

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: P271710

Luminaire Tested: **IST-AF-450-LED-E1-T4W-7027-ULG**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P271710  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P35944)-DOWNLIGHT AND  
Test Lab: INNOVATION CENTER-P3  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: MCGRAW-EDISON  
Catalog Number: IST-AF-450-LED-E1-T4W-7027-ULG  
Description: IMPACT ELITE LED TRAPEZOID LUMINAIRE WITH UPLIGHT  
LIGHT SQUARE WITH ACCULED OPTICS-TYPE IV WIDE, WITH UPLIGHT GLOW  
Light Source: (16) 2700K CCT, 70 CRI LEDs and (1) UPLIGHT LED  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 4432.8 lumens  
Efficiency: N/A  
Efficacy: 105.5 lumens/watt  
Luminous Opening: Rectangular w/ Sides (W: 0.5' x L: 0.5' x H: 0.54')  
IES Classification: Type IV - Medium - Non-Cutoff  
BUG Rating: B1 - U5 - G1

Input Watts (W): 42.01  
Input Voltage (V): 120  
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

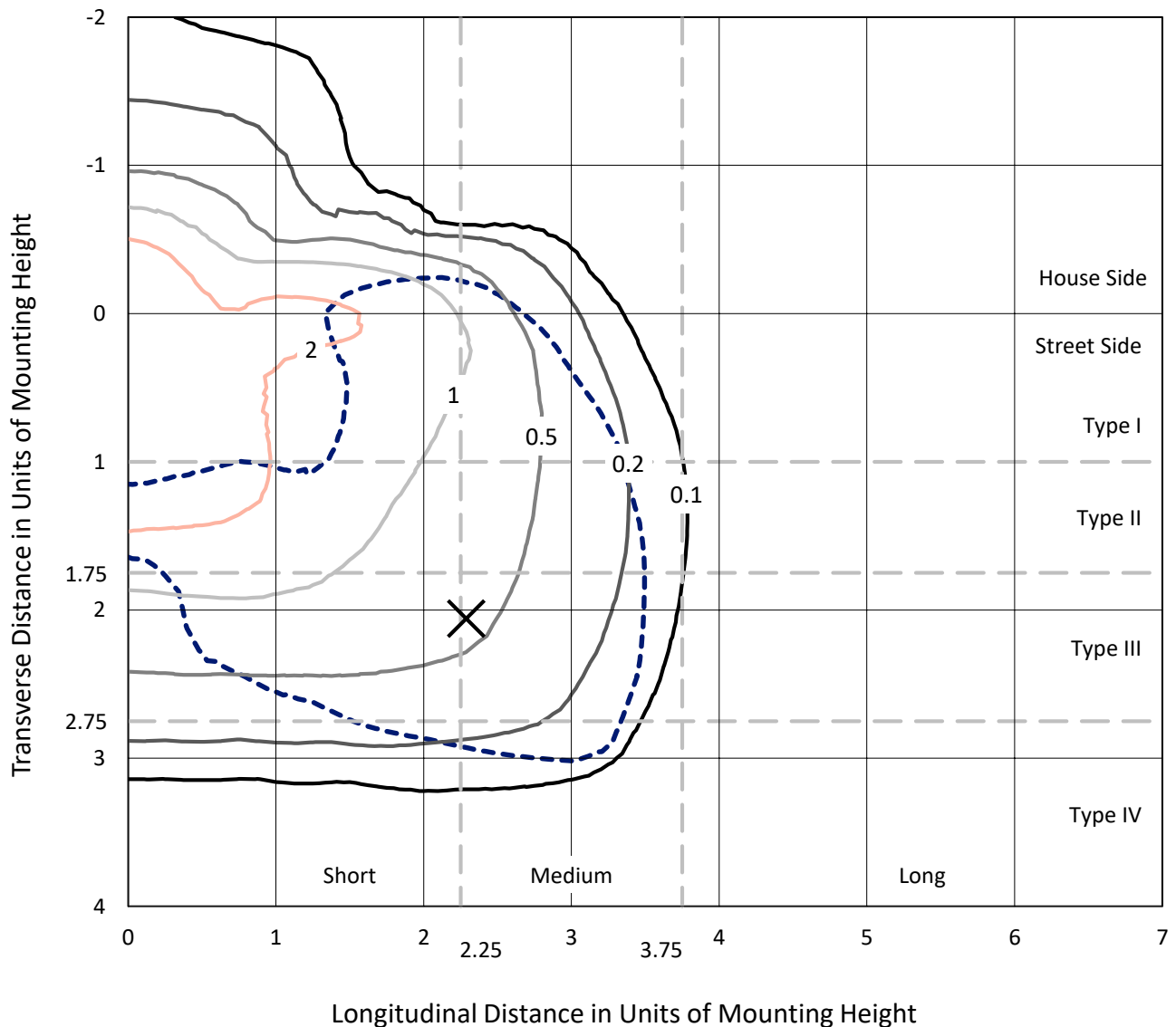


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### Iso-Footcandle Lines of Horizontal Illumination

