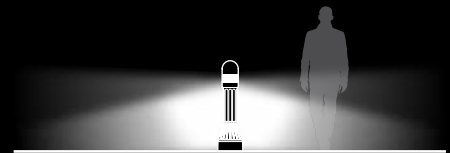
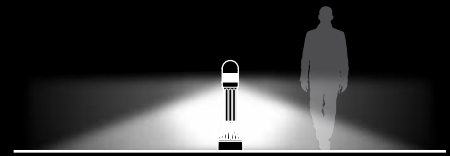


OPAL ACRYLIC WA

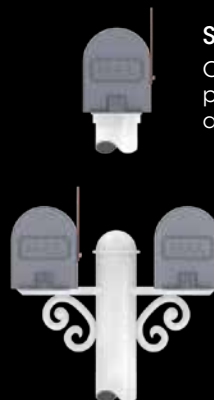


CAST LOUVER (360° HORIZ.) CL

Illuminating Characteristics



Accessories



Single or Double Cast Aluminum Mailbox

Cast mailboxes may be mounted in a post top or side mount fashion. Mailboxes are made of a durable, corrosion resistant, cast aluminum alloy and painted to match the decorative bollard. Mailboxes include non-locking pull latch and cast flag.



Duplex or GFI Receptacle with Cover

Specify the style of receptacle to mount in the outlet provision. Standard cover supplied.



Eyebolt

Eyebolts may be specified to attach barrier chain or cord. Specify the height of eyebolt location.

Specifications

Housing and Riser - Durable, corrosion resistant cast aluminum (A356 alloy; < 0.2% Cu) base, riser and top cap, minimum .250" wall thickness. All visible welds are blended, all exposed hardware is stainless steel.

Lens - Tempered Micro-Prism glass, fully gasketed, and retained by aluminum clips.

Internal Louver (IL) - A specular louver stack conceals the inner lamp/LED Power Array (with opal diffuse lens) module and provides uplight and glare control through the external clear injection molded polycarbonate lens.

Opal Lens (WP) - Injection molded opal polycarbonate lens protects the internal lamp or LED Power Array Module (with opal diffuse lenses) and provides uniform illumination.

Prismatic Glass Refractor (PG) - HID only - Clear polycarbonate lens surrounds a prismatic glass refractor (Type III and Type V).

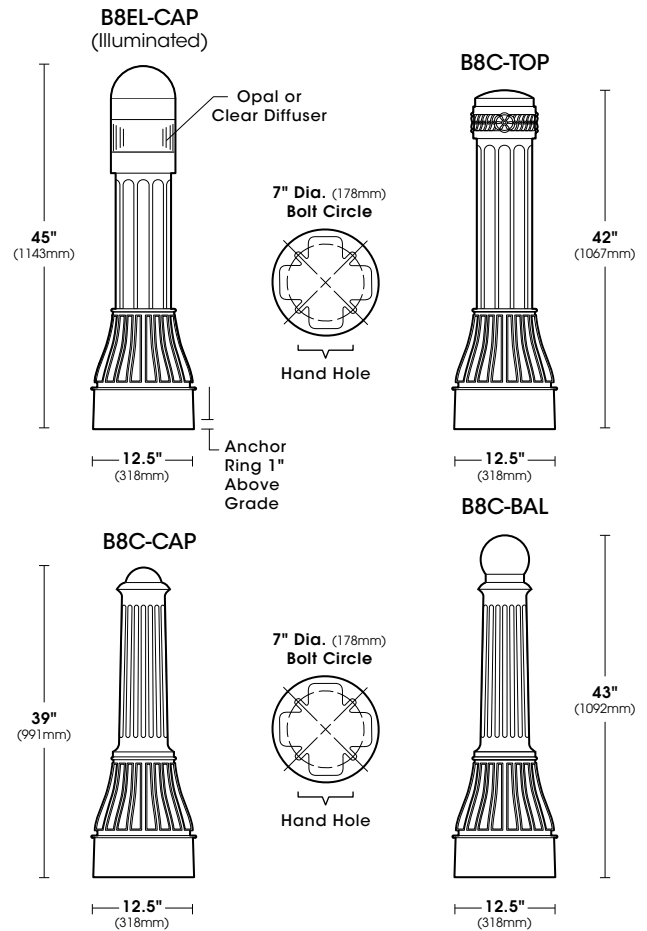
Cast Louver (CL) - Cast aluminum (A356 alloy, <0.2%Cu) louver stack protects the internal lamp module (with diffuse glass enclosure) or LED Power Array Module (with opal diffuse lenses). Horizontal louvers create a 30° cut-off angle and provide 360° of downlight.

