

BOLLARDS

LANDSCAPE & PATHWAY LIGHTING



GARDCO
LIGHTING



LOUVER BOLLARD – BRM 820/821/822/823 6-7

Rugged cast construction, tamper resistant hardware and the option of a concrete base all serve to make dome top louver bollards a formidable opponent to casual vandalism. Specifiers have the choice of an extruded aluminum base, a concrete base, a high strength galvanized steel tenon mount or simply mounting the upper luminaire housing to other architectural elements.



BEVEL TOP BOLLARD – BRM 824/825/826/827 8-9

Gardco Bevel Top bollards offer yet another styling option. Like the Louver counterpart, it can be specified with custom-designed and field-tested bases to meet the most extreme application challenges. Their Gardco heritage assures optical performance and architectural integrity.



DOME TOP BOLLARD – BRM 800 10-11

A cousin to its louvered relative, the BRM800 dome top bollard typifies the construction detailing that exists throughout the line. Silicone seals and gaskets at all points of material transition assure weather-tight seals, lamp chambers free from insects and dirt, and years of trouble-free service.



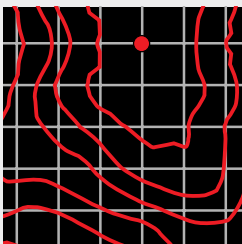
SQUARE & ROUND BOLLARDS – BS 700/BR 800 12-13

Gardco's family of 8" diameter round and 6 3/4" square bollards offer wide spacings and remarkable brightness control from precisely designed optical systems. Like all Gardco products, mounting hardware makes level, plumb installations easy.



BOLLARD 10 – BR 160/BR 162/BR 163 14-15

The Gardco 16" diameter Bollard 10 luminaire provides efficient low glare illumination from a highly durable seamless architectural form. Its Form Ten faceted optical system provides precise beam control in three distinct distribution patterns. Mounting is to a rugged cast aluminum or precast concrete base. The luminaire can also be ordered without a base for mounting to other architectural elements.



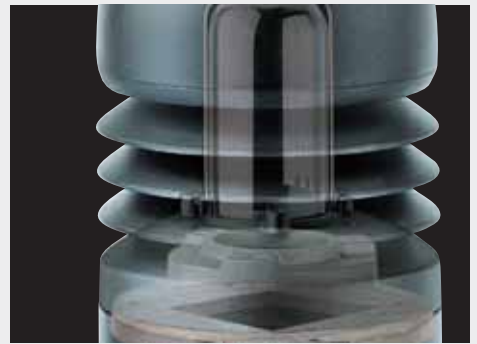
SPECIFICATIONS AND PHOTOMETRICS 16-19

Gardco bollard specifications detail construction materials, anchorage information, electrical characteristics and available finishes. Photometric data provides maintained horizontal footcandle levels generated by each luminaire.

FORM



FUNCTION



PERFORMANCE



DETAILS



Bollards become objects for climbing on, hanging from and crashing into. Add the weathering effects of the elements and irregular maintenance and it's easy to see why there may not be a more punishing environment than low level lighting.

As such, the approaches to many well conceived, finely detailed buildings are often marred by luminaires that are poorly designed, inadequate in performance and that quickly deteriorate in appearance. Gardco bollards stand in sharp contrast.

To begin, the Gardco family of bollards offers what is unquestionably the most refined series of architectural forms available. Shapes are finely detailed, material transitions are seamless and finishes flawless. Not to be misled by this aesthetic sophistication, Gardco low level luminaires offer design and construction qualities that not only ensure their long-term appearance, but provide exceptional lighting performance.

