

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: P332966-930

Luminaire Tested: **SA4XXRDIP-C1020D590U930-4F0-1E-UDD-F4**

Issue Date: 10/7/2019

Test Information

Test Method: LM-79-08
Report Number: P332966-930
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: SA4XXRDIP-C1020D590U930-4F0-1E-UDD-F4
Description: DEFINE 4 DIRECT-INDIRECT PENDANT LED LUMINAIRE
DOWNLIGHT 1020 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER, REGRESSED
HOUSING
UPLIGHT 590 LUMENS PER FOOT, BATWING OPTIC
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

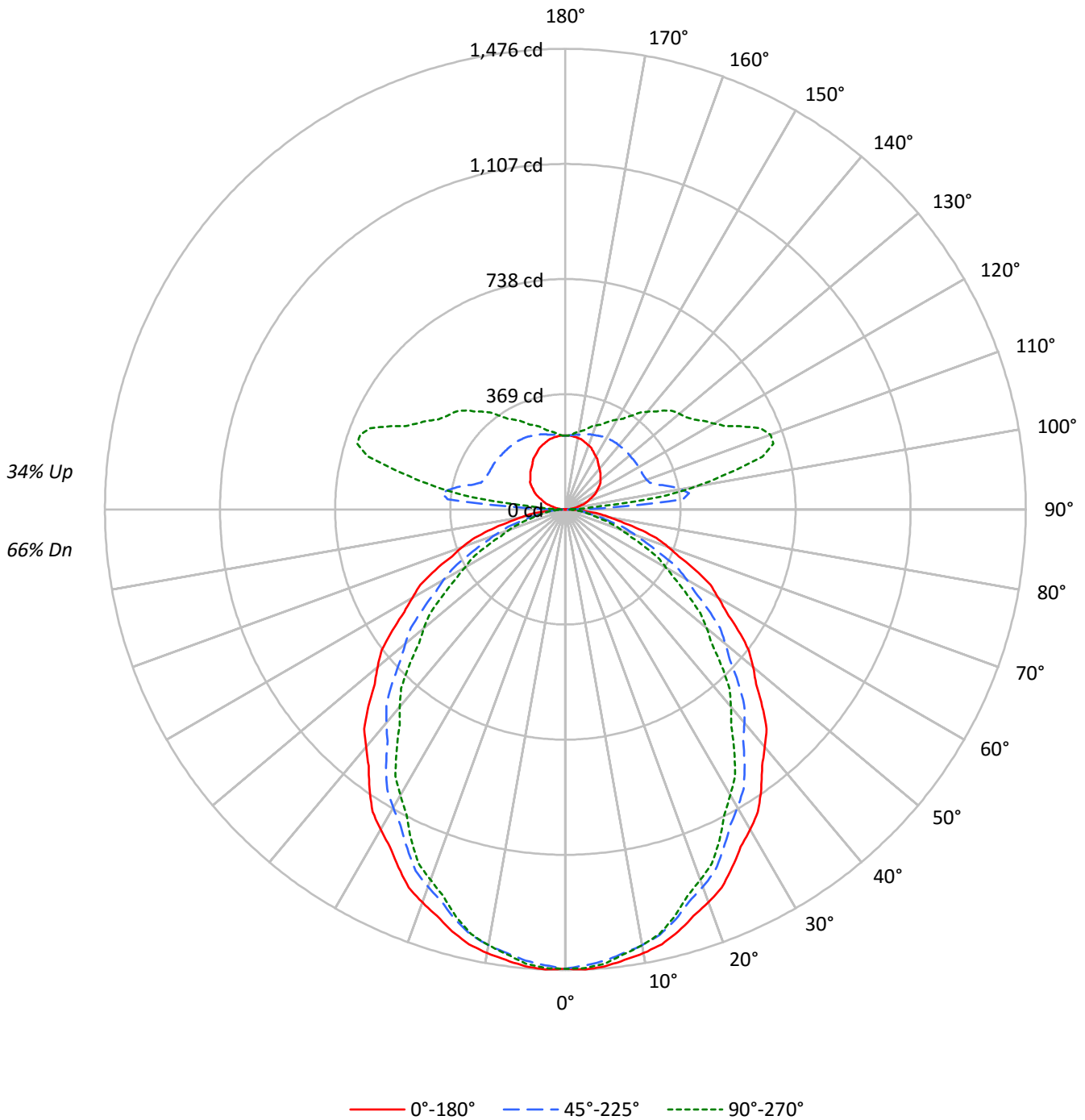
Lumens per Lamp: N/A
Luminaire Lumens: 5124.3 lumens
Efficiency: N/A
Efficacy: 105.0 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.09 / 1.24
Luminous Opening: Rectangular (W 0.33' x L: 4' x H: 0')
CIE Type: Semi-Direct

