

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: P332978-927

Luminaire Tested: **S124RDIP-S1020D1035U927-4F0-1E-UDD-F4**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332978-927
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-18,
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S124RDIP-S1020D1035U927-4F0-1E-UDD-F4
Description: DEFINE 4 DIRECT-INDIRECT PENDANT LED LUMINAIRE
DOWNLIGHT 1020 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER, REGRESSED
HOUSING
UPLIGHT 1035 LUMENS PER FOOT, BATWING OPTIC
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 6234.7 lumens
Efficiency: N/A
Efficacy: 103.1 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: General Diffuse

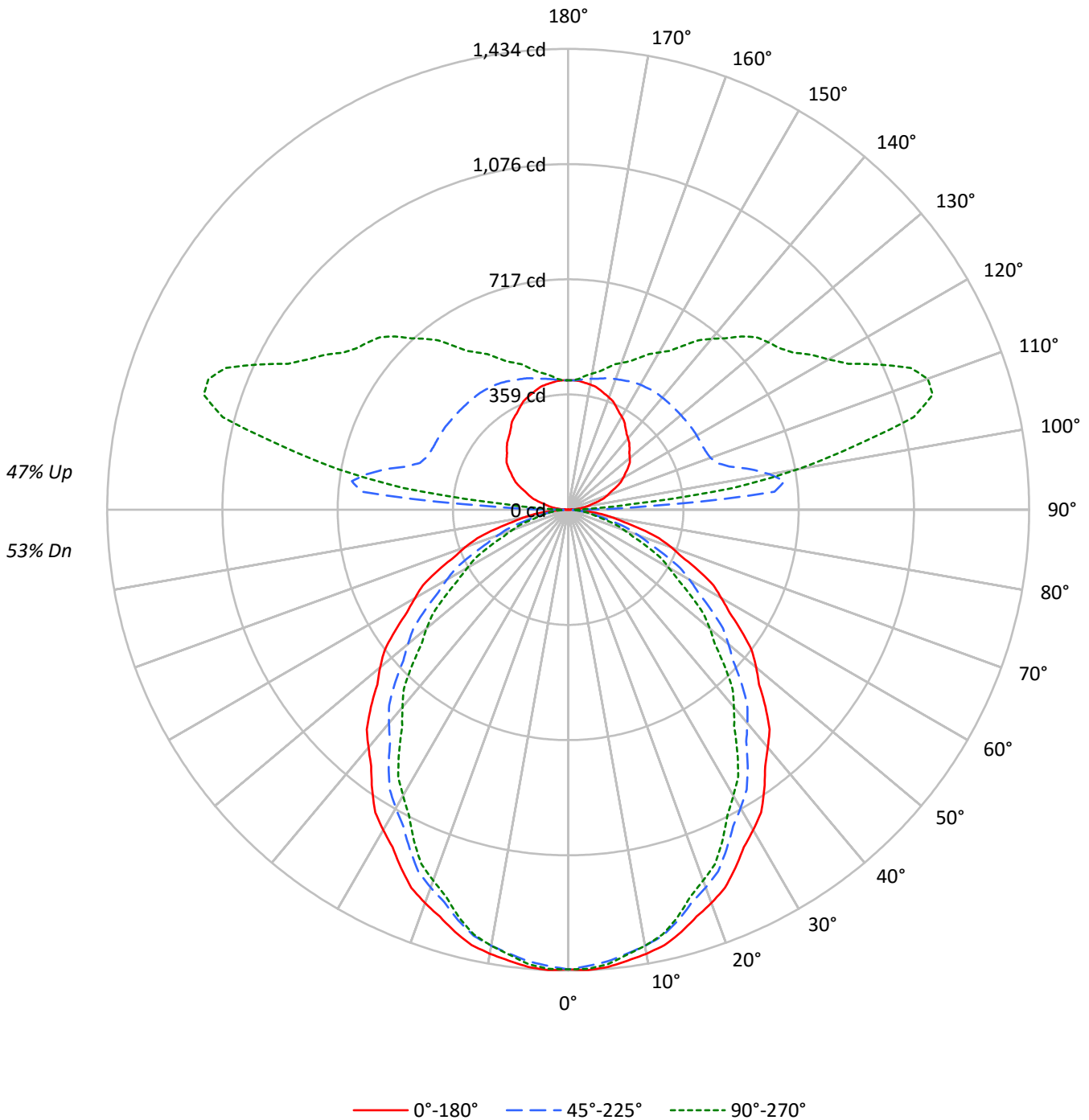
Input Watts (W): 60.5
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	108	108	108	108	100	100	100	100	85	85	85	71	71	71	59	59	59	53
1	99	95	91	87	91	88	84	82	75	73	70	63	62	60	53	51	50	45
2	90	83	77	72	83	77	72	67	66	62	59	56	53	51	47	45	43	38
3	82	73	66	60	76	68	62	57	58	54	50	50	46	43	41	39	37	33
4	76	65	57	51	70	60	54	48	52	47	43	44	40	37	37	34	32	28
5	69	58	50	44	64	54	47	42	47	41	37	40	36	32	34	30	28	25
6	64	52	44	38	59	49	41	36	42	37	32	36	32	28	31	27	25	22
7	59	47	39	34	55	44	37	32	38	33	29	33	29	25	28	25	22	19
8	55	43	35	30	51	40	33	28	35	29	25	30	26	23	26	22	20	18
9	51	39	32	27	48	37	30	25	32	27	23	28	24	20	24	20	18	16
10	48	36	29	24	45	34	27	23	30	24	21	26	22	19	22	19	16	14

