

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: NEO-RAY

Report Number: P332522-840

Luminaire Tested: **S124DIP-S350D1035U840-4F0-1E-UDD-D4**

Issue Date: 3/3/2020

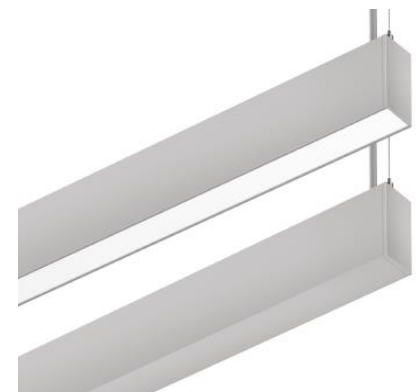
**Test Information**

Test Method: LM-79-08  
Report Number: P332522-840  
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-18,  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: S124DIP-S350D1035U840-4F0-1E-UDD-D4  
Description: DEFINE 4 DIRECT-INDIRECT PENDANT LED LUMINAIRE  
DOWNLIGHT 350 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER  
UPLIGHT 1035 LUMENS PER FOOT, BATWING OPTIC  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 5190.0 lumens  
Efficiency: N/A  
Efficacy: 139.1 lumens/watt  
Spacing Criteria (0/90/45): 1.23 / 1.28 / 1.39  
Luminous Opening: Rectangular w/ Sides (W: 0.33' x L: 4' x H: 0.08')  
CIE Type: Semi-Indirect

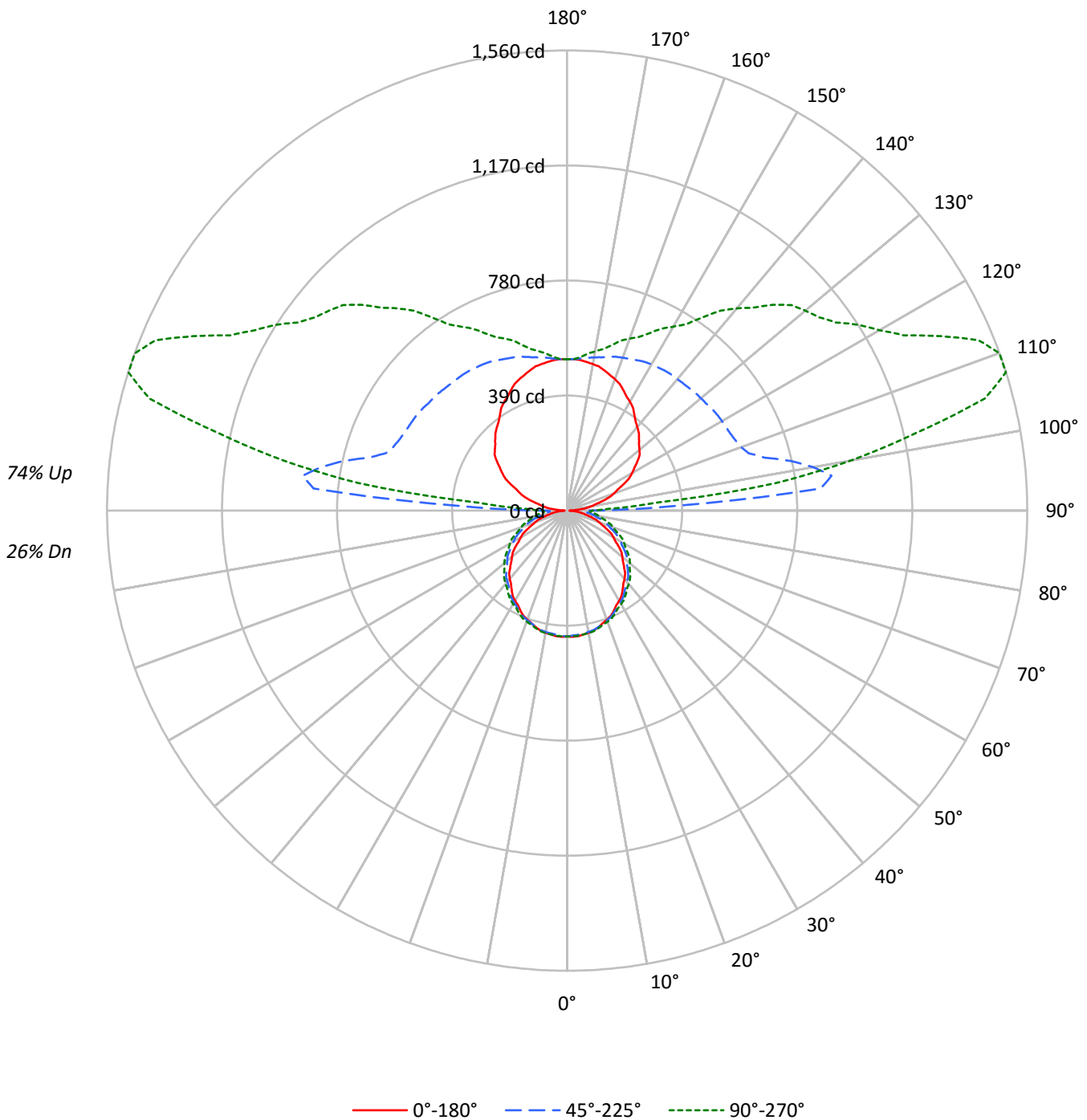
Input Watts (W): 37.3  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Luminous Intensity Polar Plot





