

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: P332183-840

Luminaire Tested: **S123DIW-S1000D460U840-4F0-1E-UDD-D1**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332183-840
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-9,
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S123DIW-S1000D460U840-4F0-1E-UDD-D1
Description: DEFINE 3 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 1000 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER
UPLIGHT 460 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 5855.9 lumens
Efficiency: N/A
Efficacy: 126.8 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.26 / 1.37
Luminous Opening: Rectangular w/ Sides (W: 0.25' x L: 4' x H: 0.08')
CIE Type: Semi-Direct

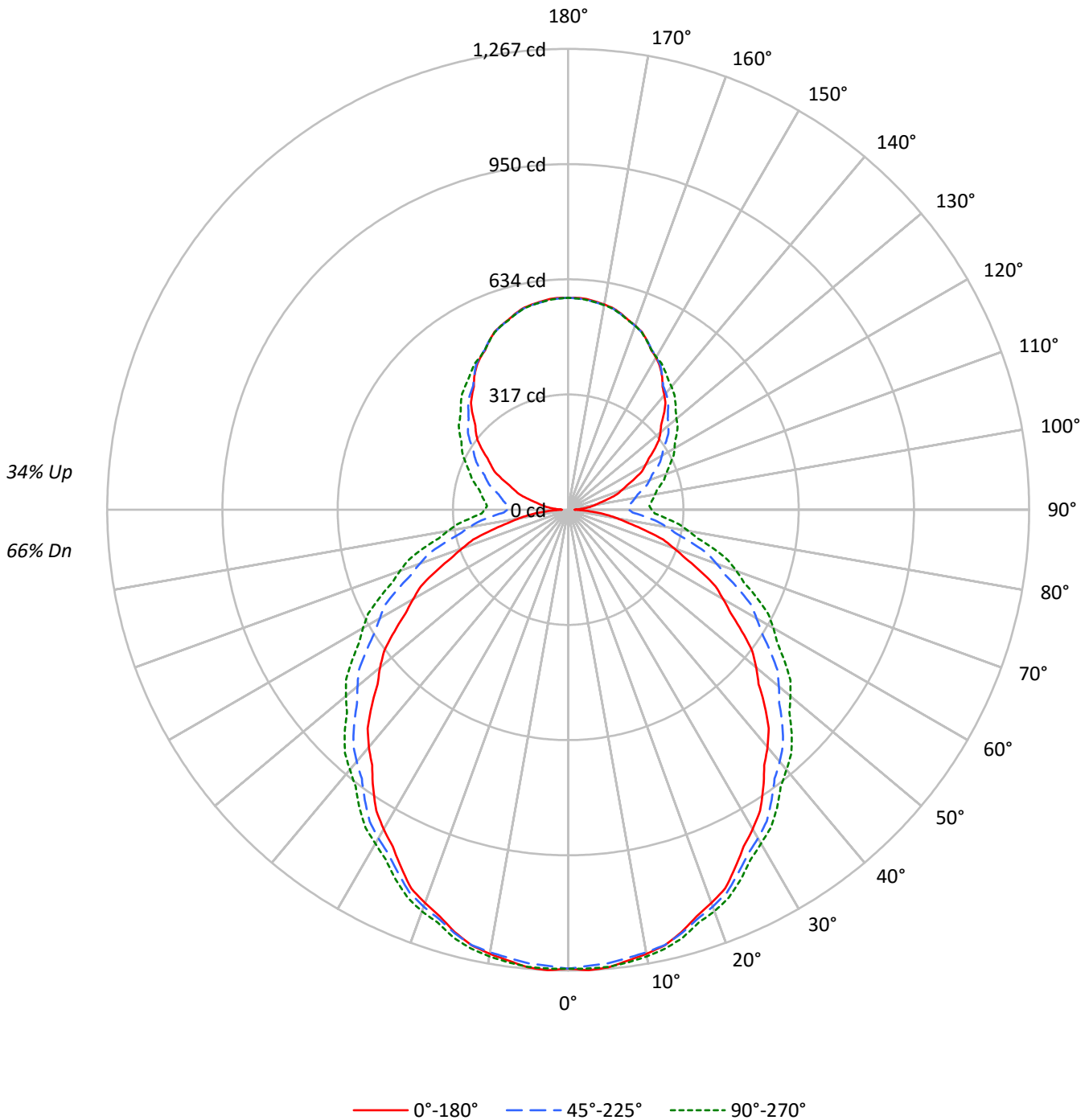
Input Watts (W): 46.2
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	111	111	111	111	105	105	105	105	92	92	92	81	81	81	71	71	71	66
1	100	95	90	86	94	89	85	82	79	76	73	69	67	65	61	59	57	53
2	91	82	75	69	85	77	71	66	68	64	60	60	57	53	53	50	47	43
3	82	72	64	57	77	68	60	55	60	54	49	53	48	44	46	43	40	36
4	75	63	55	48	70	60	52	46	53	47	42	47	42	38	41	37	34	31
5	69	56	48	41	64	53	45	39	47	41	36	42	37	33	37	33	29	26
6	63	51	42	36	59	48	40	34	43	36	31	38	33	28	33	29	26	23
7	59	46	37	31	55	43	35	30	39	32	28	34	29	25	30	26	23	20
8	55	41	33	28	51	39	32	27	35	29	24	32	26	22	28	24	20	18
9	51	38	30	25	48	36	29	24	32	26	22	29	24	20	26	21	18	16
10	48	35	27	22	45	33	26	21	30	24	20	27	22	18	24	20	17	15

