

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: P332212-840

Luminaire Tested: **S123DIW-S1165D460U840-4F0-1E-UDD-D**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332212-840
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-5,
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S123DIW-S1165D460U840-4F0-1E-UDD-D
Description: DEFINE 3 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 1165 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER
UPLIGHT 460 LUMENS PER FOOT, NO LENS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 6761.0 lumens
Efficiency: N/A
Efficacy: 129.0 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

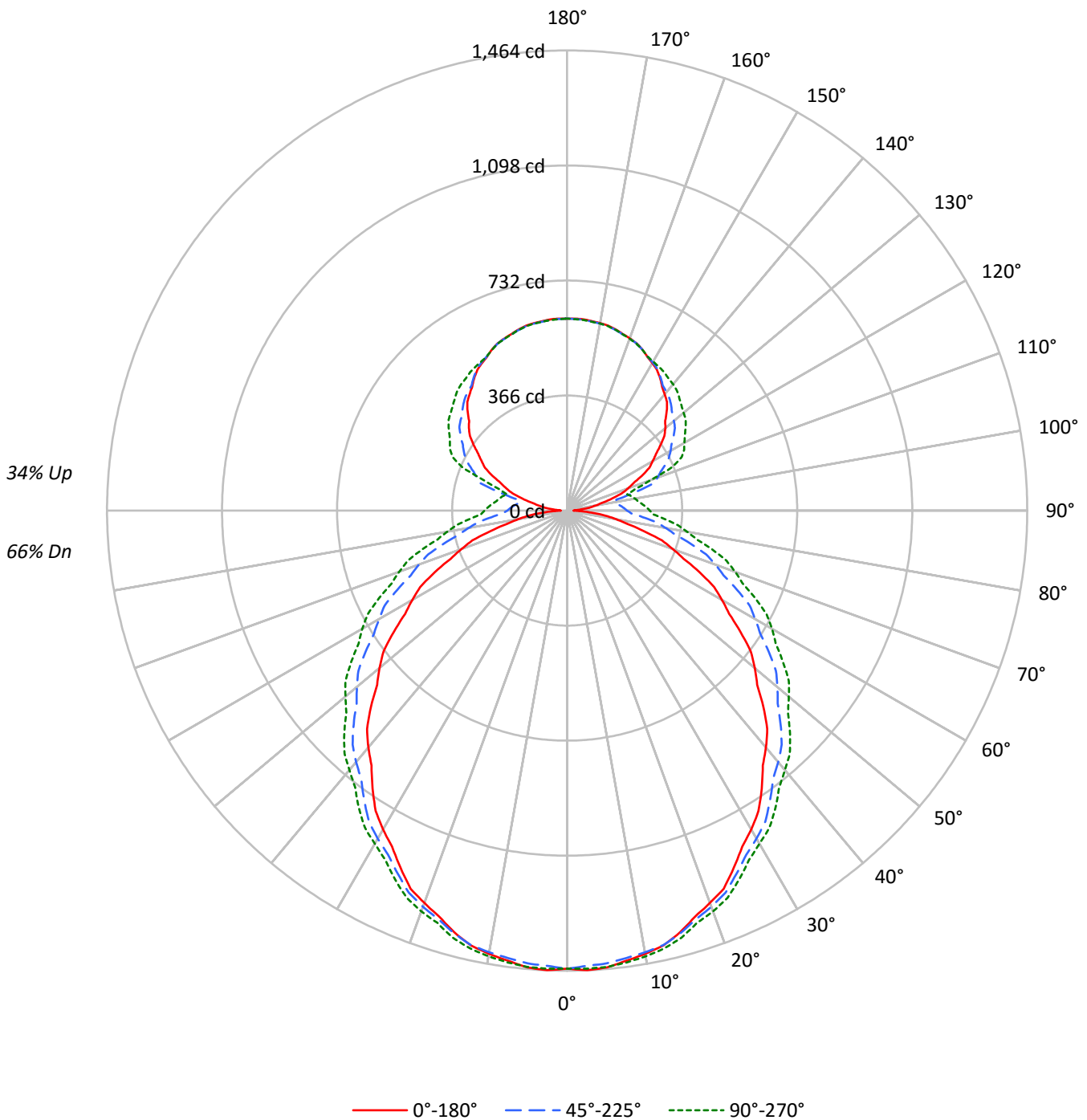
Input Watts (W): 52.4
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	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	70	67	65	61	59	57	53
2	91	82	75	69	85	77	71	66	69	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	64	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°	15685	15685	15685
5°	15735	15290	15299
10°	15593	14937	14863
15°	15393	14539	14387
20°	15105	14082	13865
25°	14751	13556	13315
30°	14388	13084	12757
35°	13980	12583	12311
40°	13592	12128	11834
45°	13161	11692	11453
50°	12735	11259	11034
55°	12267	10818	10657
60°	11808	10368	10270
65°	11339	9889	9809
70°	10633	9352	9336
75°	9740	8736	8855
80°	8709	8132	8306
85°	7760	7716	7988