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**COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:**

RF	20				20				20				20				20	
RC	80				70				50				30				10	0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	0
RCR																		
0	101	101	101	101	90	90	90	90	70	70	70	51	51	51	34	34	34	26
1	92	87	84	80	82	78	75	72	60	58	56	44	43	41	29	28	28	21
2	83	76	70	65	74	68	63	58	53	49	46	38	36	34	25	24	23	17
3	76	67	59	54	67	59	53	48	46	42	38	34	31	29	22	21	19	14
4	69	59	51	45	61	52	46	41	41	36	32	30	27	24	20	18	16	12
5	63	52	44	38	56	47	40	35	36	31	28	27	23	21	18	16	14	10
6	58	46	39	33	52	42	35	30	32	28	24	24	21	18	16	14	12	9
7	54	42	34	29	48	37	31	26	29	24	21	22	18	16	15	12	11	8
8	50	38	30	25	44	34	27	23	27	22	18	20	16	14	13	11	10	7
9	46	34	27	22	41	31	24	20	24	20	16	18	15	12	12	10	9	6
10	43	31	24	20	38	28	22	18	22	18	14	17	13	11	11	9	8	6

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	3446	3446	3446
5°	3457	3367	3378
10°	3435	3313	3310
15°	3404	3249	3231
20°	3358	3179	3155
25°	3306	3100	3070
30°	3249	3021	2983
35°	3185	2941	2907
40°	3134	2865	2828
45°	3058	2793	2759
50°	2994	2713	2687
55°	2928	2636	2603
60°	2824	2538	2526
65°	2708	2435	2431
70°	2572	2315	2320
75°	2379	2183	2220
80°	2166	2057	2123
85°	1893	1946	2065



