

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: P332646-940

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

Issue Date: 10/7/2019

**Test Information**

Test Method: LM-79-08  
Report Number: P332646-940  
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-6,  
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-D  
Description: DEFINE 4 DIRECT-INDIRECT PENDANT LED LUMINAIRE  
DOWNLIGHT 1020 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER  
UPLIGHT 810 LUMENS PER FOOT, NO LENS  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 6639.3 lumens  
Efficiency: N/A  
Efficacy: 122.0 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

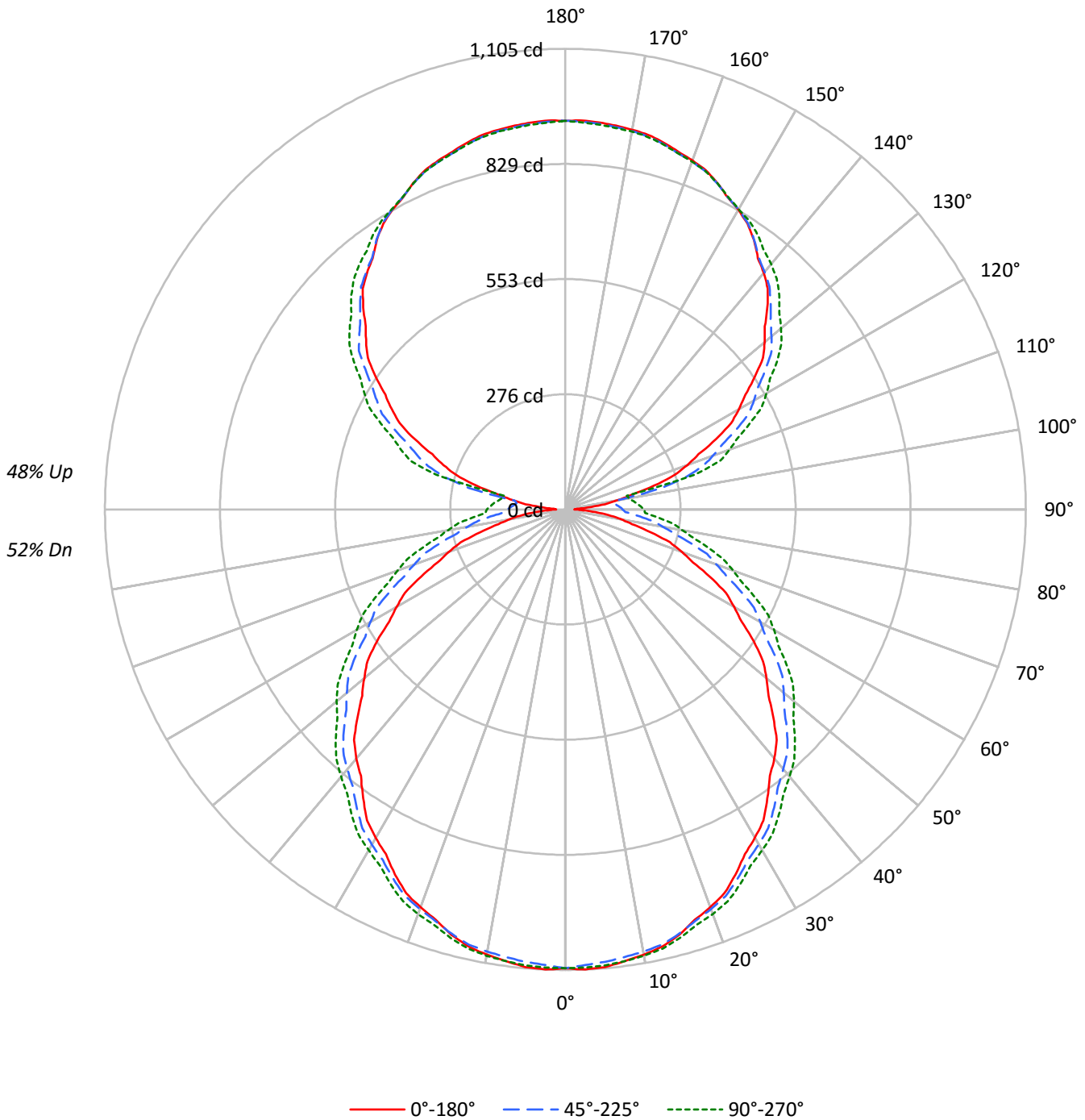
Input Watts (W): 54.4  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	108	108	108	108	100	100	100	100	85	85	85	71	71	71	58	58	58	52				
1	97	92	88	84	90	86	82	78	73	70	67	61	59	57	50	48	47	42				
2	88	80	73	68	81	74	68	63	63	59	55	53	49	47	43	41	39	34				
3	80	70	62	56	74	65	58	52	55	50	46	46	42	39	38	35	33	28				
4	73	62	53	47	67	57	50	44	49	43	39	41	37	33	34	30	28	24				
5	67	55	46	40	62	51	43	38	44	38	33	37	32	28	30	27	24	21				
6	62	49	41	35	57	46	38	33	39	33	29	33	28	25	27	24	21	18				
7	57	44	36	30	52	41	34	29	35	29	25	30	25	22	25	21	18	16				
8	53	40	32	27	49	37	30	25	32	26	22	27	23	19	23	19	16	14				
9	49	37	29	24	45	34	27	22	29	24	20	25	21	17	21	17	15	13				
10	46	33	26	21	42	31	25	20	27	22	18	23	19	16	19	16	13	11				

