

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: P332212-830

Luminaire Tested: **S123DIW-S1165D460U830-4F0-1E-UDD-D**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332212-830
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-S1165D460U830-4F0-1E-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: 6310.3 lumens
Efficiency: N/A
Efficacy: 120.4 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

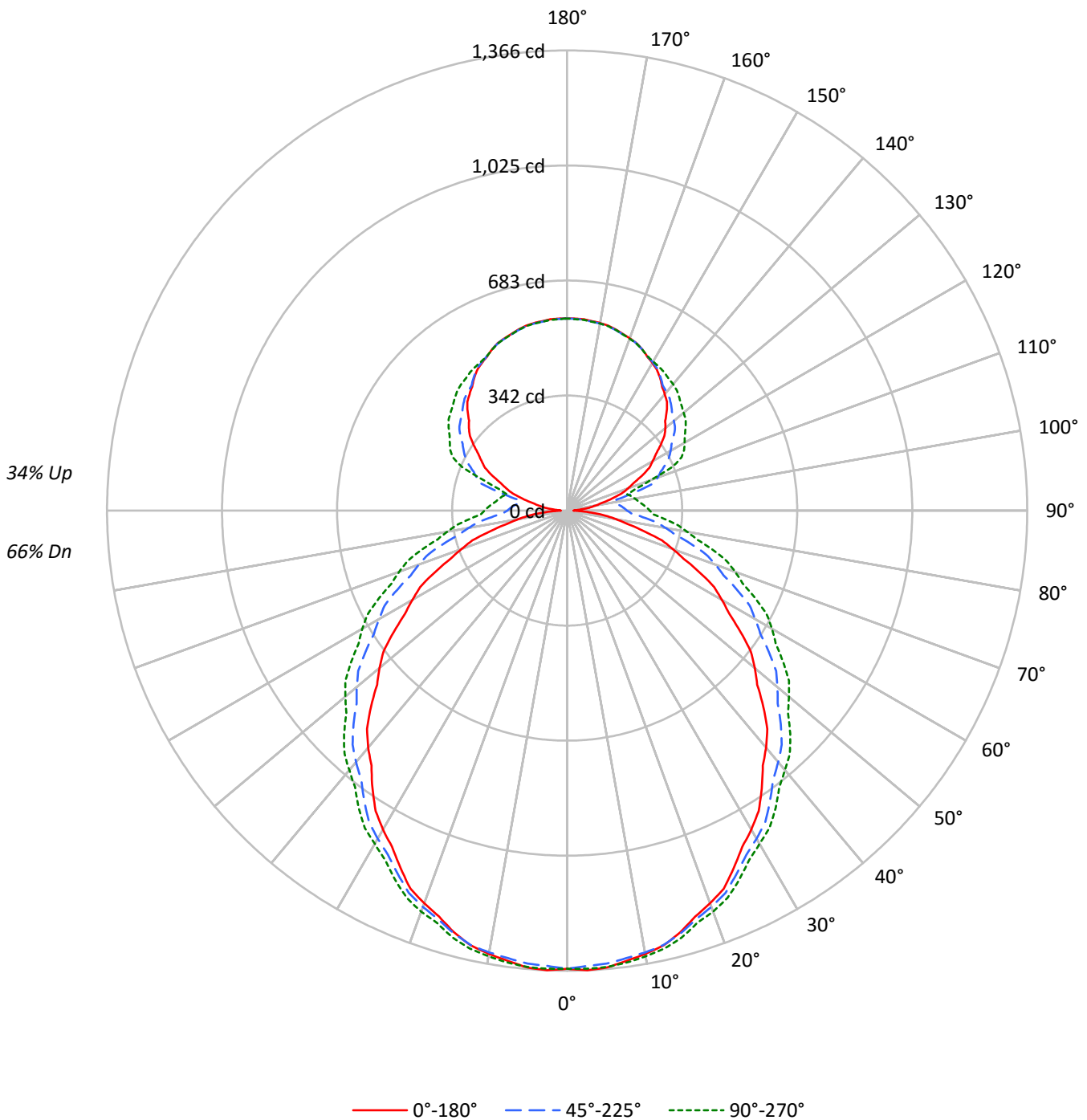
Input Watts (W): 52.4
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P332212-830