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	138.1	2.0
10°-20°	393.8	5.8
20°-30°	589.0	8.7
30°-40°	703.4	10.4
40°-50°	735.9	10.9
50°-60°	690.6	10.2
60°-70°	576.8	8.5
70°-80°	412.7	6.1
80°-90°	247.8	3.7
90°-100°	176.6	2.6
100°-110°	219.3	3.2
110°-120°	330.0	4.9
120°-130°	367.0	5.4
130°-140°	365.3	5.4
140°-150°	327.6	4.8
150°-160°	260.9	3.9
160°-170°	168.4	2.5
170°-180°	58.0	0.9
0°-30°	1120.9	16.6
0°-40°	1824.3	27.0
0°-60°	3250.8	48.1
0°-90°	4488.1	66.4
90°-120°	725.8	10.7
90°-150°	1785.6	26.4
90°-180°	2273.0	33.6
0°-180°	6761.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1457	1457	1457	1457	1457	
5°	1459	1455	1446	1458	1457	138
15°	1389	1393	1392	1407	1406	391
25°	1254	1269	1275	1294	1295	578
35°	1079	1105	1126	1148	1156	675
45°	883	921	960	990	1003	680
55°	673	726	783	824	838	602
65°	465	528	597	643	660	459
75°	252	327	406	457	478	270
85°	78	157	241	293	311	82
90°	21	104	190	244	263	15
95°	45	91	171	222	239	48
105°	148	190	218	185	198	156
115°	262	286	345	386	402	258
125°	362	368	414	447	460	324
135°	448	450	469	497	505	345
145°	515	517	518	531	538	322
155°	566	565	565	567	565	261
165°	597	595	595	598	595	169
175°	611	608	609	612	608	58
180°	611	611	611	611	611	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1457.2	1457.2	1457.2	1457.2	1457.2	1457.2	1457.2	1457.2	1457.2	1457.2	1457.2
2.5°	1463.6	1462.8	1461.9	1461.1	1460.2	1458.6	1456.4	1454.1	1451.9	1449.7	1451.9
5°	1458.9	1458.1	1457.4	1456.7	1456.0	1454.6	1452.5	1450.4	1448.2	1446.1	1449.0
7.5°	1444.5	1444.7	1444.8	1445.0	1445.1	1444.2	1442.1	1440.1	1438.0	1435.9	1439.5
10°	1431.9	1432.6	1433.3	1434.0	1434.7	1434.1	1432.4	1430.6	1428.9	1427.0	1430.6
12.5°	1416.6	1417.5	1418.6	1419.6	1420.6	1420.5	1419.3	1418.1	1416.8	1415.6	1418.9
15°	1389.0	1390.1	1391.1	1392.2	1393.2	1393.6	1393.2	1392.9	1392.5	1392.2	1395.7
17.5°	1354.0	1356.1	1358.3	1360.4	1362.5	1363.5	1363.4	1363.2	1363.1	1362.9	1366.1
20°	1328.7	1330.8	1332.9	1335.0	1337.2	1338.6	1339.3	1340.0	1340.7	1341.4	1344.5
22.5°	1302.0	1304.1	1306.3	1308.4	1310.5	1312.0	1313.0	1314.0	1314.9	1316.0	1320.0
25°	1254.1	1257.6	1261.1	1264.7	1268.2	1270.4	1271.5	1272.5	1273.6	1274.7	1279.3
27.5°	1205.8	1209.8	1213.9	1217.9	1221.8	1225.1	1227.3	1229.5	1231.8	1234.1	1238.0
30°	1171.5	1176.1	1180.6	1185.3	1189.8	1193.6	1196.4	1199.2	1202.0	1204.9	1209.1
32.5°	1133.4	1138.5	1143.7	1148.8	1154.0	1158.4	1162.1	1165.8	1169.4	1173.1	1177.6
35°	1079.4	1085.1	1090.8	1096.4	1102.1	1107.1	1111.8	1116.3	1120.8	1125.5	1130.7
37.5°	1022.3	1028.6	1035.0	1041.4	1047.7	1053.7	1059.3	1065.0	1070.7	1076.3	1082.3
40°	984.2	990.6	996.9	1003.2	1009.6	1016.3	1023.4	1030.4	1037.4	1044.5	1050.6
42.5°	942.3	950.1	957.9	965.5	973.3	980.9	988.3	995.5	1002.9	1010.3	1016.8
45°	882.6	891.1	899.5	908.0	916.5	925.1	933.9	942.7	951.6	960.4	967.0
47.5°	820.0	829.6	839.2	848.9	858.5	868.3	878.4	888.5	898.6	908.7	916.1
50°	779.4	789.3	799.2	809.0	818.9	829.3	840.3	851.2	862.1	873.0	881.2
52.5°	736.3	746.7	757.1	767.6	778.0	789.3	801.3	813.3	825.5	837.5	846.0
55°	673.1	684.7	696.3	708.0	719.6	731.7	744.5	757.2	769.9	782.6	792.1
57.5°	611.5	623.6	635.7	647.8	660.0	673.1	686.9	700.8	714.7	728.6	738.2
60°	568.3	581.0	593.7	606.4	619.0	632.7	647.1	661.6	676.1	690.5	700.4
62.5°	527.7	540.7	553.6	566.6	579.6	593.7	609.0	624.3	639.6	655.0	664.8
65°	465.1	478.9	492.6	506.3	520.2	534.8	550.3	565.8	581.4	596.8	607.4
67.5°	401.6	416.3	430.8	445.5	460.0	475.2	491.0	506.9	522.6	538.5	550.0
70°	357.2	372.3	387.5	402.6	417.9	433.9	450.8	467.8	484.7	501.6	512.9
72.5°	316.5	331.7	346.9	362.0	377.2	393.5	411.0	428.5	446.1	463.5	475.1
75°	252.4	269.0	285.6	302.2	318.7	335.8	353.5	371.1	388.7	406.4	418.0
77.5°	196.5	213.3	229.9	246.7	263.4	280.6	298.4	316.2	334.0	351.7	364.1
80°	157.1	174.4	191.8	209.0	226.3	244.1	262.5	280.8	299.1	317.5	329.5
82.5°	122.9	140.5	158.0	175.6	193.1	211.3	229.8	248.5	267.1	285.7	297.7
85°	77.8	95.4	113.1	130.7	148.3	166.5	185.2	203.9	222.6	241.3	253.3
87.5°	42.3	60.1	77.9	95.6	113.4	131.4	149.7	167.9	186.1	204.4	216.5
90°	21.1	39.4	57.7	75.9	94.2	113.1	132.4	151.7	171.0	190.3	202.7
92.5°	27.8	43.1	58.5	73.7	89.1	106.0	124.7	143.4	162.2	180.9	193.2
95°	45.1	54.7	64.4	74.0	83.6	97.7	116.0	134.4	152.8	171.2	182.9
97.5°	71.2	81.7	92.3	102.9	113.4	123.3	132.6	141.8	151.1	160.4	171.7
100°	91.0	104.2	117.5	130.9	144.2	151.1	151.6	152.1	152.6	153.1	164.1
102.5°	113.6	125.2	136.8	148.5	160.1	165.3	164.0	162.8	161.6	160.4	167.7
105°	147.9	157.4	167.0	176.6	186.2	194.0	200.2	206.2	212.3	218.4	210.5
107.5°	182.5	190.6	198.6	206.7	214.8	226.8	242.6	258.4	274.3	290.0	286.4
110°	205.5	212.7	219.8	227.0	234.2	245.3	260.5	275.8	291.0	306.2	312.0



