

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: P332371-940

Luminaire Tested: **S123RDIP-S1165D585U940-4F0-1E-UDD-F4**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332371-940
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: S123RDIP-S1165D585U940-4F0-1E-UDD-F4
Description: DEFINE 3 DIRECT-INDIRECT PENDANT LED LUMINAIRE
DOWNLIGHT 1165 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER, REGRESSED
HOUSING
UPLIGHT 585 LUMENS PER FOOT, BATWING OPTIC
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 5796.6 lumens
Efficiency: N/A
Efficacy: 105.2 lumens/watt
Spacing Criteria (0/90/45): 1.21 / 1.06 / 1.22
Luminous Opening: Rectangular (W 0.25' x L: 4' x H: 0')
CIE Type: Semi-Direct

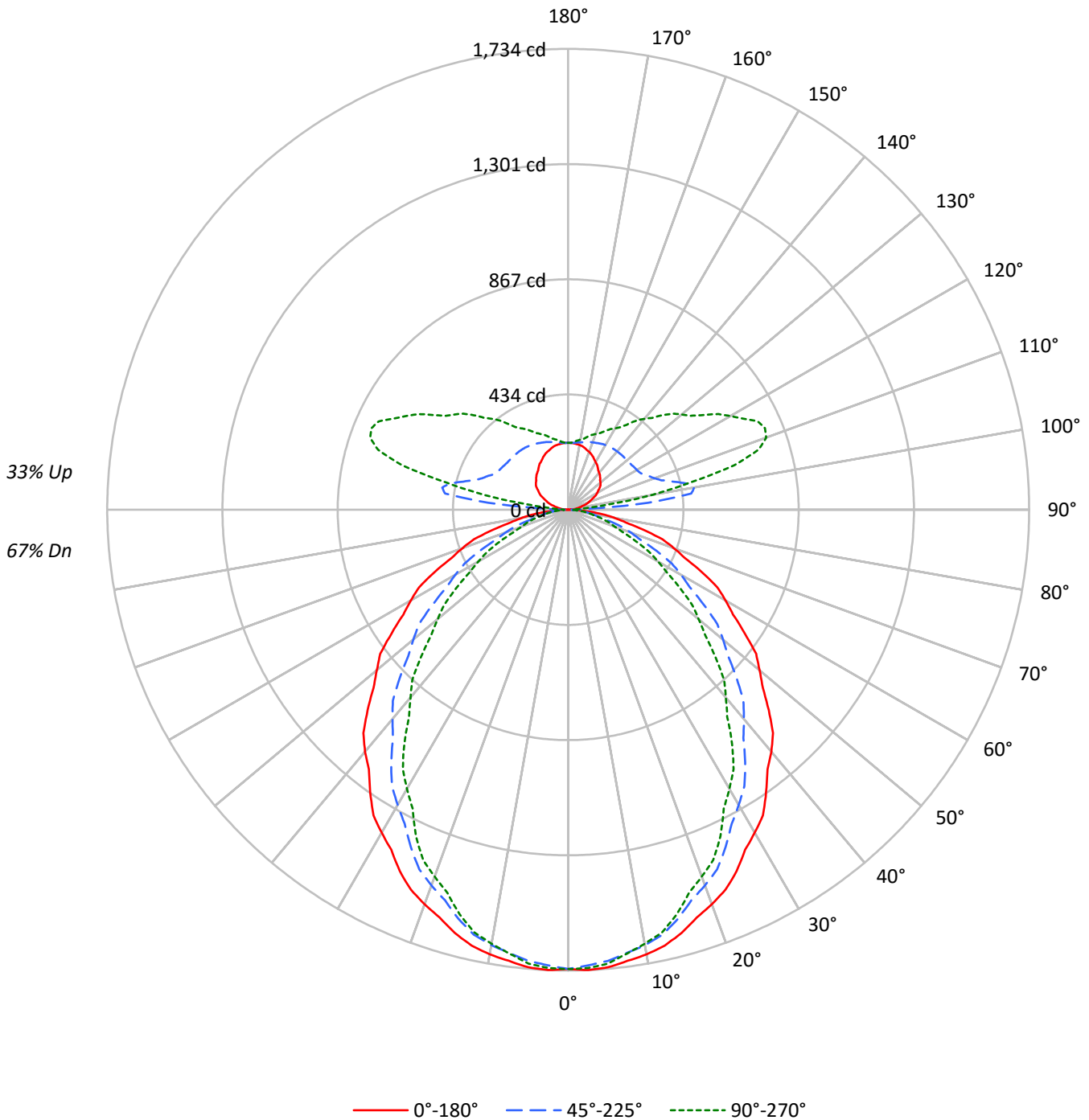
Input Watts (W): 55.1
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	111	111	111	111	105	105	105	105	93	93	93	82	82	82	72	72	72	67
1	102	98	94	91	96	92	89	86	82	80	77	73	71	69	64	63	62	58
2	93	86	80	75	88	81	76	71	73	68	65	65	61	59	57	55	53	49
3	85	76	69	63	80	72	65	60	64	59	55	58	54	50	51	48	45	42
4	78	68	60	54	74	64	57	51	58	52	47	52	47	43	46	42	39	36
5	72	61	52	46	68	58	50	45	52	46	41	47	42	38	42	38	35	32
6	67	55	46	41	63	52	44	39	47	41	36	42	37	33	38	34	31	28
7	62	49	41	36	58	47	40	35	43	37	32	39	34	30	35	31	27	25
8	58	45	37	32	54	43	36	31	39	33	29	35	30	27	32	28	25	23
9	54	41	34	29	51	40	33	28	36	30	26	33	28	24	30	25	22	20
10	50	38	31	26	48	36	30	25	33	28	24	30	25	22	28	23	20	19