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	111	111	111	111	105	105	105	105	92	92	92	81	81	81	71	71	71	66				
1	102	98	94	90	96	92	89	86	82	79	77	72	70	69	64	62	61	57				
2	93	86	79	74	87	81	75	71	72	68	64	64	61	58	56	54	52	48				
3	85	76	68	62	80	72	65	60	64	59	54	57	53	49	50	47	44	41				
4	78	67	59	53	73	64	56	51	57	51	47	51	46	43	45	42	39	35				
5	72	60	52	46	67	57	50	44	51	45	41	46	41	37	41	37	34	31				
6	66	54	46	40	62	51	44	39	46	40	36	42	37	33	37	33	30	27				
7	62	49	41	35	58	47	39	34	42	36	32	38	33	29	34	30	27	24				
8	57	45	37	31	54	43	35	30	39	33	28	35	30	26	31	27	24	22				
9	53	41	33	28	50	39	32	27	36	30	25	32	27	24	29	25	22	20				
10	50	38	30	26	47	36	29	25	33	27	23	30	25	22	27	23	20	18				

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	11885	11885	11885
5°	11912	11766	11839
10°	11837	11625	11625
15°	11701	11381	11295
20°	11515	11059	10856
25°	11276	10684	10413
30°	11044	10288	9857
35°	10787	9876	9298
40°	10478	9409	8696
45°	10193	8944	8082
50°	9868	8410	7433
55°	9520	7854	6726
60°	9137	7245	6006
65°	8785	6481	5297
70°	8275	5641	4497
75°	7629	4676	3656
80°	6657	3561	3357
85°	5641	3242	3029



