

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: P332631-930

Luminaire Tested: **S124DIP-S1020D365U930-4F0-1E-UDD-F**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332631-930
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-6,
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S124DIP-S1020D365U930-4F0-1E-UDD-F
Description: DEFINE 4 DIRECT-INDIRECT PENDANT LED LUMINAIRE
DOWNLIGHT 1020 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
UPLIGHT 365 LUMENS PER FOOT, NO LENS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4802.8 lumens
Efficiency: N/A
Efficacy: 110.4 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

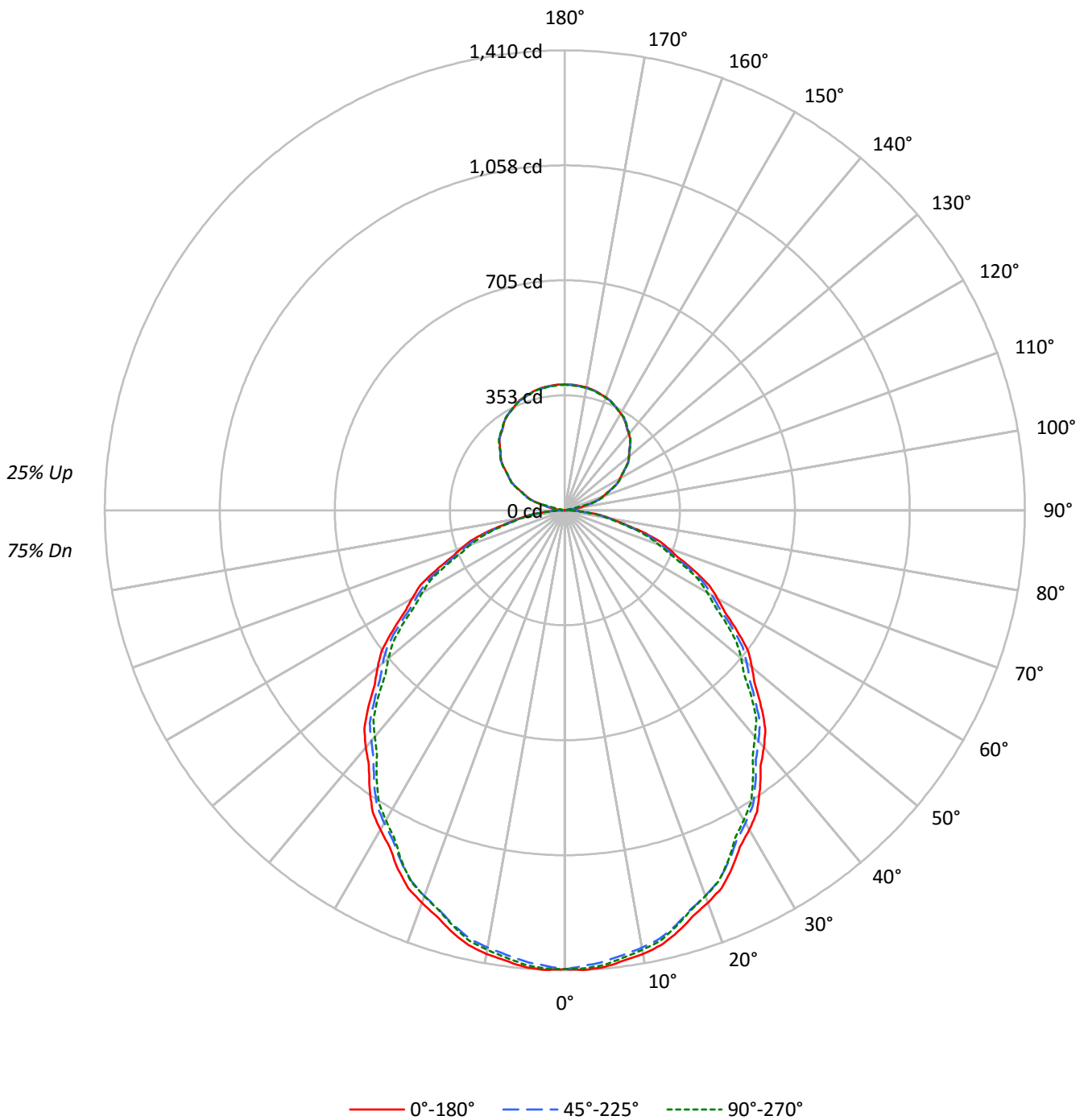
Input Watts (W): 43.5
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	0
RCR																		
0	113	113	113	113	108	108	108	108	97	97	97	88	88	88	79	79	79	75
1	103	99	95	91	98	94	91	87	85	83	80	77	75	73	70	68	67	63
2	94	86	80	74	89	82	77	72	75	70	66	68	64	61	62	59	56	53
3	86	76	68	62	81	73	66	60	66	60	56	60	56	52	55	51	48	45
4	79	67	59	53	75	64	57	51	59	53	48	54	49	44	49	45	41	38
5	72	60	52	45	69	58	50	44	53	46	41	48	43	39	44	40	36	33
6	67	54	46	40	63	52	44	38	48	41	36	44	38	34	40	35	32	29
7	62	49	41	35	59	47	39	34	43	37	32	40	34	30	37	32	28	26
8	58	45	37	31	55	43	35	30	40	33	29	37	31	27	34	29	25	23
9	54	41	33	28	51	39	32	27	36	30	26	34	28	24	31	26	23	21
10	50	38	30	25	48	36	29	25	34	28	23	31	26	22	29	24	21	19