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	40.4	0.8
10°-20°	115.8	2.2
20°-30°	175.1	3.4
30°-40°	211.9	4.1
40°-50°	224.0	4.3
50°-60°	210.8	4.1
60°-70°	174.9	3.4
70°-80°	122.9	2.4
80°-90°	72.3	1.4
90°-100°	411.9	7.9
100°-110°	801.9	15.5
110°-120°	711.4	13.7
120°-130°	592.8	11.4
130°-140°	489.6	9.4
140°-150°	371.2	7.2
150°-160°	260.2	5.0
160°-170°	153.1	2.9
170°-180°	49.8	1.0
0°-30°	331.4	6.4
0°-40°	543.2	10.5
0°-60°	978.1	18.8
0°-90°	1348.1	26.0
90°-120°	1925.2	37.1
90°-150°	3378.8	65.1
90°-180°	3842.0	74.0
0°-180°	5190.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	427	427	427	427	427	
5°	427	426	422	426	426	41
15°	410	410	409	413	412	115
25°	375	378	379	384	385	173
35°	328	334	338	345	347	205
45°	273	282	292	299	302	211
55°	214	224	238	248	251	191
65°	148	164	180	191	196	147
75°	82	100	120	133	138	87
85°	25	46	67	81	86	27
90°	9	35	65	81	86	7
95°	40	127	863	461	305	42
105°	122	185	693	1467	1466	131
115°	211	268	612	1166	1398	209
125°	291	346	600	986	1112	259
135°	345	410	586	868	987	267
145°	397	454	579	725	798	249
155°	451	486	563	637	664	208
165°	491	506	539	571	580	139
175°	512	513	517	524	522	49
180°	513	513	513	513	513	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	426.9	426.9	426.9	426.9	426.9	426.9	426.9	426.9	426.9	426.9	426.9
2.5°	428.4	428.1	427.9	427.6	427.4	426.9	426.3	425.6	424.9	424.1	424.7
5°	427.4	427.0	426.7	426.4	426.1	425.6	424.7	424.0	423.3	422.5	423.4
7.5°	423.7	423.5	423.3	423.1	422.9	422.5	421.9	421.3	420.7	420.1	421.0
10°	420.6	420.5	420.4	420.3	420.2	419.9	419.4	418.8	418.3	417.8	418.7
12.5°	416.5	416.4	416.4	416.4	416.4	416.2	415.8	415.5	415.1	414.8	415.6
15°	409.6	409.8	409.9	410.0	410.1	410.0	409.6	409.3	409.0	408.7	409.6
17.5°	400.4	400.7	401.0	401.3	401.6	401.8	401.7	401.6	401.6	401.5	402.5
20°	393.8	394.2	394.6	394.9	395.2	395.4	395.5	395.6	395.7	395.8	396.9
22.5°	386.6	387.0	387.4	387.8	388.2	388.5	388.7	388.9	389.1	389.3	390.3
25°	374.8	375.4	376.1	376.7	377.3	377.8	378.1	378.4	378.7	379.1	380.2
27.5°	361.5	362.5	363.5	364.4	365.3	366.0	366.5	367.0	367.5	368.0	369.0
30°	352.7	353.7	354.5	355.3	356.2	357.0	357.7	358.4	359.2	359.9	361.1
32.5°	343.3	344.3	345.3	346.3	347.3	348.2	349.0	349.8	350.7	351.5	352.8
35°	327.9	329.2	330.4	331.7	333.1	334.2	335.3	336.3	337.4	338.4	339.9
37.5°	312.6	314.0	315.5	316.9	318.4	319.7	321.1	322.4	323.8	325.1	326.6
40°	302.6	304.0	305.4	306.7	308.1	309.5	311.0	312.6	314.0	315.5	317.1
42.5°	291.1	292.7	294.2	295.8	297.3	298.9	300.7	302.5	304.2	305.9	307.7
45°	273.4	275.4	277.4	279.4	281.4	283.5	285.5	287.5	289.5	291.5	293.4
47.5°	256.5	258.6	260.6	262.8	264.8	267.0	269.3	271.8	274.1	276.4	278.2
50°	244.3	246.6	248.9	251.3	253.6	255.9	258.3	260.6	263.0	265.3	267.4
52.5°	232.1	234.4	236.7	239.0	241.4	243.9	246.5	249.2	251.9	254.6	256.7
55°	214.2	216.4	218.6	220.9	223.1	225.8	228.9	232.2	235.3	238.5	240.7
57.5°	194.2	196.9	199.7	202.5	205.2	208.1	211.4	214.5	217.6	220.9	223.4
60°	181.2	183.9	186.7	189.5	192.2	195.3	198.8	202.4	205.8	209.3	211.8
62.5°	168.5	171.6	174.6	177.6	180.6	183.9	187.3	190.9	194.4	197.9	200.4
65°	148.1	151.6	155.0	158.3	161.8	165.3	168.8	172.5	176.1	179.8	182.4
67.5°	128.6	132.2	135.8	139.5	143.0	146.7	150.7	154.5	158.3	162.2	164.9
70°	115.2	118.8	122.4	126.0	129.7	133.5	137.5	141.6	145.6	149.7	152.5
72.5°	102.2	105.9	109.6	113.3	116.9	121.0	125.2	129.6	133.8	138.1	140.9
75°	82.2	86.1	90.1	94.0	98.0	102.1	106.6	111.1	115.5	120.0	123.0
77.5°	63.6	67.8	71.9	76.0	80.2	84.6	89.3	94.0	98.7	103.3	106.3
80°	52.1	56.4	60.6	64.8	69.1	73.5	78.3	82.9	87.6	92.3	95.4
82.5°	40.6	45.0	49.5	53.9	58.3	62.8	67.6	72.2	76.9	81.6	84.8
85°	25.3	29.8	34.2	38.7	43.2	47.8	52.6	57.4	62.1	67.0	70.1
87.5°	14.3	19.1	24.0	28.6	33.1	37.6	43.4	48.1	53.1	58.2	61.1
90°	8.7	14.9	22.2	27.5	32.7	37.2	47.8	52.3	58.9	65.4	67.6
92.5°	18.8	27.9	41.1	57.3	75.8	101.0	156.7	239.5	320.3	364.9	314.4
95°	39.5	46.0	59.6	76.2	103.9	150.2	242.3	411.9	657.2	863.2	889.3
97.5°	65.3	68.4	80.0	95.1	119.0	158.0	229.9	370.7	614.6	904.0	1102.8
100°	81.9	84.6	94.4	109.4	131.3	166.9	230.6	348.6	558.5	846.9	1107.8
102.5°	98.1	102.0	110.7	124.4	145.2	179.0	237.0	341.2	520.3	776.4	1045.3
105°	122.3	127.4	134.6	148.8	169.1	201.4	253.7	341.2	486.4	692.9	932.5
107.5°	150.0	153.7	160.6	175.2	194.3	225.8	273.9	353.9	478.2	645.0	840.9
110°	168.1	171.7	178.1	191.8	211.4	241.3	289.3	363.6	478.2	628.1	794.9



