

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: P332049-830

Luminaire Tested: **S123DIP-S1165D365U830-4F0-1E-UDD-D1**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332049-830
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: S123DIP-S1165D365U830-4F0-1E-UDD-D1
Description: DEFINE 3 DIRECT-INDIRECT PENDANT LED LUMINAIRE
DOWNLIGHT 1165 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER
UPLIGHT 365 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 5746.6 lumens
Efficiency: N/A
Efficacy: 115.4 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

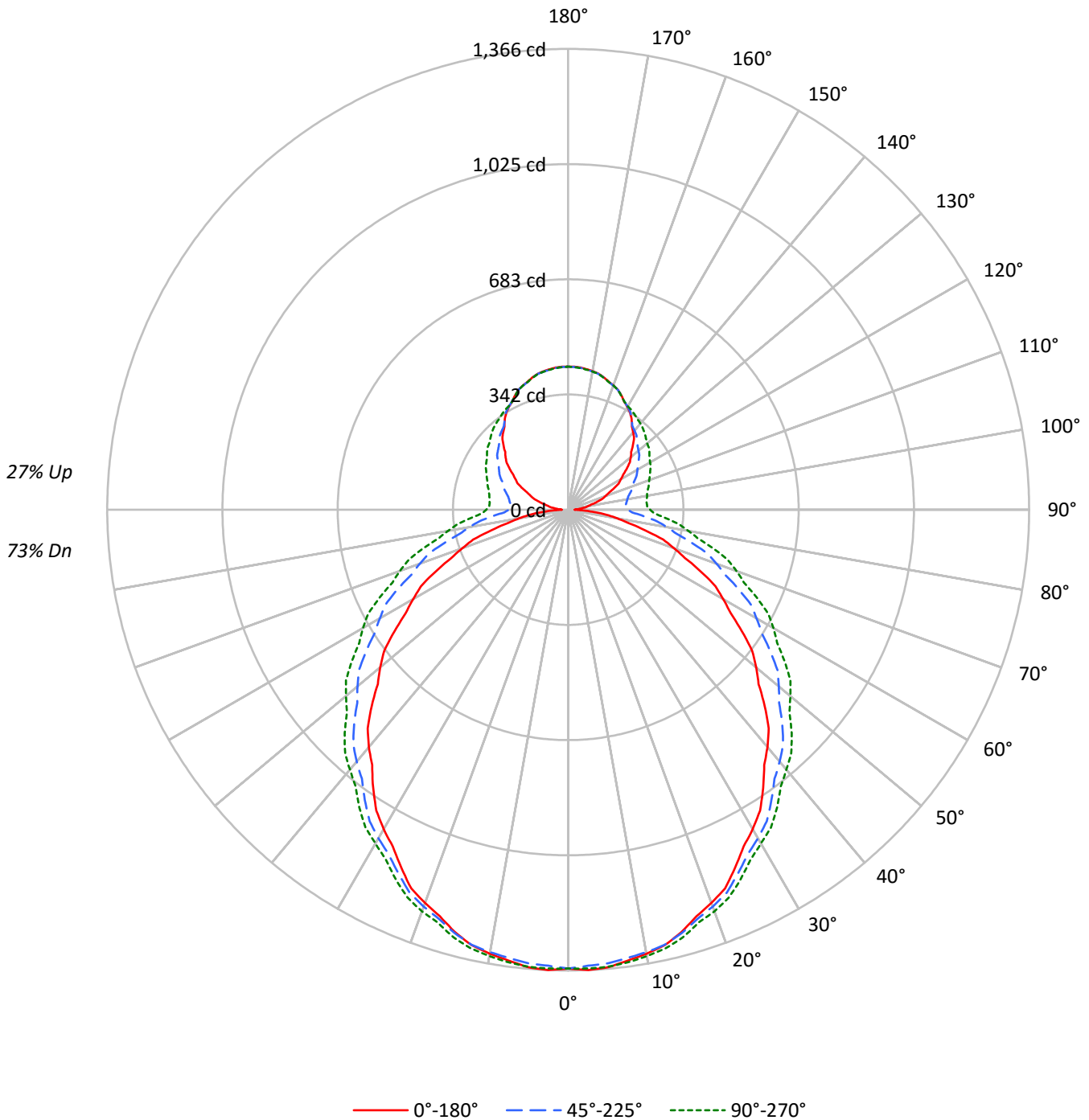
Input Watts (W): 49.8
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P332049-830