Electrical Module - All electrical components are UL and cUL recognized are mounted on a single plate and factory wired with quick-disconnect plugs. All HID lamps are medium base (E26) or Bi-pin Base (G12). Electronic MH ballasts have a power factor of >.95 (35/39W - 100W) -20°F starting, 120-277V and have lamp End-of-life protection. 347V option utilizes a step down transformer to the electronic ballast. Magnetic MH ballasts are high power factor (35/39W - 100W), -20°F starting, multi-tap 120-277V, 60Hz. All HPS ballasts are core and coil, high-reactance, high power factor (35/39W - 100W), -40°F starting. Electronic CFL ballasts are high power factor 120 - 277 voltage sensing. GX24-q4 socket supplied for all 18w - 42w triple tube lamps.

LED Driver - UL and cUL recognized High Power Factor, Constant Current LED drivers operate on input voltages from 120-277VAC, 50/60hz and is mechanically fastened to a retaining bracket. 347V option may utilize a step down transformer to the LED driver. Driver. Main power quick disconnect provided. Driver has a minimum 4KV of internal surge protection. Consult factory for other voltages. Dimming and High-Low Driver options available. 10KV & 20KV Surge Protector optional.

LED Power Array - Three-dimensional array consisting of 6 individual LED tubes fastened to a retaining plate equally spaced to provide 360° of even illumination output. Each LED tube consists of a circuit board populated with a multiple of LED's which is fastened to a radial aluminum heat sink. A

Dimensions



white polycarbonate lens and end caps protect each LED tube's internal components and provides diffusion to prevent shadowing and striations.

Finish - Electrostatically applied TGIC Polyester Powder Coat on substrate prepared with 20 PSI power wash at 140°F. Four step media blast and iron phosphate pretreatment for protection and paint adhesion. 400°F bake for maximum hardness and durability.

Spec/Order Example: B8EL-CAP-CL/42CFL120/RAL-8019-T/MBD/HLSW

Unlit Example: B8C-BAL/RAL-6005-T

MODEL	OPTICS	LAMP/LED MODE	VOLTAGE	FINISH	ACCESSORIES	OPTIONS
<input type="checkbox"/> B8EL-CAP <input type="checkbox"/> B8C-TOP <input type="checkbox"/> B8C-CAP <input type="checkbox"/> B8C-BAL <small>TO CONFIGURE, SHOW MODEL, FINISH AND ANY PERTINENT ACCESSORIES</small>	HID <input type="checkbox"/> INTERNAL LOUVER IL <input type="checkbox"/> CAST LOUVER - 360° HORIZ. CL <input type="checkbox"/> PRISMATIC GLASS TYPE-V. PG-V <input type="checkbox"/> PRISMATIC GLASS TYPE-III. PG-III <input type="checkbox"/> OPAL ACRYLIC WA	WATTAGE <input type="checkbox"/> 100 <input type="checkbox"/> 70T ¹ <input type="checkbox"/> 70 <input type="checkbox"/> 50T ¹ <input type="checkbox"/> 50 <input type="checkbox"/> 42CFL ⁵ <input type="checkbox"/> 35HPS	VOLTAGE <input type="checkbox"/> 120 <input type="checkbox"/> 208 ⁶ <input type="checkbox"/> 240 <input type="checkbox"/> 277 ⁷ <input type="checkbox"/> 347 <input type="checkbox"/> 480	STANDARD TEXTURED FINISH <input type="checkbox"/> BLACK RAL-9005-T <input type="checkbox"/> WHITE RAL-9003-T <input type="checkbox"/> GREY RAL-7004-T <input type="checkbox"/> DARK BRONZE RAL-8019-T <input type="checkbox"/> GREEN RAL-6005-T <small>FOR SMOOTH FINISH REPLACE SUFFIX "T" WITH REPLACE SUFFIX "S" (EXAMPLE: RAL-9005-S)</small> <small>CONSULT FACTORY FOR CUSTOM COLORS</small>	<input type="checkbox"/> MAILBOX - SINGLE MBS <input type="checkbox"/> MAILBOX-DOUBLE MBD BANNER EYE BOLT <input type="checkbox"/> SINGLE BEB <input type="checkbox"/> DOUBLE BEB/2-180	INTERNAL HOUSE SIDE SHIELD <input type="checkbox"/> 90° HS90 <input type="checkbox"/> 135° HS135 <input type="checkbox"/> 180° HS180 <input type="checkbox"/> DIMMABLE DRIVER(S) (0-10V) DIM <input type="checkbox"/> HIGH-LOW DIMMING FOR HARDWIRED SWITCHING OR NON-INTEGRATED MOTION SENSOR ... HLSW <input type="checkbox"/> DUPLEX RECEPTACLE DUP <input type="checkbox"/> GROUND FAULT RECEPTACLE GFI <input type="checkbox"/> 10KV SURGE PROTECTOR 10SP <input type="checkbox"/> 20KV SURGE PROTECTOR (277V & 480V Only) ... 20SP
	VERTICAL POWER ARRAY <input type="checkbox"/> INTERNAL LOUVER IL <input type="checkbox"/> CAST LOUVER CL <input type="checkbox"/> OPAL POLYCARBONATE WP RADIAL LED MODULE <input type="checkbox"/> PARABOLIC REFLECTOR PR	NO. LEDs <input type="checkbox"/> 36LED (42 Watts) <input type="checkbox"/> 24LED (28 Watts) <input type="checkbox"/> 12LED (14Watts)	TYPE <input type="checkbox"/> PSMH <input type="checkbox"/> HPS <small>NOTES: 3- AVAILABLE IN 8" BOLLARD ONLY 4- TUBULAR LAMP, G12 BASE 5- GX24q-4 BASE SUITABLE FOR 18 THRU 42 WATT TRIPLE TUBE LAMPS 6- N/A FOR 35HPS ANFD 50HPS 7- N/A FOR 35HPS 8- GX24q-5 BASE</small>	COLOR TEMP - CCT <input type="checkbox"/> NW (4000K)* *STANDARD <input type="checkbox"/> CW (5000K) <input type="checkbox"/> WW (3000K) <small>OTHER LED COLORS AVAILABLE CONSULT FACTORY</small>		

