

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: P331704-830

Luminaire Tested: **SA2XXRDIP-C675D1080U830-4F0-1E-UDD-F4**

Issue Date: 10/7/2019

Test Information

Test Method: LM-79-08
Report Number: P331704-830
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-C675D1080U830-4F0-1E-UDD-F4
Description: DEFINE 2 DIRECT-INDIRECT PENDANT LED LUMINAIRE
DOWNLIGHT 675 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER, REGRESSED
HOUSING
UPLIGHT 1080 LUMENS PER FOOT, BATWING OPTIC
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 6153.9 lumens
Efficiency: N/A
Efficacy: 108.2 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-Indirect

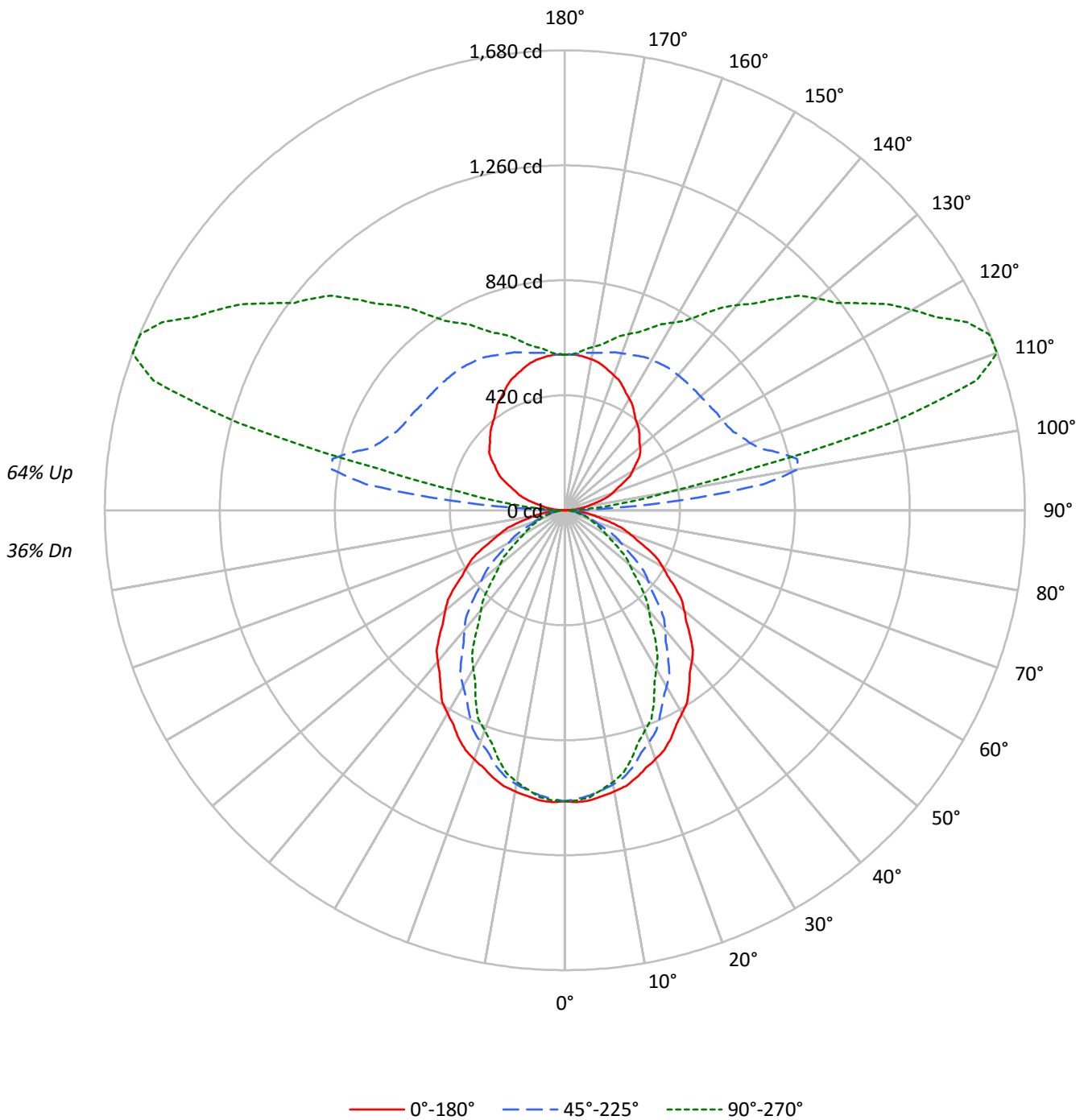
Input Watts (W): 56.9
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	104	104	104	104	94	94	94	94	75	75	75	58	58	58	43	43	43	36
1	95	91	87	84	86	82	79	76	66	64	62	52	50	49	38	38	37	31
2	87	80	74	69	78	72	67	63	59	55	52	46	44	42	34	33	32	26
3	79	70	63	58	71	64	58	53	52	48	44	41	38	36	31	29	27	23
4	73	62	55	49	65	57	50	45	46	42	38	37	33	31	28	25	24	20
5	67	56	48	42	60	51	44	39	42	37	33	33	29	27	25	23	21	17
6	61	50	42	37	56	46	39	34	37	32	29	30	26	24	23	20	19	15
7	57	45	37	32	51	41	35	30	34	29	25	27	24	21	21	18	17	14
8	53	41	33	28	48	38	31	26	31	26	23	25	21	19	19	17	15	12
9	49	37	30	25	44	34	28	24	28	24	20	23	19	17	18	15	14	11
10	46	34	27	23	42	31	25	21	26	21	18	21	18	15	17	14	12	10

