Sleek in stainless steel, the Light Column Bollard integrates into a wide range of settings and offers numerous design possibilities. Bollard columns are available in 5” or 6” diameters. Illumination options include LED, RGBW LED, or linear fluorescent lamps, and multiple ways to direct light: no shield for symmetrical lighting, or 180° and 360° shields in standard or custom designs. Non-illuminated and security core variations, and matching Light Column Pathway Bollards and Light Column Pedestrian Lighting make it easy to create a cohesive look across functionalities.

MATERIAL & CONSTRUCTION DETAILS

<table>
<thead>
<tr>
<th>CONFIGURATIONS</th>
<th>MATERIALS &amp; FINISHES</th>
<th>LED LAMPS &amp; DRIVER</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Light Column Bollards are available in two sizes. Series 500 columns have 5” (127 mm) diameter tubular stainless steel; Series 600 columns have 6” (152 mm) diameter tubular stainless steel.</td>
<td>• Illuminated bollards have a tubular stainless steel column, white-frosted acrylic lens, and a stainless steel head cap.</td>
<td>• Custom LED light engine with Cree® LEDs.</td>
</tr>
<tr>
<td>• To complement the illuminated bollard, a non-illuminated version is also available in both Series 500 and Series 600.</td>
<td>• Non-illuminated bollards are tubular stainless steel with welded stainless steel cap.</td>
<td>• Features advanced LED technology with 17W, 3000K warm white and 4000K natural white LEDs.</td>
</tr>
<tr>
<td>• Bollards can be specified with a removable base, with the exception of the RGBW LED option.</td>
<td>• Standard stainless steel finish is Satin.</td>
<td>• 17W LED driver input power is 100-277V, -30ºC starting temperature.</td>
</tr>
<tr>
<td>• Weather resistant GFCI outlet for maintenance access is available for Series 600, illuminated, non-RGBW, non-security bollards.</td>
<td>• For optional powdercoat colors see the Forms+Surfaces Powdercoat Chart. Custom RAL colors are available for an upcharge.</td>
<td>• Driver has 0-10V dimming capabilities.</td>
</tr>
<tr>
<td>• Door for optional GFCI outlet is accessed using a flathead screwdriver. See drawings on our website for details.</td>
<td></td>
<td>• LED driver certifications include: IP66 (waterproof) enclosure, and Class 2 rated output (UL8750)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>WEIGHT</th>
<th>SHIELD OPTIONS</th>
<th>FLUORESCENT LAMPS &amp; BALLASTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Series 500, illuminated: 30 lbs (14 kg); non-illuminated: 32-33 lbs (15 kg)</td>
<td>• Four standard shield designs are available for an upcharge. Refer to page 3 for details.</td>
<td>• Linear fluorescent lamps are available in two options. See lamp information on page 3.</td>
</tr>
<tr>
<td>• Series 600, illuminated: 34 lbs (15 kg); non-illuminated: 34-39 lbs (15-18 kg)</td>
<td>• Custom shield designs with either 180° or 360° coverage are also available.</td>
<td>• Ballast is an electronic, thermally protected, 120/277V combination for two F14T5 lamps, -18ºC starting temperature, &lt;10% THD, Class A sound rating. Please call for HO ballast specifications.</td>
</tr>
<tr>
<td>• Series 600, security core, illuminated: 170 lbs (77 kg); non-illuminated: 177 lbs (80 kg)</td>
<td>• Shields are offered for Series 500 and Series 600 illuminated and RGBW bollards.</td>
<td></td>
</tr>
</tbody>
</table>