B2300 Series

Cast Aluminum

Lighted



B23EL-CAP

Un-Lighted



B23C-TOP

B23C-BAL

Available Optics



INTERNAL LOUVER IL



PRISMATIC GLASS PG

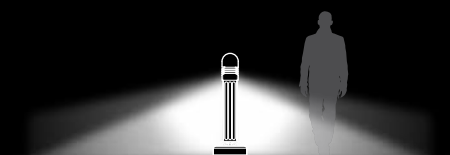
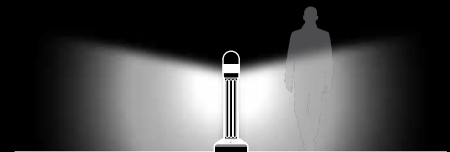
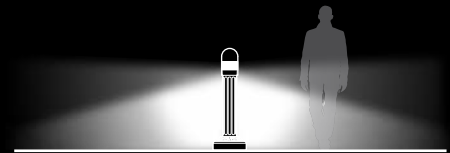
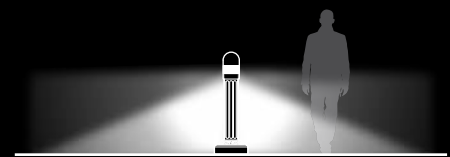


OPAL ACRYLIC WA

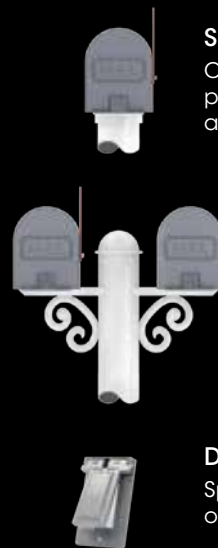


CAST LOUVER (360° HORIZ.) CL

Illuminating Characteristics



Accessories



Single or Double Cast Aluminum Mailbox

Cast mailboxes may be mounted in a post top or side mount fashion. Mailboxes are made of a durable, corrosion resistant, cast aluminum alloy and painted to match the decorative bollard. Mailboxes include non-locking pull latch and cast flag.

Duplex or GFI Receptacle with Cover

Specify the style of receptacle to mount in the outlet provision. Standard cover supplied.

Eyebolt

Eyebolts may be specified to attach barrier chain or cord. Specify the height of eyebolt location.