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	2.2
10°-20°	374.7	6.0
20°-30°	541.1	8.7
30°-40°	613.3	9.8
40°-50°	592.3	9.5
50°-60°	492.5	7.9
60°-70°	340.1	5.5
70°-80°	172.4	2.8
80°-90°	46.4	0.7
90°-100°	290.8	4.7
100°-110°	605.1	9.7
110°-120°	542.0	8.7
120°-130°	455.9	7.3
130°-140°	380.1	6.1
140°-150°	290.4	4.7
150°-160°	204.1	3.3
160°-170°	120.1	1.9
170°-180°	39.1	0.6
0°-30°	1050.1	16.8
0°-40°	1663.5	26.7
0°-60°	2748.2	44.1
0°-90°	3307.1	53.0
90°-120°	1437.9	23.1
90°-150°	2564.4	41.1
90°-180°	2928.0	47.0
0°-180°	6234.7	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	6	14	16	17	4
95°	26	82	644	319	193	29
105°	92	134	519	1117	1113	99
115°	163	204	463	889	1068	162
125°	227	270	460	756	852	202
135°	270	321	456	671	762	208
145°	311	356	454	566	622	195
155°	354	382	441	500	521	163
165°	385	397	423	448	455	109
175°	402	402	406	411	410	38
180°	402	402	402	402	402	



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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°	20.3	19.1	18.0	16.6	15.2	14.3	15.1	14.9	15.0	15.1	14.7
90°	0.8	2.4	4.8	5.5	6.3	6.3	11.1	11.1	12.7	14.3	13.5
92.5°	9.0	13.2	20.6	30.2	41.7	58.2	98.4	159.8	219.5	250.9	209.0
95°	26.1	28.4	36.4	46.7	65.7	98.9	167.6	297.4	486.4	644.5	662.7
97.5°	46.8	46.8	53.6	63.1	79.4	107.3	160.3	267.3	455.2	678.8	832.6
100°	60.1	60.1	65.7	75.1	90.2	115.5	162.2	251.5	412.8	635.8	838.3
102.5°	72.7	74.0	78.9	87.8	102.2	126.2	168.4	247.1	384.4	582.1	790.8
105°	92.5	94.9	98.9	108.4	122.6	145.5	183.5	249.1	359.8	518.8	704.6
107.5°	114.4	116.0	119.9	130.0	143.6	166.2	201.1	260.8	355.4	483.4	635.0
110°	128.9	130.5	134.4	143.9	158.2	179.5	214.3	269.7	356.6	471.3	600.2



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	142.8	144.4	149.0	157.9	172.1	193.5	227.0	279.2	360.4	465.6	580.7
115°	163.0	165.2	170.8	178.7	193.8	215.1	246.8	294.2	367.7	462.6	562.3
117.5°	183.8	186.0	190.9	199.6	213.7	235.8	265.9	309.5	375.5	461.8	554.1
120°	197.7	199.3	204.9	213.5	227.0	249.1	279.2	320.3	381.2	461.8	549.6
122.5°	210.4	211.9	217.5	225.5	240.3	261.7	291.8	330.4	386.9	461.2	544.5
125°	227.0	230.1	234.9	243.6	258.6	280.7	309.2	345.6	395.5	460.3	536.2
127.5°	241.7	244.2	249.9	259.8	275.5	297.9	325.3	358.7	402.2	458.5	525.0
130°	249.9	253.1	259.4	271.2	286.3	309.2	336.1	366.9	407.3	457.9	518.0
132.5°	258.1	260.6	268.9	280.1	296.4	318.1	345.0	375.2	411.7	457.2	511.7
135°	269.7	272.8	280.7	294.2	310.8	331.4	357.4	386.0	418.4	456.3	502.2
137.5°	281.2	284.2	292.9	305.7	323.0	342.6	366.9	393.6	422.3	456.1	493.9
140°	289.5	291.8	300.6	313.9	330.6	349.6	373.3	398.5	425.5	455.5	489.6
142.5°	298.3	300.7	308.7	321.5	337.5	355.8	379.0	402.3	428.0	455.5	485.8
145°	310.8	313.1	321.1	332.2	347.2	364.6	385.2	406.5	429.4	453.9	479.3
147.5°	324.9	325.7	332.6	344.0	356.5	372.2	391.5	410.1	430.2	451.1	473.4
150°	333.7	334.5	340.9	350.4	362.2	377.2	394.7	412.0	430.2	449.2	469.0
152.5°	342.0	342.1	348.5	357.3	367.9	381.7	397.2	413.3	429.0	446.0	463.9
155°	353.5	354.3	359.0	366.9	375.7	387.5	400.9	414.4	427.1	441.3	456.3
157.5°	364.7	364.7	369.2	375.3	382.9	392.3	403.6	414.4	425.0	436.4	448.5
160°	371.7	371.7	374.9	380.4	386.7	395.5	404.9	414.4	423.1	432.6	442.9
162.5°	378.0	377.4	379.9	384.8	390.5	397.4	406.2	414.4	421.2	428.8	437.8
165°	385.2	385.2	386.7	390.7	394.7	399.3	406.5	412.8	417.6	423.1	429.4
167.5°	392.3	391.5	392.3	395.3	397.5	401.1	406.3	410.9	413.8	417.4	421.8
170°	395.5	394.7	395.5	397.8	399.3	401.7	405.7	409.6	411.2	413.6	416.8
172.5°	398.5	397.8	397.9	399.7	400.6	402.3	405.0	408.4	408.7	409.8	412.3
175°	401.7	400.9	400.9	401.7	402.5	402.5	404.1	406.5	405.7	405.7	407.3
177.5°	403.1	402.5	401.9	402.5	402.5	402.5	403.1	404.4	403.1	403.1	403.8
180°	402.5	402.5	402.5	402.5	402.5	402.5	402.5	402.5	402.5	402.5	402.5