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	18603	18603	18603
5°	18674	18416	18522
10°	18569	18185	18124
15°	18369	17761	17572
20°	18095	17228	16827
25°	17813	16631	16098
30°	17439	15940	15070
35°	17056	15251	14127
40°	16703	14436	12960
45°	16238	13633	11905
50°	15726	12722	10727
55°	15204	11678	9627
60°	14725	10562	8420
65°	14103	9352	7210
70°	13322	7852	5822
75°	12181	6180	5481
80°	10860	5473	5040
85°	9176	4841	4508



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	162.3	2.8
10°-20°	451.6	7.8
20°-30°	650.2	11.2
30°-40°	732.4	12.6
40°-50°	700.7	12.1
50°-60°	573.8	9.9
60°-70°	387.1	6.7
70°-80°	194.8	3.4
80°-90°	53.5	0.9
90°-100°	139.8	2.4
100°-110°	395.9	6.8
110°-120°	389.5	6.7
120°-130°	310.7	5.4
130°-140°	244.9	4.2
140°-150°	182.8	3.2
150°-160°	127.4	2.2
160°-170°	74.9	1.3
170°-180°	24.4	0.4
0°-30°	1264.1	21.8
0°-40°	1996.5	34.4
0°-60°	3270.9	56.4
0°-90°	3906.3	67.4
90°-120°	925.2	16.0
90°-150°	1663.7	28.7
90°-180°	1890.0	32.6
0°-180°	5796.6	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1728	1728	1728	1728	1728	
5°	1728	1721	1704	1716	1714	164
15°	1648	1632	1594	1587	1577	464
25°	1500	1463	1400	1372	1355	689
35°	1298	1246	1161	1102	1075	812
45°	1067	1001	896	818	782	823
55°	810	739	622	544	513	726
65°	554	475	367	302	283	548
75°	293	225	149	135	132	312
85°	74	45	39	37	36	83
90°	1	6	13	14	15	5
95°	17	56	302	88	59	19
105°	59	87	409	715	647	63
115°	104	130	313	686	787	103
125°	145	171	292	529	620	129
135°	170	203	288	436	503	131
145°	194	222	284	357	393	121
155°	220	238	275	313	326	101
165°	241	247	264	279	284	68
175°	251	251	253	256	256	24
180°	251	251	251	251	251	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1728.3	1728.3	1728.3	1728.3	1728.3	1728.3	1728.3	1728.3	1728.3	1728.3	1728.3
2.5°	1733.9	1732.9	1731.9	1730.9	1729.9	1727.9	1724.9	1721.9	1719.0	1715.9	1718.7
5°	1728.3	1726.7	1725.2	1723.6	1722.1	1719.4	1715.7	1711.9	1708.2	1704.4	1707.3
7.5°	1712.3	1710.7	1709.0	1707.3	1705.6	1702.3	1697.5	1692.6	1687.7	1682.8	1684.4
10°	1698.9	1696.7	1694.5	1692.3	1690.1	1686.2	1680.6	1675.0	1669.4	1663.8	1664.1
12.5°	1679.8	1677.4	1674.9	1672.5	1670.1	1665.4	1658.6	1651.7	1644.8	1638.0	1637.8
15°	1648.4	1644.9	1641.6	1638.1	1634.7	1628.6	1619.9	1611.1	1602.4	1593.8	1592.1
17.5°	1608.8	1604.9	1600.9	1596.9	1593.0	1585.4	1574.3	1563.2	1552.1	1541.1	1537.8
20°	1579.7	1574.8	1569.8	1564.8	1559.8	1551.4	1539.5	1527.7	1515.8	1504.0	1499.9
22.5°	1547.2	1541.4	1535.7	1530.0	1524.3	1515.1	1502.5	1490.0	1477.4	1464.7	1459.7
