

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: P332641-930

Luminaire Tested: **S124DIP-S1020D590U930-4F0-1E-UDD-F1**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332641-930
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: S124DIP-S1020D590U930-4F0-1E-UDD-F1
Description: DEFINE 4 DIRECT-INDIRECT PENDANT LED LUMINAIRE
DOWNLIGHT 1020 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
UPLIGHT 590 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

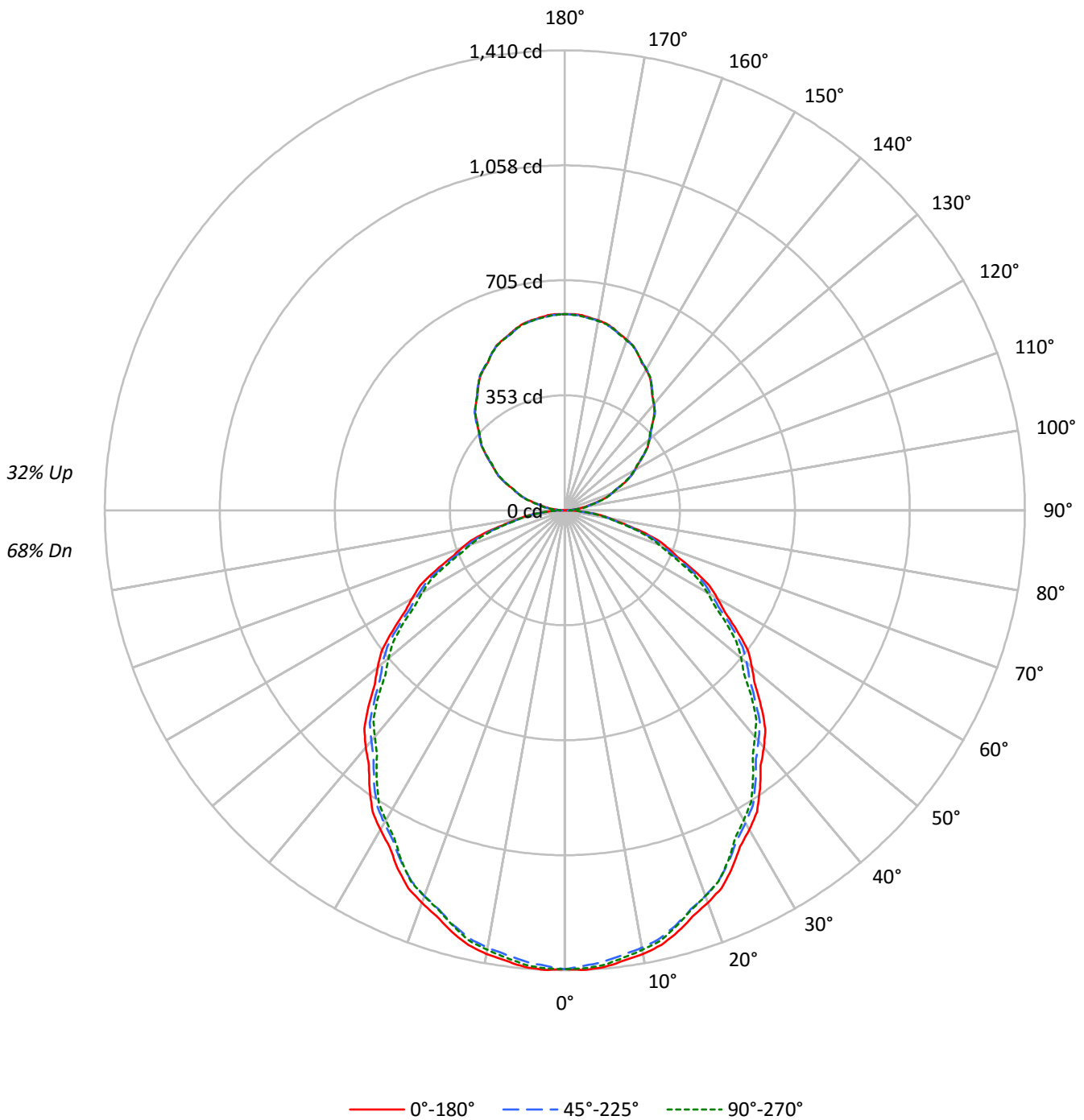
Lumens per Lamp: N/A
Luminaire Lumens: 5280.0 lumens
Efficiency: N/A
Efficacy: 108.2 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.17 / 1.3
Luminous Opening: Rectangular (W 0.33' x L: 4' x H: 0')
CIE Type: Semi-Direct

