

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: P331461-935

Luminaire Tested: **SA2XXDIP-C1005D1080U935-4F0-1E-UDD-D4**

Issue Date: 10/7/2019

**Test Information**

Test Method: LM-79-08  
Report Number: P331461-935  
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: SA2XXDIP-C1005D1080U935-4F0-1E-UDD-D4  
Description: DEFINE 2 DIRECT-INDIRECT PENDANT LED LUMINAIRE  
DOWNLIGHT 1005 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER  
UPLIGHT 1080 LUMENS PER FOOT, BATWING OPTIC  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

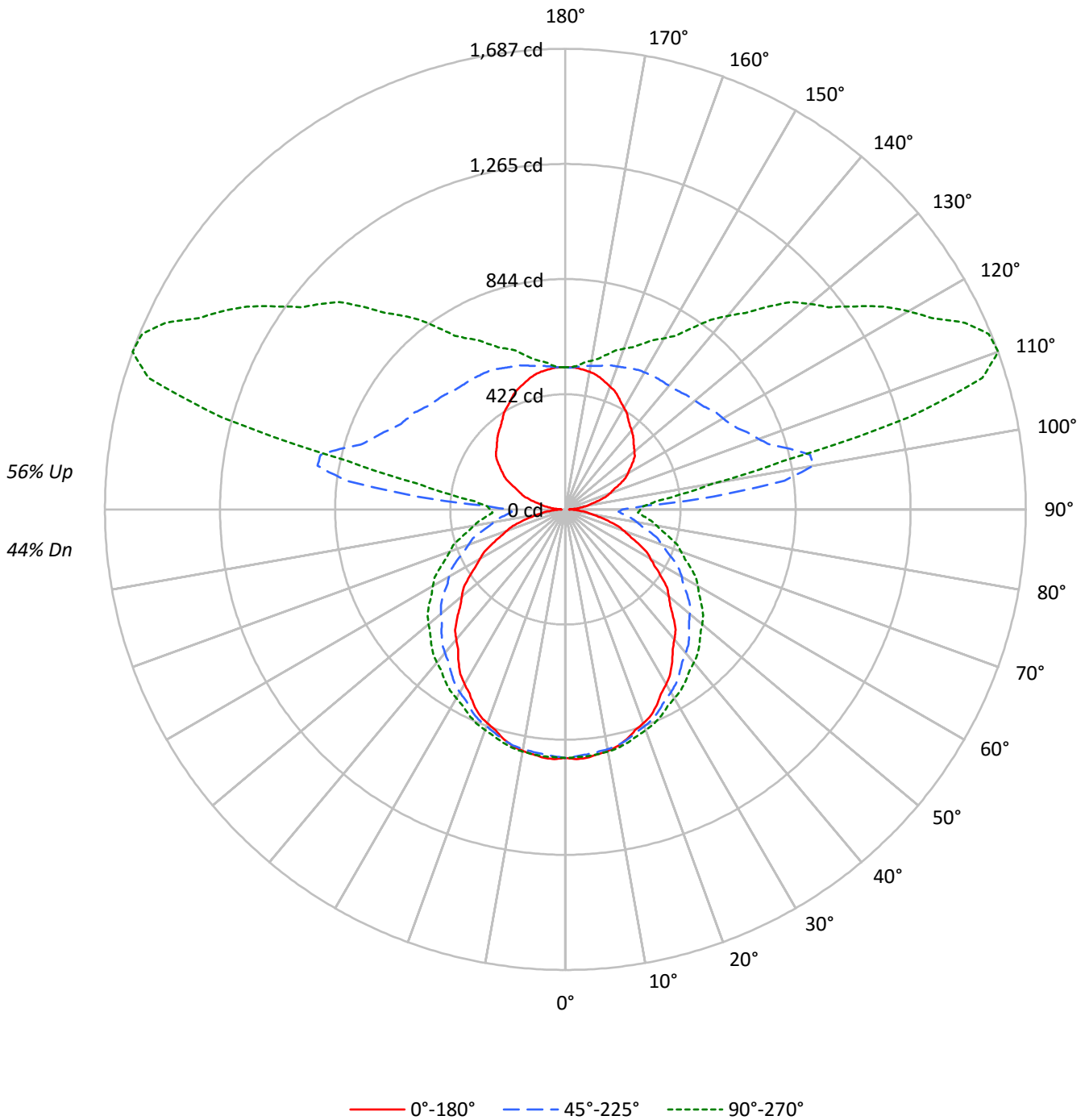
Lumens per Lamp: N/A  
Luminaire Lumens: 7097.4 lumens  
Efficiency: N/A  
Efficacy: 99.0 lumens/watt  
Spacing Criteria (0/90/45): 1.21 / 1.32 / 1.42  
Luminous Opening: Rectangular w/ Sides (W: 0.17' x L: 4' x H: 0.08')  
CIE Type: General Diffuse  
  