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	138.3	2.7
10°-20°	385.6	7.5
20°-30°	556.9	10.9
30°-40°	631.2	12.3
40°-50°	609.5	11.9
50°-60°	506.9	9.9
60°-70°	350.0	6.8
70°-80°	177.4	3.5
80°-90°	46.8	0.9
90°-100°	171.0	3.3
100°-110°	355.9	6.9
110°-120°	318.7	6.2
120°-130°	268.1	5.2
130°-140°	223.6	4.4
140°-150°	170.8	3.3
150°-160°	120.0	2.3
160°-170°	70.6	1.4
170°-180°	23.0	0.4
0°-30°	1080.8	21.1
0°-40°	1712.0	33.4
0°-60°	2828.4	55.2
0°-90°	3402.6	66.4
90°-120°	845.6	16.5
90°-150°	1508.1	29.4
90°-180°	1722.0	33.6
0°-180°	5124.3	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1472	1472	1472	1472	1472	
5°	1470	1465	1452	1462	1461	139
15°	1400	1389	1362	1359	1352	394
25°	1266	1244	1199	1181	1169	583
35°	1094	1057	1002	965	944	684
45°	893	850	783	730	708	688
55°	676	630	558	501	478	605
65°	460	410	339	293	277	454
75°	245	202	150	125	117	258
85°	61	39	35	33	33	68
90°	0	4	8	9	10	4
95°	15	48	379	188	114	17
105°	54	79	305	657	654	58
115°	96	120	272	523	628	95
125°	134	159	271	445	501	119
135°	159	189	268	395	448	123
145°	183	209	267	333	366	115
155°	208	224	260	294	306	96
165°	226	234	249	263	267	64
175°	236	237	239	242	241	22
180°	237	237	237	237	237	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1472.2	1472.2	1472.2	1472.2	1472.2	1472.2	1472.2	1472.2	1472.2	1472.2	1472.2
2.5°	1475.8	1475.0	1474.1	1473.4	1472.6	1471.0	1468.8	1466.6	1464.4	1462.2	1464.4
5°	1469.9	1468.9	1467.9	1466.9	1465.9	1463.9	1460.9	1457.9	1454.9	1451.9	1454.4
7.5°	1456.6	1455.6	1454.5	1453.4	1452.4	1449.9	1446.0	1442.1	1438.2	1434.3	1435.9
10°	1444.0	1442.8	1441.4	1440.2	1439.0	1436.1	1431.6	1427.1	1422.5	1418.1	1419.0
12.5°	1427.8	1426.3	1424.8	1423.4	1422.0	1418.5	1413.2	1407.9	1402.6	1397.3	1397.9
15°	1400.0	1397.7	1395.5	1393.3	1391.0	1386.7	1380.5	1374.2	1368.0	1361.7	1361.2
17.5°	1366.4	1363.2	1359.9	1356.7	1353.4	1348.0	1340.5	1333.0	1325.5	1317.9	1316.5
20°	1340.3	1337.0	1333.7	1330.5	1327.2	1321.4	1312.9	1304.3	1295.8	1287.3	1285.3
22.5°	1311.4	1307.7	1304.1	1300.5	1296.8	1290.4	1281.3	1272.2	1263.1	1253.9	1250.9
25°	1265.9	1261.3	1256.9	1252.4	1247.8	1240.5	1230.2	1219.9	1209.7	1199.4	1195.1
27.5°	1218.1	1212.4	1206.8	1201.1	1195.5	1187.2	1176.2	1165.2	1154.2	1143.2	1138.0
30°	1184.7	1178.4	1172.2	1166.0	1159.7	1150.6	1138.9	1127.1	1115.3	1103.6	1097.3
32.5°	1149.6	1142.5	1135.4	1128.4	1121.3	1111.7	1099.5	1087.4	1075.1	1063.0	1055.7
35°	1094.5	1086.5	1078.5	1070.5	1062.5	1052.2	1039.7	1027.2	1014.6	1002.1	993.6
37.5°	1035.7	1027.4	1019.2	1010.9	1002.7	991.6	977.7	963.8	949.9	936.0	926.5
40°	994.3	985.9	977.7	969.4	961.2	949.9	935.6	921.3	907.0	892.8	882.2
42.5°	954.6	945.9	937.2	928.5	919.9	908.1	893.2	878.3	863.5	848.6	837.9
45°	892.8	883.5	874.2	865.0	855.7	843.5	828.5	813.5	798.4	783.4	771.2
47.5°	829.0	819.4	809.8	800.3	790.7	778.1	762.5	746.8	731.2	715.6	702.9
50°	785.7	775.9	766.1	756.4	746.6	733.7	717.7	701.6	685.6	669.6	657.0
52.5°	741.5	731.9	722.4	712.8	703.2	690.2	673.8	657.4	640.9	624.5	611.8
55°	676.4	666.3	656.3	646.3	636.3	623.1	606.8	590.5	574.3	558.0	544.9
57.5°	611.9	601.4	591.0	580.6	570.2	556.9	541.0	524.9	508.8	492.8	479.6
60°	565.9	555.9	545.8	535.8	525.8	512.7	496.8	480.7	464.6	448.7	435.6
62.5°	524.4	514.0	503.5	493.1	482.7	469.3	452.8	436.4	420.0	403.6	391.5
65°	459.9	449.1	438.4	427.6	416.9	403.4	387.4	371.4	355.3	339.3	328.6
67.5°	393.0	382.6	372.3	362.0	351.6	339.1	324.2	309.3	294.4	279.6	270.3
70°	350.6	340.1	329.5	319.0	308.5	296.1	281.8	267.5	253.2	239.0	230.7
72.5°	305.5	296.0	286.4	277.0	267.4	255.9	242.5	228.9	215.5	202.0	194.9
75°	244.6	235.4	226.1	216.8	207.6	197.0	185.2	173.5	161.7	149.9	144.1
77.5°	182.9	175.0	167.1	159.2	151.4	142.7	133.1	123.7	114.1	104.6	101.3
80°	143.2	135.9	128.7	121.4	114.1	106.7	99.2	91.7	84.1	76.6	75.9
82.5°	108.9	102.2	95.6	88.9	82.3	76.7	72.5	68.2	63.8	59.5	58.9
85°	60.9	55.8	50.9	45.8	40.8	37.9	37.2	36.4	35.7	35.0	34.4
87.5°	20.9	19.4	18.1	16.6	15.1	14.2	14.5	14.3	14.3	14.3	14.0
90°	0.5	1.4	2.8	3.3	3.8	3.8	6.5	6.5	7.4	8.4	7.9
92.5°	5.3	7.7	12.1	17.8	24.5	34.2	57.9	93.9	129.1	147.5	122.9
95°	15.3	16.7	21.4	27.5	38.6	58.1	98.6	174.9	286.0	379.0	389.7
97.5°	27.6	27.6	31.6	37.1	46.7	63.1	94.2	157.2	267.7	399.3	489.7
100°	35.4	35.4	38.6	44.2	53.0	67.9	95.3	147.9	242.8	373.9	493.0
102.5°	42.8	43.5	46.4	51.6	60.1	74.2	99.1	145.3	226.0	342.3	465.0
105°	54.4	55.8	58.1	63.8	72.1	85.6	107.9	146.5	211.7	305.1	414.4
107.5°	67.3	68.2	70.5	76.5	84.5	97.8	118.2	153.4	209.0	284.3	373.5
110°	75.8	76.7	79.1	84.6	93.0	105.6	126.0	158.6	209.8	277.2	353.0



