

Scaled data based on original data using
LM-79-08 Approved Method: Electrical and Photometric Measurements of Solid-
State Lighting Products

Test Report Prepared for
Cooper Lighting Solutions
(formerly Eaton)

Brand: McGRAW-EDISON

Report Number: P821162

Luminaire Tested: **TT-D4-830-24VDC-DL-HSS**

Issue Date: 12/2/2020

Test Information

Test Method: LM-79-08
Report Number: P821162
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2010-017-4)
Test Lab: INNOVATION CENTER
Issue Date: 12/2/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: MCGRAW-EDISON
Catalog Number: TT-D4-830-24VDC-DL-HSS
Description: TOPTIER LED PARKING GARAGE LUMINAIRE
3000K, 80 CRI LEDS AND DRIVE LANE DISTRIBUTION WITH HOUSE SIDE SHIELD
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

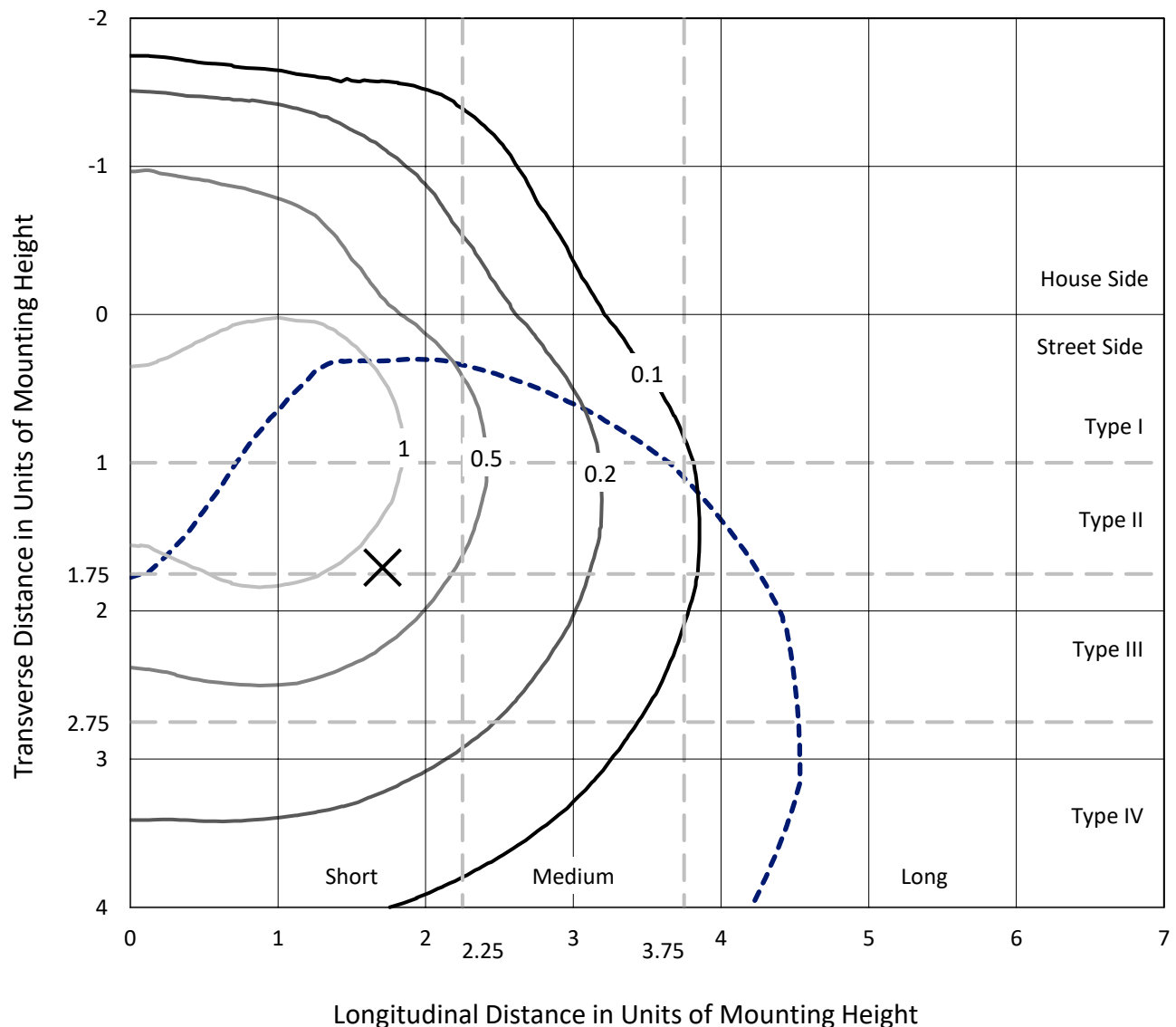
Lumens per Lamp: N/A
Luminaire Lumens: 4957.1 lumens
Efficiency: N/A
Efficacy: 87.0 lumens/watt
Luminous Opening: Circular (Dia: 1.12' x H: 0')
IES Classification: Type IV - Short
BUG Rating: B1 - U1 - G3