CATALOG NUMBER: S123DIW-S1165D460U830-4F0-1E-UDD-D

Luminous Intensity Polar Plot





TEST NUMBER: P332212-830

CATALOG NUMBER: S123DIW-S1165D460U830-4F0-1E-UDD-D

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	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°	14640	14640	14640
5°	14685	14271	14279
10°	14553	13942	13872
15°	14366	13569	13429
20°	14098	13143	12941
25°	13767	12652	12427
30°	13428	12211	11906
35°	13049	11744	11491
40°	12686	11320	11046
45°	12284	10913	10690
50°	11887	10508	10298
55°	11448	10097	9946
60°	11021	9677	9585
65°	10584	9230	9154
70°	9925	8729	8713
75°	9088	8154	8264
80°	8133	7589	7753
85°	7242	7201	7456



TEST NUMBER: P332212-830

CATALOG NUMBER: S123DIW-S1165D460U830-4F0-1E-UDD-D

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	128.9	2.0
10°-20°	367.5	5.8
20°-30°	549.7	8.7
30°-40°	656.5	10.4
40°-50°	686.9	10.9
50°-60°	644.6	10.2
60°-70°	538.3	8.5
70°-80°	385.2	6.1
80°-90°	231.3	3.7
90°-100°	164.8	2.6
100°-110°	204.7	3.2
110°-120°	308.0	4.9
120°-130°	342.5	5.4
130°-140°	340.9	5.4
140°-150°	305.7	4.8
150°-160°	243.5	3.9
160°-170°	157.1	2.5
170°-180°	54.2	0.9
0°-30°	1046.2	16.6
0°-40°	1702.7	27.0
0°-60°	3034.1	48.1
0°-90°	4188.9	66.4
90°-120°	677.5	10.7
90°-150°	1666.6	26.4
90°-180°	2121.0	33.6
0°-180°	6310.3	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1360	1360	1360	1360	1360	
5°	1362	1358	1350	1361	1360	129
15°	1296	1300	1299	1313	1313	365
25°	1170	1185	1190	1208	1209	539
35°	1008	1031	1050	1072	1079	630
45°	824	859	896	924	936	635
55°	628	677	730	769	782	562
65°	434	492	557	600	616	429
75°	236	305	379	426	446	252
85°	73	147	225	274	290	76
90°	20	97	178	228	245	14
95°	42	85	160	207	224	45
105°	138	177	204	173	184	146
115°	244	266	322	360	375	241
125°	338	344	386	417	429	302
135°	418	420	437	464	472	322
145°	481	482	483	496	502	301
155°	528	527	528	529	527	243
165°	557	556	555	558	556	157
175°	570	568	568	571	568	54
180°	570	570	570	570	570	