Input Watts (W): 71.7  
Input Voltage (V): 120  
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	0
RCR																		
0	106	106	106	106	97	97	97	97	80	80	80	64	64	64	50	50	50	44
1	95	90	86	82	87	82	79	75	68	65	63	55	53	51	42	41	40	34
2	86	78	71	66	78	71	66	61	59	54	51	47	44	41	36	34	32	27
3	78	68	60	54	71	62	56	50	51	46	42	41	38	34	32	29	27	23
4	71	60	52	45	65	55	48	42	45	40	35	36	32	29	28	25	23	19
5	65	53	45	39	59	49	41	36	40	35	30	33	28	25	25	22	20	16
6	60	48	39	33	54	44	36	31	36	30	26	29	25	22	23	20	17	14
7	55	43	35	29	50	39	32	27	33	27	23	27	22	19	21	18	15	12
8	51	39	31	25	47	36	29	24	30	24	20	24	20	17	19	16	14	11
9	48	35	28	22	43	32	26	21	27	22	18	22	18	15	18	14	12	10
10	44	32	25	20	41	30	23	19	25	20	16	20	16	14	16	13	11	9

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

	0°	45°	90°
0°	14699	14699	14699
5°	14772	14150	14097
10°	14679	13733	13578
15°	14477	13289	13032
20°	14222	12815	12506
25°	13968	12358	12028
30°	13612	11889	11549
35°	13253	11434	11211
40°	12874	11047	10874
45°	12515	10702	10584
50°	12128	10388	10300
55°	11724	10052	10011
60°	11226	9702	9705
65°	10711	9294	9342
70°	10136	8856	8949
75°	9394	8423	8587
80°	8224	7984	8220
85°	7107	7603	7937



