

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: P332648-940

Luminaire Tested: **SA4XXDIP-C1020D810U940-4F0-1E-UDD-D4**

Issue Date: 10/7/2019

Test Information

Test Method: LM-79-08
Report Number: P332648-940
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-18,
Test Lab: INNOVATION CENTER
Issue Date: 10/7/2019
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: SA4XXDIP-C1020D810U940-4F0-1E-UDD-D4
Description: DEFINE 4 DIRECT-INDIRECT PENDANT LED LUMINAIRE
DOWNLIGHT 1020 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER
UPLIGHT 810 LUMENS PER FOOT, BATWING OPTIC
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 6336.2 lumens
Efficiency: N/A
Efficacy: 116.5 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: General Diffuse

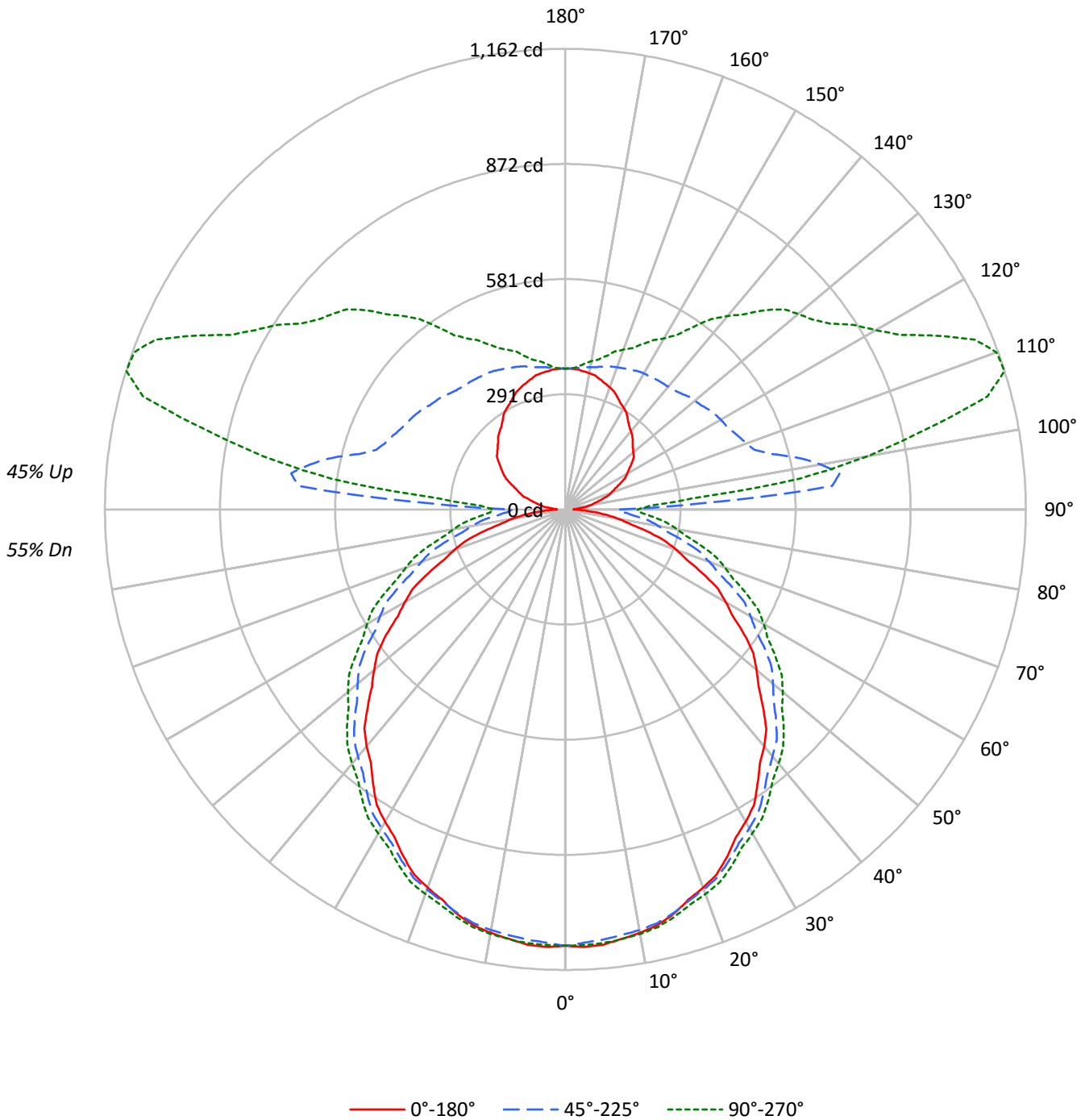
Input Watts (W): 54.4
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P332648-940

