

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: P332647-830

Luminaire Tested: **S124DIP-S1020D810U830-4F0-1E-UDD-D1**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332647-830
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-10,
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S124DIP-S1020D810U830-4F0-1E-UDD-D1
Description: DEFINE 4 DIRECT-INDIRECT PENDANT LED LUMINAIRE
DOWNLIGHT 1020 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER
UPLIGHT 810 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 6613.2 lumens
Efficiency: N/A
Efficacy: 121.6 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

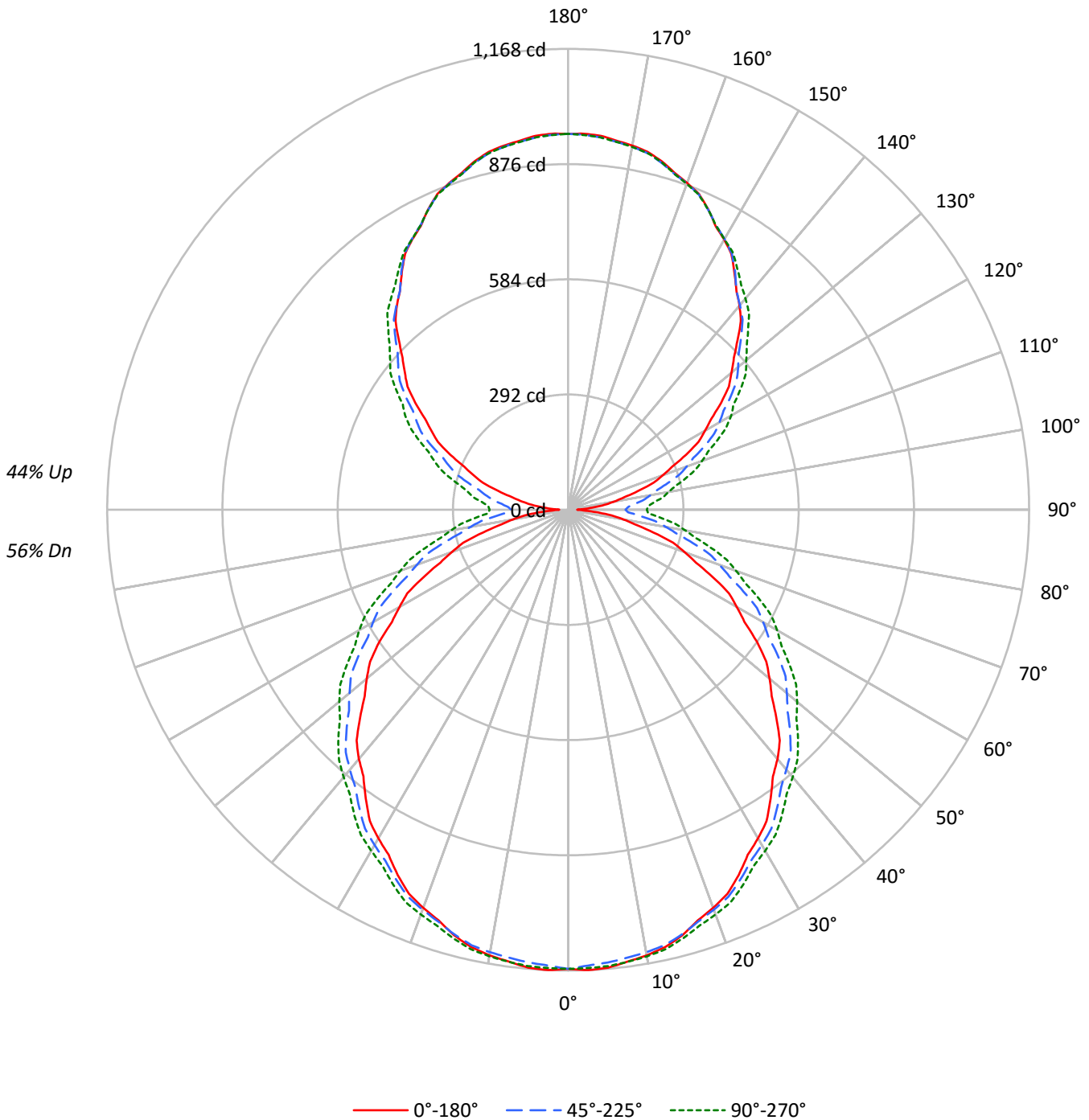
Input Watts (W): 54.4
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P332647-830