25°	1499.8	1492.0	1484.3	1476.4	1468.6	1457.6	1443.2	1429.0	1414.6	1400.3	1393.7
27.5°	1442.3	1433.8	1425.1	1416.6	1407.9	1395.7	1379.7	1363.8	1347.8	1331.9	1322.8
30°	1403.1	1393.7	1384.4	1375.0	1365.7	1352.3	1334.9	1317.4	1300.0	1282.5	1271.9
32.5°	1363.9	1353.3	1342.6	1332.0	1321.5	1307.0	1288.5	1270.1	1251.6	1233.2	1221.6
35°	1298.0	1286.7	1275.5	1264.4	1253.1	1237.9	1218.5	1199.3	1179.9	1160.6	1147.2
37.5°	1231.3	1218.8	1206.3	1193.8	1181.4	1164.8	1144.2	1123.6	1103.0	1082.4	1067.2
40°	1188.7	1174.9	1161.2	1147.5	1133.8	1115.9	1093.8	1071.7	1049.5	1027.4	1011.2
42.5°	1140.4	1126.7	1113.0	1099.3	1085.6	1067.3	1044.5	1021.5	998.7	975.9	958.1
45°	1066.7	1052.7	1038.7	1024.7	1010.6	991.6	967.6	943.6	919.6	895.6	877.9
47.5°	992.9	977.6	962.2	946.8	931.4	911.7	887.7	863.7	839.7	815.8	796.5
50°	939.1	924.5	909.8	895.2	880.6	860.7	835.4	810.2	785.0	759.7	740.4
52.5°	890.9	875.0	859.2	843.3	827.3	806.9	781.9	757.0	732.0	707.0	687.0
55°	810.2	794.9	779.6	764.4	749.1	728.3	701.8	675.3	648.8	622.3	604.3
57.5°	735.6	719.0	702.3	685.7	669.1	647.5	620.9	594.2	567.7	541.1	524.0
60°	684.0	666.9	649.8	632.7	615.5	594.0	568.1	542.3	516.5	490.6	473.8
62.5°	632.4	615.3	598.2	581.0	563.9	542.4	516.6	490.7	464.8	439.0	423.2
65°	553.7	536.5	519.4	502.3	485.2	464.4	440.1	415.8	391.6	367.2	352.0
67.5°	474.9	457.5	440.2	422.9	405.6	385.3	362.0	338.7	315.4	292.1	280.7
70°	423.3	406.5	389.7	372.8	356.1	336.7	315.0	293.1	271.3	249.5	238.6
72.5°	371.8	355.2	338.6	322.0	305.4	287.2	267.4	247.6	227.8	208.0	199.1
75°	292.9	278.0	263.1	248.1	233.2	217.1	200.0	182.8	165.7	148.6	145.4
77.5°	221.1	207.7	194.1	180.7	167.1	154.8	143.8	132.8	121.7	110.8	109.1
80°	175.2	162.5	149.6	136.9	124.1	114.5	107.9	101.4	94.9	88.3	87.4
82.5°	131.4	120.5	109.4	98.4	87.4	80.3	77.3	74.2	71.2	68.1	67.1
85°	74.3	67.4	60.5	53.8	46.9	43.0	42.1	41.1	40.2	39.2	38.6
87.5°	27.1	24.6	22.0	19.6	17.0	15.9	16.2	16.5	16.9	17.1	16.8
90°	1.0	2.1	3.0	4.5	5.6	6.6	8.1	9.6	11.1	12.8	12.2
92.5°	6.3	9.4	13.6	17.6	21.8	29.4	42.7	64.6	86.1	78.2	59.0
95°	17.3	18.8	24.4	33.1	46.3	66.1	109.3	185.1	268.6	301.6	244.6
97.5°	29.5	30.1	34.4	41.9	54.9	76.4	117.7	203.1	342.1	467.4	500.1
100°	37.6	38.2	41.7	48.9	61.0	80.9	116.5	191.7	325.5	481.6	581.8
102.5°	46.2	47.1	50.3	57.0	67.9	86.1	118.1	182.0	301.1	455.2	585.9
105°	59.0	60.5	63.6	69.6	79.4	95.1	122.6	175.0	271.1	408.9	554.9
107.5°	72.6	74.2	77.1	83.1	92.2	106.8	130.9	174.4	252.0	368.0	500.6
110°	82.4	83.9	86.5	92.0	100.7	114.9	137.9	176.5	244.6	344.8	466.4