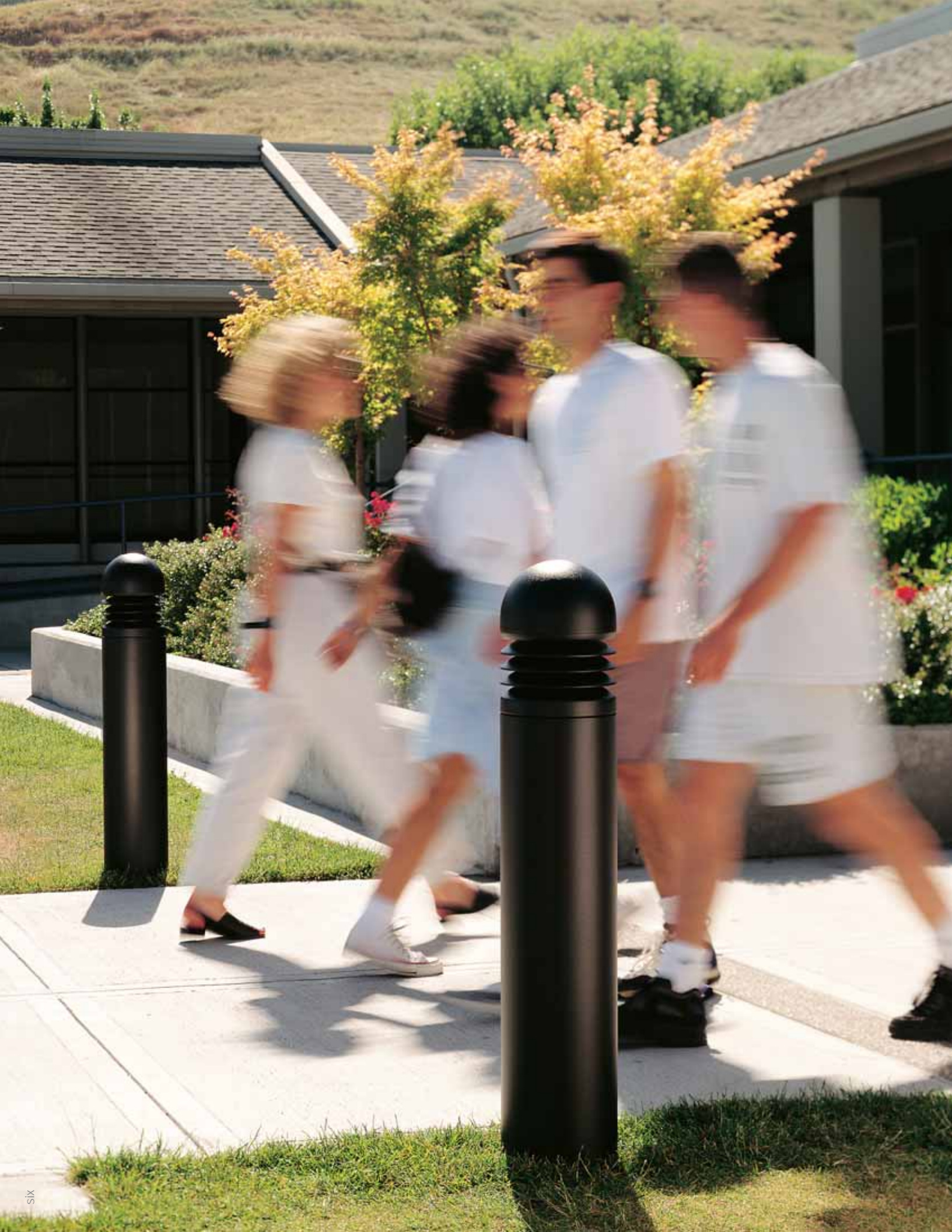
The construction of these luminaires includes sealing and gasketing that resists the entry of moisture, insects, dirt and yes, even vandals to the optical system. As such, the integrity of the high performance optical systems is maintained over time – welcome news to building operators and insurers concerned about pedestrian safety.

Glare control is a Gardco trademark, and is a noteworthy point of difference between these and common bollards.

A low-brightness optical system creates wide and uniform illumination that's easy on the eyes. Cutoff of the optical system at normal viewing angles is absolute. Internal house side shields offer sharp cutoff of the backside distribution and for special circumstances, the Bollard Ten provides specifiers with a choice of segmented Form

Ten optical systems in three distributions.





BRM 820/821/822/823 LOUVER BOLLARD

GENERAL DESCRIPTION: Gardco's dome top louver bollard provides uniform illumination, superior spacings and solid vandal resistance. Rugged extruded and cast construction with silicone seals and gasketing assures years of trouble free service. The BRM820 is a complete assembly with an extruded aluminum base. The BRM821 head-only unit affixes to custom architectural elements. Gardco's 822 school bollard provides uniform illumination and superior spacings. A high-strength galvanized steel tenon throughout the length of the luminaire provides a solid anchorage. The BRM823 luminaire includes a concrete base assembly.

ORDERING

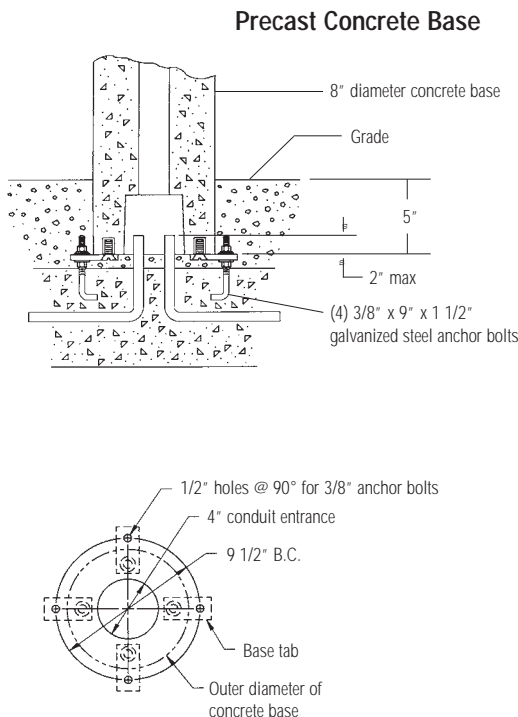
	PREFIX	HEIGHT	WATTAGE	VOLTAGE	FINISH	OPTIONS
Example	BRM 820	42	70HPS	120	WP	SHD
Louvers Head with Extruded Aluminum Base	BRM 820	42" 36"	50MH 120/277V only	120 208	BRP BLP	F SHD
Louvers Head with Extruded Aluminum Base (with internal base tenon)	BRM 822	30" 24"	70MH 100MH	240 277	NP WP	DUP* GFCI*
Head Only	BRM 821	11"	35HPS 120V only		VP	
Concrete Base	BRM 823	42"	50HPS 120/277V only		OC SC	
	Natural Concrete Base		70HPS			
	BRM 823B Beige Concrete Base		100HPS			
	BRM 823G Dark Gray Concrete Base		INC max watt A-19/100 120V only			
			32TRF 120V thru 277V			
			All HID & Incandescent lamps medium base.			

