

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: P226698

Luminaire Tested: **IST-AF-450-LED-E1-T4W-7050-ULG**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P226698
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-7050-ULG
Description: IMPACT ELITE LED TRAPEZOID LUMINAIRE WITH UPLIGHT
LIGHT SQUARE WITH ACCULED OPTICS-TYPE IV WIDE, WITH UPLIGHT GLOW
Light Source: (16) 5000K CCT, 70 CRI LEDs and (1) UPLIGHT LED
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4877.1 lumens
Efficiency: N/A
Efficacy: 116.1 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

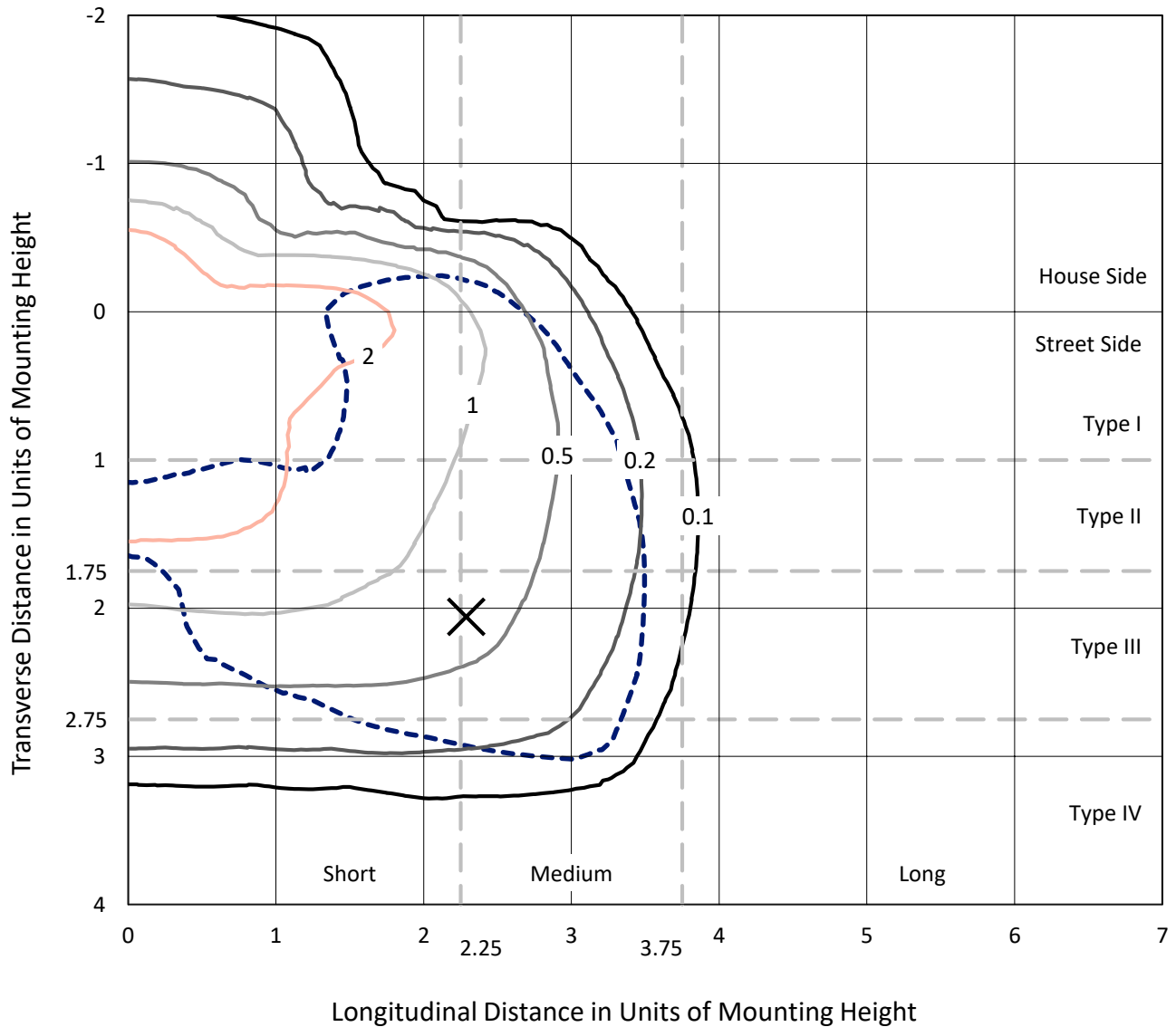
Input Watts (W): 42.01
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

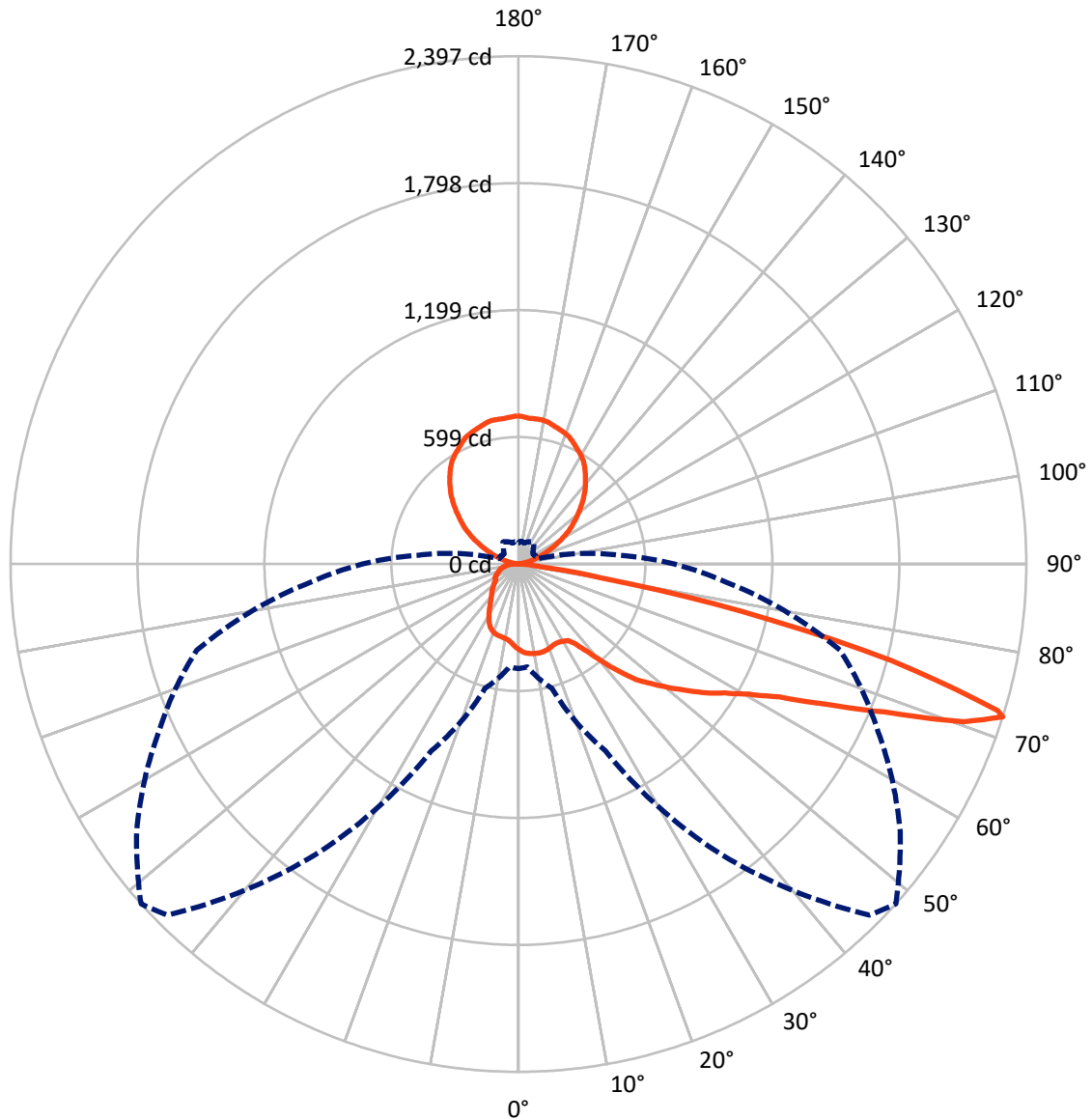
× Max cd
- - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 4.5 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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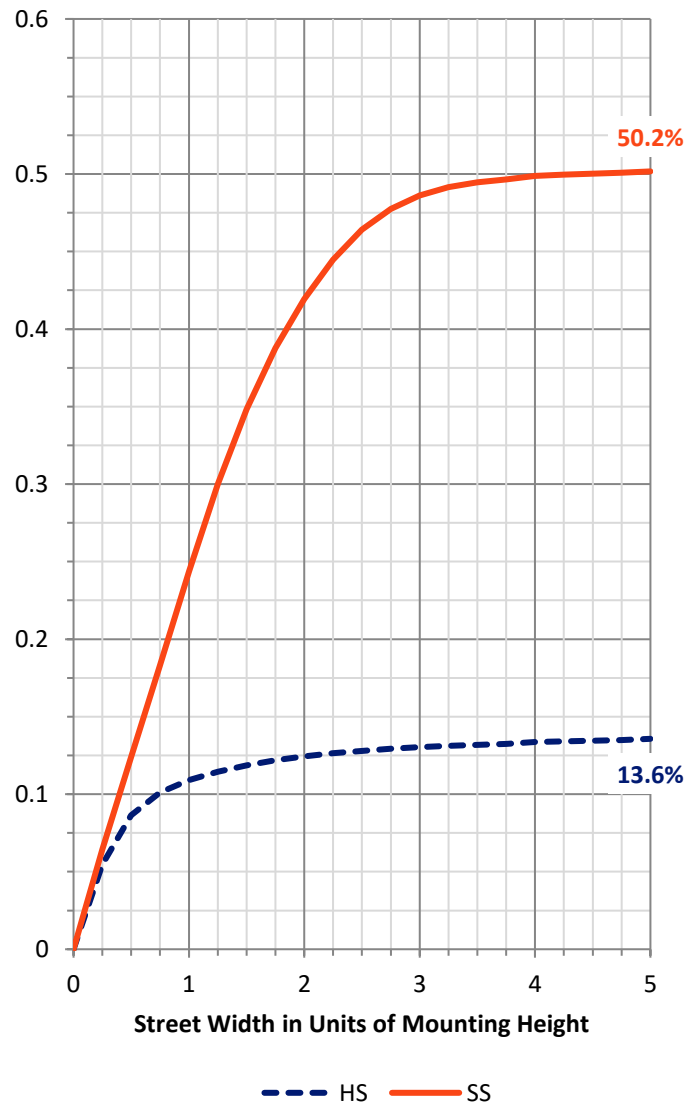
FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	682.7	869.0	1551.7
	% Fixture	14.0	17.8	31.8
Street Side	Lumens	2457.3	868.1	3325.4
	% Fixture	50.4	17.8	68.2
Total	Lumens	3140.0	1737.0	4877.1
	% Fixture	64.4	35.6	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	38.2	0.8
10°-20°	111.6	2.3
20°-30°	172.1	3.5
30°-40°	258.0	5.3
40°-50°	429.5	8.8
50°-60°	671.3	13.8
60°-70°	886.7	18.2
70°-80°	512.9	10.5
80°-90°	59.8	1.2
90°-100°	11.2	0.2
100°-110°	57.4	1.2
110°-120°	166.1	3.4
120°-130°	273.2	5.6
130°-140°	336.8	6.9
140°-150°	344.6	7.1
150°-160°	290.3	6.0
160°-170°	191.2	3.9
170°-180°	66.3	1.4
0°-90°	3140.0	64.4
0°-180°	4877.1	100.0