Input Watts (W): 57
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT

REPORT NUMBER: P821162
 CATALOG NUMBER: TT-D4-830-24VDC-DL-HSS

Iso-Footcandle Lines of Horizontal Illumination

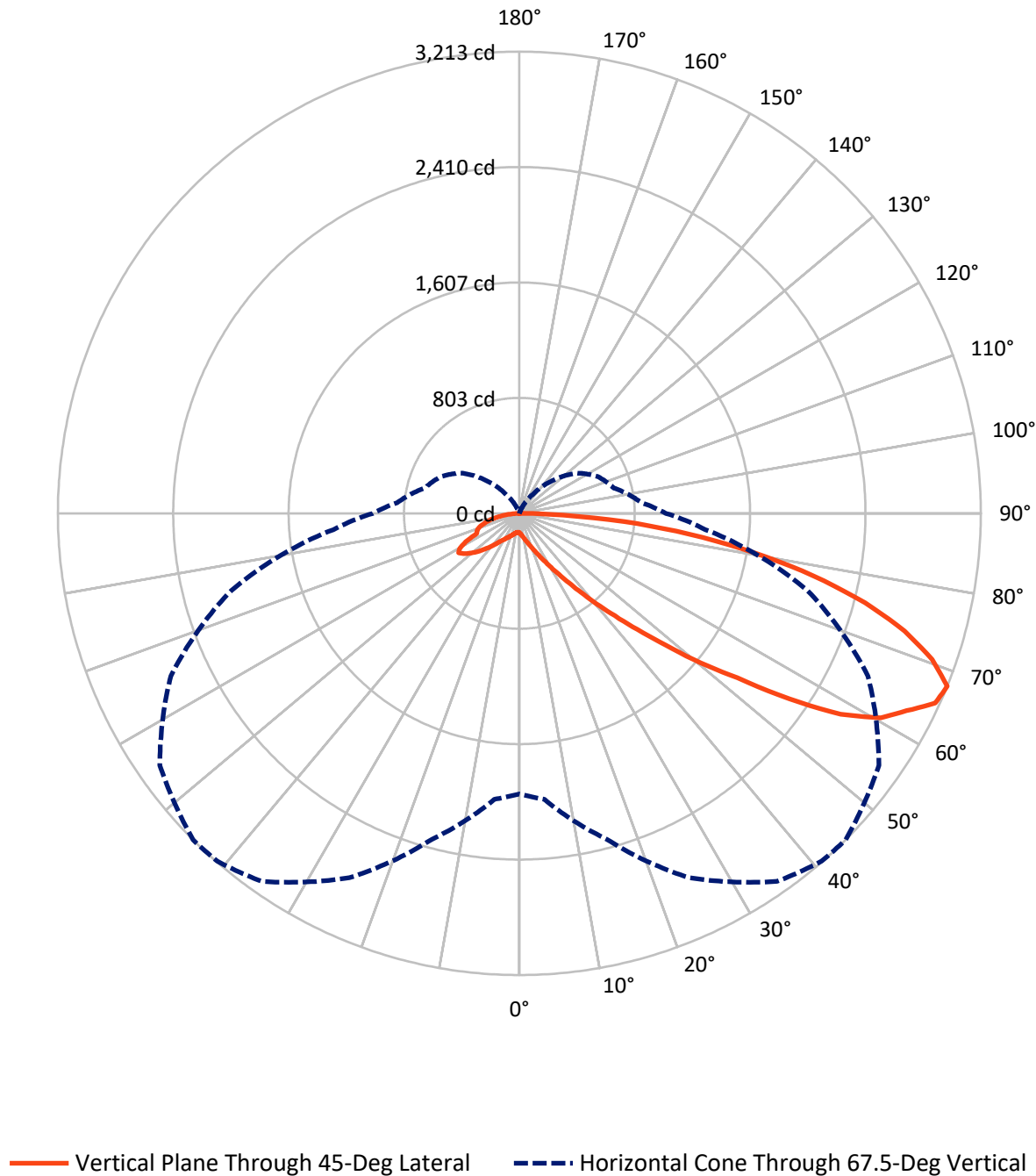
✕ Max cd
 - - - 1/2 Max cd



Based on 15 foot mounting height. Maximum calculated value = 1.9 fc
 Type IV - Short - N/A

REPORT NUMBER: P821162
CATALOG NUMBER: TT-D4-830-24VDC-DL-HSS

Luminous Intensity Polar Plot



REPORT NUMBER: P821162

CATALOG NUMBER: TT-D4-830-24VDC-DL-HSS

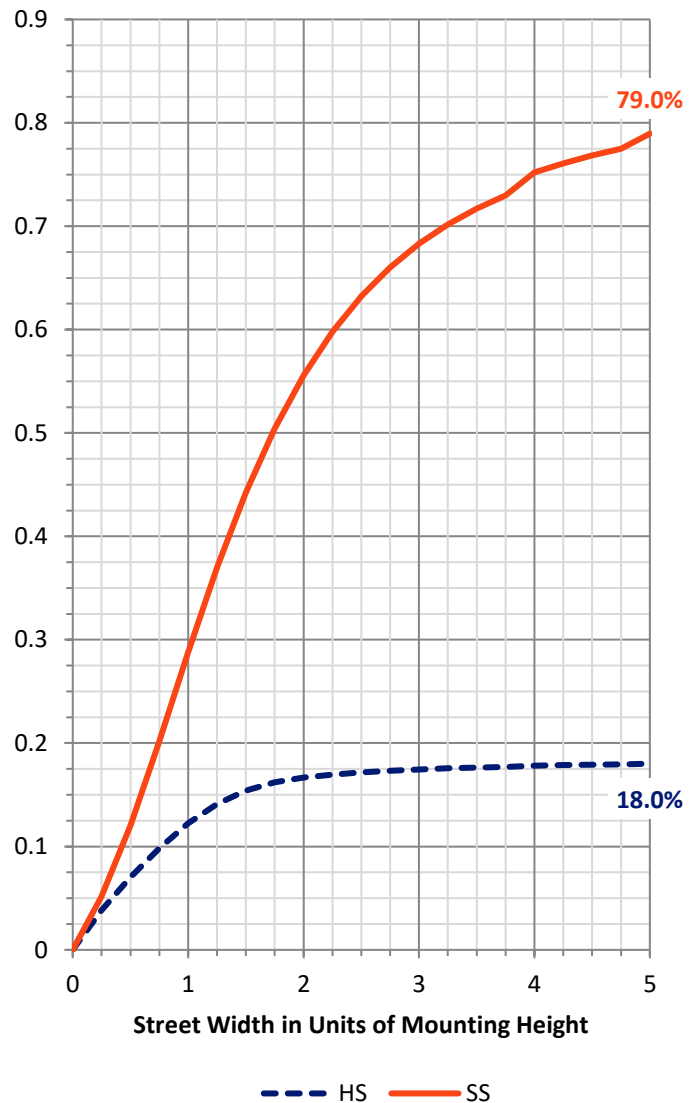
FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	900.6	1.1	901.7
	% Fixture	18.2	0.0	18.2
Street Side	Lumens	4044.3	11.1	4055.4
	% Fixture	81.6	0.2	81.8
Total	Lumens	4944.9	12.2	4957.1
	% Fixture	99.8	0.2	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	14.0	0.3
10°-20°	52.1	1.1
20°-30°	120.3	2.4
30°-40°	256.5	5.2
40°-50°	536.8	10.8
50°-60°	1018.3	20.5
60°-70°	1385.9	28.0
70°-80°	1191.5	24.0
80°-90°	369.5	7.5
90°-100°	7.8	0.2
100°-110°	2.3	0.0
110°-120°	0.6	0.0
120°-130°	0.5	0.0
130°-140°	0.3	0.0
140°-150°	0.3	0.0
150°-160°	0.2	0.0
160°-170°	0.1	0.0
170°-180°	0.0	0.0
0°-90°	4944.9	99.8
0°-180°	4957.1	100.0

