

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: P332050-840

Luminaire Tested: **S123DIP-S1165D365U840-4F0-1E-UDD-D4**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332050-840
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-S1165D365U840-4F0-1E-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: 6224.7 lumens
Efficiency: N/A
Efficacy: 125.0 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

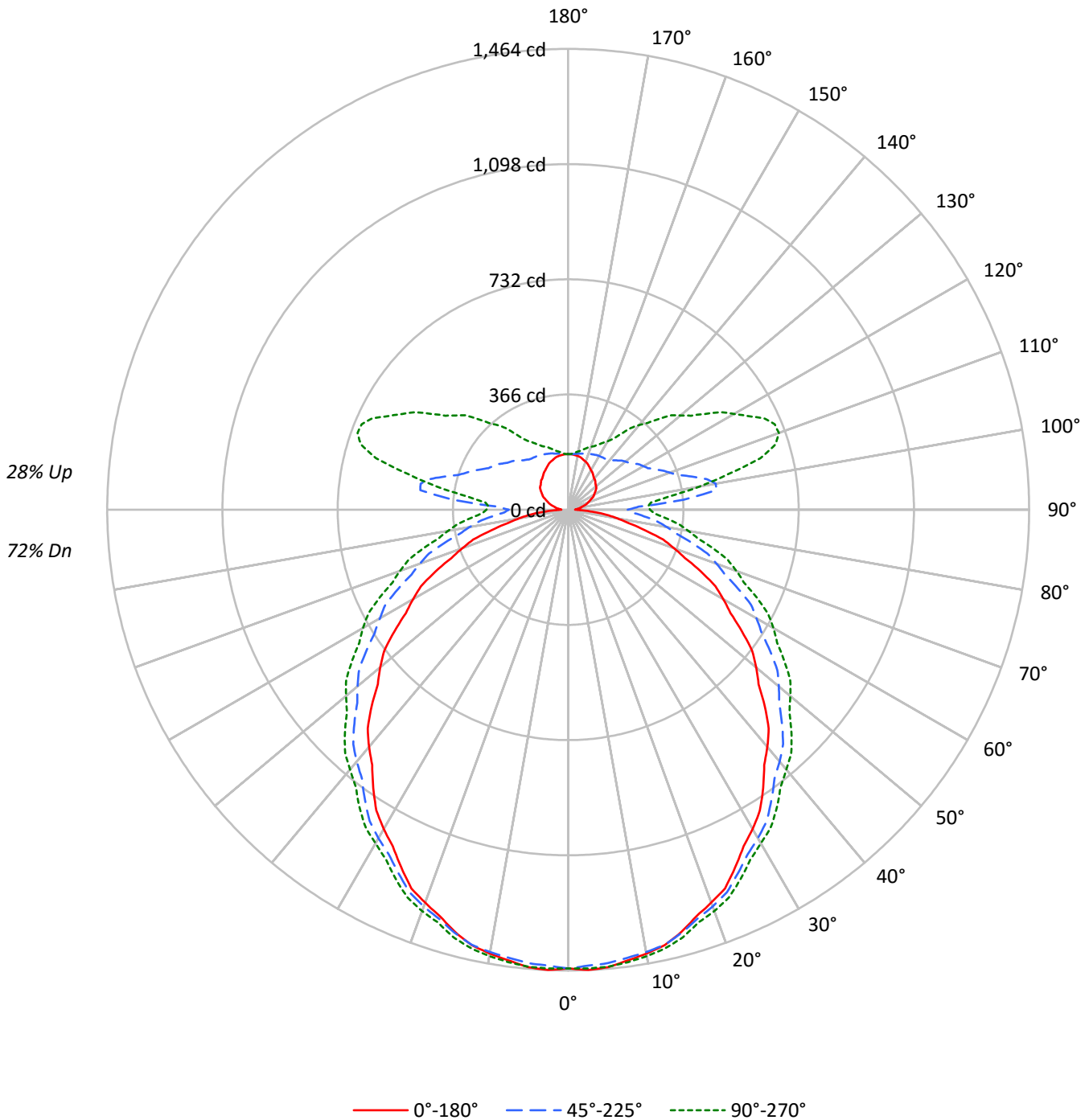
Input Watts (W): 49.8
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	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	2.2
10°-20°	393.8	6.3
20°-30°	589.0	9.5
30°-40°	703.4	11.3
40°-50°	735.9	11.8
50°-60°	690.6	11.1
60°-70°	576.8	9.3
70°-80°	412.7	6.6
80°-90°	247.5	4.0
90°-100°	252.5	4.1
100°-110°	391.3	6.3
110°-120°	349.1	5.6
120°-130°	261.3	4.2
130°-140°	191.3	3.1
140°-150°	132.4	2.1
150°-160°	89.4	1.4
160°-170°	52.5	0.8
170°-180°	17.1	0.3
0°-30°	1120.9	18.0
0°-40°	1824.3	29.3
0°-60°	3250.8	52.2
0°-90°	4487.8	72.1
90°-120°	992.8	16.0
90°-150°	1577.8	25.3
90°-180°	1737.0	27.9
0°-180°	6224.7	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	103	188	241	260	15
95°	30	120	369	266	264	27
105°	54	114	406	664	632	57
115°	81	120	304	602	687	81
125°	106	127	256	454	531	95
135°	122	145	221	352	408	95
145°	138	156	199	263	295	86
155°	154	167	193	219	229	71
165°	169	174	185	196	199	48
175°	176	176	177	180	180	17
180°	176	176	176	176	176	