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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°	14.7	14.7	14.7	14.7	15.0	15.4	15.4	15.6
90°	14.3	15.1	15.8	15.8	16.6	17.4	16.6	16.6
92.5°	155.3	116.9	93.0	77.2	67.9	63.6	60.9	60.9
95°	586.0	463.4	357.4	280.7	242.0	217.5	203.3	193.0
97.5°	865.9	820.2	742.9	660.4	603.6	556.0	532.3	515.8
100°	953.8	969.6	930.8	872.3	803.5	755.3	731.5	725.2
102.5°	949.4	1027.8	1039.0	1014.6	972.4	937.5	912.5	907.4
105°	885.7	1022.5	1100.8	1133.3	1134.9	1128.5	1117.5	1112.7
107.5°	795.4	941.1	1051.4	1121.9	1160.9	1179.0	1186.9	1189.0
110°	741.0	877.8	992.5	1079.5	1135.7	1168.9	1183.1	1190.3



TEST NUMBER: P332978-927

CATALOG NUMBER: S124RDIP-S1020D1035U927-4F0-1E-UDD-F4

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	701.2	822.1	930.5	1017.5	1081.2	1121.4	1141.4	1152.9
115°	661.2	758.4	851.0	926.9	989.4	1036.8	1062.1	1068.4
117.5°	641.5	722.1	794.8	859.2	912.5	952.4	977.9	982.9
120°	632.6	706.2	769.5	825.6	870.7	905.5	926.1	934.8
122.5°	625.1	696.1	753.7	802.9	841.0	870.7	888.1	896.8
125°	612.1	680.1	734.7	778.2	809.8	832.7	847.8	852.5
127.5°	596.3	661.3	715.7	757.0	788.8	809.2	821.8	826.6
130°	583.7	646.1	699.9	741.8	774.2	794.0	806.7	811.4
132.5°	570.4	629.1	681.5	723.5	755.3	777.5	789.6	794.3
135°	552.0	603.4	651.6	691.2	722.9	745.0	757.6	762.4
137.5°	535.4	578.9	619.6	655.3	684.8	706.7	717.2	722.9
140°	525.9	563.1	598.7	631.8	659.6	677.0	688.0	694.3
142.5°	517.1	549.8	580.4	609.1	633.6	649.7	659.6	664.0
145°	504.5	531.5	555.2	577.3	597.1	610.5	618.5	622.4
147.5°	494.2	515.6	534.6	552.0	566.6	578.1	584.2	585.5
150°	488.0	506.1	522.0	536.2	548.8	559.1	563.9	564.7
152.5°	481.0	496.6	511.2	522.9	533.7	542.0	544.9	545.7
155°	470.6	483.2	495.0	504.5	512.5	518.8	521.2	521.2
157.5°	459.3	469.9	479.9	487.5	493.5	498.2	499.6	499.6
160°	452.3	461.1	469.8	476.1	480.9	485.6	486.4	486.4
162.5°	445.4	452.8	459.6	465.3	468.8	473.6	474.4	473.7
165°	435.8	440.5	446.0	450.0	453.1	456.3	455.5	454.7
167.5°	426.4	430.1	434.5	436.9	438.5	440.5	440.4	439.7
170°	420.7	423.1	426.3	428.6	430.2	431.0	430.2	430.2
172.5°	415.7	417.4	419.3	421.0	422.0	422.8	422.0	420.7
175°	408.8	409.6	411.2	411.2	411.2	412.8	411.2	409.6
177.5°	404.4	405.0	405.0	405.7	405.0	405.7	404.4	403.1
180°	402.5	402.5	402.5	402.5	402.5	402.5	402.5	402.5

(END OF REPORT)