

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: P332638-830

Luminaire Tested: **SA4XXDIP-C1020D590U830-4F0-1E-UDD-D1**

Issue Date: 10/7/2019

**Test Information**

Test Method: LM-79-08  
Report Number: P332638-830  
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-10,  
Test Lab: INNOVATION CENTER  
Issue Date: 10/7/2019  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: SA4XXDIP-C1020D590U830-4F0-1E-UDD-D1  
Description: DEFINE 4 DIRECT-INDIRECT PENDANT LED LUMINAIRE  
DOWNLIGHT 1020 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER  
UPLIGHT 590 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

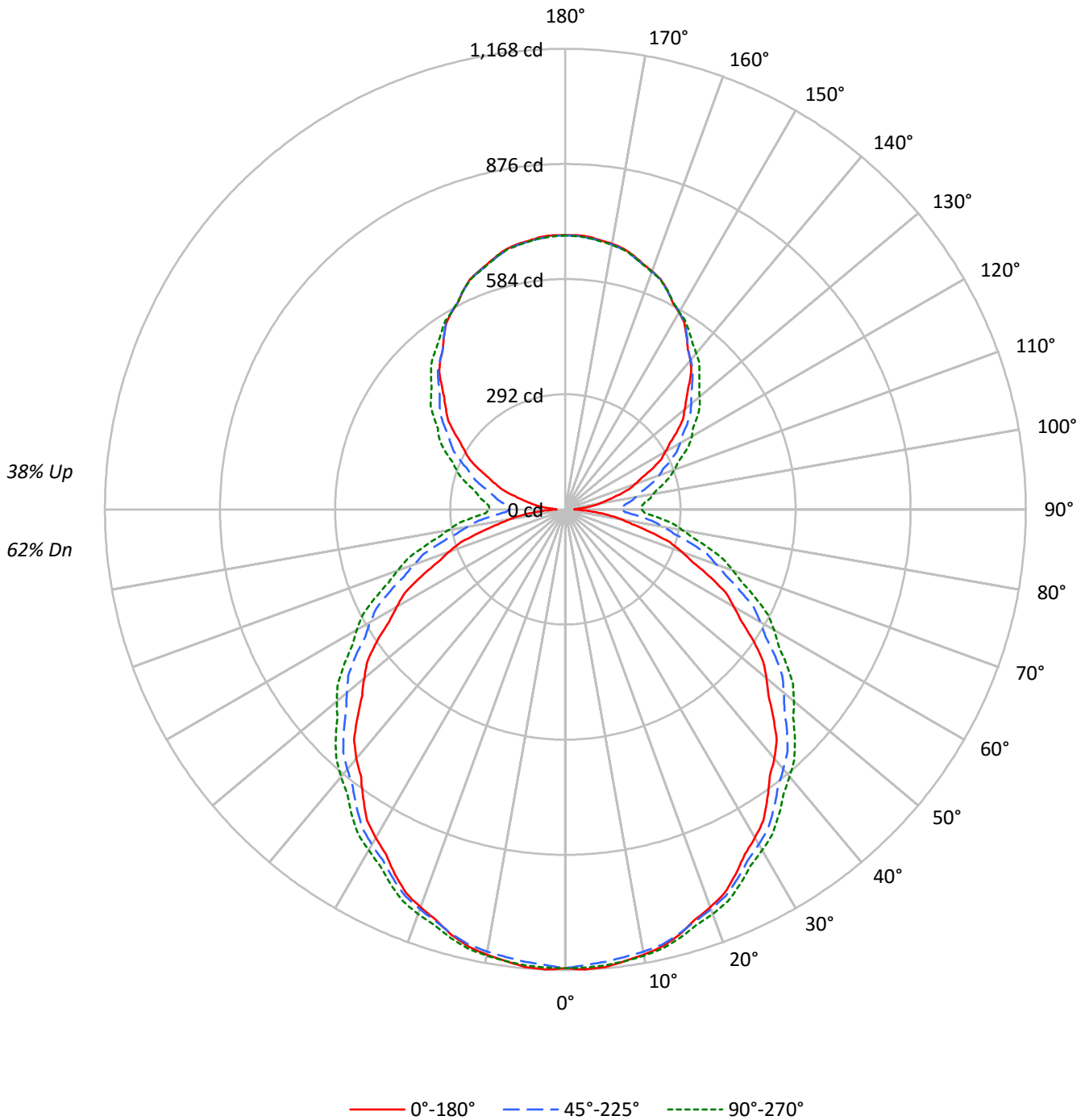
Lumens per Lamp: N/A  
Luminaire Lumens: 5897.5 lumens  
Efficiency: N/A  
Efficacy: 120.9 lumens/watt  
Spacing Criteria (0/90/45): 1.23 / 1.28 / 1.39  
Luminous Opening: Rectangular w/ Sides (W: 0.33' x L: 4' x H: 0.08')  
CIE Type: Semi-Direct