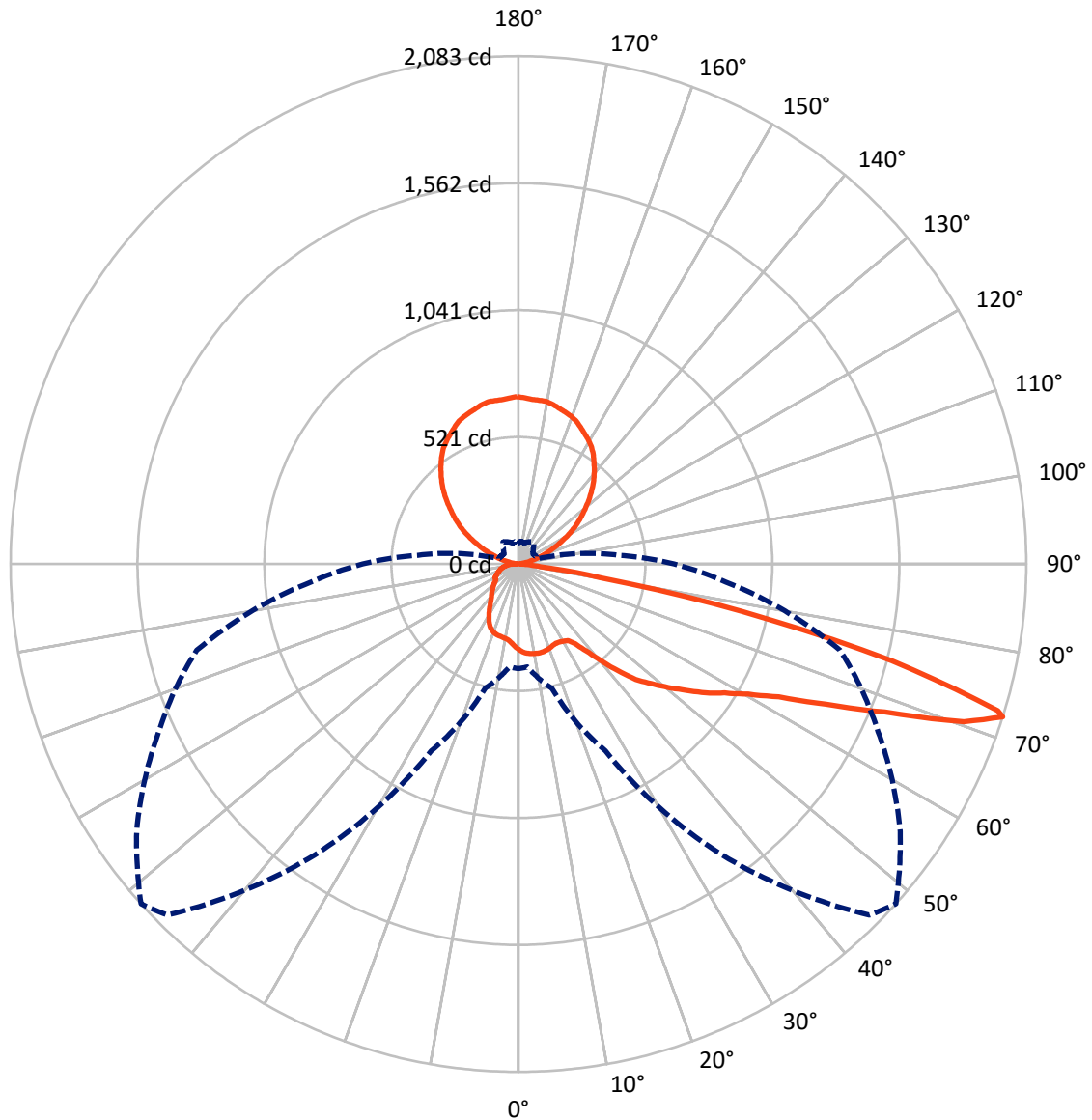
× Max cd  
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 3.9 fc  
 Type IV - Medium - Non-Cutoff

