

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: P331680-840

Luminaire Tested: **SA2XXRDIP-C675D330U840-4F0-1E-UDD-F4**

Issue Date: 10/7/2019

Test Information

Test Method: LM-79-08
Report Number: P331680-840
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-16,
Test Lab: INNOVATION CENTER
Issue Date: 10/7/2019
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: SA2XXRDIP-C675D330U840-4F0-1E-UDD-F4
Description: DEFINE 2 DIRECT-INDIRECT PENDANT LED LUMINAIRE
DOWNLIGHT 675 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER, REGRESSED
HOUSING
UPLIGHT 330 LUMENS PER FOOT, BATWING OPTIC
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

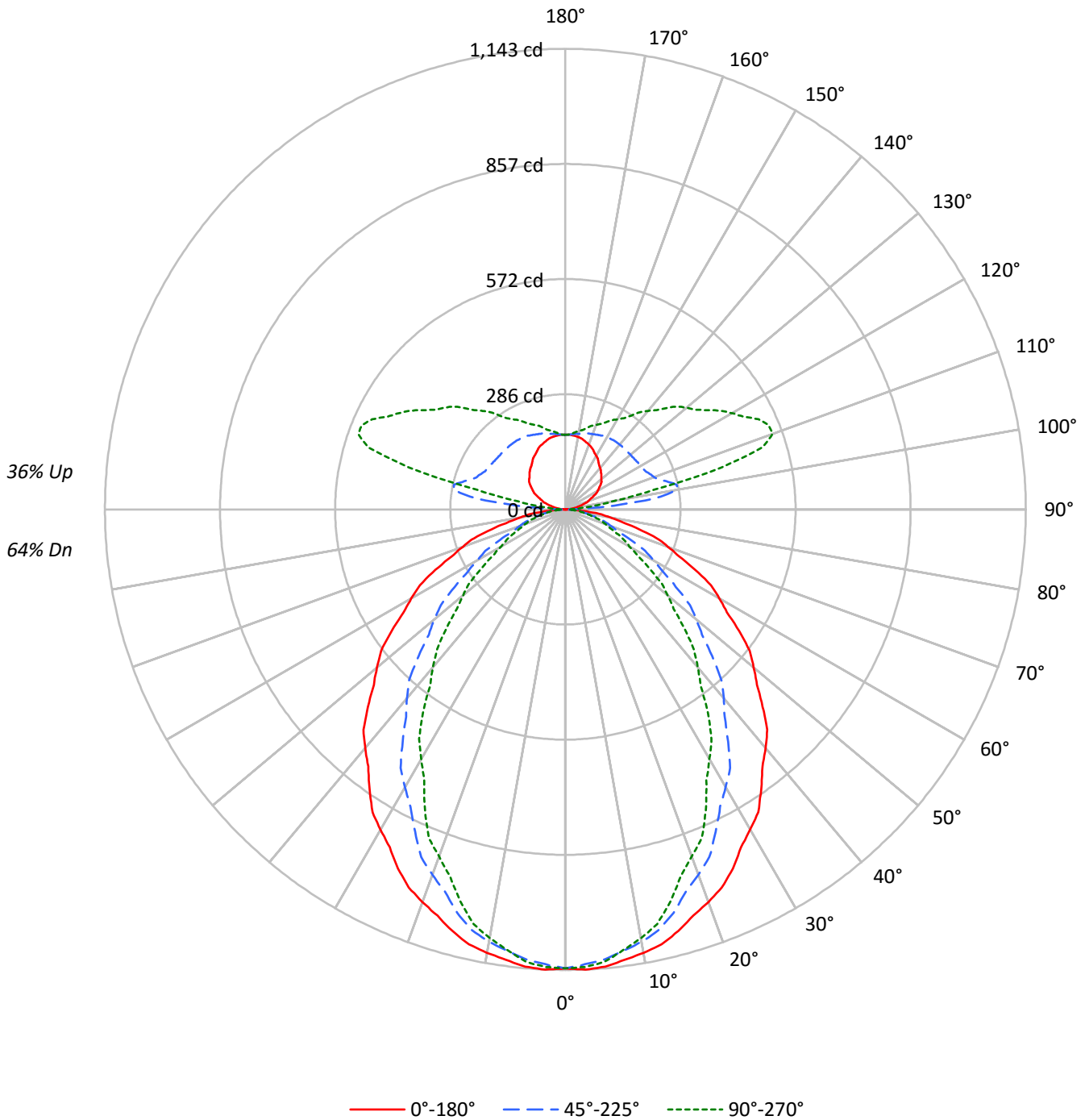
Lumens per Lamp: N/A
Luminaire Lumens: 3635.8 lumens
Efficiency: N/A
Efficacy: 103.9 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular (W 0.17' x L: 4' x H: 0')
CIE Type: Semi-Direct

