

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: P332959-927

Luminaire Tested: **SA4XXRDIP-C1020D365U927-4F0-1E-UDD-F1**

Issue Date: 10/7/2019

Test Information

Test Method: LM-79-08
Report Number: P332959-927
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: SA4XXRDIP-C1020D365U927-4F0-1E-UDD-F1
Description: DEFINE 4 DIRECT-INDIRECT PENDANT LED LUMINAIRE
DOWNLIGHT 1020 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER, REGRESSED
HOUSING
UPLIGHT 365 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4310.2 lumens
Efficiency: N/A
Efficacy: 99.1 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

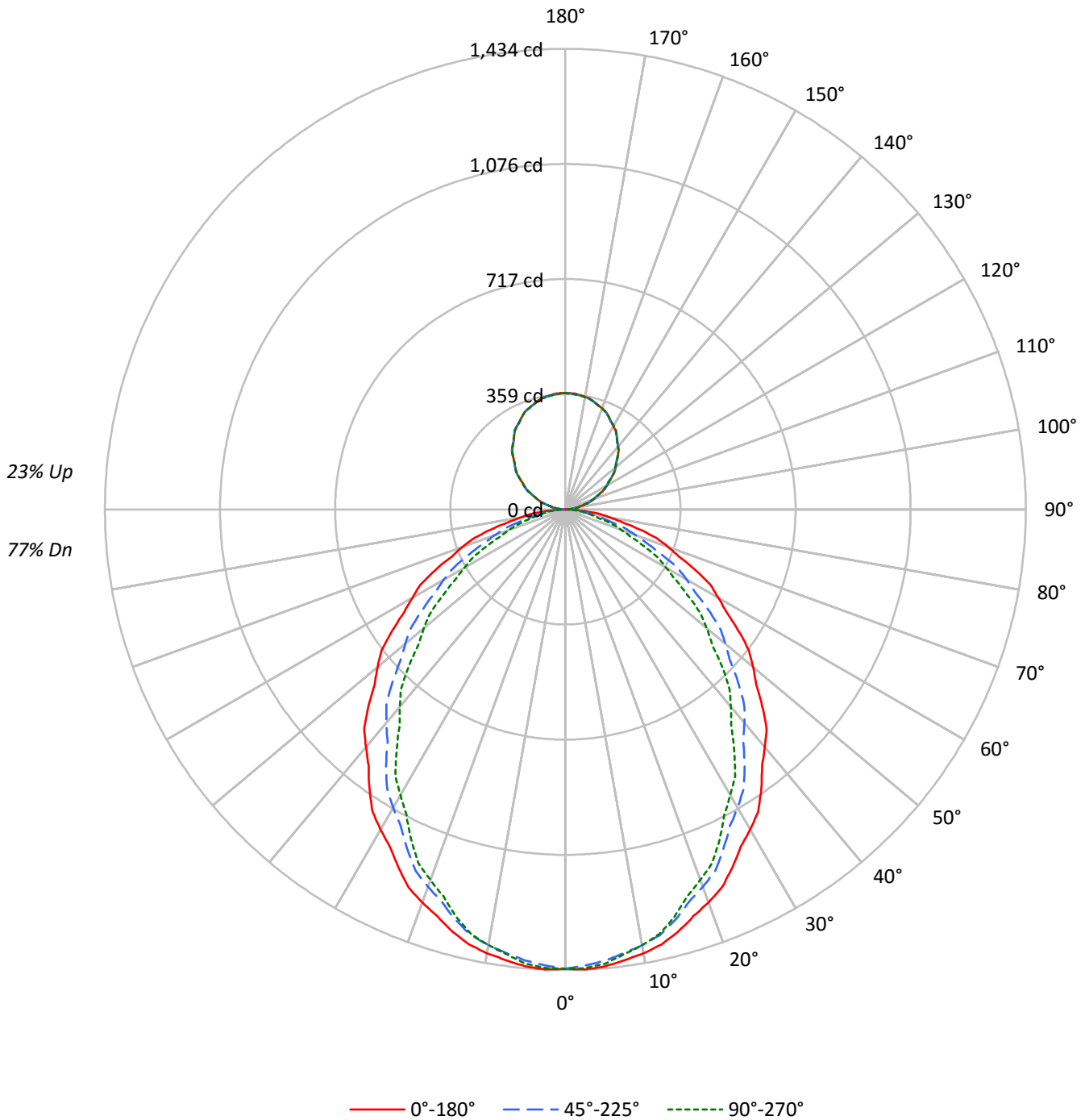
Input Watts (W): 43.5
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	50	30	10	0	
RCR																						
0	114	114	114	114	108	108	108	108	98	98	98	89	89	89	81	81	81	77				77
1	104	100	96	92	99	95	92	89	87	84	82	79	77	75	72	70	69				65	
2	95	88	81	76	91	84	78	74	77	72	68	70	67	63	64	61	59				55	
3	87	78	70	64	83	74	67	62	68	63	58	62	58	54	57	53	50				47	
4	80	69	61	55	76	66	59	53	61	55	50	56	51	47	51	47	44				41	
5	74	62	53	47	70	59	52	46	55	48	43	50	45	41	46	42	38				36	
6	68	56	47	41	65	54	46	40	50	43	38	46	40	36	42	38	34				32	
7	63	51	42	37	60	49	41	36	45	39	34	42	36	32	39	34	30				28	
8	59	46	38	33	56	45	37	32	41	35	30	38	33	29	36	31	27				25	
9	55	42	35	29	52	41	34	29	38	32	27	35	30	26	33	28	25				23	
10	52	39	32	27	49	38	31	26	35	29	25	33	28	24	31	26	23				21	