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	2.8
10°-20°	373.3	7.8
20°-30°	549.4	11.4
30°-40°	638.7	13.3
40°-50°	638.7	13.3
50°-60°	558.7	11.6
60°-70°	414.9	8.6
70°-80°	235.7	4.9
80°-90°	69.1	1.4
90°-100°	13.2	0.3
100°-110°	84.0	1.7
110°-120°	160.7	3.3
120°-130°	204.0	4.2
130°-140°	218.3	4.5
140°-150°	204.1	4.2
150°-160°	164.6	3.4
160°-170°	106.2	2.2
170°-180°	36.6	0.8
0°-30°	1055.2	22.0
0°-40°	1693.9	35.3
0°-60°	2891.3	60.2
0°-90°	3611.2	75.2
90°-120°	257.9	5.4
90°-150°	884.3	18.4
90°-180°	1192.0	24.8
0°-180°	4802.8	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	4	6	8	9	4
95°	16	7	6	8	8	20
105°	87	88	90	92	82	91
115°	162	163	162	163	163	159
125°	228	229	228	229	229	203
135°	282	282	283	284	284	217
145°	326	326	326	327	327	203
155°	357	357	356	357	357	165
165°	377	375	375	377	375	106
175°	385	384	384	386	383	37
180°	385	385	385	385	385	



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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°	23.6	23.6	23.5	23.5	23.4	23.3	23.2	23.1	23.0	22.9	23.0
90°	0.9	1.5	2.3	3.0	3.7	4.3	4.8	5.3	5.8	6.4	6.7
92.5°	3.7	3.7	3.7	3.8	3.8	4.1	4.6	5.1	5.6	6.1	6.5
95°	15.8	13.7	11.5	9.3	7.2	6.1	6.1	6.2	6.3	6.4	6.7
97.5°	33.7	35.0	36.4	37.7	39.1	36.2	29.0	21.9	14.8	7.6	7.7
100°	47.3	48.4	49.6	50.7	51.9	48.0	39.2	30.3	21.5	12.7	11.6
102.5°	62.5	63.3	64.2	65.0	65.9	65.7	64.6	63.4	62.2	61.1	49.3
105°	86.7	87.1	87.5	87.9	88.3	88.6	88.9	89.3	89.6	89.9	90.5
107.5°	109.3	109.4	109.7	109.8	110.1	110.3	110.8	111.2	111.6	112.1	112.3
110°	124.5	124.7	124.8	125.1	125.2	125.6	125.9	126.3	126.7	127.1	127.2



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	139.3	139.6	139.9	140.2	140.6	140.9	141.0	141.2	141.4	141.6	141.5
115°	161.9	162.2	162.3	162.5	162.7	162.7	162.7	162.7	162.6	162.5	162.7
117.5°	182.4	182.6	182.9	183.2	183.4	183.6	183.8	183.9	184.0	184.2	184.2
120°	196.2	196.5	196.7	197.0	197.2	197.3	197.3	197.2	197.1	197.1	197.2
122.5°	209.1	209.3	209.5	209.6	209.8	209.9	209.9	210.0	210.1	210.3	210.3
125°	227.6	227.9	228.1	228.4	228.7	228.7	228.6	228.4	228.4	228.2	228.4
127.5°	245.2	245.2	245.2	245.3	245.4	245.6	245.9	246.1	246.5	246.8	246.7
130°	256.4	256.5	256.6	256.7	256.7	256.8	257.0	257.2	257.4	257.6	257.6
132.5°	266.8	266.9	267.0	267.2	267.3	267.4	267.7	267.9	268.2	268.4	268.5
135°	282.3	282.3	282.3	282.2	282.1	282.2	282.5	282.7	283.0	283.2	283.4
137.5°	296.1	296.2	296.2	296.2	296.3	296.4	296.7	296.9	297.3	297.5	297.7
140°	305.2	305.2	305.4	305.5	305.7	305.7	305.9	306.1	306.1	306.3	306.5
142.5°	313.2	313.4	313.6	313.9	314.1	314.3	314.4	314.5	314.5	314.6	314.7
145°	325.6	325.8	326.0	326.2	326.4	326.4	326.4	326.4	326.4	326.4	326.5
147.5°	335.4	335.8	336.1	336.6	336.9	337.0	337.0	336.9	336.8	336.8	336.8
150°	342.6	342.8	343.1	343.4	343.6	343.7	343.6	343.6	343.5	343.5	343.5
152.5°	348.6	348.8	349.0	349.2	349.4	349.4	349.4	349.2	349.1	349.0	349.1
155°	357.0	357.1	357.1	357.2	357.3	357.2	357.0	356.8	356.6	356.4	356.7
157.5°	364.1	364.0	364.0	363.9	363.9	363.8	363.6	363.4	363.1	363.0	363.3
160°	368.3	368.0	367.9	367.7	367.5	367.4	367.3	367.2	367.1	367.0	367.5
162.5°	371.9	371.7	371.5	371.2	371.0	370.8	370.7	370.6	370.6	370.6	371.0
165°	376.6	376.3	375.9	375.6	375.3	375.1	375.1	375.1	375.1	375.1	375.7
167.5°	380.3	379.9	379.6	379.3	379.0	378.8	378.7	378.7	378.6	378.6	379.2
170°	382.4	382.0	381.6	381.2	380.8	380.7	380.7	380.8	380.8	380.9	381.4
172.5°	383.8	383.4	382.9	382.6	382.2	382.0	382.1	382.2	382.2	382.3	382.8
175°	385.2	384.8	384.5	384.1	383.7	383.5	383.6	383.7	383.8	383.8	384.4
177.5°	386.0	385.6	385.2	384.8	384.5	384.3	384.5	384.6	384.7	384.7	385.2
180°	385.2	385.2	385.2	385.2	385.2	385.2	385.2	385.2	385.2	385.2	385.2



