



T890LEDB

LED ROUND CUTOFF BOLLARD

JOB INFORMATION

Type: _____
 Catalog No: _____
 Project Name: _____
 Comments: _____

 Prepared by: _____

T890LEDB

FEATURES

USE OF PRODUCT

The intended use of this product is for pathways, parking lots, plazas, entrance ways, parks, and as landscape accents.

HOUSING

Extruded aluminum housing with flush mounting base and vandal resistant screws.

FINISH

Weather resistant, matt-finished powdercoat process for advanced protection in severe environments over a precise chromate conversion coating. Available in standard dark polyester bronze finish for impact, corrosion, and UV resistance. Consult factory for made to order architectural finishes.

OPTICS

Adjustable aluminum reflector is designed for maximum photometric efficiency and optimum light distribution. Clear polycarbonate lens for increased vandal resistance. One-piece silicon gasket prohibits entrance of outside contaminants. Provides 360° of low level lighting. Available with 120° or 180° house side shield

LED

High output LEDs offer a minimum estimated operating life of 50,000 hours in 3000K, 4000K or 5000K with CRI>80. LEDs placed on high performance aluminum heatsink for reduced junction temperatures and extended life.

DRIVER

Durable and long lasting LED driver operates at 120-277V and boasts a 90% power factor at 50 to 60 Hz with 0-10V Dimming Constant Current. Driver protections includes: Output open load, over-current and short-circuit, and over-temperature with auto recovery. -30°C Min Temp. 40°C Max Temp.

MOUNTING

- Mounting kit with anchor bolts are included.
- Internal ballast tray for easy maintenance.
- Bollard must be mounted on a concrete base (supplied by others).

LISTINGS/COMPLIANCE

- CSA-Suitable for wet locations

B.U.G. RATING

Watts	Lumens	B-U-G Rating
12W	520lm	B0-U1-G0
17W	728lm	B1-U2-G0

w/ 180° House side shield

Watts	Lumens	B-U-G Rating
12W	352lm	B0-U1-G0
17W	528lm	B0-U1-G0

GFCI OUTLET



BOLLARD RETROFIT BASE



ORDERING INFO

SERIES	HEIGHT	WATT/LUMENS	VOLTAGE	COLOR TEMPERATURE	FINISH	OPTIONS
T890LED	40 - 40"	12 - 12W/520lm	UNV - 120V-277V	30 - 3000K	BZ ² - Bronze	GO - GFCI Outlet
	MT0 ¹ - Made to order	17 - 17W/728lm	347 - 347V	40 - 4000K	MTO ³ - Made to order	QHSS - Quarter (120°)house side shield
			480 - 480V	50 - 5000K	MGTO ³ - Marin grade made to order	HHSS - Half (180°)house side shield BRBK ⁴ - Bollard retrofit base kit

Notes

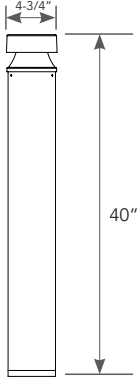
1. Consult factory for height, Minimum height 30"
2. Standard nish.
3. RAL number required.
4. Available in bronze or black, Consult factory for additional finish.