CATALOG NUMBER: SA4XXDIP-C1020D810U940-4F0-1E-UDD-D4

Luminous Intensity Polar Plot





TEST NUMBER: P332648-940

CATALOG NUMBER: SA4XXDIP-C1020D810U940-4F0-1E-UDD-D4

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	108	108	108	108	101	101	101	101	86	86	86	73	73	73	61	61	61	55				
1	98	93	89	85	90	86	82	79	74	71	68	62	60	58	52	50	49	44				
2	89	80	74	68	82	75	69	64	64	60	56	54	51	48	45	42	40	36				
3	80	70	63	56	74	65	58	53	56	51	46	47	43	40	39	36	34	30				
4	73	62	54	47	68	58	50	45	50	44	39	42	38	34	35	32	29	25				
5	67	55	47	40	62	51	44	38	44	38	34	38	33	29	31	28	25	22				
6	62	49	41	35	57	46	38	33	40	34	29	34	29	25	28	25	22	19				
7	57	44	36	30	53	42	34	29	36	30	26	31	26	22	26	22	19	17				
8	53	40	32	27	49	38	30	25	33	27	23	28	23	20	24	20	17	15				
9	49	37	29	24	46	34	27	23	30	24	20	26	21	18	22	18	15	13				
10	46	34	26	21	43	32	25	20	28	22	18	24	19	16	20	17	14	12				

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	8888	8888	8888
5°	8916	8686	8711
10°	8861	8544	8538
15°	8782	8380	8334
20°	8662	8198	8135
25°	8527	7995	7918
30°	8381	7793	7693
35°	8216	7585	7497
40°	8083	7388	7292
45°	7887	7207	7117
50°	7721	6996	6931
55°	7549	6799	6714
60°	7282	6547	6515
65°	6989	6278	6271
70°	6633	5968	5986
75°	6136	5628	5730
80°	5588	5302	5476
85°	4893	5013	5328



TEST NUMBER: P332648-940

CATALOG NUMBER: SA4XXDIP-C1020D810U940-4F0-1E-UDD-D4

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	104.3	1.6
10°-20°	298.7	4.7
20°-30°	451.7	7.1
30°-40°	546.5	8.6
40°-50°	577.7	9.1
50°-60°	543.7	8.6
60°-70°	451.1	7.1
70°-80°	316.9	5.0
80°-90°	181.1	2.9
90°-100°	362.7	5.7
100°-110°	612.2	9.7
110°-120°	530.7	8.4
120°-130°	431.8	6.8
130°-140°	348.0	5.5
140°-150°	258.7	4.1
150°-160°	180.0	2.8
160°-170°	105.9	1.7
170°-180°	34.4	0.5
0°-30°	854.6	13.5
0°-40°	1401.1	22.1
0°-60°	2522.6	39.8
0°-90°	3471.7	54.8
90°-120°	1505.7	23.8
90°-150°	2544.1	40.2
90°-180°	2864.0	45.2
0°-180°	6336.2	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1101	1101	1101	1101	1101	
5°	1102	1098	1090	1099	1098	105
15°	1057	1058	1054	1065	1064	298
25°	967	974	978	991	992	445
35°	846	860	873	889	894	529
45°	705	729	752	772	779	545
55°	552	579	615	639	647	492
65°	382	422	464	493	504	379
75°	212	258	309	343	355	226
85°	65	117	173	208	222	70
90°	20	75	135	170	182	14
95°	39	130	676	421	322	38
105°	93	155	539	1096	1103	99
115°	151	200	466	868	1036	150
125°	205	243	440	724	817	183
135°	240	286	413	622	710	186
145°	275	314	400	506	561	173
155°	312	336	389	441	460	144
165°	340	350	373	395	401	96
175°	354	355	358	363	361	34
180°	355	355	355	355	355	