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	13581	13581	13581
5°	13623	13239	13246
10°	13501	12935	12870
15°	13327	12588	12458
20°	13078	12192	12005
25°	12772	11738	11529
30°	12457	11328	11046
35°	12104	10895	10660
40°	11767	10501	10247
45°	11396	10122	9918
50°	11028	9750	9554
55°	10621	9366	9226
60°	10225	8977	8892
65°	9818	8564	8493
70°	9204	8097	8084
75°	8432	7563	7667
80°	7539	7041	7193
85°	6723	6680	6917



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	119.6	2.0
10°-20°	341.0	5.8
20°-30°	510.0	8.7
30°-40°	609.0	10.4
40°-50°	637.2	10.9
50°-60°	598.0	10.2
60°-70°	499.4	8.5
70°-80°	357.3	6.1
80°-90°	214.8	3.7
90°-100°	171.6	2.9
100°-110°	211.8	3.6
110°-120°	258.8	4.4
120°-130°	291.6	5.0
130°-140°	302.5	5.2
140°-150°	284.4	4.9
150°-160°	236.4	4.0
160°-170°	157.3	2.7
170°-180°	55.1	0.9
0°-30°	970.6	16.6
0°-40°	1579.6	27.0
0°-60°	2814.7	48.1
0°-90°	3886.3	66.4
90°-120°	642.3	11.0
90°-150°	1520.8	26.0
90°-180°	1970.0	33.6
0°-180°	5855.9	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1262	1262	1262	1262	1262	
5°	1263	1260	1252	1262	1262	120
15°	1203	1206	1205	1218	1218	339
25°	1086	1099	1104	1121	1122	500
35°	935	956	974	994	1001	584
45°	764	797	832	857	869	589
55°	583	628	678	713	726	522
65°	403	457	517	556	572	398
75°	218	283	352	396	414	233
85°	67	136	209	254	269	71
90°	18	90	166	213	230	14
95°	42	100	170	213	228	42
105°	114	150	211	248	263	121
115°	201	221	268	300	312	199
125°	289	292	329	355	364	258
135°	372	374	388	410	417	287
145°	449	449	450	460	464	280
155°	513	513	514	515	512	236
165°	559	557	557	560	557	157
175°	581	580	579	582	579	55
180°	583	583	583	583	583	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1261.7	1261.7	1261.7	1261.7	1261.7	1261.7	1261.7	1261.7	1261.7	1261.7	1261.7
2.5°	1267.3	1266.6	1265.8	1265.1	1264.4	1262.9	1261.0	1259.1	1257.1	1255.2	1257.1
5°	1263.1	1262.5	1261.9	1261.3	1260.7	1259.5	1257.7	1255.8	1253.9	1252.1	1254.6
7.5°	1250.7	1250.9	1251.0	1251.1	1251.2	1250.4	1248.7	1246.9	1245.1	1243.3	1246.4
10°	1239.8	1240.4	1241.0	1241.6	1242.2	1241.7	1240.2	1238.7	1237.2	1235.7	1238.7
12.5°	1226.6	1227.4	1228.3	1229.1	1230.0	1229.9	1228.9	1227.8	1226.8	1225.8	1228.6
15°	1202.6	1203.6	1204.5	1205.4	1206.3	1206.6	1206.3	1206.0	1205.7	1205.4	1208.5
17.5°	1172.5	1174.3	1176.1	1177.9	1179.7	1180.6	1180.5	1180.3	1180.2	1180.1	1182.9
20°	1150.4	1152.3	1154.1	1155.9	1157.7	1159.0	1159.6	1160.2	1160.8	1161.4	1164.2
22.5°	1127.3	1129.1	1131.0	1132.9	1134.7	1136.0	1136.9	1137.7	1138.6	1139.4	1142.9
