

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: P821163

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

Issue Date: 7/23/2020



**Test Information**

Test Method: LM-79-08  
Report Number: P821163  
REPORT IS FROM IESNA LM-79-08 TEST DATA - UPLIGHT (G2-2002-677-2) AND  
Test Lab: INNOVATION CENTER  
Issue Date: 7/23/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: MCGRAW-EDISON  
Catalog Number: TT-D4-830-24VDC-DL-UPL  
Description: TOPTIER LED PARKING GARAGE LUMINAIRE WITH UPLIGHT  
3000K, 80 CRI LEDS AND DRIVE LANE DISTRIBUTION  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

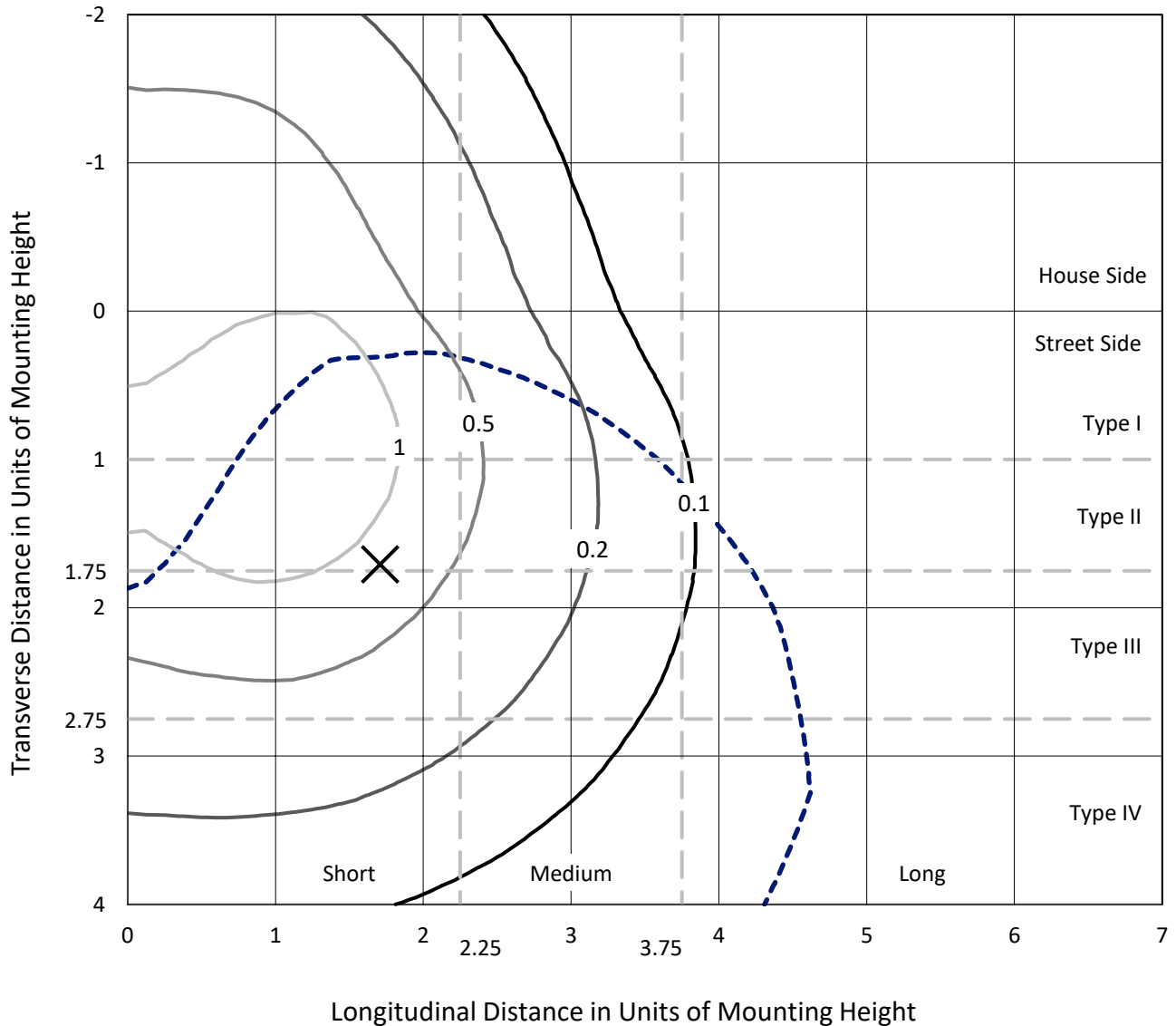
Lumens per Lamp: N/A  
Luminaire Lumens: 6457.7 lumens  
Efficiency: N/A  
Efficacy: 113.3 lumens/watt  
Luminous Opening: Vertical Cylinder (Dia: 1.12' x H: 0.1')  
IES Classification: Type IV - Short  
BUG Rating: B2 - U4 - G3