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### Luminous Intensity Polar Plot



— Vertical Plane Through 48-Deg Lateral    - - - Horizontal Cone Through 72-Deg Vertical

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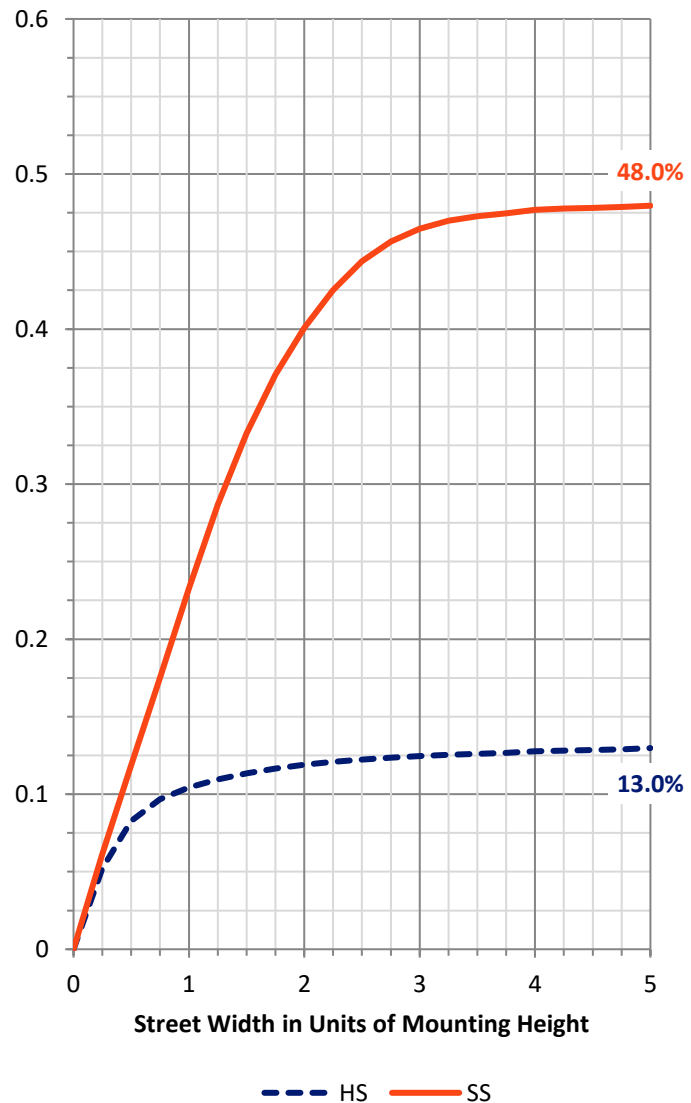
**FLUX DISTRIBUTION:**

		Downward	Upward	Total
<b>House Side</b>	Lumens	593.2	852.7	1445.9
	% Fixture	13.4	19.2	32.6
<b>Street Side</b>	Lumens	2135.0	851.9	2986.9
	% Fixture	48.2	19.2	67.4
<b>Total</b>	Lumens	2728.2	1704.6	4432.8
	% Fixture	61.5	38.5	100.0

**Coefficient of Utilization**

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	33.2	0.7
10°-20°	97.0	2.2
20°-30°	149.5	3.4
30°-40°	224.1	5.1
40°-50°	373.2	8.4
50°-60°	583.2	13.2
60°-70°	770.3	17.4
70°-80°	445.6	10.1
80°-90°	52.1	1.2
90°-100°	10.7	0.2
100°-110°	56.3	1.3
110°-120°	163.1	3.7
120°-130°	268.1	6.0
130°-140°	330.6	7.5
140°-150°	338.2	7.6
150°-160°	284.9	6.4
160°-170°	187.6	4.2
170°-180°	65.0	1.5
0°-90°	2728.2	61.5
0°-180°	4432.8	100.0