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	228.7	234.7	240.7	246.6	252.6	262.9	277.5	292.2	306.8	321.4	330.4
115°	261.6	266.4	271.2	276.1	280.9	290.1	303.8	317.3	330.9	344.6	354.1
117.5°	294.6	297.9	301.2	304.6	308.0	315.9	328.2	340.6	353.0	365.4	374.6
120°	314.0	316.6	319.3	321.9	324.7	331.9	343.9	355.9	367.8	379.7	388.7
122.5°	335.0	336.7	338.3	340.0	341.6	348.2	359.7	371.1	382.6	394.0	402.4
125°	362.2	363.0	363.9	364.7	365.5	371.2	381.8	392.5	403.1	413.7	421.4
127.5°	390.2	390.7	391.1	391.6	392.0	396.8	405.7	414.7	423.6	432.5	439.9
130°	407.7	408.1	408.6	409.0	409.5	413.4	420.9	428.4	435.8	443.2	450.4
132.5°	423.1	423.8	424.5	425.3	426.1	429.4	435.4	441.3	447.3	453.2	460.1
135°	448.3	448.5	448.8	449.0	449.3	451.5	455.9	460.1	464.4	468.7	475.3
137.5°	469.7	470.2	470.7	471.2	471.7	473.1	475.5	478.0	480.3	482.7	488.8
140°	483.0	483.6	484.2	484.8	485.4	486.4	487.8	489.1	490.5	491.8	497.6
142.5°	496.4	496.8	497.1	497.4	497.7	498.1	498.7	499.2	499.7	500.2	505.2
145°	515.2	515.5	515.9	516.2	516.6	516.8	517.1	517.3	517.5	517.7	520.7
147.5°	531.3	531.8	532.2	532.7	533.1	533.5	533.7	533.9	534.1	534.3	535.3
150°	542.2	542.5	542.8	543.1	543.4	543.6	543.8	544.0	544.2	544.4	544.6
152.5°	552.0	552.1	552.3	552.4	552.6	552.7	552.8	552.9	553.0	553.2	553.5
155°	565.7	565.5	565.3	565.2	565.0	564.9	565.0	565.1	565.2	565.3	565.8
157.5°	576.5	576.4	576.4	576.4	576.4	576.3	576.2	576.1	576.0	575.9	576.5
160°	583.0	582.9	582.8	582.7	582.6	582.5	582.4	582.3	582.2	582.1	582.7
162.5°	589.2	589.0	588.7	588.4	588.1	587.9	587.8	587.7	587.6	587.5	588.2
165°	596.6	596.3	596.0	595.7	595.4	595.2	595.1	595.0	594.9	594.8	595.6
167.5°	602.5	602.1	601.7	601.3	600.9	600.7	600.7	600.7	600.7	600.7	601.5
170°	605.7	605.3	604.9	604.5	604.1	603.9	603.9	603.9	603.9	603.9	604.7
172.5°	607.8	607.4	606.9	606.4	605.9	605.7	605.8	605.9	606.0	606.0	606.8
175°	610.7	610.2	609.7	609.2	608.6	608.4	608.5	608.6	608.7	608.8	609.6
177.5°	611.4	611.0	610.6	610.2	609.8	609.7	609.8	609.8	609.9	610.0	610.6
180°	610.7	610.7	610.7	610.7	610.7	610.7	610.7	610.7	610.7	610.7	610.7