TEST NUMBER: P332212-830

CATALOG NUMBER: S123DIW-S1165D460U830-4F0-1E-UDD-D

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1360.1	1360.1	1360.1	1360.1	1360.1	1360.1	1360.1	1360.1	1360.1	1360.1	1360.1
2.5°	1366.0	1365.3	1364.4	1363.7	1362.8	1361.4	1359.3	1357.2	1355.1	1353.0	1355.1
5°	1361.6	1360.9	1360.3	1359.6	1359.0	1357.6	1355.7	1353.7	1351.7	1349.7	1352.4
7.5°	1348.2	1348.4	1348.5	1348.7	1348.8	1347.9	1346.0	1344.1	1342.2	1340.2	1343.5
10°	1336.4	1337.1	1337.8	1338.4	1339.1	1338.5	1336.9	1335.2	1333.6	1331.9	1335.2
12.5°	1322.2	1323.0	1324.0	1324.9	1325.9	1325.8	1324.6	1323.5	1322.4	1321.3	1324.3
15°	1296.4	1297.4	1298.4	1299.4	1300.3	1300.7	1300.3	1300.0	1299.7	1299.4	1302.7
17.5°	1263.8	1265.7	1267.7	1269.7	1271.7	1272.6	1272.5	1272.3	1272.2	1272.1	1275.1
20°	1240.1	1242.1	1244.1	1246.0	1248.0	1249.3	1250.0	1250.7	1251.3	1252.0	1254.9
22.5°	1215.2	1217.2	1219.2	1221.2	1223.1	1224.6	1225.5	1226.4	1227.3	1228.2	1232.0
25°	1170.4	1173.7	1177.0	1180.3	1183.6	1185.7	1186.8	1187.7	1188.7	1189.7	1194.0
27.5°	1125.4	1129.2	1132.9	1136.7	1140.4	1143.4	1145.5	1147.5	1149.7	1151.8	1155.5
30°	1093.4	1097.7	1101.9	1106.3	1110.5	1114.0	1116.6	1119.3	1121.9	1124.5	1128.5
32.5°	1057.8	1062.6	1067.4	1072.2	1077.0	1081.2	1084.6	1088.1	1091.5	1094.9	1099.1
35°	1007.5	1012.8	1018.0	1023.3	1028.6	1033.3	1037.6	1041.9	1046.1	1050.5	1055.4
37.5°	954.1	960.1	966.0	971.9	977.9	983.4	988.7	994.0	999.3	1004.6	1010.1
40°	918.6	924.5	930.5	936.3	942.3	948.6	955.2	961.7	968.3	974.9	980.5
42.5°	879.5	886.7	894.0	901.2	908.4	915.5	922.4	929.2	936.0	942.9	949.0
45°	823.8	831.7	839.5	847.4	855.4	863.5	871.7	879.9	888.2	896.4	902.6
47.5°	765.3	774.3	783.3	792.3	801.3	810.4	819.8	829.2	838.7	848.1	855.1
50°	727.5	736.7	745.9	755.1	764.3	774.0	784.3	794.5	804.6	814.8	822.5
52.5°	687.2	696.9	706.6	716.4	726.1	736.7	747.9	759.1	770.4	781.7	789.6
55°	628.2	639.0	649.9	660.8	671.7	683.0	694.8	706.7	718.6	730.5	739.3
57.5°	570.7	582.0	593.3	604.6	616.0	628.2	641.1	654.1	667.0	680.0	689.0
60°	530.4	542.2	554.1	566.0	577.8	590.5	604.0	617.5	631.0	644.5	653.7
62.5°	492.5	504.6	516.7	528.9	540.9	554.1	568.4	582.7	597.0	611.3	620.5
65°	434.1	447.0	459.8	472.6	485.5	499.2	513.6	528.1	542.6	557.0	566.9
67.5°	374.8	388.5	402.1	415.8	429.3	443.6	458.3	473.1	487.8	502.6	513.3
70°	333.4	347.5	361.7	375.8	390.0	405.0	420.8	436.6	452.4	468.2	478.7
72.5°	295.4	309.6	323.8	337.9	352.0	367.3	383.6	399.9	416.3	432.6	443.5
75°	235.5	251.1	266.6	282.0	297.5	313.4	329.9	346.4	362.8	379.3	390.1
77.5°	183.4	199.1	214.6	230.3	245.8	261.9	278.5	295.1	311.7	328.3	339.8
80°	146.7	162.8	179.0	195.1	211.2	227.8	245.0	262.1	279.2	296.3	307.6
82.5°	114.7	131.1	147.5	163.9	180.2	197.2	214.5	232.0	249.3	266.6	277.9
85°	72.6	89.1	105.6	122.0	138.5	155.4	172.9	190.3	207.7	225.2	236.4
87.5°	39.5	56.1	72.7	89.3	105.8	122.6	139.7	156.7	173.7	190.8	202.1
90°	19.7	36.8	53.8	70.9	87.9	105.6	123.6	141.6	159.6	177.6	189.2
92.5°	25.9	40.2	54.6	68.8	83.1	99.0	116.4	133.8	151.4	168.8	180.3
95°	42.1	51.1	60.1	69.1	78.0	91.1	108.3	125.5	142.6	159.8	170.7
97.5°	66.4	76.3	86.1	96.0	105.8	115.1	123.8	132.3	141.0	149.7	160.2
100°	84.9	97.3	109.7	122.2	134.6	141.0	141.5	141.9	142.4	142.9	153.2
102.5°	106.0	116.9	127.7	138.6	149.4	154.3	153.1	151.9	150.8	149.7	156.6
105°	138.1	146.9	155.9	164.9	173.8	181.1	186.8	192.5	198.1	203.9	196.4
107.5°	170.3	177.9	185.4	192.9	200.5	211.7	226.4	241.2	256.0	270.7	267.3
110°	191.8	198.5	205.2	211.9	218.6	228.9	243.2	257.4	271.6	285.8	291.2



