

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: P332730-840

Luminaire Tested: **S124DIW-S350D1050U840-4F0-1E-UDD-D1**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332730-840
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-S350D1050U840-4F0-1E-UDD-D1
Description: DEFINE 4 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 350 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER
UPLIGHT 1050 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 5129.0 lumens
Efficiency: N/A
Efficacy: 135.0 lumens/watt
Spacing Criteria (0/90/45): 1.23 / 1.28 / 1.39
Luminous Opening: Rectangular w/ Sides (W: 0.33' x L: 4' x H: 0.08')
CIE Type: Semi-Indirect

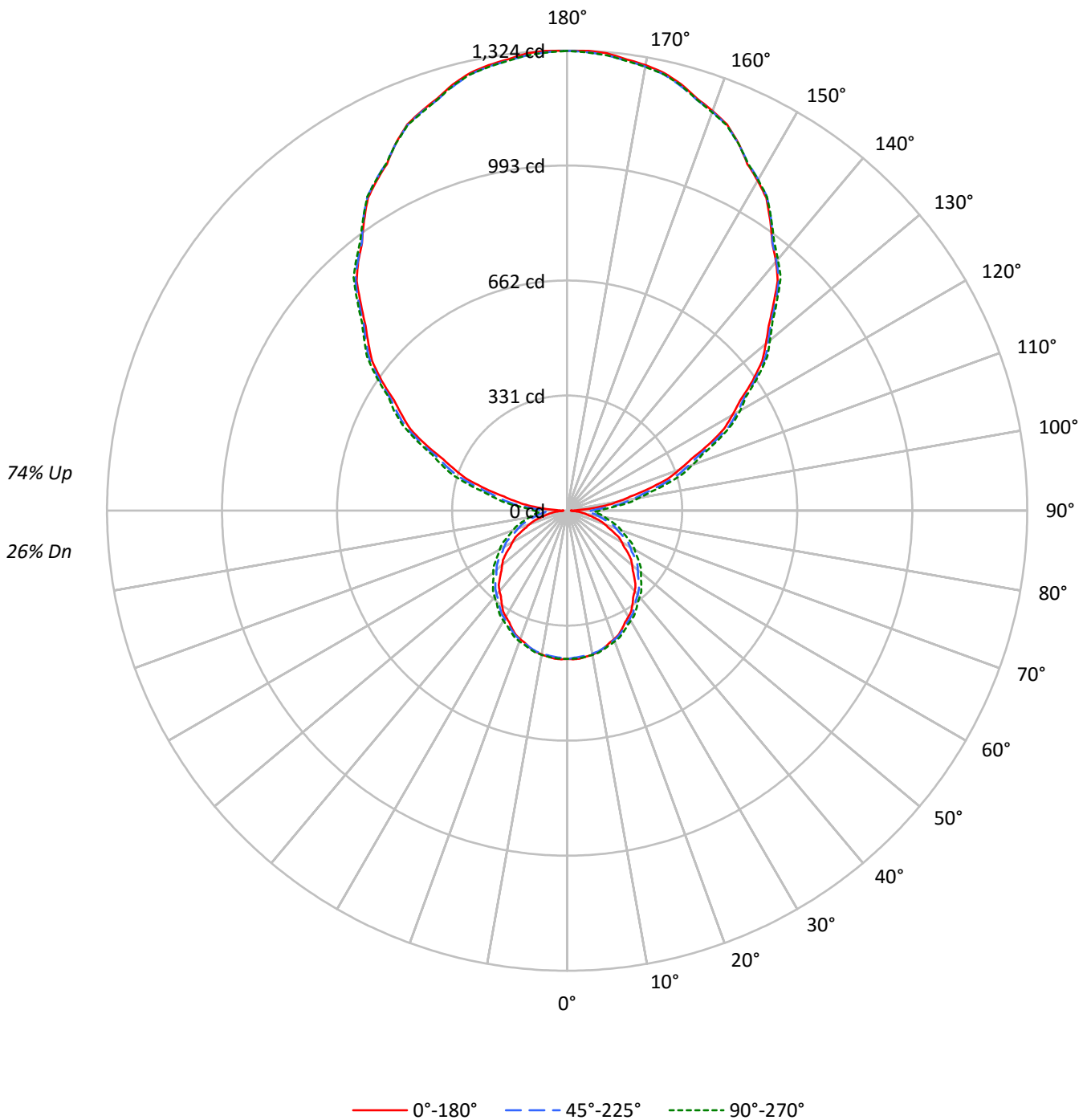
Input Watts (W): 38
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P332730-840