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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°	42.4	60.1	77.8	95.5	113.3	131.2	149.4	167.6	185.8	204.0	215.9
90°	21.3	39.4	57.4	75.7	93.7	112.1	131.1	150.2	169.3	188.3	200.0
92.5°	23.8	41.5	60.1	78.5	97.0	119.0	146.0	179.2	211.9	224.1	222.4
95°	29.6	44.4	62.1	81.9	104.9	134.4	182.0	252.5	328.3	368.8	339.7
97.5°	36.3	49.0	64.5	82.2	103.8	133.3	178.7	255.2	369.3	473.7	507.2
100°	40.7	52.3	66.1	82.4	102.3	130.0	171.2	240.1	350.3	476.1	556.6
102.5°	45.4	56.2	68.6	83.4	101.3	127.1	165.5	226.3	325.8	449.9	551.6
105°	54.1	63.6	74.2	86.9	102.2	125.1	159.6	211.5	294.1	406.0	518.3
107.5°	61.8	70.0	79.3	90.7	104.2	125.3	156.6	201.6	270.3	366.2	468.6
110°	67.4	74.7	82.9	93.2	105.6	125.8	156.0	197.2	259.1	343.6	438.0



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	73.6	79.9	86.9	96.0	107.3	126.4	154.9	193.6	249.2	325.1	409.3
115°	81.1	86.7	93.1	100.9	111.2	129.4	155.6	190.1	239.1	303.6	373.9
117.5°	89.9	94.1	98.5	104.4	113.8	130.0	155.3	186.6	229.4	285.7	347.4
120°	94.8	97.7	101.2	106.5	115.1	130.8	155.2	185.4	224.5	276.2	332.8
122.5°	100.3	102.3	104.9	109.8	117.1	132.6	156.3	184.5	220.8	267.8	319.6
125°	106.4	107.1	109.4	113.2	120.1	134.8	157.5	183.4	215.1	255.6	301.2
127.5°	112.4	113.1	115.4	119.1	126.2	139.9	160.4	183.0	210.8	244.8	283.9
130°	116.1	116.8	119.7	123.6	130.8	143.7	162.6	183.2	208.1	237.6	273.3
132.5°	117.6	119.0	122.4	127.4	134.9	147.0	164.2	183.1	204.9	231.0	262.9
135°	122.4	123.4	127.0	132.0	139.2	150.6	165.5	181.5	199.7	221.1	248.4
137.5°	126.7	127.9	131.6	136.9	144.1	154.0	166.8	180.6	195.4	212.7	235.8
140°	128.7	130.4	134.0	139.7	146.8	156.3	167.7	179.5	192.7	207.2	227.9
142.5°	132.1	133.3	136.8	141.7	148.6	156.8	167.1	177.7	189.2	201.6	219.9
145°	137.5	138.3	141.2	146.1	151.9	159.9	169.2	178.7	188.7	199.4	213.7
147.5°	141.6	142.2	145.3	150.0	155.8	162.8	171.3	180.0	188.7	198.1	208.7
150°	145.2	145.6	148.5	153.1	158.0	164.5	172.7	180.3	188.7	197.0	205.9
152.5°	149.0	149.1	151.9	155.9	160.4	166.5	173.6	180.8	187.9	195.6	203.6
155°	154.5	154.5	156.6	160.3	164.2	169.2	175.2	181.0	187.0	193.1	200.2
157.5°	159.0	159.3	161.0	164.1	167.4	171.3	176.1	181.3	185.8	190.9	196.3
160°	162.4	162.4	163.8	166.6	169.2	172.7	177.0	181.3	185.2	189.1	193.8
162.5°	164.9	164.9	166.1	168.3	170.6	173.6	177.3	181.0	184.1	187.4	191.2
165°	168.7	168.4	169.2	171.0	172.4	174.9	177.7	180.3	182.4	184.9	187.7
167.5°	171.7	171.3	171.7	173.0	174.0	175.6	177.6	179.7	180.7	182.3	184.4
170°	173.4	172.7	173.1	174.1	174.9	175.6	177.3	178.7	179.6	180.6	182.4
172.5°	174.6	174.1	174.2	175.0	175.4	175.8	177.3	178.5	178.6	179.2	180.4
175°	175.9	175.6	175.2	175.9	175.9	176.3	177.0	177.7	177.3	177.3	178.0
177.5°	176.6	176.3	176.0	176.3	176.3	176.3	176.6	177.1	176.6	176.3	176.6
180°	176.3	176.3	176.3	176.3	176.3	176.3	176.3	176.3	176.3	176.3	176.3



