

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: P332651-927

Luminaire Tested: **S124DIP-S1020D810U927-4F0-1E-UDD-F4**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332651-927
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: S124DIP-S1020D810U927-4F0-1E-UDD-F4
Description: DEFINE 4 DIRECT-INDIRECT PENDANT LED LUMINAIRE
DOWNLIGHT 1020 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
UPLIGHT 810 LUMENS PER FOOT, BATWING OPTIC
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 5802.5 lumens
Efficiency: N/A
Efficacy: 106.7 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.17 / 1.3
Luminous Opening: Rectangular (W 0.33' x L: 4' x H: 0')
CIE Type: Semi-Direct

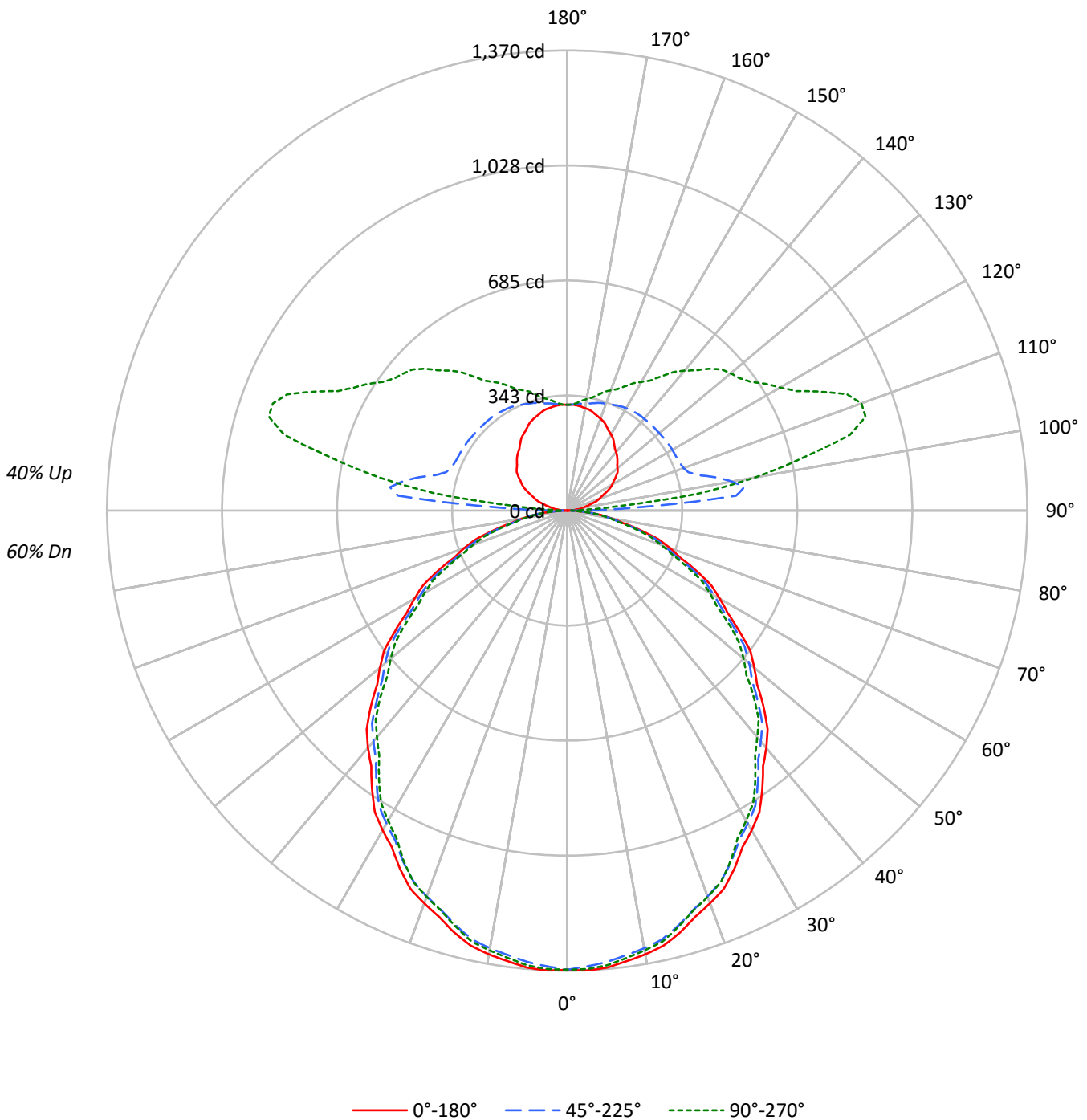
Input Watts (W): 54.4
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	110	110	110	110	102	102	102	102	89	89	89	77	77	77	66	66	66	60
1	100	96	92	88	93	90	86	83	78	76	73	68	66	64	58	57	55	51
2	91	84	77	72	85	78	73	68	69	64	61	59	56	53	51	49	47	43
3	83	73	66	60	77	69	62	57	60	55	51	53	49	45	45	42	40	36
4	76	65	57	51	71	61	54	48	54	48	44	47	42	39	40	37	34	31
5	70	58	50	44	65	55	47	42	48	42	38	42	37	34	36	33	30	27
6	64	52	44	38	60	49	42	36	43	37	33	38	33	30	33	29	26	24
7	60	47	39	33	56	44	37	32	39	33	29	35	30	26	30	26	23	21
8	55	43	35	30	52	40	33	28	36	30	26	32	27	23	28	24	21	19
9	52	39	32	26	48	37	30	25	33	27	23	29	24	21	26	22	19	17
10	48	36	29	24	45	34	27	23	30	25	21	27	22	19	24	20	17	15

