

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: P821118

Luminaire Tested: **TT-D1-830-24VDC-DL-UPL**

Issue Date: 7/23/2020



**Test Information**

Test Method: LM-79-08  
Report Number: P821118  
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-D1-830-24VDC-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**

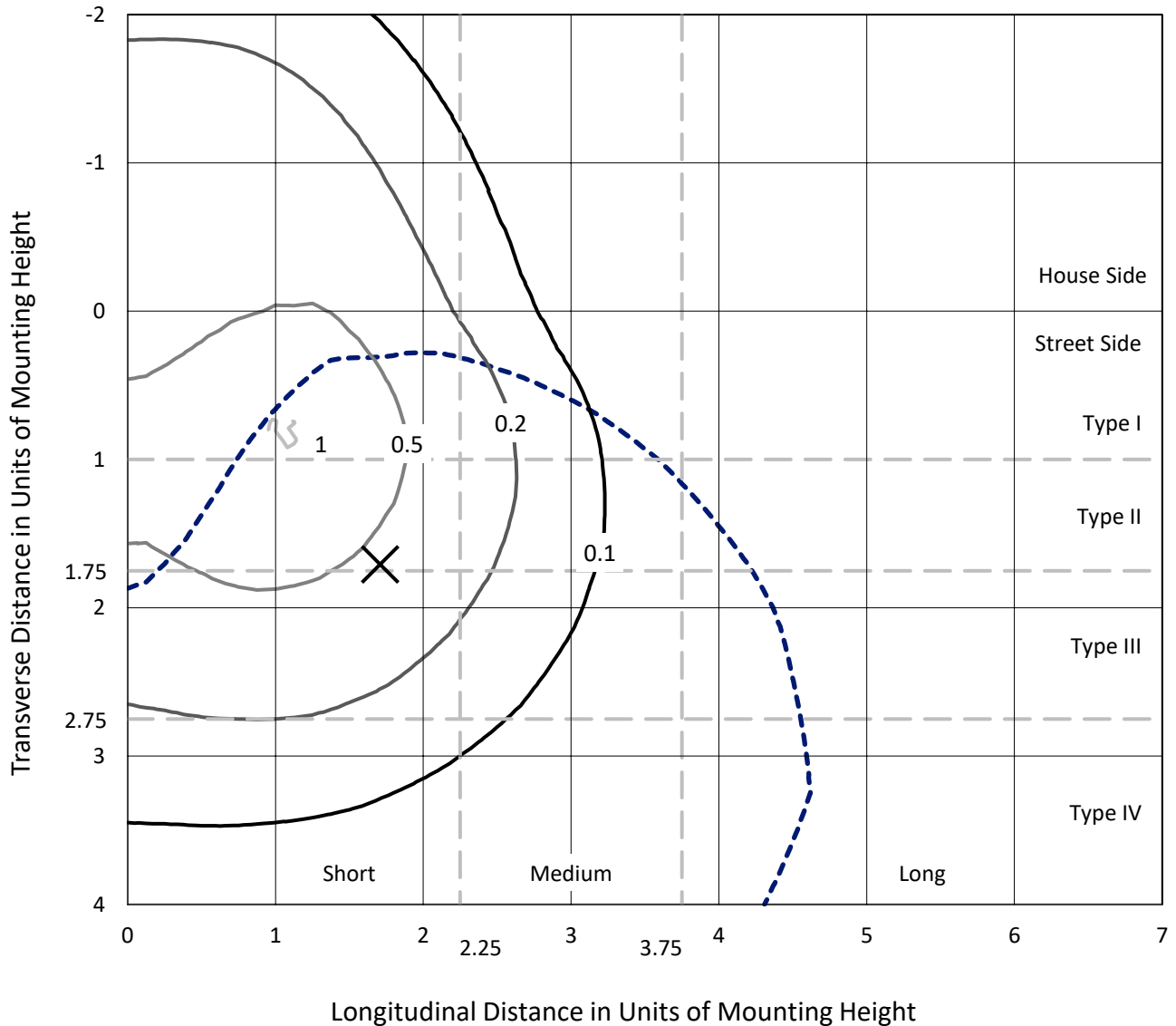
Lumens per Lamp: N/A  
Luminaire Lumens: 3794.7 lumens  
Efficiency: N/A  
Efficacy: 135.5 lumens/watt  
Luminous Opening: Vertical Cylinder (Dia: 1.12' x H: 0.1')  
IES Classification: Type IV - Short  
BUG Rating: B1 - U4 - G2