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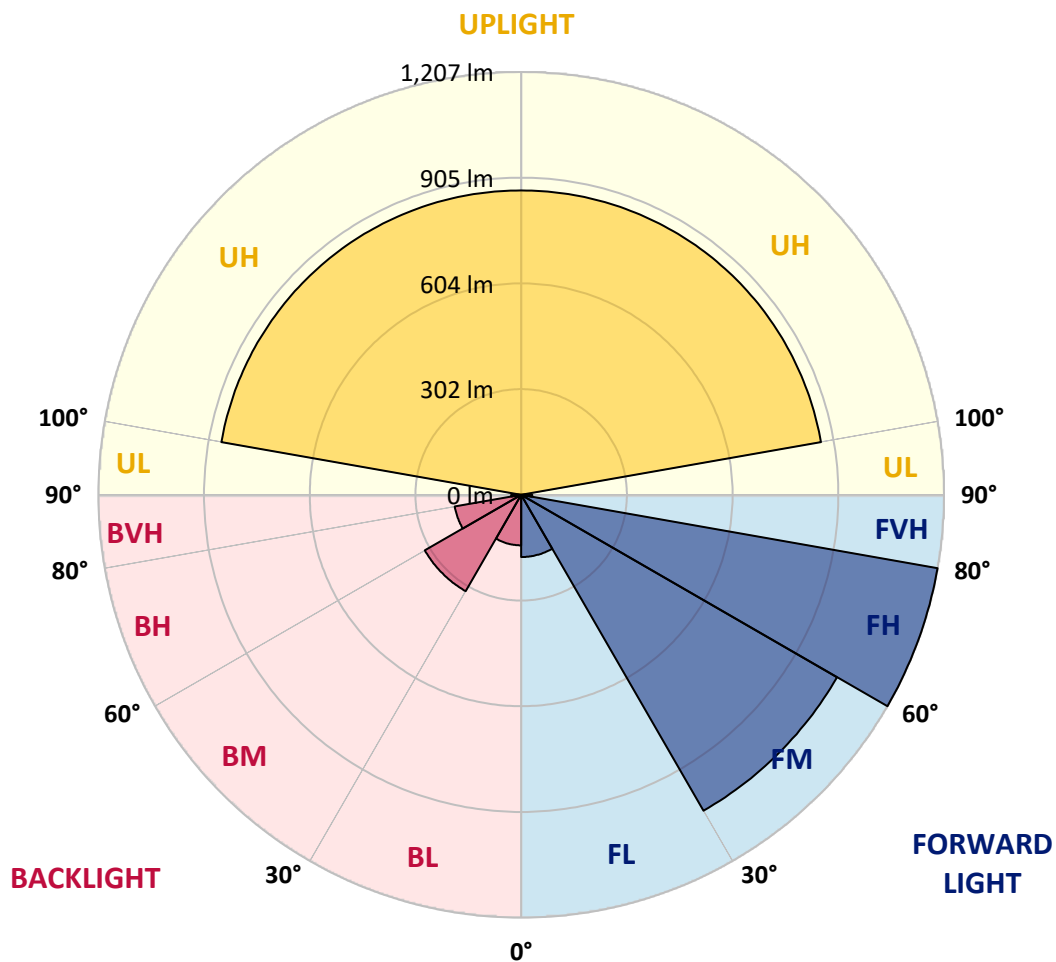
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	177.6	3.6			
FM	(30°-60°)	1041.3	21.4			
FH	(60°-80°)	1207.1	24.7			G1/1800
FVH	(80°-90°)	31.4	0.6			G1/100
BL	(0°-30°)	144.3	3.0	B1/500		
BM	(30°-60°)	317.4	6.5	B1/1000		
BH	(60°-80°)	192.5	3.9	B1/500		G1/500
BVH	(80°-90°)	28.5	0.6			G1/100
UL	(90°-100°)	11.2	0.2		U2/50	
UH	(100°-180°)	869.0	17.8		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°	404.1	404.1	404.1	404.1	404.1	404.1	404.1	404.1	404.1	404.1	404.1
2.5°	425.5	425.0	425.0	421.4	420.0	417.7	415.9	413.2	410.4	407.3	403.2
5°	446.0	447.3	445.5	440.1	433.2	425.9	423.2	416.8	408.2	400.4	393.1
7.5°	465.6	466.0	461.0	451.9	441.4	430.0	426.4	417.7	408.2	397.7	387.2
10°	479.7	480.1	472.9	460.1	446.0	433.2	429.1	420.5	408.6	397.2	384.0
12.5°	487.9	488.3	477.4	464.2	447.3	434.6	430.9	421.8	409.5	395.0	380.4
15°	486.5	487.9	478.8	464.2	446.4	435.0	430.5	422.7	407.3	392.7	377.2
17.5°	477.4	479.2	471.9	456.0	441.9	432.8	427.8	420.0	405.0	389.5	372.6
20°	459.6	461.9	458.7	443.2	433.7	426.4	423.2	415.9	401.8	385.8	368.5
22.5°	439.6	441.9	441.0	428.2	423.7	420.0	416.8	411.4	399.1	383.1	366.7
25°	425.0	426.8	425.5	414.5	415.9	415.9	414.1	410.0	398.6	384.0	366.7
27.5°	449.2	449.2	437.3	415.0	412.7	416.8	415.9	413.6	404.5	388.6	370.4
30°	537.5	530.7	509.3	453.3	424.6	422.7	422.3	420.9	412.7	398.6	381.7
32.5°	636.4	629.6	604.0	533.9	474.2	435.0	430.9	431.4	429.1	415.9	399.1
35°	724.3	723.4	703.4	627.3	551.2	478.3	461.9	451.0	450.1	444.6	431.4
37.5°	795.4	795.4	797.2	710.6	634.6	547.1	519.3	484.7	484.7	481.5	473.3