TEST NUMBER: P332212-830

CATALOG NUMBER: S123DIW-S1165D460U830-4F0-1E-UDD-D

CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	213.5	219.0	224.6	230.2	235.7	245.3	259.0	272.7	286.3	300.0	308.4
115°	244.1	248.6	253.2	257.7	262.2	270.8	283.5	296.1	308.9	321.6	330.5
117.5°	274.9	278.1	281.2	284.3	287.5	294.8	306.3	317.9	329.5	341.0	349.6
120°	293.0	295.5	298.0	300.5	303.0	309.8	320.9	332.2	343.3	354.4	362.8
122.5°	312.6	314.2	315.8	317.4	318.9	325.0	335.7	346.4	357.1	367.8	375.6
125°	338.1	338.8	339.6	340.4	341.1	346.5	356.4	366.4	376.3	386.2	393.3
127.5°	364.2	364.7	365.0	365.5	365.9	370.3	378.6	387.0	395.4	403.7	410.6
130°	380.5	380.9	381.4	381.7	382.2	385.9	392.9	399.8	406.7	413.7	420.4
132.5°	394.9	395.6	396.2	396.9	397.7	400.8	406.3	411.9	417.5	423.0	429.4
135°	418.4	418.6	418.9	419.1	419.3	421.4	425.5	429.4	433.5	437.4	443.7
137.5°	438.4	438.8	439.3	439.8	440.3	441.6	443.8	446.1	448.3	450.5	456.2
140°	450.8	451.4	451.9	452.5	453.1	453.9	455.2	456.5	457.8	459.0	464.4
142.5°	463.4	463.6	463.9	464.2	464.5	464.9	465.4	465.9	466.4	466.8	471.6
145°	480.9	481.2	481.5	481.8	482.2	482.4	482.6	482.8	483.0	483.1	486.0
147.5°	495.9	496.3	496.7	497.2	497.6	497.9	498.1	498.3	498.5	498.7	499.6
150°	506.1	506.3	506.6	506.9	507.2	507.4	507.6	507.7	507.9	508.1	508.3
152.5°	515.2	515.3	515.5	515.6	515.8	515.9	515.9	516.0	516.1	516.3	516.6
155°	528.0	527.8	527.6	527.5	527.4	527.3	527.4	527.4	527.5	527.6	528.1
157.5°	538.1	538.0	538.0	538.0	538.0	537.9	537.8	537.7	537.6	537.5	538.1
160°	544.1	544.0	543.9	543.8	543.8	543.7	543.6	543.5	543.4	543.3	543.8
162.5°	549.9	549.7	549.4	549.2	548.9	548.7	548.7	548.6	548.5	548.4	549.0
165°	556.9	556.6	556.3	556.0	555.7	555.5	555.4	555.3	555.3	555.2	555.9
167.5°	562.3	561.9	561.6	561.2	560.8	560.6	560.6	560.6	560.6	560.6	561.4
170°	565.3	565.0	564.6	564.2	563.8	563.6	563.6	563.6	563.6	563.6	564.4
172.5°	567.3	566.9	566.5	566.0	565.5	565.3	565.4	565.5	565.6	565.6	566.4
175°	570.0	569.5	569.0	568.5	568.1	567.9	568.0	568.1	568.2	568.3	568.9
177.5°	570.6	570.2	569.9	569.5	569.1	569.0	569.1	569.1	569.2	569.3	569.9
180°	570.0	570.0	570.0	570.0	570.0	570.0	570.0	570.0	570.0	570.0	570.0