Input Watts (W): 35
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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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	50	30	10	0	
RCR																						
0	111	111	111	111	104	104	104	104	91	91	91	80	80	80	69	69	69	64				
1	102	97	94	90	95	92	88	86	81	79	76	71	70	68	62	61	60	56				
2	93	86	80	75	87	81	76	71	72	68	64	63	60	58	56	53	51	48				
3	85	76	69	63	80	72	65	60	64	59	55	57	53	50	50	47	44	41				
4	78	68	60	54	74	64	57	52	57	52	47	51	47	43	45	42	39	36				
5	72	61	53	47	68	58	50	45	52	46	41	46	41	38	41	37	34	31				
6	67	55	47	41	63	52	45	40	47	41	36	42	37	33	37	33	31	28				
7	62	50	42	36	58	47	40	35	43	37	32	38	34	30	34	30	27	25				
8	58	46	38	33	54	43	36	31	39	33	29	35	30	27	32	28	25	23				
9	54	42	34	29	51	40	33	28	36	30	26	33	28	24	29	25	23	21				
10	51	39	31	26	48	37	30	26	33	28	24	30	26	22	27	23	21	19				

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	18392	18392	18392
5°	18462	18162	18263
10°	18321	17864	17713
15°	18111	17336	16836
20°	17819	16579	15747
25°	17521	15720	14694
30°	17107	14838	13340
35°	16703	13878	12151
40°	16297	12886	10777
45°	15819	11768	9533
50°	15330	10643	8312
55°	14829	9433	7139
60°	14247	8157	5926
65°	13589	6854	5398
70°	12798	5646	4961
75°	11834	5147	4629
80°	10451	4603	4212
85°	8207	3631	3631