FINISH (Luminaire):
 BRP: Bronze Paint
 BLP: Black Paint
 NP: Natural Aluminum Paint
 WP: White Paint
 VP: Verde Green Paint
 OC: Optional Color (See Color Selection Guide)
 SC: Special Color Paint (Specify)

OPTIONS:
 F: Fuse holder with GLR fuse
 SHD: Internal 180° Shield
 DUP: Duplex receptacle*
 GFCI: GFCI receptacle*
**Weathertight, flush-mounted in lower housing (BRM 820 only).*

Special concrete colors and textures available

DIMENSIONS





BRM 824/825/826/827 BEVEL TOP BOLLARD

GENERAL DESCRIPTION: Gardco's dome top louver bollard provides uniform illumination, superior spacings and solid vandal resistance. Rugged extruded and cast construction with silicone seals and gasketing assures years of trouble free service. The BRM824 is a complete assembly with an extruded aluminum base. The BRM825 head-only unit affixes to custom architectural elements. Gardco's 826 school bollard provides uniform illumination and superior spacings. A high-strength galvanized steel tenon throughout the length of the luminaire provides a solid anchorage. The BRM827 luminaire includes a concrete base assembly.

ORDERING

	PREFIX	HEIGHT	WATTAGE	VOLTAGE	FINISH	OPTIONS
Example	BRM 824	42"	70HPS	120	WP	SHD
Bevel Head with Extruded Aluminum Base	BRM 824	42" 36"	50MH 120/277V only	120 208	BRP BLP	F SHD
Bevel Head with Extruded Aluminum Base (with internal base tenon)	BRM 826	30"	70MH 100MH 35HPS 120V only	240 277	NP WP VP	DUP* GFCI*
Head Only	BRM 825	11"			OC SC	
Concrete Base	BRM 827 Natural Concrete Base BRM 827B Beige Concrete Base BRM 827G Dark Gray Concrete Base	42"	50HPS 120/277V only 70HPS 100HPS INC max watt A-19/100 120V only 32TRF 120V thru 277V		FINISH (Luminaire): BRP: Bronze Paint BLP: Black Paint NP: Natural Aluminum Paint WP: White Paint VP: Verde Green Paint OC: Optional Color (See Color Selection Guide) SC: Special Color Paint (Specify)	

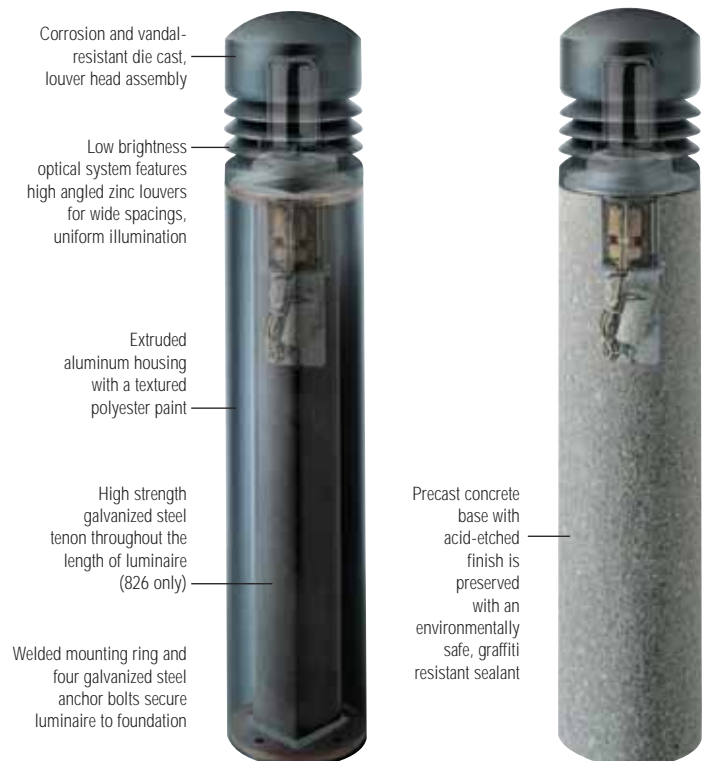
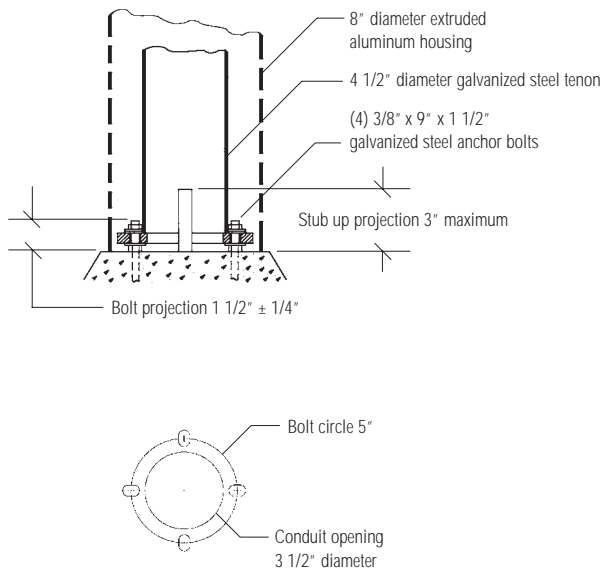
Special concrete colors and textures available

All HID & Incandescent lamps are medium base.

