

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: P331678

Luminaire Tested: **SA2XXRDIP-C675D330U835-4F0-1E-UDD-F**

Issue Date: 10/7/2019

Test Information

Test Method: LM-79-08
Report Number: P331678
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-2,
Test Lab: INNOVATION CENTER
Issue Date: 10/7/2019
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: SA2XXRDIP-C675D330U835-4F0-1E-UDD-F
Description: DEFINE 2 DIRECT-INDIRECT PENDANT LED LUMINAIRE
DOWNLIGHT 675 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER, REGRESSED
HOUSING
UPLIGHT 330 LUMENS PER FOOT, NO LENS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

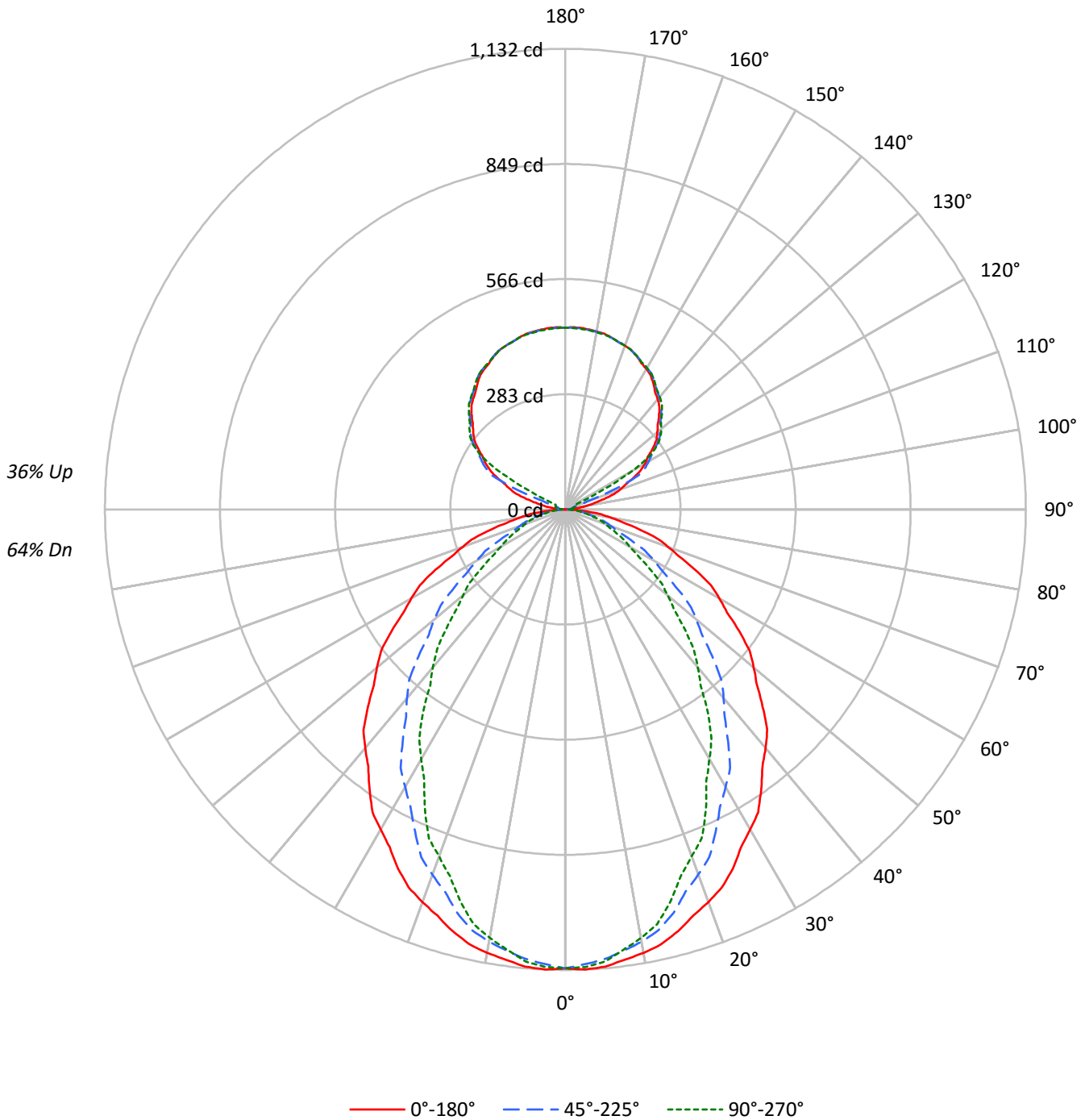
Lumens per Lamp: N/A
Luminaire Lumens: 3630.7 lumens
Efficiency: N/A
Efficacy: 103.7 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular (W 0.17' x L: 4' x H: 0')
CIE Type: Semi-Direct