40°	876.5	880.1	884.2	786.3	723.9	629.1	597.7	545.3	529.3	534.3	536.2
42.5°	983.1	987.6	984.9	879.6	805.4	727.0	688.3	625.0	585.8	594.0	613.2
45°	1055.0	1056.9	1076.4	977.1	907.9	809.9	777.2	690.1	651.4	668.3	702.0
47.5°	1136.6	1141.1	1144.3	1087.8	1028.2	903.8	843.7	753.5	728.4	753.9	807.2
50°	1216.3	1210.4	1219.0	1216.7	1142.0	987.2	915.6	812.7	814.5	849.1	936.6
52.5°	1285.5	1265.5	1285.5	1310.6	1288.7	1072.8	989.4	882.4	908.8	951.2	1089.2
55°	1338.8	1290.5	1324.3	1395.3	1390.3	1148.4	1073.7	975.3	1019.5	1077.4	1274.6
57.5°	1230.0	1235.9	1328.8	1452.3	1450.0	1224.9	1147.5	1091.5	1145.7	1210.4	1494.2
60°	1128.4	1154.8	1298.3	1461.4	1491.4	1308.3	1246.8	1223.6	1273.7	1352.5	1704.6
62.5°	1074.6	1099.7	1248.6	1444.5	1557.5	1431.8	1380.3	1362.5	1430.8	1519.2	1892.3
65°	1091.5	1107.0	1245.4	1470.0	1633.6	1618.5	1596.2	1566.6	1600.8	1683.7	1977.0
67.5°	1044.1	1069.6	1219.0	1515.1	1772.5	1846.3	1865.0	1833.1	1804.4	1793.0	1853.6
70°	777.2	801.7	958.5	1328.8	1886.4	2241.7	2230.3	2123.7	1930.6	1769.3	1448.2
72°	493.8	487.0	606.8	973.5	1676.8	2343.3	2397.0	2199.8	1873.2	1571.2	983.5
72.5°	359.0	391.3	503.4	865.5	1593.0	2287.7	2366.1	2175.2	1798.0	1484.1	865.1
75°	87.5	92.5	120.7	310.2	932.9	1721.5	1819.9	1680.5	1312.4	881.0	383.6
77.5°	59.2	61.5	79.7	109.3	274.2	981.7	1080.1	927.9	587.2	299.7	170.8
80°	44.2	45.6	57.9	77.4	113.9	334.8	395.0	313.9	146.2	166.3	121.6
82.5°	31.0	31.9	43.7	56.9	75.6	78.4	104.3	115.3	94.8	108.9	71.1
85°	21.4	21.4	31.9	39.2	47.8	38.7	41.5	57.9	64.2	64.7	43.3
87.5°	11.4	12.8	18.7	25.1	25.1	17.8	19.6	29.6	36.0	38.7	26.0
