

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: P332633-935

Luminaire Tested: **S124DIP-S1020D365U935-4F0-1E-UDD-F4**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332633-935
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-S1020D365U935-4F0-1E-UDD-F4
Description: DEFINE 4 DIRECT-INDIRECT PENDANT LED LUMINAIRE
DOWNLIGHT 1020 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
UPLIGHT 365 LUMENS PER FOOT, BATWING OPTIC
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4939.8 lumens
Efficiency: N/A
Efficacy: 113.6 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

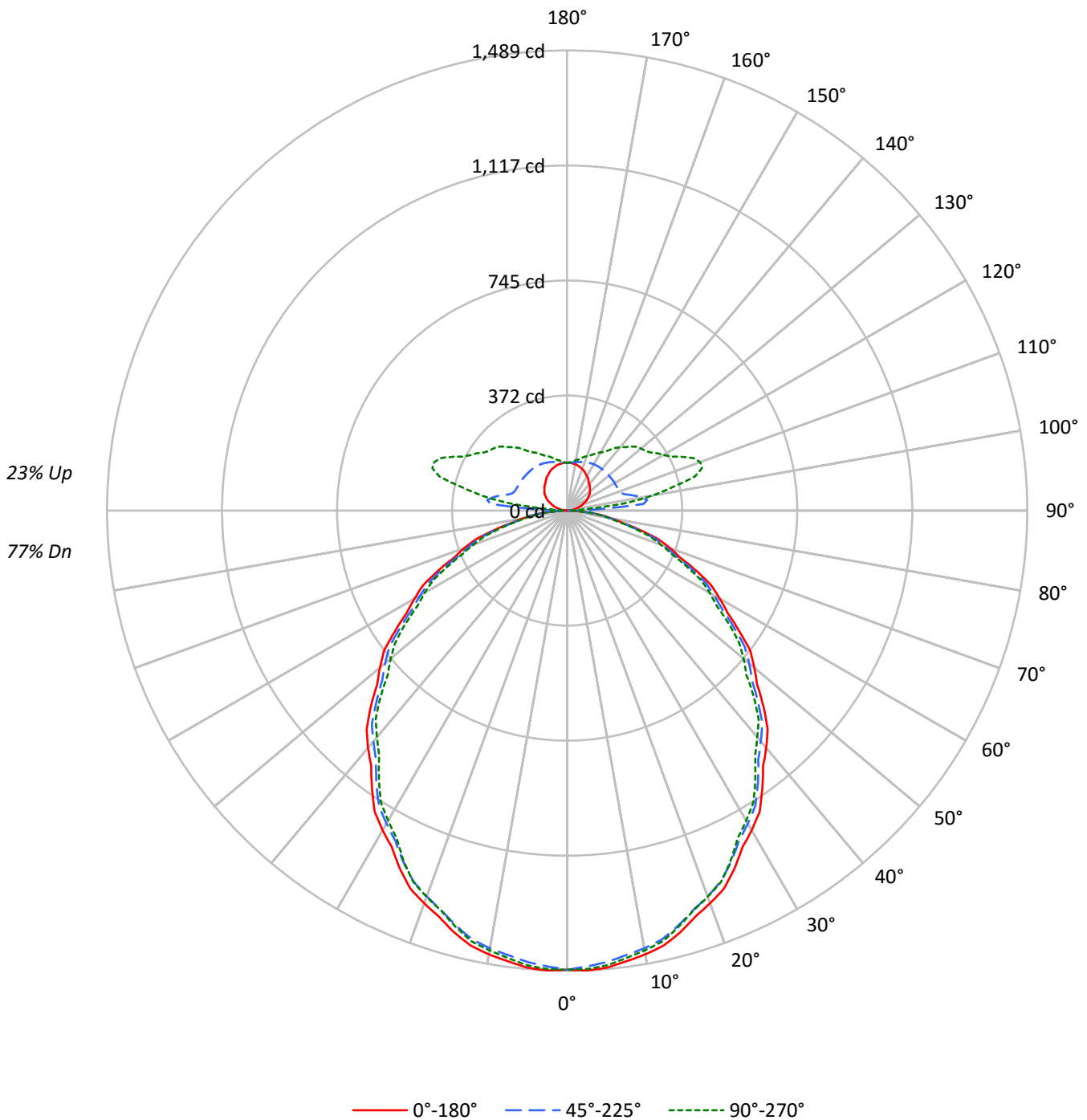
Input Watts (W): 43.5
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	108	108	108	108	98	98	98	89	89	89	81	81	81	77
1	104	99	95	92	99	95	91	88	86	84	81	79	77	75	72	70	68	65
2	95	87	80	75	90	83	77	72	76	71	67	69	65	62	63	60	58	54
3	86	76	69	62	82	73	66	60	67	61	56	61	57	53	56	52	49	46
4	79	68	59	53	75	65	57	51	60	53	48	55	49	45	50	46	42	39
5	73	60	52	46	69	58	50	44	53	47	42	49	44	39	45	41	37	34
6	67	54	46	40	64	52	44	39	48	42	37	44	39	35	41	36	33	30
7	62	49	41	35	59	47	40	34	44	37	32	41	35	31	37	33	29	27
8	58	45	37	31	55	43	36	30	40	34	29	37	32	27	34	30	26	24
9	54	41	33	28	51	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	21	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	2.8
10°-20°	394.2	8.0
20°-30°	580.2	11.7
30°-40°	674.5	13.7
40°-50°	674.5	13.7
50°-60°	590.0	11.9
60°-70°	438.2	8.9
70°-80°	248.9	5.0
80°-90°	72.7	1.5
90°-100°	111.9	2.3
100°-110°	232.8	4.7
110°-120°	208.5	4.2
120°-130°	175.4	3.6
130°-140°	146.3	3.0
140°-150°	111.7	2.3
150°-160°	78.5	1.6
160°-170°	46.2	0.9
170°-180°	15.0	0.3
0°-30°	1114.3	22.6
0°-40°	1788.8	36.2
0°-60°	3053.4	61.8
0°-90°	3813.3	77.2
90°-120°	553.3	11.2
90°-150°	986.7	20.0
90°-180°	1126.0	22.8
0°-180°	4939.8	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°	0	2	6	6	6	4
95°	10	32	248	123	74	11
105°	36	52	200	430	428	38
115°	63	79	178	342	411	62
125°	87	104	177	291	328	78
135°	104	124	176	258	293	80
145°	120	137	175	218	239	75
155°	136	147	170	192	200	63
165°	148	153	163	172	175	42
175°	154	155	156	158	158	15
180°	155	155	155	155	155	