CATALOG NUMBER: S124DIP-S1020D810U830-4F0-1E-UDD-D1

Luminous Intensity Polar Plot





TEST NUMBER: P332647-830

CATALOG NUMBER: S124DIP-S1020D810U830-4F0-1E-UDD-D1

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	108	108	108	108	101	101	101	101	86	86	86	73	73	73	61	61	61	56
1	98	93	89	85	91	86	83	79	74	71	69	63	61	59	52	51	49	44
2	89	81	74	68	82	75	69	64	64	60	56	54	51	48	45	43	41	36
3	81	70	63	56	74	66	59	53	56	51	46	48	44	40	40	37	34	30
4	74	62	54	47	68	58	50	45	50	44	39	42	38	34	35	32	29	26
5	67	55	47	40	62	51	44	38	44	38	34	38	33	29	32	28	25	22
6	62	49	41	35	57	46	38	33	40	34	29	34	29	26	29	25	22	19
7	57	45	36	30	53	42	34	29	36	30	26	31	26	23	26	22	19	17
8	53	40	32	27	49	38	31	25	33	27	23	28	23	20	24	20	17	15
9	49	37	29	24	46	35	27	23	30	24	20	26	21	18	22	18	16	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°	9395	9395	9395
5°	9424	9182	9208
10°	9366	9032	9024
15°	9282	8858	8809
20°	9156	8666	8599
25°	9013	8450	8368
30°	8859	8237	8131
35°	8684	8018	7924
40°	8544	7809	7708
45°	8336	7617	7522
50°	8161	7395	7326
55°	7979	7187	7096
60°	7697	6921	6885
65°	7387	6635	6628
70°	7013	6309	6327
75°	6486	5950	6056
80°	5904	5605	5788
85°	5170	5301	5633



TEST NUMBER: P332647-830

CATALOG NUMBER: S124DIP-S1020D810U830-4F0-1E-UDD-D1

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	110.2	1.7
10°-20°	315.7	4.8
20°-30°	477.4	7.2
30°-40°	577.6	8.7
40°-50°	610.7	9.2
50°-60°	574.7	8.7
60°-70°	476.8	7.2
70°-80°	334.9	5.1
80°-90°	192.2	2.9
90°-100°	175.3	2.7
100°-110°	269.4	4.1
110°-120°	371.8	5.6
120°-130°	448.1	6.8
130°-140°	481.5	7.3
140°-150°	462.5	7.0
150°-160°	386.7	5.8
160°-170°	257.3	3.9
170°-180°	90.1	1.4
0°-30°	903.4	13.7
0°-40°	1481.0	22.4
0°-60°	2666.4	40.3
0°-90°	3670.4	55.5
90°-120°	816.5	12.3
90°-150°	2208.7	33.4
90°-180°	2943.0	44.5
0°-180°	6613.2	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1164	1164	1164	1164	1164	
5°	1165	1161	1152	1162	1161	111
15°	1117	1118	1114	1125	1125	315
25°	1022	1029	1033	1047	1049	470
35°	894	910	923	940	945	560
45°	745	770	795	816	824	576
55°	584	612	650	675	684	520
65°	404	446	490	521	533	400
75°	224	273	327	362	375	238
85°	69	124	182	220	235	74
90°	23	83	145	186	199	17
95°	61	111	169	205	218	63
105°	183	212	261	295	309	195
115°	329	342	381	408	417	325
125°	473	474	504	526	533	422
135°	606	611	620	638	645	469
145°	734	736	737	744	747	460
155°	840	840	839	842	839	386
165°	914	912	911	915	912	258
175°	951	948	947	952	947	90
180°	953	953	953	953	953	