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	11548	11548	11548
5°	11574	11432	11503
10°	11501	11294	11294
15°	11369	11058	10975
20°	11188	10746	10548
25°	10956	10381	10117
30°	10730	9996	9577
35°	10481	9596	9034
40°	10181	9141	8450
45°	9903	8691	7854
50°	9588	8171	7222
55°	9250	7631	6536
60°	8879	7038	5837
65°	8537	6298	5146
70°	8039	5481	4369
75°	7414	4545	3553
80°	6467	3464	3259
85°	5483	3149	2946



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	134.4	3.1
10°-20°	374.7	8.7
20°-30°	541.1	12.6
30°-40°	613.3	14.2
40°-50°	592.3	13.7
50°-60°	492.5	11.4
60°-70°	340.1	7.9
70°-80°	172.4	4.0
80°-90°	45.3	1.1
90°-100°	23.9	0.6
100°-110°	70.7	1.6
110°-120°	120.0	2.8
120°-130°	158.3	3.7
130°-140°	177.8	4.1
140°-150°	174.7	4.1
150°-160°	146.9	3.4
160°-170°	97.7	2.3
170°-180°	34.2	0.8
0°-30°	1050.1	24.4
0°-40°	1663.5	38.6
0°-60°	2748.2	63.8
0°-90°	3306.0	76.7
90°-120°	214.6	5.0
90°-150°	725.3	16.8
90°-180°	1004.0	23.3
0°-180°	4310.2	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1430	1430	1430	1430	1430	
5°	1428	1423	1411	1421	1420	135
15°	1360	1349	1323	1321	1313	383
25°	1230	1209	1165	1147	1136	566
35°	1064	1027	974	937	917	664
45°	867	826	761	709	688	669
55°	657	612	542	487	464	588
65°	447	398	330	284	269	441
75°	238	197	146	122	114	251
85°	59	38	34	32	32	67
90°	1	4	6	8	8	4
95°	17	19	21	22	22	19
105°	65	66	67	67	68	69
115°	122	122	122	121	121	120
125°	178	178	177	177	176	158
135°	229	231	231	230	230	177
145°	278	280	280	280	279	174
155°	319	319	319	320	319	147
165°	347	347	346	348	347	98
175°	361	360	360	362	360	34
180°	362	362	362	362	362	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1430.4	1430.4	1430.4	1430.4	1430.4	1430.4	1430.4	1430.4	1430.4	1430.4	1430.4
2.5°	1433.9	1433.1	1432.3	1431.6	1430.8	1429.3	1427.2	1425.1	1422.9	1420.8	1422.9
5°	1428.2	1427.3	1426.3	1425.3	1424.3	1422.4	1419.5	1416.6	1413.6	1410.7	1413.2
7.5°	1415.3	1414.3	1413.3	1412.2	1411.2	1408.8	1405.0	1401.2	1397.4	1393.6	1395.2
10°	1403.0	1401.8	1400.6	1399.4	1398.2	1395.3	1391.0	1386.6	1382.2	1377.8	1378.8
12.5°	1387.3	1385.8	1384.4	1383.1	1381.6	1378.3	1373.2	1368.0	1362.9	1357.7	1358.3
15°	1360.3	1358.1	1356.0	1353.8	1351.5	1347.4	1341.3	1335.2	1329.2	1323.1	1322.6
17.5°	1327.7	1324.5	1321.4	1318.2	1315.0	1309.8	1302.5	1295.2	1287.9	1280.6	1279.2
20°	1302.3	1299.1	1295.9	1292.8	1289.6	1283.9	1275.7	1267.3	1259.1	1250.8	1248.9
22.5°	1274.2	1270.7	1267.1	1263.6	1260.0	1253.8	1245.0	1236.1	1227.2	1218.4	1215.4