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	91.3	92.9	95.4	101.0	109.7	123.5	144.7	180.6	240.6	329.4	436.7
115°	104.2	106.3	109.3	114.4	123.1	136.8	156.1	187.2	239.1	312.8	400.8
117.5°	117.2	119.5	122.1	126.7	136.4	149.1	168.3	195.9	240.0	303.0	379.2
120°	126.2	127.7	130.2	135.3	145.0	157.7	175.9	202.4	241.6	298.5	367.7
122.5°	133.8	135.4	137.9	143.4	152.7	166.2	184.1	208.6	244.4	295.7	358.4
125°	145.0	146.0	149.0	154.6	164.3	178.0	195.8	218.2	248.7	291.9	346.3
127.5°	153.4	154.9	158.7	164.3	175.0	188.8	206.0	226.1	253.6	290.1	335.8
130°	158.7	160.2	164.8	170.9	181.6	195.3	212.0	231.4	256.8	288.9	330.1
132.5°	162.7	164.7	169.7	177.0	187.7	201.0	217.4	236.3	259.3	288.5	324.8
135°	169.9	171.9	177.5	185.1	195.8	209.6	225.3	242.6	263.0	287.8	317.9
137.5°	176.6	178.7	184.2	192.3	203.0	215.6	230.8	247.3	265.4	286.8	311.9
140°	181.1	183.6	188.7	196.8	207.0	219.7	234.4	249.8	267.0	286.3	308.2
142.5°	185.9	188.1	193.6	200.9	211.1	223.0	237.3	252.2	268.2	285.5	305.0
145°	193.8	195.3	199.9	207.5	216.2	227.8	241.1	254.9	269.0	284.3	300.6
147.5°	201.7	202.6	207.1	213.7	222.0	232.0	244.2	256.5	269.0	282.4	296.3
150°	207.0	207.5	211.6	218.2	225.3	234.4	246.2	256.8	269.0	280.7	293.5
152.5°	212.3	212.4	216.5	222.3	228.5	237.3	247.4	257.7	267.9	278.7	290.3
155°	220.3	220.3	223.3	228.4	234.0	241.1	249.8	257.9	266.5	275.2	285.3
157.5°	226.5	226.9	229.3	233.9	238.6	244.2	251.0	258.4	264.7	272.0	279.8
160°	231.4	231.4	233.4	237.6	241.1	246.2	252.3	258.4	263.9	269.6	276.2
162.5°	235.1	235.1	236.7	240.0	243.1	247.4	252.7	258.0	262.3	267.2	272.5
165°	240.6	240.0	241.1	243.6	245.7	249.2	253.2	256.8	259.9	263.5	267.5
167.5°	244.8	244.2	244.6	246.6	248.0	250.2	253.2	256.0	257.4	259.8	262.8
170°	247.2	246.2	246.6	248.2	249.2	250.2	252.8	254.9	255.8	257.3	259.9
172.5°	248.8	248.2	248.3	249.4	250.0	250.7	252.8	254.4	254.6	255.3	257.1
175°	250.7	250.2	249.8	250.7	250.7	251.3	252.3	253.2	252.8	252.8	253.8
177.5°	251.6	251.3	250.8	251.3	251.3	251.3	251.6	252.4	251.6	251.3	251.6
180°	251.3	251.3	251.3	251.3	251.3	251.3	251.3	251.3	251.3	251.3	251.3