Specifications

Housing and Riser - Durable, corrosion resistant cast aluminum (A356 alloy; < 0.2% Cu) base, riser and top cap, minimum .250" wall thickness. All visible welds are blended, all exposed hardware is stainless steel.

Lens - Tempered Micro-Prism glass, fully gasketed, and retained by aluminum clips.

Internal Louver (IL) - A specular louver stack conceals the inner lamp/LED Power Array (with opal diffuse lens) module and provides uplight and glare control through the external clear injection molded polycarbonate lens.

Opal Lens (WP) - Injection molded opal polycarbonate lens protects the internal lamp or LED Power Array Module (with opal diffuse lenses) and provides uniform illumination.

Prismatic Glass Refractor (PG) - HID only - Clear polycarbonate lens surrounds a prismatic glass refractor (Type III and Type V).

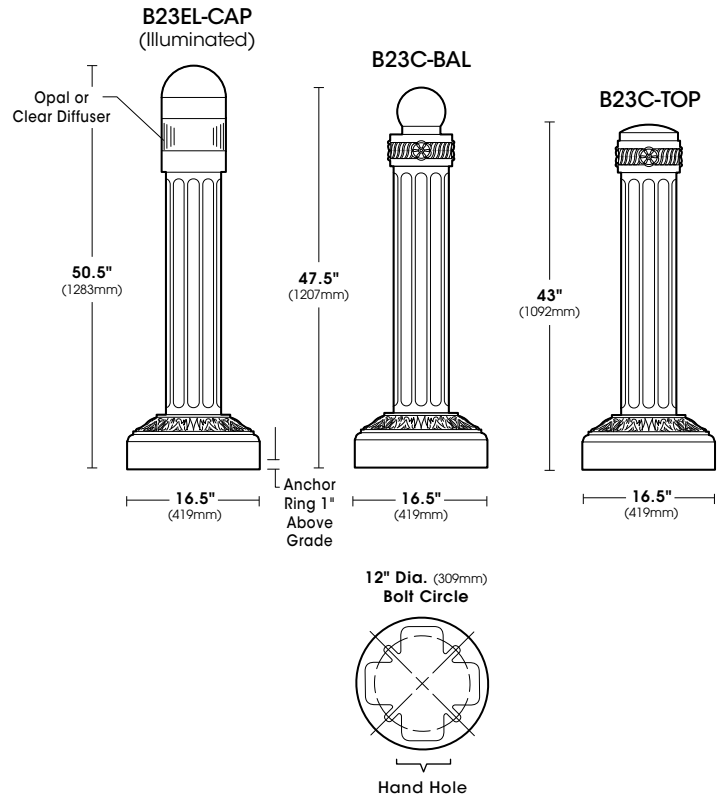
Cast Louver (CL) - Cast aluminum (A356 alloy, <0.2%Cu) louver stack protects the internal lamp module (with diffuse glass enclosure) or LED Power Array Module (with opal diffuse lenses). Horizontal louvers create a 30° cut-off angle and provide 360° of downlight.

Electrical Module - All electrical components are UL and cUL recognized are mounted on a single plate and factory prewired with quick-disconnect plugs. All HID lamps are medium base (E26) or Bi-pin Base (G12). Electronic MH ballasts have a power factor of >.95 (35/39W - 100W) -20°F starting, 120-277V and have lamp End-of-life protection. 347V option utilizes a step down transformer to the electronic ballast. Magnetic MH ballasts are high power factor (35/39W - 100W), -20°F starting, multi-tap 120-277V, 60Hz. All HPS ballasts are core and coil, high-reactance, high power factor (35/39W - 100W), -40°F starting. Electronic CFL ballasts are high power factor 120 - 277 voltage sensing. GX24-q4 socket supplied for all 18w - 42w triple tube lamps.

LED Driver - UL and cUL recognized High Power Factor, Constant Current LED drivers operate on input voltages from 120-277VAC, 50/60hz and is mechanically fastened to a retaining bracket. 347V option may utilize a step down transformer to the LED driver. Driver. Main power quick disconnect provided. Driver has a minimum 4KV of internal surge protection. Consult factory for other voltages. Dimming and High-Low Driver options available. 10KV & 20KV Surge Protector optional.