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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°	24.8	24.7	24.7	24.5	24.4	24.2	24.4	24.1	24.0	23.9	23.8
90°	0.3	0.9	1.8	2.2	2.4	2.4	4.2	4.2	4.9	5.5	5.2
92.5°	3.4	5.1	7.9	11.6	16.1	22.4	37.9	61.5	84.5	96.5	80.4
95°	10.1	10.9	14.0	18.0	25.2	38.1	64.5	114.4	187.2	248.0	255.0
97.5°	18.0	18.0	20.7	24.3	30.6	41.2	61.6	102.9	175.1	261.2	320.4
100°	23.2	23.2	25.2	28.9	34.7	44.4	62.4	96.8	158.9	244.7	322.5
102.5°	28.0	28.5	30.4	33.8	39.3	48.6	64.8	95.1	147.9	223.9	304.3
105°	35.6	36.5	38.1	41.7	47.2	56.0	70.6	95.8	138.4	199.6	271.1
107.5°	44.0	44.6	46.1	50.0	55.3	64.0	77.3	100.4	136.7	186.0	244.4
110°	49.6	50.2	51.7	55.4	60.9	69.1	82.5	103.8	137.2	181.3	231.0



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	54.9	55.5	57.3	60.7	66.2	74.4	87.3	107.5	138.7	179.2	223.4
115°	62.7	63.6	65.7	68.8	74.6	82.7	95.0	113.2	141.5	178.1	216.4
117.5°	70.7	71.5	73.4	76.8	82.2	90.7	102.3	119.1	144.5	177.7	213.2
120°	76.1	76.7	78.8	82.1	87.3	95.8	107.5	123.2	146.7	177.7	211.5
122.5°	80.9	81.5	83.7	86.8	92.5	100.7	112.3	127.2	148.9	177.5	209.6
125°	87.3	88.5	90.4	93.8	99.5	108.1	119.0	132.9	152.1	177.1	206.3
127.5°	93.0	93.9	96.2	100.0	106.0	114.6	125.2	138.0	154.8	176.4	202.0
130°	96.2	97.4	99.8	104.4	110.1	119.0	129.3	141.2	156.7	176.2	199.3
132.5°	99.4	100.3	103.5	107.8	114.1	122.3	132.8	144.4	158.4	176.0	196.9
135°	103.8	105.0	108.1	113.2	119.6	127.5	137.5	148.5	161.0	175.6	193.2
137.5°	108.2	109.3	112.7	117.6	124.2	131.8	141.2	151.4	162.5	175.6	190.1
140°	111.4	112.3	115.6	120.8	127.2	134.5	143.6	153.3	163.7	175.3	188.4
142.5°	114.8	115.7	118.8	123.7	129.8	136.9	145.9	154.8	164.7	175.3	186.9
145°	119.6	120.5	123.6	127.8	133.6	140.3	148.2	156.4	165.2	174.7	184.4
147.5°	125.0	125.3	128.0	132.3	137.2	143.2	150.6	157.8	165.6	173.6	182.2
150°	128.4	128.7	131.1	134.8	139.4	145.2	151.9	158.5	165.6	172.8	180.5
152.5°	131.6	131.6	134.1	137.5	141.5	146.9	152.8	159.0	165.1	171.6	178.5
155°	136.0	136.3	138.2	141.2	144.6	149.1	154.3	159.5	164.4	169.8	175.6
157.5°	140.3	140.3	142.1	144.4	147.3	150.9	155.3	159.5	163.5	167.9	172.6
160°	143.0	143.0	144.2	146.4	148.8	152.1	155.8	159.5	162.8	166.4	170.4
162.5°	145.4	145.3	146.2	148.1	150.2	152.9	156.3	159.5	162.0	165.0	168.5
165°	148.2	148.2	148.8	150.3	151.9	153.7	156.4	158.9	160.7	162.8	165.2
167.5°	150.9	150.6	150.9	152.1	152.9	154.4	156.4	158.1	159.2	160.6	162.3
170°	152.1	151.9	152.1	153.1	153.7	154.5	156.1	157.6	158.3	159.1	160.4
172.5°	153.3	153.1	153.1	153.8	154.1	154.8	155.8	157.1	157.3	157.6	158.7
175°	154.5	154.3	154.3	154.5	154.9	154.9	155.5	156.4	156.1	156.1	156.7
177.5°	155.2	154.9	154.6	154.9	154.9	154.9	155.2	155.6	155.2	155.2	155.4
180°	154.9	154.9	154.9	154.9	154.9	154.9	154.9	154.9	154.9	154.9	154.9