INSTALLATION & MAINTENANCE

<table>
<thead>
<tr>
<th>INSTALLATION</th>
<th>MAINTENANCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Standard mounting is surface mount with 1/2”-13x18” galvanized steel J-bolt anchors. 1/2” thick stainless steel base plate is slotted for rotational capability.</td>
<td>• Metal surfaces can be cleaned as needed using a soft cloth or brush with warm water and a mild detergent. Avoid abrasive cleaners.</td>
</tr>
<tr>
<td>• Security bollards have an embedded security core and are available for Series 600 bollards, except for the RGBW option, for an upcharge.</td>
<td></td>
</tr>
<tr>
<td>• All bollards, except for the RGBW option, can be specified with a removable base.</td>
<td></td>
</tr>
<tr>
<td>• RGBW bollards are connected via a daisy-chained hard-wired control signal in and out of each bollard.</td>
<td></td>
</tr>
<tr>
<td>• Installation of a surge protector as part of each units wiring is recommended.</td>
<td></td>
</tr>
<tr>
<td>• Necessary hardware is included for all mounting options. Templates are available upon request.</td>
<td></td>
</tr>
</tbody>
</table>
ILLUMINATED BOLLARDS

NOMINAL DIMENSIONS

SURFACE MOUNT WITH J-BOLTS

- **BASE PLATE MOUNTING DETAILS**
  - **SERIES 500, J-BOLT**
    - 8.0" (203 mm) base plate
    - 0.63" (16 mm) mounting circle
    - 5.06" (129 mm) conduit opening

- **SURFACE MOUNT WITH REMOVABLE BASE***
  - **BASE PLATE MOUNTING DETAILS**
    - **SERIES 600, J-BOLT OR SECURITY CORE BASE**
      - 9.0" (229 mm) base plate
      - 7.5" (190 mm) mounting circle
      - 6.00" (154 mm) conduit opening

* Not Available with RGBW LED option.

---

**ILLUMINATED BOLLARDS**

**NOMINAL DIMENSIONS**

**SURFACE MOUNT WITH J-BOLTS**

- Stainless steel compression cap
- White-frosted acrylic lens
- Linear fluorescent lamps (2x) or custom LED light engine
- Lamp holder and wiring channel assembly
- Ballast mounting plate or driver mounting plate
- Electronic ballast multi-voltage (120/277V) or LED driver (85/277V)
- Stainless steel column
- 1/2" (13 mm) thick stainless steel base plate with cover
- Conduit with 42" (1067 mm) wire whip (by others)
- J-bolt anchors (drop-in anchors may also be used)
- Custom LED light engine
- 45" (Standard, non-SEC) (1146 mm)
- 23.5" (597 mm)
- 18" (457 mm) min. for surface mounted J-bolts

**SURFACE MOUNT WITH REMOVABLE BASE***

- Stainless steel compression cap
- White-frosted acrylic lens
- Linear fluorescent lamps (2x) or custom LED light engine
- Lamp holder and wiring channel assembly
- Ballast mounting plate or driver mounting plate
- Electronic ballast multi-voltage (120/277V) or LED driver (85/277V)
- Stainless steel column
- 1/2" (13 mm) thick stainless steel base plate with cover
- Conduit with 42" (1067 mm) wire whip (by others)
- Epoxy anchor
- Custom LED light engine
- 45" (Standard, non-SEC) (1146 mm)
- 23.5" (597 mm)
- 5" (127 mm) (Series 500)
- 5" (127 mm) (Series 500)
- Not Available with RGBW LED option.
**LAMP DESCRIPTIONS**

<table>
<thead>
<tr>
<th>LAMP</th>
<th>DESCRIPTION</th>
<th>BASE</th>
<th>COLOR TEMPERATURE</th>
<th>LUMINAIRE LUMENS*</th>
<th>B.U.G. RATING</th>
<th>LED STARTING TEMPERATURE °C</th>
</tr>
</thead>
<tbody>
<tr>
<td>3000K LED</td>
<td>17W custom LED light engine</td>
<td>N/A</td>
<td>3,000K</td>
<td>1542</td>
<td>1545</td>
<td>B1-U4-G1</td>
</tr>
<tr>
<td>4000K LED</td>
<td>17W custom LED light engine</td>
<td>N/A</td>
<td>4,000K</td>
<td>1542</td>
<td>1545</td>
<td>B1-U4-G1</td>
</tr>
<tr>
<td>RGBW LED</td>
<td>78W custom LED light engine</td>
<td>N/A</td>
<td>RGBW</td>
<td>varies</td>
<td>varies</td>
<td>varies</td>
</tr>
<tr>
<td>(2) F14T5</td>
<td>14W T5 linear fluorescent</td>
<td>Mini bi-pin</td>
<td>4,100K</td>
<td>2220</td>
<td>2195</td>
<td>B1-U4-G2</td>
</tr>
<tr>
<td>(2) F24T5/HO</td>
<td>24W T5HO linear fluorescent</td>
<td>Mini bi-pin</td>
<td>4,100K</td>
<td>3288</td>
<td>3252</td>
<td>B1-U5-G2</td>
</tr>
</tbody>
</table>