TEST NUMBER: P332648-940

CATALOG NUMBER: SA4XXDIP-C1020D810U940-4F0-1E-UDD-D4

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1101.0	1101.0	1101.0	1101.0	1101.0	1101.0	1101.0	1101.0	1101.0	1101.0	1101.0
2.5°	1104.9	1104.3	1103.6	1103.0	1102.2	1101.1	1099.3	1097.6	1095.8	1094.0	1095.6
5°	1102.2	1101.4	1100.5	1099.7	1098.9	1097.5	1095.6	1093.7	1091.8	1089.8	1092.1
7.5°	1092.8	1092.3	1091.8	1091.4	1090.8	1089.8	1088.2	1086.6	1085.0	1083.4	1085.9
10°	1084.9	1084.7	1084.4	1084.1	1083.9	1083.0	1081.6	1080.3	1078.9	1077.5	1080.0
12.5°	1074.1	1074.1	1074.0	1073.9	1073.9	1073.4	1072.5	1071.5	1070.6	1069.6	1071.9
15°	1056.6	1056.9	1057.1	1057.4	1057.7	1057.4	1056.6	1055.8	1054.9	1054.1	1056.6
17.5°	1032.7	1033.5	1034.3	1035.1	1036.0	1036.3	1036.1	1036.0	1035.8	1035.6	1038.1
20°	1015.9	1016.7	1017.5	1018.3	1019.2	1019.8	1020.0	1020.3	1020.6	1020.8	1023.6
22.5°	997.1	998.2	999.3	1000.3	1001.3	1002.1	1002.6	1003.1	1003.5	1004.1	1006.8
25°	966.6	968.2	969.8	971.5	973.1	974.4	975.2	976.1	976.9	977.7	980.7
27.5°	932.6	935.0	937.4	939.8	942.2	944.1	945.3	946.6	947.8	949.0	951.9
30°	909.9	912.0	914.3	916.4	918.6	920.7	922.6	924.5	926.4	928.4	931.4
32.5°	885.2	887.9	890.5	893.1	895.7	898.1	900.3	902.4	904.6	906.7	910.1
35°	845.8	849.1	852.3	855.6	858.9	861.9	864.7	867.4	870.1	872.9	876.7
37.5°	806.0	809.9	813.6	817.4	821.2	824.7	828.1	831.5	835.0	838.4	842.2
40°	780.4	784.0	787.6	791.1	794.7	798.3	802.2	806.0	809.9	813.7	817.8
42.5°	750.8	754.8	758.8	762.9	766.8	771.1	775.5	780.1	784.5	789.1	793.6
45°	705.2	710.4	715.6	720.9	726.0	731.2	736.5	741.6	746.8	752.1	756.7
47.5°	661.6	666.9	672.3	677.7	683.1	688.8	694.7	700.8	706.9	712.8	717.6
50°	630.0	636.1	642.0	648.1	654.1	660.1	666.2	672.2	678.2	684.2	689.7
52.5°	598.4	604.5	610.5	616.5	622.6	629.0	635.9	642.8	649.7	656.7	662.1
55°	552.3	558.1	563.8	569.6	575.3	582.3	590.6	598.8	607.0	615.2	620.7
57.5°	500.8	507.9	515.1	522.2	529.3	536.9	545.1	553.3	561.4	569.6	576.1
60°	467.3	474.4	481.5	488.7	495.8	503.8	512.9	521.9	530.9	540.0	546.3
62.5°	434.7	442.5	450.3	458.1	465.8	474.2	483.3	492.3	501.4	510.4	516.7
65°	382.2	390.9	399.8	408.5	417.2	426.3	435.6	445.0	454.2	463.6	470.4
67.5°	331.6	341.0	350.3	359.6	368.9	378.5	388.5	398.5	408.5	418.5	425.4
70°	297.1	306.5	315.8	325.0	334.4	344.3	354.6	365.1	375.5	385.9	393.3
72.5°	263.6	273.1	282.7	292.2	301.8	312.0	323.1	334.1	345.3	356.3	363.5
75°	212.0	222.2	232.3	242.5	252.6	263.4	274.9	286.4	297.9	309.4	317.1
77.5°	164.0	174.7	185.5	196.2	207.0	218.3	230.4	242.5	254.5	266.5	274.3
80°	134.4	145.3	156.3	167.3	178.3	189.8	201.8	213.8	225.9	237.9	246.2
82.5°	104.8	116.2	127.6	139.0	150.3	162.1	174.2	186.2	198.3	210.4	218.7
85°	65.4	76.9	88.4	99.9	111.4	123.3	135.6	147.9	160.2	172.6	180.8
87.5°	36.6	48.1	59.7	71.0	82.3	93.9	106.7	118.8	131.0	143.3	151.1
90°	20.4	32.8	45.8	57.5	69.1	80.5	96.5	108.3	121.5	134.6	141.9
92.5°	26.7	40.2	56.6	75.0	95.0	120.3	167.6	233.4	297.9	337.3	308.1
95°	39.1	50.2	66.2	84.3	110.0	149.5	221.4	347.0	524.9	675.6	698.9
97.5°	55.8	63.6	77.4	93.5	115.7	149.6	207.5	313.1	489.8	698.1	840.9
100°	66.5	73.7	85.7	101.2	121.5	152.8	204.6	294.1	447.0	654.2	840.2
102.5°	77.7	85.1	95.7	109.7	128.7	158.2	205.9	285.6	417.1	601.9	793.2
105°	92.6	100.2	109.2	123.1	141.1	169.2	212.8	280.7	388.5	538.8	709.4
107.5°	111.6	117.5	125.6	138.9	155.4	182.4	222.7	285.0	378.0	500.3	640.9
110°	123.5	128.8	136.1	148.3	164.7	190.2	230.4	288.8	375.1	485.8	605.8