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	106.6	2.9
10°-20°	292.8	8.1
20°-30°	411.1	11.3
30°-40°	448.3	12.3
40°-50°	412.2	11.3
50°-60°	323.8	8.9
60°-70°	211.1	5.8
70°-80°	108.8	3.0
80°-90°	29.9	0.8
90°-100°	74.2	2.0
100°-110°	251.8	6.9
110°-120°	267.5	7.4
120°-130°	220.2	6.1
130°-140°	176.8	4.9
140°-150°	133.6	3.7
150°-160°	93.9	2.6
160°-170°	55.3	1.5
170°-180°	18.0	0.5
0°-30°	810.5	22.3
0°-40°	1258.9	34.6
0°-60°	1994.8	54.9
0°-90°	2344.6	64.5
90°-120°	593.4	16.3
90°-150°	1124.0	30.9
90°-180°	1291.0	35.5
0°-180°	3635.8	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1139	1139	1139	1139	1139	
5°	1139	1134	1121	1129	1127	108
15°	1084	1071	1037	1018	1007	305
25°	984	949	882	842	825	452
35°	847	793	704	642	616	530
45°	693	622	515	445	418	535
55°	527	445	335	276	254	471
65°	356	272	179	146	141	352
75°	190	120	82	76	74	201
85°	44	24	20	20	20	52
90°	0	5	12	12	12	3
95°	12	31	140	53	41	13
105°	44	66	264	473	402	46
115°	77	97	221	457	529	76
125°	107	127	213	370	429	95
135°	126	150	210	311	356	97
145°	143	165	209	260	284	90
155°	163	176	203	230	239	75
165°	178	183	194	206	209	50
175°	185	185	187	189	189	18
180°	186	186	186	186	186	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1139.1	1139.1	1139.1	1139.1	1139.1	1139.1	1139.1	1139.1	1139.1	1139.1	1139.1
2.5°	1143.3	1142.4	1141.5	1140.5	1139.6	1138.1	1136.1	1134.1	1132.2	1130.1	1132.0
5°	1139.1	1138.0	1136.9	1135.7	1134.6	1132.6	1129.5	1126.6	1123.6	1120.6	1122.7
7.5°	1127.4	1126.0	1124.6	1123.2	1121.8	1119.2	1115.8	1112.4	1108.8	1105.4	1105.9
10°	1117.5	1115.9	1114.3	1112.7	1111.1	1108.0	1103.4	1098.8	1094.3	1089.6	1089.0
12.5°	1105.1	1103.2	1101.2	1099.2	1097.2	1093.4	1087.5	1081.7	1075.7	1069.9	1068.6
15°	1083.5	1081.0	1078.4	1075.9	1073.4	1068.2	1060.5	1052.7	1044.9	1037.1	1032.8
17.5°	1056.9	1053.1	1049.2	1045.3	1041.5	1034.6	1024.6	1014.6	1004.6	994.6	989.5
20°	1037.1	1032.5	1027.9	1023.4	1018.8	1010.8	999.3	987.8	976.4	964.9	959.2
22.5°	1015.6	1010.6	1005.4	1000.3	995.1	986.1	973.2	960.3	947.4	934.4	927.1
25°	983.5	976.1	968.9	961.5	954.2	942.9	927.9	912.7	897.6	882.4	873.0
27.5°	944.7	936.8	928.8	920.8	912.8	900.3	883.3	866.3	849.2	832.1	821.2
30°	917.6	908.8	900.1	891.4	882.7	869.2	850.8	832.5	814.2	795.9	784.2
32.5°	891.1	880.9	870.8	860.6	850.4	836.0	817.3	798.6	779.9	761.2	747.9
35°	847.4	835.8	824.0	812.3	800.7	784.8	764.6	744.5	724.3	704.1	689.6
37.5°	803.8	790.8	778.0	765.2	752.3	735.2	713.8	692.3	670.8	649.2	633.4
40°	773.2	759.4	745.7	732.0	718.2	700.2	678.0	655.8	633.6	611.4	595.1
42.5°	741.8	727.4	712.9	698.4	684.0	665.2	642.3	619.4	596.3	573.4	556.5
45°	692.8	677.4	662.1	646.7	631.4	611.7	587.6	563.6	539.5	515.4	499.2
47.5°	644.9	628.6	612.4	596.1	579.9	559.4	534.5	509.7	484.8	460.0	443.8
50°	610.3	594.0	577.7	561.5	545.2	524.5	499.3	474.1	448.9	423.7	407.9
52.5°	576.5	559.5	542.5	525.5	508.5	487.7	463.0	438.4	413.7	389.1	373.9
55°	526.8	509.0	491.1	473.2	455.3	434.0	409.3	384.6	359.8	335.1	321.3
57.5°	475.8	457.6	439.2	420.9	402.5	381.5	357.7	334.0	310.1	286.4	273.8
60°	441.2	422.9	404.6	386.3	367.9	347.0	323.4	299.7	276.2	252.6	240.9
62.5°	407.4	389.1	370.7	352.4	334.1	313.7	291.2	268.7	246.2	223.7	212.6
65°	355.7	337.1	318.5	300.0	281.4	261.9	241.3	220.7	200.0	179.4	171.6
67.5°	305.8	287.3	268.9	250.5	232.1	213.6	195.0	176.5	157.9	139.4	135.8
70°	271.1	253.3	235.4	217.5	199.7	182.8	167.0	151.2	135.4	119.6	117.2
72.5°	238.1	221.0	203.9	186.7	169.6	154.7	142.0	129.3	116.6	103.9	102.0
75°	189.7	173.7	157.6	141.6	125.5	113.6	105.8	98.1	90.3	82.5	80.9
77.5°	142.1	127.9	113.9	99.9	85.8	76.9	73.1	69.4	65.6	61.9	60.9
80°	112.4	100.7	89.0	77.4	65.6	58.7	56.4	54.0	51.8	49.5	48.6
82.5°	85.1	76.0	67.0	57.8	48.7	43.3	41.8	40.2	38.7	37.2	36.6
85°	44.3	39.5	34.7	29.9	25.0	22.3	21.6	21.0	20.3	19.6	19.6
87.5°	13.2	12.0	10.8	9.5	8.2	7.7	8.0	8.5	9.0	9.0	8.8
90°	0.4	1.4	2.8	3.5	4.2	5.4	7.2	9.6	11.8	12.1	11.8
92.5°	4.3	6.3	8.9	10.4	12.8	16.2	24.2	35.6	45.7	46.4	39.2
95°	12.5	13.9	17.5	20.7	26.4	34.9	51.4	82.4	123.8	139.9	122.4
97.5°	20.3	22.2	26.1	30.9	37.5	47.2	67.8	111.1	179.9	238.7	250.4
100°	27.5	28.6	31.7	37.5	44.6	54.6	73.5	117.0	194.1	281.9	333.3
102.5°	34.0	34.8	38.1	43.7	51.2	61.2	78.7	117.3	188.6	283.3	364.1
105°	43.5	44.9	47.5	52.8	60.7	70.7	87.5	119.2	178.0	264.4	359.3
107.5°	53.8	54.9	57.4	62.3	70.1	80.2	96.4	124.1	172.8	244.1	328.0
110°	60.7	62.1	64.2	68.9	76.3	86.7	102.4	128.1	171.7	234.4	308.3