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LED ROUND CUTOFF BOLLARD

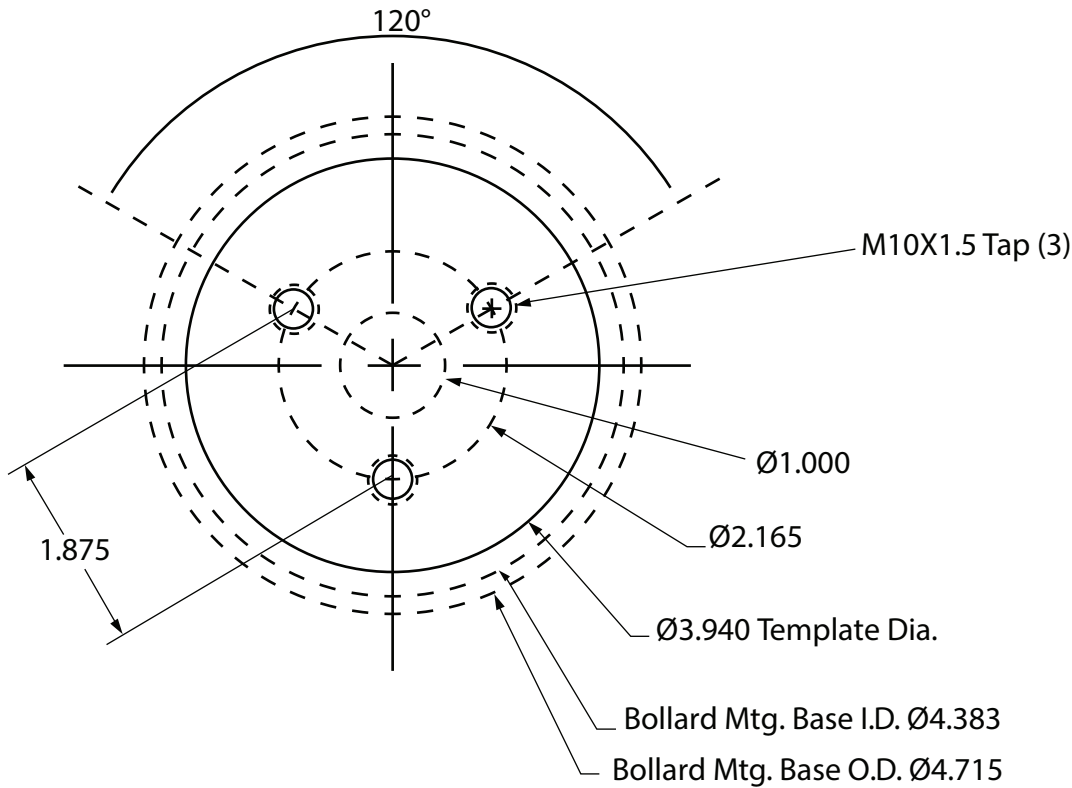
DIMENSIONS



HHSS - Half (180°) House side shield



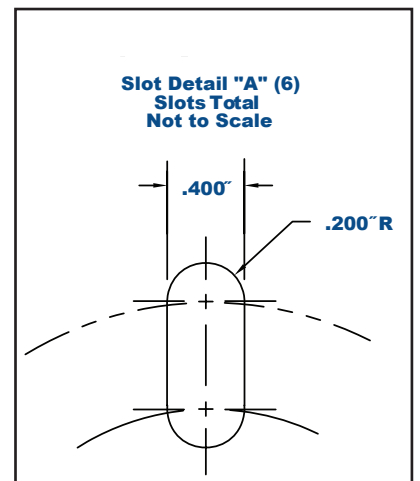
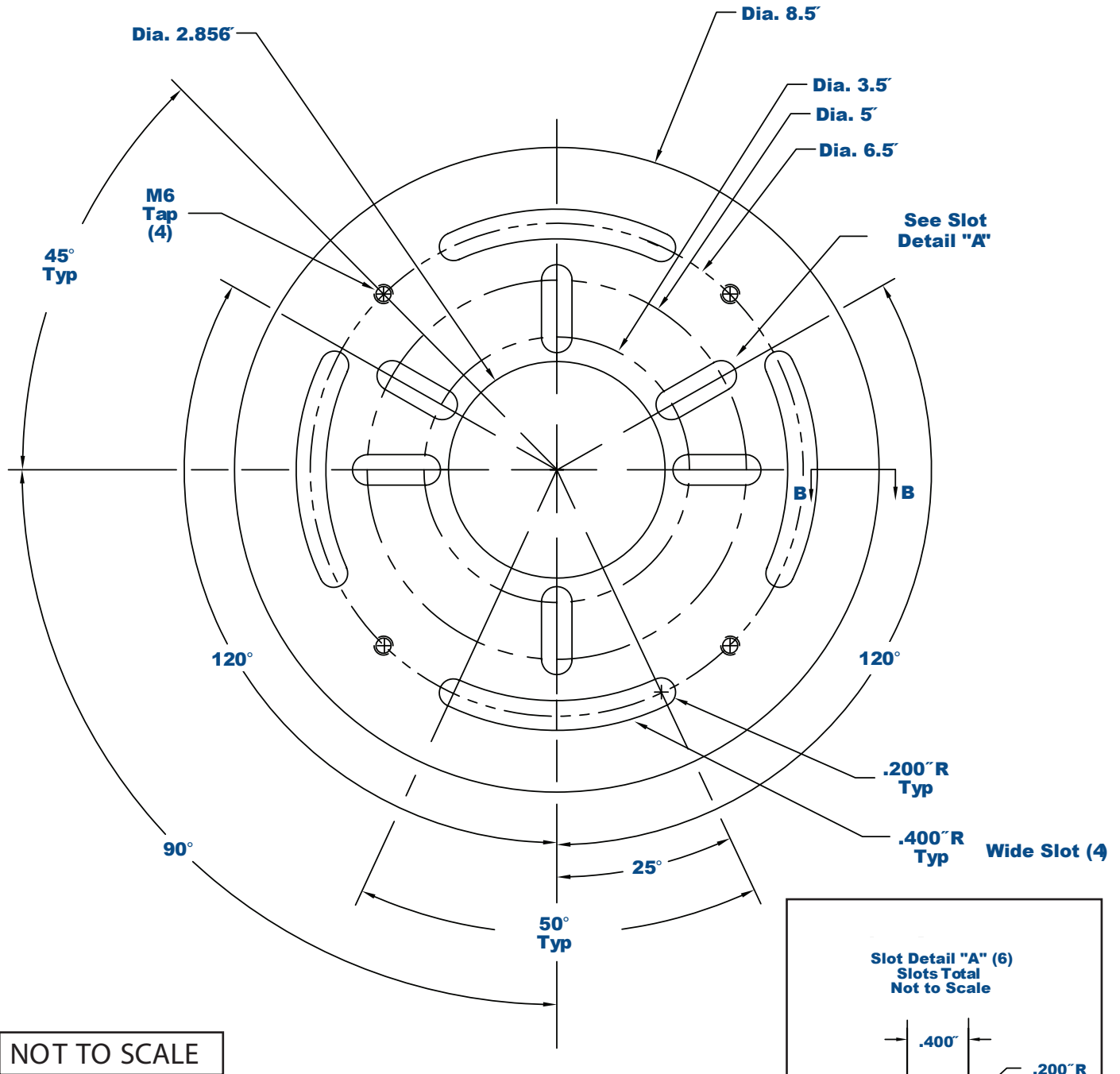
NEW CONSTRUCTION PLATE