OPTIONS:
F: Fuse holder with GLR fuse
SHD: Internal 180° Shield
DUP: Duplex receptacle*
GFCI: GFCI receptacle*
**Weatherlight, flush-mounted in lower housing (BRM 824 only).*

DIMENSIONS

Galvanized Steel Mounting System





BRM 800 DOME TOP BOLLARD

GENERAL DESCRIPTION: Gardco's BRM800 dome top bollard provides uniform illumination, wide spacings and remarkable brightness control. Rugged extruded and cast construction with silicone seals and gasketing ensures years of trouble-free service.

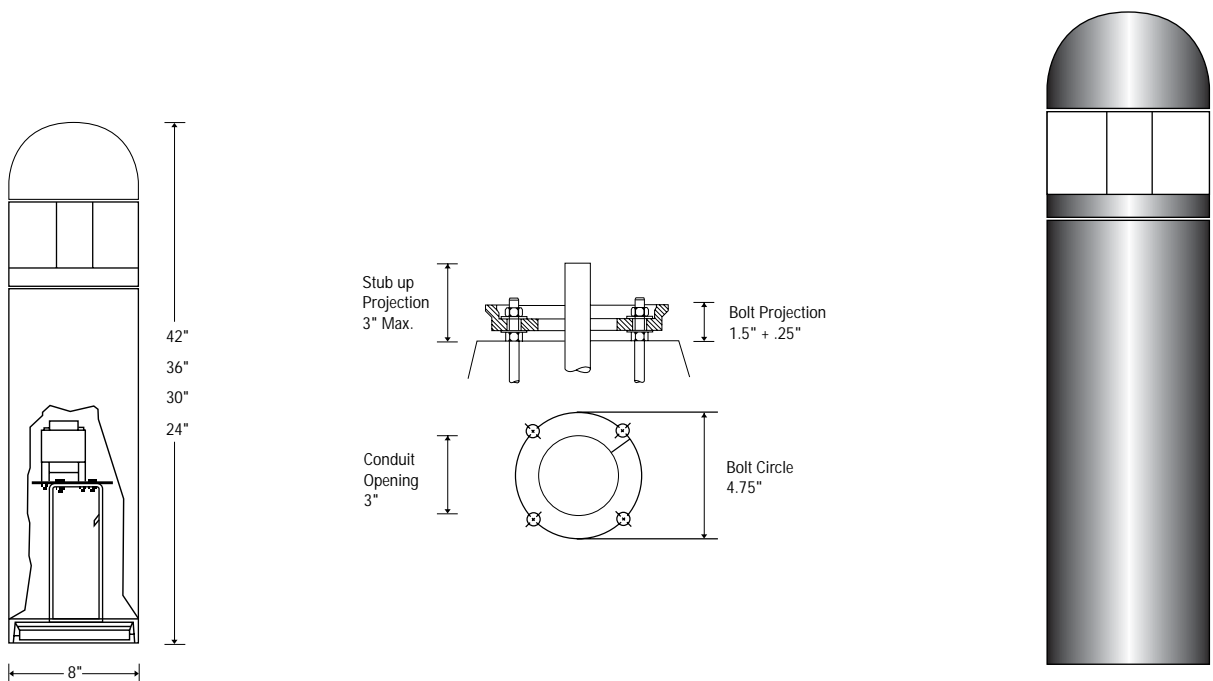
ORDERING

	PREFIX	HEIGHT	WATTAGE	VOLTAGE	FINISH	OPTIONS
Example	BRM 800	42	70HPS	120	WP	SHD
Dome Top	BRM 800	42"	50MH	120	BRP	F
		36"	120/277V only	208	BLP	SHD
		30"	70MH	240	NP	DUP*
		24"	100MH	277	WP	GFCI*
			35HPS		VP	
			120V only		OC	
			INC		SC	
			max watt A-19/100			
			120V only			
			All lamps medium base.			

FINISH (Luminaire):
 BRP: Bronze Paint
 BLP: Black Paint
 NP: Natural Aluminum Paint
 WP: White Paint
 VP: Verde Green Paint
 OC: Optional Color (See Color Selection Guide)
 SC: Special Color Paint (Specify)

OPTIONS:
 F: Fuse holder with GLR fuse
 SHD: Internal 180° Shield
 DUP: Duplex receptacle*
 GFCI: GFCI receptacle*
 *Weathertight flush-mounted in lower housing.

DIMENSIONS





BS 700/BR 800 BOLLARD

GENERAL DESCRIPTION: Gardco's family of 8" diameter round and 6 3/4" square bollards provides uniform illumination, wide spacings and remarkable brightness control. Rugged extruded and cast construction with seals and gasketing ensures years of trouble-free service.