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	67.0	68.4	70.8	75.1	82.3	93.0	108.2	132.4	171.9	228.1	294.6
115°	76.7	78.5	80.7	84.9	92.1	101.7	117.0	138.8	173.4	221.3	277.6
117.5°	86.8	88.3	90.4	94.2	101.1	111.1	125.2	145.6	176.0	217.8	266.9
120°	93.1	94.5	96.7	99.9	107.0	117.0	131.0	150.3	177.7	215.9	261.2
122.5°	99.2	100.3	102.4	105.9	113.0	123.3	136.3	154.2	179.7	214.7	256.3
125°	107.0	108.2	110.3	114.5	121.7	131.7	144.5	160.6	182.7	212.7	249.4
127.5°	113.3	114.7	117.8	122.5	129.3	139.6	152.1	166.5	185.7	211.5	243.0
130°	117.0	118.5	122.0	127.0	134.2	144.1	156.6	170.2	188.0	210.9	238.7
132.5°	120.5	122.2	126.0	131.3	138.8	148.8	160.7	173.9	190.4	210.6	235.3
135°	125.6	127.0	131.3	136.6	144.9	154.8	166.3	178.7	193.1	210.2	230.5
137.5°	130.5	132.2	136.4	142.2	150.3	159.6	170.9	182.5	195.5	210.1	227.1
140°	134.2	135.6	139.9	145.6	153.4	162.7	173.4	184.5	196.6	209.8	225.1
142.5°	137.8	139.1	143.0	148.8	156.3	165.0	175.4	186.2	197.4	209.8	223.2
145°	143.4	144.9	148.5	153.8	161.0	168.7	178.4	188.4	198.3	209.0	220.6
147.5°	149.5	150.5	153.9	158.9	164.8	171.8	180.9	189.7	198.6	207.8	217.8
150°	153.4	154.5	157.3	162.0	167.3	173.8	182.0	190.2	198.3	206.9	215.5
152.5°	157.4	157.9	160.8	164.8	170.0	175.7	183.1	190.5	197.8	205.5	213.5
155°	163.1	163.4	165.5	169.5	173.4	178.7	184.8	190.9	196.9	203.0	209.8
157.5°	167.7	168.1	169.9	173.3	176.4	180.9	186.0	190.9	195.3	200.5	206.3
160°	170.9	171.3	172.7	175.5	178.4	182.4	186.6	190.9	194.5	198.7	203.7
162.5°	174.1	173.8	175.3	177.5	180.2	183.2	186.9	190.6	193.6	197.3	201.5
165°	177.7	177.3	178.0	180.2	182.0	184.1	187.3	189.9	192.0	194.5	197.6
167.5°	180.7	180.3	180.9	182.3	183.6	184.9	187.2	189.3	190.4	192.0	194.0
170°	182.7	182.0	182.4	183.4	184.1	185.2	186.9	188.7	189.5	190.6	192.0
172.5°	183.8	183.4	183.2	184.3	184.7	185.5	186.7	187.9	188.3	188.8	190.0
175°	185.2	184.8	184.5	185.2	185.2	185.5	186.2	186.9	186.6	186.9	187.3
177.5°	185.8	185.2	185.0	185.5	185.5	185.5	185.8	186.4	185.8	185.5	185.8
180°	185.5	185.5	185.5	185.5	185.5	185.5	185.5	185.5	185.5	185.5	185.5