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



TEST NUMBER: P331678
CATALOG NUMBER: SA2XXRDIP-C675D330U835-4F0-1E-UDD-F

Luminous Intensity Polar Plot





TEST NUMBER: P331678

CATALOG NUMBER: SA2XXRDIP-C675D330U835-4F0-1E-UDD-F

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	110	110	110	110	104	104	104	104	91	91	91	80	80	80	69	69	69	64				
1	102	97	94	90	95	92	88	85	81	78	76	71	69	68	62	61	59	55				
2	93	86	80	75	87	81	76	71	72	68	64	63	60	57	55	53	51	47				
3	85	76	69	63	80	72	65	60	64	59	55	56	53	49	49	47	44	41				
4	78	68	60	54	73	64	57	52	57	52	47	51	46	43	45	41	39	35				
5	72	61	53	47	68	58	50	45	51	46	41	46	41	38	41	37	34	31				
6	67	55	47	41	63	52	45	39	47	41	36	42	37	33	37	33	30	28				
7	62	50	42	36	58	47	40	35	43	37	32	38	33	30	34	30	27	25				
8	58	45	38	32	54	43	36	31	39	33	29	35	30	27	31	27	25	22				
9	54	42	34	29	51	40	33	28	36	30	26	32	28	24	29	25	22	20				
10	50	38	31	26	48	37	30	26	33	28	24	30	25	22	27	23	20	19				

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	18213	18213	18213
5°	18282	17985	18084
10°	18143	17690	17539
15°	17934	17167	16672
20°	17646	16417	15593
25°	17350	15567	14549
30°	16940	14693	13209
35°	16539	13742	12033
40°	16136	12760	10671
45°	15664	11654	9439
50°	15179	10540	8231
55°	14686	9340	7068
60°	14108	8076	5867
65°	13456	6785	5345
70°	12675	5589	4914
75°	11715	5097	4585
80°	10349	4556	4175
85°	8133	3594	3594



TEST NUMBER: P331678

CATALOG NUMBER: SA2XXRDIP-C675D330U835-4F0-1E-UDD-F

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	105.6	2.9
10°-20°	289.9	8.0
20°-30°	407.1	11.2
30°-40°	443.9	12.2
40°-50°	408.2	11.2
50°-60°	320.6	8.8
60°-70°	209.0	5.8
70°-80°	107.8	3.0
80°-90°	29.1	0.8
90°-100°	14.9	0.4
100°-110°	54.7	1.5
110°-120°	146.1	4.0
120°-130°	241.2	6.6
130°-140°	256.5	7.1
140°-150°	238.4	6.6
150°-160°	191.7	5.3
160°-170°	123.5	3.4
170°-180°	42.5	1.2
0°-30°	802.6	22.1
0°-40°	1246.6	34.3
0°-60°	1975.3	54.4
0°-90°	2321.2	63.9
90°-120°	215.7	5.9
90°-150°	951.8	26.2
90°-180°	1309.0	36.1
0°-180°	3630.7	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1128	1128	1128	1128	1128	
5°	1128	1122	1110	1118	1116	107
15°	1073	1060	1027	1008	997	302
25°	974	939	874	833	817	448
35°	839	785	697	635	610	525
45°	686	615	510	441	413	529
55°	522	440	332	273	251	466
65°	352	269	178	145	140	349
75°	188	118	82	75	74	199
85°	44	23	19	19	19	52
90°	0	4	6	8	9	3
95°	21	11	13	14	14	26
105°	98	103	20	23	25	105
115°	186	192	200	57	26	183
125°	263	267	273	275	276	234
135°	325	330	333	336	336	251
145°	377	377	382	385	383	236
155°	416	413	416	418	416	191
165°	438	436	437	439	437	124
175°	448	446	446	448	445	43
180°	447	447	447	447	447	