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	11035	11035	11035
5°	11068	10935	11015
10°	10999	10846	10900
15°	10866	10692	10719
20°	10689	10501	10510
25°	10488	10283	10253
30°	10241	10026	9934
35°	9984	9758	9629
40°	9720	9454	9280
45°	9442	9154	8978
50°	9134	8887	8611
55°	8802	8541	8263
60°	8472	8152	7905
65°	8097	7782	7469
70°	7678	7291	7006
75°	7037	6697	6525
80°	6267	6007	5858
85°	5483	5280	5169



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	128.7	2.2
10°-20°	362.7	6.3
20°-30°	533.8	9.2
30°-40°	620.6	10.7
40°-50°	620.6	10.7
50°-60°	542.9	9.4
60°-70°	403.2	6.9
70°-80°	229.1	3.9
80°-90°	67.9	1.2
90°-100°	227.7	3.9
100°-110°	474.0	8.2
110°-120°	424.5	7.3
120°-130°	357.1	6.2
130°-140°	297.7	5.1
140°-150°	227.5	3.9
150°-160°	159.9	2.8
160°-170°	94.0	1.6
170°-180°	30.6	0.5
0°-30°	1025.2	17.7
0°-40°	1645.9	28.4
0°-60°	2809.4	48.4
0°-90°	3509.5	60.5
90°-120°	1126.2	19.4
90°-150°	2008.5	34.6
90°-180°	2293.0	39.5
0°-180°	5802.5	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1367	1367	1367	1367	1367	
5°	1366	1361	1349	1361	1359	129
15°	1300	1295	1279	1285	1282	366
25°	1177	1169	1154	1155	1151	541
35°	1013	1005	990	983	977	633
45°	827	819	802	790	786	637
55°	625	621	607	594	587	560
65°	424	418	407	397	391	420
75°	226	220	215	210	209	240
85°	59	59	57	57	56	65
90°	1	5	11	12	13	4
95°	20	64	505	250	151	23
105°	72	105	406	875	872	77
115°	128	160	362	696	837	127
125°	178	211	360	592	668	158
135°	211	251	357	526	597	163
145°	243	279	356	444	488	153
155°	277	299	346	392	408	128
165°	302	311	331	351	356	85
175°	315	315	318	322	321	30
180°	315	315	315	315	315	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1366.9	1366.9	1366.9	1366.9	1366.9	1366.9	1366.9	1366.9	1366.9	1366.9	1366.9
2.5°	1370.4	1369.8	1369.2	1368.7	1368.1	1366.7	1364.5	1362.4	1360.3	1358.1	1360.1
5°	1365.8	1364.9	1363.9	1362.9	1361.9	1360.1	1357.4	1354.7	1352.1	1349.4	1352.1
7.5°	1353.1	1352.1	1351.1	1350.2	1349.2	1347.3	1344.3	1341.3	1338.3	1335.4	1337.5
10°	1341.7	1340.8	1339.7	1338.8	1337.8	1335.8	1332.6	1329.4	1326.3	1323.1	1325.0
12.5°	1326.8	1325.9	1324.8	1323.9	1322.9	1320.7	1317.4	1314.1	1310.7	1307.3	1309.5
15°	1300.1	1299.1	1298.1	1297.2	1296.2	1293.9	1290.2	1286.6	1282.9	1279.3	1280.7
17.5°	1267.9	1266.7	1265.4	1264.2	1263.1	1260.7	1257.2	1253.8	1250.3	1246.9	1247.8
20°	1244.2	1243.0	1241.8	1240.6	1239.4	1236.9	1233.3	1229.6	1226.0	1222.3	1223.1
22.5°	1218.9	1217.2	1215.6	1214.0	1212.4	1209.7	1206.1	1202.5	1198.8	1195.2	1196.5