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LED ROUND CUTOFF BOLLARD

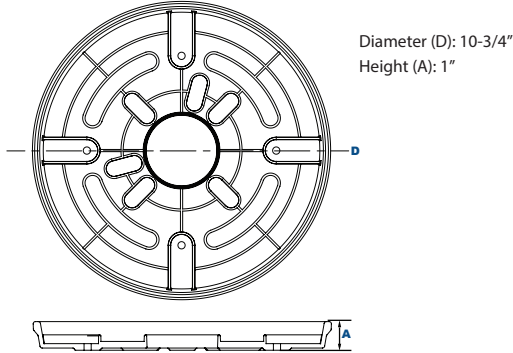
BOLLARD RETROFIT BASE TEMPLATE



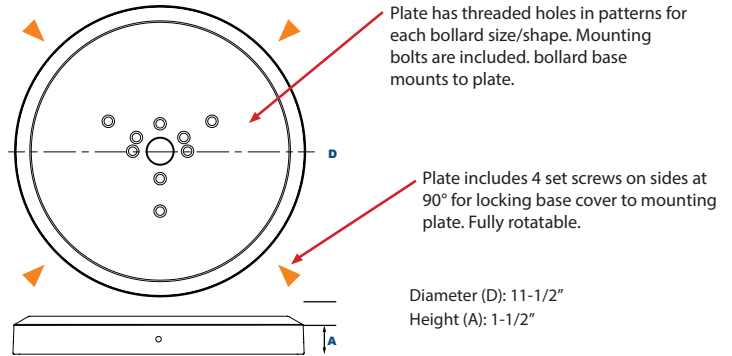
T890LEDB

LED ROUND CUTOFF BOLLARD

BASE DIMENSIONS



BASE COVER DIMENSIONS



BASE KIT INCLUDES

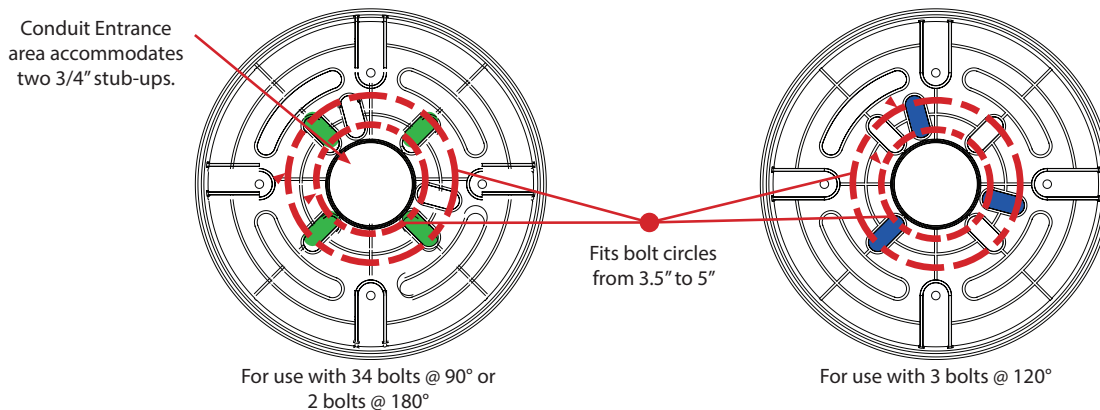
Heavy duty die cast aluminum Anchor Bolt Retrofit Adaptor Plate

- Includes slots for existing anchor bolt mounting, 3@120°, 4@90° or 2@180° (3.5" to 5" diameter bolt circle). Slots can accommodate 1/4" to 3/8" diameter anchor bolts.
- Includes large diameter slots for installing field drilled anchors (not included) in the event that the existing anchor bolt pattern does not fit slots, or anchor bolts are damaged or unusable.
- Includes 4 Stainless Steel leveling bolts with two leveling bubbles at 90° to level base prior to mounting new bollard.
- Center conduit entrance hole designed to accommodate two 3/4" PVC conduits.

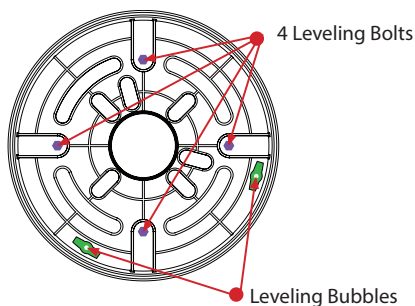
Heavy duty die cast aluminum Bollard Mounting Cover Plate

- Includes threaded holes in patterns to match bollard base mounting plates.
- Stainless Steel bolts for mounting bollard base plate.
- 4 Stainless Steel set screws at 90° for securing the cover plate to the adaptor plate. Cover plate can be rotated 360°. Powdercoat finish over chromate conversion coating in Bronze (standard) and available in made to order.

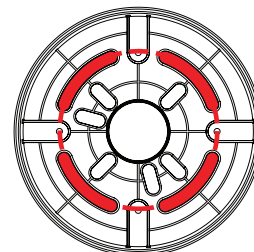
ANCHOR BOLT RETROFIT ADAPTER PLATE BOLT CIRCLES FOR USE WITH EXISTING ANCHOR BOLTS



BASE LEVELING AND LEVELS



CIRCLE FOR DRILLED ANCHORS



6.5" bolt circle for Drilled Anchors. Used when existing anchor bolts do not fit 4-bolt or 3-bolt slot or are damaged. these must be cut off and new drilled anchors installed