90°	9.1	9.1	14.7	17.6	13.9	11.6	11.1	12.9	17.7	21.3	15.2
92.5°	4.0	4.0	5.0	6.0	6.0	6.0	6.3	7.0	7.0	6.0	6.0
95°	5.0	5.0	6.0	7.0	7.0	7.0	7.0	7.0	8.0	7.0	7.0
97.5°	7.0	7.0	8.0	8.0	9.0	9.0	9.9	12.0	10.0	9.0	8.0
100°	8.0	8.0	9.0	10.0	12.0	21.0	23.4	29.0	26.0	23.0	19.0
102.5°	11.0	11.0	13.0	18.0	27.0	40.0	43.0	50.0	47.0	42.0	39.0
105°	21.0	22.0	27.0	36.0	48.0	63.0	65.7	72.0	70.0	65.0	61.0
107.5°	41.0	42.0	49.0	58.0	73.0	88.0	90.1	95.0	94.0	90.0	87.0



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CANDELA DISTRIBUTION (continued):

	0°	5°	15°	25°	35°	45°	48°	55°	65°	75°	85°
110°	66.0	68.0	74.0	87.0	102.0	114.0	115.8	120.0	121.0	119.0	116.0
112.5°	99.0	99.0	106.0	121.0	134.0	143.0	144.5	148.0	150.0	149.0	147.0
115°	140.0	139.0	147.0	159.0	168.0	174.0	175.5	179.0	182.0	179.0	177.0
117.5°	184.0	184.0	189.0	197.0	202.0	205.0	206.8	211.0	215.0	210.0	208.0
120°	225.0	223.0	226.0	233.0	237.0	243.0	243.9	246.0	250.0	245.0	243.0
122.5°	263.0	260.0	261.0	267.0	271.0	277.0	277.6	279.0	283.0	278.0	276.0
125°	298.0	294.0	296.0	299.0	305.0	310.0	310.9	313.0	315.0	310.0	310.0
127.5°	330.0	329.0	329.0	333.0	339.0	340.0	341.5	345.0	346.0	346.0	345.0
130°	363.0	361.0	362.0	366.0	370.0	372.0	373.5	377.0	381.0	381.0	379.0
132.5°	396.0	394.0	393.0	401.0	404.0	405.0	406.8	411.0	416.0	414.0	414.0
135°	429.0	426.0	426.0	432.0	435.0	437.0	438.8	443.0	448.0	447.0	450.0
137.5°	460.0	457.0	459.0	460.0	464.0	468.0	469.5	473.0	475.0	476.0	481.0
140°	488.0	485.0	487.0	489.0	491.0	497.0	497.9	500.0	502.0	504.0	509.0
142.5°	518.0	515.0	517.0	518.0	521.0	525.0	525.6	527.0	533.0	533.0	534.0
145°	550.0	546.0	544.0	547.0	550.0	551.0	552.5	556.0	562.0	561.0	558.0