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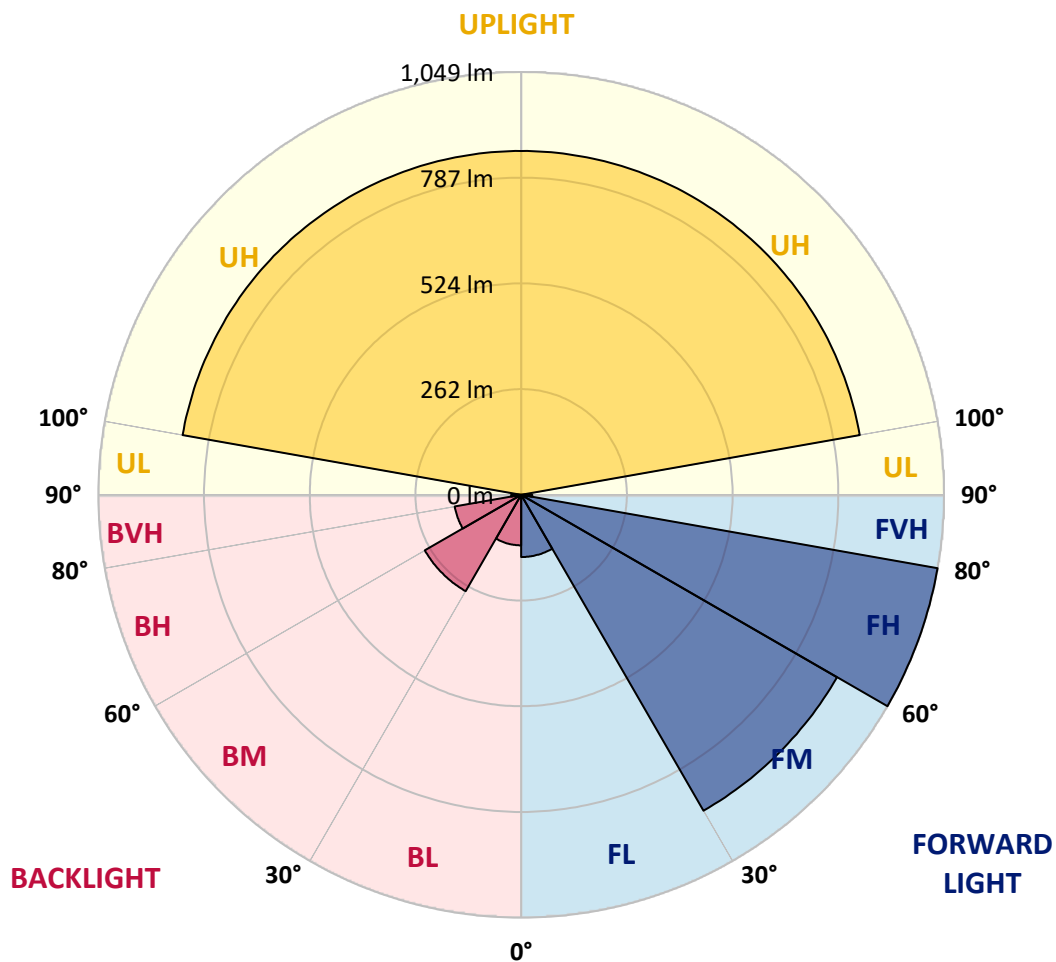
CATALOG NUMBER: IST-AF-450-LED-E1-T4W-7027-ULG

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

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	154.3	3.5			
FM (30°-60°)	904.7	20.4			
FH (60°-80°)	1048.7	23.7			G1/1800
FVH (80°-90°)	27.3	0.6			G1/100
BL (0°-30°)	125.4	2.8	B1/500		
BM (30°-60°)	275.8	6.2	B1/1000		
BH (60°-80°)	167.2	3.8	B1/500		G1/500
BVH (80°-90°)	24.8	0.6			G1/100
UL (90°-100°)	10.7	0.2		U2/50	
UH (100°-180°)	852.7	19.2		U4/1000	