**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



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	104.3	1.6
10°-20°	298.7	4.5
20°-30°	451.7	6.8
30°-40°	546.5	8.2
40°-50°	577.7	8.7
50°-60°	543.7	8.2
60°-70°	451.1	6.8
70°-80°	316.9	4.8
80°-90°	181.8	2.7
90°-100°	138.3	2.1
100°-110°	282.0	4.2
110°-120°	441.7	6.7
120°-130°	523.5	7.9
130°-140°	541.1	8.1
140°-150°	496.5	7.5
150°-160°	398.3	6.0
160°-170°	256.9	3.9
170°-180°	88.5	1.3
0°-30°	854.6	12.9
0°-40°	1401.1	21.1
0°-60°	2522.6	38.0
0°-90°	3472.5	52.3
90°-120°	862.0	13.0
90°-150°	2423.0	36.5
90°-180°	3167.0	47.7
0°-180°	6639.3	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°	22	79	137	176	189	15
95°	54	73	123	159	172	62
105°	221	251	299	333	321	232
115°	399	414	451	479	488	393
125°	556	559	587	611	620	496
135°	686	686	696	717	726	529
145°	789	790	790	798	804	493
155°	864	864	862	865	863	398
165°	911	908	908	913	907	257
175°	932	928	929	934	927	89
180°	932	932	932	932	932	



TEST NUMBER: P332646-940

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**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°	36.9	48.4	59.9	71.4	83.0	94.9	107.1	119.4	131.6	143.8	152.0
90°	21.8	34.5	47.2	59.8	72.5	85.3	98.4	111.4	124.4	137.4	146.2
92.5°	27.6	37.5	47.4	57.4	67.3	78.8	91.8	104.9	117.9	130.9	139.6
95°	54.4	58.1	61.9	65.7	69.5	77.0	88.5	99.8	111.2	122.6	130.9
97.5°	95.9	107.0	118.2	129.2	140.3	142.7	136.5	130.4	124.2	118.1	125.3
100°	127.9	137.9	147.8	157.7	167.6	167.2	156.5	145.8	135.1	124.4	129.1
102.5°	164.7	173.0	181.3	189.6	197.9	205.9	213.6	221.2	228.9	236.6	215.3
105°	221.0	227.4	233.8	240.2	246.6	255.3	266.2	277.1	288.0	298.9	307.1
107.5°	275.3	280.2	285.2	290.1	295.1	302.8	313.5	324.1	334.8	345.4	352.8
110°	311.0	315.4	319.7	324.0	328.2	335.6	346.2	356.7	367.2	377.7	384.3



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	345.8	350.0	354.3	358.5	362.7	369.6	379.2	388.8	398.4	408.0	414.0
115°	399.2	402.2	405.1	408.0	411.0	416.7	425.3	434.0	442.6	451.2	457.5
117.5°	448.5	450.6	452.7	454.8	456.9	462.2	470.7	479.2	487.7	496.2	501.9
120°	481.0	482.4	483.8	485.3	486.7	491.3	499.2	506.9	514.7	522.5	528.3
122.5°	512.2	512.7	513.3	513.8	514.3	518.4	526.2	534.0	541.6	549.4	555.0
125°	555.7	556.1	556.4	556.8	557.1	560.5	567.1	573.6	580.1	586.7	592.4
127.5°	597.9	597.8	597.6	597.5	597.4	600.3	606.3	612.2	618.2	624.2	629.1
130°	624.2	624.1	624.0	623.8	623.8	626.1	631.0	635.8	640.7	645.5	650.6
132.5°	649.3	649.3	649.3	649.3	649.3	651.4	655.5	659.6	663.7	667.8	672.6
135°	685.7	685.5	685.5	685.3	685.1	686.3	688.8	691.4	693.9	696.4	701.2
137.5°	719.1	718.9	718.6	718.5	718.2	718.9	720.5	722.1	723.8	725.4	729.7
140°	740.8	740.8	740.9	740.9	740.9	741.3	741.9	742.4	743.1	743.6	747.6
142.5°	759.4	759.8	760.4	760.9	761.3	761.6	761.6	761.7	761.7	761.7	765.2
145°	789.1	789.3	789.4	789.7	789.9	790.0	790.0	790.0	790.0	790.0	791.8
147.5°	813.0	813.5	814.1	814.8	815.3	815.6	815.4	815.2	815.0	814.9	815.3
150°	830.3	830.5	830.9	831.3	831.6	831.7	831.5	831.4	831.3	831.1	831.1
152.5°	843.7	844.2	844.6	845.1	845.5	845.6	845.3	845.1	844.7	844.5	844.7
155°	863.9	864.0	864.2	864.3	864.5	864.3	863.9	863.4	862.9	862.5	863.1
157.5°	881.0	880.9	880.8	880.7	880.7	880.3	879.8	879.3	878.8	878.2	879.0
160°	891.1	890.6	890.1	889.7	889.2	888.9	888.8	888.6	888.4	888.2	889.2
162.5°	900.0	899.4	898.8	898.2	897.6	897.2	897.1	897.0	896.8	896.6	897.6
165°	911.2	910.5	909.7	908.9	908.2	907.8	907.8	907.8	907.8	907.8	909.0
167.5°	920.2	919.4	918.6	917.7	916.9	916.5	916.4	916.3	916.2	916.1	917.5
170°	925.2	924.3	923.4	922.4	921.5	921.1	921.2	921.4	921.6	921.8	922.9
172.5°	928.5	927.6	926.7	925.8	924.9	924.4	924.6	924.8	924.9	925.1	926.3
175°	932.2	931.2	930.3	929.4	928.4	928.1	928.3	928.4	928.5	928.7	930.1
177.5°	933.9	933.0	932.1	931.2	930.4	930.1	930.3	930.6	930.9	931.0	932.0
180°	932.2	932.2	932.2	932.2	932.2	932.2	932.2	932.2	932.2	932.2	932.2