25°	1085.8	1088.8	1092.0	1095.0	1098.0	1100.0	1101.0	1101.9	1102.8	1103.7	1107.6
27.5°	1044.0	1047.5	1051.0	1054.5	1057.9	1060.7	1062.7	1064.6	1066.5	1068.5	1072.0
30°	1014.3	1018.3	1022.3	1026.2	1030.3	1033.4	1035.9	1038.3	1040.8	1043.2	1046.9
32.5°	981.4	985.8	990.3	994.7	999.2	1003.0	1006.2	1009.4	1012.6	1015.7	1019.7
35°	934.6	939.5	944.4	949.3	954.2	958.6	962.6	966.5	970.5	974.5	979.1
37.5°	885.1	890.7	896.2	901.6	907.2	912.3	917.3	922.1	927.0	931.9	937.1
40°	852.1	857.7	863.1	868.7	874.1	880.0	886.1	892.2	898.3	904.4	909.6
42.5°	815.9	822.6	829.3	836.1	842.7	849.3	855.7	862.0	868.4	874.7	880.4
45°	764.2	771.5	778.9	786.2	793.6	801.0	808.6	816.3	823.9	831.5	837.4
47.5°	710.0	718.3	726.7	735.0	743.3	751.8	760.5	769.3	778.0	786.8	793.2
50°	674.9	683.4	692.0	700.5	709.0	718.1	727.5	737.0	746.5	756.0	763.0
52.5°	637.4	646.5	655.6	664.6	673.7	683.4	693.9	704.3	714.7	725.2	732.5
55°	582.8	592.9	602.9	613.0	623.1	633.6	644.6	655.6	666.6	677.6	685.9
57.5°	529.5	540.0	550.5	561.0	571.5	582.8	594.8	606.8	618.8	630.9	639.1
60°	492.1	503.0	514.0	525.0	536.0	547.8	560.3	572.9	585.4	597.9	606.4
62.5°	456.9	468.1	479.4	490.6	501.8	514.1	527.4	540.6	553.8	567.1	575.6
65°	402.7	414.7	426.6	438.5	450.4	463.0	476.5	489.9	503.3	516.8	525.9
67.5°	347.7	360.4	373.0	385.7	398.3	411.5	425.2	438.9	452.5	466.3	476.3
70°	309.2	322.3	335.5	348.7	361.8	375.7	390.3	405.1	419.7	434.3	444.1
72.5°	274.1	287.2	300.3	313.5	326.6	340.7	355.9	371.0	386.2	401.3	411.3
75°	218.5	232.9	247.2	261.7	276.0	290.7	306.1	321.3	336.6	351.8	361.9
77.5°	170.2	184.6	199.1	213.6	228.0	243.0	258.4	273.8	289.2	304.6	315.2
80°	136.0	151.1	166.0	181.0	195.9	211.4	227.2	243.2	259.0	274.9	285.3
82.5°	106.3	121.6	136.8	152.0	167.2	182.9	199.0	215.1	231.3	247.4	257.8
85°	67.4	82.6	97.9	113.2	128.5	144.2	160.4	176.5	192.7	208.9	219.3
87.5°	36.7	52.1	67.5	82.9	98.3	113.9	129.8	145.6	161.5	177.3	187.7
90°	18.3	34.3	50.3	66.2	82.3	98.7	115.6	132.5	149.4	166.3	177.1
92.5°	27.9	42.0	56.2	70.4	84.6	99.8	115.8	131.9	148.0	164.1	174.6
95°	42.1	54.7	67.4	80.0	92.6	106.8	122.6	138.4	154.2	170.0	179.9
97.5°	61.4	72.7	84.0	95.2	106.5	119.7	134.5	149.4	164.3	179.2	188.7
100°	74.6	85.0	95.3	105.7	116.1	128.7	143.2	157.7	172.3	186.8	196.0
102.5°	90.0	99.2	108.4	117.4	126.6	138.5	152.9	167.4	181.9	196.3	205.3
105°	114.0	121.5	129.1	136.5	144.1	154.9	169.0	183.0	197.0	211.1	219.6
107.5°	140.5	146.8	153.2	159.6	165.9	175.5	188.3	201.2	214.0	226.8	235.3
110°	156.9	162.7	168.3	174.1	179.8	188.8	201.3	213.7	226.1	238.5	246.9