25°	1230.0	1225.6	1221.2	1216.9	1212.4	1205.3	1195.3	1185.3	1175.4	1165.4	1161.3
27.5°	1183.5	1178.1	1172.6	1167.0	1161.6	1153.5	1142.8	1132.2	1121.5	1110.8	1105.7
30°	1151.1	1145.0	1139.0	1132.9	1126.8	1118.0	1106.6	1095.1	1083.7	1072.3	1066.2
32.5°	1117.0	1110.1	1103.2	1096.4	1089.5	1080.1	1068.3	1056.5	1044.7	1032.8	1025.8
35°	1063.5	1055.7	1047.9	1040.1	1032.4	1022.4	1010.2	998.1	985.9	973.7	965.4
37.5°	1006.3	998.3	990.3	982.2	974.2	963.5	950.0	936.5	923.0	909.5	900.2
40°	966.1	958.0	950.0	941.9	933.9	923.0	909.1	895.2	881.3	867.4	857.2
42.5°	927.5	919.1	910.6	902.2	893.8	882.3	867.9	853.4	839.0	824.5	814.1
45°	867.4	858.5	849.5	840.4	831.4	819.6	805.0	790.4	775.8	761.2	749.3
47.5°	805.5	796.1	786.9	777.6	768.3	756.1	740.8	725.6	710.4	695.3	682.9
50°	763.4	753.9	744.4	734.9	725.4	712.9	697.4	681.8	666.1	650.6	638.4
52.5°	720.5	711.1	701.9	692.6	683.3	670.7	654.7	638.7	622.7	606.8	594.5
55°	657.2	647.5	637.7	628.0	618.2	605.5	589.6	573.8	558.0	542.2	529.5
57.5°	594.5	584.4	574.3	564.1	554.1	541.1	525.6	510.0	494.4	478.9	466.0
60°	549.9	540.1	530.4	520.6	510.9	498.2	482.7	467.1	451.5	435.9	423.3
62.5°	509.5	499.4	489.3	479.1	469.1	456.0	440.0	424.1	408.1	392.1	380.4
65°	446.9	436.4	426.0	415.5	405.0	392.0	376.4	360.8	345.2	329.7	319.2
67.5°	381.8	371.8	361.8	351.7	341.7	329.5	315.0	300.6	286.1	271.6	262.6
70°	340.6	330.4	320.2	310.0	299.8	287.7	273.9	259.9	246.1	232.2	224.2
72.5°	296.8	287.6	278.3	269.1	259.8	248.7	235.6	222.4	209.4	196.3	189.4
75°	237.7	228.7	219.7	210.6	201.7	191.4	180.0	168.6	157.1	145.7	140.1
77.5°	177.7	170.0	162.4	154.7	147.1	138.6	129.4	120.2	110.9	101.6	98.4
80°	139.1	132.1	125.0	118.0	110.9	103.7	96.4	89.1	81.8	74.5	73.8
82.5°	105.8	99.3	92.8	86.3	79.9	74.5	70.4	66.2	62.0	57.8	57.3
85°	59.2	54.3	49.4	44.5	39.7	36.8	36.1	35.4	34.7	34.0	33.4
87.5°	20.4	18.9	17.5	16.1	14.7	13.9	13.8	13.7	13.6	13.5	13.4
90°	0.9	1.5	2.2	2.9	3.6	4.2	4.7	5.1	5.6	6.2	6.5
92.5°	6.0	6.8	7.5	8.3	9.1	9.7	10.1	10.4	10.8	11.1	11.3
95°	16.8	17.3	17.9	18.5	19.0	19.6	20.0	20.4	20.8	21.3	21.5
97.5°	29.3	29.8	30.3	30.7	31.1	31.6	32.1	32.6	33.1	33.7	33.9
100°	39.2	39.5	39.7	39.9	40.2	40.6	41.1	41.7	42.3	42.9	42.9
102.5°	49.5	49.6	49.7	49.8	49.9	50.2	50.7	51.3	51.7	52.2	52.4
105°	65.2	65.3	65.4	65.4	65.4	65.6	65.9	66.1	66.4	66.6	66.8
107.5°	81.8	81.8	81.9	82.0	82.1	82.1	82.1	82.1	82.2	82.2	82.4
110°	92.9	93.1	93.2	93.3	93.4	93.5	93.4	93.3	93.2	93.2	93.1