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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°	228.0	240.0	252.2	260.0	263.5	267.1	270.7	274.2
90°	212.3	224.6	237.0	245.5	248.6	252.6	256.4	259.5
92.5°	222.7	228.2	237.1	242.8	245.3	247.5	251.2	253.7
95°	307.5	277.0	269.0	263.5	260.1	260.5	261.6	263.7
97.5°	487.0	433.7	398.3	362.6	339.8	327.3	321.1	321.6
100°	579.4	560.7	529.1	485.3	452.8	430.3	419.9	423.7
102.5°	604.5	613.6	599.2	573.8	549.3	532.2	524.0	519.4
105°	602.7	648.3	665.0	662.2	648.9	638.5	630.4	631.8
107.5°	562.7	630.1	670.8	689.7	693.2	691.7	690.9	690.7
110°	528.9	603.7	657.9	688.8	701.7	707.3	709.4	711.6



TEST NUMBER: P332050-840

CATALOG NUMBER: S123DIP-S1165D365U840-4F0-1E-UDD-D4

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	494.1	570.2	629.4	667.5	688.9	700.8	706.7	709.9
115°	448.3	518.9	579.8	624.3	653.9	672.5	682.4	687.0
117.5°	411.5	473.5	529.1	574.1	604.8	625.5	638.5	643.7
120°	391.2	447.6	498.5	539.8	570.5	592.9	603.9	608.5
122.5°	373.8	425.2	472.7	511.3	538.9	559.3	571.2	576.4
125°	349.3	395.7	437.3	470.8	496.0	514.2	525.6	530.6
127.5°	326.7	368.3	406.3	436.9	459.7	475.4	485.9	490.6
130°	312.0	350.8	386.5	415.2	436.2	451.1	460.8	465.7
132.5°	298.0	334.0	367.3	394.9	415.0	430.2	439.3	443.6
135°	278.7	310.4	339.9	364.4	383.5	396.1	404.2	408.5
137.5°	260.7	287.1	312.7	334.0	350.4	363.0	370.2	373.7
140°	249.9	273.5	295.9	314.8	330.1	341.8	349.3	350.7
142.5°	238.9	259.2	278.8	295.4	308.7	319.3	326.3	327.7
145°	227.9	242.6	256.8	269.2	279.6	288.5	292.8	294.9
147.5°	219.2	229.4	239.5	247.9	255.9	262.3	266.3	267.8
150°	214.1	222.4	229.8	236.9	243.0	247.6	250.4	251.2
152.5°	211.0	218.0	224.7	230.4	234.8	238.5	239.9	240.0
155°	206.3	212.0	217.3	221.6	224.8	227.7	228.4	228.7
157.5°	201.3	206.0	210.2	213.6	216.3	218.4	219.0	218.9
160°	198.4	202.4	205.9	208.4	210.9	213.1	213.1	212.7
162.5°	195.0	198.3	201.7	203.9	205.5	207.3	207.3	207.0
165°	190.6	192.7	195.2	197.0	198.4	199.9	199.4	199.4
167.5°	186.7	188.3	189.8	191.1	191.7	192.7	192.4	192.4
170°	184.1	185.2	186.6	187.3	187.7	188.4	188.0	188.0
172.5°	181.9	182.7	183.8	184.2	184.3	185.0	184.4	184.1
175°	178.7	179.2	179.9	179.9	179.9	180.3	179.9	179.6
177.5°	176.8	177.1	177.4	177.4	177.1	177.4	176.8	176.8
180°	176.3	176.3	176.3	176.3	176.3	176.3	176.3	176.3

(END OF REPORT)