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LED ROUND CUTOFF BOLLARD

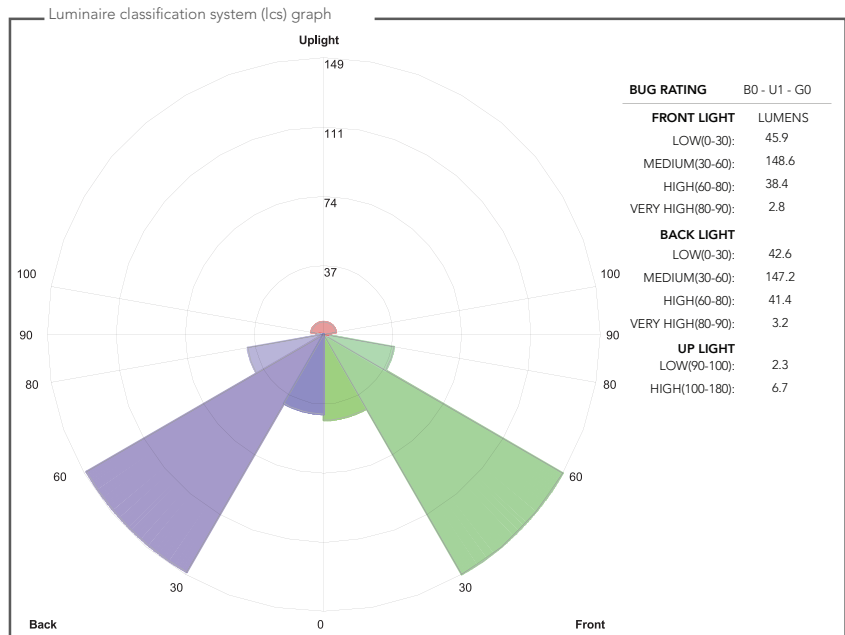
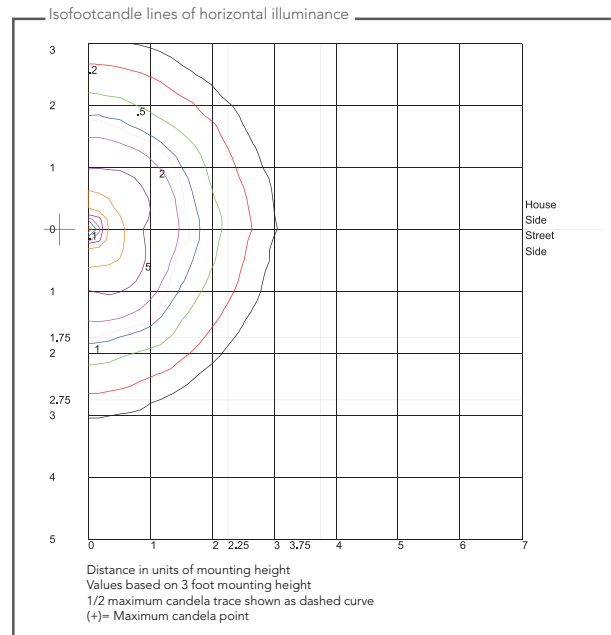
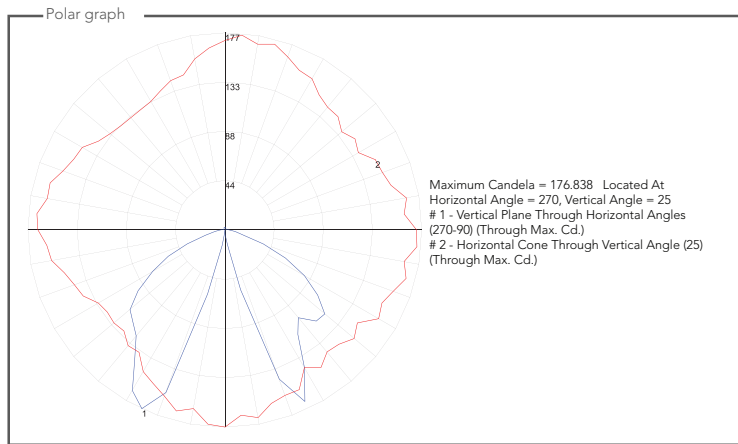
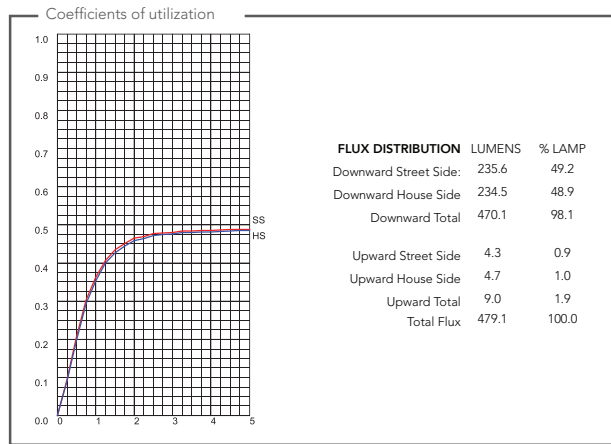
PHOTOMETRICS

T890LED
12W
30K

TEST DATE	12June17
SERIES	T890LED
CCT	3000K
LUMENS	479
WATTS	12.9

Characteristics	
IES Classification:	Type VS
Longitudinal Classification:	Very Short
Lumens Per Lamp:	N.A. (absolute)
Total Lamp Lumens:	N.A. (absolute)
Luminaire Lumens:	479
Downward Total Efficiency:	N.A. (absolute)
Total Luminaire Efficiency:	N.A. (absolute)
Luminaire Efficacy Rating (LER):	37
Total Luminaire Watts:	12.9
Ballast Factor:	1.00
Upward Waste Light Ratio:	0.02
Maximum Candela:	176.838
Maximum Candela Angle:	270H 25V
Maximum Candela (<90 Degrees Vertical):	176.838
Maximum Candela Angle (<90 Degrees Vertical):	270H 25V
Maximum Candela At 90 Degrees Vertical:	3.008 (0.6% Lamp Lumens)
Maximum Candela from 80 to <90 Degrees Vertical:	10.948 (2.3% Lamp Lumens)
Cutoff Classification (deprecated):	N.A. (absolute)

Luminaire classification system			
BUG RATING	B0 - U1 - G0		
FRONT LIGHT	LUMENS	% LAMP	% LUMINAIRE
LOW(0-30):	45.9	N.A.	9.6
MEDIUM(30-60):	148.6	N.A.	31.0
HIGH(60-80):	38.4	N.A.	8.0
VERY HIGH(80-90):	2.8	N.A.	0.6
BACK LIGHT			
LOW(0-30):	42.6	N.A.	8.9
MEDIUM(30-60):	147.2	N.A.	30.7
HIGH(60-80):	41.4	N.A.	8.7
VERY HIGH(80-90):	3.2	N.A.	0.7
UP LIGHT			
LOW(90-100):	2.3	N.A.	0.5
HIGH(100-180):	6.7	N.A.	1.4
Total	479.1	N.A.	100.0



T890LEDB

LED ROUND CUTOFF BOLLARD

PHOTOMETRICS

T890LED
12W
40K

TEST DATE	12June17
SERIES	T890LED
CCT	4000K
LUMENS	520
WATTS	12.9

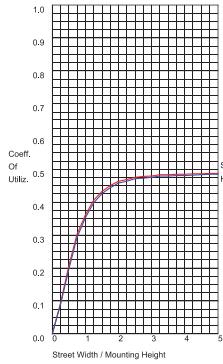
Characteristics

IES Classification:	Type VS
Longitudinal Classification:	Very Short
Lumens Per Lamp:	N.A. (adsolute)
Total Lamp Lumens:	N.A. (adsolute)
Luminaire Lumens:	520
Downward Total Efficiency:	N.A. (adsolute)
Total Luminaire Efficiency:	N.A. (adsolute)
Luminaire Efficacy Rating (LER):	40
Total Luminaire Watts:	12.9
Ballast Factor:	1.00
Upward Waste Light Ratio:	0.02
Maximum Candela:	191.836
Maximum Candela Angle:	270H 25V
Maximum Candela (<90 Degrees Vertical):	191.836
Maximum Candela Angle (<90 Degrees Vertical):	270H 25V
Maximum Candela At 90 Degrees Vertical:	3.263 (0.6% Lamp Lumens)
Maximum Candela from 80 to <90 Degrees Vertical:	11876 (2.3% Lamp Lumens)
Cutoff Classification (deprecated):	N.A. (adsolute)