147.5°	575.0	572.0	571.0	574.0	574.0	575.0	576.5	580.0	585.0	586.0	583.0
150°	595.0	592.0	593.0	593.0	593.0	593.0	594.2	597.0	600.0	603.0	606.0
152.5°	611.0	608.0	608.0	609.0	610.0	610.0	610.3	611.0	614.0	618.0	623.0
155°	629.0	625.0	625.0	627.0	630.0	628.0	627.4	626.0	631.0	636.0	638.0
157.5°	646.0	643.0	643.0	644.0	646.0	645.0	644.7	644.0	648.0	650.0	650.0
160°	663.0	660.0	659.0	656.0	655.0	655.0	655.9	658.0	664.0	661.0	660.0
162.5°	673.0	669.0	669.0	665.0	661.0	663.0	664.2	667.0	671.0	670.0	668.0
165°	681.0	678.0	676.0	676.0	673.0	673.0	672.7	672.0	677.0	680.0	678.0
167.5°	690.0	687.0	684.0	686.0	688.0	685.0	682.9	678.0	684.0	688.0	688.0
170°	698.0	695.0	692.0	692.0	693.0	691.0	689.5	686.0	689.0	694.0	696.0
172.5°	699.0	697.0	695.0	693.0	690.0	690.0	689.7	689.0	692.0	694.0	696.0
175°	700.0	698.0	697.0	695.0	691.0	690.0	690.0	690.0	695.0	696.0	694.0
177.5°	707.0	705.0	700.0	699.0	697.0	695.0	694.7	694.0	699.0	701.0	698.0
180°	700.0	700.0	700.0	700.0	700.0	700.0	700.0	700.0	700.0	700.0	700.0



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CANDELA DISTRIBUTION (continued):

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	404.1	404.1	404.1	404.1	404.1	404.1	404.1	404.1	404.1	404.1	404.1
2.5°	402.2	399.5	395.9	394.0	393.1	391.3	389.5	388.6	388.6	386.8	387.2
5°	389.5	385.4	380.4	376.7	376.3	376.3	377.2	377.2	377.6	376.3	378.1
7.5°	383.1	378.6	371.3	367.2	364.0	363.5	365.3	369.0	370.8	369.4	371.3
10°	378.6	373.5	365.3	360.3	358.1	357.1	358.5	362.2	368.1	368.1	369.9
12.5°	374.0	367.6	359.4	355.8	354.0	354.4	356.2	359.0	365.3	367.6	368.5