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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°	23.1	23.2	23.2	23.2	23.3	23.3	23.3	23.4
90°	7.1	7.5	7.9	8.2	8.2	8.4	8.5	8.6
92.5°	6.8	7.3	7.7	7.8	7.9	7.9	7.9	8.0
95°	7.1	7.5	7.9	8.1	8.2	8.2	8.3	8.3
97.5°	7.7	7.7	7.7	7.8	7.9	7.9	8.0	8.1
100°	10.5	9.4	8.3	7.8	7.9	7.9	8.0	8.1
102.5°	37.6	25.8	14.1	8.2	8.2	8.2	8.3	8.3
105°	91.1	91.6	92.2	91.3	89.0	86.7	84.4	82.1
107.5°	112.7	112.9	113.2	113.5	113.7	114.0	114.2	114.5
110°	127.3	127.4	127.6	127.8	127.9	128.2	128.3	128.5



TEST NUMBER: P332631-930

CATALOG NUMBER: S124DIP-S1020D365U930-4F0-1E-UDD-F

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	141.5	141.5	141.5	141.6	141.9	142.1	142.4	142.6
115°	162.7	162.9	163.1	163.1	163.1	163.1	163.1	163.1
117.5°	184.1	184.1	184.1	184.0	184.0	184.0	184.0	183.9
120°	197.3	197.5	197.6	197.6	197.5	197.3	197.2	197.1
122.5°	210.3	210.4	210.5	210.5	210.3	210.3	210.1	210.0
125°	228.6	228.8	228.9	229.1	229.2	229.3	229.3	229.3
127.5°	246.7	246.6	246.6	246.5	246.5	246.5	246.4	246.4
130°	257.7	257.8	257.9	257.9	257.9	257.9	257.9	257.9
132.5°	268.6	268.6	268.7	268.7	268.6	268.6	268.6	268.5
135°	283.5	283.6	283.7	283.9	284.0	284.1	284.3	284.4
137.5°	297.8	298.0	298.1	298.2	298.1	298.1	298.0	298.0
140°	306.6	306.9	307.0	307.2	307.3	307.3	307.4	307.4
142.5°	314.9	315.0	315.1	315.2	315.3	315.3	315.3	315.3
145°	326.6	326.7	326.7	326.8	326.9	327.1	327.2	327.3
147.5°	336.9	337.0	337.0	337.0	337.1	337.1	337.2	337.3
150°	343.5	343.5	343.5	343.5	343.6	343.6	343.6	343.7
152.5°	349.2	349.3	349.4	349.4	349.4	349.4	349.4	349.3
155°	356.9	357.2	357.4	357.5	357.3	357.1	356.9	356.7
157.5°	363.6	363.9	364.3	364.3	363.9	363.6	363.3	363.0
160°	367.9	368.3	368.6	368.6	368.3	367.9	367.5	367.0
162.5°	371.3	371.7	372.1	372.0	371.6	371.2	370.7	370.3
165°	376.2	376.7	377.2	377.2	376.6	376.0	375.4	374.9
167.5°	379.8	380.3	380.8	380.8	380.2	379.5	378.9	378.3
170°	382.0	382.5	382.9	382.9	382.3	381.6	381.0	380.3
172.5°	383.4	383.8	384.3	384.3	383.6	382.9	382.2	381.5
175°	385.0	385.6	386.1	386.0	385.2	384.5	383.7	382.9
177.5°	385.6	386.0	386.5	386.3	385.7	385.1	384.5	383.8
180°	385.2	385.2	385.2	385.2	385.2	385.2	385.2	385.2

(END OF REPORT)