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	17166	17166	17166
5°	17232	16951	17045
10°	17100	16674	16531
15°	16904	16181	15714
20°	16632	15474	14698
25°	16352	14672	13714
30°	15966	13848	12450
35°	15589	12952	11341
40°	15209	12026	10058
45°	14764	10985	8896
50°	14307	9934	7759
55°	13841	8802	6663
60°	13298	7611	5532
65°	12684	6395	5039
70°	11948	5268	4631
75°	11042	4803	4323
80°	9754	4296	3933
85°	7669	3390	3390



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	99.5	1.6
10°-20°	273.3	4.4
20°-30°	383.7	6.2
30°-40°	418.4	6.8
40°-50°	384.7	6.3
50°-60°	302.2	4.9
60°-70°	197.0	3.2
70°-80°	101.6	1.7
80°-90°	31.5	0.5
90°-100°	227.7	3.7
100°-110°	772.5	12.6
110°-120°	820.7	13.3
120°-130°	675.6	11.0
130°-140°	542.5	8.8
140°-150°	410.0	6.7
150°-160°	288.1	4.7
160°-170°	169.6	2.8
170°-180°	55.2	0.9
0°-30°	756.5	12.3
0°-40°	1174.9	19.1
0°-60°	1861.8	30.3
0°-90°	2191.9	35.6
90°-120°	1820.9	29.6
90°-150°	3449.0	56.0
90°-180°	3962.0	64.4
0°-180°	6153.9	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1063	1063	1063	1063	1063	
5°	1063	1058	1046	1054	1052	101
15°	1011	999	968	950	940	285
25°	918	885	824	786	770	422
35°	791	740	657	599	575	495
45°	647	580	481	415	390	499
55°	492	415	313	257	237	439
65°	332	254	167	136	132	329
75°	177	112	77	71	69	187
85°	41	22	18	18	18	49
90°	1	15	37	36	36	4
95°	38	94	429	162	125	41
105°	134	202	811	1450	1234	142
115°	235	297	679	1401	1624	233
125°	328	389	653	1135	1317	292
135°	385	460	645	954	1092	298
145°	440	506	642	797	872	276
155°	500	540	623	705	732	230
165°	545	562	597	633	643	154
175°	568	569	574	581	579	54
180°	569	569	569	569	569	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1063.2	1063.2	1063.2	1063.2	1063.2	1063.2	1063.2	1063.2	1063.2	1063.2	1063.2
2.5°	1067.1	1066.2	1065.4	1064.5	1063.7	1062.2	1060.4	1058.5	1056.7	1054.8	1056.5
5°	1063.2	1062.2	1061.1	1060.0	1058.9	1057.1	1054.2	1051.5	1048.7	1045.9	1047.8
7.5°	1052.3	1050.9	1049.6	1048.3	1047.0	1044.6	1041.4	1038.2	1034.9	1031.7	1032.2
10°	1043.0	1041.5	1040.0	1038.5	1037.0	1034.2	1029.8	1025.6	1021.3	1017.0	1016.4
12.5°	1031.4	1029.6	1027.7	1026.0	1024.1	1020.5	1015.0	1009.6	1004.0	998.5	997.4
15°	1011.3	1008.9	1006.5	1004.2	1001.8	997.0	989.8	982.5	975.2	968.0	963.9
17.5°	986.5	982.9	979.3	975.6	972.0	965.6	956.3	947.0	937.6	928.3	923.5
20°	968.0	963.7	959.4	955.2	950.8	943.4	932.6	922.0	911.3	900.6	895.2
22.5°	947.9	943.2	938.4	933.6	928.8	920.4	908.3	896.3	884.2	872.1	865.3