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	175.3	180.0	184.6	189.2	193.9	202.1	213.8	225.6	237.4	249.1	257.3
115°	201.4	205.3	209.3	213.3	217.2	224.6	235.4	246.2	257.0	267.8	275.2
117.5°	228.7	231.2	233.7	236.1	238.6	244.9	254.9	265.0	275.0	285.1	292.4
120°	244.9	247.0	249.1	251.3	253.4	259.2	268.8	278.4	287.9	297.5	304.5
122.5°	262.8	264.0	265.3	266.5	267.7	273.1	282.4	291.6	301.0	310.3	316.9
125°	288.8	289.1	289.4	289.7	290.0	294.5	303.2	311.7	320.4	329.1	335.1
127.5°	314.1	314.4	314.8	315.1	315.4	319.1	326.3	333.4	340.4	347.6	353.0
130°	330.8	331.4	331.9	332.4	333.0	336.1	341.8	347.7	353.5	359.3	364.7
132.5°	346.6	347.4	348.1	348.9	349.6	352.3	357.0	361.6	366.4	371.0	376.1
135°	372.0	372.3	372.6	372.9	373.2	375.1	378.3	381.6	384.9	388.1	393.2
137.5°	395.6	395.9	396.1	396.4	396.7	397.9	400.0	402.1	404.3	406.5	410.9
140°	411.0	411.5	412.0	412.5	413.0	413.7	414.8	415.8	416.8	417.9	422.3
142.5°	426.0	426.3	426.5	426.8	427.1	427.4	427.7	428.1	428.5	428.8	432.8
145°	449.4	449.3	449.2	449.1	449.0	449.1	449.4	449.7	450.0	450.3	452.6
147.5°	468.6	468.9	469.3	469.6	470.0	470.3	470.6	470.9	471.2	471.5	472.2
150°	482.8	483.0	483.2	483.4	483.6	483.8	484.0	484.2	484.4	484.6	484.6
152.5°	494.5	494.8	495.1	495.3	495.6	495.8	495.9	496.1	496.2	496.3	496.6
155°	513.0	513.0	513.0	513.0	513.0	513.1	513.2	513.3	513.4	513.5	513.9
157.5°	528.8	528.7	528.6	528.4	528.3	528.3	528.4	528.5	528.5	528.6	529.0
160°	538.7	538.5	538.3	538.1	537.9	537.8	537.8	537.8	537.8	537.8	538.3
162.5°	547.4	547.1	546.8	546.5	546.3	546.2	546.2	546.3	546.4	546.5	547.0
165°	558.8	558.5	558.2	557.8	557.5	557.4	557.4	557.4	557.4	557.4	558.1
167.5°	567.8	567.4	567.0	566.6	566.2	566.0	566.1	566.2	566.3	566.3	567.0
170°	573.0	572.6	572.2	571.8	571.4	571.2	571.2	571.2	571.2	571.2	571.9
172.5°	577.0	576.6	576.2	575.8	575.3	575.1	575.1	575.1	575.1	575.1	575.8
175°	581.2	580.8	580.4	580.0	579.6	579.4	579.4	579.4	579.4	579.4	580.0
177.5°	583.0	582.6	582.3	582.0	581.7	581.5	581.5	581.5	581.5	581.5	582.0
180°	582.6	582.6	582.6	582.6	582.6	582.6	582.6	582.6	582.6	582.6	582.6