TEST NUMBER: P332647-830

CATALOG NUMBER: S124DIP-S1020D810U830-4F0-1E-UDD-D1

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1163.8	1163.8	1163.8	1163.8	1163.8	1163.8	1163.8	1163.8	1163.8	1163.8	1163.8
2.5°	1167.9	1167.2	1166.5	1165.8	1165.1	1163.9	1162.0	1160.2	1158.3	1156.4	1158.0
5°	1165.0	1164.1	1163.3	1162.4	1161.6	1160.1	1158.1	1156.0	1154.0	1152.0	1154.3
7.5°	1155.1	1154.6	1154.0	1153.6	1153.0	1152.0	1150.3	1148.6	1146.9	1145.2	1147.8
10°	1146.8	1146.5	1146.2	1145.9	1145.7	1144.7	1143.3	1141.9	1140.4	1139.0	1141.6
12.5°	1135.3	1135.3	1135.2	1135.1	1135.1	1134.5	1133.6	1132.6	1131.6	1130.6	1133.0
15°	1116.8	1117.1	1117.4	1117.7	1117.9	1117.7	1116.8	1116.0	1115.0	1114.2	1116.8
17.5°	1091.6	1092.4	1093.3	1094.1	1095.0	1095.3	1095.1	1095.0	1094.9	1094.7	1097.3
20°	1073.8	1074.7	1075.5	1076.4	1077.3	1077.9	1078.2	1078.5	1078.7	1079.0	1081.9
22.5°	1054.0	1055.1	1056.2	1057.3	1058.4	1059.2	1059.7	1060.3	1060.7	1061.3	1064.2
25°	1021.7	1023.4	1025.1	1026.9	1028.6	1029.9	1030.8	1031.7	1032.6	1033.4	1036.6
27.5°	985.7	988.3	990.8	993.3	995.9	997.9	999.2	1000.5	1001.8	1003.1	1006.2
30°	961.8	964.0	966.4	968.7	971.0	973.2	975.2	977.2	979.2	981.3	984.5
32.5°	935.7	938.5	941.2	944.1	946.8	949.3	951.6	953.9	956.1	958.4	962.0
35°	894.0	897.5	900.9	904.4	907.9	911.1	914.0	916.8	919.7	922.7	926.7
37.5°	852.0	856.0	860.0	864.0	868.0	871.8	875.3	878.9	882.6	886.2	890.2
40°	824.9	828.7	832.5	836.2	840.0	843.9	847.9	852.0	856.0	860.1	864.4
42.5°	793.6	797.9	802.1	806.3	810.5	815.0	819.7	824.5	829.2	834.1	838.9
45°	745.4	750.9	756.4	762.0	767.4	772.9	778.4	783.9	789.4	794.9	799.8
47.5°	699.3	704.9	710.6	716.3	722.0	728.0	734.3	740.7	747.2	753.5	758.6
50°	665.9	672.3	678.6	685.0	691.4	697.8	704.2	710.5	716.9	723.2	729.1
52.5°	632.5	638.9	645.3	651.7	658.1	664.9	672.1	679.5	686.7	694.1	699.8
55°	583.8	589.9	596.0	602.1	608.1	615.5	624.2	632.9	641.6	650.3	656.1
57.5°	529.3	536.9	544.4	552.0	559.5	567.5	576.2	584.8	593.4	602.1	609.0
60°	493.9	501.4	509.0	516.5	524.1	532.5	542.2	551.7	561.2	570.8	577.4
62.5°	459.5	467.7	476.0	484.2	492.4	501.2	510.9	520.4	530.0	539.5	546.2
65°	404.0	413.2	422.5	431.8	441.0	450.6	460.4	470.3	480.1	490.0	497.2
67.5°	350.5	360.4	370.2	380.1	389.9	400.1	410.7	421.2	431.8	442.3	449.7
70°	314.1	324.0	333.8	343.6	353.5	363.9	374.8	385.9	396.9	407.9	415.8
72.5°	278.6	288.7	298.8	308.9	319.0	329.8	341.5	353.2	365.0	376.6	384.2
75°	224.1	234.9	245.5	256.3	267.0	278.4	290.6	302.7	314.9	327.1	335.2
77.5°	173.3	184.6	196.0	207.4	218.8	230.7	243.6	256.3	269.0	281.7	289.9
80°	142.0	153.6	165.2	176.8	188.4	200.6	213.3	226.0	238.7	251.5	260.2
82.5°	110.7	122.8	134.9	146.9	158.9	171.4	184.1	196.8	209.6	222.3	231.2
85°	69.1	81.2	93.4	105.6	117.7	130.4	143.4	156.4	169.4	182.5	191.1
87.5°	39.0	51.2	63.3	75.5	87.8	100.3	113.2	126.2	139.1	152.0	160.7
90°	23.1	36.5	49.9	63.2	76.6	90.2	104.0	117.7	131.5	145.2	154.6
92.5°	35.5	48.1	60.5	73.0	85.5	98.5	111.8	125.2	138.6	151.9	160.7
95°	61.2	72.2	83.2	94.3	105.3	117.3	130.4	143.4	156.4	169.4	177.7
97.5°	92.6	102.0	111.4	120.8	130.3	141.5	154.6	167.7	180.8	193.9	202.1
100°	117.5	125.6	133.8	142.0	150.2	160.7	173.5	186.2	199.0	211.8	219.9
102.5°	144.6	151.5	158.3	165.2	172.1	181.7	194.1	206.5	219.0	231.3	239.4
105°	183.4	189.4	195.3	201.3	207.3	215.9	227.2	238.7	250.1	261.4	269.1
107.5°	226.6	231.6	236.5	241.5	246.4	254.0	264.2	274.5	284.7	294.9	302.6
110°	255.1	259.5	263.8	268.2	272.6	279.7	289.7	299.7	309.7	319.6	326.0