TEST NUMBER: P331678

CATALOG NUMBER: SA2XXRDIP-C675D330U835-4F0-1E-UDD-F

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1128.0	1128.0	1128.0	1128.0	1128.0	1128.0	1128.0	1128.0	1128.0	1128.0	1128.0
2.5°	1132.1	1131.2	1130.3	1129.4	1128.5	1127.0	1125.0	1123.0	1121.1	1119.1	1120.9
5°	1128.0	1126.9	1125.8	1124.6	1123.5	1121.5	1118.5	1115.6	1112.6	1109.7	1111.7
7.5°	1116.4	1115.0	1113.6	1112.2	1110.8	1108.3	1104.9	1101.5	1098.0	1094.6	1095.1
10°	1106.6	1105.0	1103.4	1101.8	1100.2	1097.2	1092.6	1088.1	1083.6	1079.0	1078.4
12.5°	1094.3	1092.4	1090.4	1088.5	1086.5	1082.7	1076.9	1071.1	1065.2	1059.4	1058.2
15°	1072.9	1070.4	1067.9	1065.4	1062.9	1057.8	1050.1	1042.4	1034.7	1027.0	1022.7
17.5°	1046.6	1042.8	1039.0	1035.1	1031.3	1024.5	1014.6	1004.7	994.8	984.9	979.8
20°	1027.0	1022.4	1017.9	1013.4	1008.8	1000.9	989.5	978.2	966.9	955.5	949.8
22.5°	1005.7	1000.7	995.6	990.5	985.4	976.5	963.7	950.9	938.1	925.3	918.0
25°	973.9	966.6	959.4	952.1	944.9	933.7	918.8	903.8	888.8	873.8	864.5
27.5°	935.5	927.6	919.7	911.8	903.9	891.5	874.7	857.8	840.9	824.0	813.2
30°	908.6	899.9	891.3	882.7	874.1	860.7	842.5	824.4	806.2	788.1	776.5
32.5°	882.4	872.3	862.3	852.2	842.1	827.8	809.3	790.8	772.3	753.8	740.6
35°	839.1	827.6	816.0	804.4	792.9	777.1	757.1	737.2	717.2	697.2	682.9
37.5°	795.9	783.1	770.4	757.7	745.0	728.0	706.8	685.5	664.2	642.9	627.2
40°	765.6	752.0	738.4	724.8	711.2	693.4	671.4	649.4	627.4	605.4	589.3
42.5°	734.6	720.3	705.9	691.6	677.3	658.7	636.0	613.3	590.5	567.8	551.1
45°	686.0	670.8	655.6	640.4	625.2	605.7	581.9	558.1	534.2	510.4	494.3
47.5°	638.6	622.5	606.4	590.3	574.2	553.9	529.3	504.7	480.1	455.5	439.5
50°	604.3	588.2	572.1	556.0	539.9	519.4	494.4	469.5	444.5	419.6	403.9
52.5°	570.9	554.0	537.2	520.4	503.5	482.9	458.5	434.1	409.7	385.3	370.2
55°	521.7	504.0	486.3	468.6	450.9	429.8	405.3	380.8	356.3	331.8	318.2
57.5°	471.2	453.1	434.9	416.8	398.6	377.8	354.2	330.7	307.1	283.6	271.1
60°	436.9	418.8	400.6	382.5	364.3	343.6	320.2	296.8	273.5	250.1	238.5
62.5°	403.4	385.3	367.1	349.0	330.8	310.6	288.4	266.1	243.8	221.5	210.5
65°	352.2	333.8	315.4	297.1	278.7	259.3	238.9	218.5	198.0	177.6	169.9
67.5°	302.8	284.5	266.3	248.1	229.8	211.5	193.1	174.8	156.4	138.0	134.5
70°	268.5	250.8	233.1	215.4	197.7	181.0	165.4	149.7	134.1	118.4	116.1
72.5°	235.8	218.8	201.9	184.9	167.9	153.2	140.6	128.0	115.5	102.9	101.0
75°	187.8	172.0	156.1	140.2	124.3	112.5	104.8	97.1	89.4	81.7	80.1
77.5°	140.7	126.7	112.8	98.9	85.0	76.1	72.4	68.7	65.0	61.3	60.3
80°	111.3	99.7	88.1	76.6	65.0	58.1	55.8	53.5	51.3	49.0	48.1
82.5°	84.3	75.3	66.3	57.2	48.2	42.9	41.4	39.8	38.3	36.8	36.2
85°	43.9	39.1	34.4	29.6	24.8	22.1	21.4	20.8	20.1	19.4	19.4
87.5°	13.1	11.8	10.5	9.3	8.0	7.4	7.5	7.6	7.7	7.8	7.7
90°	0.3	1.1	1.9	2.7	3.5	4.2	4.7	5.3	5.9	6.5	6.8
92.5°	6.5	6.5	6.4	6.3	6.2	6.4	6.6	6.9	7.2	7.5	7.7
95°	21.0	18.6	16.3	13.9	11.5	10.6	11.1	11.6	12.1	12.6	13.0
97.5°	41.7	35.0	28.3	21.7	15.0	12.2	13.4	14.5	15.7	16.9	17.2
100°	57.2	47.4	37.5	27.7	17.9	13.5	14.8	16.0	17.2	18.4	19.0
102.5°	74.3	72.2	70.1	68.1	66.0	59.8	49.6	39.4	29.2	18.9	19.7
105°	98.3	100.4	102.6	104.8	106.9	98.2	78.6	59.0	39.3	19.7	20.5
107.5°	125.6	127.4	129.1	130.9	132.6	121.7	98.2	74.7	51.1	27.6	26.8
110°	143.2	144.7	146.3	147.8	149.3	139.6	118.9	98.1	77.3	56.6	49.4