TEST NUMBER: P332648-940

CATALOG NUMBER: SA4XXDIP-C1020D810U940-4F0-1E-UDD-D4

CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	134.8	139.6	147.0	158.3	174.2	199.3	238.0	293.2	374.0	475.9	583.4
115°	151.1	155.6	162.9	172.4	188.1	212.5	249.1	299.8	373.4	465.8	559.7
117.5°	169.2	172.6	178.4	187.6	201.4	225.8	260.5	307.1	373.4	457.7	544.7
120°	180.5	182.7	188.4	196.9	209.6	233.4	267.9	312.1	373.7	452.8	535.7
122.5°	191.6	193.2	198.2	205.5	218.6	241.5	275.4	317.0	374.3	447.3	526.3
125°	205.0	207.6	211.4	218.8	231.8	254.7	286.6	325.6	376.3	440.3	512.5
127.5°	217.8	219.7	224.4	233.0	246.5	268.7	298.2	332.9	376.5	431.4	494.9
130°	224.0	226.6	231.8	242.0	255.0	277.3	305.4	337.0	376.9	425.9	483.8
132.5°	231.3	233.3	240.2	249.9	263.9	284.6	311.8	342.0	377.7	421.4	474.1
135°	240.2	243.0	249.9	261.8	276.5	295.6	320.5	347.5	378.0	413.4	458.3
137.5°	250.4	252.8	260.2	271.2	286.1	303.7	326.2	350.5	376.8	407.6	445.0
140°	257.6	259.5	266.9	278.5	292.8	309.5	330.7	353.3	377.3	404.1	437.7
142.5°	264.5	266.5	273.6	284.8	298.8	315.0	335.1	355.6	378.0	402.1	431.9
145°	275.3	277.1	283.7	293.3	306.2	321.5	339.6	358.4	378.6	400.2	424.2
147.5°	287.7	288.1	293.9	303.7	314.4	328.1	345.2	361.6	379.3	397.7	417.6
150°	295.5	295.9	301.2	309.3	319.5	332.6	347.9	363.3	379.3	396.0	413.5
152.5°	301.8	301.8	307.4	315.1	324.4	336.5	350.2	364.4	378.2	393.2	409.0
155°	311.7	312.4	316.6	323.5	331.2	341.6	353.5	365.3	376.5	389.1	402.3
157.5°	321.6	321.6	325.5	330.9	337.6	345.8	355.9	365.3	374.7	384.8	395.5
160°	327.7	327.7	330.5	335.4	341.0	348.7	357.0	365.3	373.0	381.4	390.5
162.5°	333.3	332.7	334.9	339.3	344.3	350.3	358.1	365.3	371.4	378.1	386.0
165°	339.6	339.6	341.0	344.5	347.9	352.1	358.4	364.0	368.2	373.0	378.6
167.5°	345.8	345.2	345.8	348.5	350.4	353.7	358.3	362.3	364.8	368.0	371.9
170°	348.7	347.9	348.7	350.7	352.1	354.2	357.7	361.1	362.6	364.6	367.5
172.5°	351.4	350.7	350.9	352.4	353.2	354.7	357.1	360.1	360.3	361.3	363.6
175°	354.2	353.5	353.5	354.2	354.9	354.9	356.3	358.4	357.7	357.7	359.1
177.5°	355.4	354.9	354.4	354.9	354.9	354.9	355.4	356.6	355.4	355.4	356.0
180°	354.9	354.9	354.9	354.9	354.9	354.9	354.9	354.9	354.9	354.9	354.9



