

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: P332834-927

Luminaire Tested: **S124DIW-S1020D1560U927-4F0-1E-UDD-F1**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332834-927
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-10,
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S124DIW-S1020D1560U927-4F0-1E-UDD-F1
Description: DEFINE 4 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 1020 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
UPLIGHT 1560 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 7797.3 lumens
Efficiency: N/A
Efficacy: 101.8 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: General Diffuse

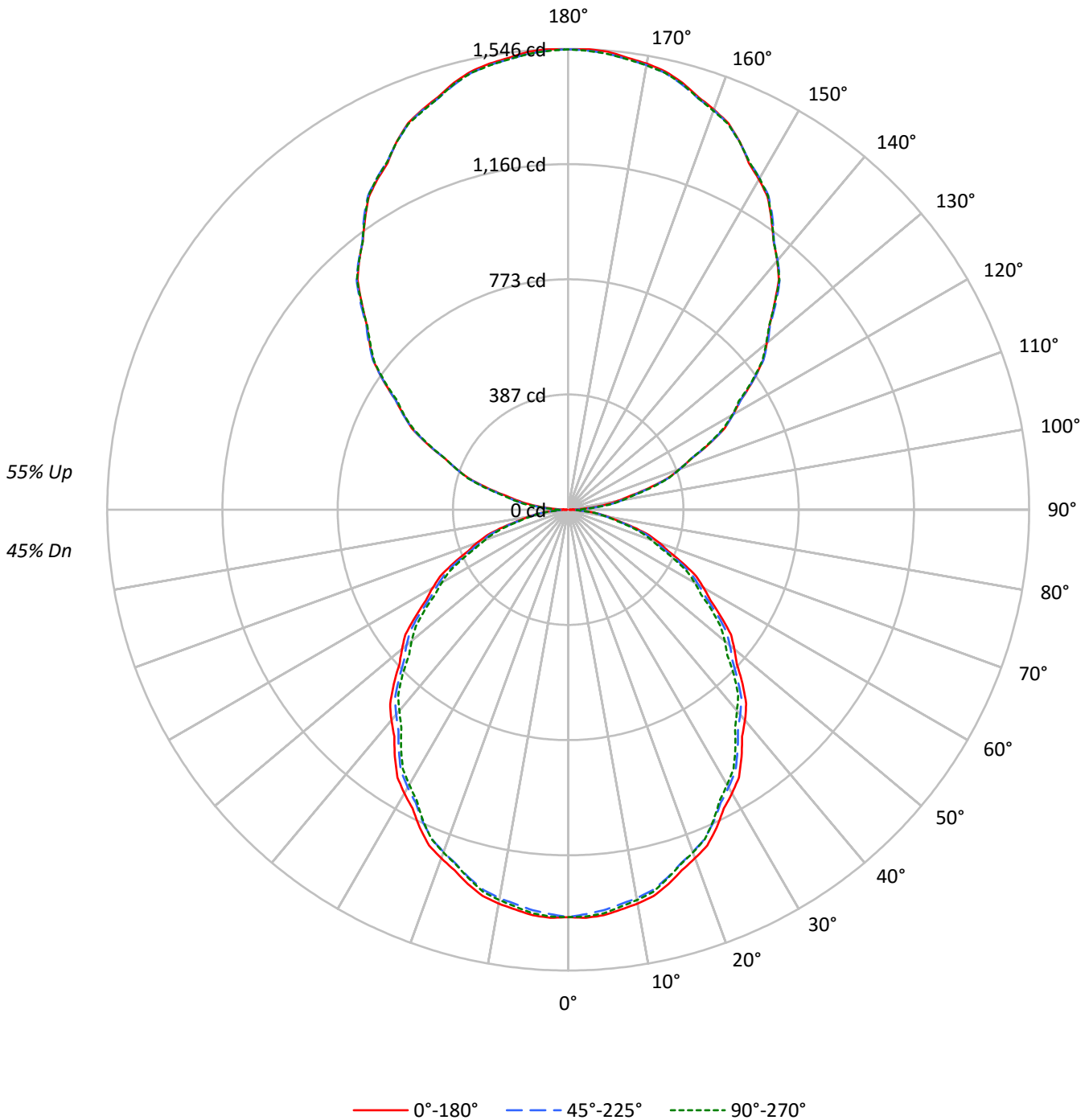
Input Watts (W): 76.6
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	106	106	106	106	97	97	97	97	81	81	81	65	65	65	52	52	52	45				
1	97	92	88	85	88	85	81	78	71	68	66	58	56	54	45	44	43	38				
2	88	81	74	69	80	74	69	64	62	58	55	50	48	45	40	38	37	32				
3	80	71	64	58	73	65	59	54	54	50	46	45	41	38	35	33	31	27				
4	73	63	55	49	67	58	51	46	48	43	39	40	36	33	32	29	27	23				
5	67	56	48	42	61	51	44	39	43	38	34	36	32	28	29	26	23	20				
6	62	50	42	36	57	46	39	34	39	33	29	32	28	25	26	23	21	18				
7	57	45	37	32	52	42	35	30	35	30	26	29	25	22	24	21	18	16				
8	53	41	33	28	49	38	31	26	32	27	23	27	23	20	22	19	16	14				
9	49	37	30	25	45	35	28	23	29	24	20	25	21	18	20	17	15	13				
10	46	34	27	22	42	32	25	21	27	22	18	23	19	16	19	16	13	11				