15°	369.4	362.2	355.3	350.3	350.3	351.7	354.0	357.1	363.1	367.2	368.1
17.5°	364.9	357.6	351.7	347.6	347.6	349.4	351.7	355.8	359.9	365.8	365.8
20°	360.8	354.9	347.1	343.5	343.0	344.4	347.1	351.2	354.4	360.3	360.8
22.5°	358.5	351.2	343.9	338.5	336.2	335.3	338.0	342.1	345.3	351.2	352.1
25°	357.6	349.4	340.3	330.3	324.3	322.5	323.9	328.9	331.6	336.2	337.6
27.5°	360.8	353.0	338.9	320.7	308.4	303.4	304.8	307.9	308.9	313.9	316.1
30°	371.7	362.6	341.7	310.7	288.4	279.2	279.2	279.7	281.1	285.2	285.6
32.5°	389.5	380.8	349.9	300.2	267.9	255.1	251.9	249.6	249.6	249.2	249.6
35°	422.3	415.0	364.0	288.4	245.5	231.4	223.7	219.6	215.5	213.6	213.2
37.5°	469.7	463.3	384.0	274.7	225.9	211.8	202.3	194.1	189.5	189.0	191.3
40°	540.3	533.9	406.3	259.2	207.3	196.8	186.8	178.1	173.1	173.6	175.8
42.5°	627.3	607.7	430.5	238.2	192.2	186.8	175.8	168.5	163.5	160.8	160.3
45°	728.9	696.1	453.3	218.7	175.8	178.1	167.6	159.4	153.1	145.8	144.9
47.5°	855.5	784.4	473.3	199.1	158.1	169.0	159.0	151.2	141.7	133.0	131.7
50°	987.6	886.0	490.6	178.1	142.1	159.0	150.3	139.9	126.6	118.9	118.9
52.5°	1140.2	1008.1	512.9	154.9	129.8	148.1	139.4	125.7	114.8	113.9	113.9
55°	1310.1	1136.1	528.4	136.7	120.3	136.2	132.1	128.0	124.4	125.3	125.7
57.5°	1487.8	1269.6	514.8	123.9	112.5	133.5	145.3	139.9	128.5	128.0	127.6
60°	1640.9	1373.5	439.1	115.7	106.6	138.0	155.8	139.9	128.5	134.4	134.8
62.5°	1741.1	1422.7	292.5	105.2	97.9	130.3	152.2	135.8	128.9	145.8	147.1
65°	1727.4	1367.5	168.1	97.9	92.5	119.8	147.1	130.7	120.3	129.8	127.1
67.5°	1523.8	1146.1	121.6	94.8	88.4	112.5	138.0	123.5	112.1	123.9	118.9
70°	1095.1	780.3	104.8	92.0	85.6	103.9	131.7	118.9	107.5	115.7	108.0