Coefficient of Utilization



REPORT NUMBER: P821162

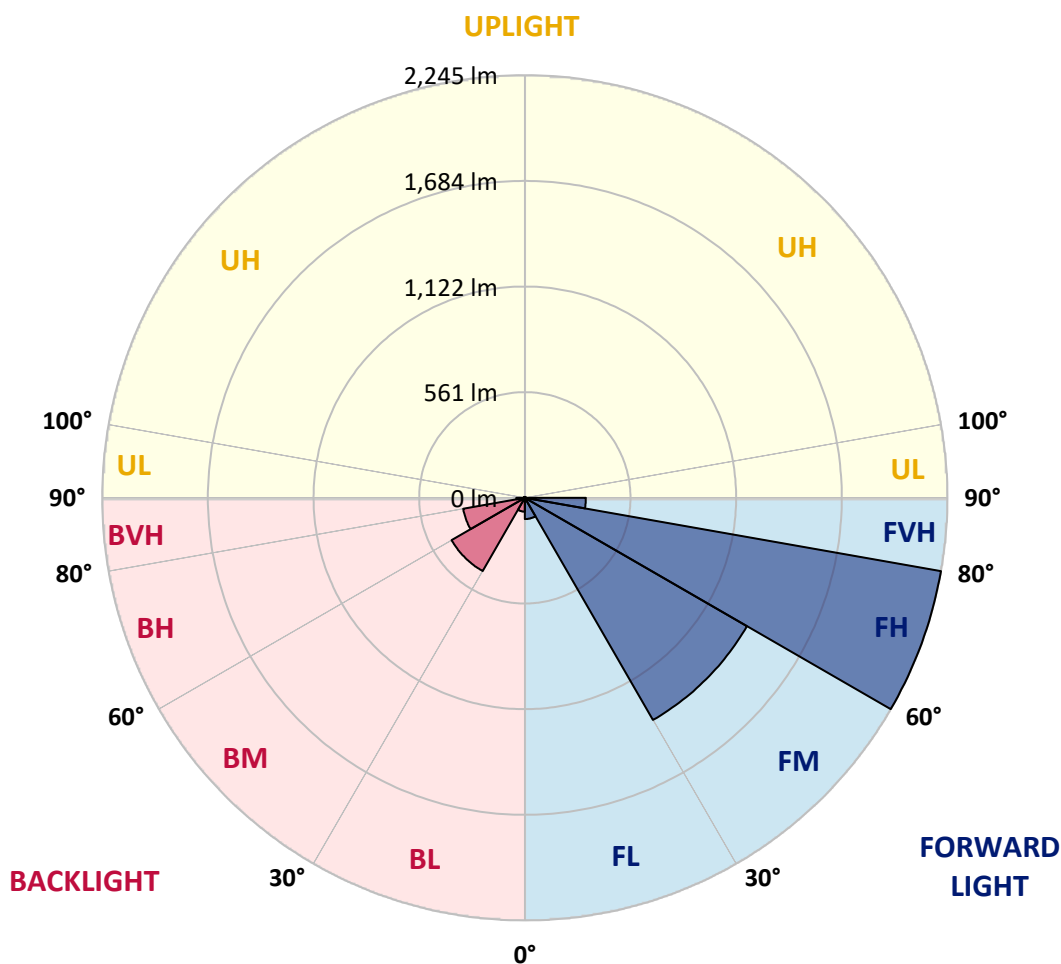
CATALOG NUMBER: TT-D4-830-24VDC-DL-HSS

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	113.0	2.3			
FM	(30°-60°)	1362.3	27.5			
FH	(60°-80°)	2244.8	45.3			G2/5000
FVH	(80°-90°)	324.2	6.5			G3/500
BL	(0°-30°)	73.4	1.5	B0/110		
BM	(30°-60°)	449.3	9.1	B1/1000		
BH	(60°-80°)	332.7	6.7	B1/500		G1/500
BVH	(80°-90°)	45.3	0.9			G1/100
UL	(90°-100°)	7.8	0.2		U1/10	
UH	(100°-180°)	4.4	0.1		U1/10	