*Luminaire lumens represents the absolute photometry for the luminaire, and indicates the lumens out of the entire fixture.

**NOTE:** Polar candela and isofootcandle plots can be found on the Light Column Bollard product page on our website.

**STANDARD SHIELD DESIGNS**

![KENTE](image1)

![PERFORATED](image2)

![SCAPE](image3)

![BUBBLES](image4)

<table>
<thead>
<tr>
<th></th>
<th>KENTE</th>
<th>PERFORATED</th>
<th>SCAPE</th>
<th>BUBBLES</th>
</tr>
</thead>
<tbody>
<tr>
<td>180 Bollard</td>
<td>N/A</td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>360 Bollard</td>
<td>N/A</td>
<td>N/A</td>
<td>•</td>
<td>•</td>
</tr>
</tbody>
</table>

*NOTE:* "•" indicates that the shield design is available in the selected series and size combination.
ILLUMINATED BOLLARDS - CONTINUED

NOMINAL DIMENSIONS - EMBEDDED SECURITY CORE

Crash scenario with 5,500 lb pickup truck approaching embedded bollard system at 40 mph

Full-scale crash 330ms after impact

OPTIONAL SECURITY CORE

Site security is a major concern in today’s unpredictable world. Public and private buildings, government facilities, campuses and public parks are all susceptible to accidental, as well as deliberate vehicle infringement. Design professionals, city planners, facilities managers and engineers must now be increasingly sensitive to the safety and security requirements of public and private spaces. Security bollards placed at ingress points are an excellent way to guard against vehicle infringement while still allowing pedestrian access.

Until recently, security bollards have frequently taken the form of generic pipes or cylinders that offer little in the way of design or lighting functionality. Now, an optional enhancement to our Light Column Bollards provides a solution that blends security, performance and style. By adding a pre-engineered security core to our Series 600 design, we’re able to respond to the needs of today’s public spaces with a beautiful illuminated bollard that meets stringent high-impact crash requirements.

Forms+Surfaces’ security bollards have been tested using a Finite Element Analysis (FEA) by a professional engineering consultant. FEA is a software-based tool commonly used in the automotive industry and used extensively for crash test simulations. Tests were performed using our bollards set in permanent concrete footings spaced 42" center-to-center apart (to assure a minimum of two bollards being hit) and struck by a vehicle at a 90 degree impact. The impact simulation found the bollards to be successful in stopping a 5,500 lb. vehicle traveling at a minimum test velocity of 40 mph.

In addition to our illuminated security bollards, we can also provide non-illuminated options. Refer to page 5 for details. Note that security cores are not available with the RGBW LED option. Please contact us to discuss design and installation considerations for Light Column Bollards with security cores.
NON-ILLUMINATED BOLLARDS

NOMINAL DIMENSIONS

SURFACE MOUNT WITH REMOVABLE BASE

- 5" (127 mm) (Series 500)
- 6" (152 mm) (Series 600)

- 6.5" (165 mm)
- 5.06" (129 mm)
- 1/2" (13 mm) thick stainless steel base plate with cover
- 1/2"-13 x 5" epoxy anchor
- Poured concrete footer

SURFACE MOUNT WITH J-BOLTS

- 5" (127 mm) (Series 500)
- 6" (152 mm) (Series 600)

- 1/2" (13 mm) thick stainless steel base plate with cover
- J-bolt anchors (strap-in type anchors may also be used)
- Poured concrete footer

EMBEDDED SECURITY CORE

- 6" (152 mm) (Series 600)