CATALOG NUMBER: S123DIP-S1165D365U830-4F0-1E-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	113	113	113	113	107	107	107	107	96	96	96	86	86	86	77	77	77	73
1	101	96	92	87	96	91	87	83	82	79	76	74	71	69	66	64	62	58
2	92	83	76	70	87	79	73	67	71	66	62	64	60	56	57	54	51	48
3	83	73	64	58	79	69	62	56	62	56	51	56	51	47	50	46	43	40
4	76	64	55	49	72	61	53	47	55	49	43	50	44	40	44	40	37	34
5	70	57	48	42	66	54	46	40	49	42	37	44	39	34	40	35	32	29
6	64	51	42	36	61	49	41	35	44	38	32	40	34	30	36	31	28	25
7	60	46	38	32	56	44	36	31	40	33	29	36	31	27	33	28	25	22
8	55	42	34	28	52	40	33	27	37	30	25	33	28	24	30	26	22	20
9	52	38	30	25	49	37	29	24	34	27	23	31	25	21	28	23	20	18
10	48	35	28	23	46	34	27	22	31	25	21	28	23	19	26	21	18	16

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: P332049-830

CATALOG NUMBER: S123DIP-S1165D365U830-4F0-1E-UDD-D1

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	128.9	2.2
10°-20°	367.5	6.4
20°-30°	549.7	9.6
30°-40°	656.5	11.4
40°-50°	686.9	12.0
50°-60°	644.6	11.2
60°-70°	538.3	9.4
70°-80°	385.2	6.7
80°-90°	231.0	4.0
90°-100°	171.7	3.0
100°-110°	188.6	3.3
110°-120°	211.3	3.7
120°-130°	225.4	3.9
130°-140°	226.0	3.9
140°-150°	208.2	3.6
150°-160°	172.1	3.0
160°-170°	114.5	2.0
170°-180°	40.1	0.7
0°-30°	1046.2	18.2
0°-40°	1702.7	29.6
0°-60°	3034.1	52.8
0°-90°	4188.6	72.9
90°-120°	571.7	9.9
90°-150°	1231.3	21.4
90°-180°	1558.0	27.1
0°-180°	5746.6	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	96	175	225	243	14
95°	36	97	171	217	233	35
105°	87	125	190	230	245	92
115°	149	170	220	255	268	148
125°	212	215	255	284	294	189
135°	272	273	288	313	320	209
145°	328	327	328	339	344	204
155°	373	373	374	375	373	172
165°	407	406	406	408	405	115
175°	423	422	422	423	421	40
180°	424	424	424	424	424	



TEST NUMBER: P332049-830

CATALOG NUMBER: S123DIP-S1165D365U830-4F0-1E-UDD-D1

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	56.0	72.6	89.1	105.7	122.4	139.4	156.4	173.3	190.4	201.6
90°	19.6	36.5	53.3	70.2	87.1	104.4	122.2	139.9	157.7	175.4	186.9
92.5°	26.1	41.2	56.3	71.4	86.3	102.5	119.5	136.6	153.6	170.7	181.9
95°	35.9	49.3	62.7	76.1	89.4	104.4	121.1	137.9	154.6	171.4	181.8
97.5°	49.4	61.4	73.3	85.4	97.4	111.2	127.1	142.9	158.7	174.6	184.7
100°	58.6	69.7	80.6	91.6	102.5	115.8	131.3	146.8	162.3	177.9	187.7
102.5°	69.5	79.2	89.0	98.7	108.4	121.0	136.4	151.7	167.1	182.5	192.0
105°	86.8	94.8	102.9	110.9	119.0	130.4	145.2	160.0	174.9	189.7	199.0
107.5°	105.6	112.4	119.1	125.9	132.8	143.0	156.7	170.4	184.1	197.8	206.9
110°	117.2	123.2	129.3	135.3	141.5	151.1	164.5	177.8	191.1	204.4	213.3