Luminaire classification system

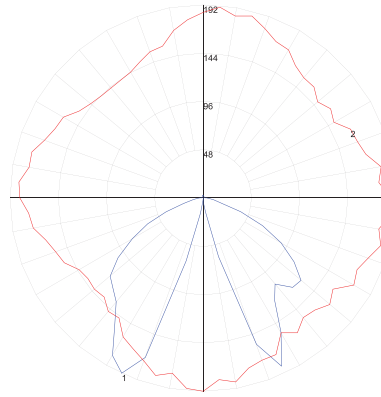
BUG RATING	B0 - U1 - G0		
	LUMENS	% LAMP	% LUMINAIRE
FRONT LIGHT			
LOW(0-30):	49.7	N.A.	9.6
MEDIUM(30-60):	161.2	N.A.	31.0
HIGH(60-80):	41.6	N.A.	8.0
VERY HIGH(80-90):	3.0	N.A.	0.6
BACK LIGHT			
LOW(0-30):	46.2	N.A.	8.9
MEDIUM(30-60):	159.7	N.A.	30.7
HIGH(60-80):	45.0	N.A.	8.7
VERY HIGH(80-90):	3.5	N.A.	0.7
UP LIGHT			
LOW(90-100):	2.5	N.A.	0.5
HIGH(100-180):	7.3	N.A.	1.4
Total	519.7	N.A.	100.0

Coefficients of utilization



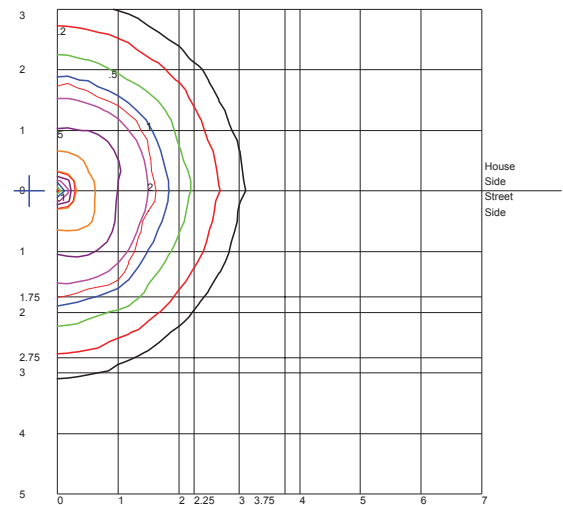
FLUX DISTRIBUTION	LUMENS	% LAMP
Downward Street Side:	255.6	49.2
Downward House Side:	254.3	48.9
Downward Total:	509.9	98.1
Upward Street Side:	4.6	0.9
Upward House Side:	5.1	1.0
Upward Total:	9.7	1.9
Total Flux:	519.6	100.0

Polar graph



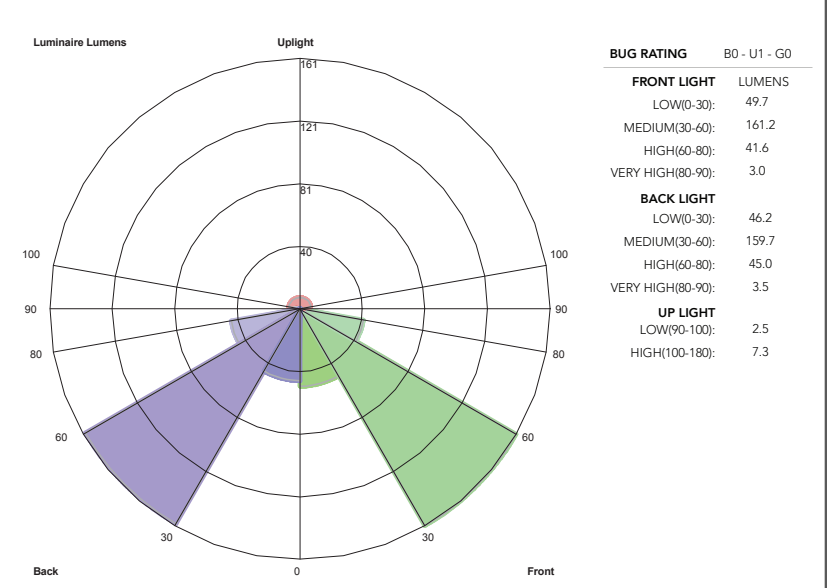
Maximum Candela = 191.836 Located At
Horizontal Angle = 270, Vertical Angle = 25
1 - Vertical Plane Through Horizontal Angles
(270-90) (Through Max. Cd.)
2 - Horizontal Cone Through Vertical Angle (25)
(Through Max. Cd.)

Isofootcandle lines of horizontal illuminance



Distance in units of mounting height
Values based on 3 foot mounting height
1/2 maximum candela trace shown as dashed curve
(+)= Maximum candela point

Luminaire classification system (lcs) graph



BUG RATING	B0 - U1 - G0	
	LUMENS	
FRONT LIGHT		
LOW(0-30):	49.7	
MEDIUM(30-60):	161.2	
HIGH(60-80):	41.6	
VERY HIGH(80-90):	3.0	
BACK LIGHT		
LOW(0-30):	46.2	
MEDIUM(30-60):	159.7	
HIGH(60-80):	45.0	
VERY HIGH(80-90):	3.5	
UP LIGHT		
LOW(90-100):	2.5	
HIGH(100-180):	7.3	

T890LEDB

LED ROUND CUTOFF BOLLARD

PHOTOMETRICS

T890LED
12W
50K

TEST DATE	12June17
SERIES	T890LED
CCT	5000K
LUMENS	541
WATTS	12.9

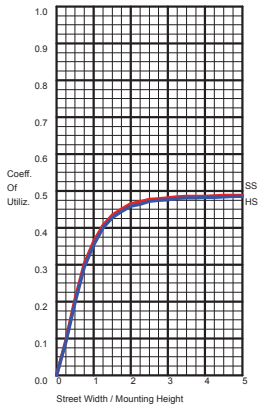
Characteristics

IES Classification:	Type VS
Longitudinal Classification:	Very Short
Lumens Per Lamp:	N.A. (absolute)
Total Lamp Lumens:	N.A. (absolute)
Luminaire Lumens:	541
Downward Total Efficiency:	N.A. (absolute)
Total Luminaire Efficiency:	N.A. (absolute)
Luminaire Efficacy Rating (LER):	42
Total Luminaire Watts:	12.9
Ballast Factor:	1.00
Upward Waste Light Ratio:	0.02
Maximum Candela:	199.814
Maximum Candela Angle:	270H 25V
Maximum Candela (<90 Degrees Vertical):	199.814
Maximum Candela Angle (<90 Degrees Vertical):	270H 25V
Maximum Candela At 90 Degrees Vertical:	3.399 (0.6% Lamp Lumens)
Maximum Candela from 80 to <90 Degrees Vertical:	12.37 (2.3% Lamp Lumens)
Cutoff Classification (deprecated):	N.A. (absolute)

