

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: P332050-830

Luminaire Tested: **S123DIP-S1165D365U830-4F0-1E-UDD-D4**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332050-830
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-17,
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-D4
Description: DEFINE 3 DIRECT-INDIRECT PENDANT LED LUMINAIRE
DOWNLIGHT 1165 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER
UPLIGHT 365 LUMENS PER FOOT, BATWING OPTIC
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 5809.7 lumens
Efficiency: N/A
Efficacy: 116.7 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

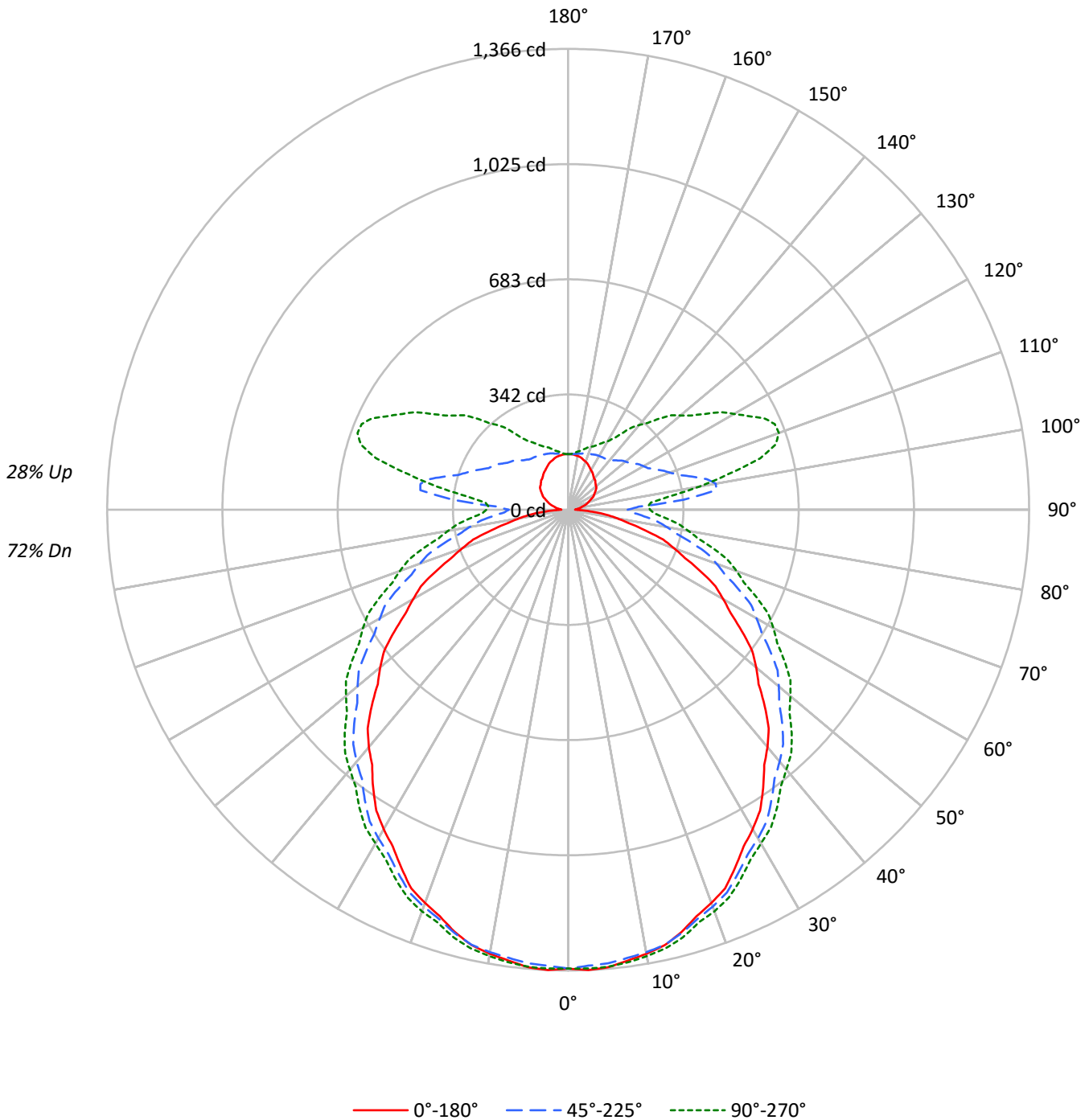
Input Watts (W): 49.8
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	112	112	112	112	107	107	107	107	96	96	96	86	86	86	76	76	76	72
1	101	96	91	87	96	91	87	83	82	79	76	73	71	68	65	63	62	58
2	92	83	76	70	86	79	73	67	71	66	61	63	59	56	56	53	51	47
3	83	73	64	58	78	69	62	56	62	56	51	56	51	47	50	46	43	39
4	76	64	55	49	72	61	53	47	55	48	43	49	44	40	44	40	36	33
5	70	57	48	42	66	54	46	40	49	42	37	44	39	34	40	35	31	29
6	64	51	42	36	61	49	41	35	44	37	32	40	34	30	36	31	28	25
7	59	46	38	32	56	44	36	31	40	33	28	36	31	26	33	28	24	22
8	55	42	34	28	52	40	32	27	37	30	25	33	28	24	30	25	22	20
9	51	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	20	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