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	1.7
10°-20°	362.7	4.7
20°-30°	533.8	6.8
30°-40°	620.6	8.0
40°-50°	620.6	8.0
50°-60°	542.9	7.0
60°-70°	403.2	5.2
70°-80°	229.1	2.9
80°-90°	70.7	0.9
90°-100°	101.9	1.3
100°-110°	301.8	3.9
110°-120°	512.2	6.6
120°-130°	675.4	8.7
130°-140°	758.5	9.7
140°-150°	745.3	9.6
150°-160°	626.9	8.0
160°-170°	417.1	5.3
170°-180°	146.1	1.9
0°-30°	1025.2	13.1
0°-40°	1645.9	21.1
0°-60°	2809.4	36.0
0°-90°	3512.3	45.0
90°-120°	915.8	11.7
90°-150°	3095.0	39.7
90°-180°	4285.0	55.0
0°-180°	7797.3	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°	4	17	26	33	36	8
95°	72	82	91	94	94	80
105°	278	280	284	288	291	295
115°	521	521	518	517	516	513
125°	758	758	757	755	752	676
135°	978	985	986	983	980	757
145°	1188	1193	1194	1193	1190	743
155°	1362	1362	1360	1365	1360	626
165°	1482	1479	1476	1483	1479	418
175°	1542	1536	1535	1542	1535	146
180°	1544	1544	1544	1544	1544	



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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°	23.5	23.9	24.2	24.6	25.0	25.3	25.6	25.8	26.1	26.3	26.6
90°	3.6	6.5	9.4	12.4	15.3	17.8	19.9	22.0	24.2	26.3	27.9
92.5°	25.6	28.9	32.2	35.6	39.0	41.4	42.9	44.4	45.8	47.3	48.2
95°	71.7	74.1	76.4	78.8	81.2	83.3	85.2	87.1	89.0	90.8	91.6
97.5°	125.2	127.1	129.0	130.9	132.8	134.9	137.0	139.2	141.4	143.5	144.5
100°	167.2	168.3	169.4	170.4	171.5	173.2	175.6	178.0	180.4	182.8	183.3
102.5°	211.2	211.6	212.1	212.5	212.9	214.2	216.3	218.6	220.7	222.9	223.6
105°	278.3	278.6	278.8	279.1	279.4	280.0	281.1	282.2	283.2	284.3	285.1
107.5°	348.8	349.1	349.4	349.7	350.1	350.3	350.5	350.6	350.8	350.9	351.6
110°	396.6	397.1	397.6	398.2	398.7	398.9	398.5	398.3	398.0	397.8	397.2