Input Watts (W): 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	0
RCR																		
0	112	112	112	112	105	105	105	105	94	94	94	83	83	83	73	73	73	68
1	102	97	93	90	96	92	89	85	82	79	77	73	71	69	64	63	62	58
2	93	85	79	73	87	81	75	70	72	68	64	64	61	58	57	54	52	48
3	85	75	67	61	80	71	64	59	63	58	54	57	52	49	50	47	44	41
4	78	66	58	52	73	63	56	50	56	50	46	51	46	42	45	41	38	35
5	71	59	51	45	67	56	49	43	51	44	40	45	40	36	41	36	33	30
6	66	53	45	39	62	51	43	37	46	39	35	41	36	32	37	33	29	27
7	61	48	40	34	57	46	38	33	42	35	31	37	32	28	34	29	26	24
8	57	44	36	30	53	42	34	29	38	32	27	34	29	25	31	27	23	21
9	53	40	32	27	50	38	31	26	35	29	25	32	27	23	29	24	21	19
10	49	37	29	25	47	35	28	24	32	26	22	29	24	21	27	22	19	17

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	11357	11357	11357
5°	11391	11255	11336
10°	11320	11163	11218
15°	11183	11004	11032
20°	11001	10808	10817
25°	10794	10583	10553
30°	10540	10318	10224
35°	10276	10042	9909
40°	10003	9729	9551
45°	9717	9421	9240
50°	9401	9146	8862
55°	9060	8790	8504
60°	8719	8391	8136
65°	8334	8010	7687
70°	7903	7504	7211
75°	7243	6890	6716
80°	6448	6183	6025
85°	5641	5428	5326



