

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: P332050-940

Luminaire Tested: **S123DIP-S1165D365U940-4F0-1E-UDD-D4**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332050-940
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-S1165D365U940-4F0-1E-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: 5496.4 lumens
Efficiency: N/A
Efficacy: 110.4 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

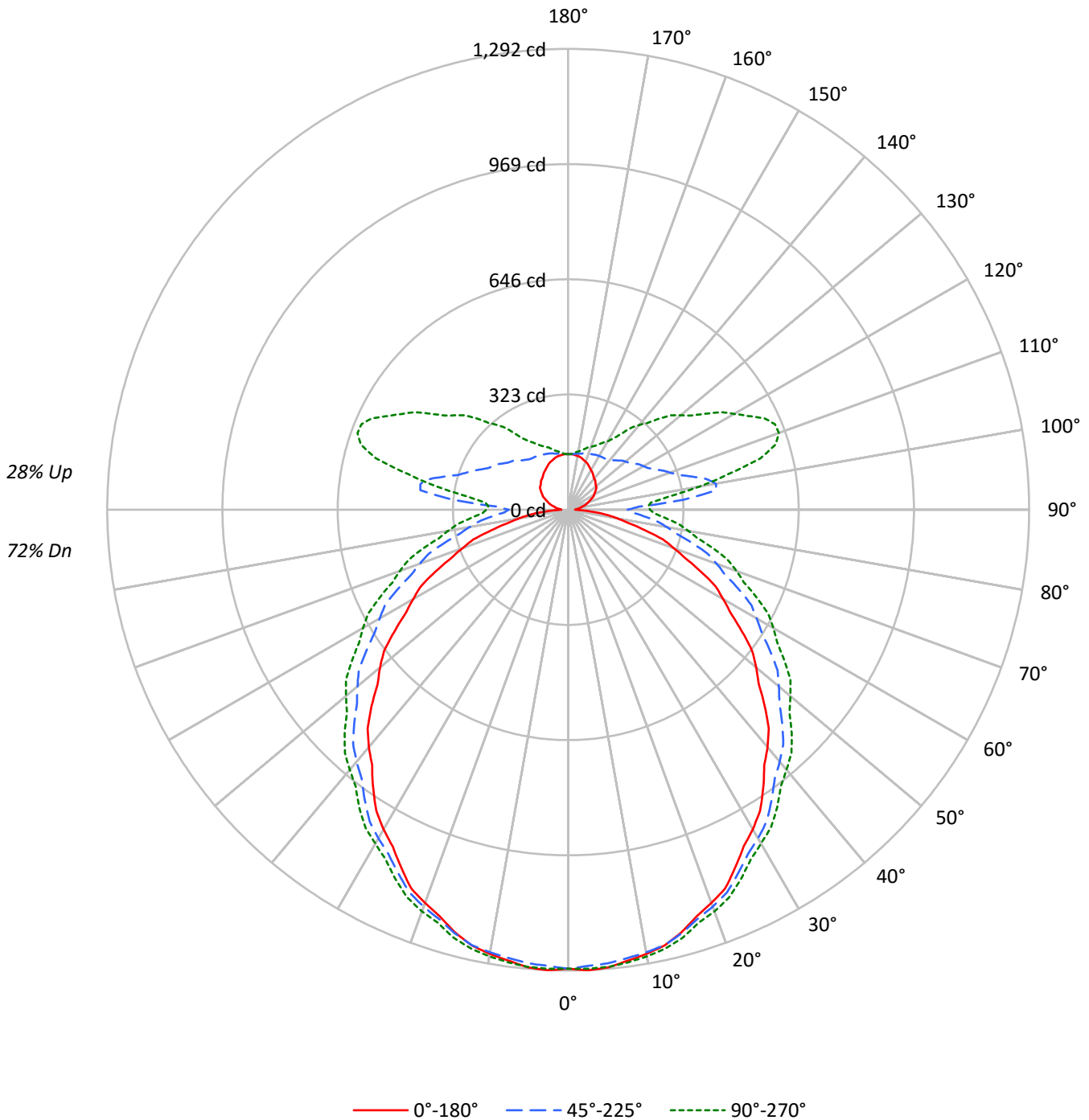
Input Watts (W): 49.8
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	13850	13850	13850
5°	13894	13501	13509
10°	13769	13190	13124
15°	13592	12837	12705
20°	13338	12435	12243
25°	13025	11969	11757
30°	12705	11553	11264
35°	12344	11111	10871
40°	12002	10709	10450
45°	11622	10323	10113
50°	11245	9942	9744
55°	10831	9553	9410
60°	10426	9156	9068
65°	10013	8733	8661
70°	9389	8257	8243
75°	8597	7713	7819
80°	7695	7181	7334
85°	6853	6811	7053