**BUG Rating: B1-U5-G1**

Type IV Medium





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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	15°	25°	35°	45°	48°	55°	65°	75°	85°
0°	351.1	351.1	351.1	351.1	351.1	351.1	351.1	351.1	351.1	351.1	351.1
2.5°	369.7	369.2	369.2	366.1	364.9	362.9	361.4	359.0	356.5	353.8	350.2
5°	387.5	388.7	387.1	382.3	376.4	370.0	367.7	362.2	354.7	347.9	341.5
7.5°	404.5	404.9	400.6	392.6	383.5	373.7	370.4	362.9	354.7	345.5	336.4
10°	416.7	417.2	410.9	399.7	387.5	376.4	372.9	365.3	355.0	345.1	333.6
12.5°	423.9	424.3	414.7	403.2	388.7	377.6	374.4	366.5	355.8	343.2	330.5
15°	422.7	423.9	415.9	403.2	387.9	378.0	374.1	367.2	353.8	341.2	327.7
17.5°	414.7	416.4	410.1	396.2	383.8	376.0	371.6	364.9	351.9	338.4	323.7
20°	399.4	401.4	398.6	385.1	376.7	370.4	367.7	361.4	349.1	335.2	320.2
22.5°	381.9	383.8	383.0	372.0	368.0	364.9	362.2	357.3	346.7	332.8	318.6
25°	369.2	370.8	369.7	360.2	361.4	361.4	359.7	356.2	346.3	333.6	318.6
27.5°	390.2	390.2	379.9	360.6	358.5	362.2	361.4	359.3	351.5	337.7	321.8
30°	467.0	461.1	442.4	393.7	368.8	367.2	366.9	365.7	358.5	346.3	331.7
32.5°	552.9	547.0	524.8	463.9	412.1	378.0	374.4	374.9	372.9	361.4	346.7
35°	629.4	628.5	611.0	545.0	478.9	415.6	401.4	391.8	391.0	386.3	374.9
37.5°	691.1	691.1	692.6	617.5	551.3	475.3	451.2	421.1	421.1	418.3	411.2
40°	761.4	764.6	768.2	683.1	628.9	546.6	519.3	473.8	459.9	464.2	465.8
42.5°	854.1	858.0	855.6	764.3	699.7	631.7	598.0	543.0	509.0	516.1	532.8
45°	916.6	918.2	935.2	849.0	788.8	703.7	675.2	599.6	565.9	580.7	609.9
47.5°	987.5	991.4	994.2	945.1	893.3	785.2	732.9	654.7	632.9	655.0	701.3
50°	1056.8	1051.6	1059.1	1057.1	992.2	857.6	795.4	706.1	707.7	737.7	813.8
52.5°	1117.0	1099.4	1117.0	1138.6	1119.6	932.0	859.6	766.6	789.6	826.4	946.4
55°	1163.1	1121.3	1150.5	1212.3	1208.0	997.7	932.8	847.3	885.8	936.0	1107.4
57.5°	1068.6	1073.7	1154.5	1261.7	1259.7	1064.2	997.0	948.3	995.4	1051.6	1298.1
60°	980.3	1003.2	1127.9	1269.7	1295.7	1136.6	1083.3	1063.1	1106.6	1175.1	1480.9
62.5°	933.7	955.3	1084.8	1255.0	1353.2	1244.0	1199.1	1183.8	1243.2	1319.9	1644.1
65°	948.3	961.7	1082.1	1277.2	1419.2	1406.2	1386.8	1361.1	1390.8	1462.8	1717.6
67.5°	907.1	929.3	1059.1	1316.4	1540.0	1604.0	1620.4	1592.7	1567.6	1557.8	1610.4
70°	675.2	696.5	832.7	1154.5	1638.9	1947.6	1937.7	1845.1	1677.2	1537.2	1258.2
72°	429.0	423.1	527.1	845.8	1456.8	2035.9	2082.6	1911.2	1627.4	1365.1	854.5
72.5°	311.9	340.0	437.4	752.0	1384.0	1987.6	2055.6	1889.9	1562.2	1289.4	751.6
75°	76.0	80.4	104.9	269.5	810.5	1495.7	1581.2	1460.0	1140.2	765.4	333.2
77.5°	51.5	53.4	69.3	95.0	238.3	852.9	938.4	806.2	510.1	260.4	148.4
80°	38.4	39.5	50.2	67.4	98.9	290.9	343.2	272.6	127.0	144.4	105.7
82.5°	26.9	27.7	38.0	49.5	65.7	68.1	90.5	100.1	82.4	94.6	61.7
85°	18.7	18.7	27.7	34.0	41.5	33.7	36.0	50.2	55.9	56.2	37.5
87.5°	9.9	11.0	16.2	21.8	21.8	15.5	17.0	25.7	31.4	33.7	22.5
90°	8.4	8.4	13.7	16.2	12.9	10.8	10.4	11.9	16.3	19.5	14.0
92.5°	4.0	4.0	4.9	5.9	5.9	5.9	6.2	6.8	6.8	5.9	5.9
95°	4.9	4.9	5.9	6.8	6.8	6.8	6.8	6.8	7.8	6.8	6.8
97.5°	6.8	6.8	7.8	7.8	8.8	8.8	9.7	11.8	9.8	8.8	7.8
100°	7.8	7.8	8.8	9.8	11.8	20.6	23.0	28.5	25.5	22.5	18.7
102.5°	10.8	10.8	12.8	17.7	26.5	39.3	42.2	49.0	46.2	41.2	38.3
105°	20.6	21.6	26.5	35.3	47.1	61.8	64.5	70.7	68.7	63.8	59.8
107.5°	40.2	41.2	48.1	57.0	71.7	86.3	88.4	93.2	92.3	88.3	85.4