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	132.5	2.5
10°-20°	373.3	7.1
20°-30°	549.4	10.4
30°-40°	638.7	12.1
40°-50°	638.7	12.1
50°-60°	558.7	10.6
60°-70°	414.9	7.9
70°-80°	235.7	4.5
80°-90°	69.8	1.3
90°-100°	39.7	0.8
100°-110°	117.5	2.2
110°-120°	199.4	3.8
120°-130°	262.9	5.0
130°-140°	295.3	5.6
140°-150°	290.2	5.5
150°-160°	244.0	4.6
160°-170°	162.4	3.1
170°-180°	56.9	1.1
0°-30°	1055.2	20.0
0°-40°	1693.9	32.1
0°-60°	2891.3	54.8
0°-90°	3611.8	68.4
90°-120°	356.5	6.8
90°-150°	1204.9	22.8
90°-180°	1668.0	31.6
0°-180°	5280.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1407	1407	1407	1407	1407	
5°	1406	1401	1389	1400	1399	133
15°	1338	1333	1317	1323	1320	377
25°	1212	1204	1188	1189	1185	557
35°	1043	1034	1019	1011	1006	652
45°	851	843	825	813	809	656
55°	644	640	624	611	604	576
65°	436	430	419	408	402	432
75°	232	227	221	217	215	247
85°	61	61	59	59	58	67
90°	1	6	10	13	14	5
95°	28	32	35	37	37	31
105°	108	109	111	112	114	115
115°	203	203	202	201	201	200
125°	295	295	295	294	293	263
135°	381	384	384	383	381	295
145°	463	464	465	464	463	289
155°	530	530	530	531	530	244
165°	577	576	575	577	576	163
175°	600	598	598	600	598	57
180°	601	601	601	601	601	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1406.8	1406.8	1406.8	1406.8	1406.8	1406.8	1406.8	1406.8	1406.8	1406.8	1406.8
2.5°	1410.4	1409.8	1409.2	1408.6	1408.0	1406.6	1404.4	1402.2	1400.0	1397.7	1399.8
5°	1405.7	1404.7	1403.7	1402.6	1401.7	1399.8	1397.0	1394.2	1391.6	1388.8	1391.6
7.5°	1392.6	1391.6	1390.6	1389.6	1388.6	1386.6	1383.5	1380.5	1377.4	1374.4	1376.6
10°	1380.9	1379.9	1378.8	1377.9	1376.9	1374.8	1371.5	1368.2	1365.0	1361.7	1363.7
12.5°	1365.5	1364.6	1363.5	1362.5	1361.5	1359.3	1355.8	1352.4	1348.9	1345.5	1347.7
15°	1338.1	1337.0	1336.0	1335.1	1334.0	1331.6	1327.9	1324.1	1320.4	1316.6	1318.1
17.5°	1304.9	1303.7	1302.4	1301.1	1299.9	1297.5	1293.9	1290.4	1286.8	1283.3	1284.2
20°	1280.5	1279.3	1278.1	1276.8	1275.5	1273.0	1269.3	1265.5	1261.8	1258.0	1258.7
22.5°	1254.4	1252.7	1251.1	1249.4	1247.8	1245.0	1241.3	1237.5	1233.8	1230.0	1231.4
25°	1211.8	1210.1	1208.3	1206.5	1204.8	1202.2	1198.7	1195.1	1191.6	1188.1	1188.4
27.5°	1163.1	1161.3	1159.4	1157.6	1155.8	1153.3	1150.1	1146.8	1143.5	1140.3	1139.7
30°	1130.7	1128.6	1126.6	1124.6	1122.6	1120.0	1116.7	1113.5	1110.2	1106.9	1106.0
32.5°	1096.3	1094.5	1092.7	1091.0	1089.2	1086.5	1083.0	1079.6	1076.1	1072.7	1071.5
35°	1042.7	1041.0	1039.2	1037.5	1035.7	1033.1	1029.6	1026.1	1022.5	1019.0	1017.2
37.5°	986.1	984.5	982.9	981.3	979.7	977.1	973.2	969.5	965.7	962.0	960.1
40°	949.2	947.1	945.1	943.1	941.1	938.2	934.5	930.7	927.0	923.2	920.7
42.5°	909.5	908.2	907.0	905.9	904.7	902.0	897.8	893.6	889.5	885.3	882.4
45°	851.1	849.3	847.6	845.8	844.1	841.1	837.1	833.2	829.2	825.2	822.4
47.5°	789.9	788.8	787.6	786.4	785.1	782.7	779.0	775.3	771.6	767.8	764.8
50°	748.5	747.5	746.5	745.5	744.4	742.2	738.7	735.2	731.7	728.2	724.7
52.5°	707.9	706.7	705.5	704.3	703.1	700.7	696.9	693.2	689.5	685.8	682.7
55°	643.7	642.9	642.1	641.4	640.7	638.5	635.0	631.5	628.0	624.5	621.5
57.5°	582.4	581.5	580.7	579.8	578.9	576.7	573.3	569.9	566.4	563.0	560.1
60°	540.0	538.7	537.4	536.2	534.9	532.7	529.5	526.2	522.9	519.7	517.4
62.5°	498.5	497.4	496.4	495.3	494.2	492.0	488.5	485.1	481.6	478.2	476.1
65°	436.3	435.0	433.7	432.5	431.2	429.3	426.8	424.4	421.8	419.3	416.9
67.5°	373.6	372.4	371.3	370.1	368.9	367.2	364.8	362.4	360.0	357.6	355.1
70°	334.8	333.0	331.3	329.5	327.8	325.9	323.9	321.9	319.9	317.9	315.8
72.5°	293.3	291.6	289.8	288.0	286.3	284.6	283.0	281.4	279.8	278.2	276.6
75°	232.2	231.0	229.7	228.4	227.2	225.9	224.7	223.5	222.2	220.9	220.0
77.5°	173.8	173.3	172.7	172.2	171.6	170.8	169.7	168.6	167.5	166.4	166.1
80°	138.7	137.9	137.1	136.4	135.7	135.0	134.5	134.0	133.5	133.0	132.5
82.5°	104.4	104.0	103.7	103.3	103.0	102.7	102.6	102.6	102.5	102.3	102.1
85°	60.9	60.9	60.9	60.9	60.9	60.7	60.1	59.6	59.1	58.6	58.6
87.5°	23.7	23.7	23.8	23.8	23.8	23.8	23.8	23.7	23.7	23.7	23.8
90°	1.4	2.5	3.7	4.8	6.0	6.9	7.7	8.6	9.4	10.2	10.8
92.5°	9.9	11.3	12.6	13.9	15.2	16.1	16.7	17.3	17.9	18.4	18.8
95°	27.9	28.9	29.8	30.7	31.6	32.4	33.2	33.9	34.7	35.3	35.6
97.5°	48.8	49.5	50.2	51.0	51.7	52.5	53.3	54.2	55.0	55.9	56.3
100°	65.1	65.6	66.0	66.4	66.8	67.4	68.3	69.3	70.2	71.2	71.3
102.5°	82.2	82.3	82.5	82.7	82.8	83.4	84.2	85.0	85.9	86.7	87.1
105°	108.4	108.4	108.5	108.7	108.8	109.0	109.4	109.8	110.2	110.6	111.0
107.5°	135.7	135.9	136.0	136.2	136.3	136.4	136.4	136.5	136.6	136.6	136.9
110°	154.4	154.6	154.8	155.0	155.2	155.2	155.2	155.1	155.0	154.8	154.7