TEST NUMBER: P332647-830

CATALOG NUMBER: S124DIP-S1020D810U830-4F0-1E-UDD-D1

CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	284.6	288.3	292.0	295.7	299.3	305.9	315.2	324.6	333.9	343.4	349.7
115°	329.1	331.7	334.3	337.0	339.5	345.3	354.2	363.2	372.1	381.1	387.3
117.5°	372.1	373.8	375.5	377.2	378.9	384.0	392.4	400.8	409.2	417.5	423.0
120°	400.0	401.5	403.0	404.5	406.1	410.9	418.7	426.6	434.5	442.4	447.4
122.5°	430.1	430.5	430.9	431.4	431.8	435.9	443.6	451.3	459.0	466.7	471.9
125°	473.2	472.9	472.6	472.2	471.9	475.3	482.4	489.6	496.6	503.7	508.9
127.5°	513.1	513.3	513.5	513.7	513.9	516.6	522.0	527.3	532.5	537.8	542.7
130°	540.4	540.5	540.7	540.9	541.1	543.6	548.2	552.8	557.5	562.1	567.0
132.5°	569.2	569.3	569.4	569.5	569.5	571.4	575.0	578.5	582.0	585.6	590.3
135°	606.1	607.1	608.0	609.1	610.0	611.5	613.6	615.6	617.6	619.6	624.0
137.5°	647.6	647.8	648.0	648.2	648.4	649.0	650.3	651.6	652.8	654.0	657.8
140°	675.3	675.4	675.4	675.5	675.5	675.7	676.0	676.3	676.6	676.8	680.4
142.5°	699.6	699.9	700.2	700.5	700.8	700.7	700.4	700.1	699.8	699.6	702.8
145°	734.5	734.8	735.2	735.6	735.9	736.2	736.4	736.5	736.7	736.9	738.5
147.5°	769.3	769.8	770.2	770.7	771.3	771.5	771.3	771.2	771.0	770.9	771.0
150°	790.5	790.9	791.3	791.5	791.9	792.1	792.1	792.1	792.1	792.1	792.1
152.5°	809.5	809.8	810.1	810.5	810.9	811.1	811.2	811.3	811.4	811.6	812.0
155°	840.0	840.0	840.0	840.0	840.0	839.9	839.8	839.6	839.4	839.3	839.9
157.5°	866.0	865.6	865.3	865.1	864.8	864.6	864.6	864.6	864.5	864.5	865.0
160°	881.3	881.1	881.0	880.8	880.6	880.4	880.3	880.1	880.0	879.9	880.3
162.5°	895.4	895.0	894.6	894.2	893.7	893.4	893.2	893.2	893.0	892.8	893.7
165°	914.5	914.0	913.5	912.9	912.5	912.1	911.7	911.4	911.1	910.8	911.7
167.5°	929.1	928.3	927.7	927.0	926.3	926.0	926.0	926.0	926.0	926.0	927.1
170°	937.3	936.5	935.7	934.8	934.1	933.7	933.9	934.1	934.2	934.3	935.3
172.5°	943.2	942.5	941.8	941.1	940.5	940.1	940.2	940.2	940.2	940.3	941.3
175°	951.3	950.5	949.6	948.9	948.0	947.5	947.3	947.2	947.1	946.9	948.0
177.5°	953.9	953.3	952.6	952.0	951.3	951.0	951.0	951.0	951.0	951.0	951.9
180°	952.7	952.7	952.7	952.7	952.7	952.7	952.7	952.7	952.7	952.7	952.7