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	15°	25°	35°	45°	48°	55°	65°	75°	85°
110°	64.8	66.7	72.7	85.4	100.1	111.9	113.6	117.8	118.8	116.8	113.8
112.5°	97.2	97.2	104.0	118.8	131.5	140.3	141.8	145.3	147.2	146.2	144.3
115°	137.4	136.5	144.3	156.0	164.9	170.8	172.3	175.7	178.7	175.7	173.7
117.5°	180.6	180.6	185.5	193.3	198.3	201.2	202.9	207.1	211.0	206.1	204.2
120°	220.8	218.8	221.8	228.7	232.6	238.5	239.4	241.5	245.3	240.5	238.5
122.5°	258.2	255.2	256.2	262.0	266.0	271.8	272.5	273.8	277.8	272.8	270.9
125°	292.5	288.5	290.5	293.5	299.3	304.3	305.2	307.2	309.2	304.3	304.3
127.5°	323.9	322.9	322.9	326.8	332.7	333.7	335.2	338.6	339.6	339.6	338.6
130°	356.3	354.3	355.3	359.2	363.2	365.1	366.6	370.0	374.0	374.0	372.0
132.5°	388.7	386.7	385.7	393.5	396.5	397.5	399.3	403.4	408.3	406.3	406.3
135°	421.0	418.1	418.1	424.0	427.0	428.9	430.6	434.8	439.7	438.7	441.7
137.5°	451.5	448.5	450.5	451.5	455.4	459.3	460.8	464.2	466.2	467.2	472.1
140°	479.0	476.0	478.0	480.0	481.9	487.8	488.7	490.7	492.7	494.7	499.5
142.5°	508.4	505.5	507.5	508.4	511.3	515.3	515.9	517.2	523.2	523.2	524.1
145°	539.8	535.9	534.0	536.8	539.8	540.8	542.3	545.7	551.6	550.6	547.7
147.5°	564.3	561.4	560.5	563.3	563.3	564.3	565.8	569.3	574.2	575.2	572.2
150°	584.0	581.0	582.0	582.0	582.0	582.0	583.2	586.0	588.9	591.8	594.8
152.5°	599.7	596.7	596.7	597.7	598.7	598.7	599.0	599.7	602.7	606.5	611.5
155°	617.3	613.5	613.5	615.4	618.3	616.3	615.8	614.4	619.3	624.2	626.2
157.5°	634.0	631.1	631.1	632.0	634.0	633.0	632.8	632.0	636.0	638.0	638.0
160°	650.7	647.8	646.8	643.8	642.8	642.8	643.7	645.8	651.7	648.8	647.8
162.5°	660.5	656.6	656.6	652.7	648.8	650.7	651.9	654.7	658.5	657.6	655.7
165°	668.4	665.5	663.5	663.5	660.5	660.5	660.3	659.5	664.5	667.4	665.5
167.5°	677.2	674.3	671.3	673.3	675.3	672.3	670.2	665.5	671.3	675.3	675.3
170°	685.0	682.2	679.2	679.2	680.2	678.2	676.7	673.3	676.2	681.2	683.1
172.5°	686.0	684.1	682.2	680.2	677.2	677.2	677.0	676.2	679.2	681.2	683.1
175°	687.0	685.0	684.1	682.2	678.2	677.2	677.2	677.2	682.2	683.1	681.2
177.5°	693.9	692.0	687.0	686.0	684.1	682.2	681.8	681.2	686.0	688.0	685.0
180°	687.0	687.0	687.0	687.0	687.0	687.0	687.0	687.0	687.0	687.0	687.0





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**CANDELA DISTRIBUTION (continued):**