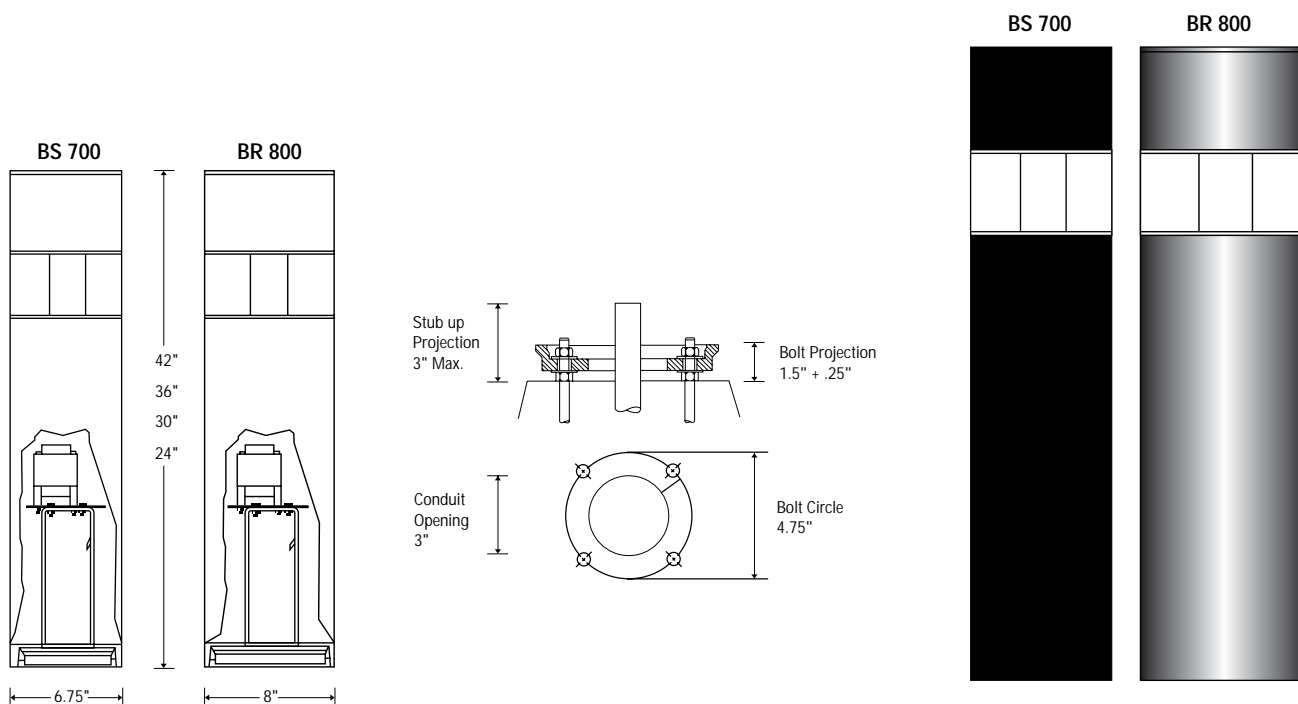
ORDERING

	PREFIX	HEIGHT	WATTAGE	VOLTAGE	FINISH	OPTIONS
Example	BR 800	42	70HPS	120	WP	SHD
Square	BS 700	42"	50MH	120	BRP	F
	BR 800	36"	120/277V only	208	BLP	SHD
		30"	70MH	240	NP	DUP*
		24"	100MH	277	WP	GFCI*
			35HPS		VP	
			120V only		OC	
			50HPS		SC	
			120/277V only			
			70HPS			
			100HPS			
		INC				
		max watt A-19/100				
		120V only				
		All lamps medium base.				

FINISH (Luminaire):
 BRP: Bronze Paint
 BLP: Black Paint
 NP: Natural Aluminum Paint
 WP: White Paint
 VP: Verde Green Paint
 OC: Optional Color (See Color Selection Guide)
 SC: Special Color Paint (Specify)

OPTIONS:
 F: Fuse holder with GLR fuse
 SHD: Internal 180° Shield
 DUP: Duplex receptacle*
 GFCI: GFCI receptacle*
 *Weathertight, flush-mounted in lower housing.




DIMENSIONS





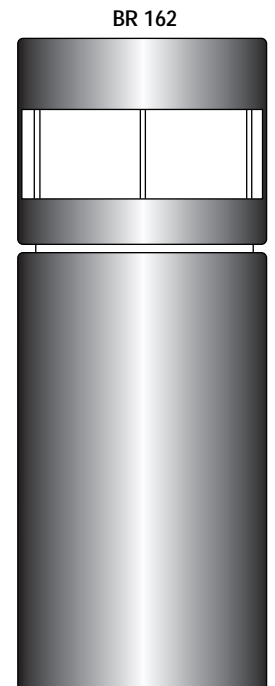
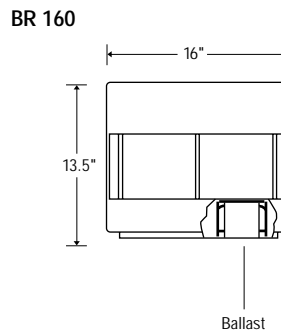
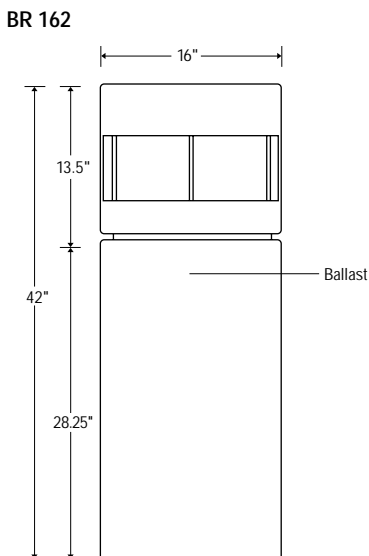
GENERAL DESCRIPTION: The Gardco 16" diameter Bollard 10 luminaires provide efficient low glare illumination from a highly durable seamless architectural form. Utilizing the Form Ten faceted optical system, precise beam control is achieved and discomforting brightness is eliminated. A 0.25" cast aluminum housing and a 0.188" injection molded DR acrylic lens ensure exceptional vandal resistance. Each Gardco BR160/162/163 is a bollard luminaire utilizing 50W through 175W high intensity discharge lamps. Units are totally sealed and gasketed, preventing intrusion of moisture, dust and insects into the lamp or electrical chambers.