TEST NUMBER: P331678

CATALOG NUMBER: SA2XXRDIP-C675D330U835-4F0-1E-UDD-F

CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	159.8	161.1	162.5	163.8	165.1	163.2	158.1	153.0	147.8	142.7	116.5
115°	185.9	187.1	188.4	189.6	190.8	192.3	194.1	195.9	197.7	199.5	166.2
117.5°	209.3	210.6	212.0	213.4	214.7	216.0	217.3	218.5	219.7	221.0	212.9
120°	226.3	227.4	228.5	229.6	230.6	231.8	233.1	234.4	235.7	237.0	237.9
122.5°	240.8	242.0	243.1	244.2	245.4	246.6	248.0	249.4	250.9	252.3	252.8
125°	262.9	263.8	264.7	265.7	266.6	267.8	269.1	270.5	271.8	273.2	273.7
127.5°	282.8	283.9	284.9	286.0	287.0	288.0	289.0	290.1	291.1	292.1	292.8
130°	295.5	296.7	297.8	299.0	300.1	301.1	301.9	302.7	303.5	304.3	305.0
132.5°	308.5	309.4	310.4	311.4	312.4	313.2	314.0	314.8	315.6	316.4	317.1
135°	325.3	326.4	327.6	328.7	329.9	330.8	331.4	332.1	332.7	333.4	334.1
137.5°	342.3	343.1	343.9	344.7	345.5	346.3	347.0	347.7	348.5	349.2	349.9
140°	353.4	354.0	354.5	355.1	355.7	356.4	357.2	358.0	358.8	359.5	360.2
142.5°	362.7	363.2	363.7	364.3	364.8	365.5	366.4	367.3	368.2	369.1	369.7
145°	377.3	377.3	377.2	377.1	377.0	377.6	378.8	380.1	381.3	382.5	383.0
147.5°	390.1	389.8	389.5	389.2	389.0	389.4	390.6	391.9	393.1	394.3	394.6
150°	398.3	397.8	397.3	396.8	396.3	396.7	397.8	399.0	400.1	401.3	401.7
152.5°	405.3	404.8	404.2	403.6	403.1	403.3	404.4	405.5	406.6	407.7	408.1
155°	415.5	414.8	414.2	413.5	412.9	413.0	413.9	414.7	415.6	416.4	416.9
157.5°	423.4	422.9	422.3	421.8	421.2	421.3	421.9	422.5	423.1	423.7	424.2
160°	428.1	427.7	427.2	426.8	426.4	426.4	426.8	427.2	427.7	428.1	428.5
162.5°	432.2	431.8	431.4	430.9	430.5	430.5	430.8	431.2	431.6	432.0	432.5
165°	437.8	437.4	436.9	436.5	436.1	436.0	436.2	436.4	436.6	436.8	437.3
167.5°	441.9	441.5	441.1	440.6	440.2	440.1	440.3	440.5	440.7	440.9	441.4
170°	444.3	443.8	443.4	443.0	442.5	442.4	442.5	442.7	442.8	443.0	443.5
172.5°	445.8	445.4	444.9	444.5	444.1	443.9	444.1	444.2	444.4	444.5	445.0
175°	447.8	447.3	446.8	446.3	445.8	445.6	445.8	445.9	446.1	446.2	446.7
177.5°	448.1	447.7	447.3	446.9	446.5	446.4	446.4	446.5	446.5	446.6	447.0
180°	446.8	446.8	446.8	446.8	446.8	446.8	446.8	446.8	446.8	446.8	446.8