BUG Rating: B1-U1-G3

Type IV Short



REPORT NUMBER: P821162

CATALOG NUMBER: TT-D4-830-24VDC-DL-HSS

CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	41°	45°	55°	65°	75°	85°
0°	135.6	135.6	135.6	135.6	135.6	135.6	135.6	135.6	135.6	135.6	135.6
2.5°	147.2	146.1	146.1	145.1	145.1	143.0	143.0	141.9	140.9	139.8	137.7
5°	157.7	156.7	156.7	155.6	154.6	152.5	151.4	149.3	147.2	145.1	143.0
7.5°	170.3	169.3	169.3	168.2	166.1	163.0	161.9	158.8	155.6	152.5	149.3
10°	186.1	185.1	185.1	182.9	180.8	177.7	175.6	171.4	168.2	163.0	157.7
12.5°	202.9	201.9	201.9	199.8	195.6	193.5	191.4	186.1	180.8	174.5	168.2
15°	221.9	221.9	221.9	220.8	216.6	212.4	210.3	204.0	197.7	188.2	179.8
17.5°	246.0	245.0	245.0	242.9	237.6	235.5	232.4	225.0	215.5	205.0	194.5
20°	275.5	274.4	272.3	271.3	266.0	263.9	259.7	251.3	238.7	225.0	210.3
22.5°	304.9	304.9	303.9	304.9	300.7	298.6	293.3	281.8	267.1	247.1	229.2
25°	338.6	339.6	341.7	344.9	339.6	337.5	333.3	318.6	300.7	275.5	250.2
27.5°	380.6	380.6	385.9	391.1	386.9	385.9	379.6	363.8	338.6	308.1	278.6
30°	425.8	426.9	435.3	444.8	442.7	442.7	437.4	419.5	389.0	353.3	312.3
32.5°	478.4	482.6	491.0	501.5	508.9	508.9	506.8	487.9	452.1	403.7	353.3
35°	547.8	540.4	556.2	572.0	587.7	590.9	592.0	574.1	533.1	472.1	403.7
37.5°	607.7	606.7	630.9	658.2	684.5	695.0	698.1	681.3	628.8	548.8	458.4
40°	677.1	683.4	716.0	757.0	801.2	819.1	827.5	808.5	743.4	640.3	521.5
42.5°	749.7	768.6	809.6	871.6	938.9	965.2	974.7	956.8	880.0	754.9	601.4
45°	834.8	861.1	915.8	1004.1	1092.4	1131.3	1152.4	1146.1	1067.2	911.6	704.5
47.5°	940.0	958.9	1033.6	1152.4	1277.5	1341.6	1371.1	1388.9	1276.4	1073.5	794.9
50°	1058.8	1061.9	1165.0	1315.3	1498.3	1583.5	1635.0	1626.6	1493.0	1259.6	909.5
52.5°	1178.7	1175.5	1310.1	1514.1	1753.8	1865.2	1899.9	1934.6	1803.2	1543.5	1093.5