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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°	23.9	24.0	24.1	24.1	24.1	24.2	24.1	24.1
90°	5.5	5.8	6.1	6.1	6.4	6.7	6.4	6.4
92.5°	59.8	44.9	35.8	29.7	26.1	24.5	23.4	23.4
95°	225.5	178.3	137.5	108.1	93.1	83.7	78.2	74.2
97.5°	333.1	315.6	285.9	254.1	232.2	214.0	204.8	198.5
100°	367.0	373.1	358.2	335.6	309.2	290.6	281.5	279.1
102.5°	365.3	395.5	399.8	390.4	374.2	360.8	351.1	349.1
105°	340.8	393.5	423.6	436.1	436.7	434.2	430.0	428.2
107.5°	306.1	362.1	404.5	431.7	446.7	453.7	456.7	457.4
110°	285.2	337.8	381.9	415.3	437.0	449.8	455.2	458.0



TEST NUMBER: P332633-935

CATALOG NUMBER: S124DIP-S1020D365U935-4F0-1E-UDD-F4

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	269.8	316.3	358.0	391.5	416.0	431.5	439.2	443.6
115°	254.4	291.8	327.4	356.6	380.6	398.9	408.7	411.1
117.5°	246.8	277.8	305.8	330.6	351.1	366.4	376.3	378.2
120°	243.4	271.7	296.1	317.7	335.0	348.4	356.4	359.7
122.5°	240.5	267.9	290.0	308.9	323.6	335.0	341.7	345.1
125°	235.6	261.7	282.7	299.5	311.6	320.5	326.2	328.0
127.5°	229.5	254.4	275.4	291.3	303.5	311.3	316.2	318.1
130°	224.5	248.7	269.3	285.4	297.9	305.5	310.4	312.2
132.5°	219.5	242.0	262.3	278.4	290.6	299.2	303.8	305.7
135°	212.4	232.2	250.7	266.0	278.1	286.6	291.5	293.3
137.5°	206.0	222.7	238.4	252.1	263.6	271.9	276.0	278.1
140°	202.3	216.6	230.3	243.1	253.8	260.5	264.8	267.2
142.5°	199.0	211.5	223.3	234.4	243.8	250.0	253.8	255.5
145°	194.2	204.5	213.6	222.1	229.7	234.9	238.0	239.4
147.5°	190.2	198.4	205.7	212.4	218.0	222.5	224.7	225.3
150°	187.8	194.8	200.9	206.3	211.2	215.2	217.0	217.2
152.5°	185.1	191.1	196.7	201.2	205.3	208.5	209.7	210.0
155°	181.1	185.9	190.5	194.2	197.2	199.6	200.5	200.5
157.5°	176.8	180.8	184.7	187.6	189.9	191.7	192.3	192.3
160°	174.1	177.4	180.7	183.2	185.0	186.8	187.2	187.2
162.5°	171.4	174.3	176.8	179.1	180.4	182.2	182.5	182.3
165°	167.6	169.5	171.6	173.1	174.4	175.6	175.3	175.0
167.5°	164.1	165.5	167.2	168.1	168.7	169.5	169.4	169.2
170°	161.9	162.8	164.0	165.0	165.6	165.8	165.6	165.6
172.5°	160.0	160.6	161.4	162.0	162.4	162.6	162.4	161.9
175°	157.3	157.6	158.3	158.3	158.3	158.9	158.3	157.6
177.5°	155.6	155.8	155.8	156.1	155.8	156.1	155.6	155.2
180°	154.9	154.9	154.9	154.9	154.9	154.9	154.9	154.9

(END OF REPORT)