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	104.6	104.6	104.6	104.6	104.6	104.6	104.5	104.4	104.3	104.2	104.2
115°	122.1	122.1	122.1	122.1	122.1	122.0	121.8	121.8	121.6	121.5	121.4
117.5°	138.5	138.6	138.6	138.6	138.7	138.7	138.6	138.6	138.4	138.3	138.2
120°	149.5	149.7	150.0	150.2	150.5	150.5	150.4	150.1	150.0	149.8	149.5
122.5°	160.9	161.0	161.1	161.2	161.3	161.3	161.2	161.1	161.1	161.0	160.7
125°	177.8	177.8	177.8	177.8	177.8	177.7	177.7	177.6	177.5	177.4	177.4
127.5°	193.1	193.2	193.5	193.6	193.8	193.8	193.8	193.6	193.5	193.5	193.3
130°	203.8	204.0	204.1	204.4	204.5	204.6	204.6	204.6	204.6	204.6	204.5
132.5°	214.8	214.9	215.0	215.2	215.3	215.3	215.3	215.2	215.2	215.2	215.0
135°	229.3	229.7	230.0	230.4	230.8	230.9	230.9	230.9	230.9	230.9	230.8
137.5°	245.0	245.3	245.4	245.6	245.7	245.9	246.0	246.1	246.2	246.3	246.1
140°	255.6	255.7	255.8	256.0	256.1	256.1	256.1	256.1	256.1	256.1	256.1
142.5°	265.2	265.3	265.5	265.5	265.7	265.8	265.7	265.6	265.6	265.5	265.5
145°	278.5	278.8	279.0	279.2	279.6	279.7	279.7	279.8	279.9	280.0	279.9
147.5°	291.8	292.1	292.3	292.6	292.9	293.0	293.0	292.9	292.9	292.9	292.8
150°	299.8	300.1	300.3	300.6	300.8	301.0	301.0	301.0	301.0	301.0	301.0
152.5°	307.4	307.6	307.7	307.8	308.0	308.1	308.2	308.2	308.2	308.3	308.5
155°	319.1	319.1	319.1	319.1	319.1	319.1	319.0	318.9	318.9	318.9	319.1
157.5°	329.0	328.8	328.8	328.7	328.5	328.4	328.4	328.4	328.4	328.4	328.6
160°	334.8	334.7	334.7	334.6	334.5	334.5	334.5	334.4	334.3	334.2	334.5
162.5°	340.2	340.0	339.8	339.7	339.5	339.5	339.4	339.3	339.2	339.1	339.5
165°	347.4	347.2	347.1	346.8	346.7	346.5	346.3	346.3	346.1	346.0	346.3
167.5°	352.9	352.7	352.4	352.1	351.9	351.7	351.8	351.8	351.8	351.8	352.2
170°	356.1	355.8	355.5	355.1	354.8	354.7	354.7	354.8	354.9	355.0	355.3
172.5°	358.3	358.1	357.7	357.5	357.3	357.1	357.1	357.2	357.2	357.2	357.6
175°	361.4	361.1	360.8	360.4	360.1	360.0	359.9	359.8	359.8	359.7	360.1
177.5°	362.4	362.2	361.9	361.6	361.4	361.3	361.3	361.3	361.3	361.3	361.6
180°	361.9	361.9	361.9	361.9	361.9	361.9	361.9	361.9	361.9	361.9	361.9



