

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: P332657-830

Luminaire Tested: **SA4XXDIP-C1020D1035U830-4F0-1E-UDD-D4**

Issue Date: 10/7/2019

**Test Information**

Test Method: LM-79-08  
Report Number: P332657-830  
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-C1020D1035U830-4F0-1E-UDD-D4  
Description: DEFINE 4 DIRECT-INDIRECT PENDANT LED LUMINAIRE  
DOWNLIGHT 1020 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER  
UPLIGHT 1035 LUMENS PER FOOT, BATWING OPTIC  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 7452.9 lumens  
Efficiency: N/A  
Efficacy: 123.2 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

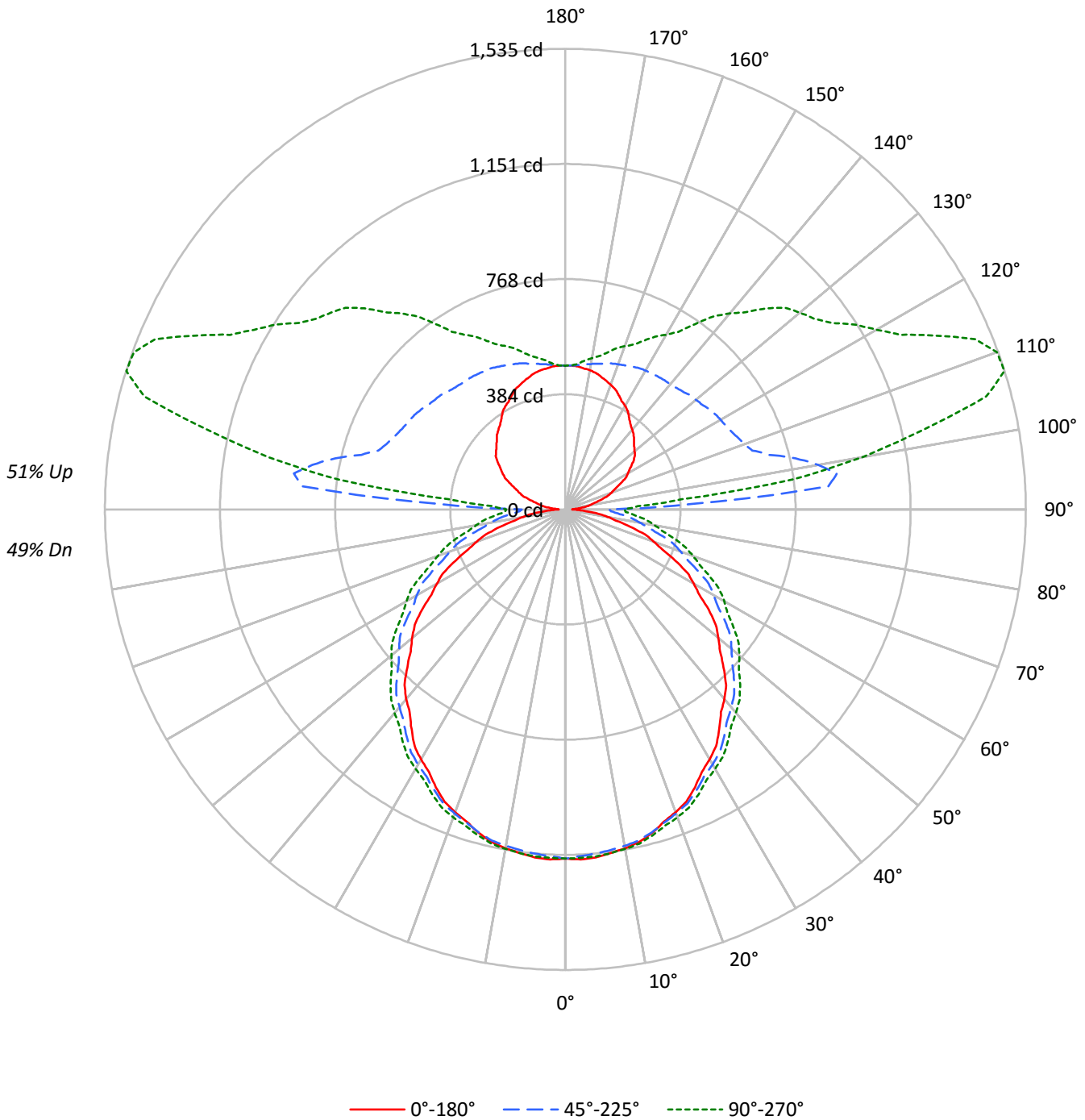
Input Watts (W): 60.5  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	0
RCR																		
0	107	107	107	107	99	99	99	99	83	83	83	69	69	69	55	55	55	49
1	97	92	88	84	89	85	81	78	71	68	66	59	57	55	47	46	45	39
2	88	80	73	68	80	73	68	63	62	58	54	51	48	45	41	39	37	32
3	80	70	62	56	73	64	57	52	54	49	45	45	41	38	36	33	31	27
4	73	61	53	47	66	57	49	44	48	42	38	40	35	32	32	29	26	23
5	67	55	46	40	61	50	43	37	43	37	32	35	31	28	29	25	23	19
6	61	49	40	34	56	45	38	32	38	32	28	32	27	24	26	23	20	17
7	57	44	36	30	52	41	33	28	35	29	25	29	24	21	24	20	18	15
8	52	40	32	26	48	37	30	25	32	26	22	26	22	19	22	18	16	13
9	49	36	29	23	45	34	27	22	29	23	19	24	20	17	20	17	14	12
10	46	33	26	21	42	31	24	20	27	21	17	22	18	15	19	15	13	11