Input Watts (W): 48.8  
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	110	110	110	110	103	103	103	103	90	90	90	78	78	78	67	67	67	62				
1	99	94	90	86	93	88	84	81	77	74	72	67	65	63	58	56	54	50				
2	90	82	75	69	84	77	70	65	67	62	58	58	54	51	50	47	45	41				
3	82	71	63	57	76	67	60	54	59	53	48	51	47	43	44	40	38	34				
4	75	63	54	48	69	59	51	45	52	46	41	45	40	36	39	35	32	29				
5	68	56	47	41	64	53	45	39	46	40	35	40	35	31	35	31	28	25				
6	63	50	41	35	59	47	39	34	42	35	30	36	31	27	32	27	24	21				
7	58	45	37	31	54	43	35	29	38	31	27	33	28	24	29	25	21	19				
8	54	41	33	27	50	39	31	26	34	28	24	30	25	21	26	22	19	17				
9	50	37	30	24	47	35	28	23	31	25	21	28	23	19	24	20	17	15				
10	47	34	27	22	44	33	26	21	29	23	19	26	21	17	23	18	16	14				

**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



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	110.2	1.9
10°-20°	315.7	5.4
20°-30°	477.4	8.1
30°-40°	577.6	9.8
40°-50°	610.7	10.4
50°-60°	574.7	9.7
60°-70°	476.8	8.1
70°-80°	334.9	5.7
80°-90°	191.4	3.2
90°-100°	158.3	2.7
100°-110°	219.0	3.7
110°-120°	286.4	4.9
120°-130°	335.5	5.7
130°-140°	355.0	6.0
140°-150°	338.2	5.7
150°-160°	282.1	4.8
160°-170°	187.7	3.2
170°-180°	65.7	1.1
0°-30°	903.4	15.3
0°-40°	1481.0	25.1
0°-60°	2666.4	45.2
0°-90°	3669.7	62.2
90°-120°	663.7	11.3
90°-150°	1692.3	28.7
90°-180°	2228.0	37.8
0°-180°	5897.5	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°	22	81	141	180	193	16
95°	49	98	154	190	203	49
105°	137	165	214	247	260	146
115°	242	256	294	322	331	239
125°	347	347	377	400	408	309
135°	443	446	455	474	481	343
145°	536	537	538	545	548	336
155°	613	613	612	614	612	282
165°	667	666	664	667	666	188
175°	694	691	691	694	691	66
180°	695	695	695	695	695	