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	86.3	1.2
10°-20°	247.4	3.5
20°-30°	374.9	5.3
30°-40°	456.6	6.4
40°-50°	491.2	6.9
50°-60°	477.0	6.7
60°-70°	416.5	5.9
70°-80°	320.7	4.5
80°-90°	219.9	3.1
90°-100°	356.2	5.0
100°-110°	814.0	11.5
110°-120°	821.2	11.6
120°-130°	657.1	9.3
130°-140°	512.3	7.2
140°-150°	377.4	5.3
150°-160°	263.2	3.7
160°-170°	154.9	2.2
170°-180°	50.4	0.7
0°-30°	708.5	10.0
0°-40°	1165.2	16.4
0°-60°	2133.4	30.1
0°-90°	3090.5	43.5
90°-120°	1991.4	28.1
90°-150°	3538.3	49.9
90°-180°	4007.0	56.5
0°-180°	7097.4	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	910	910	910	910	910	
5°	913	909	901	909	908	87
15°	871	873	874	885	884	245
25°	792	801	813	828	833	364
35°	682	705	730	758	768	426
45°	560	596	641	681	695	432
55°	429	478	545	591	610	383
65°	293	358	435	488	507	291
75°	162	237	321	375	394	172
85°	48	129	214	267	288	51
90°	14	104	208	257	276	11
95°	46	160	544	348	332	45
105°	129	231	855	1483	1301	137
115°	220	294	699	1397	1616	218
125°	303	360	641	1116	1296	269
135°	353	422	604	912	1050	273
145°	402	462	586	735	811	253
155°	457	494	569	644	669	210
165°	498	513	545	578	587	140
175°	519	520	524	531	529	49
180°	520	520	520	520	520	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	910.4	910.4	910.4	910.4	910.4	910.4	910.4	910.4	910.4	910.4	910.4
2.5°	915.8	915.1	914.3	913.6	912.9	911.7	910.1	908.4	906.8	905.2	906.4
5°	913.1	912.2	911.4	910.4	909.6	908.3	906.5	904.7	903.0	901.2	903.0
7.5°	904.9	904.3	903.7	903.2	902.6	901.6	900.3	898.9	897.6	896.2	898.3
10°	898.6	898.0	897.4	896.8	896.2	895.5	894.7	893.7	892.9	892.0	894.3
12.5°	888.0	888.1	888.3	888.4	888.5	888.2	887.6	886.9	886.3	885.6	888.0
15°	870.9	871.5	872.0	872.6	873.2	873.5	873.5	873.5	873.5	873.5	876.2
17.5°	848.7	850.0	851.2	852.4	853.6	854.7	855.7	856.6	857.6	858.5	861.3
20°	834.0	835.4	836.9	838.4	839.8	841.1	842.3	843.4	844.6	845.8	849.0
22.5°	818.1	819.8	821.5	823.2	824.9	826.6	828.2	829.8	831.5	833.1	836.4
25°	791.7	793.8	795.8	797.9	800.0	802.3	804.9	807.5	810.2	812.8	816.3
27.5°	760.0	763.4	766.7	770.1	773.4	776.6	779.7	782.8	785.9	789.1	793.5
30°	738.9	742.7	746.6	750.4	754.1	758.0	761.8	765.6	769.4	773.3	777.9
32.5°	715.7	720.0	724.3	728.6	732.8	737.2	741.8	746.2	750.8	755.3	760.7
35°	682.2	687.2	692.2	697.2	702.1	707.4	713.0	718.5	724.1	729.7	736.2
37.5°	645.8	651.5	657.3	663.0	668.7	675.2	682.4	689.7	696.9	704.1	711.3
40°	621.5	627.9	634.4	640.8	647.3	654.4	662.4	670.3	678.2	686.1	693.8
42.5°	598.3	604.7	611.1	617.6	624.1	631.8	640.9	650.1	659.1	668.2	676.5
45°	559.5	567.4	575.3	583.2	591.2	600.2	610.5	620.8	631.0	641.3	650.4
47.5°	521.2	529.9	538.5	547.1	555.7	566.0	578.1	590.0	602.1	614.1	623.6
50°	494.8	503.9	513.0	522.1	531.2	542.3	555.5	568.7	581.9	595.1	605.1
52.5°	469.5	479.1	488.6	498.2	507.7	519.4	533.3	547.3	561.1	575.1	585.2
55°	428.9	439.4	450.0	460.5	471.1	484.0	499.2	514.4	529.7	544.9	555.5
57.5°	388.7	400.6	412.5	424.5	436.4	450.0	465.6	481.1	496.7	512.2	523.6
60°	360.2	372.8	385.5	398.0	410.7	425.3	442.0	458.7	475.4	492.1	503.3
62.5°	334.9	347.9	361.0	374.1	387.2	402.1	418.8	435.5	452.3	469.0	480.8
65°	292.9	307.3	321.7	336.0	350.4	366.3	383.6	400.8	418.1	435.4	447.5
67.5°	254.4	269.4	284.4	299.5	314.4	330.8	348.5	366.3	383.9	401.7	413.8
70°	227.0	242.2	257.4	272.7	287.9	304.6	322.9	341.0	359.2	377.4	389.9
72.5°	201.6	217.3	233.1	248.7	264.5	281.5	300.0	318.4	336.8	355.2	367.6
75°	162.3	178.7	195.1	211.5	228.0	245.6	264.3	283.1	301.9	320.6	333.2
77.5°	124.3	141.5	158.7	175.8	193.0	211.1	230.2	249.3	268.3	287.4	300.0
80°	98.9	116.8	134.7	152.7	170.5	189.0	208.0	227.1	246.2	265.2	277.5
82.5°	77.8	95.5	113.1	130.8	148.4	166.9	186.2	205.5	224.8	244.1	256.4
85°	47.5	65.7	83.9	102.0	120.2	138.7	157.5	176.2	195.0	213.8	226.1
87.5°	26.1	44.2	62.4	80.3	98.2	116.9	136.6	156.8	176.8	195.8	207.5
90°	14.2	34.2	55.2	74.2	93.2	114.1	137.8	163.7	188.4	208.2	219.0
92.5°	24.4	45.5	68.6	88.9	111.5	137.8	178.5	228.3	274.8	294.7	286.0
95°	45.5	63.4	87.1	109.9	139.7	179.4	243.0	347.6	481.2	543.8	505.9
97.5°	66.2	83.9	106.8	132.6	163.2	205.1	279.7	417.8	627.6	809.8	853.4
100°	86.3	100.1	119.9	146.8	177.6	219.3	288.7	427.1	659.6	922.1	1077.0
102.5°	103.6	115.7	134.7	160.6	191.2	232.2	297.1	421.5	637.5	918.7	1155.8
105°	128.6	141.1	156.6	180.1	210.7	250.6	312.8	417.1	597.4	854.6	1130.9
107.5°	157.1	167.2	180.8	201.4	230.0	268.9	329.1	421.3	572.4	787.0	1031.9
110°	175.3	185.2	197.1	215.9	242.8	281.9	340.3	426.6	563.1	753.5	969.9