**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	1.5
10°-20°	315.7	4.2
20°-30°	477.4	6.4
30°-40°	577.6	7.8
40°-50°	610.7	8.2
50°-60°	574.7	7.7
60°-70°	476.8	6.4
70°-80°	334.9	4.5
80°-90°	192.0	2.6
90°-100°	458.4	6.2
100°-110°	803.2	10.8
110°-120°	700.7	9.4
120°-130°	574.0	7.7
130°-140°	465.9	6.3
140°-150°	348.3	4.7
150°-160°	242.9	3.3
160°-170°	142.9	1.9
170°-180°	46.5	0.6
0°-30°	903.4	12.1
0°-40°	1481.0	19.9
0°-60°	2666.4	35.8
0°-90°	3670.2	49.2
90°-120°	1962.3	26.3
90°-150°	3350.5	45.0
90°-180°	3783.0	50.8
0°-180°	7452.9	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	73
90°	22	81	146	184	197	15
95°	48	158	880	527	390	48
105°	122	199	703	1446	1453	131
115°	202	264	612	1146	1370	200
125°	275	327	584	960	1084	245
135°	324	385	555	831	947	250
145°	371	424	540	681	754	233
155°	421	454	525	595	620	194
165°	458	472	503	533	541	129
175°	478	479	483	489	487	45
180°	479	479	479	479	479	



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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°	38.7	51.0	63.3	75.3	87.4	99.6	113.4	126.1	139.1	152.2	160.4
90°	21.8	35.3	49.7	62.2	74.7	86.7	104.8	117.3	131.6	145.9	153.4
92.5°	30.5	45.8	65.1	87.0	111.2	142.2	202.5	287.9	371.6	421.2	379.6
95°	48.0	60.4	79.4	101.1	133.3	183.5	277.2	443.5	680.2	880.2	909.7
97.5°	71.1	79.3	95.7	115.2	142.7	185.9	260.6	399.8	635.2	913.0	1103.5
100°	85.9	93.4	107.4	126.3	151.7	191.2	258.1	375.7	578.9	855.5	1104.3
102.5°	100.9	109.1	121.5	138.6	162.3	199.7	261.1	365.6	540.1	786.4	1042.4
105°	121.8	130.4	140.9	158.0	180.8	216.3	272.2	361.0	503.4	703.2	931.6
107.5°	147.5	154.2	163.6	180.4	201.3	235.7	287.2	368.5	491.2	653.6	841.1
110°	163.8	169.8	178.5	193.9	214.8	247.3	298.9	374.8	488.5	635.1	795.1



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	179.3	184.8	193.9	207.9	228.5	260.5	310.1	381.9	488.2	623.1	766.4
115°	201.6	207.1	216.3	228.3	248.7	280.1	327.1	392.8	489.6	611.7	736.6
117.5°	226.2	230.5	237.8	249.8	268.1	299.5	343.9	404.4	491.5	602.9	718.7
120°	241.8	244.5	251.9	263.2	280.0	311.0	355.2	412.6	493.3	597.8	707.9
122.5°	256.8	258.8	265.6	275.4	293.0	322.7	366.4	420.3	495.4	591.7	696.7
125°	275.2	278.7	284.1	294.2	311.7	341.6	382.7	433.2	499.7	584.1	680.0
127.5°	292.5	295.2	301.7	313.3	331.6	360.8	399.1	444.4	501.7	574.2	658.5
130°	301.2	304.7	312.0	325.7	343.4	372.9	409.4	450.8	503.4	568.3	645.0
132.5°	311.0	313.8	323.3	336.3	355.4	383.0	418.6	458.3	505.5	563.4	633.1
135°	323.5	327.3	336.7	352.6	372.4	397.8	430.9	466.8	507.5	554.7	613.9
137.5°	337.2	340.5	350.5	365.5	385.7	409.4	439.4	472.0	507.2	548.5	597.7
140°	346.9	349.5	359.6	375.3	394.7	417.4	445.8	476.3	508.5	544.6	588.8
142.5°	356.5	359.3	368.8	384.0	402.9	424.6	451.9	479.7	509.9	542.5	581.7
145°	371.1	373.6	382.8	395.7	413.2	433.8	458.3	483.6	511.0	540.1	571.9
147.5°	387.9	388.5	396.5	409.7	424.3	442.8	465.8	488.0	511.9	536.7	563.5
150°	398.4	399.1	406.2	417.3	431.1	448.8	469.6	490.2	511.9	534.4	558.0
152.5°	407.1	407.3	414.7	425.2	437.7	454.1	472.6	491.7	510.4	530.7	552.0
155°	420.6	421.5	427.2	436.6	447.0	461.1	477.0	493.0	508.1	525.1	542.9
157.5°	433.9	433.9	439.2	446.6	455.6	466.7	480.2	493.0	505.7	519.2	533.7
160°	442.2	442.2	446.0	452.6	460.1	470.5	481.7	493.0	503.4	514.7	527.0
162.5°	449.8	449.0	452.0	457.9	464.7	472.8	483.2	493.0	501.1	510.2	520.9
165°	458.3	458.3	460.1	464.9	469.6	475.1	483.6	491.2	496.8	503.4	511.0
167.5°	466.7	465.8	466.7	470.3	473.0	477.2	483.4	488.9	492.3	496.6	501.9
170°	470.5	469.6	470.5	473.3	475.1	478.0	482.7	487.4	489.3	492.1	495.9
172.5°	474.2	473.3	473.4	475.5	476.6	478.7	481.9	485.9	486.3	487.6	490.6
175°	478.0	477.0	477.0	478.0	478.9	478.9	480.8	483.6	482.7	482.7	484.6
177.5°	479.7	478.9	478.2	478.9	478.9	478.9	479.7	481.2	479.7	479.7	480.4
180°	478.9	478.9	478.9	478.9	478.9	478.9	478.9	478.9	478.9	478.9	478.9



