

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: P332684-940

Luminaire Tested: **SA4XXDIP-C1195D590U940-4F0-1E-UDD-D4**

Issue Date: 10/7/2019

**Test Information**

Test Method: LM-79-08  
Report Number: P332684-940  
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-C1195D590U940-4F0-1E-UDD-D4  
Description: DEFINE 4 DIRECT-INDIRECT PENDANT LED LUMINAIRE  
DOWNLIGHT 1195 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER  
UPLIGHT 590 LUMENS PER FOOT, BATWING OPTIC  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

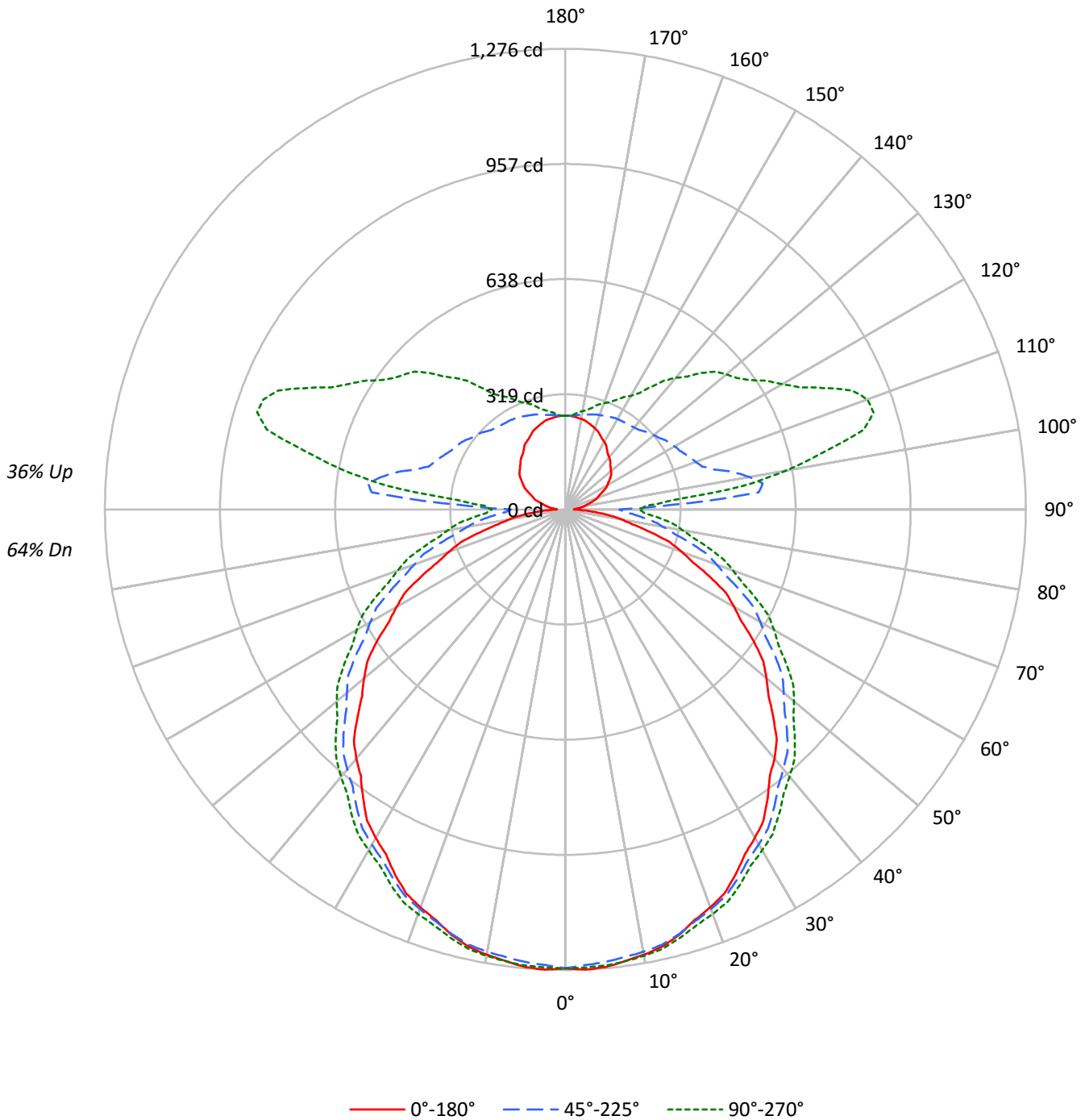
Lumens per Lamp: N/A  
Luminaire Lumens: 6219.0 lumens  
Efficiency: N/A  
Efficacy: 112.9 lumens/watt  
Spacing Criteria (0/90/45): 1.23 / 1.28 / 1.39  
Luminous Opening: Rectangular w/ Sides (W: 0.33' x L: 4' x H: 0.08')  
CIE Type: Semi-Direct