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	185.5	188.8	196.0	208.6	228.1	257.7	304.1	374.2	481.3	618.9	767.9
115°	210.6	214.5	222.6	233.6	253.7	283.1	326.8	390.7	487.9	612.3	741.6
117.5°	237.1	240.4	247.3	258.9	277.5	307.6	349.0	407.9	495.1	608.3	728.1
120°	254.4	256.8	264.2	275.6	293.0	323.0	364.4	419.8	500.5	606.4	720.4
122.5°	270.5	272.7	279.7	290.1	308.9	337.8	379.1	431.1	506.0	603.7	712.2
125°	291.2	295.2	301.1	312.1	331.1	360.6	399.6	448.7	514.8	600.2	698.9
127.5°	309.9	313.1	320.2	332.8	352.6	382.0	419.2	463.7	521.2	595.0	681.7
130°	320.0	324.0	331.9	346.9	366.0	396.0	432.0	473.0	526.1	592.3	670.9
132.5°	330.5	333.7	344.0	358.2	378.9	407.1	442.7	482.6	530.6	590.0	661.2
135°	344.8	348.8	358.8	376.0	397.2	423.7	457.8	494.8	536.8	586.0	646.2
137.5°	359.4	363.1	374.2	390.4	412.2	437.4	468.8	503.0	540.1	583.6	633.4
140°	369.9	372.8	383.8	400.9	421.9	446.2	476.5	508.9	543.2	581.7	626.4
142.5°	380.8	383.8	394.2	410.4	430.8	454.1	483.5	513.3	545.8	580.9	620.7
145°	396.7	399.6	409.6	423.5	442.6	464.7	491.0	518.2	547.4	578.7	611.6
147.5°	414.7	415.6	424.3	438.7	454.5	474.4	499.1	522.8	548.5	575.0	603.6
150°	426.0	426.9	434.7	446.8	461.8	480.9	503.1	525.2	548.5	572.6	597.8
152.5°	436.1	436.2	444.2	455.6	469.0	486.6	506.3	526.8	546.8	568.6	591.4
155°	450.6	451.6	457.7	467.8	478.9	494.0	511.1	528.3	544.4	562.6	581.7
157.5°	464.9	464.9	470.6	478.5	488.2	500.1	514.5	528.3	541.8	556.3	571.8
160°	473.8	473.8	477.9	484.9	493.0	504.1	516.1	528.3	539.4	551.5	564.6
162.5°	481.9	481.1	484.3	490.6	497.9	506.5	517.8	528.3	536.9	546.6	558.2
165°	491.0	491.0	493.0	498.1	503.1	509.1	518.2	526.2	532.3	539.4	547.4
167.5°	500.1	499.1	500.1	503.9	506.8	511.3	518.0	523.8	527.5	532.1	537.8
170°	504.1	503.1	504.1	507.2	509.1	512.1	517.2	522.2	524.2	527.3	531.3
172.5°	508.1	507.2	507.3	509.5	510.7	512.9	516.3	520.6	521.0	522.4	525.6
175°	512.1	511.1	511.1	512.1	513.1	513.1	515.1	518.2	517.2	517.2	519.2
177.5°	513.9	513.1	512.3	513.1	513.1	513.1	513.9	515.5	513.9	513.9	514.7
180°	513.1	513.1	513.1	513.1	513.1	513.1	513.1	513.1	513.1	513.1	513.1