25°	917.9	911.1	904.3	897.4	890.6	880.1	866.0	851.9	837.7	823.6	814.8
27.5°	881.7	874.3	866.9	859.4	852.0	840.3	824.4	808.5	792.6	776.7	766.5
30°	856.4	848.2	840.1	832.0	823.9	811.2	794.1	777.0	759.9	742.8	731.9
32.5°	831.7	822.2	812.8	803.2	793.7	780.2	762.8	745.4	727.9	710.5	698.0
35°	790.9	780.0	769.1	758.2	747.3	732.4	713.6	694.8	676.0	657.1	643.7
37.5°	750.2	738.1	726.1	714.2	702.2	686.2	666.2	646.1	626.0	606.0	591.2
40°	721.6	708.8	696.0	683.2	670.3	653.6	632.8	612.1	591.4	570.6	555.4
42.5°	692.4	678.9	665.3	651.9	638.4	620.9	599.5	578.1	556.6	535.2	519.4
45°	646.6	632.3	617.9	603.6	589.3	570.9	548.5	526.0	503.5	481.1	465.9
47.5°	601.9	586.7	571.6	556.4	541.2	522.1	498.9	475.7	452.5	429.3	414.2
50°	569.6	554.4	539.2	524.1	508.9	489.6	466.0	442.5	419.0	395.5	380.7
52.5°	538.1	522.2	506.3	490.5	474.6	455.2	432.2	409.2	386.2	363.2	348.9
55°	491.7	475.0	458.4	441.7	425.0	405.1	382.0	358.9	335.8	312.7	299.9
57.5°	444.1	427.1	409.9	392.9	375.7	356.1	333.8	311.7	289.5	267.3	255.5
60°	411.8	394.7	377.6	360.5	343.4	323.9	301.8	279.7	257.8	235.7	224.8
62.5°	380.2	363.2	346.0	328.9	311.8	292.8	271.8	250.8	229.8	208.8	198.4
65°	332.0	314.6	297.3	280.0	262.7	244.4	225.2	205.9	186.6	167.4	160.1
67.5°	285.4	268.2	251.0	233.8	216.6	199.3	182.0	164.8	147.4	130.1	126.8
70°	253.1	236.4	219.7	203.0	186.3	170.6	155.9	141.1	126.4	111.6	109.4
72.5°	222.3	206.2	190.3	174.3	158.3	144.4	132.5	120.6	108.9	97.0	95.2
75°	177.0	162.1	147.1	132.1	117.2	106.0	98.8	91.5	84.3	77.0	75.5
77.5°	132.6	119.4	106.3	93.2	80.1	71.7	68.2	64.8	61.3	57.8	56.8
80°	104.9	94.0	83.0	72.2	61.3	54.8	52.6	50.4	48.4	46.2	45.3
82.5°	79.5	71.0	62.5	53.9	45.4	40.4	39.0	37.5	36.1	34.7	34.1
85°	41.4	36.9	32.4	27.9	23.4	20.8	20.2	19.6	18.9	18.3	18.3
87.5°	12.5	11.8	11.3	10.4	9.4	9.4	10.6	12.1	13.4	13.6	13.2
90°	1.1	4.3	8.8	10.9	13.1	16.4	21.9	29.6	36.1	37.2	36.1
92.5°	13.4	19.2	27.1	32.0	39.4	49.7	74.5	109.2	140.3	142.3	120.3
95°	38.4	42.7	53.6	63.5	81.1	107.3	157.7	252.9	379.9	429.2	375.6
97.5°	62.4	68.3	79.9	94.8	115.0	144.8	208.0	340.7	551.9	732.7	768.6
100°	84.3	87.6	97.5	115.0	136.9	167.5	225.6	359.1	595.6	865.0	1022.7
102.5°	104.4	106.9	116.7	134.2	157.0	187.7	241.3	360.1	579.0	869.4	1117.3
105°	133.6	138.0	145.6	162.0	186.2	216.8	268.2	365.7	546.4	811.3	1102.6
107.5°	165.1	168.6	176.1	191.1	215.1	245.9	295.9	380.8	530.2	749.1	1006.4
110°	186.2	190.5	197.1	211.3	234.3	266.1	314.2	393.0	526.7	719.3	946.0