ORDERING

PREFIX	OPTICS	HEIGHT	WATTAGE	VOLTAGE	FINISH	OPTIONS
Example BR 160	3	42	70HPS	120	WP	SHD
BR 160	 3	14"	50MH	120	BRP	F
BR 162		BR 160 only	70MH	208	BLP	DUP*
BR 163	 Q	42"	100MH	240	NP	GFCI*
BR 163B		BR 162, 163 only	150MH	277	WP	
BR 163G	 FM		175MH		VP	
			50HPS		OC	
			120/277V only		SC	
			70HPS			
			100HPS			
			150HPS			

PREFIX: BR 160: Head Only BR 162: With Cast Aluminum Base BR 163: Natural Concrete Base BR 163B: Beige Concrete Base BR 163G: Dark Grey Concrete Base	FINISH (Luminaire): BRP: Bronze Paint BLP: Black Paint NP: Natural Aluminum Paint WP: White Paint VP: Verde Green Paint OC: Optional Color (See Color Selection Guide) SC: Special Color Paint (Specify)
OPTIONS: F: Fuse holder with GLR fuse DUP: Duplex receptacle* GFCI: GFCI receptacle* <i>*Weathertight, flush-mounted in lower housing (BRM 162 only).</i>	

DIMENSIONS



SPECIFICATIONS 7" & 8" BOLLARDS



General Description

Each Gardco BS7, BR8 and BRM is a bollard luminaire utilizing 35W through 100W high intensity discharge lamps. Units are sealed and gasketed at all points of material transition preventing intrusion of moisture, dust and insects into the optical chamber.

Upper Housing

- BS700* 0.156" aluminum extrusion supports 0.25" aluminum top plate. Top plate is mechanically secured with 4 tamper-resistant stainless steel fasteners. Assembly is supported from base with 4 chrome plated steel rods.
- BR800* 0.125" aluminum extrusions supports 0.25" aluminum top plate. Top plate is mechanically secured with 3 tamper resistant stainless steel fasteners. Assembly is supported from base with 3 chrome plated steel rods.
- BRM800* Die cast aluminum dome top is supported from base with 3 chrome plated steel rods.
- BRM820/821/822/823/824/825/826/827* Die cast aluminum top secures to die cast zinc louvers with 3 concealed tamper-resistant screws.

Lens

- BS700* Four sections of 0.312 mitered clear acrylic are permanently enjoined with solvent type adhesive.
- BR800/BRM800* Lens is 0.25 injection molded clear virgin acrylic.
- BRM820/821/822/823/824/825/826/827* Fully gasketed Pyrex® vessel enshrouds lamp envelope and is secured with stainless steel spring.

Optical System

- BS700/BR800/BRM800* Electrochemically anodized die formed aluminum reflector provides efficient illumination, wide spacing and brightness control. Hammertone reflector assures clean, unstriated beam pattern.
- BRM820/821/822/823/824/825/826/827* Louvers are angled to provide maximum spacings while shielding the source to 90°. Upper louver features concealed hammertone anodized aluminum reflector to increase luminaire efficiency and generate unstriated beam patterns.

Lower Housing

- BS700/BR800/BRM800/820/824* Aluminum extrusion secures to base with (4) tamper-resistant stainless steel fasteners.
- BRM822/826* Extruded aluminum housing connects to the top flange of the mounting tenon with (4) internal hex bolts, inaccessible after installation.
- BRM823/827* Pre-cast concrete base assembly is constructed with welded wire mesh and steel rebar. Base is sandblasted to an exposed aggregate finish.

Anchorage

- BS700/BR800/BRM800/820/824* Base assembly consists of cast aluminum platform and ballast mounting bracket. Assembly is secured and leveled to the mounting foundation with (4) 3/8" x 9" x 1 1/2" anchor bolts on a 4 3/4" bolt circle. Ballast is prewired with quick electrical disconnects and mounting bracket is secured with (2) Phillips head stainless steel screws for ease of service.
- BRM822/826* High strength steel mounting tenon secures to the same anchorage as above but with greater structural strength.

Electrical

Medium base pulse rated lampholder is glazed porcelain with nickel plated reinforced screw shell and spring loaded contact.

Each high power factor ballast is the separate component type, capable of providing reliable lamp starting down to -20°F. Component-to-component wiring within the luminaire will carry no more than 80% of rated current and is listed by UL for use at 600 VAC at 150° or higher. Plug disconnects are listed by UL for use at 600 VAC, 15A or higher.

Finish

Each luminaire receives a fade and abrasion resistant, electrostatically-applied, thermally cured textured polyester powder finish.

Labels

All fixtures bear UL (or CUL) Wet Location labels.