LED Power Array - Three-dimensional array consisting of 6 individual LED tubes fastened to a retaining plate equally spaced to provide 360° of

Dimensions



even illumination output. Each LED tube consists of a circuit board populated with a multiple of LED's which is fastened to a radial aluminum heat sink. A white polycarbonate lens and end caps protect each LED tube's internal components and provides diffusion to prevent shadowing and striations.

Finish - Electrostatically applied TGIC Polyester Powder Coat on substrate prepared with 20 PSI power wash at 140°F. Four step media blast and iron phosphate pretreatment for protection and paint adhesion. 400°F bake for maximum hardness and durability.

Spec/Order Example: B23EL-CAP-WA/100PSMH240/RAL-6005-S/MBS/DUP

Unit Example: B8C-TOP/RAL-8019-S

MODEL	OPTICS	LAMP/LED MODE	VOLTAGE	FINISH	ACCESSORIES	OPTIONS
<input type="checkbox"/> B23EL-CAP	<input type="checkbox"/> INTERNAL LOUVER IL	WATTAGE	<input type="checkbox"/> 120	<input type="checkbox"/> BLACK RAL-9005-T	<input type="checkbox"/> MAILBOX - SINGLE MBS	INTERNAL HOUSE SIDE SHIELD <input type="checkbox"/> 90° HS90
<input type="checkbox"/> UN-LIGHTED	<input type="checkbox"/> CAST LOUVER - 360° HORIZ. CL	<input type="checkbox"/> 70T [†]	<input type="checkbox"/> 208 [§]	<input type="checkbox"/> WHITE RAL-9003-T	<input type="checkbox"/> MAILBOX-DOUBLE MBD	<input type="checkbox"/> 135° HS135
<input type="checkbox"/> B23C-TOP	<input type="checkbox"/> PRISMATIC GLASS TYPE-V. PG-V	<input type="checkbox"/> 70	<input type="checkbox"/> 240	<input type="checkbox"/> GREY RAL-7004-T	BANNER EYE BOLT <input type="checkbox"/> SINGLE	<input type="checkbox"/> 180° HS180
<input type="checkbox"/> B23C-BAL	<input type="checkbox"/> PRISMATIC GLASS TYPE-III. PG-III	<input type="checkbox"/> 50T [†]	<input type="checkbox"/> 277 [†]	<input type="checkbox"/> DARK BRONZE RAL-8019-T	<input type="checkbox"/> DOUBLE BEB/2-180	<input type="checkbox"/> DIMMABLE DRIVER(S) (0-10V) DIM
TO CONFIGURE, SHOW MODEL, FINISH AND ANY PERTINENT ACCESSORIES	<input type="checkbox"/> OPAL ACRYLIC WA	<input type="checkbox"/> 50	<input type="checkbox"/> 347	<input type="checkbox"/> GREEN RAL-6005-T		<input type="checkbox"/> HIGH-LOW DIMMING FOR HARDWIRED SWITCHING OR NON-INTEGRATED MOTION SENSOR HLSW
		<input type="checkbox"/> 42CFL [§]	<input type="checkbox"/> 480			<input type="checkbox"/> DUPLEX RECEPTACLE DUP
		<input type="checkbox"/> 35HPS				<input type="checkbox"/> GROUND FAULT RECEPTACLE GFI
	VERTICAL POWER ARRAY	NO. LEDs				<input type="checkbox"/> 10KV SURGE PROTECTOR 10SP
	<input type="checkbox"/> INTERNAL LOUVER IL					<input type="checkbox"/> 20KV SURGE PROTECTOR (277V & 480V Only) 20SP
	<input type="checkbox"/> CAST LOUVER CL	<input type="checkbox"/> 36LED (42 Watts)				
	<input type="checkbox"/> OPAL POLYCARBONATE WP	<input type="checkbox"/> 24LED (28 Watts)				
	RADIAL LED MODULE	<input type="checkbox"/> 12LED (14Watts)				
	<input type="checkbox"/> PARABOLIC REFLECTOR PR	<input type="checkbox"/> NW (4000K) [*] *STANDARD				
		<input type="checkbox"/> CW (5000K)				
		<input type="checkbox"/> WW (3000K)				
		OTHER LED COLORS AVAILABLE CONSULT FACTORY				
				FOR SMOOTH FINISH REPLACE SUFFIX "T" WITH REPLACE SUFFIX "S" (EXAMPLE: RAL-9005-S)		
				CONSULT FACTORY FOR CUSTOM COLORS		