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	173.7	173.7	173.8	173.8	173.9	173.8	173.7	173.4	173.3	173.1	173.0
115°	202.8	202.8	202.8	202.8	202.8	202.6	202.4	202.2	202.0	201.8	201.7
117.5°	230.1	230.2	230.2	230.3	230.4	230.4	230.2	230.1	229.9	229.8	229.4
120°	248.3	248.7	249.2	249.6	250.0	250.1	249.7	249.4	249.1	248.7	248.3
122.5°	267.3	267.4	267.6	267.7	267.9	268.0	267.8	267.7	267.5	267.4	267.0
125°	295.3	295.3	295.3	295.3	295.3	295.2	295.1	295.1	294.9	294.8	294.6
127.5°	320.7	321.0	321.3	321.6	321.9	322.0	321.8	321.6	321.5	321.3	321.1
130°	338.5	338.8	339.2	339.5	339.7	339.9	339.9	339.9	339.9	339.9	339.7
132.5°	356.8	357.0	357.2	357.4	357.7	357.8	357.7	357.6	357.5	357.4	357.2
135°	380.8	381.5	382.0	382.7	383.4	383.6	383.6	383.6	383.6	383.6	383.4
137.5°	407.1	407.3	407.6	407.9	408.2	408.5	408.6	408.8	409.0	409.1	408.9
140°	424.5	424.8	424.9	425.2	425.3	425.5	425.5	425.5	425.5	425.5	425.3
142.5°	440.5	440.8	441.0	441.2	441.4	441.4	441.3	441.2	441.2	441.1	441.1
145°	462.7	463.1	463.5	463.9	464.3	464.6	464.7	464.8	464.9	465.0	464.9
147.5°	484.6	485.1	485.6	486.1	486.7	486.8	486.7	486.7	486.6	486.5	486.4
150°	498.0	498.5	498.9	499.3	499.7	499.9	499.9	499.9	499.9	499.9	499.9
152.5°	510.7	510.9	511.2	511.4	511.7	511.8	511.9	512.0	512.1	512.2	512.4
155°	530.1	530.1	530.1	530.1	530.1	530.0	529.9	529.9	529.8	529.6	530.0
157.5°	546.5	546.3	546.1	545.9	545.8	545.6	545.6	545.6	545.6	545.5	545.8
160°	556.1	556.0	556.0	555.9	555.7	555.6	555.5	555.5	555.3	555.2	555.5
162.5°	565.1	564.8	564.5	564.3	564.0	563.8	563.7	563.6	563.5	563.4	563.9
165°	577.1	576.7	576.4	576.2	575.8	575.6	575.4	575.2	574.9	574.8	575.4
167.5°	586.3	585.9	585.4	585.0	584.6	584.3	584.3	584.4	584.4	584.4	585.1
170°	591.5	591.0	590.4	590.0	589.4	589.2	589.3	589.4	589.5	589.6	590.3
172.5°	595.2	594.8	594.4	593.9	593.5	593.3	593.3	593.3	593.3	593.4	594.0
175°	600.3	599.8	599.3	598.8	598.3	597.9	597.9	597.8	597.6	597.5	598.3
177.5°	602.0	601.6	601.2	600.8	600.3	600.1	600.1	600.1	600.1	600.1	600.7
180°	601.3	601.3	601.3	601.3	601.3	601.3	601.3	601.3	601.3	601.3	601.3



