

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: P332632-935

Luminaire Tested: **S124DIP-S1020D365U935-4F0-1E-UDD-F1**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332632-935
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-S1020D365U935-4F0-1E-UDD-F1
Description: DEFINE 4 DIRECT-INDIRECT PENDANT LED LUMINAIRE
DOWNLIGHT 1020 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
UPLIGHT 365 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4905.0 lumens
Efficiency: N/A
Efficacy: 112.8 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: Semi-Direct

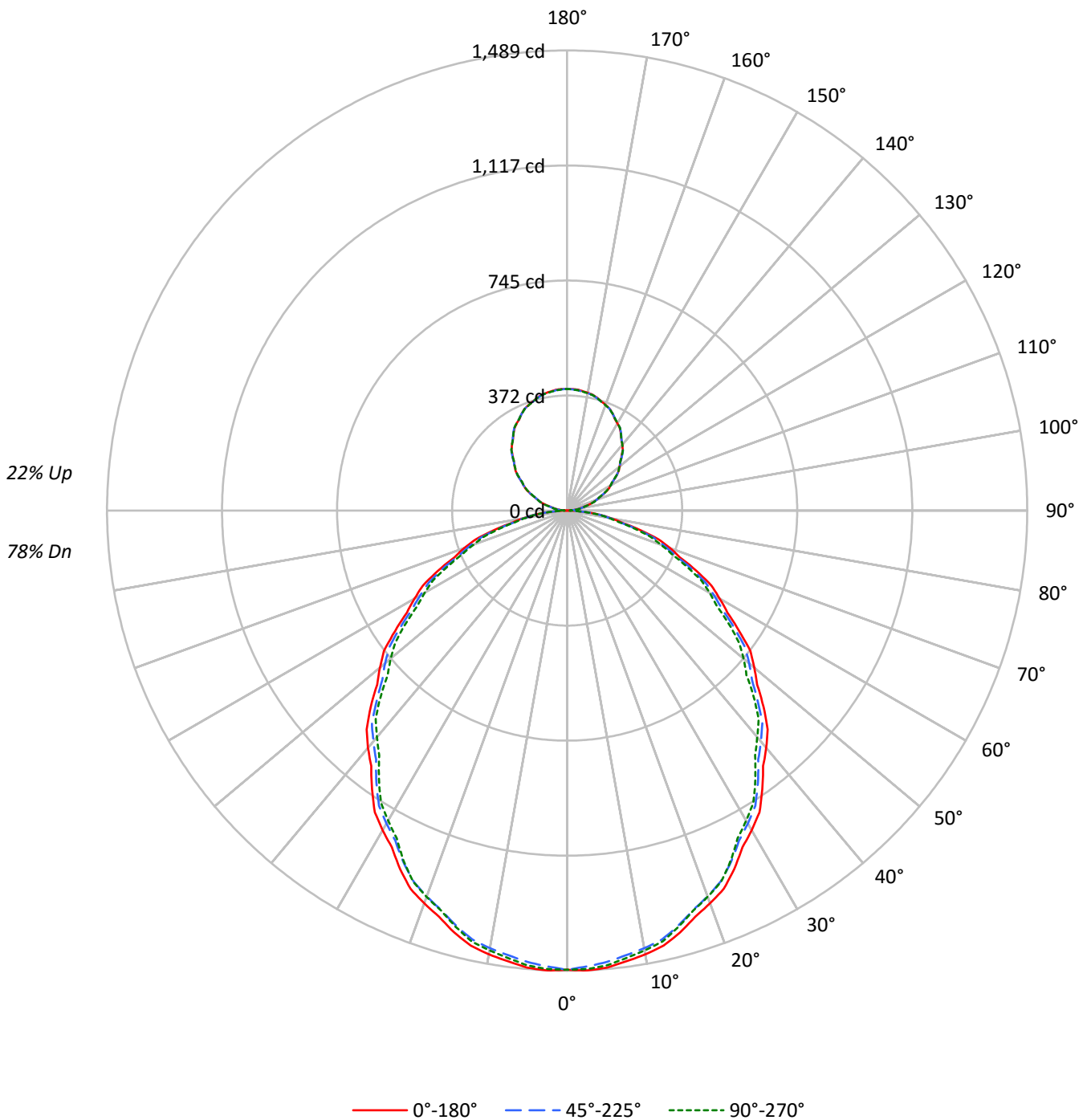
Input Watts (W): 43.5
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	114	114	114	114	109	109	109	109	99	99	99	90	90	90	82	82	82	78
1	104	99	95	92	99	95	91	88	87	84	81	79	77	75	72	70	69	65
2	95	87	80	75	90	83	77	72	76	71	67	69	66	63	63	61	58	55
3	86	76	69	63	82	73	66	61	67	61	57	61	57	53	56	53	49	46
4	79	68	59	53	75	65	57	51	60	53	48	55	50	45	50	46	43	40
5	73	61	52	46	69	58	50	44	54	47	42	49	44	40	45	41	37	35
6	67	55	46	40	64	52	45	39	48	42	37	45	39	35	41	36	33	30
7	62	49	41	35	59	48	40	34	44	37	33	41	35	31	38	33	29	27
8	58	45	37	31	55	43	36	31	40	34	29	37	32	28	35	30	26	24
9	54	41	33	28	52	40	32	27	37	31	26	34	29	25	32	27	24	22
10	51	38	30	25	48	37	30	25	34	28	24	32	26	23	30	25	22	20