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1430.4	1430.4	1430.4	1430.4	1430.4	1430.4	1430.4	1430.4
2.5°	1425.1	1427.2	1429.3	1430.4	1430.1	1430.0	1429.7	1429.6
5°	1415.6	1418.0	1420.5	1421.4	1420.9	1420.5	1420.0	1419.5
7.5°	1396.8	1398.3	1399.9	1400.3	1399.5	1398.7	1397.9	1397.1
10°	1379.8	1380.8	1381.7	1381.7	1380.8	1379.8	1378.8	1377.8
12.5°	1358.8	1359.5	1360.0	1359.6	1358.3	1356.9	1355.6	1354.2
15°	1322.2	1321.6	1321.1	1320.0	1318.3	1316.6	1314.9	1313.2
17.5°	1277.9	1276.5	1275.2	1273.2	1270.6	1268.0	1265.4	1262.8
20°	1246.9	1245.0	1243.0	1240.5	1237.3	1234.1	1231.0	1227.8
22.5°	1212.5	1209.6	1206.7	1204.0	1201.3	1198.8	1196.2	1193.7
25°	1157.1	1152.9	1148.8	1145.5	1143.1	1140.7	1138.2	1135.8
27.5°	1100.6	1095.5	1090.4	1086.1	1082.6	1079.0	1075.5	1072.1
30°	1060.1	1054.0	1047.9	1042.9	1039.0	1035.1	1031.3	1027.4
32.5°	1018.7	1011.7	1004.6	999.3	995.5	991.8	988.2	984.4
35°	957.1	948.9	940.6	934.3	929.9	925.5	921.1	916.7
37.5°	891.0	881.8	872.5	865.7	861.3	856.9	852.5	848.2
40°	847.0	836.8	826.6	819.3	814.9	810.5	806.1	801.8
42.5°	803.7	793.3	782.8	775.4	770.8	766.2	761.6	757.1
45°	737.4	725.4	713.5	705.4	701.0	696.6	692.2	687.9
47.5°	670.6	658.2	645.8	637.2	632.4	627.6	622.7	618.0
50°	626.2	614.1	601.9	593.5	588.9	584.2	579.6	575.0
52.5°	582.0	569.7	557.3	548.7	543.9	539.1	534.2	529.5
55°	516.8	504.2	491.5	482.9	478.2	473.6	469.1	464.4
57.5°	453.1	440.3	427.5	419.3	415.7	412.3	408.8	405.3
60°	410.6	397.9	385.3	377.0	373.1	369.2	365.4	361.5
62.5°	368.8	357.0	345.4	337.9	334.9	331.8	328.6	325.5
65°	308.7	298.3	287.8	281.1	278.2	275.3	272.4	269.4
67.5°	253.6	244.6	235.6	229.5	226.2	223.1	219.8	216.7
70°	216.1	208.1	200.1	194.8	192.4	190.0	187.5	185.1
72.5°	182.5	175.7	168.8	164.3	162.0	159.8	157.6	155.3
75°	134.5	128.9	123.3	119.8	118.3	116.8	115.3	113.9
77.5°	95.1	91.9	88.6	86.7	86.3	85.9	85.4	85.0
80°	73.0	72.3	71.5	71.1	70.8	70.6	70.3	70.1
82.5°	56.7	56.2	55.7	55.3	55.1	54.8	54.6	54.3
85°	33.0	32.5	32.0	31.8	31.8	31.8	31.8	31.8
87.5°	13.2	13.2	13.0	13.1	13.3	13.5	13.7	13.9
90°	6.9	7.3	7.7	7.9	8.0	8.2	8.2	8.4
92.5°	11.6	11.7	12.0	12.1	12.2	12.3	12.4	12.4
95°	21.6	21.9	22.0	22.1	22.1	22.1	22.1	22.1
97.5°	34.1	34.3	34.5	34.6	34.6	34.6	34.6	34.6
100°	43.1	43.2	43.3	43.4	43.4	43.4	43.4	43.4
102.5°	52.6	52.8	52.9	53.1	53.1	53.2	53.2	53.2
105°	67.0	67.2	67.3	67.6	67.7	68.0	68.1	68.3
107.5°	82.6	82.8	82.9	83.0	83.0	83.0	83.0	82.9
110°	93.0	92.8	92.7	92.8	92.9	93.2	93.3	93.5