- 45" (1143 mm)
- 9" (229 mm)
- 6.06" (154 mm)
- 0.63" (16 mm)
- 1/2" (13 mm) thick stainless steel base plate with cover
- 9" (229 mm)
- Base cover
- Welded steel cross supports (2x)
- Schedule 160 pipe 5/8" (16 mm) wall thickness
- Poured concrete footer

BASE PLATE MOUNTING DETAILS

SERIES 500, REMOVABLE BASE

- 8.0" (203 mm) base plate
- 6.5" (165 mm) mounting circle
- 5.06" (129 mm) conduit opening

SERIES 500, J-BOLT

- 6.06" (154 mm) conduit opening
- 7.5" (190 mm) mounting circle
- 9.0" (229 mm) base plate

SERIES 600, REMOVABLE BASE

- 6.06" (154 mm) conduit opening
- 7.5" (190 mm) mounting circle

SERIES 600, J-BOLT OR SECURITY CORE BASE

- 6.06" (154 mm) conduit opening
- 7.5" (190 mm) mounting circle
- 9.0" (229 mm) base plate
- 0.63" (16 mm)

© 2019 Forms+Surfaces® | All dimensions are nominal. Specifications and pricing subject to change without notice. For the most current version of this document, please refer to our website at www.forms-surfaces.com.
CERTIFICATIONS
• UL and C-UL listed for wet locations (linear fluorescent).
• ETL and C-ETL listed for wet locations (LED).

ENVIRONMENTAL CONSIDERATIONS
• Please refer to the Light Column Bollard Environmental Data Sheets for detailed environmental impact information.
• Light Column Bollard has high recycled content and is highly recyclable.
• Powdercoat finishes are no- or low-VOC, depending on color.
• Low maintenance.

MODEL NUMBERS AND DESCRIPTIONS

<table>
<thead>
<tr>
<th>MODEL</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>LBLCO-504</td>
<td>Light Column Bollard, Series 500, illuminated</td>
</tr>
<tr>
<td>LBLCO-604</td>
<td>Light Column Bollard, Series 600, illuminated</td>
</tr>
<tr>
<td>LBLCO-504-RGBW</td>
<td>Light Column Bollard, Series 500, illuminated, RGBW</td>
</tr>
<tr>
<td>LBLCO-604-RGBW</td>
<td>Light Column Bollard, Series 600, illuminated, RGBW</td>
</tr>
<tr>
<td>LBLCO-504-N</td>
<td>Light Column Bollard, Series 500, non-illuminated</td>
</tr>
<tr>
<td>LBLCO-604-N</td>
<td>Light Column Bollard, Series 600, non-illuminated</td>
</tr>
</tbody>
</table>

PRODUCT OPTIONS
The following options are available for an upcharge

| Upgrade to embedded security core (available for Series 600)* | Add 360° custom shield (customer-supplied artwork) |
| Upgrade to removable base*                                     | GFCI outlet (available for Series 600, illuminated, non-security bollards)* |
| Add 180° perforated shield in standard designs                | Add powdercoat color from Forms+Surfaces Powdercoat Chart |
| Add 360° perforated shield in standard designs                | Custom RAL powdercoat color |
| Add 180° custom shield (customer-supplied artwork)            | Custom fixture height |

*Not available with RGBW LED option.

LEAD TIME: 6 to 8 weeks. Shorter lead times may be available upon request. Please contact us to discuss your specific timing requirements.

PRICING: Please contact us at 800.451.0410 or sales@forms-surfaces.com. At Forms+Surfaces, we design, manufacture and sell our products directly to you. Our sales team is available to assist you with questions about our products, requests for quotes, and orders. Territory Managers are located worldwide to assist with the front-end specification and quoting process, and our in-house Project Sales Coordinators follow your project through from the time you place an order to shipment.

TO ORDER SPECIFY: Quantity, model, finish, lamp, shield (if applicable), and mounting. Quote/Order Forms are available on our website to lead you through the specification process in a simple checkbox format.

NOTE: Because different computers will render colors and textures differently, actual colors and finishes may vary slightly from those shown here.