TEST NUMBER: P332049-830

CATALOG NUMBER: S123DIP-S1165D365U830-4F0-1E-UDD-D1

CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	130.4	135.4	140.3	145.3	150.3	159.1	171.8	184.5	197.2	209.8	218.5
115°	149.0	153.2	157.3	161.5	165.7	173.6	185.3	197.0	208.7	220.5	228.4
117.5°	168.8	171.4	174.0	176.5	179.1	185.9	196.8	207.7	218.7	229.6	237.4
120°	180.1	182.2	184.3	186.4	188.5	194.8	205.3	215.7	226.3	236.8	244.3
122.5°	193.2	194.4	195.6	196.7	197.9	203.6	213.8	223.9	234.0	244.1	251.3
125°	211.6	211.9	212.1	212.3	212.5	217.4	226.7	236.1	245.5	255.0	261.6
127.5°	230.0	230.2	230.3	230.5	230.5	234.5	242.2	250.0	257.8	265.5	271.5
130°	242.2	242.5	242.8	243.1	243.4	246.7	253.0	259.4	265.7	272.1	278.1
132.5°	253.4	253.8	254.4	255.0	255.4	258.3	263.3	268.4	273.6	278.7	284.4
135°	271.7	271.9	272.0	272.1	272.2	274.1	277.6	281.2	284.7	288.2	293.9
137.5°	288.8	288.9	289.0	289.1	289.2	290.4	292.7	294.8	297.1	299.4	304.3
140°	299.6	299.9	300.3	300.7	301.0	301.8	302.8	303.9	305.0	306.0	310.9
142.5°	310.5	310.7	310.8	310.9	310.9	311.1	311.5	311.8	312.2	312.5	316.8
145°	327.5	327.3	327.3	327.1	326.9	326.9	327.1	327.3	327.5	327.7	330.4
147.5°	341.0	341.3	341.6	341.9	342.0	342.3	342.5	342.7	342.9	343.2	343.9
150°	351.4	351.6	351.7	351.9	352.0	352.1	352.3	352.4	352.6	352.7	352.7
152.5°	360.0	360.1	360.3	360.5	360.8	360.9	361.0	361.1	361.2	361.3	361.4
155°	373.4	373.4	373.4	373.4	373.4	373.4	373.5	373.5	373.6	373.7	374.0
157.5°	384.8	384.7	384.7	384.6	384.5	384.5	384.6	384.6	384.7	384.7	385.0
160°	392.0	391.9	391.7	391.6	391.4	391.3	391.3	391.3	391.3	391.3	391.7
162.5°	398.4	398.2	398.0	397.8	397.6	397.6	397.6	397.7	397.8	397.8	398.1
165°	406.7	406.5	406.2	406.0	405.8	405.7	405.7	405.7	405.7	405.7	406.1
167.5°	413.3	413.0	412.7	412.4	412.1	412.0	412.1	412.1	412.2	412.3	412.6
170°	417.0	416.7	416.4	416.1	415.8	415.7	415.7	415.7	415.7	415.7	416.2
172.5°	420.0	419.6	419.3	419.1	418.8	418.6	418.6	418.6	418.6	418.6	419.1
175°	423.0	422.7	422.4	422.2	421.9	421.7	421.7	421.7	421.7	421.7	422.2
177.5°	424.2	424.0	423.8	423.6	423.3	423.2	423.2	423.2	423.2	423.2	423.6
180°	424.0	424.0	424.0	424.0	424.0	424.0	424.0	424.0	424.0	424.0	424.0