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1261.7	1261.7	1261.7	1261.7	1261.7	1261.7	1261.7	1261.7
2.5°	1259.1	1261.0	1262.9	1263.8	1263.5	1263.3	1263.1	1262.8
5°	1257.0	1259.5	1261.9	1262.9	1262.6	1262.3	1262.0	1261.7
7.5°	1249.4	1252.5	1255.6	1256.9	1256.6	1256.2	1255.8	1255.5
10°	1241.7	1244.8	1247.9	1249.1	1248.5	1247.9	1247.3	1246.7
12.5°	1231.3	1234.2	1237.0	1238.1	1237.5	1236.9	1236.3	1235.7
15°	1211.5	1214.6	1217.6	1219.0	1218.7	1218.4	1218.1	1217.8
17.5°	1185.6	1188.4	1191.1	1192.2	1191.8	1191.4	1191.0	1190.5
20°	1166.9	1169.6	1172.5	1174.0	1174.3	1174.6	1174.9	1175.2
22.5°	1146.4	1149.8	1153.4	1155.0	1154.8	1154.7	1154.5	1154.3
25°	1111.7	1115.6	1119.5	1121.6	1121.6	1121.6	1121.6	1121.6
27.5°	1075.3	1078.7	1082.2	1084.0	1084.3	1084.5	1084.8	1085.0
30°	1050.6	1054.2	1057.8	1059.8	1059.8	1059.8	1059.8	1059.8
32.5°	1023.6	1027.4	1031.4	1033.7	1034.4	1035.1	1035.9	1036.6
35°	983.6	988.3	992.8	995.7	996.9	998.2	999.4	1000.6
37.5°	942.3	947.5	952.7	955.7	956.7	957.7	958.7	959.7
40°	914.7	920.0	925.1	928.4	929.6	930.8	932.0	933.2
42.5°	886.1	891.7	897.5	901.1	902.8	904.5	906.3	908.0
45°	843.1	849.0	854.7	858.9	861.3	863.7	866.3	868.7
47.5°	799.8	806.4	812.8	817.1	819.0	820.9	822.7	824.7
50°	770.0	777.0	784.1	788.6	790.8	792.9	795.1	797.2
52.5°	739.7	747.0	754.3	759.2	761.8	764.5	767.1	769.7
55°	694.1	702.4	710.6	715.9	718.4	720.8	723.3	725.7
57.5°	647.5	655.8	664.1	669.7	672.6	675.4	678.3	681.2
60°	615.0	623.6	632.1	638.0	641.5	644.8	648.1	651.5
62.5°	584.2	592.8	601.3	607.1	610.3	613.4	616.5	619.7
65°	535.1	544.3	553.4	559.6	562.6	565.6	568.8	571.8
67.5°	486.3	496.2	506.2	512.6	515.1	517.8	520.3	522.8
70°	453.8	463.6	473.4	479.9	482.9	485.9	489.0	492.1
72.5°	421.4	431.4	441.4	448.0	451.0	454.0	457.2	460.2
75°	372.0	382.1	392.1	399.1	402.7	406.4	410.0	413.7
77.5°	325.9	336.5	347.1	353.9	356.6	359.4	362.2	365.1
80°	295.7	306.1	316.4	323.2	326.2	329.2	332.3	335.4
82.5°	268.2	278.5	288.9	295.7	298.7	301.7	304.8	307.9
85°	229.6	240.0	250.4	257.2	260.2	263.3	266.3	269.4
87.5°	198.2	208.7	219.1	225.9	229.0	232.2	235.2	238.3
90°	187.8	198.6	209.4	216.5	219.7	223.0	226.3	229.5
92.5°	185.0	195.5	205.9	212.6	215.2	217.9	220.6	223.3
95°	189.7	199.5	209.4	215.9	218.9	222.0	225.1	228.1
97.5°	198.3	207.8	217.4	223.8	226.7	229.7	232.8	235.8
100°	205.2	214.3	223.5	229.7	233.0	236.2	239.4	242.8
102.5°	214.2	223.1	232.1	238.0	241.1	244.0	247.0	250.0
105°	228.2	236.7	245.3	251.1	254.0	256.9	259.9	262.9
107.5°	243.9	252.4	260.8	266.4	268.9	271.6	274.1	276.7
110°	255.2	263.6	272.0	277.2	279.4	281.7	284.0	286.2