Additional Lighted Bollards

Cast Aluminum

Available Optics

Illuminating Characteristics



B85EL-CAP



INTERNAL LOUVER IL



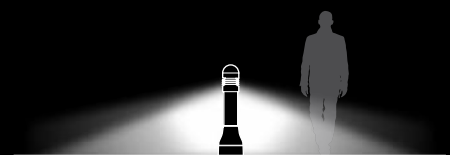
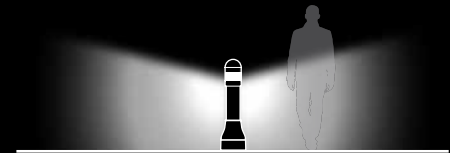
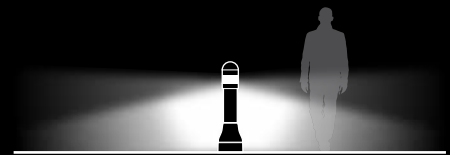
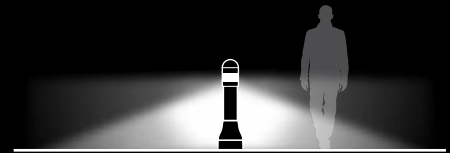
PRISMATIC GLASS PG



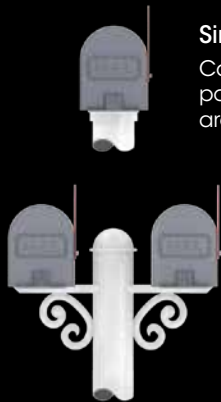
OPAL ACRYLIC WA



CAST LOUVER (360° HORIZ.) CL



Accessories



Single or Double Cast Aluminum Mailbox

Cast mailboxes may be mounted in a post top or side mount fashion. Mailboxes are made of a durable, corrosion resistant, cast aluminum alloy and painted to match the decorative bollard. Mailboxes include non-locking pull latch and cast flag.



Duplex or GFI Receptacle with Cover

Specify the style of receptacle to mount in the outlet provision. Standard cover supplied.

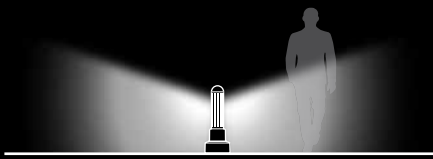


Eyebolt

Eyebolts may be specified to attach barrier chain or cord. Specify the height of eyebolt location.

Additional Lighted Bollards (continued)

Cast Aluminum



The Opal Diffuse lens provides even illumination with no striations or shadowing. The generous opening height creates soft vertical illumination to light objects and people transitioning the illuminated area.

Accessories



Single or Double Cast Aluminum Mailbox

Cast mailboxes may be mounted in a post top or side mount fashion. Mailboxes are made of a durable, corrosion resistant, cast aluminum alloy and painted to match the decorative bollard. Mailboxes include non-locking pull latch and cast flag.

Duplex or GFI Receptacle with Cover

Specify the style of receptacle to mount in the outlet provision. Standard cover supplied.

Eyebolt

Eyebolts may be specified to attach barrier chain or cord. Specify the height of eyebolt location.

Scale: 3/4" = 1'-0"

Additional Un-Lighted Bollards



B4E-BAL

B4C-CAP

B4C-BAL

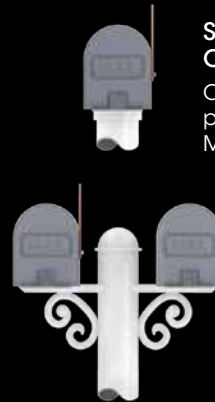


B35E-BAL

B35C-CAP

B35C-BAL

Accessories



Single or Double Cast Aluminum Mailbox

Cast mailboxes may be mounted in a post top or side mount fashion. Mailboxes are made of a durable, corrosion resistant, cast aluminum alloy and painted to match the decorative bollard. Mailboxes include non-locking pull latch and cast flag.



Duplex or GFI Receptacle with Cover

Specify the style of receptacle to mount in the outlet provision. Standard cover supplied.



Eyebolt

Eyebolts may be specified to attach barrier chain or cord. Specify the height of eyebolt location.