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	128.9	2.2
10°-20°	367.5	6.3
20°-30°	549.7	9.5
30°-40°	656.5	11.3
40°-50°	686.9	11.8
50°-60°	644.6	11.1
60°-70°	538.3	9.3
70°-80°	385.2	6.6
80°-90°	231.0	4.0
90°-100°	235.7	4.1
100°-110°	365.2	6.3
110°-120°	325.8	5.6
120°-130°	243.9	4.2
130°-140°	178.5	3.1
140°-150°	123.6	2.1
150°-160°	83.5	1.4
160°-170°	49.0	0.8
170°-180°	16.0	0.3
0°-30°	1046.2	18.0
0°-40°	1702.7	29.3
0°-60°	3034.1	52.2
0°-90°	4188.6	72.1
90°-120°	926.7	16.0
90°-150°	1472.7	25.3
90°-180°	1621.0	27.9
0°-180°	5809.7	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	176	225	242	14
95°	28	112	344	248	246	25
105°	50	106	379	619	590	53
115°	76	112	283	562	641	75
125°	99	119	239	424	495	89
135°	114	135	206	329	381	88
145°	128	146	186	246	275	80
155°	144	156	180	205	214	66
165°	158	162	173	183	186	44
175°	164	164	166	168	168	16
180°	165	165	165	165	165	



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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°	39.6	56.1	72.6	89.2	105.8	122.4	139.4	156.5	173.4	190.4	201.5
90°	19.9	36.8	53.5	70.7	87.5	104.6	122.3	140.2	158.0	175.8	186.6
92.5°	22.2	38.7	56.1	73.2	90.6	111.0	136.3	167.2	197.7	209.2	207.5
95°	27.6	41.5	58.0	76.4	97.9	125.5	169.8	235.6	306.4	344.2	317.1
97.5°	33.8	45.7	60.2	76.7	96.9	124.4	166.8	238.2	344.7	442.1	473.3
100°	38.0	48.8	61.7	76.9	95.5	121.3	159.8	224.1	327.0	444.3	519.5
102.5°	42.4	52.5	64.0	77.9	94.5	118.7	154.5	211.2	304.1	419.9	514.8
105°	50.5	59.4	69.3	81.2	95.4	116.8	148.9	197.4	274.5	378.9	483.7
107.5°	57.7	65.3	74.0	84.6	97.3	117.0	146.2	188.1	252.3	341.8	437.3
110°	62.9	69.7	77.4	87.0	98.6	117.4	145.6	184.1	241.9	320.7	408.8



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	68.7	74.6	81.2	89.6	100.2	118.0	144.6	180.7	232.6	303.4	382.0
115°	75.7	81.0	86.9	94.2	103.8	120.7	145.2	177.4	223.2	283.3	348.9
117.5°	83.9	87.8	91.9	97.5	106.2	121.3	145.0	174.2	214.1	266.6	324.2
120°	88.5	91.1	94.4	99.4	107.4	122.1	144.9	173.1	209.5	257.8	310.6
122.5°	93.6	95.5	97.9	102.5	109.3	123.8	145.9	172.2	206.0	250.0	298.3
125°	99.3	100.0	102.1	105.7	112.1	125.8	147.0	171.2	200.8	238.6	281.2
127.5°	104.9	105.6	107.7	111.1	117.8	130.5	149.7	170.8	196.7	228.5	264.9
130°	108.4	109.1	111.7	115.4	122.1	134.1	151.7	171.0	194.3	221.8	255.1
132.5°	109.8	111.0	114.2	118.9	125.9	137.2	153.3	170.9	191.2	215.6	245.3
135°	114.2	115.2	118.6	123.2	129.9	140.5	154.5	169.4	186.3	206.3	231.9
137.5°	118.3	119.4	122.8	127.8	134.5	143.7	155.7	168.5	182.4	198.5	220.1
140°	120.1	121.7	125.1	130.4	137.0	145.9	156.6	167.5	179.8	193.4	212.7
142.5°	123.3	124.4	127.7	132.2	138.6	146.4	156.0	165.9	176.6	188.1	205.3
145°	128.4	129.0	131.8	136.4	141.8	149.2	157.9	166.8	176.2	186.2	199.4
147.5°	132.1	132.7	135.6	140.0	145.4	151.9	159.9	168.0	176.2	184.9	194.8
150°	135.5	135.9	138.6	142.9	147.5	153.5	161.2	168.2	176.2	183.9	192.2
152.5°	139.0	139.1	141.8	145.5	149.7	155.4	162.0	168.7	175.4	182.6	190.0
155°	144.2	144.2	146.2	149.6	153.3	157.9	163.5	168.9	174.6	180.2	186.8
157.5°	148.4	148.6	150.2	153.2	156.3	159.9	164.4	169.2	173.4	178.1	183.2
160°	151.6	151.6	152.9	155.5	157.9	161.2	165.2	169.2	172.9	176.5	180.9
162.5°	153.9	153.9	155.0	157.1	159.2	162.0	165.5	168.9	171.8	174.9	178.4
165°	157.5	157.2	157.9	159.6	160.9	163.2	165.9	168.2	170.2	172.6	175.2
167.5°	160.2	159.9	160.2	161.5	162.4	163.9	165.8	167.7	168.6	170.1	172.1
170°	161.8	161.2	161.6	162.5	163.2	163.9	165.5	166.8	167.6	168.5	170.2
172.5°	163.0	162.5	162.6	163.3	163.7	164.1	165.5	166.6	166.7	167.2	168.3
175°	164.2	163.9	163.5	164.2	164.2	164.6	165.2	165.9	165.5	165.5	166.2
177.5°	164.9	164.6	164.3	164.6	164.6	164.6	164.9	165.3	164.9	164.6	164.9
180°	164.6	164.6	164.6	164.6	164.6	164.6	164.6	164.6	164.6	164.6	164.6