55°	1315.3	1309.0	1478.3	1737.0	2034.5	2181.7	2279.5	2327.9	2120.7	1730.7	1173.4
57.5°	1428.9	1448.9	1661.3	1972.5	2387.8	2572.8	2637.0	2610.7	2295.3	1825.3	1212.3
60°	1572.9	1602.4	1844.2	2280.5	2693.8	2831.5	2890.4	2770.5	2406.7	1896.8	1239.6
62.5°	1708.6	1746.4	2045.0	2530.8	2885.1	3011.3	3026.0	2895.6	2563.4	2037.7	1319.5
65°	1835.8	1878.9	2244.8	2679.0	3052.3	3157.4	3182.7	3079.6	2729.5	2120.7	1351.1
67.5°	1952.5	1997.7	2347.8	2797.9	3127.0	3207.9	3213.2	3056.5	2678.0	2077.6	1300.6
70°	2041.9	2061.9	2397.3	2794.7	3038.6	3070.2	3049.1	2891.4	2557.1	1989.3	1228.1
72.5°	2059.7	2074.5	2328.9	2639.1	2793.6	2823.1	2806.3	2667.5	2366.8	1831.6	1110.3
75°	1969.3	1972.5	2144.9	2359.4	2471.9	2507.7	2485.6	2357.3	2080.8	1608.7	955.7
77.5°	1732.8	1739.1	1843.2	1987.2	2081.8	2112.3	2095.5	1977.7	1743.3	1351.1	790.7
80°	1373.2	1385.8	1460.4	1560.3	1646.5	1678.1	1658.1	1563.5	1372.1	1061.9	617.2
82.5°	935.8	951.5	1019.9	1102.9	1178.7	1209.1	1192.3	1132.4	989.4	765.4	440.5
85°	473.1	490.0	560.4	638.2	704.5	737.1	731.8	706.6	608.8	472.1	266.0
87.5°	74.7	82.0	111.5	148.3	189.3	219.7	200.8	198.7	157.7	126.2	64.1
90°	30.5	30.5	29.4	28.4	25.2	23.1	22.1	17.9	13.7	8.4	3.2
92.5°	27.3	27.3	26.3	24.2	22.1	21.0	18.9	15.8	11.6	7.4	3.2
95°	22.1	22.1	21.0	20.0	17.9	16.8	14.7	12.6	9.5	6.3	3.2
97.5°	16.8	16.8	15.8	14.7	13.7	11.6	11.6	9.5	6.3	4.2	2.1
100°	12.6	12.6	11.6	10.5	9.5	8.4	8.4	6.3	4.2	3.2	2.1
102.5°	8.4	8.4	8.4	7.4	6.3	6.3	5.3	4.2	3.2	2.1	2.1
105°	5.3	5.3	5.3	5.3	4.2	3.2	3.2	2.1	2.1	2.1	2.1
107.5°	3.2	3.2	3.2	3.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1
110°	2.1	2.1	2.1	1.1	1.1	1.1	1.1	1.1	1.1	2.1	1.1



REPORT NUMBER: P821162
 CATALOG NUMBER: TT-D4-830-24VDC-DL-HSS

CANDELA DISTRIBUTION (continued):