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	446.2	446.4	446.5	446.6	446.7	446.5	446.0	445.5	445.0	444.6	444.5
115°	520.8	520.8	520.8	520.8	520.8	520.5	520.0	519.4	519.0	518.4	518.2
117.5°	591.0	591.2	591.4	591.7	591.9	591.8	591.4	591.0	590.7	590.3	589.4
120°	637.9	638.9	640.0	641.0	642.1	642.2	641.4	640.6	639.8	639.1	637.7
122.5°	686.6	687.0	687.5	687.9	688.2	688.3	687.9	687.5	687.2	686.8	686.0
125°	758.5	758.5	758.5	758.5	758.5	758.4	758.1	757.8	757.6	757.3	756.8
127.5°	823.7	824.5	825.3	826.1	826.9	827.1	826.6	826.2	825.9	825.4	824.8
130°	869.6	870.4	871.2	872.0	872.7	873.1	873.1	873.1	873.1	873.1	872.7
132.5°	916.4	917.0	917.6	918.1	918.8	918.9	918.7	918.5	918.3	918.1	917.6
135°	978.3	979.9	981.4	983.1	984.7	985.5	985.5	985.5	985.5	985.5	984.9
137.5°	1045.7	1046.4	1047.1	1047.9	1048.6	1049.2	1049.6	1050.0	1050.5	1050.9	1050.2
140°	1090.6	1091.1	1091.6	1092.2	1092.7	1093.0	1093.0	1093.0	1093.0	1093.0	1092.7
142.5°	1131.6	1132.2	1132.7	1133.2	1133.8	1133.9	1133.7	1133.5	1133.3	1133.1	1133.1
145°	1188.5	1189.5	1190.6	1191.7	1192.8	1193.4	1193.7	1194.0	1194.2	1194.5	1194.2
147.5°	1244.9	1246.2	1247.4	1248.7	1250.0	1250.5	1250.3	1250.1	1249.9	1249.7	1249.4
150°	1279.3	1280.3	1281.4	1282.5	1283.6	1284.0	1284.0	1284.0	1284.0	1284.0	1284.0
152.5°	1311.8	1312.4	1313.0	1313.7	1314.3	1314.8	1314.9	1315.2	1315.4	1315.6	1316.2
155°	1361.7	1361.7	1361.7	1361.7	1361.7	1361.6	1361.3	1361.0	1360.8	1360.5	1361.6
157.5°	1403.7	1403.3	1402.8	1402.3	1401.8	1401.6	1401.5	1401.4	1401.4	1401.4	1402.2
160°	1428.6	1428.3	1428.1	1427.8	1427.5	1427.3	1427.0	1426.7	1426.5	1426.2	1427.0
162.5°	1451.5	1450.9	1450.2	1449.5	1448.7	1448.3	1448.0	1447.8	1447.5	1447.2	1448.7
165°	1482.3	1481.5	1480.7	1480.0	1479.2	1478.5	1478.0	1477.4	1476.9	1476.4	1478.0
167.5°	1506.0	1504.9	1503.8	1502.7	1501.6	1501.0	1501.1	1501.1	1501.2	1501.3	1502.8
170°	1519.4	1518.1	1516.7	1515.4	1514.1	1513.5	1513.8	1514.1	1514.3	1514.6	1516.2
172.5°	1528.9	1527.8	1526.7	1525.6	1524.5	1523.9	1524.0	1524.1	1524.1	1524.2	1526.0
175°	1542.1	1540.7	1539.4	1538.1	1536.8	1536.0	1535.7	1535.4	1535.2	1534.9	1536.8
177.5°	1546.3	1545.3	1544.3	1543.2	1542.1	1541.6	1541.6	1541.6	1541.6	1541.6	1543.1
180°	1544.4	1544.4	1544.4	1544.4	1544.4	1544.4	1544.4	1544.4	1544.4	1544.4	1544.4