TEST NUMBER: P332049-830

CATALOG NUMBER: S123DIP-S1165D365U830-4F0-1E-UDD-D1

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°	212.8	224.1	235.4	242.6	246.0	249.3	252.6	255.9
90°	198.4	209.9	221.4	228.8	232.2	235.7	239.1	242.6
92.5°	193.0	204.2	215.4	222.4	225.4	228.4	231.3	234.2
95°	192.4	202.8	213.3	220.3	223.6	226.8	230.1	233.4
97.5°	194.9	205.0	215.2	221.9	225.2	228.4	231.7	235.0
100°	197.4	207.2	217.0	223.6	227.0	230.5	233.8	237.3
102.5°	201.5	211.0	220.5	226.9	230.2	233.4	236.7	240.0
105°	208.2	217.4	226.6	232.8	235.9	239.0	242.1	245.2
107.5°	215.9	225.0	234.0	240.0	242.8	245.6	248.5	251.2
110°	222.2	231.0	239.9	245.5	248.0	250.4	253.0	255.4



TEST NUMBER: P332049-830

CATALOG NUMBER: S123DIP-S1165D365U830-4F0-1E-UDD-D1

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	227.2	235.7	244.4	250.2	253.1	255.9	258.8	261.6
115°	236.4	244.3	252.3	257.6	260.1	262.7	265.2	267.9
117.5°	245.2	253.1	260.9	266.0	268.3	270.7	273.1	275.4
120°	251.8	259.3	266.7	271.5	273.7	275.9	278.1	280.2
122.5°	258.4	265.5	272.6	277.2	279.4	281.4	283.5	285.6
125°	268.2	274.8	281.3	285.7	287.8	289.7	291.7	293.7
127.5°	277.7	283.8	289.9	293.9	295.8	297.7	299.6	301.5
130°	284.0	289.9	296.0	299.6	301.0	302.6	304.0	305.5
132.5°	289.9	295.6	301.2	305.0	306.8	308.7	310.5	312.4
135°	299.5	305.1	310.8	314.3	315.8	317.4	318.9	320.4
137.5°	309.1	314.0	318.9	322.0	323.4	324.7	326.1	327.4
140°	315.8	320.7	325.5	328.5	329.6	330.7	331.9	333.0
142.5°	321.1	325.5	329.8	332.6	333.8	335.2	336.4	337.6
145°	332.9	335.5	338.0	339.8	340.8	341.9	342.8	343.8
147.5°	344.7	345.5	346.3	347.0	347.8	348.6	349.3	350.1
150°	352.7	352.7	352.7	352.9	353.1	353.3	353.5	353.7
152.5°	361.5	361.7	361.7	361.7	361.5	361.2	360.9	360.6
155°	374.3	374.6	374.9	374.8	374.3	373.7	373.2	372.7
157.5°	385.3	385.7	386.0	385.9	385.5	385.1	384.7	384.3
160°	392.1	392.5	392.9	392.9	392.6	392.3	392.0	391.7
162.5°	398.5	398.9	399.3	399.2	398.7	398.2	397.8	397.3
165°	406.6	407.0	407.5	407.5	406.9	406.4	405.9	405.4
167.5°	413.1	413.6	414.1	414.1	413.6	413.1	412.6	412.3
170°	416.7	417.3	417.7	417.7	417.3	416.7	416.2	415.7
172.5°	419.5	420.0	420.5	420.5	419.9	419.4	418.9	418.4
175°	422.5	423.0	423.5	423.4	422.9	422.4	421.9	421.3
177.5°	424.0	424.2	424.6	424.6	424.2	423.8	423.4	422.9
180°	424.0	424.0	424.0	424.0	424.0	424.0	424.0	424.0

(END OF REPORT)