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**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°	160.2	168.3	176.4	181.7	184.1	186.6	189.1	191.5
90°	155.2	164.0	172.9	178.6	181.1	183.6	186.1	188.6
92.5°	148.2	156.9	165.5	171.0	173.3	175.5	177.7	180.0
95°	139.3	147.6	155.9	161.4	164.0	166.7	169.2	171.8
97.5°	132.6	139.8	147.1	152.0	154.5	157.0	159.5	162.0
100°	133.9	138.7	143.4	146.9	148.9	151.0	153.1	155.2
102.5°	194.1	172.9	151.6	142.0	144.3	146.4	148.6	150.8
105°	315.4	323.6	331.9	334.3	330.9	327.5	324.1	320.7
107.5°	360.3	367.7	375.1	380.1	382.6	385.2	387.8	390.4
110°	391.0	397.6	404.2	408.8	411.5	414.1	416.8	419.5





TEST NUMBER: P332646-940

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

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	420.0	426.1	432.0	436.4	439.3	442.0	444.8	447.5
115°	463.9	470.2	476.5	480.6	482.6	484.5	486.4	488.3
117.5°	507.5	513.1	518.8	522.6	524.8	526.9	529.1	531.2
120°	534.1	539.8	545.6	549.5	551.4	553.3	555.2	557.1
122.5°	560.7	566.4	572.0	575.7	577.4	579.0	580.7	582.4
125°	598.1	603.7	609.4	613.1	614.9	616.7	618.5	620.4
127.5°	633.9	638.7	643.5	646.8	648.6	650.3	652.1	653.8
130°	655.7	660.8	665.8	669.2	670.8	672.5	674.1	675.8
132.5°	677.5	682.3	687.2	690.5	692.0	693.5	695.0	696.5
135°	705.9	710.5	715.2	718.5	720.5	722.5	724.4	726.4
137.5°	734.1	738.4	742.7	745.6	746.8	748.1	749.4	750.6
140°	751.6	755.7	759.7	762.5	764.0	765.5	767.0	768.6
142.5°	768.7	772.1	775.6	777.9	779.1	780.2	781.4	782.7
145°	793.5	795.3	797.2	798.7	800.1	801.6	803.0	804.4
147.5°	815.6	815.9	816.3	817.0	818.0	819.0	820.1	821.1
150°	831.1	831.1	831.1	831.2	831.3	831.4	831.6	831.8
152.5°	845.0	845.3	845.4	845.5	845.4	845.3	845.3	845.2
155°	863.7	864.3	865.0	865.0	864.5	864.1	863.6	863.2
157.5°	879.9	880.7	881.5	881.5	880.7	879.9	879.0	878.2
160°	890.1	891.1	892.0	892.0	891.1	890.1	889.2	888.2
162.5°	898.5	899.4	900.4	900.3	899.2	898.1	897.2	896.1
165°	910.3	911.5	912.8	912.7	911.2	909.9	908.5	907.0
167.5°	918.9	920.2	921.6	921.5	920.0	918.4	916.9	915.3
170°	924.2	925.4	926.7	926.5	925.0	923.5	921.9	920.3
172.5°	927.6	928.8	930.1	929.8	928.2	926.5	924.8	923.1
175°	931.5	932.9	934.2	934.1	932.2	930.3	928.4	926.6
177.5°	933.1	934.1	935.0	934.8	933.3	931.8	930.3	928.8
180°	932.2	932.2	932.2	932.2	932.2	932.2	932.2	932.2

(END OF REPORT)