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	193.0	201.8	213.5	230.7	255.8	294.9	351.0	432.7	557.2	728.5	924.1
115°	220.3	228.5	237.8	253.0	276.2	311.4	367.6	441.9	552.1	699.3	866.1
117.5°	247.4	253.5	261.7	274.3	295.7	330.8	382.8	452.2	549.5	679.1	825.2
120°	265.0	270.2	277.3	287.6	308.7	343.2	393.9	459.6	548.4	667.1	802.4
122.5°	281.8	285.5	292.0	302.2	322.7	357.2	404.8	465.9	548.4	657.6	782.2
125°	302.7	305.7	311.7	323.7	343.7	376.4	421.8	476.2	547.6	641.0	751.9
127.5°	320.3	324.0	332.1	345.0	363.9	396.4	438.9	486.9	548.5	628.1	723.8
130°	330.7	334.4	344.1	357.8	377.5	408.5	449.6	493.8	550.0	620.2	705.2
132.5°	340.3	344.8	355.3	369.8	390.4	420.6	458.7	500.7	551.5	613.0	689.1
135°	353.4	357.4	369.4	384.4	407.4	436.9	471.8	509.7	552.7	603.6	666.8
137.5°	367.0	371.7	383.7	399.6	422.4	449.0	481.9	515.8	553.5	595.8	649.0
140°	377.4	381.1	392.8	408.5	430.2	456.4	487.0	518.6	553.2	590.7	638.4
142.5°	387.8	390.7	401.6	417.3	438.2	462.5	491.9	522.2	553.9	588.7	629.8
145°	402.1	406.0	416.1	431.1	451.1	473.1	500.1	528.1	556.1	586.1	619.9
147.5°	418.9	421.9	431.4	445.3	461.9	481.5	506.9	531.5	556.9	582.6	610.8
150°	430.1	433.1	441.1	454.1	469.1	487.1	510.1	533.1	556.1	580.1	604.1
152.5°	441.3	442.7	450.6	462.1	476.3	492.7	513.3	533.9	554.5	576.1	598.5
155°	457.1	458.1	464.1	475.1	486.1	501.1	518.1	535.1	552.1	569.1	588.1
157.5°	470.3	471.3	476.1	485.7	494.5	507.1	521.5	535.1	547.5	561.9	578.3
160°	479.1	480.1	484.1	492.1	500.1	511.1	523.1	535.1	545.1	557.2	571.1
162.5°	487.9	487.3	491.3	497.7	504.9	513.5	523.9	534.3	542.7	553.1	564.7
165°	498.1	497.1	499.1	505.1	510.1	516.1	525.1	532.1	538.1	545.1	554.1
167.5°	506.5	505.3	507.1	510.9	514.5	518.3	524.9	530.7	533.5	538.1	543.7
170°	512.1	510.1	511.1	514.1	516.1	519.1	524.1	529.1	531.1	534.1	538.1
172.5°	515.3	514.1	513.5	516.5	517.7	519.9	523.3	526.7	527.9	529.3	532.5
175°	519.1	518.1	517.1	519.1	519.1	520.1	522.1	524.1	523.1	524.1	525.1
177.5°	520.9	519.3	518.5	520.1	520.1	520.1	520.9	522.5	520.9	520.1	520.9
180°	520.1	520.1	520.1	520.1	520.1	520.1	520.1	520.1	520.1	520.1	520.1