72°	734.8	474.7	96.1	89.7	82.9	98.4	127.1	115.3	103.4	108.0	99.3
72.5°	625.5	374.5	93.8	88.8	82.0	97.0	125.7	114.3	102.5	107.1	98.9
75°	233.7	146.7	83.4	82.0	75.6	90.2	120.3	110.2	97.9	96.6	92.9
77.5°	120.3	92.9	71.1	72.4	67.9	82.5	114.3	103.9	90.2	85.2	83.4
80°	87.5	67.4	57.4	61.5	57.9	74.3	106.1	94.3	82.0	76.5	74.3
82.5°	55.1	41.9	43.7	48.7	49.2	65.6	96.6	84.7	72.9	68.3	64.7
85°	26.4	25.1	31.0	36.0	39.6	55.6	88.4	75.2	63.8	54.7	55.1
87.5°	14.1	19.1	18.7	24.1	30.5	45.6	78.4	61.5	51.0	41.0	41.5
90°	10.2	12.0	14.5	18.6	19.3	26.6	58.6	43.1	41.2	19.6	17.8
92.5°	6.0	6.0	6.0	7.0	7.0	6.0	6.0	6.0	5.0	4.0	4.0
95°	7.0	7.0	7.0	8.0	7.0	7.0	7.0	7.0	6.0	5.0	5.0
97.5°	8.0	8.0	9.0	10.0	12.0	9.0	9.0	8.0	8.0	7.0	7.0
100°	19.0	19.0	23.0	26.0	29.0	21.0	12.0	10.0	9.0	8.0	8.0
102.5°	38.0	39.0	42.0	47.0	50.0	40.0	27.0	18.0	13.0	11.0	11.0
105°	61.0	61.0	65.0	70.0	72.0	63.0	48.0	36.0	27.0	22.0	21.0
107.5°	86.0	87.0	90.0	94.0	95.0	88.0	73.0	58.0	49.0	42.0	41.0



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CANDELA DISTRIBUTION (continued):

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
110°	117.0	116.0	119.0	121.0	120.0	114.0	102.0	87.0	74.0	68.0	66.0
112.5°	147.0	147.0	149.0	150.0	148.0	143.0	134.0	121.0	106.0	99.0	99.0
115°	178.0	177.0	179.0	182.0	179.0	174.0	168.0	159.0	147.0	139.0	140.0
117.5°	209.0	208.0	210.0	215.0	211.0	205.0	202.0	197.0	189.0	184.0	184.0
120°	243.0	243.0	245.0	250.0	246.0	243.0	237.0	233.0	226.0	223.0	225.0
122.5°	277.0	276.0	278.0	283.0	279.0	277.0	271.0	267.0	261.0	260.0	263.0
125°	310.0	310.0	310.0	315.0	313.0	310.0	305.0	299.0	296.0	294.0	298.0