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1406.8	1406.8	1406.8	1406.8	1406.8	1406.8	1406.8	1406.8
2.5°	1401.7	1403.8	1405.8	1406.7	1406.5	1406.3	1406.1	1405.9
5°	1394.2	1397.0	1399.8	1400.9	1400.4	1399.9	1399.4	1398.9
7.5°	1378.8	1381.0	1383.2	1384.1	1383.8	1383.5	1383.2	1382.9
10°	1365.7	1367.7	1369.7	1370.4	1369.9	1369.5	1369.0	1368.5
12.5°	1349.9	1352.1	1354.3	1355.0	1354.4	1353.6	1352.9	1352.3
15°	1319.6	1321.1	1322.7	1323.0	1322.3	1321.5	1320.8	1320.0
17.5°	1285.2	1286.1	1287.0	1287.3	1286.8	1286.3	1285.8	1285.2
20°	1259.5	1260.3	1261.0	1261.1	1260.6	1260.1	1259.6	1259.1
22.5°	1232.7	1234.1	1235.4	1235.7	1234.8	1233.9	1233.0	1232.1
25°	1188.6	1188.9	1189.1	1188.7	1187.7	1186.7	1185.7	1184.7
27.5°	1139.1	1138.5	1137.9	1137.0	1135.7	1134.5	1133.2	1132.0
30°	1105.0	1103.9	1102.9	1101.8	1100.6	1099.3	1098.0	1096.8
32.5°	1070.2	1069.1	1067.9	1066.7	1065.4	1064.1	1062.9	1061.6
35°	1015.5	1013.7	1012.0	1010.5	1009.3	1008.0	1006.7	1005.5
37.5°	958.1	956.3	954.4	952.6	951.0	949.3	947.6	946.0
40°	918.2	915.7	913.2	911.3	910.0	908.8	907.6	906.3
42.5°	879.5	876.6	873.7	871.8	871.0	870.1	869.3	868.5
45°	819.6	816.8	814.1	812.4	811.6	810.9	810.1	809.3
47.5°	761.7	758.6	755.5	752.9	751.1	749.1	747.2	745.3
50°	721.2	717.7	714.2	711.7	710.1	708.7	707.2	705.6
52.5°	679.6	676.5	673.4	670.9	669.0	667.1	665.2	663.2
55°	618.5	615.5	612.5	610.3	608.7	607.2	605.7	604.2
57.5°	557.3	554.4	551.5	549.3	547.9	546.5	545.0	543.6
60°	515.2	512.9	510.6	508.9	507.6	506.4	505.2	503.9
62.5°	474.1	472.0	469.9	468.3	467.1	465.8	464.6	463.3
65°	414.3	411.8	409.3	407.4	406.2	405.0	403.7	402.4
67.5°	352.8	350.3	348.0	346.6	346.2	345.8	345.5	345.2
70°	313.9	311.9	309.9	308.5	307.8	307.0	306.2	305.5
72.5°	275.0	273.4	271.8	270.6	269.9	269.1	268.4	267.6
75°	218.9	217.9	217.0	216.3	216.1	215.8	215.6	215.3
77.5°	165.8	165.5	165.2	164.7	164.0	163.4	162.7	162.1
80°	132.0	131.5	131.0	130.6	130.4	130.1	129.9	129.6
82.5°	101.7	101.4	101.2	100.9	100.6	100.4	100.1	99.9
85°	58.6	58.6	58.6	58.5	58.2	58.0	57.7	57.5
87.5°	24.0	24.1	24.2	24.3	24.3	24.4	24.4	24.5
90°	11.5	12.1	12.7	13.1	13.4	13.5	13.8	13.9
92.5°	19.2	19.6	19.9	20.1	20.3	20.4	20.5	20.6
95°	36.0	36.3	36.6	36.8	36.8	36.8	36.8	36.8
97.5°	56.7	57.0	57.4	57.6	57.6	57.6	57.6	57.6
100°	71.6	71.7	72.0	72.1	72.1	72.1	72.1	72.1
102.5°	87.3	87.6	87.9	88.1	88.2	88.3	88.4	88.5
105°	111.3	111.6	111.9	112.2	112.5	112.8	113.2	113.5
107.5°	137.2	137.5	137.8	137.9	137.9	137.9	137.9	137.9
110°	154.4	154.3	154.0	154.1	154.4	154.7	155.0	155.3