25°	1177.4	1175.8	1174.0	1172.3	1170.6	1168.1	1164.7	1161.3	1157.9	1154.4	1154.7
27.5°	1130.1	1128.4	1126.6	1124.8	1123.1	1120.6	1117.5	1114.3	1111.1	1107.9	1107.4
30°	1098.6	1096.6	1094.6	1092.7	1090.8	1088.2	1085.1	1081.9	1078.7	1075.5	1074.6
32.5°	1065.2	1063.5	1061.8	1060.0	1058.3	1055.7	1052.3	1049.0	1045.6	1042.3	1041.1
35°	1013.1	1011.5	1009.7	1008.1	1006.3	1003.8	1000.4	997.0	993.6	990.1	988.4
37.5°	958.1	956.6	955.1	953.5	951.9	949.4	945.6	942.0	938.3	934.7	932.9
40°	922.3	920.3	918.3	916.4	914.4	911.6	908.0	904.4	900.7	897.1	894.6
42.5°	883.7	882.5	881.3	880.2	879.0	876.4	872.4	868.3	864.3	860.2	857.4
45°	827.0	825.2	823.6	821.8	820.1	817.3	813.4	809.5	805.6	801.8	799.1
47.5°	767.5	766.4	765.2	764.1	762.9	760.5	756.9	753.3	749.7	746.1	743.1
50°	727.3	726.3	725.3	724.4	723.3	721.2	717.8	714.4	711.0	707.6	704.2
52.5°	687.9	686.7	685.5	684.4	683.2	680.8	677.2	673.6	669.9	666.4	663.4
55°	625.4	624.6	623.9	623.2	622.5	620.4	617.0	613.6	610.2	606.8	603.9
57.5°	565.9	565.0	564.2	563.3	562.5	560.4	557.1	553.7	550.3	547.0	544.2
60°	524.7	523.4	522.2	521.0	519.8	517.6	514.4	511.3	508.1	504.9	502.7
62.5°	484.3	483.3	482.3	481.3	480.2	478.1	474.7	471.3	467.9	464.6	462.6
65°	423.9	422.6	421.4	420.3	419.0	417.2	414.7	412.3	409.9	407.4	405.0
67.5°	363.0	361.9	360.8	359.7	358.5	356.8	354.4	352.1	349.7	347.5	345.1
70°	325.3	323.6	321.9	320.2	318.5	316.6	314.7	312.8	310.9	308.9	306.9
72.5°	285.0	283.3	281.6	279.9	278.2	276.6	275.0	273.5	271.9	270.3	268.8
75°	225.6	224.4	223.2	222.0	220.8	219.5	218.3	217.1	215.9	214.7	213.7
77.5°	168.9	168.3	167.8	167.3	166.8	166.0	164.9	163.8	162.7	161.7	161.4
80°	134.8	134.0	133.2	132.5	131.8	131.2	130.7	130.2	129.8	129.2	128.7
82.5°	101.4	101.1	100.8	100.4	100.1	99.8	99.7	99.7	99.6	99.4	99.2
85°	59.2	59.2	59.2	59.2	59.2	58.9	58.4	57.9	57.4	57.0	57.0
87.5°	22.9	23.0	23.1	23.1	23.0	22.8	23.4	23.1	23.2	23.3	23.1
90°	0.6	1.8	3.7	4.4	5.0	5.0	8.6	8.6	9.9	11.2	10.5
92.5°	7.1	10.3	16.1	23.7	32.7	45.6	77.1	125.1	172.0	196.5	163.7
95°	20.4	22.3	28.5	36.5	51.4	77.4	131.3	232.9	381.0	504.9	519.1
97.5°	36.7	36.7	42.0	49.4	62.2	84.0	125.5	209.4	356.6	531.7	652.1
100°	47.1	47.1	51.4	58.9	70.6	90.5	127.0	197.0	323.4	498.0	656.6
102.5°	57.0	58.0	61.8	68.8	80.0	98.9	131.9	193.5	301.0	455.9	619.4
105°	72.5	74.3	77.4	84.8	96.0	114.0	143.7	195.1	281.9	406.3	551.9
107.5°	89.6	90.8	93.9	101.8	112.5	130.2	157.5	204.3	278.4	378.6	497.4
110°	101.0	102.2	105.3	112.7	123.9	140.6	167.9	211.2	279.3	369.2	470.2