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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°	26.9	27.3	27.6	27.8	27.9	28.0	28.1	28.2
90°	29.5	31.1	32.6	33.7	34.2	34.8	35.3	35.8
92.5°	49.2	50.1	51.1	51.7	52.0	52.4	52.7	53.0
95°	92.4	93.2	94.0	94.3	94.3	94.3	94.3	94.3
97.5°	145.5	146.5	147.4	147.9	147.9	147.9	147.9	147.9
100°	183.8	184.3	184.9	185.1	185.1	185.1	185.1	185.1
102.5°	224.3	225.1	225.9	226.3	226.6	226.8	227.0	227.2
105°	285.9	286.7	287.5	288.3	289.1	289.9	290.7	291.4
107.5°	352.4	353.2	353.9	354.3	354.2	354.2	354.1	354.0
110°	396.7	396.2	395.6	395.8	396.6	397.4	398.2	398.9



TEST NUMBER: P332834-927

CATALOG NUMBER: S124DIW-S1020D1560U927-4F0-1E-UDD-F1

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	444.3	444.3	444.2	444.2	444.3	444.5	444.7	444.8
115°	517.8	517.6	517.4	517.1	516.8	516.6	516.3	516.0
117.5°	588.5	587.6	586.7	586.0	585.4	584.9	584.4	583.8
120°	636.4	635.1	633.7	633.3	633.9	634.4	634.9	635.5
122.5°	685.0	684.1	683.3	682.3	681.4	680.4	679.5	678.5
125°	756.2	755.7	755.2	754.6	754.1	753.6	753.0	752.5
127.5°	824.3	823.8	823.2	822.8	822.4	822.0	821.5	821.1
130°	872.1	871.6	871.0	870.2	869.2	868.2	867.0	866.0
132.5°	917.0	916.5	915.9	915.4	915.0	914.7	914.2	913.8
135°	984.4	983.9	983.3	982.6	981.8	981.0	980.2	979.5
137.5°	1049.6	1048.8	1048.1	1047.9	1048.1	1048.2	1048.4	1048.5
140°	1092.4	1092.2	1091.9	1091.6	1091.4	1091.1	1090.8	1090.6
142.5°	1133.0	1132.9	1132.9	1132.8	1132.7	1132.7	1132.7	1132.6
145°	1194.0	1193.7	1193.4	1192.9	1192.1	1191.3	1190.5	1189.7
147.5°	1249.3	1249.0	1248.8	1248.6	1248.3	1248.1	1247.8	1247.5
150°	1284.0	1284.0	1284.0	1284.0	1283.7	1283.4	1283.2	1282.9
152.5°	1316.8	1317.5	1318.1	1318.1	1317.4	1316.8	1316.1	1315.3
155°	1362.6	1363.7	1364.8	1364.8	1363.7	1362.6	1361.6	1360.5
157.5°	1403.0	1403.7	1404.5	1404.5	1403.6	1402.7	1401.8	1400.9
160°	1427.8	1428.6	1429.4	1429.1	1427.8	1426.5	1425.1	1423.8
162.5°	1450.1	1451.5	1452.9	1453.0	1451.7	1450.4	1449.1	1447.7
165°	1479.6	1481.1	1482.7	1483.0	1481.9	1480.9	1479.8	1478.8
167.5°	1504.4	1506.0	1507.6	1507.6	1505.9	1504.3	1502.6	1500.9
170°	1517.8	1519.4	1521.0	1520.8	1519.0	1517.1	1515.3	1513.4
172.5°	1527.8	1529.5	1531.4	1531.4	1529.5	1527.6	1525.7	1523.9
175°	1538.7	1540.5	1542.4	1542.4	1540.5	1538.7	1536.8	1534.9
177.5°	1544.6	1546.0	1547.5	1547.4	1545.7	1544.0	1542.4	1540.6
180°	1544.4	1544.4	1544.4	1544.4	1544.4	1544.4	1544.4	1544.4

(END OF REPORT)