TEST NUMBER: P332647-830

CATALOG NUMBER: S124DIP-S1020D810U830-4F0-1E-UDD-D1

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1163.8	1163.8	1163.8	1163.8	1163.8	1163.8	1163.8	1163.8
2.5°	1159.7	1161.3	1162.9	1163.6	1163.4	1163.1	1162.9	1162.7
5°	1156.6	1159.0	1161.3	1162.2	1162.0	1161.7	1161.4	1161.1
7.5°	1150.5	1153.0	1155.7	1156.8	1156.5	1156.2	1155.9	1155.7
10°	1144.2	1146.8	1149.4	1150.6	1150.3	1150.0	1149.7	1149.4
12.5°	1135.4	1137.7	1140.1	1141.3	1141.2	1141.1	1141.1	1141.0
15°	1119.5	1122.0	1124.6	1125.8	1125.5	1125.2	1124.9	1124.6
17.5°	1099.9	1102.7	1105.3	1106.5	1106.3	1106.1	1105.8	1105.6
20°	1084.8	1087.7	1090.6	1092.0	1092.0	1092.0	1092.0	1092.0
22.5°	1067.1	1070.0	1072.9	1074.6	1075.1	1075.4	1075.9	1076.4
25°	1039.8	1042.9	1046.1	1047.9	1048.2	1048.5	1048.8	1049.0
27.5°	1009.1	1012.0	1015.0	1016.6	1017.0	1017.4	1017.7	1018.0
30°	987.7	990.8	994.0	995.9	996.5	997.0	997.7	998.2
32.5°	965.6	969.3	973.0	975.1	975.6	976.2	976.8	977.4
35°	930.8	934.8	938.9	941.3	942.2	943.0	944.0	944.8
37.5°	894.4	898.5	902.6	905.1	906.1	907.0	907.9	908.8
40°	868.7	873.1	877.5	880.2	881.4	882.5	883.7	884.9
42.5°	843.7	848.5	853.3	856.1	857.1	858.0	858.9	859.8
45°	804.7	809.7	814.6	817.8	819.3	820.7	822.2	823.6
47.5°	763.6	768.7	773.9	777.3	779.0	780.8	782.5	784.3
50°	734.8	740.6	746.4	750.2	752.0	753.7	755.4	757.1
52.5°	705.7	711.4	717.3	721.0	722.7	724.4	726.2	727.9
55°	661.9	667.7	673.4	677.2	678.9	680.7	682.4	684.2
57.5°	615.9	622.7	629.6	633.9	635.5	637.2	638.8	640.4
60°	584.1	590.8	597.4	601.9	604.3	606.5	608.9	611.1
62.5°	552.8	559.5	566.2	570.6	573.0	575.2	577.6	579.9
65°	504.4	511.7	519.0	523.8	526.0	528.4	530.7	533.0
67.5°	457.0	464.4	471.7	476.5	478.8	481.1	483.3	485.6
70°	423.5	431.3	439.1	444.1	446.1	448.2	450.2	452.2
72.5°	391.8	399.4	407.0	411.9	414.2	416.4	418.7	420.9
75°	343.3	351.4	359.5	364.9	367.5	370.1	372.7	375.3
77.5°	298.2	306.4	314.6	320.2	322.9	325.7	328.5	331.3
80°	268.9	277.6	286.3	291.7	294.1	296.4	298.7	301.0
82.5°	240.2	249.1	258.0	263.7	266.3	268.8	271.4	273.9
85°	199.8	208.5	217.2	223.0	225.9	228.8	231.7	234.6
87.5°	169.3	177.9	186.4	192.1	194.6	197.3	199.9	202.5
90°	164.0	173.3	182.8	188.8	191.4	194.1	196.7	199.3
92.5°	169.5	178.2	187.0	192.6	195.1	197.7	200.1	202.6
95°	186.0	194.4	202.6	208.1	210.7	213.3	215.9	218.5
97.5°	210.2	218.4	226.6	231.9	234.4	236.9	239.4	241.9
100°	228.1	236.2	244.4	249.5	251.5	253.5	255.5	257.6
102.5°	247.4	255.4	263.5	268.7	271.1	273.5	275.9	278.3
105°	276.8	284.6	292.3	297.6	300.4	303.2	306.0	308.8
107.5°	310.1	317.7	325.3	330.1	332.2	334.2	336.2	338.3
110°	332.3	338.7	345.0	349.6	352.3	355.2	358.0	360.8