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	11994	11994	11994
5°	12030	11885	11972
10°	11954	11788	11847
15°	11810	11621	11651
20°	11618	11413	11424
25°	11399	11176	11144
30°	11130	10897	10797
35°	10852	10606	10465
40°	10564	10275	10086
45°	10261	9949	9758
50°	9928	9658	9359
55°	9568	9282	8981
60°	9206	8861	8591
65°	8800	8458	8118
70°	8344	7924	7615
75°	7648	7277	7093
80°	6811	6527	6365
85°	5956	5734	5622



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	139.9	2.9
10°-20°	394.2	8.0
20°-30°	580.2	11.8
30°-40°	674.5	13.8
40°-50°	674.5	13.8
50°-60°	590.0	12.0
60°-70°	438.2	8.9
70°-80°	248.9	5.1
80°-90°	73.0	1.5
90°-100°	25.9	0.5
100°-110°	76.9	1.6
110°-120°	130.5	2.7
120°-130°	172.0	3.5
130°-140°	193.2	3.9
140°-150°	189.8	3.9
150°-160°	159.7	3.3
160°-170°	106.2	2.2
170°-180°	37.2	0.8
0°-30°	1114.3	22.7
0°-40°	1788.8	36.5
0°-60°	3053.4	62.3
0°-90°	3813.6	77.7
90°-120°	233.3	4.8
90°-150°	788.3	16.1
90°-180°	1091.0	22.2
0°-180°	4905.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1486	1486	1486	1486	1486	
5°	1484	1479	1467	1479	1477	141
15°	1413	1408	1390	1397	1394	398
25°	1280	1271	1255	1256	1251	588
35°	1101	1092	1076	1068	1062	688
45°	899	890	871	859	855	693
55°	680	675	660	646	638	609
65°	461	454	443	431	425	456
75°	245	239	233	229	227	261
85°	64	64	62	62	61	71
90°	1	4	7	8	9	5
95°	18	21	23	24	24	20
105°	71	71	72	73	74	75
115°	133	133	132	132	132	131
125°	193	193	193	192	192	172
135°	249	251	251	250	250	193
145°	303	304	304	304	303	189
155°	347	347	347	348	347	160
165°	378	377	376	378	377	106
175°	393	391	391	393	391	37
180°	393	393	393	393	393	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1485.7	1485.7	1485.7	1485.7	1485.7	1485.7	1485.7	1485.7	1485.7	1485.7	1485.7
2.5°	1489.4	1488.8	1488.2	1487.5	1486.9	1485.4	1483.1	1480.7	1478.4	1476.1	1478.3
5°	1484.5	1483.4	1482.4	1481.3	1480.2	1478.3	1475.3	1472.4	1469.6	1466.6	1469.6
7.5°	1470.7	1469.6	1468.5	1467.5	1466.5	1464.3	1461.0	1457.8	1454.6	1451.4	1453.7
10°	1458.3	1457.2	1456.1	1455.1	1454.1	1451.8	1448.4	1444.9	1441.5	1438.0	1440.1
12.5°	1442.1	1441.1	1439.9	1438.9	1437.9	1435.5	1431.8	1428.2	1424.5	1420.9	1423.2
15°	1413.1	1412.0	1410.9	1409.9	1408.8	1406.3	1402.3	1398.4	1394.4	1390.4	1392.0
17.5°	1378.0	1376.7	1375.4	1374.1	1372.8	1370.2	1366.4	1362.7	1358.9	1355.2	1356.2
20°	1352.3	1351.0	1349.7	1348.3	1347.0	1344.4	1340.4	1336.4	1332.5	1328.5	1329.3
22.5°	1324.7	1322.9	1321.2	1319.5	1317.8	1314.8	1310.9	1306.9	1303.0	1299.0	1300.5