Input Watts (W): 57  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): 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

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### Iso-Footcandle Lines of Horizontal Illumination

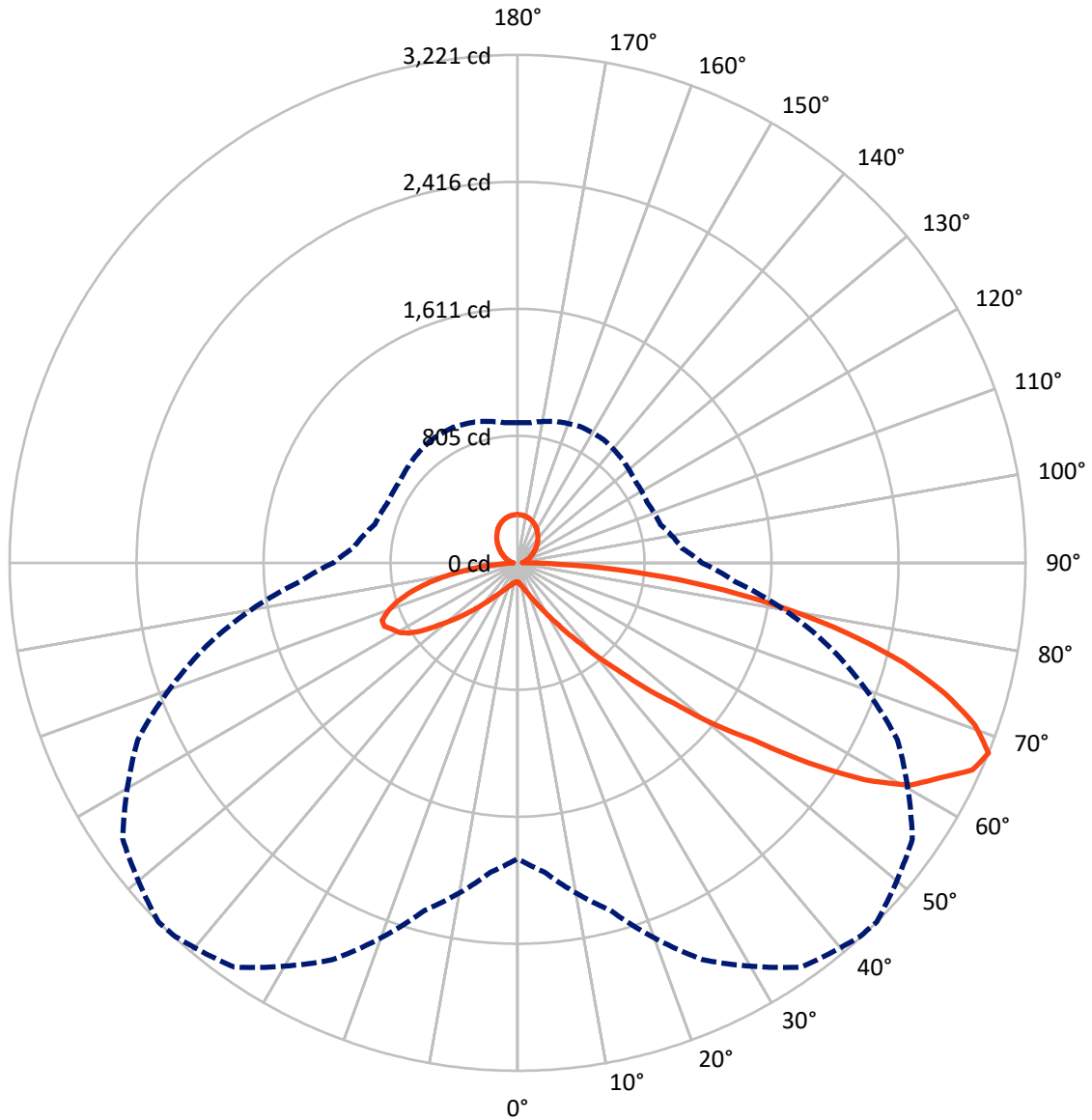
✕ Max cd  
 - - - 1/2 Max cd



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

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### Luminous Intensity Polar Plot