Luminaire classification system

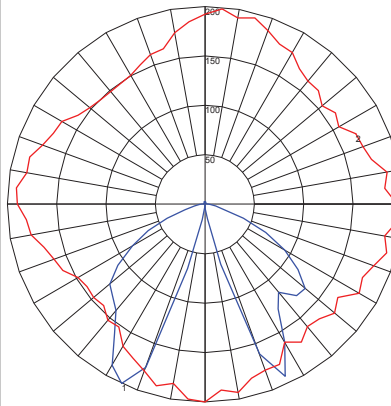
BUG RATING	B0 - U1 - G0		
FRONT LIGHT	LUMENS	% LAMP	% LUMINAIRE
LOW(0-30):	51.8	N.A.	9.6
MEDIUM(30-60):	167.9	N.A.	31.0
HIGH(60-80):	43.4	N.A.	8.0
VERY HIGH(80-90):	3.1	N.A.	0.6
BACK LIGHT			
LOW(0-30):	48.1	N.A.	8.9
MEDIUM(30-60):	166.4	N.A.	30.7
HIGH(60-80):	46.8	N.A.	8.7
VERY HIGH(80-90):	3.6	N.A.	0.7
UP LIGHT			
LOW(90-100):	2.6	N.A.	0.5
HIGH(100-180):	7.6	N.A.	1.4
Total	541.3	N.A.	100.0

Coefficients of utilization



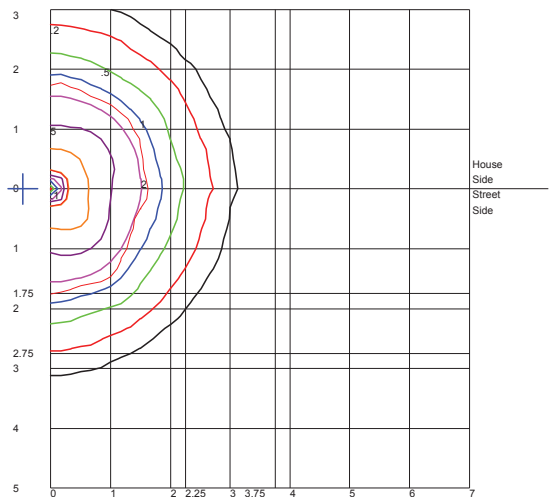
FLUX DISTRIBUTION	LUMENS	% LAMP
Downward Street Side:	266.3	49.2
Downward House Side:	264.9	48.9
Downward Total:	531.2	98.1
Upward Street Side:	4.8	0.9
Upward House Side:	5.3	1.0
Upward Total:	10.1	1.9
Total Flux:	541.3	100.0

Polar graph



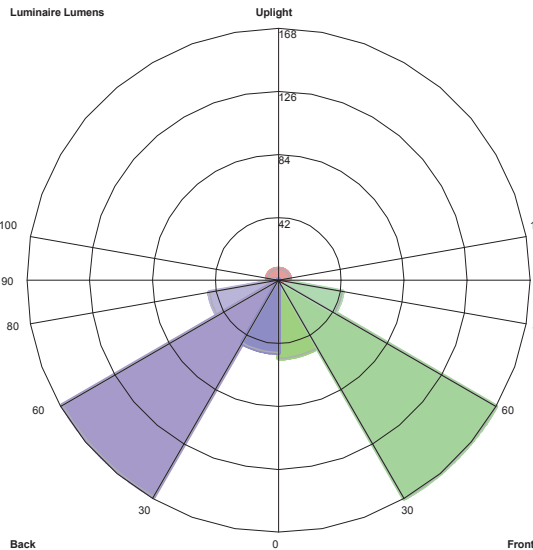
Maximum Candela = 199.814 Located At
Horizontal Angle = 270, Vertical Angle = 25
1 - Vertical Plane Through Horizontal Angles
(270-90) (Through Max. Cd.)
2 - Horizontal Cone Through Vertical Angle (25)
(Through Max. Cd.)

Isofootcandle lines of horizontal illuminance



Distance in units of mounting height
Values based on 3 foot mounting height
1/2 maximum candela trace shown as dashed curve
(+)= Maximum candela point