TEST NUMBER: P332212-830

CATALOG NUMBER: S123DIW-S1165D460U830-4F0-1E-UDD-D

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1360.1	1360.1	1360.1	1360.1	1360.1	1360.1	1360.1	1360.1
2.5°	1357.2	1359.3	1361.4	1362.4	1362.1	1361.8	1361.5	1361.3
5°	1355.0	1357.6	1360.3	1361.4	1361.1	1360.7	1360.5	1360.1
7.5°	1346.8	1350.1	1353.4	1354.9	1354.4	1354.1	1353.7	1353.3
10°	1338.5	1341.8	1345.1	1346.4	1345.8	1345.1	1344.4	1343.8
12.5°	1327.4	1330.4	1333.4	1334.5	1333.9	1333.2	1332.6	1331.9
15°	1305.9	1309.2	1312.5	1314.0	1313.7	1313.3	1313.1	1312.7
17.5°	1278.0	1281.0	1283.9	1285.2	1284.8	1284.3	1283.8	1283.4
20°	1257.8	1260.8	1263.8	1265.5	1265.7	1266.1	1266.4	1266.8
22.5°	1235.8	1239.5	1243.2	1245.0	1244.8	1244.6	1244.4	1244.3
25°	1198.3	1202.6	1206.8	1209.0	1209.0	1209.0	1209.0	1209.0
27.5°	1159.1	1162.8	1166.5	1168.5	1168.8	1169.0	1169.3	1169.6
30°	1132.5	1136.4	1140.3	1142.3	1142.3	1142.3	1142.3	1142.3
32.5°	1103.3	1107.6	1111.7	1114.3	1115.0	1115.9	1116.6	1117.4
35°	1060.4	1065.3	1070.2	1073.4	1074.7	1076.0	1077.3	1078.6
37.5°	1015.7	1021.3	1026.9	1030.2	1031.3	1032.4	1033.4	1034.4
40°	986.1	991.6	997.3	1000.7	1002.0	1003.3	1004.7	1006.0
42.5°	955.2	961.3	967.4	971.4	973.2	975.1	976.9	978.7
45°	908.9	915.1	921.4	925.9	928.5	931.1	933.8	936.3
47.5°	862.1	869.2	876.3	880.8	882.8	884.9	886.9	888.9
50°	830.0	837.6	845.2	850.1	852.4	854.7	857.1	859.3
52.5°	797.4	805.2	813.0	818.4	821.2	824.1	826.9	829.7
55°	748.2	757.1	766.0	771.8	774.4	777.0	779.7	782.3
57.5°	698.0	706.9	715.9	721.9	725.0	728.1	731.2	734.2
60°	662.9	672.1	681.4	687.8	691.4	695.0	698.6	702.3
62.5°	629.7	638.9	648.2	654.5	657.8	661.2	664.6	667.9
65°	576.8	586.7	596.6	603.1	606.4	609.7	613.0	616.3
67.5°	524.1	535.0	545.7	552.5	555.3	558.1	560.8	563.6
70°	489.3	499.8	510.3	517.3	520.6	523.9	527.1	530.4
72.5°	454.2	465.1	475.8	482.9	486.2	489.5	492.8	496.1
75°	401.1	411.9	422.7	430.2	434.1	438.1	442.1	445.9
77.5°	351.2	362.7	374.2	381.4	384.5	387.5	390.5	393.5
80°	318.7	329.9	341.1	348.4	351.7	355.0	358.3	361.5
82.5°	289.1	300.3	311.4	318.7	322.0	325.3	328.6	331.9
85°	247.6	258.8	269.9	277.2	280.5	283.8	287.1	290.4
87.5°	213.3	224.6	235.8	243.2	246.5	249.9	253.2	256.5
90°	200.8	212.3	223.9	231.4	234.9	238.4	241.9	245.3
92.5°	191.8	203.4	214.9	222.3	225.4	228.6	231.7	234.8
95°	181.5	192.4	203.3	210.4	213.7	217.0	220.2	223.5
97.5°	170.8	181.3	191.9	198.9	202.3	205.7	209.1	212.4
100°	163.4	173.8	184.1	191.0	194.4	197.7	201.0	204.4
102.5°	163.5	170.5	177.5	182.7	186.2	189.5	193.0	196.5
105°	189.0	181.5	174.1	171.9	175.1	178.2	181.4	184.5
107.5°	263.9	260.5	257.1	250.6	241.0	231.3	221.7	212.0
110°	296.7	302.2	307.6	304.9	294.1	283.3	272.5	261.6