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	205.4	209.8	217.3	230.5	252.7	285.3	331.8	406.2	527.5	700.1	904.0
115°	235.4	240.9	247.4	260.6	282.5	312.1	359.1	425.9	532.2	678.8	851.9
117.5°	266.6	270.9	277.5	289.1	310.1	340.7	384.3	447.0	540.0	668.5	819.0
120°	285.8	290.1	296.7	306.6	328.5	359.1	401.8	461.0	545.3	662.4	801.4
122.5°	304.2	307.6	314.2	325.0	346.9	378.4	418.5	473.3	551.4	658.9	786.6
125°	328.5	331.8	338.4	351.5	373.3	404.1	443.5	492.8	560.6	652.6	765.3
127.5°	347.7	352.1	361.4	375.8	396.8	428.3	466.7	510.9	570.0	648.8	745.6
130°	359.1	363.5	374.5	389.8	411.7	442.3	480.7	522.3	577.0	647.1	732.5
132.5°	369.7	374.9	386.7	402.9	425.7	456.4	492.9	533.7	584.0	646.2	722.0
135°	385.4	389.8	402.9	419.3	444.5	475.2	510.2	548.6	592.4	644.9	707.3
137.5°	400.3	405.6	418.7	436.2	461.2	489.7	524.2	560.0	599.8	644.7	697.0
140°	411.7	416.0	429.2	446.8	470.8	499.3	532.2	566.1	603.3	643.9	690.9
142.5°	423.1	426.6	438.8	456.4	479.6	506.3	538.3	571.4	606.0	643.9	684.8
145°	440.2	444.5	455.5	471.9	493.8	517.9	547.4	578.2	608.8	641.6	676.7
147.5°	458.5	461.8	472.3	487.5	505.7	527.1	554.9	581.8	609.6	637.7	668.4
150°	470.8	474.1	482.9	497.1	513.5	533.2	558.5	583.6	608.8	635.1	661.3
152.5°	483.1	484.7	493.3	505.9	521.4	539.3	561.9	584.5	607.0	630.7	655.2
155°	500.4	501.4	508.0	520.1	532.2	548.6	567.1	585.8	604.4	623.0	643.9
157.5°	514.8	515.9	521.2	531.7	541.3	555.2	570.9	585.8	599.4	615.1	633.1
160°	524.4	525.6	529.9	538.7	547.4	559.5	572.7	585.8	596.7	609.9	625.2
162.5°	534.1	533.5	537.8	544.8	552.7	562.1	573.5	584.9	594.1	605.5	618.2
165°	545.3	544.2	546.4	552.9	558.5	565.0	574.9	582.5	589.1	596.7	606.6
167.5°	554.5	553.2	555.2	559.3	563.3	567.4	574.6	581.0	584.0	589.1	595.2
170°	560.6	558.5	559.5	562.8	565.0	568.3	573.7	579.2	581.4	584.7	589.1
172.5°	564.1	562.8	562.1	565.4	566.8	569.1	572.9	576.6	577.9	579.5	583.0
175°	568.3	567.1	566.1	568.3	568.3	569.4	571.6	573.7	572.7	573.7	574.9
177.5°	570.2	568.4	567.6	569.4	569.4	569.4	570.2	572.0	570.2	569.4	570.2
180°	569.4	569.4	569.4	569.4	569.4	569.4	569.4	569.4	569.4	569.4	569.4