CATALOG NUMBER: S124DIW-S350D1050U840-4F0-1E-UDD-D1

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	102	102	102	102	91	91	91	91	70	70	70	52	52	52	34	34	34	26
1	92	88	84	80	82	78	75	72	61	58	56	44	43	42	29	29	28	21
2	83	76	70	65	74	68	63	58	53	49	46	39	36	34	26	24	23	17
3	76	67	59	54	67	60	53	48	46	42	38	34	31	29	22	21	19	14
4	69	59	51	45	61	52	46	41	41	36	32	30	27	24	20	18	16	12
5	63	52	44	38	56	47	40	35	36	31	28	27	23	21	18	16	14	10
6	58	46	39	33	52	42	35	30	33	28	24	24	21	18	16	14	12	9
7	54	42	34	29	48	37	31	26	29	24	21	22	18	16	15	13	11	8
8	50	38	30	25	44	34	27	23	27	22	18	20	16	14	13	11	10	7
9	46	34	27	22	41	31	24	20	24	20	16	18	15	12	12	10	9	6
10	43	31	24	20	38	28	22	18	22	18	14	17	13	11	11	9	8	6

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3446	3446	3446
5°	3457	3367	3378
10°	3435	3313	3310
15°	3404	3249	3231
20°	3358	3179	3155
25°	3306	3100	3070
30°	3249	3021	2983
35°	3185	2941	2907
40°	3134	2865	2828
45°	3058	2793	2759
50°	2994	2713	2687
55°	2928	2636	2603
60°	2824	2538	2526
65°	2708	2435	2431
70°	2572	2315	2320
75°	2379	2183	2220
80°	2166	2057	2123
85°	1893	1946	2065



TEST NUMBER: P332730-840

CATALOG NUMBER: S124DIW-S350D1050U840-4F0-1E-UDD-D1

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	40.4	0.8
10°-20°	115.8	2.3
20°-30°	175.1	3.4
30°-40°	211.9	4.1
40°-50°	224.0	4.4
50°-60°	210.8	4.1
60°-70°	174.9	3.4
70°-80°	122.9	2.4
80°-90°	73.4	1.4
90°-100°	128.5	2.5
100°-110°	289.0	5.6
110°-120°	459.2	9.0
120°-130°	590.0	11.5
130°-140°	654.6	12.8
140°-150°	639.4	12.5
150°-160°	536.9	10.5
160°-170°	357.2	7.0
170°-180°	125.1	2.4
0°-30°	331.4	6.5
0°-40°	543.2	10.6
0°-60°	978.1	19.1
0°-90°	1349.2	26.3
90°-120°	876.6	17.1
90°-150°	2760.6	53.8
90°-180°	3780.0	73.7
0°-180°	5129.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	427	427	427	427	427	
5°	427	426	422	426	426	41
15°	410	410	409	413	412	115
25°	375	378	379	384	385	173
35°	328	334	338	345	347	205
45°	273	282	292	299	302	211
55°	214	224	238	248	251	191
65°	148	164	180	191	196	147
75°	82	100	120	133	138	87
85°	25	46	67	81	86	27
90°	11	41	70	89	96	9
95°	68	93	119	135	140	73
105°	243	254	275	290	297	258
115°	449	454	466	476	478	443
125°	652	652	662	669	670	581
135°	839	845	848	854	854	649
145°	1018	1022	1023	1025	1024	637
155°	1166	1166	1165	1169	1165	536
165°	1270	1267	1264	1270	1266	358
175°	1321	1316	1315	1321	1315	125
180°	1323	1323	1323	1323	1323	