25°	1279.7	1277.9	1276.0	1274.1	1272.3	1269.5	1265.8	1262.1	1258.4	1254.7	1255.0
27.5°	1228.3	1226.4	1224.4	1222.5	1220.6	1218.0	1214.5	1211.1	1207.6	1204.2	1203.6
30°	1194.0	1191.9	1189.7	1187.7	1185.5	1182.8	1179.3	1175.9	1172.4	1169.0	1167.9
32.5°	1157.8	1155.9	1154.0	1152.1	1150.2	1147.4	1143.8	1140.1	1136.4	1132.8	1131.5
35°	1101.1	1099.3	1097.4	1095.6	1093.7	1091.0	1087.3	1083.6	1079.9	1076.2	1074.3
37.5°	1041.4	1039.7	1038.0	1036.3	1034.6	1031.8	1027.8	1023.8	1019.9	1015.9	1013.9
40°	1002.4	1000.2	998.1	996.0	993.9	990.8	986.9	982.9	979.0	975.0	972.3
42.5°	960.4	959.2	957.9	956.7	955.4	952.5	948.1	943.7	939.4	935.0	931.9
45°	898.8	896.9	895.1	893.2	891.4	888.3	884.1	879.9	875.6	871.4	868.5
47.5°	834.2	833.0	831.7	830.4	829.1	826.6	822.7	818.7	814.9	810.9	807.6
50°	790.5	789.4	788.3	787.3	786.2	783.9	780.2	776.4	772.7	769.0	765.3
52.5°	747.6	746.3	745.0	743.8	742.5	739.9	736.0	732.1	728.1	724.3	721.0
55°	679.8	678.9	678.1	677.3	676.6	674.3	670.6	666.9	663.2	659.5	656.3
57.5°	615.0	614.1	613.2	612.3	611.4	609.1	605.5	601.8	598.1	594.5	591.5
60°	570.2	568.9	567.6	566.3	564.9	562.6	559.1	555.7	552.2	548.8	546.4
62.5°	526.4	525.3	524.2	523.1	521.9	519.6	515.9	512.3	508.6	505.0	502.8
65°	460.7	459.3	458.1	456.8	455.4	453.4	450.7	448.2	445.5	442.8	440.2
67.5°	394.5	393.3	392.1	390.9	389.6	387.8	385.2	382.7	380.1	377.6	375.1
70°	353.5	351.7	349.8	348.0	346.1	344.1	342.1	339.9	337.9	335.7	333.6
72.5°	309.8	307.9	306.1	304.2	302.4	300.6	298.9	297.2	295.5	293.8	292.1
75°	245.2	243.9	242.5	241.3	240.0	238.6	237.3	236.0	234.6	233.3	232.3
77.5°	183.6	183.0	182.4	181.8	181.2	180.4	179.2	178.1	176.8	175.7	175.4
80°	146.5	145.6	144.8	144.0	143.3	142.6	142.1	141.5	141.0	140.4	139.9
82.5°	110.2	109.9	109.5	109.1	108.7	108.5	108.4	108.3	108.2	108.1	107.8
85°	64.3	64.3	64.3	64.3	64.3	64.1	63.5	62.9	62.4	61.9	61.9
87.5°	25.0	24.9	24.8	24.8	24.7	24.6	24.5	24.4	24.3	24.2	24.3
90°	0.9	1.6	2.4	3.2	3.9	4.6	5.1	5.6	6.1	6.7	7.1
92.5°	6.5	7.4	8.2	9.0	9.9	10.5	10.9	11.3	11.7	12.1	12.3
95°	18.3	18.9	19.5	20.1	20.7	21.3	21.7	22.2	22.6	23.2	23.3
97.5°	31.9	32.4	32.9	33.3	33.8	34.4	34.9	35.5	36.0	36.6	36.9
100°	42.6	42.9	43.1	43.4	43.7	44.1	44.7	45.4	46.0	46.6	46.7
102.5°	53.8	53.9	54.0	54.2	54.2	54.6	55.1	55.7	56.2	56.7	57.0
105°	70.9	70.9	71.0	71.1	71.1	71.3	71.6	71.9	72.2	72.4	72.6
107.5°	88.9	88.9	89.0	89.1	89.2	89.2	89.3	89.3	89.4	89.4	89.5
110°	101.0	101.2	101.3	101.4	101.5	101.6	101.5	101.4	101.3	101.3	101.2