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1063.2	1063.2	1063.2	1063.2	1063.2	1063.2	1063.2	1063.2
2.5°	1058.2	1059.9	1061.6	1062.2	1062.0	1061.6	1061.3	1060.9
5°	1049.7	1051.7	1053.6	1054.2	1053.6	1052.9	1052.3	1051.7
7.5°	1032.7	1033.3	1033.9	1033.6	1032.5	1031.4	1030.3	1029.2
10°	1015.8	1015.1	1014.5	1013.5	1012.2	1011.0	1009.7	1008.3
12.5°	996.3	995.1	993.9	992.3	990.1	988.1	985.9	983.7
15°	959.9	955.7	951.7	948.6	946.5	944.3	942.2	940.1
17.5°	918.7	913.8	909.0	904.7	901.1	897.4	893.7	890.0
20°	889.9	884.6	879.2	874.2	869.5	864.8	860.1	855.4
22.5°	858.4	851.5	844.6	839.4	835.8	832.4	828.9	825.4
25°	806.1	797.3	788.5	782.6	779.4	776.2	773.0	769.8
27.5°	756.2	746.0	735.8	728.1	723.0	717.9	712.8	707.8
30°	721.0	710.1	699.2	690.9	685.0	679.3	673.5	667.8
32.5°	685.6	673.2	660.7	651.8	646.3	640.9	635.5	630.1
35°	630.3	616.8	603.3	594.2	589.5	584.8	580.1	575.4
37.5°	576.3	561.5	546.7	536.5	531.1	525.8	520.4	515.0
40°	540.2	525.0	509.8	499.5	493.9	488.3	482.8	477.2
42.5°	503.8	488.0	472.4	461.8	456.5	451.1	445.7	440.3
45°	450.7	435.5	420.4	410.2	405.1	399.9	394.8	389.6
47.5°	399.2	384.1	368.9	359.1	354.4	349.8	345.1	340.4
50°	366.0	351.2	336.5	326.8	322.3	317.8	313.4	308.9
52.5°	334.7	320.4	306.1	297.0	292.8	288.7	284.6	280.4
55°	287.1	274.2	261.4	253.0	248.9	244.8	240.7	236.7
57.5°	243.7	232.1	220.3	212.6	209.2	205.9	202.4	199.0
60°	214.0	203.0	192.1	184.9	181.5	178.1	174.7	171.3
62.5°	188.0	177.6	167.2	161.0	158.9	156.9	154.9	152.8
65°	152.9	145.6	138.4	134.4	133.7	133.1	132.4	131.9
67.5°	123.4	120.1	116.8	114.7	114.0	113.4	112.7	112.0
70°	107.4	105.2	103.0	101.6	100.7	99.8	99.0	98.1
72.5°	93.4	91.6	89.8	88.7	88.1	87.7	87.1	86.6
75°	74.0	72.5	71.0	70.1	69.9	69.7	69.5	69.3
77.5°	56.0	55.1	54.3	53.7	53.3	53.1	52.7	52.3
80°	44.5	43.6	42.8	42.3	42.3	42.3	42.3	42.3
82.5°	33.6	33.1	32.6	32.3	32.3	32.3	32.3	32.3
85°	18.3	18.3	18.3	18.3	18.3	18.3	18.3	18.3
87.5°	12.8	12.3	12.4	12.6	12.6	12.6	12.6	12.6
90°	35.1	32.9	35.1	36.1	36.1	36.1	36.1	36.1
92.5°	95.5	81.9	72.7	65.9	65.0	61.5	62.4	60.7
95°	286.9	220.1	174.1	150.0	135.7	127.1	123.8	124.8
97.5°	669.4	547.7	429.2	350.2	297.8	270.9	254.9	245.7
100°	999.7	863.9	713.9	581.4	490.5	443.5	411.7	392.0
102.5°	1216.1	1185.3	1075.6	935.3	836.5	756.2	716.5	689.8
105°	1330.3	1454.1	1468.3	1432.2	1364.2	1296.4	1249.3	1234.0
107.5°	1248.0	1434.4	1548.2	1601.2	1609.8	1606.0	1596.6	1576.2
110°	1177.0	1373.0	1513.2	1603.0	1650.0	1670.8	1680.7	1679.6