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	426.9	426.9	426.9	426.9	426.9	426.9	426.9	426.9
2.5°	425.4	426.0	426.6	426.8	426.8	426.7	426.6	426.5
5°	424.2	425.1	426.0	426.4	426.3	426.1	426.0	425.9
7.5°	422.0	422.9	423.9	424.3	424.2	424.1	424.0	423.9
10°	419.7	420.6	421.6	422.0	421.9	421.8	421.7	421.6
12.5°	416.5	417.4	418.2	418.6	418.6	418.6	418.6	418.5
15°	410.6	411.5	412.5	412.9	412.8	412.7	412.6	412.5
17.5°	403.4	404.5	405.5	405.9	405.8	405.7	405.7	405.6
20°	397.9	399.0	400.0	400.6	400.6	400.6	400.6	400.6
22.5°	391.4	392.4	393.5	394.2	394.4	394.5	394.7	394.9
25°	381.4	382.5	383.7	384.4	384.5	384.6	384.7	384.8
27.5°	370.1	371.2	372.3	372.9	373.0	373.1	373.2	373.4
30°	362.2	363.5	364.6	365.3	365.5	365.8	366.0	366.2
32.5°	354.2	355.6	356.9	357.7	357.9	358.1	358.3	358.5
35°	341.4	342.8	344.4	345.3	345.6	345.9	346.3	346.6
37.5°	328.1	329.5	331.0	332.0	332.3	332.6	333.1	333.4
40°	318.7	320.2	321.8	322.9	323.3	323.8	324.2	324.6
42.5°	309.4	311.2	313.0	314.1	314.4	314.7	315.1	315.4
45°	295.2	297.0	298.8	299.9	300.5	301.0	301.5	302.1
47.5°	280.1	282.0	283.9	285.1	285.8	286.4	287.0	287.7
50°	269.5	271.7	273.8	275.2	275.8	276.4	277.1	277.7
52.5°	258.8	260.9	263.1	264.5	265.1	265.7	266.4	267.0
55°	242.8	244.9	247.0	248.4	249.0	249.6	250.3	251.0
57.5°	225.9	228.4	231.0	232.5	233.1	233.7	234.3	234.9
60°	214.3	216.7	219.1	220.8	221.7	222.5	223.4	224.2
62.5°	202.8	205.2	207.6	209.3	210.2	211.0	211.9	212.7
65°	185.0	187.7	190.4	192.1	193.0	193.8	194.7	195.5
67.5°	167.6	170.4	173.0	174.8	175.6	176.4	177.2	178.1
70°	155.3	158.2	161.1	162.9	163.6	164.4	165.1	165.8
72.5°	143.7	146.5	149.3	151.1	151.9	152.7	153.6	154.4
75°	125.9	128.9	131.9	133.8	134.8	135.7	136.7	137.6
77.5°	109.4	112.4	115.4	117.4	118.5	119.5	120.5	121.5
80°	98.7	101.8	105.0	107.0	107.9	108.8	109.6	110.4
82.5°	88.1	91.4	94.6	96.7	97.7	98.6	99.6	100.5
85°	73.3	76.4	79.7	81.8	82.8	83.9	84.9	86.0
87.5°	64.3	67.7	70.9	72.9	74.1	75.2	75.9	76.9
90°	71.6	75.7	79.8	81.8	83.6	85.5	85.3	86.1
92.5°	249.0	203.0	175.6	157.3	146.3	141.7	139.2	140.0
95°	794.4	641.0	508.8	412.8	364.5	334.2	316.9	304.8
97.5°	1147.9	1092.7	996.8	893.4	821.9	762.1	732.9	712.8
100°	1257.9	1280.9	1234.4	1161.6	1074.6	1013.9	984.4	977.0
102.5°	1250.2	1353.0	1370.1	1340.8	1287.8	1244.1	1213.0	1207.4
105°	1166.0	1343.0	1445.5	1488.6	1491.5	1484.3	1471.0	1465.8
107.5°	1048.0	1236.3	1379.5	1471.1	1521.7	1545.4	1556.3	1559.6
110°	976.7	1153.7	1302.2	1414.8	1487.2	1530.5	1549.4	1559.3