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	122.0	2.2
10°-20°	347.7	6.3
20°-30°	520.1	9.5
30°-40°	621.1	11.3
40°-50°	649.8	11.8
50°-60°	609.8	11.1
60°-70°	509.3	9.3
70°-80°	364.4	6.6
80°-90°	218.5	4.0
90°-100°	223.0	4.1
100°-110°	345.5	6.3
110°-120°	308.2	5.6
120°-130°	230.7	4.2
130°-140°	168.9	3.1
140°-150°	116.9	2.1
150°-160°	79.0	1.4
160°-170°	46.4	0.8
170°-180°	15.1	0.3
0°-30°	989.8	18.0
0°-40°	1610.9	29.3
0°-60°	2870.5	52.2
0°-90°	3962.7	72.1
90°-120°	876.7	16.0
90°-150°	1393.2	25.3
90°-180°	1534.0	27.9
0°-180°	5496.4	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1287	1287	1287	1287	1287	
5°	1288	1285	1277	1287	1287	122
15°	1226	1230	1229	1242	1242	345
25°	1107	1121	1126	1143	1144	510
35°	953	975	994	1014	1020	596
45°	779	813	848	874	886	601
55°	594	641	691	727	740	532
65°	411	466	527	568	583	406
75°	223	289	359	403	422	238
85°	69	139	213	259	275	72
90°	19	91	166	213	229	13
95°	26	106	326	235	233	24
105°	48	100	358	586	558	50
115°	72	106	268	532	607	71
125°	94	112	226	401	468	84
135°	108	128	195	311	361	83
145°	122	138	176	232	260	76
155°	136	147	170	194	202	63
165°	149	153	163	173	176	42
175°	155	156	157	159	158	15
180°	156	156	156	156	156	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1286.7	1286.7	1286.7	1286.7	1286.7	1286.7	1286.7	1286.7	1286.7	1286.7	1286.7
2.5°	1292.4	1291.6	1290.8	1290.1	1289.3	1288.0	1286.0	1284.0	1282.0	1280.1	1282.0
5°	1288.2	1287.5	1286.9	1286.3	1285.7	1284.4	1282.5	1280.7	1278.8	1276.9	1279.4
7.5°	1275.5	1275.7	1275.8	1275.9	1276.0	1275.2	1273.4	1271.6	1269.8	1267.9	1271.0
10°	1264.4	1265.0	1265.6	1266.2	1266.9	1266.3	1264.8	1263.2	1261.7	1260.1	1263.2
12.5°	1250.9	1251.7	1252.6	1253.5	1254.4	1254.3	1253.2	1252.1	1251.1	1250.0	1252.9
15°	1226.5	1227.4	1228.3	1229.3	1230.2	1230.6	1230.2	1229.9	1229.6	1229.3	1232.4
17.5°	1195.6	1197.5	1199.4	1201.2	1203.1	1204.0	1203.9	1203.7	1203.6	1203.5	1206.3
20°	1173.2	1175.1	1177.0	1178.8	1180.7	1182.0	1182.6	1183.2	1183.8	1184.5	1187.2
22.5°	1149.7	1151.6	1153.4	1155.3	1157.2	1158.5	1159.4	1160.3	1161.1	1162.0	1165.6
25°	1107.3	1110.4	1113.6	1116.7	1119.8	1121.8	1122.8	1123.6	1124.6	1125.5	1129.6
27.5°	1064.7	1068.3	1071.8	1075.4	1078.9	1081.7	1083.7	1085.7	1087.7	1089.7	1093.1
30°	1034.5	1038.5	1042.5	1046.6	1050.6	1053.9	1056.4	1058.9	1061.4	1063.9	1067.6
32.5°	1000.8	1005.3	1009.9	1014.4	1019.0	1022.9	1026.1	1029.4	1032.6	1035.8	1039.8
35°	953.1	958.1	963.1	968.1	973.1	977.6	981.7	985.7	989.7	993.8	998.4
37.5°	902.7	908.3	913.9	919.5	925.1	930.4	935.4	940.4	945.4	950.4	955.6
40°	869.1	874.7	880.3	885.8	891.4	897.4	903.7	909.8	916.1	922.3	927.6
42.5°	832.1	838.9	845.8	852.6	859.4	866.1	872.6	879.0	885.6	892.1	897.9
45°	779.4	786.8	794.2	801.7	809.2	816.9	824.7	832.4	840.3	848.0	853.9
47.5°	724.1	732.5	741.0	749.6	758.0	766.7	775.6	784.5	793.4	802.4	809.0
50°	688.2	697.0	705.7	714.3	723.1	732.3	742.0	751.6	761.3	770.9	778.1
52.5°	650.1	659.3	668.5	677.8	687.0	697.0	707.6	718.2	728.9	739.5	747.0
55°	594.3	604.6	614.8	625.2	635.4	646.1	657.4	668.6	679.8	691.1	699.5
57.5°	539.9	550.6	561.3	572.0	582.8	594.3	606.5	618.8	631.1	643.4	651.8
60°	501.8	513.0	524.2	535.5	546.6	558.7	571.4	584.2	597.0	609.8	618.5
62.5°	465.9	477.4	488.8	500.3	511.8	524.2	537.8	551.3	564.8	578.4	587.0
65°	410.7	422.8	435.0	447.1	459.3	472.3	485.9	499.6	513.4	527.0	536.4
67.5°	354.6	367.6	380.4	393.3	406.2	419.6	433.5	447.5	461.5	475.5	485.6
70°	315.4	328.8	342.1	355.5	369.0	383.2	398.1	413.0	428.0	442.9	452.9
72.5°	279.5	292.9	306.3	319.7	333.1	347.5	362.9	378.4	393.9	409.3	419.5
75°	222.8	237.6	252.2	266.8	281.4	296.5	312.1	327.7	343.2	358.8	369.1
77.5°	173.5	188.3	203.0	217.8	232.6	247.8	263.5	279.2	294.9	310.6	321.5
80°	138.8	154.0	169.3	184.6	199.8	215.5	231.8	248.0	264.1	280.4	291.0
82.5°	108.5	124.0	139.6	155.1	170.5	186.5	203.0	219.5	235.9	252.3	262.9
85°	68.7	84.3	99.9	115.4	131.0	147.0	163.5	180.0	196.5	213.0	223.6
87.5°	37.5	53.1	68.7	84.4	100.0	115.8	131.9	148.0	164.1	180.1	190.6
90°	18.8	34.8	50.6	66.9	82.8	99.0	115.7	132.6	149.5	166.3	176.6
92.5°	21.0	36.6	53.1	69.3	85.7	105.0	128.9	158.2	187.1	197.9	196.4
95°	26.1	39.2	54.8	72.3	92.6	118.7	160.7	222.9	289.9	325.7	300.0
97.5°	32.0	43.2	57.0	72.6	91.7	117.7	157.8	225.3	326.1	418.3	447.8
100°	35.9	46.2	58.4	72.8	90.3	114.8	151.1	212.0	309.3	420.4	491.5
102.5°	40.1	49.7	60.5	73.7	89.4	112.3	146.2	199.8	287.7	397.3	487.1
105°	47.8	56.2	65.5	76.8	90.2	110.5	140.9	186.7	259.7	358.5	457.6
107.5°	54.6	61.8	70.0	80.1	92.0	110.7	138.3	178.0	238.7	323.3	413.8
110°	59.5	66.0	73.2	82.3	93.3	111.1	137.8	174.2	228.8	303.4	386.7