TEST NUMBER: P331704-830

CATALOG NUMBER: SA2XXRDIP-C675D1080U830-4F0-1E-UDD-F4

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	1112.2	1300.3	1450.1	1553.0	1618.5	1653.3	1672.0	1677.8
115°	1032.6	1201.2	1344.5	1457.4	1535.1	1585.5	1613.9	1623.8
117.5°	972.5	1120.6	1250.7	1356.4	1435.7	1488.8	1518.9	1527.2
120°	942.7	1078.5	1194.6	1294.2	1370.8	1422.3	1454.1	1465.0
122.5°	919.1	1043.5	1153.4	1243.4	1312.1	1362.7	1391.0	1400.1
125°	884.7	997.5	1093.8	1175.9	1239.4	1281.1	1308.4	1317.2
127.5°	850.7	952.8	1043.7	1119.5	1174.9	1213.8	1237.5	1244.5
130°	828.9	923.0	1009.6	1081.8	1135.5	1172.7	1194.6	1203.3
132.5°	807.9	895.0	974.5	1042.4	1095.1	1132.4	1152.5	1160.4
135°	778.4	850.7	923.0	984.3	1031.4	1067.5	1087.2	1091.7
137.5°	755.1	815.5	872.9	926.3	969.2	1000.3	1017.7	1024.2
140°	740.2	792.8	843.1	891.3	926.3	954.8	971.2	977.8
142.5°	727.9	772.6	816.0	856.2	889.5	915.4	930.0	931.3
145°	710.6	746.8	780.7	812.5	838.7	857.3	868.3	871.6
147.5°	697.3	725.8	752.2	775.4	797.1	812.0	819.4	821.4
150°	687.6	711.7	734.7	754.4	770.8	784.0	790.5	791.6
152.5°	678.0	700.3	719.8	736.9	749.8	761.2	766.0	766.2
155°	664.6	682.1	698.5	710.6	722.6	730.3	734.7	732.5
157.5°	649.0	663.7	677.5	686.9	695.5	701.8	703.8	703.8
160°	639.4	651.5	663.5	671.2	678.8	684.3	685.4	685.4
162.5°	629.8	640.1	650.4	656.3	663.9	667.7	668.7	667.9
165°	615.4	623.0	630.7	635.1	639.4	643.9	643.9	642.7
167.5°	601.5	607.5	612.7	616.7	618.6	621.0	620.9	619.5
170°	594.6	597.9	602.2	604.4	605.5	608.8	607.7	605.5
172.5°	586.6	589.1	592.6	593.9	595.0	596.5	595.4	594.1
175°	578.2	579.2	580.3	581.4	581.4	582.5	581.4	579.2
177.5°	572.0	572.0	572.9	572.9	572.9	572.9	572.0	570.2
180°	569.4	569.4	569.4	569.4	569.4	569.4	569.4	569.4

(END OF REPORT)