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	113.7	113.7	113.7	113.7	113.7	113.7	113.6	113.5	113.4	113.2	113.2
115°	132.7	132.7	132.7	132.7	132.7	132.6	132.4	132.3	132.2	132.1	132.0
117.5°	150.5	150.6	150.7	150.7	150.8	150.8	150.7	150.6	150.4	150.3	150.2
120°	162.5	162.7	163.0	163.2	163.6	163.6	163.4	163.2	163.0	162.8	162.5
122.5°	174.9	175.0	175.1	175.2	175.3	175.3	175.2	175.1	175.0	175.0	174.7
125°	193.2	193.2	193.2	193.2	193.2	193.1	193.1	193.0	193.0	192.9	192.8
127.5°	209.8	210.0	210.3	210.4	210.6	210.7	210.6	210.4	210.3	210.3	210.1
130°	221.5	221.7	221.9	222.1	222.3	222.4	222.4	222.4	222.4	222.4	222.3
132.5°	233.4	233.6	233.7	233.8	234.0	234.0	234.0	233.9	233.9	233.8	233.7
135°	249.2	249.6	249.9	250.4	250.8	251.0	251.0	251.0	251.0	251.0	250.9
137.5°	266.3	266.6	266.7	266.9	267.1	267.3	267.3	267.4	267.6	267.7	267.5
140°	277.8	277.9	278.0	278.2	278.4	278.4	278.4	278.4	278.4	278.4	278.4
142.5°	288.3	288.3	288.5	288.6	288.8	288.9	288.8	288.7	288.7	288.6	288.6
145°	302.7	303.0	303.2	303.5	303.8	304.0	304.0	304.1	304.2	304.3	304.2
147.5°	317.1	317.5	317.7	318.1	318.4	318.5	318.5	318.4	318.4	318.3	318.2
150°	325.9	326.1	326.4	326.7	326.9	327.1	327.1	327.1	327.1	327.1	327.1
152.5°	334.2	334.3	334.4	334.6	334.8	334.8	334.9	335.0	335.0	335.1	335.3
155°	346.8	346.8	346.8	346.8	346.8	346.8	346.7	346.6	346.6	346.6	346.8
157.5°	357.6	357.4	357.3	357.2	357.1	357.0	357.0	357.0	357.0	357.0	357.1
160°	363.9	363.8	363.8	363.7	363.6	363.5	363.5	363.4	363.3	363.3	363.5
162.5°	369.7	369.5	369.4	369.2	369.0	368.9	368.9	368.8	368.7	368.6	369.0
165°	377.5	377.4	377.2	376.9	376.8	376.6	376.4	376.3	376.2	376.1	376.4
167.5°	383.6	383.3	383.1	382.7	382.5	382.3	382.4	382.4	382.4	382.4	382.8
170°	387.0	386.7	386.3	386.0	385.6	385.6	385.6	385.6	385.7	385.8	386.2
172.5°	389.4	389.2	388.8	388.6	388.3	388.1	388.1	388.2	388.2	388.2	388.7
175°	392.8	392.4	392.1	391.8	391.4	391.2	391.2	391.1	391.1	391.0	391.4
177.5°	393.9	393.6	393.3	393.0	392.8	392.7	392.7	392.7	392.7	392.7	393.0
180°	393.4	393.4	393.4	393.4	393.4	393.4	393.4	393.4	393.4	393.4	393.4