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	910.4	910.4	910.4	910.4	910.4	910.4	910.4	910.4
2.5°	907.5	908.7	909.9	910.2	909.7	909.3	908.8	908.4
5°	904.7	906.5	908.3	909.0	908.7	908.4	908.1	907.8
7.5°	900.4	902.6	904.7	905.6	905.3	905.0	904.7	904.4
10°	896.6	899.1	901.4	902.4	902.1	901.8	901.6	901.2
12.5°	890.4	892.7	895.0	896.0	895.8	895.4	895.2	894.9
15°	878.8	881.4	884.1	885.3	884.9	884.7	884.3	884.1
17.5°	864.0	866.8	869.5	870.9	870.9	870.9	870.9	870.9
20°	852.2	855.5	858.7	860.3	860.3	860.3	860.3	860.3
22.5°	839.6	842.8	846.0	847.9	848.3	848.9	849.3	849.8
25°	819.8	823.4	826.9	829.1	830.0	830.9	831.7	832.6
27.5°	798.0	802.5	806.9	809.4	810.1	810.7	811.4	812.0
30°	782.6	787.3	792.0	794.8	795.7	796.5	797.5	798.3
32.5°	766.1	771.5	776.9	780.3	782.0	783.5	785.1	786.7
35°	742.6	749.1	755.5	759.7	761.8	763.9	765.9	767.9
37.5°	718.4	725.6	732.7	737.4	739.5	741.8	743.9	746.1
40°	701.4	709.0	716.6	721.8	724.4	727.0	729.7	732.4
42.5°	684.8	693.2	701.5	707.0	709.6	712.3	714.9	717.6
45°	659.4	668.6	677.6	683.6	686.6	689.5	692.4	695.3
47.5°	633.1	642.6	652.1	658.5	661.7	665.0	668.1	671.4
50°	615.0	625.0	635.0	641.6	644.8	648.0	651.3	654.4
52.5°	595.5	605.6	615.9	622.7	626.1	629.6	633.1	636.5
55°	566.1	576.6	587.2	594.3	598.1	602.0	605.8	609.6
57.5°	535.0	546.4	557.8	565.3	569.2	573.1	577.0	580.8
60°	514.4	525.6	536.7	544.4	548.5	552.6	556.7	560.8
62.5°	492.7	504.5	516.3	524.2	528.1	531.9	535.8	539.7
65°	459.5	471.5	483.5	491.5	495.2	499.0	502.9	506.7
67.5°	425.9	438.1	450.2	458.3	462.3	466.2	470.3	474.2
70°	402.6	415.2	427.8	435.8	439.4	442.9	446.4	450.0
72.5°	380.0	392.4	404.7	413.0	417.2	421.5	425.7	429.9
75°	345.9	358.4	371.1	379.3	383.1	386.9	390.7	394.5
77.5°	312.5	325.0	337.6	345.9	350.0	354.1	358.3	362.3
80°	289.8	302.2	314.5	322.7	326.8	330.9	335.0	339.1
82.5°	268.7	281.0	293.3	301.4	305.3	309.2	313.1	316.9
85°	238.4	250.7	263.0	271.2	275.3	279.5	283.5	287.7
87.5°	219.3	230.8	243.2	251.2	255.0	258.8	262.5	266.3
90°	229.6	239.4	253.1	261.7	265.3	268.7	272.2	275.8
92.5°	274.9	274.0	277.1	278.4	281.1	281.4	285.8	287.7
95°	436.1	386.2	355.3	340.7	331.2	326.7	327.3	331.7
97.5°	773.6	673.2	575.8	510.8	466.5	445.3	434.2	429.2
100°	1066.9	953.6	827.5	713.5	633.7	593.9	568.2	553.4
102.5°	1256.6	1239.2	1149.6	1028.3	941.3	871.2	838.2	817.0
105°	1349.3	1472.6	1495.8	1469.6	1410.7	1351.9	1312.2	1301.4
107.5°	1262.4	1442.4	1556.3	1611.3	1622.3	1622.1	1616.8	1601.4
110°	1190.3	1378.7	1516.1	1604.5	1650.7	1672.9	1685.1	1687.4