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	111.9	113.1	116.7	123.7	134.8	151.5	177.8	218.6	282.3	364.7	454.8
115°	127.6	129.4	133.8	140.0	151.8	168.5	193.3	230.4	288.0	362.3	440.4
117.5°	143.9	145.7	149.6	156.4	167.4	184.7	208.3	242.4	294.1	361.7	434.0
120°	154.9	156.1	160.4	167.2	177.8	195.1	218.6	250.9	298.6	361.7	430.5
122.5°	164.8	166.0	170.3	176.7	188.1	205.0	228.5	258.8	303.0	361.2	426.5
125°	177.8	180.2	183.9	190.8	202.6	219.9	242.2	270.7	309.7	360.5	419.9
127.5°	189.3	191.3	195.7	203.5	215.8	233.3	254.8	281.0	315.1	359.2	411.1
130°	195.7	198.2	203.2	212.5	224.3	242.2	263.2	287.4	319.0	358.6	405.8
132.5°	202.2	204.1	210.6	219.4	232.2	249.1	270.2	293.8	322.5	358.1	400.8
135°	211.2	213.7	219.9	230.4	243.4	259.5	280.0	302.3	327.6	357.4	393.3
137.5°	220.3	222.6	229.4	239.5	252.9	268.3	287.4	308.2	330.7	357.3	386.9
140°	226.7	228.5	235.4	245.9	258.9	273.8	292.4	312.2	333.3	356.8	383.4
142.5°	233.6	235.5	241.9	251.8	264.4	278.8	296.8	315.1	335.3	356.8	380.5
145°	243.4	245.3	251.5	260.2	272.0	285.6	301.7	318.4	336.4	355.5	375.3
147.5°	254.4	255.1	260.5	269.4	279.2	291.5	306.7	321.2	337.0	353.3	370.8
150°	261.4	262.1	267.0	274.4	283.7	295.5	309.1	322.7	337.0	351.8	367.3
152.5°	267.8	268.0	272.9	279.9	288.2	299.0	311.1	323.7	336.0	349.4	363.4
155°	276.9	277.5	281.2	287.4	294.2	303.5	314.0	324.6	334.5	345.6	357.4
157.5°	285.7	285.7	289.1	294.0	299.9	307.2	316.2	324.6	332.9	341.8	351.3
160°	291.1	291.1	293.6	297.9	302.9	309.7	317.1	324.6	331.4	338.8	346.9
162.5°	296.1	295.6	297.5	301.4	305.9	311.2	318.1	324.6	329.9	335.9	342.9
165°	301.7	301.7	302.9	306.0	309.1	312.8	318.4	323.4	327.1	331.4	336.4
167.5°	307.2	306.7	307.2	309.6	311.3	314.2	318.3	321.9	324.1	326.9	330.4
170°	309.7	309.1	309.7	311.6	312.8	314.7	317.7	320.8	322.1	323.9	326.5
172.5°	312.2	311.6	311.7	313.1	313.8	315.1	317.3	319.9	320.1	321.0	323.0
175°	314.7	314.0	314.0	314.7	315.3	315.3	316.6	318.4	317.7	317.7	319.0
177.5°	315.8	315.3	314.8	315.3	315.3	315.3	315.8	316.8	315.8	315.8	316.2
180°	315.3	315.3	315.3	315.3	315.3	315.3	315.3	315.3	315.3	315.3	315.3