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	84.0	85.0	87.6	92.9	101.2	113.7	133.5	164.2	212.0	273.9	341.4
115°	95.8	97.2	100.4	105.1	114.0	126.5	145.1	173.0	216.3	272.1	330.7
117.5°	108.1	109.4	112.3	117.4	125.6	138.7	156.4	182.1	220.8	271.6	325.9
120°	116.3	117.2	120.4	125.6	133.5	146.5	164.2	188.3	224.2	271.6	323.3
122.5°	123.7	124.7	127.9	132.6	141.3	153.9	171.6	194.3	227.6	271.3	320.2
125°	133.5	135.3	138.1	143.2	152.1	165.1	181.8	203.3	232.5	270.7	315.4
127.5°	142.1	143.7	147.0	152.8	162.0	175.1	191.4	211.0	236.5	269.6	308.8
130°	147.0	148.8	152.5	159.6	168.4	181.8	197.6	215.8	239.5	269.3	304.6
132.5°	151.8	153.3	158.2	164.8	174.3	187.0	202.8	220.6	242.1	268.9	300.9
135°	158.6	160.5	165.1	173.0	182.8	194.9	210.2	227.0	246.1	268.3	295.3
137.5°	165.4	167.1	172.3	179.8	190.0	201.5	215.8	231.5	248.3	268.2	290.5
140°	170.2	171.6	176.8	184.7	194.4	205.5	219.6	234.4	250.2	267.9	287.9
142.5°	175.5	176.8	181.6	189.1	198.5	209.3	222.9	236.6	251.7	267.9	285.7
145°	182.8	184.2	188.8	195.3	204.2	214.4	226.5	239.0	252.6	266.9	281.8
147.5°	191.0	191.5	195.6	202.3	209.7	218.9	230.2	241.2	253.0	265.3	278.4
150°	196.2	196.7	200.5	206.0	213.0	221.8	232.1	242.3	253.0	264.2	275.8
152.5°	201.1	201.2	204.9	210.1	216.4	224.5	233.6	243.0	252.3	262.3	272.8
155°	207.9	208.4	211.2	215.8	220.9	227.9	235.8	243.7	251.1	259.5	268.3
157.5°	214.5	214.5	217.1	220.7	225.2	230.6	237.4	243.7	250.0	256.7	263.8
160°	218.6	218.6	220.5	223.7	227.4	232.5	238.1	243.7	248.8	254.4	260.5
162.5°	222.3	221.9	223.4	226.3	229.7	233.7	238.9	243.7	247.7	252.2	257.5
165°	226.5	226.5	227.4	229.8	232.1	234.9	239.0	242.8	245.6	248.8	252.6
167.5°	230.6	230.2	230.6	232.4	233.7	235.9	239.0	241.7	243.4	245.5	248.1
170°	232.5	232.1	232.5	233.9	234.9	236.3	238.6	240.9	241.8	243.2	245.1
172.5°	234.4	233.9	234.0	235.1	235.6	236.6	238.2	240.2	240.4	241.0	242.5
175°	236.3	235.8	235.8	236.3	236.8	236.8	237.7	239.0	238.6	238.6	239.5
177.5°	237.1	236.8	236.4	236.8	236.8	236.8	237.1	237.8	237.1	237.1	237.5
180°	236.8	236.8	236.8	236.8	236.8	236.8	236.8	236.8	236.8	236.8	236.8