Input Watts (W): 55.1  
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	111	111	111	111	104	104	104	104	91	91	91	80	80	80	69	69	69	64				
1	100	95	90	86	93	89	85	81	78	75	72	68	66	64	59	58	56	52				
2	90	82	75	69	84	77	71	66	68	63	59	59	56	52	51	49	46	42				
3	82	72	64	57	77	67	60	54	59	54	49	52	47	44	45	42	39	35				
4	75	63	55	48	70	59	52	46	53	46	41	46	41	37	40	36	33	30				
5	69	56	47	41	64	53	45	39	47	40	36	41	36	32	36	32	28	25				
6	63	50	42	35	59	47	40	34	42	36	31	37	32	28	32	28	25	22				
7	58	45	37	31	55	43	35	30	38	32	27	34	28	25	30	25	22	20				
8	54	41	33	27	51	39	32	26	35	29	24	31	26	22	27	23	20	17				
9	51	38	30	24	47	36	28	23	32	26	22	28	23	20	25	21	18	16				
10	47	35	27	22	44	33	26	21	29	23	19	26	21	18	23	19	16	14				

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	10266	10266	10266
5°	10297	10032	10061
10°	10234	9869	9861
15°	10142	9679	9625
20°	10004	9469	9396
25°	9848	9234	9144
30°	9679	9000	8885
35°	9488	8760	8658
40°	9335	8533	8422
45°	9109	8323	8219
50°	8917	8080	8004
55°	8719	7852	7753
60°	8410	7562	7524
65°	8071	7250	7242
70°	7660	6893	6914
75°	7091	6501	6617
80°	6453	6124	6326
85°	5641	5792	6154



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	120.4	1.9
10°-20°	345.0	5.5
20°-30°	521.7	8.4
30°-40°	631.2	10.1
40°-50°	667.3	10.7
50°-60°	628.0	10.1
60°-70°	521.0	8.4
70°-80°	366.0	5.9
80°-90°	208.3	3.3
90°-100°	309.9	5.0
100°-110°	480.2	7.7
110°-120°	409.7	6.6
120°-130°	327.7	5.3
130°-140°	259.4	4.2
140°-150°	189.8	3.1
150°-160°	131.3	2.1
160°-170°	77.2	1.2
170°-180°	25.1	0.4
0°-30°	987.1	15.9
0°-40°	1618.2	26.0
0°-60°	2913.5	46.8
0°-90°	4008.8	64.5
90°-120°	1199.7	19.3
90°-150°	1976.6	31.8
90°-180°	2210.0	35.5
0°-180°	6219.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1272	1272	1272	1272	1272	
5°	1273	1268	1259	1269	1269	121
15°	1220	1221	1218	1229	1229	344
25°	1116	1125	1129	1144	1146	514
35°	977	994	1008	1027	1032	611
45°	814	842	869	892	900	629
55°	638	668	710	738	748	568
65°	441	487	535	570	582	437
75°	245	298	357	396	410	260
85°	75	136	199	240	256	80
90°	23	84	150	191	204	16
95°	35	119	538	366	299	33
105°	72	129	428	847	857	78
115°	113	155	364	669	795	113
125°	152	180	336	552	624	135
135°	176	210	306	467	534	137
145°	201	229	292	373	415	127
155°	227	245	284	321	335	105
165°	248	255	272	288	292	70
175°	258	259	261	264	264	25
180°	259	259	259	259	259	