TEST NUMBER: P331678

CATALOG NUMBER: SA2XXRDIP-C675D330U835-4F0-1E-UDD-F

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1128.0	1128.0	1128.0	1128.0	1128.0	1128.0	1128.0	1128.0
2.5°	1122.7	1124.5	1126.3	1127.0	1126.7	1126.3	1126.0	1125.6
5°	1113.7	1115.8	1117.8	1118.5	1117.8	1117.1	1116.5	1115.8
7.5°	1095.7	1096.3	1096.9	1096.6	1095.4	1094.3	1093.1	1091.9
10°	1077.7	1077.0	1076.3	1075.3	1073.9	1072.6	1071.2	1069.8
12.5°	1057.0	1055.8	1054.5	1052.8	1050.5	1048.3	1046.0	1043.7
15°	1018.4	1014.0	1009.7	1006.4	1004.2	1001.9	999.6	997.4
17.5°	974.7	969.5	964.4	959.9	956.0	952.1	948.2	944.3
20°	944.2	938.5	932.8	927.5	922.5	917.5	912.5	907.5
22.5°	910.7	903.4	896.1	890.6	886.8	883.1	879.4	875.7
25°	855.2	845.9	836.6	830.3	826.9	823.5	820.1	816.7
27.5°	802.3	791.5	780.7	772.5	767.1	761.7	756.3	750.9
30°	765.0	753.4	741.8	733.0	726.8	720.7	714.6	708.5
32.5°	727.4	714.2	701.0	691.5	685.7	680.0	674.2	668.5
35°	668.7	654.4	640.1	630.4	625.4	620.4	615.5	610.5
37.5°	611.4	595.7	580.0	569.2	563.5	557.8	552.1	546.4
40°	573.1	557.0	540.9	529.9	524.0	518.1	512.2	506.3
42.5°	534.5	517.8	501.2	490.0	484.3	478.6	472.9	467.1
45°	478.2	462.1	446.0	435.2	429.8	424.3	418.9	413.4
47.5°	423.5	407.5	391.4	381.0	376.0	371.1	366.1	361.2
50°	388.3	372.6	357.0	346.7	342.0	337.2	332.5	327.7
52.5°	355.1	339.9	324.8	315.1	310.7	306.3	301.9	297.5
55°	304.6	290.9	277.3	268.4	264.1	259.7	255.4	251.1
57.5°	258.6	246.2	233.7	225.6	222.0	218.4	214.7	211.1
60°	227.0	215.4	203.8	196.2	192.6	189.0	185.3	181.7
62.5°	199.5	188.4	177.4	170.8	168.6	166.5	164.3	162.1
65°	162.2	154.5	146.8	142.6	141.9	141.2	140.5	139.9
67.5°	130.9	127.4	123.9	121.7	121.0	120.3	119.6	118.8
70°	113.9	111.6	109.3	107.8	106.8	105.9	105.0	104.1
72.5°	99.1	97.2	95.3	94.1	93.5	93.0	92.4	91.9
75°	78.5	76.9	75.3	74.4	74.2	74.0	73.7	73.5
77.5°	59.4	58.5	57.6	57.0	56.6	56.3	55.9	55.5
80°	47.2	46.3	45.4	44.9	44.9	44.9	44.9	44.9
82.5°	35.7	35.1	34.6	34.3	34.3	34.3	34.3	34.3
85°	19.4	19.4	19.4	19.4	19.4	19.4	19.4	19.4
87.5°	7.6	7.5	7.4	7.3	7.4	7.4	7.4	7.5
90°	7.2	7.5	7.9	8.2	8.3	8.4	8.6	8.7
92.5°	7.9	8.1	8.2	8.4	8.5	8.6	8.6	8.7
95°	13.3	13.7	14.0	14.2	14.1	14.0	14.0	13.9
97.5°	17.5	17.7	18.0	18.2	18.3	18.4	18.5	18.6
100°	19.6	20.2	20.7	21.1	21.2	21.4	21.5	21.7
102.5°	20.4	21.2	21.9	22.4	22.6	22.8	23.0	23.2
105°	21.3	22.1	22.9	23.4	23.7	24.0	24.3	24.6
107.5°	26.0	25.2	24.4	24.1	24.4	24.7	25.0	25.3
110°	42.2	35.0	27.8	24.4	24.7	25.0	25.3	25.5