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	65.0	70.5	76.8	84.8	94.8	111.6	136.8	170.9	220.1	287.0	361.4
115°	71.6	76.6	82.2	89.1	98.2	114.2	137.4	167.8	211.2	268.0	330.1
117.5°	79.4	83.1	86.9	92.2	100.5	114.8	137.1	164.8	202.6	252.3	306.7
120°	83.7	86.2	89.3	94.1	101.7	115.5	137.1	163.7	198.2	243.9	293.8
122.5°	88.5	90.3	92.6	96.9	103.4	117.1	138.0	162.9	194.9	236.5	282.2
125°	94.0	94.6	96.6	100.0	106.0	119.0	139.1	161.9	189.9	225.7	266.0
127.5°	99.2	99.9	101.9	105.1	111.5	123.5	141.6	161.6	186.1	216.2	250.7
130°	102.5	103.2	105.7	109.1	115.5	126.9	143.6	161.8	183.8	209.8	241.3
132.5°	103.9	105.0	108.1	112.5	119.1	129.8	145.0	161.7	180.9	203.9	232.1
135°	108.1	109.0	112.2	116.5	122.9	133.0	146.2	160.2	176.3	195.2	219.4
137.5°	111.9	113.0	116.2	120.9	127.2	136.0	147.3	159.4	172.5	187.8	208.2
140°	113.6	115.1	118.3	123.3	129.7	138.0	148.1	158.5	170.1	183.0	201.3
142.5°	116.6	117.7	120.8	125.1	131.2	138.5	147.6	156.9	167.1	178.0	194.2
145°	121.5	122.1	124.7	129.0	134.1	141.2	149.4	157.8	166.7	176.1	188.7
147.5°	125.0	125.6	128.3	132.4	137.6	143.7	151.2	158.9	166.7	175.0	184.3
150°	128.2	128.6	131.1	135.2	139.6	145.3	152.5	159.2	166.7	174.0	181.8
152.5°	131.5	131.6	134.1	137.7	141.6	147.0	153.3	159.6	165.9	172.7	179.8
155°	136.4	136.4	138.3	141.5	145.0	149.4	154.7	159.8	165.1	170.5	176.7
157.5°	140.4	140.6	142.1	144.9	147.8	151.2	155.5	160.1	164.1	168.5	173.3
160°	143.4	143.4	144.6	147.1	149.4	152.5	156.3	160.1	163.5	167.0	171.1
162.5°	145.6	145.6	146.7	148.6	150.6	153.3	156.6	159.8	162.6	165.5	168.8
165°	149.0	148.7	149.4	151.0	152.2	154.4	156.9	159.2	161.0	163.3	165.8
167.5°	151.6	151.2	151.6	152.8	153.6	155.1	156.9	158.6	159.5	161.0	162.8
170°	153.1	152.5	152.8	153.7	154.4	155.1	156.6	157.8	158.5	159.4	161.0
172.5°	154.2	153.7	153.8	154.5	154.9	155.2	156.6	157.7	157.7	158.2	159.3
175°	155.3	155.1	154.7	155.3	155.3	155.7	156.3	156.9	156.6	156.6	157.2
177.5°	156.0	155.7	155.4	155.7	155.7	155.7	156.0	156.4	156.0	155.7	156.0
180°	155.7	155.7	155.7	155.7	155.7	155.7	155.7	155.7	155.7	155.7	155.7