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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°	169.0	177.6	186.2	191.6	194.4	197.1	199.4	202.0
90°	162.8	172.1	181.4	186.8	190.0	193.3	194.6	197.0
92.5°	323.9	286.3	266.1	252.5	243.7	240.9	240.1	242.4
95°	826.2	688.2	570.0	483.9	440.4	413.9	399.5	389.8
97.5°	1150.7	1104.0	1019.5	926.3	861.3	807.2	781.4	764.3
100°	1249.4	1276.1	1237.8	1173.1	1093.3	1037.9	1011.7	1006.2
102.5°	1238.5	1339.4	1360.4	1336.3	1288.4	1249.1	1221.5	1217.8
105°	1154.3	1324.4	1424.7	1468.1	1472.3	1467.2	1456.2	1452.9
107.5°	1039.1	1219.6	1357.8	1446.4	1495.0	1518.5	1530.0	1534.6
110°	969.3	1138.7	1281.9	1389.8	1459.0	1500.8	1520.0	1530.8





TEST NUMBER: P332657-830

CATALOG NUMBER: SA4XXDIP-C1020D1035U830-4F0-1E-UDD-D4

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	916.2	1066.6	1201.9	1309.8	1387.9	1438.0	1464.1	1480.2
115°	860.6	982.7	1099.2	1193.7	1270.1	1328.6	1360.7	1370.3
117.5°	828.8	930.6	1023.2	1103.9	1169.7	1219.5	1252.3	1260.4
120°	812.6	905.9	986.9	1057.8	1113.7	1157.4	1184.2	1196.9
122.5°	798.3	888.6	962.9	1025.4	1072.8	1110.2	1133.0	1145.5
125°	775.8	862.2	932.6	988.0	1027.4	1056.4	1076.0	1083.5
127.5°	748.6	831.1	901.1	953.8	993.6	1019.8	1036.9	1044.4
130°	728.3	807.9	877.0	930.4	970.7	996.0	1012.8	1020.1
132.5°	707.8	782.7	850.1	903.3	942.9	971.2	987.2	994.6
135°	677.8	743.6	805.6	855.8	895.2	923.3	940.1	947.4
137.5°	651.2	707.2	759.8	805.1	841.8	869.2	883.1	891.3
140°	635.8	683.8	730.0	772.1	806.4	828.6	843.2	852.2
142.5°	622.4	664.6	704.2	740.7	771.1	791.5	804.4	810.9
145°	603.8	637.5	667.5	695.3	720.0	737.2	747.7	753.6
147.5°	588.5	614.2	637.0	658.3	676.6	691.2	699.3	701.9
150°	580.6	602.2	621.0	638.0	653.0	665.2	670.9	671.8
152.5°	572.3	590.9	608.2	622.2	635.0	644.9	648.3	649.2
155°	559.9	575.0	589.0	600.3	609.7	617.3	620.1	620.1
157.5°	546.5	559.1	571.0	580.0	587.1	592.8	594.5	594.5
160°	538.2	548.6	558.9	566.5	572.1	577.8	578.7	578.7
162.5°	529.9	538.8	546.9	553.6	557.8	563.5	564.4	563.6
165°	518.5	524.1	530.7	535.4	539.1	542.9	542.0	541.0
167.5°	507.4	511.7	517.0	519.8	521.7	524.1	524.0	523.2
170°	500.6	503.4	507.2	510.0	511.9	512.8	511.9	511.9
172.5°	494.6	496.6	498.9	501.0	502.1	503.0	502.1	500.6
175°	486.4	487.4	489.3	489.3	489.3	491.2	489.3	487.4
177.5°	481.2	481.9	481.9	482.7	481.9	482.7	481.2	479.7
180°	478.9	478.9	478.9	478.9	478.9	478.9	478.9	478.9

(END OF REPORT)