Luminaire classification system (lcs) graph



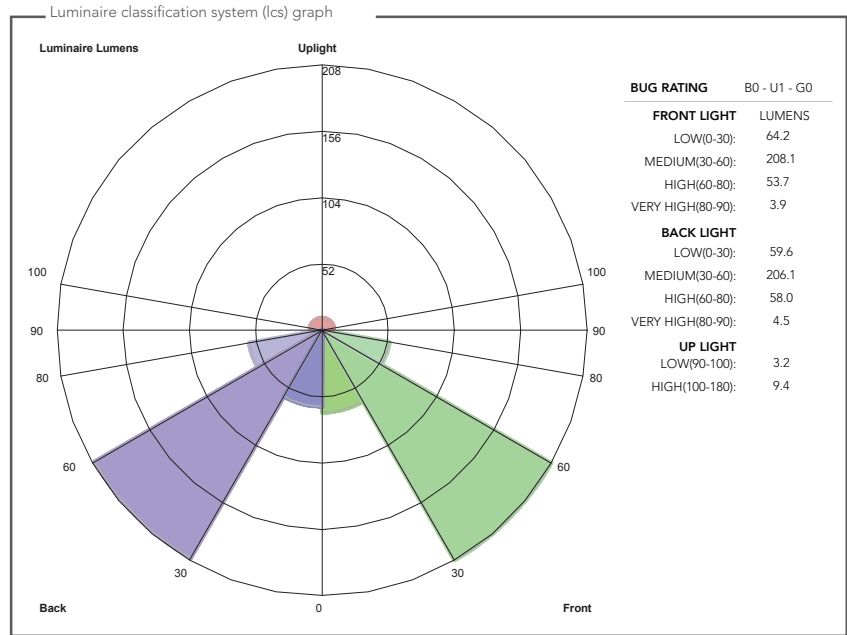
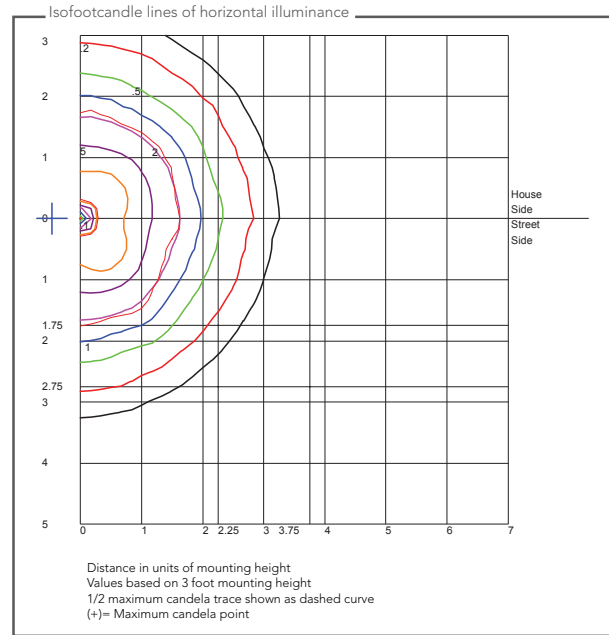
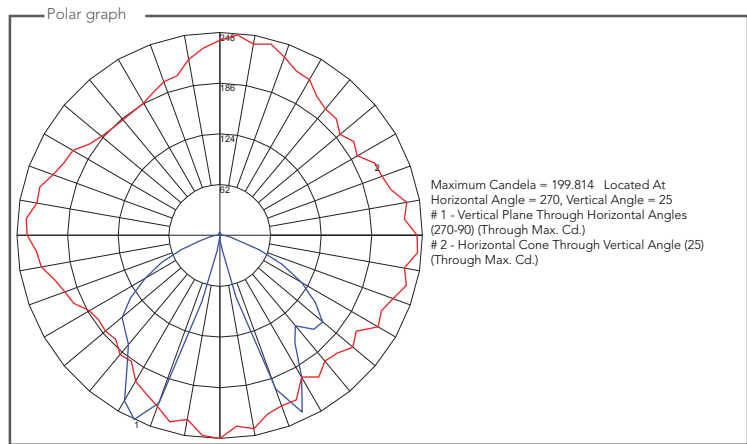
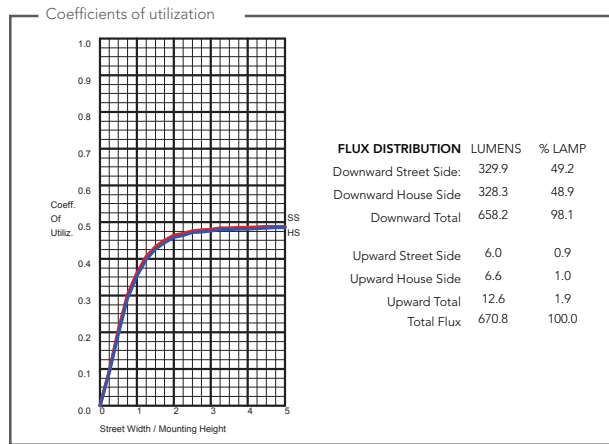
BUG RATING	B0 - U1 - G0	
FRONT LIGHT	LUMENS	
LOW(0-30):	51.8	
MEDIUM(30-60):	167.9	
HIGH(60-80):	43.4	
VERY HIGH(80-90):	3.1	
BACK LIGHT		
LOW(0-30):	48.1	
MEDIUM(30-60):	166.4	
HIGH(60-80):	46.8	
VERY HIGH(80-90):	3.6	
UP LIGHT		
LOW(90-100):	2.6	
HIGH(100-180):	7.6	

T890LEDB

LED ROUND CUTOFF BOLLARD

PHOTOMETRICS

<h1>T890LED</h1> <h2>17W</h2> <h3>30K</h3>	Characteristics		Luminaire classification system		
	TEST DATE	12June17	IES Classification:	Type VS	BUG RATING B0 - U1 - G0
	SERIES	T890LED	Longitudinal Classification:	Very Short	
	CCT	3000K	Lumens Per Lamp:	N.A. (absolute)	
	LUMENS	671	Total Lamp Lumens:	N.A. (absolute)	
	WATTS	18.1	Luminaire Lumens:	671	
			Downward Total Efficiency:	N.A. (absolute)	
			Total Luminaire Efficiency:	N.A. (absolute)	
			Luminaire Efficacy Rating (LER):	37	
			Total Luminaire Watts:	18.1	
		Ballast Factor:	1.00		
		Upward Waste Light Ratio:	0.02		
		Maximum Candela:	247.579		
		Maximum Candela Angle:	270H 25V		
		Maximum Candela (<90 Degrees Vertical):	247.579		
		Maximum Candela Angle (<90 Degrees Vertical):	270H 25V		
		Maximum Candela At 90 Degrees Vertical:	4.211 (0.6% Lamp Lumens)		
		Maximum Candela from 80 to <90 Degrees Vertical:	15.327 (2.3% Lamp Lumens)		
		Cutoff Classification (deprecated):	N.A. (absolute)		
				FRONT LIGHT LUMENS % LAMP % LUMINAIRE LOW(0-30): 64.2 N.A. 9.6 MEDIUM(30-60): 208.1 N.A. 31.0 HIGH(60-80): 53.7 N.A. 8.0 VERY HIGH(80-90): 3.9 N.A. 0.6 BACK LIGHT LOW(0-30): 59.6 N.A. 8.9 MEDIUM(30-60): 206.1 N.A. 30.7 HIGH(60-80): 58.0 N.A. 8.7 VERY HIGH(80-90): 4.5 N.A. 0.7 UP LIGHT LOW(90-100): 3.2 N.A. 0.5 HIGH(100-180): 9.4 N.A. 1.4 Total 670.7 N.A. 100.0	