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1366.9	1366.9	1366.9	1366.9	1366.9	1366.9	1366.9	1366.9
2.5°	1362.0	1364.0	1366.0	1366.8	1366.6	1366.4	1366.2	1366.0
5°	1354.7	1357.4	1360.1	1361.2	1360.7	1360.2	1359.7	1359.2
7.5°	1339.7	1341.8	1343.9	1344.9	1344.6	1344.3	1343.9	1343.7
10°	1327.0	1329.0	1330.9	1331.6	1331.1	1330.6	1330.2	1329.7
12.5°	1311.6	1313.8	1315.9	1316.6	1316.0	1315.3	1314.5	1313.9
15°	1282.2	1283.7	1285.2	1285.5	1284.8	1284.0	1283.3	1282.5
17.5°	1248.7	1249.7	1250.5	1250.8	1250.3	1249.8	1249.4	1248.8
20°	1223.8	1224.6	1225.3	1225.3	1224.9	1224.4	1223.9	1223.4
22.5°	1197.8	1199.1	1200.4	1200.6	1199.8	1198.9	1198.0	1197.1
25°	1154.9	1155.2	1155.4	1155.0	1154.1	1153.1	1152.1	1151.1
27.5°	1106.8	1106.2	1105.6	1104.8	1103.5	1102.3	1101.1	1099.9
30°	1073.6	1072.6	1071.7	1070.6	1069.4	1068.1	1066.9	1065.7
32.5°	1039.9	1038.8	1037.6	1036.4	1035.1	1034.0	1032.8	1031.5
35°	986.7	985.0	983.3	981.8	980.6	979.5	978.2	977.0
37.5°	931.0	929.2	927.3	925.6	924.0	922.3	920.8	919.2
40°	892.2	889.7	887.3	885.5	884.2	883.0	881.9	880.6
42.5°	854.6	851.8	848.9	847.1	846.3	845.4	844.6	843.8
45°	796.4	793.7	791.0	789.3	788.6	787.9	787.1	786.4
47.5°	740.1	737.0	734.0	731.6	729.8	727.9	726.0	724.2
50°	700.8	697.4	694.0	691.5	690.0	688.6	687.1	685.6
52.5°	660.4	657.3	654.3	651.9	650.0	648.2	646.3	644.4
55°	600.9	598.0	595.1	592.9	591.4	590.0	588.5	587.1
57.5°	541.5	538.7	535.9	533.8	532.3	531.0	529.6	528.1
60°	500.6	498.4	496.1	494.5	493.2	492.0	490.8	489.6
62.5°	460.7	458.6	456.6	455.0	453.8	452.6	451.4	450.2
65°	402.6	400.1	397.7	395.9	394.7	393.5	392.2	391.0
67.5°	342.8	340.4	338.1	336.8	336.4	336.0	335.7	335.4
70°	305.0	303.0	301.1	299.8	299.0	298.3	297.5	296.8
72.5°	267.2	265.6	264.1	262.9	262.2	261.5	260.8	260.0
75°	212.7	211.8	210.8	210.2	209.9	209.7	209.5	209.2
77.5°	161.1	160.8	160.5	160.0	159.4	158.8	158.1	157.5
80°	128.3	127.8	127.3	126.9	126.7	126.4	126.2	126.0
82.5°	98.9	98.5	98.3	98.0	97.8	97.5	97.3	97.0
85°	57.0	57.0	57.0	56.8	56.6	56.3	56.1	55.8
87.5°	23.3	23.4	23.5	23.5	23.6	23.8	23.6	23.6
90°	11.2	11.8	12.4	12.4	13.0	13.6	13.0	13.0
92.5°	121.7	91.6	72.9	60.4	53.2	49.8	47.7	47.7
95°	459.0	363.0	280.0	219.9	189.6	170.3	159.2	151.1
97.5°	678.1	642.5	581.9	517.2	472.8	435.5	416.8	404.0
100°	747.0	759.4	729.0	683.3	629.3	591.5	573.0	568.0
102.5°	743.5	805.0	813.8	794.7	761.7	734.3	714.7	710.7
105°	693.8	800.9	862.2	887.6	888.9	883.9	875.3	871.6
107.5°	623.1	737.1	823.5	878.7	909.3	923.4	929.6	931.2
110°	580.4	687.5	777.4	845.5	889.5	915.5	926.7	932.2