TEST NUMBER: P332648-940

CATALOG NUMBER: SA4XXDIP-C1020D810U940-4F0-1E-UDD-D4

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1101.0	1101.0	1101.0	1101.0	1101.0	1101.0	1101.0	1101.0
2.5°	1097.2	1098.7	1100.2	1100.8	1100.6	1100.4	1100.2	1100.0
5°	1094.2	1096.4	1098.7	1099.6	1099.3	1099.0	1098.8	1098.5
7.5°	1088.4	1090.8	1093.3	1094.4	1094.1	1093.9	1093.6	1093.3
10°	1082.4	1084.9	1087.4	1088.5	1088.2	1088.0	1087.7	1087.4
12.5°	1074.2	1076.4	1078.6	1079.8	1079.7	1079.6	1079.6	1079.5
15°	1059.1	1061.5	1064.0	1065.1	1064.8	1064.5	1064.3	1064.0
17.5°	1040.6	1043.2	1045.7	1046.9	1046.6	1046.4	1046.2	1046.0
20°	1026.3	1029.0	1031.8	1033.1	1033.1	1033.1	1033.1	1033.1
22.5°	1009.5	1012.3	1015.0	1016.6	1017.1	1017.4	1017.9	1018.3
25°	983.7	986.7	989.7	991.4	991.7	991.9	992.2	992.5
27.5°	954.7	957.4	960.3	961.8	962.2	962.5	962.8	963.1
30°	934.4	937.4	940.4	942.2	942.7	943.3	943.9	944.4
32.5°	913.6	917.0	920.5	922.5	923.0	923.5	924.1	924.7
35°	880.6	884.4	888.2	890.6	891.4	892.2	893.0	893.9
37.5°	846.1	850.1	853.9	856.3	857.2	858.1	858.9	859.8
40°	821.9	826.0	830.2	832.8	833.8	834.9	836.1	837.1
42.5°	798.2	802.7	807.3	809.9	810.8	811.7	812.6	813.4
45°	761.3	766.1	770.7	773.7	775.1	776.4	777.8	779.2
47.5°	722.5	727.3	732.2	735.4	737.0	738.7	740.3	742.0
50°	695.2	700.7	706.1	709.7	711.4	713.0	714.6	716.3
52.5°	667.6	673.1	678.6	682.1	683.8	685.4	687.1	688.7
55°	626.2	631.7	637.1	640.7	642.3	644.0	645.6	647.3
57.5°	582.6	589.2	595.7	599.7	601.2	602.8	604.3	605.8
60°	552.6	558.9	565.2	569.4	571.7	573.8	576.0	578.2
62.5°	523.0	529.3	535.7	539.8	542.1	544.2	546.4	548.7
65°	477.2	484.1	491.0	495.5	497.7	499.9	502.0	504.3
67.5°	432.4	439.3	446.3	450.8	453.0	455.1	457.3	459.4
70°	400.6	408.0	415.4	420.2	422.0	424.0	425.9	427.8
72.5°	370.7	377.8	385.0	389.7	391.8	394.0	396.1	398.2
75°	324.8	332.4	340.1	345.2	347.7	350.2	352.6	355.1
77.5°	282.1	289.9	297.7	302.9	305.5	308.2	310.8	313.4
80°	254.4	262.6	270.8	276.0	278.2	280.4	282.6	284.8
82.5°	227.2	235.7	244.1	249.5	251.9	254.3	256.7	259.1
85°	189.0	197.2	205.5	211.0	213.7	216.4	219.2	221.9
87.5°	159.2	167.3	175.4	180.6	183.1	185.7	187.9	190.3
90°	150.5	159.2	167.8	172.8	175.8	178.6	180.1	182.4
92.5°	268.5	242.4	229.1	220.1	214.0	212.4	212.2	214.5
95°	638.7	538.1	452.0	389.3	357.6	338.5	328.3	321.7
97.5°	877.4	844.4	783.4	715.3	667.6	627.9	609.4	597.3
100°	949.4	970.7	944.0	897.0	838.3	797.6	778.6	775.0
102.5°	940.1	1016.5	1033.5	1016.7	981.6	953.0	933.0	930.7
105°	876.0	1003.4	1079.3	1112.4	1116.1	1112.7	1105.1	1103.0
107.5°	789.0	924.2	1028.1	1094.7	1131.0	1149.0	1157.9	1161.6
110°	736.2	863.1	970.5	1051.5	1103.1	1134.6	1149.4	1157.9