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1139.1	1139.1	1139.1	1139.1	1139.1	1139.1	1139.1	1139.1
2.5°	1133.8	1135.6	1137.4	1138.1	1137.8	1137.4	1137.1	1136.7
5°	1124.7	1126.8	1128.8	1129.5	1128.8	1128.1	1127.5	1126.8
7.5°	1106.5	1107.1	1107.7	1107.4	1106.2	1105.1	1103.9	1102.7
10°	1088.3	1087.6	1086.9	1085.9	1084.5	1083.2	1081.8	1080.4
12.5°	1067.4	1066.2	1064.9	1063.2	1060.9	1058.6	1056.3	1054.0
15°	1028.4	1024.0	1019.7	1016.3	1014.1	1011.8	1009.5	1007.2
17.5°	984.3	979.1	973.9	969.4	965.4	961.5	957.6	953.6
20°	953.5	947.8	942.0	936.6	931.6	926.6	921.5	916.5
22.5°	919.7	912.3	904.9	899.4	895.5	891.8	888.1	884.3
25°	863.6	854.2	844.9	838.5	835.1	831.6	828.2	824.8
27.5°	810.2	799.3	788.4	780.1	774.7	769.2	763.8	758.3
30°	772.5	760.8	749.1	740.2	734.0	727.8	721.6	715.5
32.5°	734.6	721.2	707.9	698.3	692.5	686.7	680.9	675.1
35°	675.3	660.9	646.4	636.6	631.6	626.5	621.6	616.5
37.5°	617.4	601.6	585.7	574.8	569.1	563.3	557.5	551.8
40°	578.8	562.5	546.2	535.1	529.2	523.2	517.3	511.3
42.5°	539.8	522.9	506.1	494.8	489.1	483.3	477.6	471.7
45°	482.9	466.7	450.4	439.5	434.0	428.5	423.0	417.5
47.5°	427.7	411.5	395.3	384.8	379.7	374.8	369.7	364.8
50°	392.1	376.3	360.5	350.1	345.4	340.5	335.8	330.9
52.5°	358.6	343.3	328.0	318.2	313.8	309.3	304.9	300.4
55°	307.6	293.8	280.0	271.0	266.7	262.3	257.9	253.6
57.5°	261.2	248.6	236.0	227.8	224.2	220.6	216.8	213.2
60°	229.2	217.5	205.8	198.1	194.5	190.9	187.1	183.5
62.5°	201.5	190.3	179.2	172.5	170.3	168.1	165.9	163.7
65°	163.8	156.0	148.2	144.0	143.3	142.6	141.9	141.3
67.5°	132.2	128.7	125.1	122.9	122.2	121.5	120.8	120.0
70°	115.0	112.7	110.4	108.9	107.9	106.9	106.0	105.1
72.5°	100.1	98.2	96.2	95.0	94.4	93.9	93.3	92.8
75°	79.3	77.7	76.0	75.1	74.9	74.7	74.4	74.2
77.5°	60.0	59.1	58.2	57.6	57.2	56.9	56.5	56.0
80°	47.7	46.8	45.8	45.3	45.3	45.3	45.3	45.3
82.5°	36.1	35.4	34.9	34.6	34.6	34.6	34.6	34.6
85°	19.6	19.6	19.6	19.6	19.6	19.6	19.6	19.6
87.5°	8.5	8.2	8.2	8.1	8.1	8.1	8.1	8.1
90°	11.4	10.7	11.4	11.8	11.8	11.8	11.8	11.8
92.5°	31.1	26.7	23.7	21.5	21.2	20.1	20.3	19.8
95°	93.5	71.7	56.8	48.9	44.2	41.4	40.3	40.7
97.5°	218.1	178.4	139.9	114.1	97.0	88.3	83.1	80.1
100°	325.8	281.6	232.7	189.5	159.9	144.5	134.2	127.7
102.5°	396.3	386.3	350.5	304.8	272.6	246.4	233.5	224.8
105°	433.5	473.8	478.5	466.8	444.5	422.4	407.1	402.1
107.5°	406.7	467.5	504.5	521.8	524.6	523.4	520.3	513.7
110°	383.5	447.5	493.1	522.4	537.8	544.5	547.8	547.3