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**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°	38.9	51.0	63.1	75.1	87.2	99.7	112.5	125.5	138.3	151.2	159.8
90°	22.4	35.3	48.3	61.2	74.1	87.2	100.6	114.0	127.4	140.8	150.0
92.5°	31.3	43.3	55.1	67.1	79.1	91.5	104.7	117.8	130.9	144.0	152.6
95°	49.2	59.9	70.5	81.1	91.7	103.4	116.1	128.8	141.5	154.2	162.4
97.5°	71.7	80.8	89.9	99.0	108.0	118.9	131.7	144.4	157.2	169.9	178.0
100°	89.6	97.6	105.6	113.6	121.6	131.8	144.2	156.6	168.9	181.3	189.4
102.5°	109.3	116.2	123.0	129.8	136.6	146.0	158.0	170.0	182.1	194.2	202.1
105°	137.0	142.9	148.8	154.7	160.6	169.2	180.4	191.5	202.7	214.0	221.6
107.5°	168.4	173.3	178.2	183.1	188.0	195.6	205.8	215.9	226.2	236.4	243.8
110°	188.9	193.2	197.5	201.8	206.0	213.2	223.3	233.3	243.3	253.3	259.7



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	210.2	213.9	217.5	221.1	224.8	231.3	240.8	250.2	259.7	269.2	275.5
115°	242.2	244.8	247.4	250.1	252.6	258.4	267.5	276.5	285.5	294.5	300.8
117.5°	273.5	275.2	276.8	278.5	280.2	285.2	293.7	302.2	310.7	319.1	324.7
120°	293.6	294.9	296.2	297.7	299.0	303.7	311.7	319.7	327.8	335.8	341.0
122.5°	315.6	315.8	316.2	316.6	317.0	321.0	328.9	336.6	344.3	352.1	357.5
125°	346.6	346.3	346.0	345.7	345.4	348.8	356.0	363.1	370.2	377.3	382.6
127.5°	375.7	375.7	375.8	375.9	376.0	378.6	384.0	389.4	394.7	400.1	405.1
130°	395.3	395.3	395.4	395.5	395.6	397.8	402.6	407.2	411.8	416.4	421.4
132.5°	416.3	416.3	416.3	416.2	416.2	418.0	421.6	425.3	428.9	432.4	437.2
135°	442.9	443.6	444.3	445.1	445.7	447.1	449.1	451.2	453.2	455.2	459.6
137.5°	473.2	473.3	473.3	473.3	473.3	474.0	475.1	476.4	477.5	478.7	482.6
140°	493.4	493.3	493.3	493.2	493.2	493.3	493.6	493.9	494.2	494.5	498.1
142.5°	510.9	511.0	511.2	511.4	511.6	511.5	511.2	511.0	510.8	510.5	513.8
145°	536.2	536.4	536.6	536.8	537.0	537.1	537.2	537.3	537.4	537.5	539.2
147.5°	561.6	561.8	562.1	562.4	562.7	562.8	562.7	562.6	562.5	562.4	562.5
150°	577.0	577.2	577.4	577.6	577.8	577.9	577.9	577.9	577.9	577.9	577.9
152.5°	590.6	590.9	591.1	591.4	591.5	591.7	591.8	591.9	592.0	592.1	592.4
155°	612.8	612.8	612.8	612.8	612.8	612.7	612.7	612.6	612.5	612.3	612.7
157.5°	631.8	631.5	631.3	631.1	630.9	630.7	630.7	630.7	630.7	630.7	631.0
160°	642.9	642.8	642.7	642.6	642.4	642.3	642.2	642.2	642.0	641.9	642.2
162.5°	653.3	653.0	652.6	652.3	652.1	651.8	651.7	651.6	651.5	651.3	652.0
165°	667.1	666.8	666.4	666.1	665.7	665.4	665.2	665.0	664.7	664.5	665.2
167.5°	677.8	677.3	676.7	676.3	675.8	675.5	675.5	675.6	675.6	675.6	676.4
170°	683.8	683.2	682.6	682.0	681.4	681.2	681.3	681.4	681.6	681.6	682.4
172.5°	688.1	687.6	687.1	686.6	686.1	685.9	685.9	685.9	685.9	686.0	686.7
175°	694.0	693.4	692.9	692.2	691.6	691.3	691.2	691.1	690.9	690.8	691.6
177.5°	696.0	695.5	695.0	694.6	694.0	693.8	693.8	693.8	693.8	693.8	694.5
180°	695.1	695.1	695.1	695.1	695.1	695.1	695.1	695.1	695.1	695.1	695.1