TEST NUMBER: P332730-840

CATALOG NUMBER: S124DIW-S350D1050U840-4F0-1E-UDD-D1

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	426.9	426.9	426.9	426.9	426.9	426.9	426.9	426.9	426.9	426.9	426.9
2.5°	428.4	428.1	427.9	427.6	427.4	426.9	426.3	425.6	424.9	424.1	424.7
5°	427.4	427.0	426.7	426.4	426.1	425.6	424.7	424.0	423.3	422.5	423.4
7.5°	423.7	423.5	423.3	423.1	422.9	422.5	421.9	421.3	420.7	420.1	421.0
10°	420.6	420.5	420.4	420.3	420.2	419.9	419.4	418.8	418.3	417.8	418.7
12.5°	416.5	416.4	416.4	416.4	416.4	416.2	415.8	415.5	415.1	414.8	415.6
15°	409.6	409.8	409.9	410.0	410.1	410.0	409.6	409.3	409.0	408.7	409.6
17.5°	400.4	400.7	401.0	401.3	401.6	401.8	401.7	401.6	401.6	401.5	402.5
20°	393.8	394.2	394.6	394.9	395.2	395.4	395.5	395.6	395.7	395.8	396.9
22.5°	386.6	387.0	387.4	387.8	388.2	388.5	388.7	388.9	389.1	389.3	390.3
25°	374.8	375.4	376.1	376.7	377.3	377.8	378.1	378.4	378.7	379.1	380.2
27.5°	361.5	362.5	363.5	364.4	365.3	366.0	366.5	367.0	367.5	368.0	369.0
30°	352.7	353.7	354.5	355.3	356.2	357.0	357.7	358.4	359.2	359.9	361.1
32.5°	343.3	344.3	345.3	346.3	347.3	348.2	349.0	349.8	350.7	351.5	352.8
35°	327.9	329.2	330.4	331.7	333.1	334.2	335.3	336.3	337.4	338.4	339.9
37.5°	312.6	314.0	315.5	316.9	318.4	319.7	321.1	322.4	323.8	325.1	326.6
40°	302.6	304.0	305.4	306.7	308.1	309.5	311.0	312.6	314.0	315.5	317.1
42.5°	291.1	292.7	294.2	295.8	297.3	298.9	300.7	302.5	304.2	305.9	307.7
45°	273.4	275.4	277.4	279.4	281.4	283.5	285.5	287.5	289.5	291.5	293.4
47.5°	256.5	258.6	260.6	262.8	264.8	267.0	269.3	271.8	274.1	276.4	278.2
50°	244.3	246.6	248.9	251.3	253.6	255.9	258.3	260.6	263.0	265.3	267.4
52.5°	232.1	234.4	236.7	239.0	241.4	243.9	246.5	249.2	251.9	254.6	256.7
55°	214.2	216.4	218.6	220.9	223.1	225.8	228.9	232.2	235.3	238.5	240.7
57.5°	194.2	196.9	199.7	202.5	205.2	208.1	211.4	214.5	217.6	220.9	223.4
60°	181.2	183.9	186.7	189.5	192.2	195.3	198.8	202.4	205.8	209.3	211.8
62.5°	168.5	171.6	174.6	177.6	180.6	183.9	187.3	190.9	194.4	197.9	200.4
65°	148.1	151.6	155.0	158.3	161.8	165.3	168.8	172.5	176.1	179.8	182.4
67.5°	128.6	132.2	135.8	139.5	143.0	146.7	150.7	154.5	158.3	162.2	164.9
70°	115.2	118.8	122.4	126.0	129.7	133.5	137.5	141.6	145.6	149.7	152.5
72.5°	102.2	105.9	109.6	113.3	116.9	121.0	125.2	129.6	133.8	138.1	140.9
75°	82.2	86.1	90.1	94.0	98.0	102.1	106.6	111.1	115.5	120.0	123.0
77.5°	63.6	67.8	71.9	76.0	80.2	84.6	89.3	94.0	98.7	103.3	106.3
80°	52.1	56.4	60.6	64.8	69.1	73.5	78.3	82.9	87.6	92.3	95.4
82.5°	40.6	45.0	49.5	53.9	58.3	62.8	67.6	72.2	76.9	81.6	84.8
85°	25.3	29.8	34.2	38.7	43.2	47.8	52.6	57.4	62.1	67.0	70.1
87.5°	14.7	19.6	24.4	29.3	34.1	39.0	44.0	49.1	54.0	59.1	62.4
90°	10.7	17.5	24.2	31.0	37.7	44.3	50.7	57.1	63.4	69.8	74.2
92.5°	29.2	35.9	42.5	49.2	55.9	62.2	68.1	73.8	79.7	85.5	89.4
95°	67.6	73.1	78.7	84.2	89.8	95.5	101.5	107.4	113.4	119.4	122.9
97.5°	112.9	117.5	122.2	126.8	131.5	136.8	143.1	149.3	155.4	161.6	165.2
100°	148.5	152.2	155.8	159.5	163.2	168.1	174.3	180.5	186.6	192.9	196.2
102.5°	186.1	188.9	191.7	194.5	197.2	201.7	207.5	213.5	219.3	225.3	228.7
105°	242.7	245.0	247.4	249.7	252.1	255.7	260.5	265.4	270.2	275.0	278.3
107.5°	303.0	305.0	307.0	309.0	311.0	314.0	317.8	321.6	325.5	329.3	332.5
110°	343.5	345.4	347.4	349.3	351.2	354.0	357.5	360.9	364.5	367.9	369.9