TEST NUMBER: P332647-830

CATALOG NUMBER: S124DIP-S1020D810U830-4F0-1E-UDD-D1

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	356.1	362.4	368.8	373.2	375.6	378.0	380.4	382.9
115°	393.4	399.6	405.9	409.9	411.8	413.7	415.5	417.4
117.5°	428.5	433.9	439.4	443.2	445.2	447.1	449.1	451.1
120°	452.4	457.3	462.3	466.2	468.8	471.5	474.1	476.7
122.5°	477.2	482.4	487.7	491.0	492.5	494.0	495.5	497.0
125°	514.0	519.2	524.3	527.6	529.0	530.5	531.9	533.3
127.5°	547.6	552.5	557.4	560.7	562.4	564.1	565.8	567.5
130°	571.8	576.7	581.6	584.7	585.7	586.8	587.9	589.0
132.5°	594.9	599.6	604.3	607.3	608.8	610.3	611.7	613.2
135°	628.3	632.5	636.9	639.6	640.9	642.2	643.4	644.6
137.5°	661.7	665.4	669.2	671.9	673.4	675.0	676.6	678.1
140°	684.0	687.7	691.3	693.7	694.9	696.3	697.6	698.8
142.5°	706.1	709.4	712.6	714.8	716.0	717.2	718.4	719.5
145°	740.0	741.6	743.2	744.3	745.0	745.6	746.3	747.0
147.5°	771.1	771.2	771.3	771.8	772.5	773.3	774.0	774.8
150°	792.1	792.1	792.1	792.0	791.9	791.7	791.5	791.4
152.5°	812.4	812.8	813.1	813.1	812.8	812.3	811.9	811.4
155°	840.6	841.2	841.9	841.9	841.2	840.6	839.9	839.3
157.5°	865.4	866.0	866.5	866.4	865.9	865.3	864.8	864.2
160°	880.8	881.3	881.7	881.7	880.8	880.0	879.2	878.4
162.5°	894.6	895.4	896.4	896.4	895.5	894.8	893.9	893.1
165°	912.8	913.7	914.7	914.8	914.2	913.5	912.9	912.3
167.5°	928.0	929.1	930.0	930.0	929.0	927.9	927.0	926.0
170°	936.3	937.3	938.3	938.2	937.1	935.9	934.7	933.6
172.5°	942.4	943.6	944.7	944.7	943.6	942.4	941.2	940.1
175°	949.1	950.3	951.5	951.5	950.3	949.1	948.0	946.9
177.5°	952.8	953.8	954.7	954.6	953.6	952.5	951.5	950.4
180°	952.7	952.7	952.7	952.7	952.7	952.7	952.7	952.7

(END OF REPORT)