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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	224.0	235.4	242.7	245.9	249.3	252.7	255.9
90°	198.1	209.6	221.2	229.1	232.1	235.7	239.3	242.2
92.5°	207.8	213.0	221.3	226.6	228.9	231.0	234.4	236.8
95°	287.0	258.5	251.1	245.9	242.8	243.2	244.1	246.1
97.5°	454.5	404.8	371.7	338.5	317.2	305.5	299.7	300.2
100°	540.7	523.3	493.8	453.0	422.6	401.6	391.9	395.5
102.5°	564.2	572.7	559.2	535.6	512.6	496.7	489.1	484.7
105°	562.5	605.1	620.7	618.0	605.7	596.0	588.3	589.7
107.5°	525.2	588.1	626.0	643.8	647.0	645.5	644.9	644.7
110°	493.6	563.5	614.1	642.9	654.9	660.2	662.1	664.1



TEST NUMBER: P332050-830

CATALOG NUMBER: S123DIP-S1165D365U830-4F0-1E-UDD-D4

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	461.2	532.2	587.5	623.0	643.0	654.1	659.6	662.6
115°	418.4	484.3	541.1	582.7	610.3	627.6	636.9	641.2
117.5°	384.1	442.0	493.8	535.8	564.5	583.8	596.0	600.8
120°	365.1	417.7	465.2	503.8	532.4	553.4	563.6	568.0
122.5°	348.8	396.8	441.2	477.2	502.9	522.0	533.1	538.0
125°	326.0	369.3	408.1	439.4	463.0	479.9	490.6	495.2
127.5°	304.9	343.7	379.2	407.7	429.0	443.7	453.6	457.9
130°	291.2	327.4	360.7	387.5	407.1	421.0	430.1	434.7
132.5°	278.1	311.7	342.8	368.5	387.3	401.5	410.0	414.1
135°	260.1	289.7	317.3	340.1	358.0	369.7	377.3	381.3
137.5°	243.4	268.0	291.8	311.7	327.1	338.8	345.5	348.7
140°	233.3	255.2	276.2	293.8	308.1	319.1	326.0	327.3
142.5°	223.0	242.0	260.2	275.7	288.1	298.0	304.5	305.9
145°	212.7	226.4	239.7	251.3	261.0	269.3	273.2	275.2
147.5°	204.6	214.1	223.6	231.4	238.8	244.8	248.5	250.0
150°	199.8	207.5	214.5	221.1	226.8	231.1	233.8	234.4
152.5°	196.9	203.5	209.7	215.0	219.1	222.6	223.9	224.0
155°	192.6	197.8	202.8	206.8	209.8	212.5	213.2	213.5
157.5°	187.8	192.3	196.1	199.3	201.9	203.9	204.4	204.3
160°	185.2	188.9	192.2	194.5	196.8	198.9	198.9	198.5
162.5°	182.0	185.1	188.2	190.3	191.8	193.5	193.5	193.2
165°	177.9	179.8	182.2	183.9	185.2	186.5	186.2	186.2
167.5°	174.3	175.8	177.1	178.3	178.9	179.8	179.6	179.6
170°	171.8	172.9	174.2	174.8	175.2	175.9	175.5	175.5
172.5°	169.8	170.5	171.5	171.9	172.0	172.7	172.1	171.8
175°	166.8	167.2	167.9	167.9	167.9	168.2	167.9	167.6
177.5°	165.0	165.3	165.6	165.6	165.3	165.6	165.0	165.0
180°	164.6	164.6	164.6	164.6	164.6	164.6	164.6	164.6

(END OF REPORT)