Additional Un-Lighted Bollards (continued)



B9C-CAP

B9C-BAL

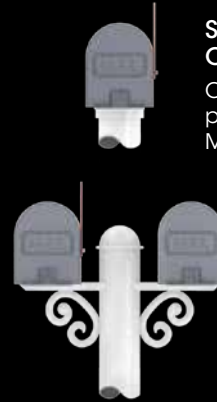


B10E-BAL

B10C-CAP

B10C-BAL

Accessories



Single or Double Cast Aluminum Mailbox

Cast mailboxes may be mounted in a post top or side mount fashion. Mailboxes are made of a durable, corrosion resistant, cast aluminum alloy and painted to match the decorative bollard. Mailboxes include non-locking pull latch and cast flag.



Duplex or GFI Receptacle with Cover

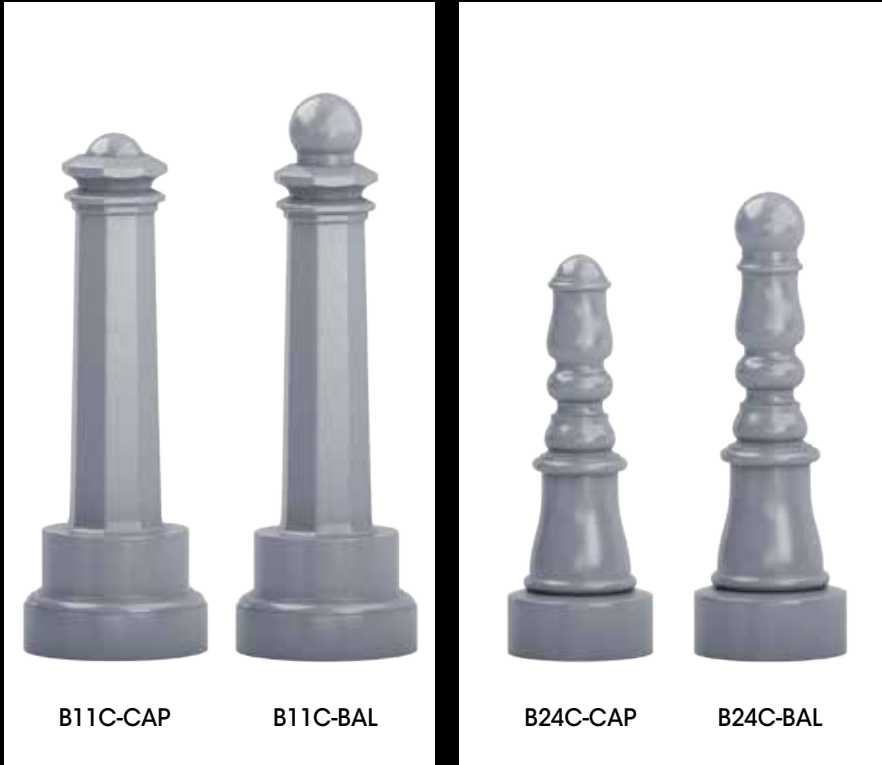
Specify the style of receptacle to mount in the outlet provision. Standard cover supplied.



Eyebolt

Eyebolts may be specified to attach barrier chain or cord. Specify the height of eyebolt location.

Additional Un-Lighted Bollards (continued)



B11C-CAP

B11C-BAL

B24C-CAP

B24C-BAL



B85C-TOP

B85C-CAP

B85C-BAL

Accessories



Single or Double Cast Aluminum Mailbox

Cast mailboxes may be mounted in a post top or side mount fashion. Mailboxes are made of a durable, corrosion resistant, cast aluminum alloy and painted to match the decorative bollard. Mailboxes include non-locking pull latch and cast flag.



Duplex or GFI Receptacle with Cover

Specify the style of receptacle to mount in the outlet provision. Standard cover supplied.



Eyebolt

Eyebolts may be specified to attach barrier chain or cord. Specify the height of eyebolt location.