TEST NUMBER: P332212-830

CATALOG NUMBER: S123DIW-S1165D460U830-4F0-1E-UDD-D

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	316.7	325.1	333.5	337.6	337.7	337.8	337.8	337.9
115°	339.3	348.1	356.9	362.9	365.9	368.9	371.9	374.9
117.5°	358.2	366.8	375.4	381.0	383.6	386.3	388.9	391.5
120°	371.1	379.4	387.8	393.0	395.3	397.7	399.9	402.3
122.5°	383.4	391.3	399.2	404.3	406.6	409.0	411.4	413.8
125°	400.4	407.5	414.6	419.4	421.9	424.3	426.9	429.3
127.5°	417.4	424.1	431.0	435.5	437.5	439.5	441.6	443.7
130°	427.0	433.6	440.3	444.4	446.2	448.0	449.8	451.6
132.5°	435.7	442.1	448.5	452.7	454.7	456.7	458.6	460.6
135°	449.9	456.1	462.2	466.1	467.4	468.8	470.1	471.6
137.5°	461.8	467.5	473.2	476.7	478.2	479.7	481.1	482.6
140°	469.7	474.9	480.3	483.7	485.1	486.6	488.0	489.6
142.5°	476.3	481.0	485.7	488.7	490.1	491.5	492.9	494.3
145°	488.8	491.6	494.5	496.5	497.9	499.2	500.5	501.8
147.5°	500.6	501.6	502.6	503.4	504.2	504.9	505.7	506.4
150°	508.5	508.7	508.9	509.2	509.5	509.9	510.3	510.7
152.5°	517.0	517.3	517.6	517.6	517.4	517.1	516.8	516.4
155°	528.6	529.0	529.5	529.4	528.9	528.3	527.7	527.3
157.5°	538.7	539.2	539.8	539.7	538.9	538.3	537.5	536.8
160°	544.4	545.0	545.5	545.5	544.9	544.2	543.6	542.9
162.5°	549.7	550.4	550.9	551.0	550.4	549.8	549.2	548.7
165°	556.7	557.4	558.2	558.2	557.5	556.9	556.3	555.6
167.5°	562.1	562.8	563.5	563.5	562.8	562.1	561.4	560.6
170°	565.1	565.9	566.7	566.7	565.9	565.1	564.4	563.6
172.5°	567.1	567.9	568.6	568.6	567.8	566.9	566.2	565.3
175°	569.6	570.2	570.9	570.9	570.1	569.4	568.6	567.9
177.5°	570.5	571.1	571.7	571.7	570.9	570.1	569.4	568.6
180°	570.0	570.0	570.0	570.0	570.0	570.0	570.0	570.0

(END OF REPORT)