	0°	5°	15°	25°	35°	41°	45°	55°	65°	75°	85°
112.5°	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
115°	0.0	0.0	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
117.5°	0.0	0.0	0.0	0.0	0.0	1.1	1.1	1.1	1.1	1.1	1.1
120°	0.0	0.0	0.0	0.0	0.0	1.1	1.1	1.1	1.1	1.1	1.1
122.5°	0.0	0.0	0.0	0.0	0.0	1.1	1.1	1.1	1.1	1.1	1.1
125°	0.0	0.0	0.0	1.1	0.0	1.1	1.1	1.1	1.1	1.1	1.1
127.5°	0.0	0.0	0.0	1.1	0.0	0.0	1.1	1.1	1.1	1.1	1.1
130°	0.0	0.0	0.0	0.0	0.0	0.0	1.1	1.1	1.1	1.1	1.1
132.5°	0.0	0.0	0.0	0.0	0.0	0.0	1.1	1.1	1.1	1.1	1.1
135°	0.0	0.0	0.0	0.0	0.0	0.0	1.1	1.1	1.1	1.1	1.1
137.5°	0.0	0.0	0.0	0.0	0.0	0.0	1.1	1.1	1.1	1.1	1.1
140°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.1	1.1	1.1	1.1
142.5°	1.1	1.1	0.0	0.0	0.0	0.0	1.1	1.1	1.1	1.1	1.1
145°	1.1	1.1	0.0	0.0	0.0	0.0	1.1	1.1	1.1	1.1	1.1
147.5°	1.1	1.1	0.0	0.0	0.0	0.0	1.1	1.1	1.1	1.1	1.1
150°	0.0	0.0	0.0	0.0	0.0	0.0	1.1	1.1	1.1	1.1	1.1
152.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.1	1.1	1.1	1.1
155°	0.0	0.0	0.0	0.0	0.0	0.0	1.1	1.1	1.1	1.1	1.1
157.5°	0.0	0.0	0.0	0.0	0.0	0.0	1.1	1.1	1.1	1.1	1.1
160°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.1	1.1	1.1	1.1
162.5°	0.0	0.0	0.0	0.0	0.0	0.0	1.1	1.1	1.1	1.1	1.1
165°	0.0	0.0	0.0	0.0	0.0	0.0	1.1	1.1	1.1	1.1	1.1
167.5°	0.0	0.0	0.0	0.0	0.0	0.0	1.1	1.1	1.1	1.1	1.1
170°	0.0	0.0	0.0	0.0	0.0	0.0	1.1	1.1	1.1	1.1	1.1
172.5°	0.0	0.0	0.0	0.0	0.0	0.0	1.1	1.1	1.1	1.1	1.1
175°	0.0	0.0	0.0	0.0	0.0	1.1	1.1	1.1	1.1	1.1	1.1
177.5°	0.0	0.0	0.0	0.0	0.0	0.0	1.1	1.1	1.1	1.1	1.1
180°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



REPORT NUMBER: P821162

CATALOG NUMBER: TT-D4-830-24VDC-DL-HSS

CANDELA DISTRIBUTION (continued):