TEST NUMBER: P332651-927

CATALOG NUMBER: S124DIP-S1020D810U927-4F0-1E-UDD-F4

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	549.2	644.0	728.8	796.9	846.8	878.4	894.0	903.0
115°	517.8	594.1	666.5	726.0	774.9	812.1	831.9	836.9
117.5°	502.5	565.5	622.5	673.0	714.7	745.9	766.0	769.8
120°	495.5	553.2	602.7	646.7	682.0	709.2	725.3	732.1
122.5°	489.6	545.2	590.3	628.8	658.7	682.0	695.6	702.4
125°	479.4	532.7	575.4	609.5	634.3	652.3	664.0	667.7
127.5°	467.1	517.9	560.5	592.9	617.8	633.8	643.7	647.5
130°	457.2	506.0	548.2	581.0	606.4	621.9	631.8	635.6
132.5°	446.7	492.7	533.9	566.6	591.5	609.0	618.5	622.2
135°	432.4	472.6	510.4	541.4	566.2	583.5	593.4	597.1
137.5°	419.4	453.4	485.3	513.3	536.4	553.5	561.7	566.2
140°	411.9	441.0	468.9	495.0	516.6	530.2	538.9	543.8
142.5°	405.0	430.6	454.6	477.1	496.3	508.9	516.6	520.1
145°	395.2	416.3	434.8	452.2	467.7	478.2	484.4	487.5
147.5°	387.1	403.9	418.7	432.4	443.8	452.8	457.5	458.6
150°	382.1	396.4	408.8	419.9	429.9	437.9	441.6	442.3
152.5°	376.8	389.0	400.4	409.6	418.0	424.5	426.7	427.4
155°	368.5	378.5	387.8	395.2	401.4	406.3	408.2	408.2
157.5°	359.7	368.0	375.9	381.8	386.5	390.2	391.3	391.3
160°	354.3	361.2	368.0	372.9	376.6	380.3	381.0	381.0
162.5°	348.9	354.7	360.0	364.5	367.2	370.9	371.5	371.1
165°	341.3	345.0	349.4	352.4	354.9	357.4	356.8	356.2
167.5°	334.0	336.8	340.3	342.1	343.4	345.0	344.9	344.4
170°	329.5	331.4	333.9	335.7	337.0	337.5	337.0	337.0
172.5°	325.6	326.9	328.4	329.8	330.5	331.1	330.5	329.5
175°	320.3	320.8	322.1	322.1	322.1	323.4	322.1	320.8
177.5°	316.8	317.3	317.3	317.7	317.3	317.7	316.8	315.8
180°	315.3	315.3	315.3	315.3	315.3	315.3	315.3	315.3

(END OF REPORT)