TEST NUMBER: P332959-927

CATALOG NUMBER: SA4XXRDIP-C1020D365U927-4F0-1E-UDD-F1

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	104.2	104.1	104.1	104.1	104.2	104.2	104.2	104.3
115°	121.4	121.3	121.2	121.2	121.1	121.0	121.0	121.0
117.5°	137.9	137.7	137.5	137.4	137.2	137.0	137.0	136.8
120°	149.2	148.9	148.5	148.5	148.5	148.7	148.8	148.9
122.5°	160.6	160.3	160.1	159.9	159.7	159.5	159.2	159.0
125°	177.2	177.1	177.0	176.8	176.7	176.6	176.5	176.3
127.5°	193.2	193.1	192.9	192.8	192.7	192.7	192.5	192.4
130°	204.4	204.2	204.1	203.9	203.7	203.4	203.2	203.0
132.5°	214.9	214.8	214.7	214.5	214.4	214.4	214.3	214.1
135°	230.7	230.6	230.4	230.3	230.1	229.9	229.7	229.6
137.5°	246.0	245.8	245.7	245.6	245.6	245.7	245.7	245.7
140°	256.0	256.0	255.9	255.8	255.8	255.7	255.6	255.6
142.5°	265.5	265.5	265.5	265.5	265.5	265.5	265.5	265.5
145°	279.8	279.7	279.7	279.6	279.4	279.2	279.0	278.8
147.5°	292.8	292.7	292.6	292.6	292.6	292.5	292.4	292.4
150°	301.0	301.0	301.0	300.9	300.9	300.8	300.7	300.6
152.5°	308.6	308.8	309.0	308.9	308.7	308.6	308.4	308.2
155°	319.3	319.6	319.8	319.8	319.6	319.3	319.1	318.9
157.5°	328.8	329.0	329.2	329.2	328.9	328.8	328.5	328.3
160°	334.6	334.8	335.0	334.9	334.6	334.3	334.0	333.7
162.5°	339.8	340.2	340.5	340.5	340.2	339.9	339.6	339.3
165°	346.7	347.1	347.5	347.5	347.3	347.1	346.8	346.6
167.5°	352.6	352.9	353.3	353.3	352.9	352.5	352.1	351.7
170°	355.7	356.1	356.5	356.4	356.0	355.5	355.1	354.7
172.5°	358.1	358.5	358.9	358.9	358.5	358.0	357.6	357.1
175°	360.6	361.0	361.5	361.5	361.0	360.6	360.1	359.7
177.5°	361.9	362.3	362.7	362.7	362.3	361.9	361.5	361.1
180°	361.9	361.9	361.9	361.9	361.9	361.9	361.9	361.9

(END OF REPORT)