T890LEDB

LED ROUND CUTOFF BOLLARD

PHOTOMETRICS

T890LED 17W 40K

TEST DATE	12June17
SERIES	T890LED
CCT	4000K
LUMENS	728
WATTS	18.1

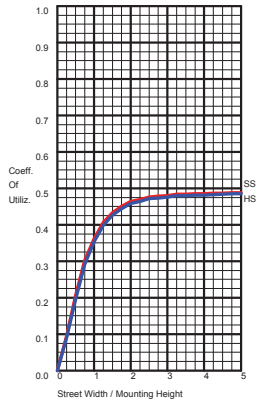
Characteristics

IES Classification:	Type VS
Longitudinal Classification:	Very Short
Lumens Per Lamp:	N.A. (absolute)
Total Lamp Lumens:	N.A. (absolute)
Luminaire Lumens:	728
Downward Total Efficiency:	N.A. (absolute)
Total Luminaire Efficiency:	N.A. (absolute)
Luminaire Efficacy Rating (LER):	40
Total Luminaire Watts:	18.1
Ballast Factor:	1.00
Upward Waste Light Ratio:	0.02
Maximum Candela:	268.56
Maximum Candela Angle:	270H 25V
Maximum Candela (<90 Degrees Vertical):	268.56
Maximum Candela Angle (<90 Degrees Vertical):	270H 25V
Maximum Candela At 90 Degrees Vertical:	4.568 (0.6% Lamp Lumens)
Maximum Candela from 80 to <90 Degrees Vertical:	16.626 (2.3% Lamp Lumens)
Cutoff Classification (deprecated):	N.A. (absolute)

Luminaire classification system

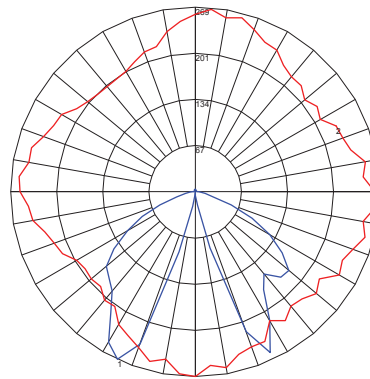
BUG RATING	B1 - U2 - G0		
FRONT LIGHT	LUMENS	% LAMP	% LUMINAIRE
LOW(0-30):	69.6	N.A.	9.6
MEDIUM(30-60):	225.7	N.A.	31.0
HIGH(60-80):	58.3	N.A.	8.0
VERY HIGH(80-90):	4.2	N.A.	0.6
BACK LIGHT			
LOW(0-30):	64.6	N.A.	8.9
MEDIUM(30-60):	223.6	N.A.	30.7
HIGH(60-80):	62.9	N.A.	8.7
VERY HIGH(80-90):	4.9	N.A.	0.7
UP LIGHT			
LOW(90-100):	3.5	N.A.	0.5
HIGH(100-180):	10.2	N.A.	1.4
Total	727.5	N.A.	100.0

Coefficients of utilization



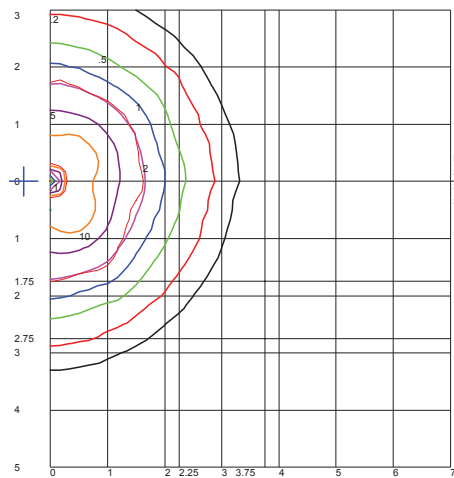
FLUX DISTRIBUTION	LUMENS	% LAMP
Downward Street Side:	357.9	49.2
Downward House Side:	356.1	48.9
Downward Total:	714.0	98.1
Upward Street Side:	6.5	0.9
Upward House Side:	7.2	1.0
Upward Total:	13.7	1.9
Total Flux:	727.7	100.0

Polar graph



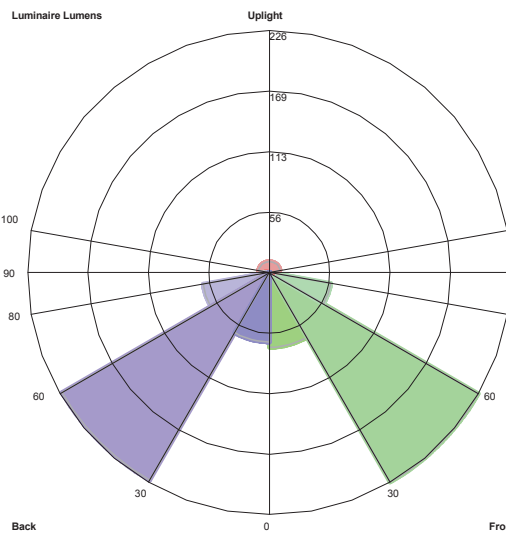
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Horizontal Angle = 270, Vertical Angle = 25
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2 - Horizontal Cone Through Vertical Angle (25)
(Through Max. Cd.)

Isofootcandle lines of horizontal illuminance



Distance in units of mounting height
Values based on 3 foot mounting height
1/2 maximum candela trace shown as dashed curve
(+)= Maximum candela point

Luminaire classification system (lcs) graph



BUG RATING	B1 - U2 - G0	
FRONT LIGHT	LUMENS	
LOW(0-30):	69.6	
MEDIUM(30-60):	225.7	
HIGH(60-80):	58.3	
VERY HIGH(80-90):	4.2	
BACK LIGHT		
LOW(0-30):	64.6	
MEDIUM(30-60):	223.6	
HIGH(60-80):	62.9	
VERY HIGH(80-90):	4.9	
UP LIGHT		
LOW(90-100):	3.5	
HIGH(100-180):	10.2	