TEST NUMBER: P332730-840

CATALOG NUMBER: S124DIW-S350D1050U840-4F0-1E-UDD-D1

CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	385.7	387.1	388.5	389.9	391.3	393.5	396.7	399.8	402.9	406.1	408.4
115°	448.9	449.9	450.8	451.8	452.7	454.6	457.7	460.6	463.5	466.5	468.6
117.5°	509.0	509.7	510.5	511.2	512.0	513.8	516.6	519.5	522.3	525.2	526.6
120°	548.7	549.9	551.2	552.4	553.6	555.4	557.8	560.2	562.6	565.0	566.0
122.5°	590.5	590.9	591.3	591.7	592.2	593.7	596.2	598.8	601.5	604.0	605.4
125°	651.6	651.5	651.4	651.3	651.2	652.3	654.7	657.1	659.5	662.0	663.6
127.5°	707.3	707.9	708.4	709.0	709.6	710.7	712.4	714.1	715.8	717.4	718.9
130°	746.2	746.8	747.4	747.9	748.5	749.6	751.3	753.1	754.8	756.5	757.9
132.5°	786.3	786.7	787.1	787.5	787.9	788.7	789.8	791.0	792.2	793.3	794.8
135°	838.8	840.2	841.5	842.9	844.2	845.4	846.1	846.8	847.6	848.3	849.6
137.5°	896.6	897.1	897.6	898.1	898.7	899.3	900.0	900.7	901.4	902.2	903.1
140°	935.0	935.3	935.6	936.0	936.3	936.6	936.8	936.9	937.0	937.1	938.2
142.5°	969.8	970.3	970.7	971.1	971.5	971.6	971.4	971.1	970.9	970.7	971.8
145°	1018.4	1019.2	1020.0	1020.8	1021.6	1022.1	1022.4	1022.6	1022.8	1023.0	1023.4
147.5°	1066.7	1067.6	1068.6	1069.6	1070.7	1071.1	1070.9	1070.7	1070.5	1070.3	1070.2
150°	1096.1	1096.9	1097.7	1098.5	1099.3	1099.7	1099.7	1099.7	1099.7	1099.7	1099.7
152.5°	1123.6	1124.1	1124.7	1125.2	1125.7	1126.0	1126.2	1126.4	1126.6	1126.8	1127.3
155°	1166.3	1166.3	1166.3	1166.3	1166.3	1166.2	1165.9	1165.7	1165.5	1165.3	1166.2
157.5°	1202.2	1201.8	1201.4	1201.0	1200.6	1200.4	1200.3	1200.3	1200.2	1200.2	1200.9
160°	1223.6	1223.4	1223.0	1222.8	1222.6	1222.4	1222.1	1221.9	1221.7	1221.5	1222.1
162.5°	1243.1	1242.6	1242.0	1241.4	1240.8	1240.4	1240.2	1240.0	1239.7	1239.5	1240.7
165°	1269.6	1268.9	1268.2	1267.6	1266.9	1266.3	1265.9	1265.4	1265.0	1264.5	1265.9
167.5°	1289.8	1288.9	1288.0	1287.0	1286.1	1285.6	1285.7	1285.7	1285.7	1285.8	1287.1
170°	1301.3	1300.2	1299.0	1297.9	1296.8	1296.3	1296.6	1296.8	1297.0	1297.2	1298.6
172.5°	1309.5	1308.5	1307.6	1306.7	1305.7	1305.3	1305.3	1305.4	1305.4	1305.4	1307.0
175°	1320.7	1319.6	1318.5	1317.4	1316.2	1315.6	1315.2	1315.0	1314.8	1314.6	1316.2
177.5°	1324.4	1323.5	1322.6	1321.7	1320.8	1320.3	1320.3	1320.3	1320.3	1320.3	1321.6
180°	1322.8	1322.8	1322.8	1322.8	1322.8	1322.8	1322.8	1322.8	1322.8	1322.8	1322.8