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	351.1	351.1	351.1	351.1	351.1	351.1	351.1	351.1	351.1	351.1	351.1
2.5°	349.5	347.0	343.9	342.3	341.5	340.0	338.4	337.7	337.7	336.1	336.4
5°	338.4	334.8	330.5	327.3	326.9	326.9	327.7	327.7	328.2	326.9	328.5
7.5°	332.8	328.9	322.5	319.0	316.2	315.8	317.4	320.5	322.1	321.0	322.5
10°	328.9	324.6	317.4	313.1	311.0	310.3	311.5	314.7	319.8	319.8	321.3
12.5°	325.0	319.3	312.3	309.1	307.5	307.8	309.5	311.9	317.4	319.3	320.2
15°	321.0	314.7	308.7	304.3	304.3	305.5	307.5	310.3	315.5	319.0	319.8
17.5°	317.0	310.6	305.5	302.0	302.0	303.5	305.5	309.1	312.7	317.8	317.8
20°	313.5	308.3	301.7	298.3	298.0	299.2	301.7	305.2	307.8	313.1	313.5
22.5°	311.5	305.2	298.8	294.0	292.1	291.3	293.7	297.2	300.0	305.2	306.0
25°	310.6	303.5	295.6	287.0	281.8	280.2	281.3	285.8	288.2	292.1	293.3
27.5°	313.5	306.7	294.5	278.7	268.0	263.7	264.8	267.5	268.3	272.6	274.7
30°	322.9	315.0	296.8	269.9	250.5	242.6	242.6	243.0	244.2	247.8	248.1
32.5°	338.4	330.8	304.0	260.8	232.8	221.6	218.8	216.9	216.9	216.5	216.9
35°	366.9	360.6	316.2	250.5	213.3	201.0	194.3	190.8	187.2	185.6	185.2
37.5°	408.0	402.5	333.6	238.7	196.3	184.1	175.7	168.6	164.6	164.2	166.3
40°	469.4	463.9	353.0	225.1	180.1	170.9	162.2	154.8	150.4	150.7	152.8
42.5°	545.0	527.9	374.1	207.0	167.1	162.2	152.8	146.4	142.1	139.7	139.2
45°	633.2	604.8	393.7	190.0	152.8	154.8	145.6	138.5	132.9	126.6	125.9
47.5°	743.3	681.5	411.2	172.9	137.4	146.9	138.1	131.4	123.1	115.5	114.4
50°	858.0	769.8	426.2	154.8	123.4	138.1	130.6	121.5	110.0	103.2	103.2
52.5°	990.7	875.8	445.6	134.6	112.7	128.6	121.1	109.2	99.7	98.9	98.9
55°	1138.2	987.1	459.1	118.8	104.6	118.4	114.7	111.2	108.1	108.9	109.2
57.5°	1292.6	1103.0	447.3	107.7	97.7	116.0	126.2	121.5	111.6	111.2	110.9
60°	1425.6	1193.3	381.5	100.5	92.6	119.9	135.4	121.5	111.6	116.8	117.2
62.5°	1512.7	1236.0	254.1	91.4	85.1	113.2	132.2	117.9	112.0	126.6	127.8
65°	1500.8	1188.1	146.1	85.1	80.4	104.1	127.8	113.5	104.6	112.7	110.4
67.5°	1323.9	995.8	105.7	82.4	76.7	97.7	119.9	107.3	97.4	107.7	103.2
70°	951.5	678.0	91.0	79.9	74.4	90.2	114.4	103.2	93.4	100.5	93.9
72°	638.3	412.4	83.5	78.0	72.0	85.5	110.4	100.1	89.8	93.9	86.2
72.5°	543.5	325.4	81.6	77.2	71.2	84.4	109.2	99.4	89.0	93.1	85.9
75°	203.1	127.4	72.4	71.2	65.7	78.3	104.6	95.8	85.1	83.9	80.8
77.5°	104.6	80.8	61.7	62.9	59.0	71.7	99.4	90.2	78.3	74.0	72.4
80°	76.0	58.6	49.9	53.4	50.2	64.5	92.3	81.9	71.2	66.5	64.5
82.5°	47.9	36.4	38.0	42.3	42.8	57.0	83.9	73.6	63.3	59.4	56.2
85°	23.0	21.8	26.9	31.4	34.5	48.3	76.7	65.3	55.4	47.5	47.9
87.5°	12.3	16.6	16.2	21.0	26.5	39.5	68.1	53.4	44.4	35.7	36.0
90°	9.6	11.2	13.6	17.2	17.6	23.9	51.8	38.3	36.5	17.6	16.0
92.5°	5.9	5.9	5.9	6.8	6.8	5.9	5.9	5.9	4.9	4.0	4.0
95°	6.8	6.8	6.8	7.8	6.8	6.8	6.8	6.8	5.9	4.9	4.9
97.5°	7.8	7.8	8.8	9.8	11.8	8.8	8.8	7.8	7.8	6.8	6.8
100°	18.7	18.7	22.5	25.5	28.5	20.6	11.8	9.8	8.8	7.8	7.8
102.5°	37.3	38.3	41.2	46.2	49.0	39.3	26.5	17.7	12.8	10.8	10.8
105°	59.8	59.8	63.8	68.7	70.7	61.8	47.1	35.3	26.5	21.6	20.6
107.5°	84.4	85.4	88.3	92.3	93.2	86.3	71.7	57.0	48.1	41.2	40.2