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1457.2	1457.2	1457.2	1457.2	1457.2	1457.2	1457.2	1457.2
2.5°	1454.1	1456.4	1458.6	1459.7	1459.4	1459.1	1458.8	1458.5
5°	1451.8	1454.6	1457.4	1458.6	1458.3	1457.9	1457.6	1457.2
7.5°	1443.0	1446.5	1450.1	1451.7	1451.2	1450.8	1450.4	1450.0
10°	1434.1	1437.6	1441.2	1442.6	1441.9	1441.2	1440.5	1439.8
12.5°	1422.2	1425.4	1428.7	1429.9	1429.2	1428.5	1427.7	1427.0
15°	1399.2	1402.7	1406.2	1407.9	1407.5	1407.1	1406.8	1406.4
17.5°	1369.3	1372.5	1375.6	1377.0	1376.5	1376.0	1375.5	1375.0
20°	1347.7	1350.9	1354.0	1355.8	1356.1	1356.6	1356.9	1357.3
22.5°	1324.0	1328.1	1332.0	1333.9	1333.7	1333.5	1333.3	1333.1
25°	1283.8	1288.5	1293.0	1295.4	1295.4	1295.4	1295.4	1295.4
27.5°	1241.9	1245.9	1249.8	1251.9	1252.2	1252.5	1252.8	1253.1
30°	1213.4	1217.6	1221.7	1223.9	1223.9	1223.9	1223.9	1223.9
32.5°	1182.1	1186.7	1191.1	1193.9	1194.7	1195.6	1196.4	1197.2
35°	1136.1	1141.3	1146.6	1150.0	1151.4	1152.9	1154.3	1155.6
37.5°	1088.2	1094.3	1100.2	1103.8	1105.0	1106.1	1107.2	1108.3
40°	1056.5	1062.5	1068.5	1072.2	1073.6	1075.0	1076.4	1077.8
42.5°	1023.4	1030.0	1036.5	1040.8	1042.7	1044.7	1046.6	1048.6
45°	973.8	980.5	987.2	992.0	994.8	997.6	1000.5	1003.2
47.5°	923.7	931.3	938.9	943.7	945.8	948.1	950.3	952.4
50°	889.3	897.5	905.5	910.8	913.3	915.7	918.3	920.7
52.5°	854.3	862.7	871.1	876.9	879.9	882.9	886.0	889.0
55°	801.6	811.1	820.7	826.9	829.7	832.5	835.4	838.2
57.5°	747.8	757.4	767.0	773.5	776.8	780.1	783.5	786.7
60°	710.2	720.1	730.0	736.9	740.8	744.7	748.5	752.5
62.5°	674.7	684.6	694.5	701.3	704.8	708.4	712.1	715.6
65°	618.0	628.6	639.2	646.2	649.7	653.3	656.8	660.4
67.5°	561.6	573.2	584.7	592.0	595.0	597.9	600.9	603.9
70°	524.2	535.5	546.7	554.2	557.7	561.3	564.7	568.3
72.5°	486.7	498.3	509.8	517.4	520.9	524.4	528.0	531.5
75°	429.7	441.3	452.9	460.9	465.1	469.4	473.6	477.8
77.5°	376.3	388.6	400.9	408.6	411.9	415.2	418.4	421.6
80°	341.4	353.5	365.5	373.2	376.8	380.3	383.8	387.3
82.5°	309.7	321.7	333.7	341.4	345.0	348.5	352.0	355.6
85°	265.3	277.3	289.2	297.0	300.5	304.1	307.6	311.1
87.5°	228.5	240.7	252.7	260.5	264.1	267.7	271.2	274.8
90°	215.1	227.4	239.8	247.9	251.7	255.4	259.1	262.9
92.5°	205.5	217.9	230.2	238.1	241.5	244.9	248.2	251.6
95°	194.5	206.1	217.8	225.4	228.9	232.5	235.9	239.4
97.5°	183.0	194.3	205.6	213.1	216.7	220.4	224.0	227.6
100°	175.1	186.2	197.2	204.6	208.2	211.8	215.4	219.0
102.5°	175.2	182.7	190.2	195.7	199.4	203.1	206.8	210.6
105°	202.5	194.5	186.5	184.2	187.6	191.0	194.4	197.7
107.5°	282.8	279.1	275.5	268.5	258.2	247.8	237.5	227.1
110°	317.9	323.8	329.6	326.7	315.1	303.6	292.0	280.3