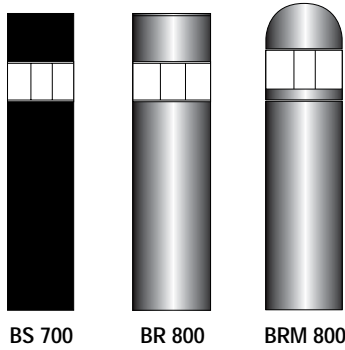


7" & 8" BOLLARDS PHOTOMETRICS

Initial Footcandles

LENSED

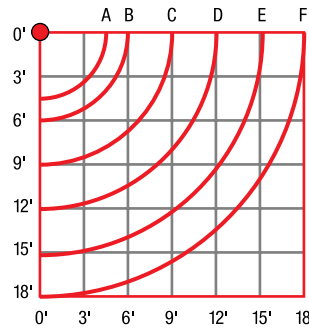
42" Bollard, 36" Light Center Lensed Units: Clear Lamp (exc. MV)



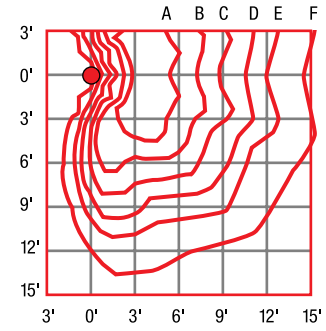
Symmetric

Asymmetric

	A	B	C	D	E	F	A	B	C	D	E	F
100W HPS	25.0	16.0	5.0	1.8	0.7	0.3	11.0	6.0	3.5	2.0	1.3	0.6
100W MH	22.4	14.3	4.5	1.6	0.6	0.2	9.8	5.4	3.1	1.8	1.2	0.5
100W MV	11.1	7.1	2.2	0.8	0.3	0.1	4.9	2.7	1.6	0.9	0.6	0.3



GL-1865



GL-1905

LAMP LUMENS

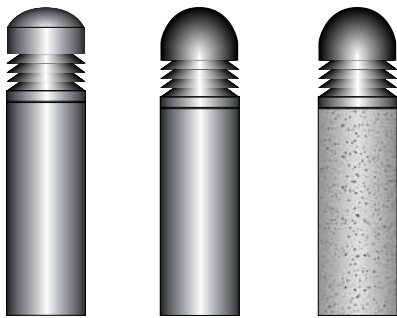
Footcandle Conversion Factors for Lensed Units:

Type	100HPS	70HPS	50HPS	35HPS	100MH	70MH	50MH	100MV	75MV	50MV
Clear	9500	6300	4000	2250	8500	5200	3450	—	—	—
	1.0	0.66	0.42	0.24	1.0	0.61	0.41	—	—	—

Initial Footcandles

BEVEL TOP & LOUVERED

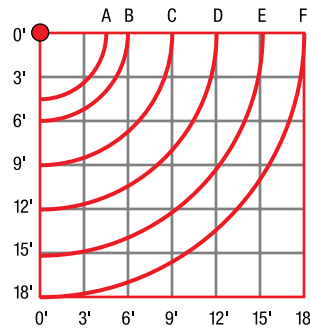
42" Bollard, 36" Light Center Louver: Coated Lamp



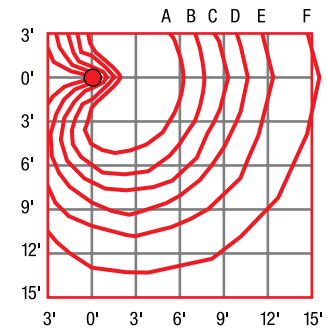
Symmetric

Asymmetric

	A	B	C	D	E	F	A	B	C	D	E	F
100W HPS	9.5	6.0	1.8	0.7	0.3	0.2	6.0	3.5	2.0	1.3	0.7	0.3
100W MH	8.5	5.4	1.6	0.6	0.3	0.2	5.4	3.1	1.8	1.2	0.6	0.3
100W MV	4.5	2.9	0.9	0.3	0.2	0.1	2.9	1.7	1.0	0.6	0.3	0.1



GL-4257



GL-4397

Louvered BRM820

BRM822

BRM821 (Head only)
BRM823

Bevel Top BRM824

BRM826

BRM825 (Head only)
BRM827

LAMP LUMENS

Footcandle Conversion Factors for Louvered Units:

Type	100HPS	70HPS	50HPS	35HPS	100MH	70MH	50MH	100MV	75MV	50MV
Coated	8800	5800	3700	2100	7900	4800	3000	4200	2700	1650
	1.0	0.66	0.42	0.24	1.0	0.61	0.38	1.0	0.64	0.39



General Description

Each Gardco BR160/162/163 is a bollard luminaire utilizing 50W through 175W high intensity discharge lamps. Luminaires feature precision segmented optical systems, cast aluminum housing and 0.188" DR acrylic lens. Units are totally sealed and gasketed, preventing intrusion of moisture, dust and insects into the lamp or electrical chambers.

Housing

Upper and lower housing sections are 0.25" wall seamless cast aluminum. Lens is one piece. 0.188" thick injection molded clear non-yellowing DR acrylic secured between upper and lower housing sections with (3) 1/2" diameter chrome plated steel posts. Silicone gasketing allows for thermal expansion while maintaining a weathertight operation of the optical system.

Optical System

The Form Ten optical system segments are formed from homogeneous sheet aluminum, electrochemically brightened, anodized and precisely positioned in reflector pan to produce Type VS square, Type III or Forward Throw distributions. Mogul base lampholder is glazed porcelain with nickel plated screw shell and is securely attached to the reflector assembly. 50W MH, 70W MH and 100W MH units have medium base lampholders.

Mounting Assemblies

BR160

Head-only luminaire is designed for mounting on concrete pedestal or architectural elements (by others). Mounting plate is cast aluminum with slots to accept anchor bolts (by others) at 90° on a 12 1/4" diameter bolt circle. Ballast is attached to the mounting plate.