— Vertical Plane Through 45-Deg Lateral    - - - Horizontal Cone Through 67.5-Deg Vertical

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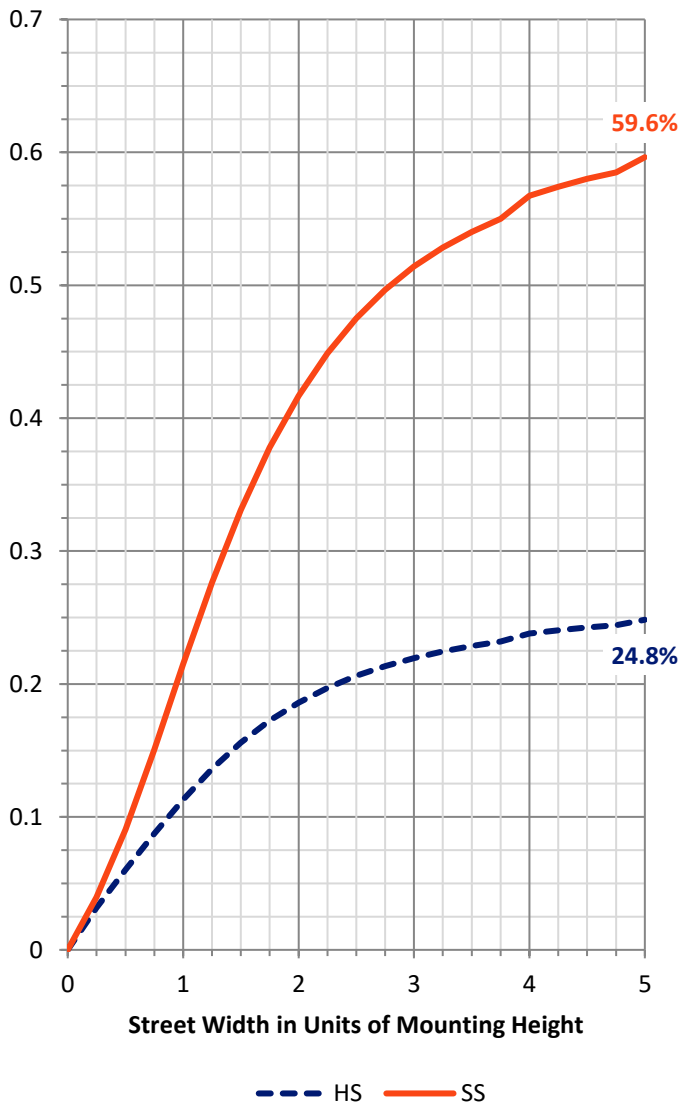
**FLUX DISTRIBUTION:**

		Downward	Upward	Total
<b>House Side</b>	Lumens	1640.2	415.9	2056.1
	% Fixture	25.4	6.4	31.8
<b>Street Side</b>	Lumens	3985.7	415.9	4401.6
	% Fixture	61.7	6.4	68.2
<b>Total</b>	Lumens	5626.0	831.7	6457.7
	% Fixture	87.1	12.9	100.0

**Coefficient of Utilization**

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	12.5	0.2
10°-20°	46.6	0.7
20°-30°	110.3	1.7
30°-40°	249.6	3.9
40°-50°	556.5	8.6
50°-60°	1118.7	17.3
60°-70°	1643.1	25.4
70°-80°	1444.8	22.4
80°-90°	443.8	6.9
90°-100°	42.6	0.7
100°-110°	66.0	1.0
110°-120°	91.9	1.4
120°-130°	119.0	1.8
130°-140°	138.7	2.1
140°-150°	140.5	2.2
150°-160°	121.9	1.9
160°-170°	82.2	1.3
170°-180°	28.9	0.4
0°-90°	5626.0	87.1
0°-180°	6457.7	100.0