TEST NUMBER: P331678

CATALOG NUMBER: SA2XXRDIP-C675D330U835-4F0-1E-UDD-F

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	90.3	64.1	37.9	24.9	25.1	25.3	25.6	25.8
115°	133.0	99.7	66.4	47.2	42.0	36.9	31.7	26.5
117.5°	204.9	196.8	188.8	176.3	159.3	142.3	125.3	108.3
120°	238.7	239.6	240.4	236.0	226.3	216.6	206.9	197.2
122.5°	253.3	253.8	254.3	253.6	251.8	249.9	248.0	246.1
125°	274.2	274.7	275.2	275.6	275.8	276.0	276.2	276.4
127.5°	293.6	294.3	295.0	295.4	295.5	295.5	295.5	295.6
130°	305.8	306.6	307.4	307.8	307.7	307.6	307.6	307.5
132.5°	317.8	318.4	319.1	319.4	319.3	319.3	319.2	319.1
135°	334.8	335.5	336.2	336.5	336.4	336.2	336.1	335.9
137.5°	350.6	351.3	352.0	352.2	352.0	351.8	351.5	351.3
140°	360.8	361.5	362.1	362.3	361.9	361.6	361.2	360.8
142.5°	370.3	370.9	371.5	371.6	371.2	370.9	370.5	370.1
145°	383.5	384.0	384.5	384.6	384.2	383.9	383.5	383.1
147.5°	395.0	395.4	395.8	395.8	395.5	395.2	394.9	394.6
150°	402.1	402.5	403.0	403.0	402.7	402.3	401.9	401.6
152.5°	408.6	409.0	409.4	409.4	408.9	408.5	408.0	407.5
155°	417.3	417.7	418.2	418.1	417.5	417.0	416.4	415.8
157.5°	424.7	425.2	425.6	425.6	425.0	424.5	423.9	423.4
160°	429.0	429.4	429.8	429.8	429.3	428.8	428.3	427.8
162.5°	432.9	433.4	433.9	433.9	433.2	432.6	432.0	431.4
165°	437.8	438.3	438.8	438.8	438.3	437.8	437.3	436.8
167.5°	441.9	442.4	442.9	442.8	442.2	441.5	440.9	440.2
170°	444.0	444.5	445.0	444.9	444.3	443.6	443.0	442.3
172.5°	445.5	446.0	446.5	446.5	445.8	445.2	444.5	443.9
175°	447.2	447.7	448.2	448.1	447.4	446.7	445.9	445.2
177.5°	447.4	447.8	448.2	448.1	447.6	447.1	446.6	446.1
180°	446.8	446.8	446.8	446.8	446.8	446.8	446.8	446.8

(END OF REPORT)