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1485.7	1485.7	1485.7	1485.7	1485.7	1485.7	1485.7	1485.7
2.5°	1480.3	1482.5	1484.6	1485.6	1485.3	1485.1	1484.9	1484.7
5°	1472.4	1475.3	1478.3	1479.5	1478.9	1478.3	1477.8	1477.3
7.5°	1456.0	1458.4	1460.7	1461.7	1461.4	1461.0	1460.7	1460.4
10°	1442.3	1444.4	1446.5	1447.3	1446.7	1446.2	1445.7	1445.2
12.5°	1425.6	1427.9	1430.2	1431.0	1430.3	1429.5	1428.7	1428.1
15°	1393.6	1395.2	1396.8	1397.1	1396.4	1395.6	1394.8	1394.0
17.5°	1357.2	1358.2	1359.2	1359.4	1358.9	1358.4	1357.9	1357.3
20°	1330.1	1330.9	1331.7	1331.8	1331.3	1330.8	1330.2	1329.7
22.5°	1301.8	1303.3	1304.7	1304.9	1304.0	1303.0	1302.1	1301.1
25°	1255.3	1255.5	1255.8	1255.3	1254.3	1253.3	1252.2	1251.1
27.5°	1203.0	1202.3	1201.7	1200.8	1199.4	1198.1	1196.7	1195.4
30°	1166.9	1165.8	1164.8	1163.6	1162.3	1160.9	1159.6	1158.3
32.5°	1130.2	1129.0	1127.7	1126.4	1125.1	1123.8	1122.5	1121.1
35°	1072.5	1070.6	1068.8	1067.1	1065.8	1064.5	1063.2	1061.9
37.5°	1011.8	1009.9	1007.9	1006.0	1004.3	1002.5	1000.7	999.0
40°	969.7	967.0	964.4	962.4	961.0	959.8	958.5	957.1
42.5°	928.8	925.7	922.6	920.7	919.8	918.9	918.0	917.1
45°	865.6	862.6	859.7	857.9	857.1	856.4	855.5	854.7
47.5°	804.3	801.1	797.8	795.1	793.2	791.1	789.1	787.1
50°	761.6	757.9	754.2	751.6	749.9	748.4	746.8	745.2
52.5°	717.7	714.4	711.1	708.5	706.5	704.5	702.5	700.4
55°	653.2	650.0	646.8	644.5	642.8	641.3	639.6	638.1
57.5°	588.5	585.5	582.5	580.1	578.6	577.1	575.6	574.0
60°	544.1	541.7	539.2	537.4	536.1	534.8	533.5	532.1
62.5°	500.7	498.4	496.3	494.6	493.3	491.9	490.6	489.3
65°	437.6	434.9	432.2	430.2	429.0	427.7	426.3	425.0
67.5°	372.6	370.0	367.5	366.0	365.6	365.2	364.9	364.5
70°	331.5	329.3	327.3	325.8	325.0	324.2	323.4	322.6
72.5°	290.4	288.7	287.1	285.8	285.0	284.2	283.4	282.6
75°	231.2	230.1	229.1	228.4	228.2	227.9	227.6	227.4
77.5°	175.0	174.8	174.4	173.9	173.2	172.5	171.9	171.2
80°	139.4	138.9	138.4	137.9	137.7	137.4	137.2	136.9
82.5°	107.5	107.1	106.9	106.5	106.2	106.0	105.7	105.5
85°	61.9	61.9	61.9	61.7	61.5	61.2	61.0	60.7
87.5°	24.4	24.5	24.5	24.5	24.6	24.6	24.6	24.7
90°	7.5	7.9	8.4	8.6	8.7	8.9	9.0	9.1
92.5°	12.6	12.7	13.0	13.2	13.3	13.3	13.4	13.5
95°	23.5	23.8	23.9	24.0	24.0	24.0	24.0	24.0
97.5°	37.0	37.3	37.5	37.6	37.6	37.6	37.6	37.6
100°	46.8	46.9	47.1	47.2	47.2	47.2	47.2	47.2
102.5°	57.2	57.3	57.5	57.7	57.7	57.8	57.8	57.9
105°	72.8	73.0	73.2	73.4	73.6	73.9	74.0	74.2
107.5°	89.8	90.0	90.1	90.2	90.2	90.2	90.2	90.1
110°	101.1	100.9	100.7	100.8	101.0	101.3	101.4	101.6