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1472.2	1472.2	1472.2	1472.2	1472.2	1472.2	1472.2	1472.2
2.5°	1466.6	1468.8	1471.0	1472.1	1471.9	1471.7	1471.5	1471.3
5°	1456.9	1459.4	1461.9	1462.9	1462.4	1461.9	1461.4	1460.9
7.5°	1437.5	1439.1	1440.7	1441.1	1440.3	1439.5	1438.7	1437.9
10°	1420.1	1421.1	1422.0	1422.0	1421.1	1420.1	1419.0	1418.1
12.5°	1398.5	1399.1	1399.7	1399.3	1397.9	1396.5	1395.1	1393.8
15°	1360.7	1360.2	1359.7	1358.5	1356.8	1355.0	1353.3	1351.5
17.5°	1315.2	1313.8	1312.4	1310.3	1307.7	1305.0	1302.4	1299.7
20°	1283.3	1281.3	1279.3	1276.7	1273.4	1270.2	1266.9	1263.6
22.5°	1247.9	1244.9	1241.9	1239.1	1236.4	1233.8	1231.1	1228.5
25°	1190.8	1186.6	1182.3	1178.9	1176.5	1173.9	1171.4	1169.0
27.5°	1132.7	1127.5	1122.2	1117.8	1114.2	1110.5	1106.9	1103.3
30°	1091.0	1084.8	1078.5	1073.3	1069.3	1065.4	1061.4	1057.4
32.5°	1048.5	1041.2	1034.0	1028.4	1024.6	1020.8	1017.0	1013.2
35°	985.0	976.6	968.0	961.6	957.0	952.5	948.0	943.5
37.5°	917.0	907.5	898.0	891.0	886.5	881.9	877.4	872.9
40°	871.7	861.2	850.7	843.2	838.7	834.1	829.6	825.2
42.5°	827.1	816.4	805.7	798.0	793.3	788.6	783.8	779.2
45°	758.9	746.6	734.3	725.9	721.5	716.9	712.4	707.9
47.5°	690.2	677.4	664.6	655.8	650.9	645.9	640.9	636.0
50°	644.5	632.0	619.5	610.8	606.1	601.3	596.6	591.8
52.5°	599.0	586.3	573.6	564.8	559.8	554.8	549.8	544.9
55°	531.9	518.9	505.9	497.0	492.2	487.5	482.7	477.9
57.5°	466.4	453.1	439.9	431.5	427.9	424.3	420.7	417.1
60°	422.6	409.5	396.6	388.0	384.0	380.0	376.0	372.0
62.5°	379.5	367.5	355.5	347.8	344.6	341.4	338.2	335.0
65°	317.7	307.0	296.2	289.3	286.3	283.3	280.3	277.3
67.5°	261.0	251.8	242.5	236.2	232.8	229.6	226.2	223.0
70°	222.4	214.2	205.9	200.5	198.0	195.5	193.0	190.5
72.5°	187.8	180.8	173.7	169.1	166.7	164.4	162.2	159.9
75°	138.4	132.6	126.9	123.3	121.7	120.3	118.7	117.2
77.5°	97.9	94.6	91.2	89.3	88.8	88.4	87.9	87.5
80°	75.2	74.4	73.6	73.1	72.9	72.6	72.4	72.2
82.5°	58.4	57.9	57.3	56.9	56.7	56.4	56.2	55.9
85°	33.9	33.4	32.9	32.7	32.7	32.7	32.7	32.7
87.5°	13.9	13.8	13.7	13.7	13.9	14.3	14.3	14.6
90°	8.4	8.8	9.3	9.3	9.8	10.2	9.8	9.8
92.5°	91.3	68.7	54.7	45.4	39.9	37.4	35.8	35.8
95°	344.6	272.6	210.2	165.1	142.4	127.9	119.5	113.5
97.5°	509.2	482.4	436.9	388.3	355.0	326.9	313.0	303.3
100°	560.9	570.2	547.4	513.0	472.5	444.2	430.2	426.5
102.5°	558.3	604.5	611.1	596.7	571.9	551.3	536.6	533.6
105°	520.9	601.4	647.4	666.5	667.4	663.7	657.1	654.4
107.5°	467.8	553.4	618.3	659.7	682.7	693.3	698.0	699.2
110°	435.8	516.2	583.7	634.9	667.9	687.4	695.8	699.9