TEST NUMBER: P332641-930

CATALOG NUMBER: S124DIP-S1020D590U930-4F0-1E-UDD-F1

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	173.0	172.9	172.9	172.9	173.0	173.0	173.1	173.2
115°	201.6	201.5	201.4	201.3	201.2	201.1	201.0	200.9
117.5°	229.1	228.8	228.4	228.1	227.9	227.7	227.5	227.3
120°	247.8	247.2	246.7	246.5	246.8	247.0	247.2	247.4
122.5°	266.7	266.4	266.0	265.6	265.2	264.9	264.5	264.2
125°	294.4	294.2	294.0	293.8	293.6	293.3	293.2	292.9
127.5°	320.9	320.7	320.5	320.3	320.2	320.0	319.8	319.7
130°	339.5	339.3	339.1	338.8	338.3	337.9	337.5	337.1
132.5°	357.0	356.8	356.6	356.4	356.2	356.0	355.9	355.7
135°	383.2	383.0	382.8	382.5	382.2	381.9	381.6	381.3
137.5°	408.5	408.3	408.1	407.9	408.0	408.1	408.1	408.2
140°	425.3	425.2	425.1	424.9	424.9	424.8	424.7	424.5
142.5°	441.1	441.1	441.0	441.0	441.0	441.0	440.9	440.9
145°	464.8	464.7	464.6	464.4	464.1	463.7	463.4	463.2
147.5°	486.3	486.2	486.2	486.1	486.0	485.8	485.8	485.7
150°	499.9	499.9	499.9	499.9	499.7	499.6	499.5	499.5
152.5°	512.7	512.9	513.1	513.1	512.9	512.6	512.3	512.1
155°	530.4	530.8	531.3	531.3	530.8	530.4	530.0	529.6
157.5°	546.2	546.5	546.8	546.7	546.4	546.1	545.7	545.4
160°	555.9	556.1	556.4	556.4	555.9	555.3	554.8	554.3
162.5°	564.5	565.1	565.7	565.7	565.2	564.6	564.1	563.6
165°	576.0	576.6	577.2	577.3	576.9	576.5	576.1	575.7
167.5°	585.6	586.3	586.9	586.9	586.3	585.6	585.0	584.3
170°	590.8	591.5	592.1	592.1	591.3	590.6	589.9	589.1
172.5°	594.8	595.5	596.1	596.1	595.4	594.7	593.9	593.3
175°	599.0	599.7	600.4	600.4	599.7	599.0	598.3	597.5
177.5°	601.3	601.9	602.4	602.4	601.8	601.1	600.4	599.7
180°	601.3	601.3	601.3	601.3	601.3	601.3	601.3	601.3

(END OF REPORT)