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**CANDELA DISTRIBUTION (continued):**

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
110°	114.8	113.8	116.8	118.8	117.8	111.9	100.1	85.4	72.7	66.7	64.8
112.5°	144.3	144.3	146.2	147.2	145.3	140.3	131.5	118.8	104.0	97.2	97.2
115°	174.7	173.7	175.7	178.7	175.7	170.8	164.9	156.0	144.3	136.5	137.4
117.5°	205.2	204.2	206.1	211.0	207.1	201.2	198.3	193.3	185.5	180.6	180.6
120°	238.5	238.5	240.5	245.3	241.5	238.5	232.6	228.7	221.8	218.8	220.8
122.5°	271.8	270.9	272.8	277.8	273.8	271.8	266.0	262.0	256.2	255.2	258.2
125°	304.3	304.3	304.3	309.2	307.2	304.3	299.3	293.5	290.5	288.5	292.5
127.5°	340.5	338.6	339.6	339.6	338.6	333.7	332.7	326.8	322.9	322.9	323.9
130°	373.0	372.0	374.0	374.0	370.0	365.1	363.2	359.2	355.3	354.3	356.3
132.5°	407.3	406.3	406.3	408.3	403.4	397.5	396.5	393.5	385.7	386.7	388.7
135°	442.7	441.7	438.7	439.7	434.8	428.9	427.0	424.0	418.1	418.1	421.0
137.5°	473.0	472.1	467.2	466.2	464.2	459.3	455.4	451.5	450.5	448.5	451.5
140°	501.5	499.5	494.7	492.7	490.7	487.8	481.9	480.0	478.0	476.0	479.0
142.5°	526.0	524.1	523.2	523.2	517.2	515.3	511.3	508.4	507.5	505.5	508.4
145°	549.7	547.7	550.6	551.6	545.7	540.8	539.8	536.8	534.0	535.9	539.8
147.5°	574.2	572.2	575.2	574.2	569.3	564.3	563.3	563.3	560.5	561.4	564.3
150°	598.7	594.8	591.8	588.9	586.0	582.0	582.0	582.0	582.0	581.0	584.0
152.5°	616.3	611.5	606.5	602.7	599.7	598.7	598.7	597.7	596.7	596.7	599.7
155°	629.2	626.2	624.2	619.3	614.4	616.3	618.3	615.4	613.5	613.5	617.3
157.5°	642.8	638.0	638.0	636.0	632.0	633.0	634.0	632.0	631.1	631.1	634.0
160°	653.7	647.8	648.8	651.7	645.8	642.8	642.8	643.8	646.8	647.8	650.7
162.5°	661.5	655.7	657.6	658.5	654.7	650.7	648.8	652.7	656.6	656.6	660.5
165°	669.3	665.5	667.4	664.5	659.5	660.5	660.5	663.5	663.5	665.5	668.4
167.5°	681.2	675.3	675.3	671.3	665.5	672.3	675.3	673.3	671.3	674.3	677.2
170°	688.0	683.1	681.2	676.2	673.3	678.2	680.2	679.2	679.2	682.2	685.0
172.5°	688.0	683.1	681.2	679.2	676.2	677.2	677.2	680.2	682.2	684.1	686.0
175°	686.0	681.2	683.1	682.2	677.2	677.2	678.2	682.2	684.1	685.0	687.0
177.5°	689.0	685.0	688.0	686.0	681.2	682.2	684.1	686.0	687.0	692.0	693.9
180°	687.0	687.0	687.0	687.0	687.0	687.0	687.0	687.0	687.0	687.0	687.0

(END OF REPORT)