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1286.7	1286.7	1286.7	1286.7	1286.7	1286.7	1286.7	1286.7
2.5°	1284.0	1286.0	1288.0	1288.9	1288.6	1288.3	1288.1	1287.9
5°	1281.9	1284.4	1286.9	1288.0	1287.7	1287.4	1287.1	1286.7
7.5°	1274.2	1277.3	1280.4	1281.8	1281.4	1281.0	1280.7	1280.3
10°	1266.3	1269.4	1272.6	1273.8	1273.2	1272.6	1271.9	1271.3
12.5°	1255.8	1258.6	1261.5	1262.6	1261.9	1261.3	1260.7	1260.1
15°	1235.5	1238.6	1241.7	1243.1	1242.9	1242.5	1242.2	1241.9
17.5°	1209.1	1211.9	1214.7	1215.8	1215.5	1215.0	1214.6	1214.2
20°	1190.0	1192.8	1195.6	1197.2	1197.5	1197.8	1198.1	1198.5
22.5°	1169.1	1172.7	1176.2	1177.9	1177.7	1177.5	1177.3	1177.1
25°	1133.6	1137.7	1141.7	1143.8	1143.8	1143.8	1143.8	1143.8
27.5°	1096.6	1100.1	1103.6	1105.5	1105.7	1106.0	1106.3	1106.5
30°	1071.4	1075.1	1078.8	1080.7	1080.7	1080.7	1080.7	1080.7
32.5°	1043.8	1047.8	1051.8	1054.2	1054.9	1055.7	1056.4	1057.1
35°	1003.2	1007.8	1012.4	1015.5	1016.7	1018.0	1019.2	1020.4
37.5°	960.9	966.3	971.5	974.6	975.7	976.7	977.7	978.7
40°	932.9	938.2	943.5	946.7	948.0	949.2	950.5	951.7
42.5°	903.7	909.5	915.3	919.0	920.7	922.5	924.2	926.0
45°	859.9	865.8	871.7	875.9	878.4	880.9	883.4	885.8
47.5°	815.6	822.3	829.0	833.3	835.2	837.1	839.1	841.0
50°	785.2	792.5	799.6	804.2	806.5	808.6	810.8	813.0
52.5°	754.4	761.8	769.2	774.3	776.9	779.6	782.3	785.0
55°	707.8	716.2	724.7	730.1	732.6	735.1	737.6	740.1
57.5°	660.3	668.8	677.3	683.0	685.9	688.8	691.8	694.6
60°	627.1	635.9	644.6	650.7	654.2	657.5	660.9	664.4
62.5°	595.8	604.5	613.2	619.2	622.3	625.5	628.7	631.9
65°	545.7	555.1	564.5	570.6	573.7	576.8	580.0	583.1
67.5°	495.9	506.1	516.3	522.7	525.4	528.0	530.6	533.2
70°	462.9	472.9	482.8	489.4	492.5	495.6	498.6	501.8
72.5°	429.7	440.0	450.1	456.8	459.9	463.1	466.2	469.3
75°	379.4	389.7	399.9	407.0	410.7	414.5	418.2	421.9
77.5°	332.3	343.1	354.0	360.8	363.7	366.6	369.4	372.3
80°	301.5	312.1	322.7	329.6	332.7	335.8	338.9	342.0
82.5°	273.5	284.1	294.6	301.5	304.6	307.7	310.9	314.0
85°	234.3	244.9	255.4	262.3	265.4	268.5	271.6	274.7
87.5°	201.3	212.0	222.7	229.6	232.6	235.9	239.1	242.1
90°	187.4	198.3	209.3	216.8	219.5	223.0	226.4	229.2
92.5°	196.6	201.5	209.4	214.4	216.6	218.6	221.8	224.0
95°	271.5	244.6	237.6	232.6	229.7	230.1	231.0	232.8
97.5°	430.0	383.0	351.7	320.2	300.1	289.0	283.6	284.0
100°	511.6	495.1	467.2	428.6	399.8	380.0	370.8	374.2
102.5°	533.8	541.8	529.1	506.7	485.0	469.9	462.7	458.6
105°	532.2	572.5	587.2	584.7	573.0	563.8	556.6	557.9
107.5°	496.9	556.3	592.3	609.0	612.1	610.7	610.1	609.9
110°	467.0	533.1	580.9	608.2	619.6	624.6	626.4	628.3