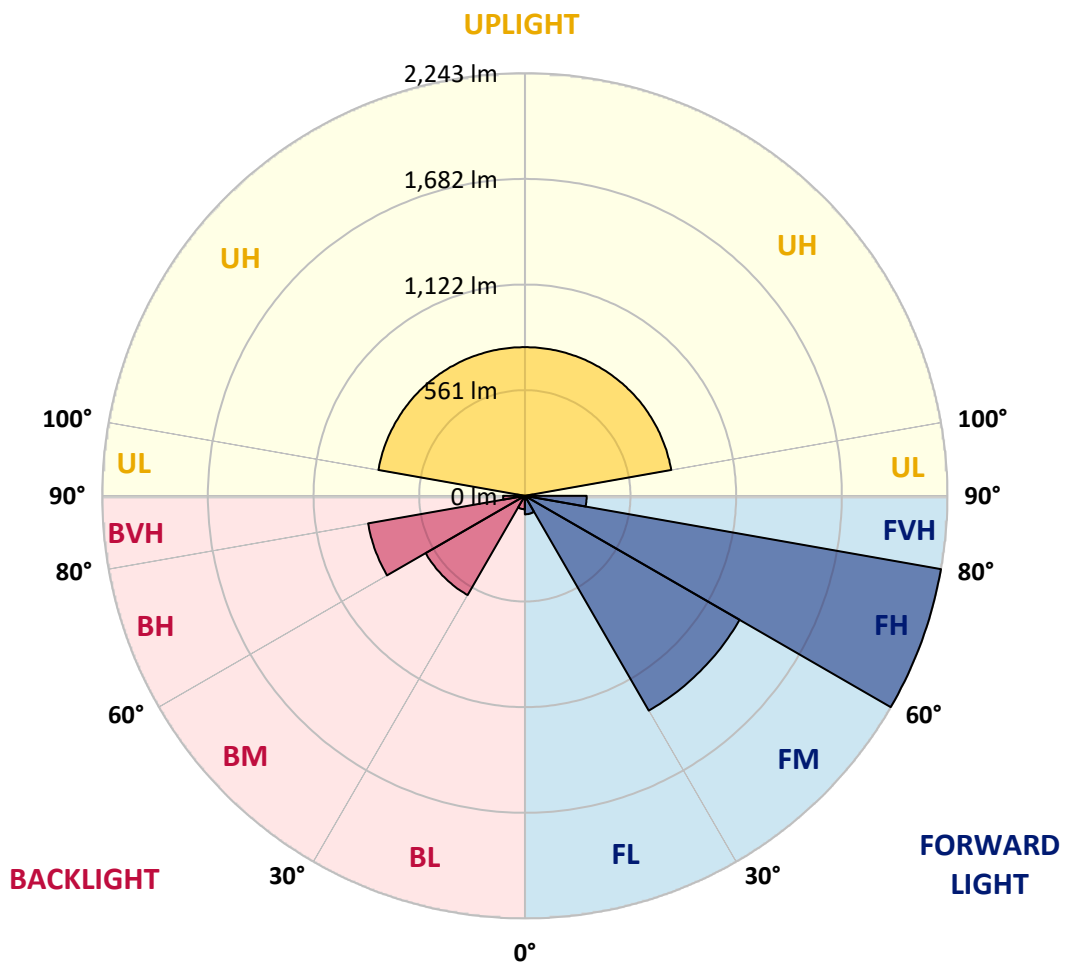


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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	98.2	1.5			
FM (30°-60°)	1316.6	20.4			
FH (60°-80°)	2243.1	34.7			G2/5000
FVH (80°-90°)	327.9	5.1			G3/500
BL (0°-30°)	71.3	1.1	B0/110		
BM (30°-60°)	608.2	9.4	B1/1000		
BH (60°-80°)	844.8	13.1	B2/1000		G2/1000
BVH (80°-90°)	115.9	1.8			G2/225
UL (90°-100°)	42.6	0.7		U2/50	
UH (100°-180°)	789.1	12.2		U4/1000	