TEST NUMBER: P332730-840

CATALOG NUMBER: S124DIW-S350D1050U840-4F0-1E-UDD-D1

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	426.9	426.9	426.9	426.9	426.9	426.9	426.9	426.9
2.5°	425.4	426.0	426.6	426.8	426.8	426.7	426.6	426.5
5°	424.2	425.1	426.0	426.4	426.3	426.1	426.0	425.9
7.5°	422.0	422.9	423.9	424.3	424.2	424.1	424.0	423.9
10°	419.7	420.6	421.6	422.0	421.9	421.8	421.7	421.6
12.5°	416.5	417.4	418.2	418.6	418.6	418.6	418.6	418.5
15°	410.6	411.5	412.5	412.9	412.8	412.7	412.6	412.5
17.5°	403.4	404.5	405.5	405.9	405.8	405.7	405.7	405.6
20°	397.9	399.0	400.0	400.6	400.6	400.6	400.6	400.6
22.5°	391.4	392.4	393.5	394.2	394.4	394.5	394.7	394.9
25°	381.4	382.5	383.7	384.4	384.5	384.6	384.7	384.8
27.5°	370.1	371.2	372.3	372.9	373.0	373.1	373.2	373.4
30°	362.2	363.5	364.6	365.3	365.5	365.8	366.0	366.2
32.5°	354.2	355.6	356.9	357.7	357.9	358.1	358.3	358.5
35°	341.4	342.8	344.4	345.3	345.6	345.9	346.3	346.6
37.5°	328.1	329.5	331.0	332.0	332.3	332.6	333.1	333.4
40°	318.7	320.2	321.8	322.9	323.3	323.8	324.2	324.6
42.5°	309.4	311.2	313.0	314.1	314.4	314.7	315.1	315.4
45°	295.2	297.0	298.8	299.9	300.5	301.0	301.5	302.1
47.5°	280.1	282.0	283.9	285.1	285.8	286.4	287.0	287.7
50°	269.5	271.7	273.8	275.2	275.8	276.4	277.1	277.7
52.5°	258.8	260.9	263.1	264.5	265.1	265.7	266.4	267.0
55°	242.8	244.9	247.0	248.4	249.0	249.6	250.3	251.0
57.5°	225.9	228.4	231.0	232.5	233.1	233.7	234.3	234.9
60°	214.3	216.7	219.1	220.8	221.7	222.5	223.4	224.2
62.5°	202.8	205.2	207.6	209.3	210.2	211.0	211.9	212.7
65°	185.0	187.7	190.4	192.1	193.0	193.8	194.7	195.5
67.5°	167.6	170.4	173.0	174.8	175.6	176.4	177.2	178.1
70°	155.3	158.2	161.1	162.9	163.6	164.4	165.1	165.8
72.5°	143.7	146.5	149.3	151.1	151.9	152.7	153.6	154.4
75°	125.9	128.9	131.9	133.8	134.8	135.7	136.7	137.6
77.5°	109.4	112.4	115.4	117.4	118.5	119.5	120.5	121.5
80°	98.7	101.8	105.0	107.0	107.9	108.8	109.6	110.4
82.5°	88.1	91.4	94.6	96.7	97.7	98.6	99.6	100.5
85°	73.3	76.4	79.7	81.8	82.8	83.9	84.9	86.0
87.5°	65.8	69.2	72.5	74.7	75.7	76.7	77.8	78.8
90°	78.7	83.2	87.7	90.5	91.8	93.1	94.4	95.7
92.5°	93.2	96.9	100.8	103.3	104.4	105.5	106.6	107.8
95°	126.4	130.0	133.5	135.8	136.7	137.7	138.7	139.7
97.5°	168.7	172.4	176.0	178.2	179.2	180.1	181.0	181.9
100°	199.4	202.8	206.1	208.1	208.9	209.6	210.5	211.2
102.5°	232.2	235.6	239.0	241.3	242.3	243.3	244.3	245.3
105°	281.8	285.1	288.4	290.8	292.4	293.9	295.4	296.9
107.5°	335.9	339.1	342.3	344.4	345.1	345.8	346.5	347.2
110°	371.9	373.9	375.9	377.6	379.2	380.7	382.2	383.7