BR162

16" diameter mounting base is 0.125" wall aluminum. Integral cast aluminum top section is secured to the mounting foundation with four (4) 3/8" x 9" x 1 1/2" anchor bolts on 12 1/4" diameter bolt circle. Ballast mounting plate is positioned at the top of base easily accessible for service.

BR163

Luminaire includes a pre-cast concrete base constructed with steel molds and wire reinforcing. Base is sandblasted to an exposed aggregate finish.

Electrical

Each high power factor ballast is capable of providing reliable lamp starting down to -20°F.

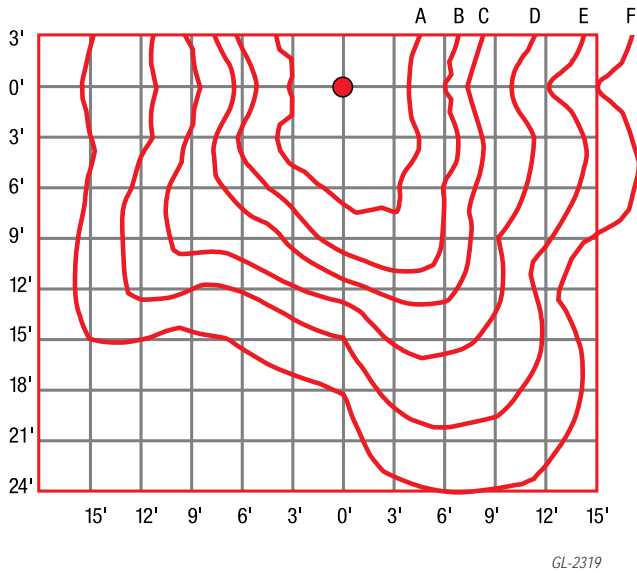
Finish

Each luminaire receives a fade and abrasion resistant, electrostatically applied, thermally cured textured polyester powder finish.

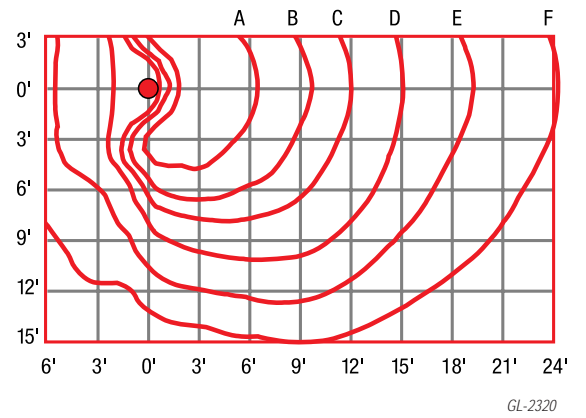
Labels

All fixtures bear UL (or CUL) Wet Location labels.

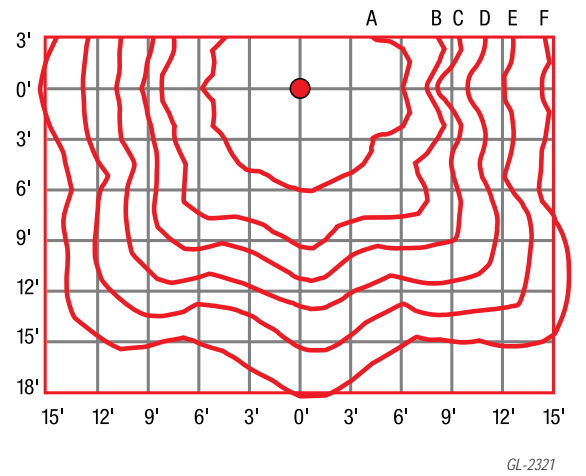
TYPE III



TYPE FM



TYPE Q



Initial Footcandles

LAMP (CLEAR) 42" Bollard, 36" Light Center

	A	B	C	D	E	F
150HPS	25.7	8.6	4.3	1.6	0.54	0.21
100HPS	15.1	5.0	2.5	0.95	0.32	0.13
70HPS	10.1	3.4	1.7	0.63	0.21	0.08
50HPS	6.5	2.2	1.1	0.41	0.14	0.05
175MH/HOR	24.0	8.0	4.0	1.5	0.50	0.20
100MH/MED	13.7	4.6	2.3	0.86	0.29	0.11
70MH/MED	8.4	2.8	1.4	0.53	0.18	0.07
50MH/MED	5.5	1.8	0.92	0.35	0.12	0.05
175MV	12.2	4.1	2.0	0.77	0.26	0.10
100MV	6.5	2.2	1.1	0.41	0.14	0.05



BR 162



BR 163

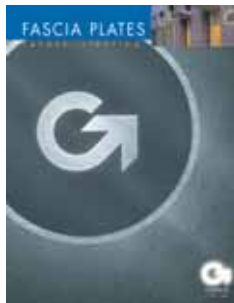
LAMP LUMENS

Clear Lamp	150HPS (ET-23.5) 16,000	100HPS (ET-23.5) 9500	70HPS(ET-23.5) 6300	50HPS (ET-23.5) 4000
Clear Lamp	175MH (BT-28) 15,000	100MH (ED-17) 8500	70MH (ED-17) 5200	50MH (ED-17) 3450
Clear Lamp	175MV (BT-28) 7700	100MV (ET-23.5) 4000		

Gullwing



Fascia Plates



Form 10 Round



100 Line Sconces



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