**BUG Rating: B2-U4-G3**  
 Type IV Short





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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	15°	25°	35°	42.5°	45°	55°	65°	75°	85°
0°	121.9	121.9	121.9	121.9	121.9	121.9	121.9	121.9	121.9	121.9	121.9
2.5°	127.2	126.2	126.2	126.2	125.1	125.1	125.1	125.1	124.0	124.0	124.0
5°	134.6	133.5	134.6	132.5	131.4	131.4	130.4	130.4	129.3	128.3	127.2
7.5°	145.1	144.0	144.0	141.9	140.9	139.8	139.8	137.7	136.7	134.6	132.5
10°	156.6	156.6	155.6	154.5	152.4	150.3	150.3	147.2	146.1	143.0	139.8
12.5°	170.3	170.3	170.3	168.2	166.1	165.0	162.9	160.8	157.7	152.4	149.3
15°	187.1	187.1	187.1	185.0	182.9	180.8	179.8	175.6	170.3	165.0	158.7
17.5°	208.1	206.0	206.0	203.9	201.8	200.8	198.7	194.5	187.1	180.8	172.4
20°	231.3	230.2	229.2	229.2	227.1	225.0	223.9	217.6	209.2	197.6	187.1
22.5°	257.6	256.5	256.5	258.6	257.6	254.4	254.4	244.9	233.4	219.7	203.9
25°	290.1	289.1	291.2	295.4	295.4	293.3	290.1	280.7	263.9	244.9	226.0
27.5°	325.9	324.8	329.0	336.4	338.5	335.4	333.2	322.7	303.8	278.6	251.3
30°	369.0	370.0	381.6	390.0	395.3	393.2	392.1	380.6	350.1	320.6	284.9
32.5°	421.6	418.4	433.1	446.8	456.2	461.5	458.4	444.7	418.4	372.1	326.9
35°	477.3	478.3	496.2	516.2	538.2	540.3	546.7	533.0	497.2	442.6	379.5
37.5°	549.8	541.4	564.5	602.4	628.7	651.8	647.6	639.2	597.1	524.6	438.4
40°	615.0	612.9	645.5	698.0	746.4	780.0	784.2	773.7	718.0	615.0	501.5
42.5°	689.6	695.9	741.1	813.7	887.3	935.6	924.1	918.8	853.6	722.2	587.7
45°	765.3	786.3	844.2	949.3	1035.5	1104.9	1124.9	1107.0	1027.1	891.5	697.0
47.5°	856.8	885.2	956.6	1098.6	1239.4	1320.4	1324.6	1378.2	1257.3	1054.4	810.5
50°	977.7	990.3	1090.2	1263.6	1457.0	1570.6	1603.2	1604.2	1483.3	1218.4	938.8
52.5°	1096.5	1105.9	1237.3	1461.3	1724.1	1853.4	1860.7	1901.7	1736.7	1483.3	1122.7
55°	1239.4	1235.2	1416.0	1685.2	1995.3	2183.5	2238.1	2293.9	2083.6	1692.5	1227.9
57.5°	1378.2	1371.9	1589.5	1942.7	2366.4	2553.5	2598.7	2558.8	2246.5	1779.8	1279.4
60°	1506.5	1528.5	1793.5	2227.6	2653.4	2832.1	2862.6	2754.3	2351.7	1847.1	1312.0
62.5°	1640.0	1684.1	2004.8	2465.2	2873.1	3001.4	3003.5	2876.3	2527.2	1977.4	1418.2
65°	1765.1	1835.5	2168.8	2668.1	3026.6	3154.8	3169.6	3055.0	2699.6	2091.0	1436.0
67.5°	1875.5	1969.0	2282.3	2777.4	3130.7	3213.7	3221.1	3056.0	2658.6	2044.7	1386.6
70°	1964.8	2040.5	2352.7	2779.5	3058.1	3081.2	3076.0	2900.4	2545.1	1953.2	1303.6
72.5°	1999.5	2061.5	2319.1	2649.2	2844.7	2839.5	2835.3	2673.4	2358.0	1800.8	1183.7
75°	1950.1	1968.0	2135.1	2370.6	2494.6	2524.1	2528.3	2382.2	2068.9	1574.8	1015.5
77.5°	1746.1	1736.7	1864.9	2020.5	2114.1	2135.1	2130.9	2009.0	1734.6	1308.8	851.5
80°	1384.5	1404.5	1484.4	1587.4	1681.0	1704.1	1689.4	1596.9	1349.8	1020.8	653.9
82.5°	968.2	992.4	1059.7	1137.5	1207.9	1207.9	1221.6	1132.2	956.6	732.7	457.3
85°	522.5	508.8	582.4	670.7	721.2	730.6	735.9	706.4	591.9	442.6	271.2
87.5°	86.2	92.5	114.6	175.6	199.7	231.3	246.0	192.4	116.7	74.6	54.7
90°	30.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1
92.5°	34.8	34.2	34.2	33.8	33.8	33.8	33.8	33.8	33.8	33.8	33.8
95°	39.4	39.4	39.4	38.5	38.5	38.5	38.5	38.5	38.5	38.5	38.5
97.5°	44.6	44.6	44.6	44.2	44.2	44.2	44.2	44.2	44.2	44.2	44.2
100°	49.8	49.8	49.8	49.8	49.8	49.8	49.8	49.8	49.8	49.8	49.8
102.5°	55.9	55.9	55.9	55.9	55.9	55.9	55.9	55.9	56.4	55.9	55.9
105°	62.0	62.0	62.0	62.0	62.0	62.0	62.0	62.0	62.9	62.0	62.0
107.5°	68.6	68.6	69.0	69.0	69.0	69.0	69.0	69.0	69.5	69.0	69.0
110°	75.1	75.1	76.1	76.1	76.1	76.1	76.1	76.1	76.1	76.1	76.1