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1728.3	1728.3	1728.3	1728.3	1728.3	1728.3	1728.3	1728.3
2.5°	1721.4	1724.2	1726.9	1728.0	1727.5	1727.1	1726.5	1726.0
5°	1710.0	1712.9	1715.7	1716.7	1716.1	1715.5	1714.8	1714.2
7.5°	1686.0	1687.6	1689.1	1689.3	1688.3	1687.2	1686.1	1685.1
10°	1664.5	1664.7	1665.1	1664.5	1662.9	1661.3	1659.7	1658.2
12.5°	1637.6	1637.4	1637.3	1636.3	1634.5	1632.6	1630.8	1629.1
15°	1590.6	1589.0	1587.5	1585.6	1583.4	1581.3	1579.0	1576.9
17.5°	1534.5	1531.1	1527.8	1524.6	1521.3	1518.0	1514.8	1511.5
20°	1495.9	1491.8	1487.8	1483.9	1480.2	1476.4	1472.7	1469.0
22.5°	1454.6	1449.7	1444.6	1440.3	1436.8	1433.3	1429.9	1426.4
25°	1387.2	1380.6	1374.1	1369.1	1365.7	1362.3	1358.9	1355.4
27.5°	1313.7	1304.6	1295.5	1288.3	1283.1	1277.9	1272.6	1267.4
30°	1261.3	1250.8	1240.2	1232.4	1227.4	1222.4	1217.5	1212.5
32.5°	1210.1	1198.5	1186.9	1178.5	1173.2	1168.0	1162.8	1157.5
35°	1133.8	1120.4	1107.1	1097.5	1091.9	1086.3	1080.7	1075.1
37.5°	1052.0	1036.8	1021.5	1010.5	1003.6	996.7	989.8	982.8
40°	995.1	978.8	962.7	951.0	943.8	936.7	929.5	922.3
42.5°	940.5	922.7	905.1	893.0	886.6	880.2	873.8	867.4
45°	860.1	842.4	824.7	812.1	804.6	797.1	789.6	782.1
47.5°	777.1	757.9	738.5	725.6	718.9	712.2	705.5	698.9
50°	721.1	701.8	682.4	669.2	662.1	654.9	647.7	640.6
52.5°	666.9	646.8	626.8	613.5	607.1	600.7	594.3	587.9
55°	586.2	568.1	550.1	538.0	531.7	525.5	519.2	513.0
57.5°	506.9	489.8	472.8	461.5	456.3	451.0	445.7	440.4
60°	456.9	440.1	423.3	412.2	407.0	401.6	396.4	391.1
62.5°	407.3	391.6	375.7	365.1	359.4	353.9	348.4	342.9
65°	336.7	321.5	306.2	296.9	293.5	290.0	286.6	283.1
67.5°	269.3	257.9	246.5	239.0	235.3	231.6	227.9	224.3
70°	227.7	216.8	205.9	198.8	195.3	191.9	188.4	185.0
72.5°	190.2	181.3	172.4	167.2	165.8	164.3	162.9	161.5
75°	142.3	139.2	136.1	134.3	133.7	133.0	132.4	131.8
77.5°	107.4	105.7	104.0	102.8	102.2	101.6	100.9	100.3
80°	86.4	85.5	84.5	83.8	83.2	82.6	81.9	81.3
82.5°	66.3	65.4	64.4	63.8	63.8	63.6	63.5	63.4
85°	38.0	37.4	36.7	36.5	36.5	36.5	36.5	36.5
87.5°	16.6	16.5	16.3	16.3	16.0	15.8	15.6	15.2
90°	12.8	13.2	13.7	14.7	14.3	14.7	15.2	14.7
92.5°	42.8	34.0	30.1	27.4	26.5	24.9	25.4	24.5
95°	183.1	124.1	97.1	78.8	69.2	64.6	61.0	59.0
97.5°	456.5	365.6	300.0	239.2	201.6	178.7	165.0	160.6
100°	599.7	558.5	498.9	426.7	375.3	338.2	318.4	318.9
102.5°	647.3	646.0	611.3	565.4	525.5	496.1	479.5	467.8
105°	661.2	712.0	721.8	708.5	685.1	665.8	649.5	646.9
107.5°	621.1	703.7	748.2	766.3	766.8	760.3	754.7	750.1
110°	582.8	676.5	740.6	776.1	790.4	794.4	793.4	792.4