TEST NUMBER: P332684-940

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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1271.6	1271.6	1271.6	1271.6	1271.6	1271.6	1271.6	1271.6	1271.6	1271.6	1271.6
2.5°	1276.1	1275.3	1274.6	1273.8	1273.1	1271.7	1269.6	1267.7	1265.6	1263.6	1265.3
5°	1272.9	1272.0	1271.0	1270.2	1269.2	1267.6	1265.3	1263.1	1261.0	1258.7	1261.2
7.5°	1262.1	1261.6	1261.0	1260.4	1259.9	1258.6	1256.9	1255.0	1253.1	1251.3	1254.2
10°	1253.0	1252.7	1252.4	1252.1	1251.8	1250.8	1249.2	1247.7	1246.1	1244.5	1247.3
12.5°	1240.5	1240.5	1240.4	1240.3	1240.3	1239.7	1238.6	1237.5	1236.4	1235.4	1238.0
15°	1220.3	1220.6	1220.9	1221.2	1221.6	1221.2	1220.3	1219.3	1218.3	1217.5	1220.3
17.5°	1192.7	1193.6	1194.5	1195.5	1196.4	1196.9	1196.7	1196.4	1196.2	1196.1	1199.0
20°	1173.3	1174.2	1175.2	1176.2	1177.1	1177.7	1178.0	1178.4	1178.7	1179.0	1182.1
22.5°	1151.6	1152.8	1154.1	1155.2	1156.5	1157.4	1157.9	1158.5	1159.0	1159.6	1162.8
25°	1116.3	1118.2	1120.2	1122.0	1123.9	1125.3	1126.3	1127.2	1128.2	1129.2	1132.7
27.5°	1077.0	1079.9	1082.6	1085.4	1088.2	1090.3	1091.7	1093.2	1094.7	1096.1	1099.3
30°	1050.8	1053.4	1055.9	1058.5	1061.0	1063.4	1065.5	1067.7	1070.0	1072.2	1075.7
32.5°	1022.3	1025.4	1028.4	1031.4	1034.5	1037.2	1039.7	1042.2	1044.6	1047.1	1051.1
35°	976.8	980.6	984.4	988.2	991.9	995.4	998.6	1001.7	1005.0	1008.1	1012.5
37.5°	930.9	935.3	939.7	944.1	948.4	952.5	956.4	960.4	964.3	968.2	972.8
40°	901.3	905.4	909.5	913.6	917.7	922.0	926.5	930.9	935.3	939.8	944.5
42.5°	867.2	871.7	876.4	881.0	885.6	890.6	895.7	900.9	906.1	911.3	916.6
45°	814.5	820.5	826.5	832.5	838.5	844.5	850.5	856.6	862.6	868.6	874.0
47.5°	764.0	770.3	776.5	782.7	788.9	795.5	802.5	809.4	816.4	823.3	828.8
50°	727.6	734.6	741.5	748.5	755.5	762.4	769.4	776.3	783.3	790.2	796.6
52.5°	691.2	698.1	705.1	712.0	719.0	726.5	734.4	742.4	750.4	758.4	764.7
55°	637.9	644.5	651.2	657.8	664.5	672.5	682.1	691.5	701.1	710.5	716.8
57.5°	578.4	586.7	594.9	603.1	611.3	620.1	629.5	639.0	648.5	657.8	665.4
60°	539.7	547.9	556.1	564.4	572.6	581.9	592.4	602.8	613.2	623.7	631.0
62.5°	502.0	511.0	520.0	529.1	538.0	547.7	558.2	568.6	579.1	589.5	596.7
65°	441.4	451.6	461.6	471.8	481.9	492.3	503.1	513.9	524.6	535.4	543.3
67.5°	383.0	393.8	404.6	415.3	426.1	437.2	448.7	460.2	471.7	483.3	491.3
70°	343.1	353.9	364.7	375.4	386.2	397.6	409.6	421.6	433.6	445.7	454.2
72.5°	304.4	315.4	326.5	337.4	348.5	360.3	373.2	385.9	398.7	411.5	419.8
75°	245.0	256.6	268.3	280.0	291.8	304.3	317.5	330.8	344.1	357.4	366.2
77.5°	189.4	201.8	214.2	226.6	239.0	252.2	266.1	280.0	293.9	307.8	316.8
80°	155.2	167.8	180.5	193.1	205.8	219.1	233.0	247.0	260.9	274.8	284.3
82.5°	121.0	134.2	147.4	160.5	173.7	187.3	201.2	215.1	229.0	242.9	252.6
85°	75.4	88.7	102.0	115.3	128.6	142.4	156.6	170.9	185.1	199.4	208.8
87.5°	42.3	55.4	68.6	81.6	94.6	108.0	122.4	136.3	150.3	164.4	173.5
90°	23.3	37.0	51.2	64.3	77.5	90.6	107.3	120.9	135.5	150.2	158.8
92.5°	27.5	41.5	57.7	75.3	94.1	117.2	156.6	209.6	261.7	295.5	277.4
95°	35.3	47.3	62.8	79.8	102.5	135.5	192.8	289.2	423.7	538.4	558.7
97.5°	46.9	55.9	69.3	84.4	103.8	132.6	179.6	261.3	395.0	551.7	658.9
100°	54.3	62.5	74.4	88.6	106.6	133.1	175.5	245.3	361.4	517.2	655.9
102.5°	62.4	70.4	80.9	93.8	110.2	135.4	174.6	237.3	337.7	476.9	619.5
105°	72.3	80.2	89.1	101.5	117.0	140.7	176.8	230.8	313.7	427.7	555.1
107.5°	86.1	92.3	100.0	111.7	125.6	148.4	181.8	231.3	303.3	396.6	501.9
110°	94.3	99.8	106.7	117.3	130.8	152.3	185.8	232.5	299.5	384.3	474.6