TEST NUMBER: P332212-840

CATALOG NUMBER: S123DIW-S1165D460U840-4F0-1E-UDD-D

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	339.3	348.3	357.3	361.7	361.8	361.9	361.9	362.0
115°	363.6	372.9	382.4	388.8	392.0	395.3	398.5	401.7
117.5°	383.7	393.0	402.2	408.2	411.0	413.8	416.7	419.5
120°	397.6	406.5	415.5	421.1	423.5	426.1	428.5	431.0
122.5°	410.8	419.3	427.7	433.1	435.7	438.2	440.8	443.3
125°	429.0	436.6	444.2	449.4	452.0	454.6	457.4	460.0
127.5°	447.2	454.4	461.8	466.6	468.8	470.9	473.1	475.3
130°	457.5	464.5	471.7	476.2	478.1	480.0	481.9	483.8
132.5°	466.9	473.7	480.5	485.0	487.2	489.3	491.4	493.5
135°	482.0	488.7	495.2	499.4	500.8	502.3	503.7	505.2
137.5°	494.8	500.9	507.0	510.8	512.3	513.9	515.4	517.1
140°	503.2	508.9	514.6	518.3	519.8	521.4	522.9	524.5
142.5°	510.3	515.3	520.4	523.6	525.1	526.6	528.1	529.6
145°	523.7	526.7	529.8	532.0	533.4	534.8	536.2	537.7
147.5°	536.3	537.5	538.5	539.4	540.2	541.0	541.8	542.6
150°	544.8	545.0	545.2	545.5	545.9	546.3	546.7	547.1
152.5°	553.9	554.2	554.6	554.6	554.3	554.0	553.7	553.3
155°	566.3	566.8	567.3	567.2	566.6	566.0	565.4	564.9
157.5°	577.1	577.7	578.3	578.2	577.4	576.7	575.9	575.1
160°	583.3	583.9	584.5	584.5	583.8	583.1	582.4	581.7
162.5°	589.0	589.7	590.3	590.4	589.7	589.1	588.4	587.8
165°	596.4	597.2	598.0	598.0	597.3	596.7	596.0	595.3
167.5°	602.3	603.0	603.8	603.8	603.0	602.3	601.5	600.7
170°	605.5	606.3	607.1	607.1	606.3	605.5	604.7	603.9
172.5°	607.6	608.4	609.3	609.3	608.3	607.4	606.6	605.7
175°	610.3	611.0	611.7	611.7	610.9	610.1	609.3	608.4
177.5°	611.3	611.9	612.6	612.5	611.7	610.9	610.1	609.3
180°	610.7	610.7	610.7	610.7	610.7	610.7	610.7	610.7

(END OF REPORT)