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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	1123.7	1304.9	1451.1	1551.4	1614.5	1649.5	1669.7	1678.3
115°	1039.9	1202.8	1342.6	1451.6	1525.9	1575.1	1604.3	1616.5
117.5°	974.0	1118.0	1245.5	1348.0	1423.3	1475.0	1505.4	1516.0
120°	939.6	1071.9	1186.1	1282.8	1356.1	1406.3	1438.6	1451.7
122.5°	911.2	1032.8	1141.2	1228.8	1294.3	1343.3	1371.8	1383.0
125°	868.8	979.8	1075.7	1156.1	1216.7	1257.3	1285.0	1295.6
127.5°	827.1	927.6	1017.9	1092.0	1145.1	1183.4	1207.6	1216.5
130°	800.2	893.3	979.4	1050.1	1101.4	1137.8	1160.1	1170.4
132.5°	774.2	860.7	940.1	1006.7	1057.2	1093.6	1114.3	1123.9
135°	738.0	810.1	882.4	942.5	987.9	1023.3	1043.6	1050.0
137.5°	707.4	768.0	825.8	878.3	919.5	949.9	967.7	975.7
140°	688.2	740.9	791.5	838.8	872.5	900.3	917.1	924.9
142.5°	673.0	717.6	760.9	800.3	832.2	857.4	872.4	875.0
145°	652.6	687.4	720.1	750.8	776.3	794.7	806.2	810.6
147.5°	637.4	663.7	688.1	709.7	730.2	744.6	752.1	754.6
150°	628.1	650.1	671.1	689.1	704.1	716.2	722.1	723.2
152.5°	619.3	639.7	657.5	673.1	684.9	695.3	699.7	699.9
155°	607.1	623.1	638.1	649.1	660.1	667.1	671.1	669.2
157.5°	592.9	606.3	618.9	627.5	635.3	641.1	642.9	642.9
160°	584.1	595.1	606.1	613.1	620.1	625.1	626.1	626.1
162.5°	575.3	584.7	594.1	599.5	606.5	609.9	610.9	610.1
165°	562.1	569.1	576.1	580.1	584.1	588.1	588.1	587.1
167.5°	549.5	554.9	559.7	563.4	565.1	567.3	567.1	565.9
170°	543.1	546.1	550.1	552.1	553.1	556.1	555.1	553.1
172.5°	535.9	538.1	541.3	542.5	543.5	544.9	543.9	542.7
175°	528.1	529.1	530.1	531.1	531.1	532.1	531.1	529.1
177.5°	522.5	522.5	523.3	523.3	523.3	523.3	522.5	520.9
180°	520.1	520.1	520.1	520.1	520.1	520.1	520.1	520.1

(END OF REPORT)