TEST NUMBER: P332183-840

CATALOG NUMBER: S123DIW-S1000D460U840-4F0-1E-UDD-D1

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	265.5	273.7	281.9	287.3	289.9	292.6	295.3	297.9
115°	282.7	290.1	297.5	302.5	304.8	307.1	309.4	311.7
117.5°	299.6	306.8	314.1	318.7	320.8	323.0	325.1	327.2
120°	311.3	318.3	325.2	329.6	331.6	333.6	335.5	337.4
122.5°	323.4	329.9	336.4	340.6	342.4	344.3	346.2	348.0
125°	341.1	347.1	353.1	357.0	358.7	360.4	362.1	364.0
127.5°	358.5	364.1	369.5	373.0	374.7	376.3	377.9	379.5
130°	370.1	375.5	380.8	384.2	385.3	386.4	387.5	388.6
132.5°	381.1	386.2	391.3	394.6	396.1	397.6	399.2	400.7
135°	398.3	403.3	408.5	411.7	413.0	414.3	415.7	417.0
137.5°	415.3	419.7	424.0	426.9	428.0	429.1	430.3	431.4
140°	426.8	431.3	435.8	438.4	439.2	440.0	440.8	441.6
142.5°	436.8	440.8	444.7	447.3	448.3	449.2	450.2	451.2
145°	455.0	457.4	459.7	461.3	462.1	462.9	463.7	464.5
147.5°	472.9	473.6	474.4	475.0	475.5	475.9	476.5	477.0
150°	484.6	484.6	484.6	484.6	484.6	484.6	484.6	484.6
152.5°	496.7	496.9	497.1	496.9	496.4	496.0	495.6	495.2
155°	514.3	514.7	515.1	514.9	514.2	513.5	512.8	512.1
157.5°	529.5	529.9	530.3	530.2	529.7	529.1	528.5	528.0
160°	538.8	539.3	539.8	539.8	539.4	539.0	538.6	538.2
162.5°	547.5	548.1	548.6	548.5	547.9	547.1	546.5	545.8
165°	558.7	559.3	559.9	559.8	559.1	558.4	557.6	556.9
167.5°	567.6	568.3	568.9	568.9	568.3	567.6	567.0	566.3
170°	572.6	573.3	574.0	574.0	573.3	572.6	571.9	571.2
172.5°	576.4	577.0	577.6	577.6	576.9	576.2	575.5	574.8
175°	580.6	581.2	581.8	581.8	581.1	580.4	579.7	579.0
177.5°	582.5	583.0	583.4	583.4	582.8	582.3	581.7	581.1
180°	582.6	582.6	582.6	582.6	582.6	582.6	582.6	582.6

(END OF REPORT)