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	135.6	135.6	135.6	135.6	135.6	135.6	135.6	135.6	135.6	135.6	135.6
2.5°	137.7	136.7	134.6	133.5	131.4	131.4	130.4	129.3	129.3	129.3	129.3
5°	140.9	139.8	137.7	135.6	133.5	131.4	130.4	129.3	129.3	129.3	128.3
7.5°	147.2	145.1	141.9	138.8	135.6	133.5	132.5	131.4	130.4	130.4	130.4
10°	154.6	152.5	147.2	144.0	139.8	136.7	135.6	134.6	133.5	133.5	133.5
12.5°	164.0	160.9	154.6	149.3	145.1	141.9	139.8	138.8	138.8	137.7	138.8
15°	175.6	171.4	163.0	156.7	151.4	148.3	146.1	145.1	145.1	145.1	144.0
17.5°	188.2	182.9	172.4	165.1	158.8	155.6	153.5	152.5	152.5	152.5	152.5
20°	202.9	195.6	184.0	174.5	168.2	164.0	161.9	161.9	160.9	161.9	161.9
22.5°	218.7	210.3	195.6	185.1	176.6	172.4	170.3	170.3	170.3	171.4	172.4
25°	237.6	227.1	209.2	195.6	186.1	181.9	179.8	180.8	180.8	181.9	181.9
27.5°	262.9	247.1	225.0	208.2	197.7	192.4	190.3	191.4	192.4	192.4	192.4
30°	291.2	272.3	241.8	224.0	211.3	205.0	202.9	204.0	205.0	207.1	206.1
32.5°	325.9	302.8	267.1	241.8	228.2	220.8	218.7	217.6	219.7	221.9	221.9
35°	368.0	338.6	296.5	267.1	247.1	237.6	235.5	234.5	235.5	237.6	239.7
37.5°	413.2	377.5	325.9	295.5	273.4	262.9	257.6	253.4	254.4	255.5	258.7
40°	464.7	420.6	359.6	322.8	302.8	290.2	282.8	276.5	278.6	278.6	279.7
42.5°	529.9	474.2	401.6	355.4	334.4	320.7	309.1	301.8	297.6	298.6	294.4
45°	615.1	545.7	454.2	401.6	372.2	351.2	337.5	322.8	312.3	314.4	308.1
47.5°	685.5	602.5	503.6	445.8	414.3	388.0	359.6	338.6	323.8	321.7	317.5
50°	771.7	671.9	560.4	494.2	460.5	420.6	386.9	351.2	327.0	320.7	321.7
52.5°	916.8	793.8	641.4	559.4	500.5	453.2	401.6	352.2	319.6	310.2	313.3
55°	969.4	834.8	683.4	613.0	555.2	481.6	408.0	340.7	298.6	290.2	291.2
57.5°	981.0	834.8	686.6	629.8	581.4	504.7	404.8	314.4	258.7	251.3	250.2
60°	987.3	829.6	675.0	617.2	564.6	482.6	363.8	253.4	198.7	193.5	190.3
62.5°	1046.2	873.7	686.6	607.7	533.1	423.7	276.5	161.9	110.4	109.3	107.2
65°	1064.0	889.5	701.3	614.0	498.4	329.1	164.0	54.7	11.6	12.6	10.5
67.5°	1019.9	853.8	680.3	604.6	487.9	320.7	157.7	46.3	0.0	0.0	0.0
70°	958.9	802.2	643.5	572.0	465.8	308.1	154.6	46.3	0.0	0.0	0.0
72.5°	862.2	728.6	584.6	527.8	427.9	282.8	144.0	44.2	0.0	0.0	0.0
75°	748.6	634.0	512.0	467.9	379.6	248.1	129.3	40.0	0.0	0.0	0.0
77.5°	626.7	528.9	427.9	394.3	320.7	211.3	109.3	33.6	0.0	0.0	0.0
80°	492.1	418.5	337.5	314.4	253.4	168.2	87.3	26.3	0.0	0.0	0.0
82.5°	354.3	303.9	249.2	230.3	186.1	122.0	63.1	17.9	0.0	0.0	0.0
85°	218.7	190.3	160.9	149.3	117.8	75.7	37.9	9.5	0.0	0.0	0.0
87.5°	65.2	63.1	56.8	55.7	40.0	23.1	8.4	1.1	0.0	0.0	0.0
90°	1.1	1.1	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0
92.5°	1.1	1.1	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0
95°	1.1	1.1	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0
97.5°	1.1	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
100°	1.1	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
102.5°	1.1	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
105°	1.1	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
107.5°	1.1	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
110°	1.1	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0



REPORT NUMBER: P821162
 CATALOG NUMBER: TT-D4-830-24VDC-DL-HSS

CANDELA DISTRIBUTION (continued):

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
112.5°	1.1	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
115°	1.1	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
117.5°	1.1	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
120°	1.1	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
122.5°	1.1	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
125°	1.1	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
127.5°	1.1	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
130°	1.1	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
132.5°	1.1	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
135°	1.1	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
137.5°	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
140°	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
142.5°	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
145°	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
147.5°	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
150°	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
152.5°	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
155°	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
157.5°	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
160°	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
162.5°	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
165°	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
167.5°	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
170°	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
172.5°	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
175°	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
177.5°	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
180°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)