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**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°	168.2	176.8	185.4	191.0	193.5	196.1	198.7	201.3
90°	159.1	168.1	177.3	183.1	185.7	188.2	190.8	193.3
92.5°	161.3	169.8	178.4	184.0	186.4	188.9	191.3	193.8
95°	170.6	178.8	186.9	192.4	194.9	197.6	200.2	202.7
97.5°	186.0	194.0	202.0	207.3	209.7	212.3	214.7	217.2
100°	197.4	205.5	213.5	218.6	220.6	222.6	224.6	226.7
102.5°	210.0	217.9	225.8	230.9	233.3	235.6	238.0	240.3
105°	229.1	236.8	244.3	249.5	252.1	254.9	257.5	260.1
107.5°	251.3	258.7	266.3	271.0	273.1	275.1	277.2	279.3
110°	266.2	272.6	279.0	283.5	286.3	288.9	291.5	294.3





TEST NUMBER: P332638-830

CATALOG NUMBER: SA4XXDIP-C1020D590U830-4F0-1E-UDD-D1

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	281.9	288.3	294.6	299.1	301.4	303.9	306.2	308.6
115°	307.1	313.3	319.5	323.7	325.6	327.4	329.3	331.3
117.5°	330.4	335.9	341.6	345.4	347.5	349.6	351.7	353.7
120°	346.2	351.4	356.6	360.4	363.1	365.6	368.2	370.7
122.5°	362.9	368.3	373.6	377.2	378.8	380.5	382.1	383.8
125°	387.9	393.1	398.4	401.7	403.2	404.7	406.2	407.7
127.5°	410.1	415.1	420.0	423.4	425.2	427.0	428.8	430.6
130°	426.4	431.3	436.3	439.4	440.7	442.0	443.2	444.5
132.5°	442.0	446.7	451.5	454.6	456.1	457.7	459.2	460.8
135°	464.0	468.4	472.8	475.7	477.1	478.4	479.8	481.2
137.5°	486.5	490.4	494.4	497.1	498.6	500.1	501.6	503.1
140°	501.8	505.4	509.1	511.5	512.9	514.3	515.6	516.9
142.5°	517.0	520.3	523.6	525.8	527.0	528.2	529.4	530.6
145°	540.8	542.4	544.0	545.3	546.0	546.9	547.6	548.5
147.5°	562.7	562.8	563.0	563.5	564.2	565.1	565.8	566.7
150°	577.9	577.9	577.9	577.9	577.7	577.6	577.5	577.4
152.5°	592.7	593.0	593.2	593.2	593.0	592.6	592.3	592.0
155°	613.2	613.7	614.3	614.3	613.7	613.2	612.7	612.3
157.5°	631.4	631.8	632.2	632.1	631.7	631.3	630.8	630.5
160°	642.6	642.9	643.3	643.2	642.6	642.0	641.4	640.8
162.5°	652.6	653.3	653.9	653.9	653.4	652.7	652.1	651.6
165°	665.9	666.6	667.3	667.4	666.9	666.5	666.0	665.5
167.5°	677.0	677.8	678.5	678.4	677.8	677.0	676.3	675.5
170°	683.1	683.8	684.5	684.5	683.6	682.8	681.9	681.1
172.5°	687.6	688.4	689.2	689.2	688.3	687.5	686.6	685.9
175°	692.5	693.3	694.1	694.1	693.3	692.5	691.6	690.8
177.5°	695.1	695.8	696.4	696.4	695.7	694.9	694.1	693.3
180°	695.1	695.1	695.1	695.1	695.1	695.1	695.1	695.1

(END OF REPORT)