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	15°	25°	35°	42.5°	45°	55°	65°	75°	85°
112.5°	83.1	83.1	84.0	84.0	84.0	84.0	84.0	84.6	84.6	84.0	84.0
115°	91.1	91.1	92.0	92.0	92.0	92.0	92.0	93.0	93.0	92.0	92.0
117.5°	100.5	100.5	101.0	101.4	101.4	101.4	101.4	102.4	102.4	101.4	101.4
120°	109.9	109.9	109.9	110.8	110.8	110.8	110.8	111.8	111.8	110.8	110.8
122.5°	120.7	120.7	121.2	121.6	121.6	121.6	121.6	122.6	122.6	122.1	122.1
125°	131.5	131.5	132.4	132.4	132.4	132.4	132.4	133.4	133.4	133.4	133.4
127.5°	143.2	143.2	144.2	144.2	144.2	144.2	144.2	145.1	145.1	145.1	145.1
130°	155.0	155.0	155.9	155.9	155.9	155.9	155.9	156.8	156.8	156.8	156.8
132.5°	167.2	167.2	167.6	167.6	167.6	168.0	168.1	168.6	168.6	168.6	168.6
135°	179.4	179.4	179.4	179.4	179.4	180.1	180.3	180.3	180.3	180.3	180.3
137.5°	191.2	190.6	191.2	190.6	191.2	191.5	191.6	191.6	191.6	191.6	191.6
140°	202.9	201.9	202.9	201.9	202.9	202.9	202.9	202.9	202.9	202.9	202.9
142.5°	213.7	213.2	213.7	212.7	213.7	213.7	213.7	213.7	213.7	213.7	213.7
145°	224.5	224.5	224.5	223.5	224.5	224.5	224.5	224.5	224.5	224.5	224.5
147.5°	235.8	235.3	235.8	234.8	235.8	235.8	235.8	235.8	235.8	235.8	235.8
150°	247.0	246.1	247.0	246.1	247.0	247.0	247.0	247.0	247.0	247.0	247.0
152.5°	256.0	255.5	256.4	255.5	256.0	256.0	256.0	256.4	256.0	256.0	256.0
155°	264.9	264.9	265.8	264.9	264.9	264.9	264.9	265.8	264.9	264.9	264.9
157.5°	272.4	272.4	273.3	272.4	272.4	272.4	272.4	273.3	272.4	272.4	272.4
160°	279.9	279.9	280.8	279.9	279.9	279.9	279.9	280.8	279.9	279.9	279.9
162.5°	286.0	286.0	286.9	286.0	286.0	286.0	286.0	286.9	286.0	286.0	286.0
165°	292.1	292.1	293.0	292.1	292.1	292.1	292.1	293.0	292.1	292.1	292.1
167.5°	295.8	295.8	296.8	295.8	295.8	295.8	295.8	296.8	295.8	295.8	295.8
170°	299.6	299.6	300.5	299.6	299.6	299.6	299.6	300.5	299.6	299.6	299.6
172.5°	302.0	302.0	302.8	302.0	302.4	302.1	302.0	302.8	302.0	302.0	302.0
175°	304.3	304.3	305.2	304.3	305.2	304.6	304.3	305.2	304.3	304.3	304.3
177.5°	305.2	305.2	305.7	305.2	305.7	305.4	305.2	305.7	305.2	305.2	305.2
180°	306.2	306.2	306.2	306.2	306.2	306.2	306.2	306.2	306.2	306.2	306.2





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**CANDELA DISTRIBUTION (continued):**