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	102.1	107.1	114.0	123.6	136.6	157.7	189.8	233.9	296.8	375.0	455.9
115°	113.3	117.7	124.1	132.1	144.5	164.8	195.3	235.9	293.4	364.5	435.5
117.5°	126.4	129.6	134.5	141.8	152.6	172.4	201.1	238.6	290.4	355.4	421.3
120°	134.3	136.3	140.8	147.3	156.9	176.2	204.7	240.3	288.6	349.7	412.5
122.5°	142.4	143.7	147.4	152.8	162.4	180.7	208.7	242.2	287.1	343.7	403.6
125°	151.7	153.4	156.1	161.4	170.8	188.8	215.0	246.4	286.3	335.9	390.7
127.5°	160.9	162.2	165.5	171.7	181.4	198.6	222.4	249.9	283.9	326.3	374.7
130°	165.1	166.7	170.5	177.8	187.2	204.3	226.7	251.6	282.5	320.1	364.5
132.5°	170.3	171.7	176.6	183.5	193.7	209.5	230.8	254.3	281.9	315.2	355.6
135°	176.3	178.3	183.4	192.1	202.8	217.1	236.1	256.6	279.7	306.3	340.9
137.5°	183.7	185.4	190.6	198.6	209.3	222.3	239.1	257.3	276.8	299.7	328.6
140°	189.0	190.2	195.6	203.8	214.2	226.4	242.0	258.6	276.2	295.9	321.8
142.5°	193.6	195.0	200.2	208.3	218.6	230.2	244.9	259.8	276.1	293.6	316.6
145°	201.3	202.5	207.3	214.1	223.5	234.5	247.7	261.4	276.3	291.9	310.1
147.5°	210.4	210.6	214.7	221.8	229.4	239.4	251.8	263.8	276.7	290.2	304.8
150°	216.1	216.2	220.1	225.8	233.1	242.6	253.9	265.0	276.7	288.9	301.7
152.5°	220.3	220.3	224.3	229.9	236.7	245.5	255.5	265.8	275.9	286.9	298.4
155°	227.4	227.9	231.0	236.0	241.7	249.2	257.9	266.5	274.6	283.8	293.5
157.5°	234.6	234.6	237.5	241.4	246.3	252.3	259.7	266.5	273.4	280.7	288.6
160°	239.1	239.1	241.1	244.7	248.7	254.3	260.5	266.5	272.2	278.2	284.9
162.5°	243.2	242.7	244.3	247.5	251.2	255.6	261.3	266.5	270.9	275.8	281.6
165°	247.7	247.7	248.7	251.3	253.9	256.9	261.4	265.6	268.6	272.2	276.3
167.5°	252.3	251.8	252.3	254.2	255.7	258.0	261.4	264.3	266.2	268.5	271.3
170°	254.3	253.9	254.3	255.8	256.9	258.4	260.9	263.5	264.5	266.0	268.0
172.5°	256.4	255.8	255.9	257.1	257.7	258.8	260.6	262.7	262.9	263.6	265.2
175°	258.4	257.9	257.9	258.4	259.0	259.0	259.9	261.4	260.9	260.9	262.0
177.5°	259.3	259.0	258.5	259.0	259.0	259.0	259.3	260.1	259.3	259.3	259.8
180°	259.0	259.0	259.0	259.0	259.0	259.0	259.0	259.0	259.0	259.0	259.0