Input Watts (W): 28  
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

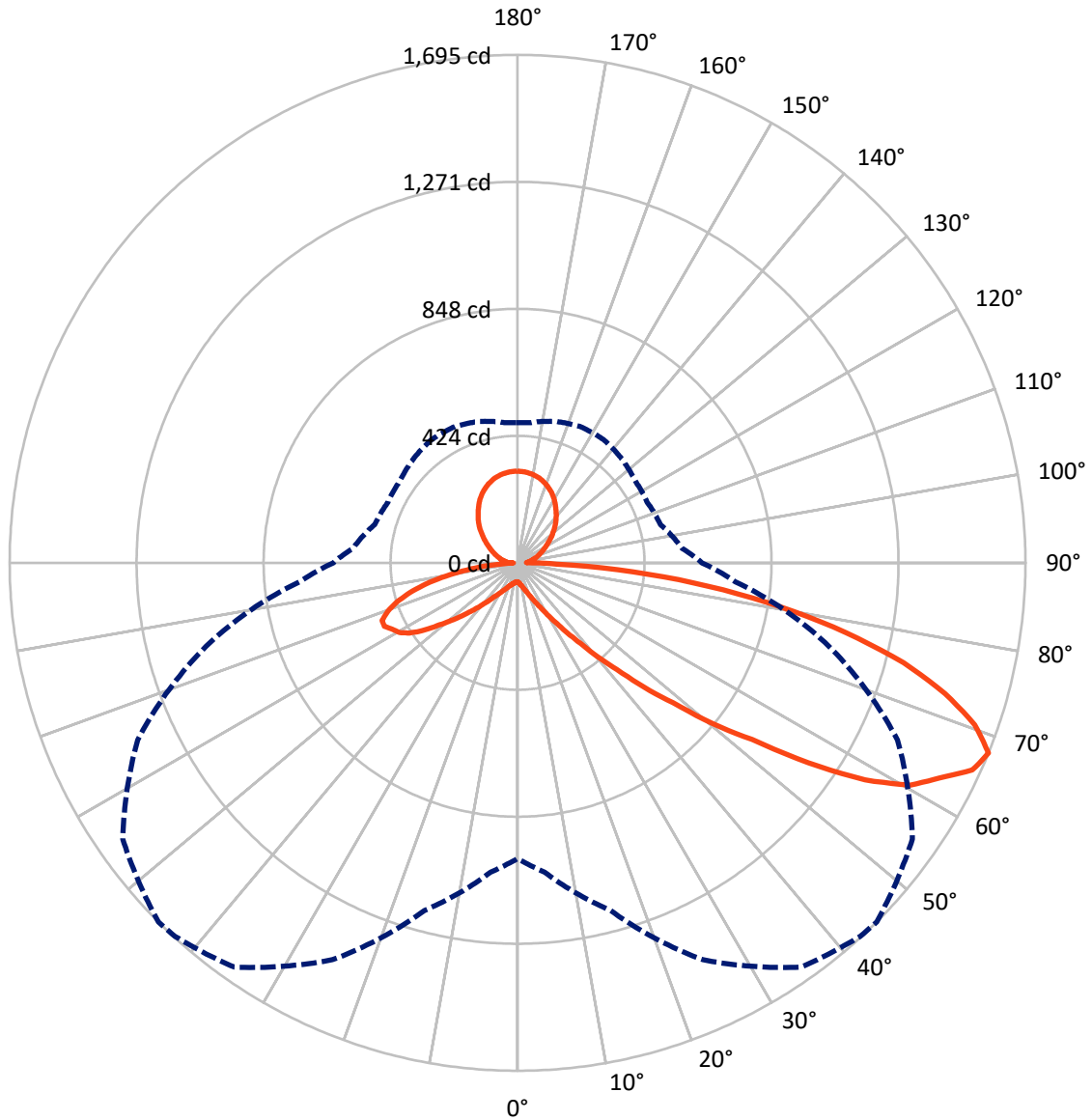
✕ Max cd  
 - - - 1/2 Max cd



Based on 15 foot mounting height. Maximum calculated value = 1 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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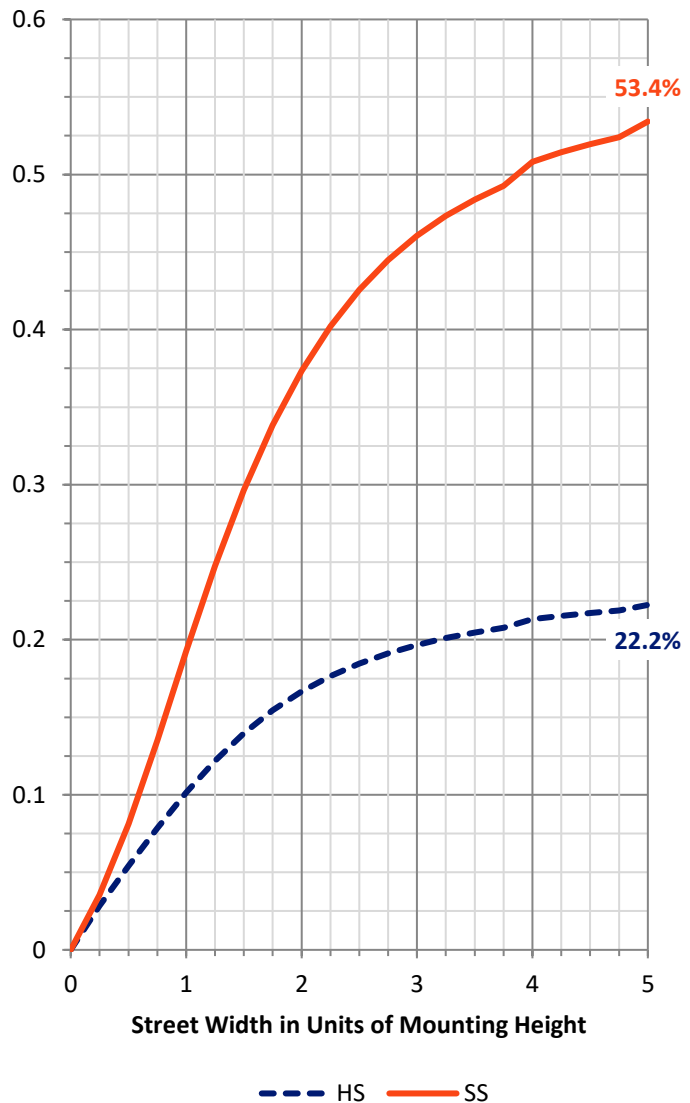
**FLUX DISTRIBUTION:**

		Downward	Upward	Total
<b>House Side</b>	Lumens	864.2	415.9	1280.1
	% Fixture	22.8	11.0	33.7
<b>Street Side</b>	Lumens	2098.7	415.9	2514.6
	% Fixture	55.3	11.0	66.3
<b>Total</b>	Lumens	2963.0	831.7	3794.7
	% Fixture	78.1	21.9	100.0

**Coefficient of Utilization**

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	6.6	0.2
10°-20°	24.5	0.6
20°-30°	58.1	1.5
30°-40°	131.4	3.5
40°-50°	292.9	7.7
50°-60°	588.8	15.5
60°-70°	864.8	22.8
70°-80°	760.5	20.0
80°-90°	235.5	6.2
90°-100°	42.6	1.1
100°-110°	66.0	1.7
110°-120°	91.9	2.4
120°-130°	119.0	3.1
130°-140°	138.7	3.7
140°-150°	140.5	3.7
150°-160°	121.9	3.2
160°-170°	82.2	2.2
170°-180°	28.9	0.8
0°-90°	2963.0	78.1
0°-180°	3794.7	100.0