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	121.9	121.9	121.9	121.9	121.9	121.9	121.9	121.9	121.9	121.9	121.9
2.5°	124.0	123.0	121.9	120.9	120.9	119.8	119.8	119.8	120.9	120.9	120.9
5°	127.2	126.2	125.1	124.0	121.9	121.9	121.9	121.9	121.9	121.9	121.9
7.5°	132.5	130.4	129.3	127.2	125.1	125.1	124.0	124.0	124.0	125.1	124.0
10°	138.8	136.7	134.6	131.4	130.4	129.3	128.3	128.3	129.3	129.3	128.3
12.5°	146.1	145.1	140.9	137.7	135.6	134.6	133.5	134.6	133.5	134.6	134.6
15°	156.6	153.5	148.2	145.1	141.9	140.9	139.8	140.9	140.9	141.9	140.9
17.5°	168.2	164.0	158.7	153.5	149.3	148.2	148.2	148.2	149.3	150.3	149.3
20°	181.9	176.6	169.3	162.9	158.7	157.7	157.7	158.7	159.8	160.8	160.8
22.5°	195.5	191.3	180.8	172.4	170.3	169.3	168.2	170.3	172.4	173.5	174.5
25°	216.6	208.1	195.5	186.1	181.9	181.9	182.9	185.0	186.1	188.2	187.1
27.5°	238.6	229.2	213.4	200.8	197.6	196.6	198.7	200.8	205.0	205.0	203.9
30°	269.1	253.4	233.4	221.8	213.4	214.5	217.6	220.8	225.0	227.1	227.1
32.5°	303.8	287.0	259.7	241.8	237.6	238.6	239.7	244.9	249.1	253.4	250.2
35°	349.0	328.0	294.4	274.4	263.9	262.8	267.0	273.3	277.5	279.6	279.6
37.5°	398.4	371.1	329.0	312.2	299.6	298.6	299.6	304.9	310.1	312.2	316.4
40°	458.4	424.7	375.3	348.0	338.5	336.4	340.6	348.0	348.0	351.1	352.2
42.5°	531.9	488.8	434.2	398.4	386.9	386.9	385.8	392.1	392.1	392.1	390.0
45°	625.5	577.1	505.7	468.9	448.9	438.4	441.5	437.3	436.3	439.4	430.0
47.5°	715.9	654.9	570.8	530.9	510.9	504.6	493.0	489.9	484.6	484.6	471.0
50°	821.0	745.3	664.4	607.6	588.7	570.8	561.4	546.7	530.9	527.7	522.5
52.5°	996.6	902.0	774.8	713.8	665.4	647.6	625.5	606.6	587.7	572.9	581.3
55°	1068.1	971.4	850.5	791.6	758.0	741.1	700.1	674.9	646.5	625.5	637.1
57.5°	1103.8	998.7	886.2	842.1	832.6	816.8	786.3	743.2	710.7	684.4	686.5
60°	1123.8	1013.4	905.1	865.2	859.9	870.4	854.7	825.2	774.8	748.5	745.3
62.5°	1200.5	1084.9	958.8	902.0	890.4	897.8	902.0	884.1	842.1	807.4	797.9
65°	1216.3	1093.3	969.3	932.5	933.5	935.6	938.8	919.9	898.8	855.7	847.3
67.5°	1169.0	1048.1	937.7	907.2	909.3	933.5	952.4	951.4	928.3	891.5	888.3
70°	1097.5	979.8	877.8	850.5	855.7	877.8	918.8	939.8	935.6	911.4	916.7
72.5°	986.1	881.0	791.6	770.6	783.2	804.2	843.1	881.0	903.0	908.3	919.9
75°	855.7	771.6	687.5	674.9	684.4	708.6	744.3	788.4	836.8	863.1	870.4
77.5°	706.4	629.7	567.7	559.3	572.9	595.0	630.8	665.4	720.1	766.4	776.9
80°	553.0	486.7	442.6	435.2	443.6	462.6	489.9	518.3	570.8	606.6	611.8
82.5°	383.7	343.8	315.4	311.2	316.4	323.8	345.9	372.1	401.6	430.0	433.1
85°	222.9	197.6	190.3	184.0	195.5	195.5	200.8	215.5	230.2	232.3	238.6
87.5°	41.0	38.9	39.9	29.4	36.8	26.3	26.3	33.6	25.2	29.4	24.2
90°	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1	30.1
92.5°	33.8	33.8	33.8	33.8	33.8	33.8	33.8	33.8	34.2	34.2	34.8
95°	38.5	38.5	38.5	38.5	38.5	38.5	38.5	38.5	39.4	39.4	39.4
97.5°	44.2	44.2	44.2	44.2	44.2	44.2	44.2	44.2	44.6	44.6	44.6
100°	49.8	49.8	49.8	49.8	49.8	49.8	49.8	49.8	49.8	49.8	49.8
102.5°	55.9	55.9	55.9	56.4	55.9	55.9	55.9	55.9	55.9	55.9	55.9
105°	62.0	62.0	62.0	62.9	62.0	62.0	62.0	62.0	62.0	62.0	62.0
107.5°	69.0	69.0	69.0	69.5	69.0	69.0	69.0	69.0	69.0	68.6	68.6
110°	76.1	76.1	76.1	76.1	76.1	76.1	76.1	76.1	76.1	75.1	75.1