TEST NUMBER: P332730-840

CATALOG NUMBER: S124DIW-S350D1050U840-4F0-1E-UDD-D1

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	410.6	412.9	415.2	416.8	417.8	418.8	419.8	420.7
115°	470.7	472.8	474.9	476.3	476.8	477.3	477.8	478.3
117.5°	528.1	529.5	530.9	531.8	532.2	532.6	533.0	533.4
120°	566.9	567.9	569.0	570.1	571.4	572.7	574.0	575.3
122.5°	606.7	608.0	609.5	610.1	610.1	610.0	610.0	609.9
125°	665.1	666.7	668.2	669.1	669.3	669.4	669.6	669.8
127.5°	720.3	721.9	723.3	724.2	724.6	724.9	725.3	725.6
130°	759.3	760.8	762.2	762.9	762.5	762.3	762.0	761.7
132.5°	796.1	797.5	798.9	799.7	800.0	800.2	800.5	800.8
135°	850.8	852.0	853.3	853.8	853.8	853.8	853.7	853.7
137.5°	904.1	905.0	906.1	906.9	907.5	908.2	908.8	909.5
140°	939.4	940.5	941.6	942.4	942.7	943.0	943.3	943.6
142.5°	973.0	974.1	975.3	976.1	976.4	976.8	977.2	977.7
145°	1023.9	1024.3	1024.7	1024.7	1024.5	1024.2	1024.0	1023.7
147.5°	1070.2	1070.1	1070.0	1070.0	1070.1	1070.2	1070.3	1070.4
150°	1099.7	1099.7	1099.7	1099.6	1099.4	1099.2	1098.9	1098.7
152.5°	1127.8	1128.4	1128.9	1128.9	1128.3	1127.7	1127.1	1126.6
155°	1167.1	1168.0	1168.9	1168.9	1168.0	1167.1	1166.2	1165.3
157.5°	1201.6	1202.2	1203.0	1203.0	1202.1	1201.3	1200.6	1199.8
160°	1222.8	1223.6	1224.3	1224.0	1222.8	1221.7	1220.6	1219.4
162.5°	1241.9	1243.1	1244.5	1244.5	1243.3	1242.2	1241.0	1239.9
165°	1267.2	1268.6	1269.9	1270.1	1269.2	1268.3	1267.4	1266.5
167.5°	1288.5	1289.8	1291.2	1291.2	1289.8	1288.4	1287.0	1285.6
170°	1299.9	1301.3	1302.6	1302.5	1301.0	1299.4	1297.8	1296.2
172.5°	1308.5	1310.0	1311.6	1311.5	1310.0	1308.4	1306.8	1305.1
175°	1317.8	1319.4	1321.0	1321.0	1319.4	1317.8	1316.2	1314.6
177.5°	1322.9	1324.1	1325.4	1325.3	1323.8	1322.4	1321.0	1319.5
180°	1322.8	1322.8	1322.8	1322.8	1322.8	1322.8	1322.8	1322.8

(END OF REPORT)