127.5°	347.0	345.0	346.0	346.0	345.0	340.0	339.0	333.0	329.0	329.0	330.0
130°	380.0	379.0	381.0	381.0	377.0	372.0	370.0	366.0	362.0	361.0	363.0
132.5°	415.0	414.0	414.0	416.0	411.0	405.0	404.0	401.0	393.0	394.0	396.0
135°	451.0	450.0	447.0	448.0	443.0	437.0	435.0	432.0	426.0	426.0	429.0
137.5°	482.0	481.0	476.0	475.0	473.0	468.0	464.0	460.0	459.0	457.0	460.0
140°	511.0	509.0	504.0	502.0	500.0	497.0	491.0	489.0	487.0	485.0	488.0
142.5°	536.0	534.0	533.0	533.0	527.0	525.0	521.0	518.0	517.0	515.0	518.0
145°	560.0	558.0	561.0	562.0	556.0	551.0	550.0	547.0	544.0	546.0	550.0
147.5°	585.0	583.0	586.0	585.0	580.0	575.0	574.0	574.0	571.0	572.0	575.0
150°	610.0	606.0	603.0	600.0	597.0	593.0	593.0	593.0	593.0	592.0	595.0
152.5°	628.0	623.0	618.0	614.0	611.0	610.0	610.0	609.0	608.0	608.0	611.0
155°	641.0	638.0	636.0	631.0	626.0	628.0	630.0	627.0	625.0	625.0	629.0
157.5°	655.0	650.0	650.0	648.0	644.0	645.0	646.0	644.0	643.0	643.0	646.0
160°	666.0	660.0	661.0	664.0	658.0	655.0	655.0	656.0	659.0	660.0	663.0
162.5°	674.0	668.0	670.0	671.0	667.0	663.0	661.0	665.0	669.0	669.0	673.0
165°	682.0	678.0	680.0	677.0	672.0	673.0	673.0	676.0	676.0	678.0	681.0
167.5°	694.0	688.0	688.0	684.0	678.0	685.0	688.0	686.0	684.0	687.0	690.0
170°	701.0	696.0	694.0	689.0	686.0	691.0	693.0	692.0	692.0	695.0	698.0
172.5°	701.0	696.0	694.0	692.0	689.0	690.0	690.0	693.0	695.0	697.0	699.0
175°	699.0	694.0	696.0	695.0	690.0	690.0	691.0	695.0	697.0	698.0	700.0
177.5°	702.0	698.0	701.0	699.0	694.0	695.0	697.0	699.0	700.0	705.0	707.0
180°	700.0	700.0	700.0	700.0	700.0	700.0	700.0	700.0	700.0	700.0	700.0

(END OF REPORT)