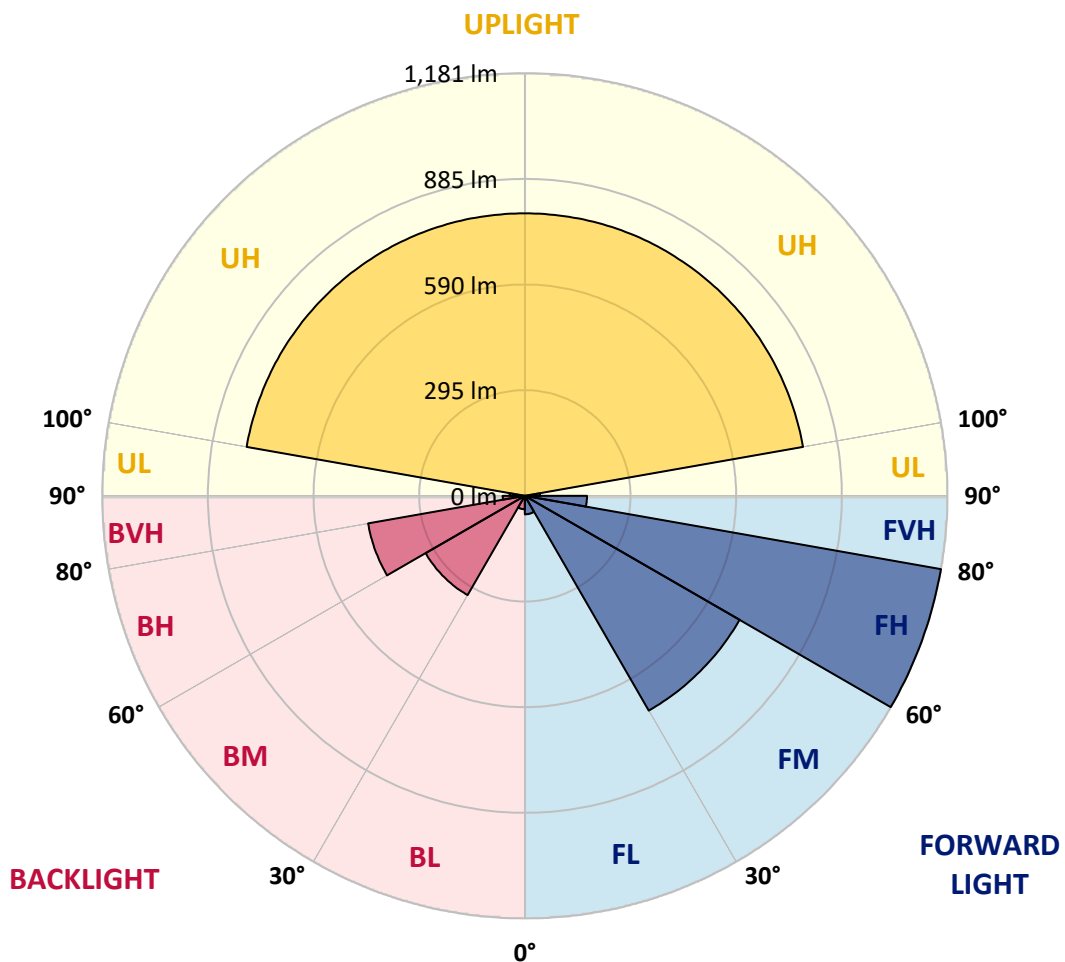


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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	51.7	1.4			
FM (30°-60°)	692.9	18.3			
FH (60°-80°)	1180.6	31.1			G1/1800
FVH (80°-90°)	173.5	4.6			G2/225
BL (0°-30°)	37.5	1.0	B0/110		
BM (30°-60°)	320.1	8.4	B1/1000		
BH (60°-80°)	444.6	11.7	B1/500		G1/500
BVH (80°-90°)	62.0	1.6			G1/100
UL (90°-100°)	42.6	1.1		U2/50	
UH (100°-180°)	789.1	20.8		U4/1000	