Lamp / Electrical Guide

LAMP WATTS	LAMP TYPE	BULB TYPE	INITIAL LUMENS	LIFE (HOURS)	ANSI CODE	STARTING TEMP.	CIRCUIT TYPE	SYSTEM WATTS	VOLTS	MAX INPUT AMPS	MIN. FUSE AMPS
PULSE START METAL HALIDE											
70	PSMH	Clear, ED17, Med. Base - 4000K T6, G12 Base	5,900	20,000	M98	-20°F	Electronic	82	120	0.68	2
			6,600	12,000	M139 M143			81	277	0.31	2
								90	120	1.90	4
								90	277	0.80	2
								90	347	0.70	2
100	PSMH	Clear, ED17, Med. Base	9,000	24,000	M90	-20°F	Electronic	115	120	0.96	2
			M140	HX-HPF	113			277	0.42	2	
					129			120	2.30	6	
					129			277	1.00	3	
					129			347	1.00	2	
150	PSMH	Clear, ED17, Med. Base T6, G12 Base	13,000	24,000	M102	-20°F	Electronic	165	120	1.40	2
			12,000	12,000	M142			161	277	0.60	2
								185	120	3.70	4
								185	277	1.60	2
								185	347	1.30	2
HIGH PRESSURE SODIUM											
70	HPS	Clear, BD17, Med. Base	6,300	24,000	S62	-40°F	HX-HPF	91	120	1.40	5
								91	277	0.70	2
								93	347	0.60	2
100	HPS	Clear, BD17, Med. Base	9,500	24,000	S54	-40°F	HX-HPF	130	120	2.20	7
								130	277	0.90	3
								130	347	0.70	3
150	HPS	Clear, BD17, Med. Base	16,000	24,000	S55	-40°F	HX-HPF	188	120	2.80	10
								188	277	1.30	4
								188	347	0.90	3
FLUORESCENT											
13	CLF	4-Pin Triple Tube GX24q-1 base	900	20,000		0°F		16	120 277	0.13 0.06	
42	CLF	4-Pin Triple Tube GX24q-4 base	3,200	20,000		0°F		46	120 277	0.38 0.17	
LED											
19	LED	18 LED Radial Array - 350mA	1,890 - 2,160	70,000 - 140,000		-40°F		21	120 277	0.45 0.20	Note 7
26	LED	24 LED Optical Array - 350mA	2,520 - 2,880	70,000 - 140,000		-40°F		28	120 277	0.66 0.30	Note 7
38	LED	36 LED Optical Module - Array - 350mA	3,780 - 4,320	70,000 - 140,000		-40°F		40	120	0.60	Note 7

NOTES:

1. Sun Valley and U.S. Architectural Lighting's Lamp and Electrical Guide is for reference only. ALWAYS consult lamp and ballast manufacturer's data for exact technical specifications.
2. All Initial Lumen values shown are approximate in the vertical position unless otherwise indicated and may vary from one manufacturer to another.
3. Max Input Amps is the highest of starting, operating, or opening circuit currents.
4. Lumen values for LED Modules vary according to the distribution type.
5. Source Watts does NOT include any other ballast/driver component. Only the source wattage.
6. System Watts includes the Source Watts and all ballast/driver components.
7. Fuse value should be sufficient to protect all wiring components. For electronic driver and LED component protection, use 10KV - 20KV surge suppressors.

WARNING: All fixtures must be installed in accordance with local codes or the National Electrical Code. Failure to do so may result in serious personal injury.



3300 Series Base and 3300 Series Bollards

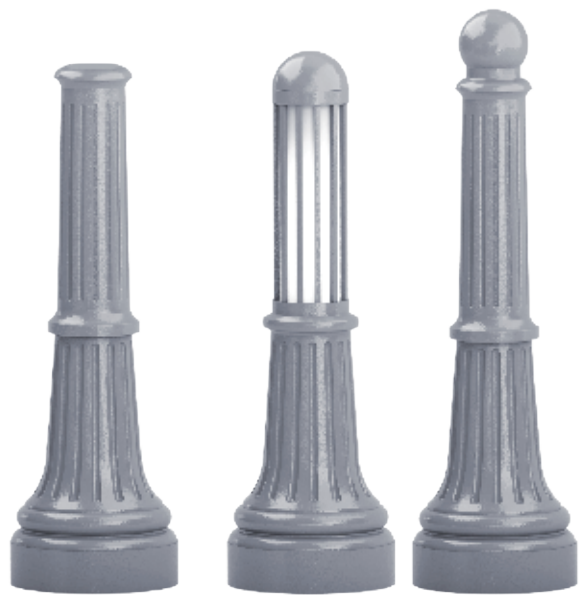


2300 Series Base and 2300 Series Bollards

Sun Valley Bollards are designed to complement Sun Valley Decorative Bases and unify the jobsite aesthetic from structure to poles and luminaires.



3100 Series Base and 3100 Series Bollards



300 Series Base and 300 Series Bollards

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Bollards by US Architectural and Sun Valley Lighting

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SUN VALLEY
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