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

**CANDELA DISTRIBUTION (continued):**

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
112.5°	84.0	84.0	84.0	84.6	84.6	84.0	84.0	84.0	84.0	83.1	83.1
115°	92.0	92.0	92.0	93.0	93.0	92.0	92.0	92.0	92.0	91.1	91.1
117.5°	101.4	101.4	101.4	102.4	102.4	101.4	101.4	101.4	101.0	100.5	100.5
120°	110.8	110.8	110.8	111.8	111.8	110.8	110.8	110.8	109.9	109.9	109.9
122.5°	121.6	122.1	122.1	122.6	122.6	121.6	121.6	121.6	121.2	120.7	120.7
125°	132.4	133.4	133.4	133.4	133.4	132.4	132.4	132.4	132.4	131.5	131.5
127.5°	144.2	145.1	145.1	145.1	145.1	144.2	144.2	144.2	144.2	143.2	143.2
130°	155.9	156.8	156.8	156.8	156.8	155.9	155.9	155.9	155.9	155.0	155.0
132.5°	168.1	168.6	168.6	168.6	168.6	168.1	167.6	167.6	167.6	167.2	167.2
135°	180.3	180.3	180.3	180.3	180.3	180.3	179.4	179.4	179.4	179.4	179.4
137.5°	191.6	191.6	191.6	191.6	191.6	191.6	191.2	190.6	191.2	190.6	191.2
140°	202.9	202.9	202.9	202.9	202.9	202.9	202.9	201.9	202.9	201.9	202.9
142.5°	213.7	213.7	213.7	213.7	213.7	213.7	213.7	212.7	213.7	213.2	213.7
145°	224.5	224.5	224.5	224.5	224.5	224.5	224.5	223.5	224.5	224.5	224.5
147.5°	235.8	235.8	235.8	235.8	235.8	235.8	235.8	234.8	235.8	235.3	235.8
150°	247.0	247.0	247.0	247.0	247.0	247.0	247.0	246.1	247.0	246.1	247.0
152.5°	256.0	256.0	256.0	256.0	256.4	256.0	256.0	255.5	256.4	255.5	256.0
155°	264.9	264.9	264.9	264.9	265.8	264.9	264.9	264.9	265.8	264.9	264.9
157.5°	272.4	272.4	272.4	272.4	273.3	272.4	272.4	272.4	273.3	272.4	272.4
160°	279.9	279.9	279.9	279.9	280.8	279.9	279.9	279.9	280.8	279.9	279.9
162.5°	286.0	286.0	286.0	286.0	286.9	286.0	286.0	286.0	286.9	286.0	286.0
165°	292.1	292.1	292.1	292.1	293.0	292.1	292.1	292.1	293.0	292.1	292.1
167.5°	295.8	295.8	295.8	295.8	296.8	295.8	295.8	295.8	296.8	295.8	295.8
170°	299.6	299.6	299.6	299.6	300.5	299.6	299.6	299.6	300.5	299.6	299.6
172.5°	302.0	302.0	302.0	302.0	302.8	302.0	302.4	302.0	302.8	302.0	302.0
175°	304.3	304.3	304.3	304.3	305.2	304.3	305.2	304.3	305.2	304.3	304.3
177.5°	305.2	305.2	305.2	305.2	305.7	305.2	305.7	305.2	305.7	305.2	305.2
180°	306.2	306.2	306.2	306.2	306.2	306.2	306.2	306.2	306.2	306.2	306.2

(END OF REPORT)