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	362.4	423.7	472.5	506.1	527.5	538.8	544.8	546.7
115°	336.5	391.4	438.2	474.9	500.3	516.6	525.9	529.2
117.5°	316.9	365.2	407.6	442.0	467.9	485.2	494.9	497.7
120°	307.2	351.4	389.3	421.7	446.8	463.5	473.8	477.5
122.5°	299.5	340.0	375.9	405.2	427.6	444.1	453.3	456.3
125°	288.3	325.1	356.5	383.2	403.9	417.5	426.4	429.3
127.5°	277.2	310.5	340.1	364.8	382.8	395.6	403.2	405.6
130°	270.1	300.8	329.0	352.5	370.0	382.1	389.3	392.1
132.5°	263.3	291.6	317.6	339.7	356.9	369.0	375.6	378.2
135°	253.7	277.2	300.8	320.7	336.1	347.9	354.4	355.8
137.5°	246.1	265.8	284.5	301.8	315.9	326.0	331.6	333.8
140°	241.2	258.3	274.8	290.4	301.8	311.1	316.5	318.6
142.5°	237.2	251.8	265.9	279.0	289.8	298.3	303.1	303.5
145°	231.6	243.4	254.4	264.8	273.3	279.4	283.0	284.0
147.5°	227.2	236.5	245.1	252.7	259.7	264.6	267.0	267.7
150°	224.1	232.0	239.4	245.8	251.2	255.5	257.6	258.0
152.5°	221.0	228.2	234.6	240.1	244.4	248.0	249.6	249.7
155°	216.6	222.3	227.6	231.6	235.5	238.0	239.4	238.7
157.5°	211.6	216.3	220.8	223.9	226.6	228.7	229.3	229.3
160°	208.3	212.3	216.2	218.7	221.3	223.0	223.4	223.4
162.5°	205.2	208.6	212.0	213.9	216.4	217.6	217.9	217.6
165°	200.6	203.0	205.5	206.9	208.3	209.8	209.8	209.4
167.5°	196.0	197.9	199.7	201.0	201.6	202.4	202.3	201.9
170°	193.8	194.8	196.2	196.9	197.3	198.3	198.0	197.3
172.5°	191.2	192.0	193.1	193.5	193.9	194.4	194.0	193.6
175°	188.4	188.7	189.1	189.5	189.5	189.9	189.5	188.7
177.5°	186.4	186.4	186.7	186.7	186.7	186.7	186.4	185.8
180°	185.5	185.5	185.5	185.5	185.5	185.5	185.5	185.5

(END OF REPORT)