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1271.6	1271.6	1271.6	1271.6	1271.6	1271.6	1271.6	1271.6
2.5°	1267.1	1268.9	1270.7	1271.4	1271.1	1270.9	1270.7	1270.4
5°	1263.8	1266.3	1268.8	1270.0	1269.6	1269.4	1269.0	1268.7
7.5°	1257.0	1259.9	1262.8	1264.0	1263.6	1263.4	1263.0	1262.8
10°	1250.2	1253.0	1255.9	1257.1	1256.9	1256.5	1256.2	1255.9
12.5°	1240.5	1243.1	1245.7	1247.1	1247.0	1246.9	1246.8	1246.8
15°	1223.2	1226.0	1228.8	1230.1	1229.8	1229.5	1229.1	1228.8
17.5°	1201.9	1204.8	1207.7	1209.1	1208.8	1208.5	1208.3	1208.0
20°	1185.4	1188.5	1191.7	1193.2	1193.2	1193.2	1193.2	1193.2
22.5°	1165.9	1169.1	1172.2	1174.1	1174.7	1175.1	1175.6	1176.2
25°	1136.1	1139.6	1143.1	1145.0	1145.3	1145.6	1145.9	1146.2
27.5°	1102.6	1105.8	1109.0	1110.8	1111.3	1111.6	1112.0	1112.3
30°	1079.1	1082.6	1086.1	1088.2	1088.8	1089.4	1090.0	1090.7
32.5°	1055.1	1059.1	1063.1	1065.4	1066.0	1066.7	1067.3	1067.9
35°	1017.0	1021.4	1025.8	1028.5	1029.5	1030.5	1031.4	1032.3
37.5°	977.2	981.7	986.2	989.0	990.0	991.0	992.0	993.0
40°	949.2	954.0	958.8	961.8	963.0	964.3	965.5	966.8
42.5°	921.8	927.0	932.3	935.4	936.5	937.5	938.4	939.5
45°	879.3	884.8	890.1	893.6	895.2	896.7	898.3	899.9
47.5°	834.5	840.0	845.6	849.3	851.2	853.1	855.0	856.9
50°	802.9	809.2	815.6	819.7	821.6	823.5	825.4	827.2
52.5°	771.1	777.4	783.6	787.8	789.7	791.6	793.4	795.4
55°	723.2	729.5	735.8	739.9	741.8	743.8	745.6	747.5
57.5°	672.9	680.5	688.0	692.6	694.4	696.2	697.9	699.7
60°	638.2	645.5	652.7	657.6	660.2	662.7	665.3	667.8
62.5°	604.0	611.4	618.6	623.5	626.1	628.6	631.1	633.6
65°	551.2	559.1	567.0	572.2	574.8	577.3	579.9	582.4
67.5°	499.4	507.4	515.4	520.7	523.2	525.6	528.1	530.6
70°	462.8	471.3	479.8	485.3	487.4	489.6	491.9	494.1
72.5°	428.1	436.4	444.7	450.0	452.5	455.0	457.4	459.9
75°	375.1	384.0	392.8	398.7	401.5	404.4	407.2	410.1
77.5°	325.8	334.8	343.8	349.8	352.8	355.9	358.9	361.9
80°	293.8	303.3	312.8	318.8	321.3	323.9	326.4	329.0
82.5°	262.4	272.2	281.9	288.2	291.0	293.7	296.5	299.3
85°	218.3	227.8	237.3	243.6	246.8	249.9	253.2	256.3
87.5°	182.8	192.1	201.3	207.3	210.2	213.1	215.8	218.6
90°	168.4	178.2	187.9	193.7	196.7	199.7	201.8	204.3
92.5°	251.9	236.1	229.6	225.2	221.8	221.5	222.3	224.8
95°	517.9	447.5	388.0	344.3	322.3	309.3	303.0	299.3
97.5°	688.5	667.5	626.1	578.5	544.7	516.7	504.3	496.3
100°	738.8	757.5	741.1	708.8	666.8	638.0	624.9	623.1
102.5°	729.7	788.5	804.0	793.7	769.0	748.9	735.4	734.6
105°	679.5	775.4	833.7	859.8	863.4	861.7	857.2	856.7
107.5°	612.9	714.4	793.1	843.5	870.9	884.8	892.2	895.7
110°	572.4	667.6	748.7	809.5	848.2	872.1	883.8	890.8