**BUG Rating: B1-U4-G2**  
 Type IV Short





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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	15°	25°	35°	42.5°	45°	55°	65°	75°	85°
0°	64.2	64.2	64.2	64.2	64.2	64.2	64.2	64.2	64.2	64.2	64.2
2.5°	66.9	66.4	66.4	66.4	65.8	65.8	65.8	65.8	65.3	65.3	65.3
5°	70.8	70.3	70.8	69.7	69.2	69.2	68.6	68.6	68.1	67.5	66.9
7.5°	76.4	75.8	75.8	74.7	74.1	73.6	73.6	72.5	71.9	70.8	69.7
10°	82.4	82.4	81.9	81.3	80.2	79.1	79.1	77.5	76.9	75.2	73.6
12.5°	89.6	89.6	89.6	88.5	87.4	86.9	85.8	84.7	83.0	80.2	78.6
15°	98.5	98.5	98.5	97.4	96.3	95.2	94.6	92.4	89.6	86.9	83.5
17.5°	109.6	108.4	108.4	107.3	106.2	105.7	104.6	102.4	98.5	95.2	90.7
20°	121.7	121.2	120.6	120.6	119.5	118.4	117.9	114.5	110.1	104.0	98.5
22.5°	135.6	135.0	135.0	136.1	135.6	133.9	133.9	128.9	122.8	115.6	107.3
25°	152.7	152.2	153.3	155.5	155.5	154.4	152.7	147.7	138.9	128.9	119.0
27.5°	171.5	171.0	173.2	177.1	178.2	176.5	175.4	169.9	159.9	146.6	132.2
30°	194.2	194.8	200.8	205.3	208.0	206.9	206.4	200.3	184.3	168.8	149.9
32.5°	221.9	220.2	228.0	235.2	240.1	242.9	241.2	234.0	220.2	195.9	172.1
35°	251.2	251.8	261.2	271.7	283.3	284.4	287.7	280.5	261.7	232.9	199.7
37.5°	289.4	285.0	297.1	317.0	330.9	343.0	340.8	336.4	314.3	276.1	230.7
40°	323.7	322.6	339.7	367.4	392.8	410.6	412.8	407.2	377.9	323.7	263.9
42.5°	363.0	366.3	390.1	428.3	467.0	492.4	486.4	483.6	449.3	380.1	309.3
45°	402.8	413.9	444.3	499.6	545.0	581.5	592.0	582.6	540.6	469.2	366.8
47.5°	450.9	465.9	503.5	578.2	652.3	695.0	697.2	725.4	661.8	555.0	426.6
50°	514.6	521.2	573.8	665.1	766.9	826.6	843.8	844.3	780.7	641.3	494.1
52.5°	577.1	582.1	651.2	769.1	907.4	975.5	979.4	1000.9	914.1	780.7	590.9
55°	652.3	650.1	745.3	886.9	1050.2	1149.2	1178.0	1207.3	1096.7	890.8	646.3
57.5°	725.4	722.1	836.6	1022.5	1245.5	1344.0	1367.8	1346.7	1182.4	936.7	673.4
60°	792.9	804.5	943.9	1172.5	1396.5	1490.6	1506.7	1449.7	1237.7	972.2	690.5
62.5°	863.2	886.4	1055.2	1297.5	1512.2	1579.7	1580.8	1513.8	1330.1	1040.8	746.4
65°	929.0	966.1	1141.5	1404.3	1593.0	1660.5	1668.2	1607.9	1420.9	1100.5	755.8
67.5°	987.1	1036.3	1201.2	1461.8	1647.7	1691.5	1695.3	1608.5	1399.3	1076.2	729.8
70°	1034.1	1074.0	1238.3	1462.9	1609.6	1621.7	1619.0	1526.6	1339.6	1028.0	686.1
72.5°	1052.4	1085.0	1220.6	1394.3	1497.2	1494.5	1492.3	1407.1	1241.1	947.8	623.0
75°	1026.4	1035.8	1123.8	1247.7	1313.0	1328.5	1330.7	1253.8	1088.9	828.9	534.5
77.5°	919.0	914.1	981.6	1063.5	1112.7	1123.8	1121.6	1057.4	913.0	688.9	448.2
80°	728.7	739.2	781.3	835.5	884.7	896.9	889.2	840.5	710.4	537.3	344.2
82.5°	509.6	522.3	557.7	598.7	635.7	635.7	642.9	595.9	503.5	385.7	240.7
85°	275.0	267.8	306.5	353.0	379.6	384.5	387.3	371.8	311.5	232.9	142.8