TEST NUMBER: P332632-935

CATALOG NUMBER: S124DIP-S1020D365U935-4F0-1E-UDD-F1

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	113.2	113.1	113.1	113.1	113.2	113.2	113.2	113.3
115°	131.9	131.8	131.7	131.7	131.6	131.6	131.5	131.5
117.5°	149.9	149.6	149.5	149.3	149.1	149.0	148.9	148.7
120°	162.1	161.8	161.4	161.4	161.4	161.6	161.7	161.9
122.5°	174.5	174.3	174.0	173.7	173.6	173.3	173.1	172.8
125°	192.6	192.5	192.3	192.2	192.1	191.9	191.8	191.7
127.5°	210.0	209.8	209.7	209.6	209.5	209.4	209.2	209.1
130°	222.1	222.0	221.9	221.6	221.4	221.1	220.8	220.6
132.5°	233.6	233.4	233.3	233.2	233.1	233.0	232.9	232.7
135°	250.7	250.6	250.5	250.3	250.1	249.9	249.7	249.5
137.5°	267.3	267.2	267.0	266.9	266.9	267.0	267.0	267.1
140°	278.3	278.2	278.1	278.0	278.0	277.9	277.8	277.8
142.5°	288.6	288.6	288.5	288.5	288.5	288.5	288.5	288.5
145°	304.1	304.0	304.0	303.8	303.7	303.4	303.2	303.1
147.5°	318.2	318.1	318.1	318.1	318.0	317.9	317.8	317.8
150°	327.1	327.1	327.1	327.0	327.0	326.9	326.8	326.7
152.5°	335.4	335.6	335.8	335.7	335.5	335.4	335.2	335.0
155°	347.1	347.3	347.6	347.6	347.3	347.1	346.8	346.6
157.5°	357.3	357.6	357.7	357.7	357.5	357.3	357.1	356.8
160°	363.7	363.9	364.1	364.0	363.7	363.3	363.0	362.7
162.5°	369.4	369.7	370.1	370.1	369.8	369.5	369.1	368.8
165°	376.9	377.3	377.6	377.7	377.5	377.2	376.9	376.7
167.5°	383.2	383.6	384.0	384.0	383.6	383.1	382.7	382.3
170°	386.6	387.0	387.4	387.4	386.9	386.4	386.0	385.5
172.5°	389.2	389.6	390.0	390.0	389.6	389.1	388.7	388.1
175°	391.9	392.4	392.9	392.9	392.4	391.9	391.4	391.0
177.5°	393.4	393.8	394.2	394.2	393.7	393.3	392.9	392.4
180°	393.4	393.4	393.4	393.4	393.4	393.4	393.4	393.4

(END OF REPORT)