TEST NUMBER: P332050-940

CATALOG NUMBER: S123DIP-S1165D365U940-4F0-1E-UDD-D4

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	436.3	503.5	555.8	589.4	608.3	618.8	624.0	626.9
115°	395.8	458.2	511.9	551.3	577.4	593.8	602.5	606.6
117.5°	363.4	418.1	467.2	506.9	534.0	552.3	563.8	568.4
120°	345.4	395.2	440.1	476.6	503.7	523.5	533.2	537.3
122.5°	330.0	375.4	417.4	451.5	475.8	493.8	504.4	509.0
125°	308.4	349.4	386.1	415.7	438.0	454.1	464.1	468.5
127.5°	288.5	325.2	358.7	385.8	405.9	419.8	429.1	433.2
130°	275.5	309.8	341.3	366.6	385.1	398.3	406.9	411.3
132.5°	263.1	294.9	324.3	348.7	366.4	379.9	387.9	391.7
135°	246.1	274.1	300.1	321.7	338.7	349.7	357.0	360.7
137.5°	230.2	253.5	276.1	294.9	309.4	320.6	326.9	329.9
140°	220.7	241.5	261.3	277.9	291.5	301.8	308.4	309.7
142.5°	211.0	228.9	246.2	260.8	272.6	282.0	288.1	289.4
145°	201.3	214.2	226.8	237.7	246.9	254.8	258.5	260.4
147.5°	193.6	202.6	211.5	218.9	226.0	231.6	235.1	236.5
150°	189.0	196.4	203.0	209.2	214.5	218.6	221.1	221.8
152.5°	186.3	192.5	198.4	203.4	207.3	210.6	211.9	212.0
155°	182.2	187.2	191.9	195.6	198.5	201.1	201.7	202.0
157.5°	177.7	181.9	185.6	188.6	191.0	192.9	193.4	193.3
160°	175.2	178.7	181.8	184.0	186.2	188.2	188.2	187.8
162.5°	172.2	175.1	178.1	180.0	181.5	183.1	183.1	182.8
165°	168.3	170.1	172.4	174.0	175.2	176.5	176.1	176.1
167.5°	164.9	166.3	167.6	168.7	169.2	170.1	169.9	169.9
170°	162.6	163.5	164.8	165.4	165.8	166.4	166.0	166.0
172.5°	160.6	161.3	162.3	162.6	162.7	163.4	162.8	162.6
175°	157.8	158.2	158.8	158.8	158.8	159.2	158.8	158.5
177.5°	156.1	156.4	156.7	156.7	156.4	156.7	156.1	156.1
180°	155.7	155.7	155.7	155.7	155.7	155.7	155.7	155.7

(END OF REPORT)