TEST NUMBER: P332648-940

CATALOG NUMBER: SA4XXDIP-C1020D810U940-4F0-1E-UDD-D4

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	695.7	808.4	910.1	990.9	1049.3	1086.9	1106.6	1119.0
115°	652.9	744.7	832.3	903.2	960.2	1004.0	1028.1	1035.7
117.5°	627.6	704.3	774.1	834.8	884.0	921.3	946.1	952.6
120°	614.4	684.7	745.9	799.3	841.2	874.1	894.4	904.3
122.5°	602.7	670.8	727.1	774.2	809.8	837.9	855.2	864.9
125°	584.6	649.8	703.1	744.8	774.4	796.3	811.2	817.0
127.5°	562.7	625.0	677.9	717.6	747.5	767.4	780.4	786.5
130°	546.6	606.6	659.0	699.2	729.4	748.5	761.3	767.1
132.5°	530.6	587.0	638.0	678.1	707.8	729.1	741.4	747.2
135°	506.6	556.2	603.2	641.1	670.6	691.7	704.5	710.3
137.5°	485.4	527.8	567.7	601.8	629.3	649.9	660.5	666.9
140°	473.2	509.6	544.6	576.3	602.1	618.8	629.9	636.9
142.5°	462.6	494.6	524.6	552.1	574.9	590.3	600.1	605.1
145°	448.2	473.5	496.1	516.9	535.5	548.4	556.5	561.1
147.5°	436.2	455.3	472.3	488.1	501.9	512.8	519.1	521.2
150°	430.2	446.2	460.2	472.7	483.9	492.9	497.1	497.8
152.5°	424.1	437.8	450.7	461.0	470.5	477.9	480.4	481.1
155°	414.8	426.1	436.5	444.9	451.8	457.4	459.5	459.5
157.5°	404.9	414.3	423.1	429.8	435.1	439.3	440.5	440.5
160°	398.9	406.5	414.2	419.7	423.9	428.1	428.8	428.8
162.5°	392.7	399.2	405.3	410.3	413.3	417.5	418.2	417.7
165°	384.1	388.3	393.2	396.7	399.5	402.3	401.6	400.9
167.5°	375.9	379.2	383.1	385.1	386.6	388.3	388.3	387.6
170°	371.0	373.0	375.9	377.9	379.3	380.0	379.3	379.3
172.5°	366.5	368.0	369.7	371.2	372.0	372.7	372.0	371.0
175°	360.5	361.1	362.6	362.6	362.6	364.0	362.6	361.1
177.5°	356.6	357.1	357.1	357.7	357.1	357.7	356.6	355.4
180°	354.9	354.9	354.9	354.9	354.9	354.9	354.9	354.9

(END OF REPORT)