87.5°	45.4	48.7	60.3	92.4	105.1	121.7	129.5	101.3	61.4	39.3	28.8
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°	64.2	64.2	64.2	64.2	64.2	64.2	64.2	64.2	64.2	64.2	64.2
2.5°	65.3	64.7	64.2	63.6	63.6	63.1	63.1	63.1	63.6	63.6	63.6
5°	66.9	66.4	65.8	65.3	64.2	64.2	64.2	64.2	64.2	64.2	64.2
7.5°	69.7	68.6	68.1	66.9	65.8	65.8	65.3	65.3	65.3	65.8	65.3
10°	73.0	71.9	70.8	69.2	68.6	68.1	67.5	67.5	68.1	68.1	67.5
12.5°	76.9	76.4	74.1	72.5	71.4	70.8	70.3	70.8	70.3	70.8	70.8
15°	82.4	80.8	78.0	76.4	74.7	74.1	73.6	74.1	74.1	74.7	74.1
17.5°	88.5	86.3	83.5	80.8	78.6	78.0	78.0	78.0	78.6	79.1	78.6
20°	95.7	93.0	89.1	85.8	83.5	83.0	83.0	83.5	84.1	84.7	84.7
22.5°	102.9	100.7	95.2	90.7	89.6	89.1	88.5	89.6	90.7	91.3	91.8
25°	114.0	109.6	102.9	97.9	95.7	95.7	96.3	97.4	97.9	99.0	98.5
27.5°	125.6	120.6	112.3	105.7	104.0	103.5	104.6	105.7	107.9	107.9	107.3
30°	141.6	133.3	122.8	116.7	112.3	112.9	114.5	116.2	118.4	119.5	119.5
32.5°	159.9	151.1	136.7	127.3	125.0	125.6	126.2	128.9	131.1	133.3	131.7
35°	183.7	172.6	154.9	144.4	138.9	138.3	140.5	143.9	146.1	147.2	147.2
37.5°	209.7	195.3	173.2	164.3	157.7	157.1	157.7	160.5	163.2	164.3	166.5
40°	241.2	223.5	197.5	183.1	178.2	177.1	179.3	183.1	183.1	184.8	185.4
42.5°	280.0	257.3	228.5	209.7	203.6	203.6	203.1	206.4	206.4	206.4	205.3
45°	329.2	303.8	266.1	246.8	236.3	230.7	232.4	230.2	229.6	231.3	226.3
47.5°	376.8	344.7	300.4	279.4	268.9	265.6	259.5	257.8	255.1	255.1	247.9
50°	432.1	392.3	349.7	319.8	309.9	300.4	295.5	287.7	279.4	277.8	275.0
52.5°	524.5	474.7	407.8	375.7	350.2	340.8	329.2	319.3	309.3	301.6	306.0
55°	562.2	511.3	447.6	416.6	398.9	390.1	368.5	355.2	340.3	329.2	335.3
57.5°	581.0	525.6	466.4	443.2	438.2	429.9	413.9	391.2	374.0	360.2	361.3
60°	591.5	533.4	476.4	455.4	452.6	458.1	449.8	434.3	407.8	394.0	392.3
62.5°	631.9	571.0	504.6	474.7	468.6	472.5	474.7	465.3	443.2	424.9	420.0
65°	640.2	575.4	510.1	490.8	491.3	492.4	494.1	484.1	473.1	450.4	446.0
67.5°	615.3	551.6	493.5	477.5	478.6	491.3	501.3	500.7	488.6	469.2	467.5
70°	577.7	515.7	462.0	447.6	450.4	462.0	483.6	494.7	492.4	479.7	482.5
72.5°	519.0	463.7	416.6	405.6	412.2	423.3	443.8	463.7	475.3	478.1	484.1
75°	450.4	406.1	361.9	355.2	360.2	372.9	391.7	415.0	440.4	454.3	458.1
77.5°	371.8	331.4	298.8	294.4	301.6	313.2	332.0	350.2	379.0	403.4	408.9
80°	291.0	256.2	232.9	229.1	233.5	243.5	257.8	272.8	300.4	319.3	322.0
82.5°	202.0	180.9	166.0	163.8	166.5	170.4	182.0	195.9	211.4	226.3	228.0
85°	117.3	104.0	100.1	96.8	102.9	102.9	105.7	113.4	121.2	122.3	125.6
87.5°	21.6	20.5	21.0	15.5	19.4	13.8	13.8	17.7	13.3	15.5	12.7
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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**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)