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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	923.9	1080.5	1220.9	1333.4	1415.5	1467.6	1493.9	1509.4
115°	870.0	996.3	1116.6	1214.9	1295.4	1356.6	1389.6	1398.4
117.5°	841.8	946.6	1041.7	1125.2	1194.1	1245.7	1279.2	1286.3
120°	828.5	924.3	1007.1	1080.2	1138.5	1183.7	1210.7	1222.7
122.5°	816.9	909.5	985.0	1049.1	1098.5	1137.2	1160.1	1172.0
125°	797.7	886.5	958.1	1014.8	1055.8	1085.6	1105.4	1112.2
127.5°	774.5	859.3	930.6	984.5	1025.7	1052.5	1069.3	1076.1
130°	756.5	838.0	908.5	963.2	1005.1	1031.0	1047.7	1054.4
132.5°	737.8	814.5	883.2	937.9	979.1	1008.1	1024.1	1030.8
135°	711.3	778.6	841.8	893.4	934.3	963.2	980.0	986.6
137.5°	687.7	744.8	798.1	844.8	882.9	911.3	925.1	932.9
140°	674.2	722.9	769.6	812.9	848.8	871.5	886.2	894.7
142.5°	661.8	704.7	744.8	782.3	814.1	835.1	848.0	854.1
145°	644.5	679.4	710.2	739.0	764.7	782.2	792.7	798.2
147.5°	630.3	657.6	681.9	704.3	723.2	738.2	746.2	748.3
150°	622.1	645.2	665.4	683.6	699.6	712.8	718.8	719.8
152.5°	613.2	633.1	651.7	666.6	680.3	690.9	694.6	695.6
155°	599.9	616.0	631.1	643.2	653.3	661.4	664.4	664.4
157.5°	585.5	599.1	611.8	621.5	629.0	635.1	636.9	636.9
160°	576.6	587.7	598.8	606.9	613.0	619.0	620.1	620.1
162.5°	567.7	577.2	585.9	593.2	597.6	603.7	604.7	603.9
165°	555.5	561.6	568.6	573.6	577.6	581.7	580.7	579.7
167.5°	543.6	548.3	553.9	556.9	559.0	561.6	561.4	560.6
170°	536.3	539.4	543.4	546.4	548.5	549.5	548.5	548.5
172.5°	529.9	532.1	534.5	536.7	538.0	539.0	538.0	536.3
175°	521.2	522.2	524.2	524.2	524.2	526.2	524.2	522.2
177.5°	515.5	516.3	516.3	517.2	516.3	517.2	515.5	513.9
180°	513.1	513.1	513.1	513.1	513.1	513.1	513.1	513.1

(END OF REPORT)