TEST NUMBER: P332684-940

CATALOG NUMBER: SA4XXDIP-C1195D590U940-4F0-1E-UDD-D4

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	540.5	625.4	702.0	762.8	806.4	834.7	850.1	860.1
115°	506.1	575.6	642.1	695.5	737.9	770.6	789.2	795.4
117.5°	484.2	542.5	595.9	641.9	678.7	706.9	725.9	731.6
120°	472.3	525.9	572.9	613.5	645.0	669.9	685.6	693.8
122.5°	461.7	513.7	557.1	593.0	619.8	641.2	654.7	662.5
125°	445.6	495.3	536.5	568.4	590.7	607.3	618.8	623.8
127.5°	426.2	473.8	514.4	544.9	567.6	582.8	593.1	598.3
130°	412.4	458.3	498.6	529.3	552.1	566.7	576.8	581.7
132.5°	398.8	442.0	481.3	511.8	534.2	550.5	560.1	565.0
135°	378.0	416.2	452.2	481.2	503.4	519.5	529.6	534.5
137.5°	359.9	392.4	423.2	449.3	469.9	485.5	493.8	499.1
140°	349.4	377.4	404.4	428.6	448.0	460.7	469.5	475.1
142.5°	340.4	365.1	388.3	409.2	426.3	438.0	445.7	449.9
145°	328.3	347.5	364.7	380.5	394.5	404.4	410.7	414.6
147.5°	318.4	332.4	344.9	356.7	367.1	375.5	380.4	382.3
150°	313.9	325.6	335.7	344.9	353.0	359.6	362.7	363.2
152.5°	309.3	319.4	328.8	336.4	343.2	348.7	350.4	351.0
155°	302.6	310.8	318.4	324.5	329.7	333.7	335.2	335.2
157.5°	295.4	302.3	308.6	313.5	317.4	320.5	321.4	321.4
160°	291.0	296.6	302.1	306.2	309.2	312.4	312.8	312.8
162.5°	286.5	291.2	295.6	299.3	301.6	304.6	305.1	304.7
165°	280.3	283.3	286.9	289.4	291.5	293.5	293.0	292.5
167.5°	274.3	276.6	279.5	281.0	282.0	283.3	283.2	282.9
170°	270.6	272.2	274.2	275.7	276.7	277.2	276.7	276.7
172.5°	267.3	268.5	269.7	270.8	271.4	272.0	271.4	270.6
175°	263.0	263.5	264.5	264.5	264.5	265.6	264.5	263.5
177.5°	260.1	260.6	260.6	260.9	260.6	260.9	260.1	259.3
180°	259.0	259.0	259.0	259.0	259.0	259.0	259.0	259.0

(END OF REPORT)