TEST NUMBER: P332966-930

CATALOG NUMBER: SA4XXRDIP-C1020D590U930-4F0-1E-UDD-F4

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	412.4	483.5	547.2	598.3	635.9	659.5	671.2	678.0
115°	388.8	446.1	500.4	545.1	581.8	609.8	624.6	628.4
117.5°	377.2	424.6	467.4	505.2	536.6	560.0	575.1	578.0
120°	372.1	415.3	452.5	485.5	512.1	532.6	544.6	549.8
122.5°	367.6	409.4	443.2	472.1	494.6	512.1	522.3	527.4
125°	360.0	400.0	432.0	457.6	476.2	489.8	498.6	501.3
127.5°	350.7	388.9	420.9	445.2	463.9	475.9	483.3	486.1
130°	343.2	380.0	411.6	436.3	455.3	466.9	474.4	477.2
132.5°	335.4	369.9	400.8	425.4	444.2	457.3	464.3	467.2
135°	324.7	354.9	383.2	406.5	425.1	438.1	445.6	448.3
137.5°	314.9	340.5	364.4	385.4	402.8	415.6	421.8	425.1
140°	309.2	331.2	352.0	371.6	387.9	398.1	404.6	408.4
142.5°	304.1	323.3	341.3	358.2	372.6	382.1	387.9	390.4
145°	296.7	312.5	326.5	339.5	351.1	359.1	363.7	366.0
147.5°	290.7	303.2	314.4	324.7	333.2	340.0	343.5	344.4
150°	287.0	297.7	307.0	315.4	322.8	328.8	331.6	332.1
152.5°	282.8	292.0	300.6	307.5	313.8	318.8	320.4	320.9
155°	276.7	284.1	291.1	296.7	301.4	305.1	306.5	306.5
157.5°	270.1	276.4	282.2	286.7	290.2	293.0	293.8	293.8
160°	266.0	271.2	276.2	280.0	282.7	285.6	286.0	286.0
162.5°	262.0	266.3	270.3	273.7	275.7	278.5	279.0	278.6
165°	256.2	259.0	262.3	264.6	266.5	268.3	267.9	267.4
167.5°	250.8	252.9	255.5	256.9	257.9	259.0	258.9	258.6
170°	247.4	248.8	250.7	252.1	253.0	253.5	253.0	253.0
172.5°	244.4	245.5	246.6	247.6	248.2	248.7	248.2	247.4
175°	240.4	240.9	241.8	241.8	241.8	242.8	241.8	240.9
177.5°	237.8	238.2	238.2	238.6	238.2	238.6	237.8	237.1
180°	236.8	236.8	236.8	236.8	236.8	236.8	236.8	236.8

(END OF REPORT)