TEST NUMBER: P332371-940

CATALOG NUMBER: S123RDIP-S1165D585U940-4F0-1E-UDD-F4

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	545.0	640.6	712.5	758.2	784.3	796.9	800.8	800.9
115°	494.9	583.4	658.2	713.5	751.7	774.1	784.3	786.8
117.5°	458.5	534.9	602.1	658.4	698.1	723.7	738.4	741.8
120°	439.4	508.1	569.1	620.5	660.7	689.2	701.3	704.5
122.5°	424.4	486.5	543.1	590.8	626.5	652.1	665.6	669.4
125°	404.3	459.8	508.6	549.3	581.8	604.2	617.0	620.5
127.5°	386.8	436.3	480.4	517.4	546.4	565.4	576.9	580.2
130°	375.9	421.6	462.8	497.4	524.4	542.7	553.4	557.4
132.5°	365.7	407.8	446.1	479.1	504.4	522.7	532.2	535.0
135°	352.0	388.1	421.2	450.1	475.0	490.3	499.4	503.0
137.5°	339.5	369.1	397.5	422.7	443.6	459.1	466.8	469.1
140°	332.2	358.0	382.5	404.3	423.7	437.9	446.0	445.5
142.5°	325.2	347.5	368.6	387.6	404.1	416.8	424.1	423.6
145°	316.8	333.7	349.9	364.7	377.4	388.1	392.2	393.2
147.5°	310.0	323.3	336.5	347.0	356.6	363.8	367.7	368.1
150°	305.1	316.8	327.5	337.2	344.8	350.4	353.5	353.5
152.5°	300.7	310.8	320.2	328.2	334.2	339.5	341.3	341.3
155°	294.0	302.1	309.8	315.8	320.4	324.5	325.5	326.0
157.5°	286.9	293.6	299.6	304.3	308.4	311.4	312.2	312.1
160°	282.8	288.4	293.5	297.0	300.6	303.6	303.6	303.1
162.5°	277.9	282.7	287.4	290.5	292.8	295.5	295.5	295.0
165°	271.6	274.6	278.2	280.7	282.8	284.8	284.3	284.3
167.5°	266.1	268.4	270.5	272.3	273.2	274.6	274.1	274.1
170°	262.4	263.9	266.0	267.0	267.5	268.6	268.0	268.0
172.5°	259.2	260.3	261.9	262.5	262.6	263.7	262.8	262.3
175°	254.9	255.3	256.4	256.4	256.4	256.8	256.4	255.8
177.5°	252.1	252.4	252.9	252.9	252.4	252.9	252.1	252.1
180°	251.3	251.3	251.3	251.3	251.3	251.3	251.3	251.3

(END OF REPORT)