

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: P332389-940

Luminaire Tested: **S123RDIP-S1165D1195U940-4F0-1E-UDD-F4**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332389-940
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-S1165D1195U940-4F0-1E-UDD-F4
Description: DEFINE 3 DIRECT-INDIRECT PENDANT LED LUMINAIRE
DOWNLIGHT 1165 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER, REGRESSED
HOUSING
UPLIGHT 1195 LUMENS PER FOOT, BATWING OPTIC
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 7758.8 lumens
Efficiency: N/A
Efficacy: 108.2 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: General Diffuse

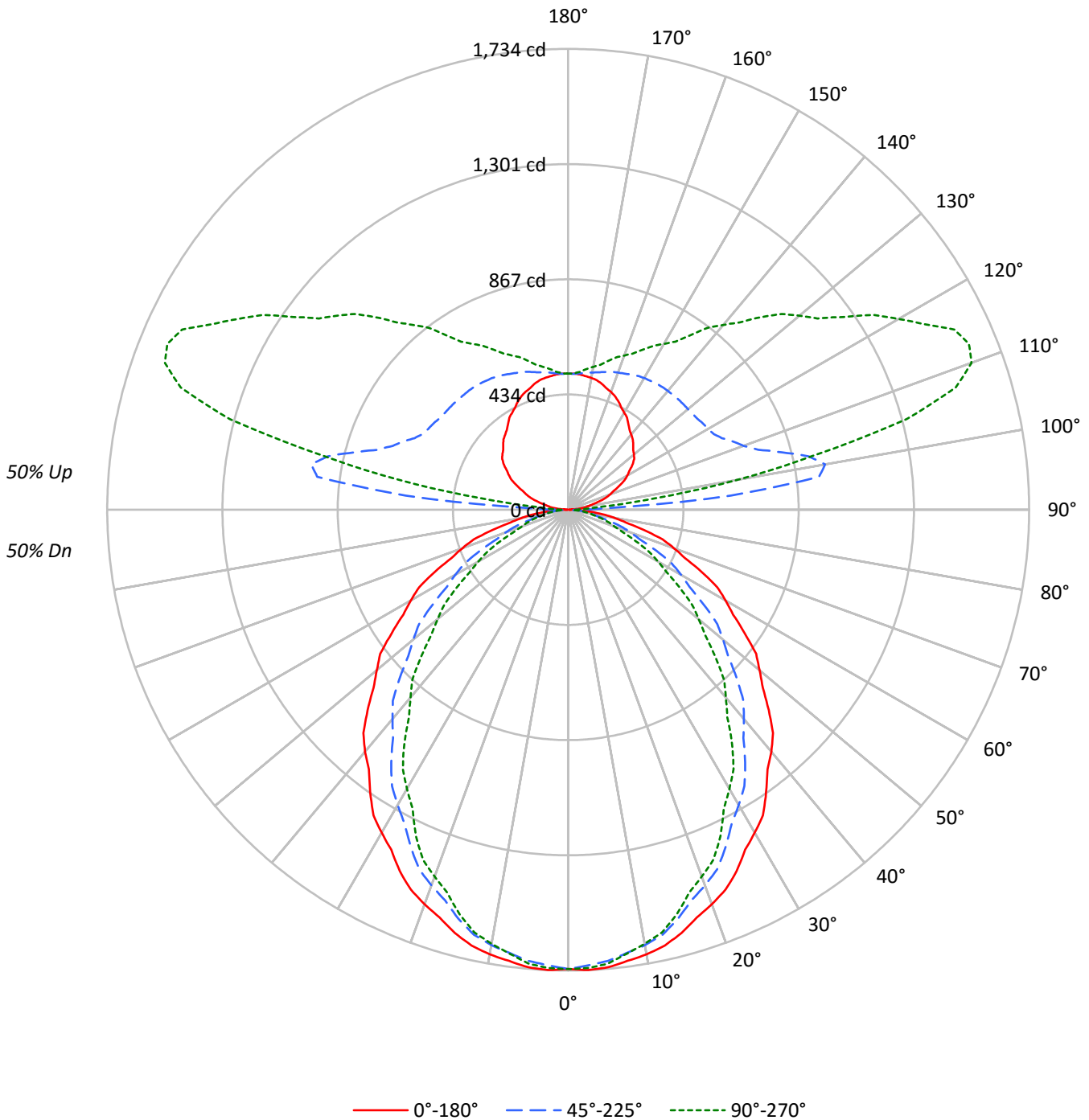
Input Watts (W): 71.7
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	107	107	107	107	99	99	99	99	84	84	84	69	69	69	56	56	56	50
1	98	94	90	87	91	87	84	81	74	71	69	62	60	58	50	49	48	43
2	90	82	76	71	83	76	71	67	65	61	58	54	52	49	45	43	41	37
3	82	73	66	60	75	67	61	56	58	53	49	48	45	42	40	37	35	31
4	75	65	57	51	69	60	53	48	51	46	42	43	39	36	36	33	31	27
5	69	58	50	44	64	54	47	41	46	41	36	39	35	32	32	29	27	24
6	64	52	44	38	59	48	41	36	42	36	32	35	31	28	30	26	24	21
7	59	47	39	34	54	44	37	32	38	32	28	32	28	25	27	24	21	19
8	55	43	35	30	51	40	33	28	35	29	25	30	25	22	25	22	19	17
9	51	39	32	27	47	36	30	25	32	26	23	27	23	20	23	20	17	15
10	48	36	29	24	44	34	27	23	29	24	20	25	21	18	21	18	16	14

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	2.1
10°-20°	451.6	5.8
20°-30°	650.2	8.4
30°-40°	732.4	9.4
40°-50°	700.7	9.0
50°-60°	573.8	7.4
60°-70°	387.1	5.0
70°-80°	194.8	2.5
80°-90°	55.5	0.7
90°-100°	284.8	3.7
100°-110°	806.5	10.4
110°-120°	793.4	10.2
120°-130°	632.8	8.2
130°-140°	498.9	6.4
140°-150°	372.4	4.8
150°-160°	259.6	3.3
160°-170°	152.5	2.0
170°-180°	49.6	0.6
0°-30°	1264.1	16.3
0°-40°	1996.5	25.7
0°-60°	3270.9	42.2
0°-90°	3908.3	50.4
90°-120°	1884.7	24.3
90°-150°	3388.9	43.7
90°-180°	3851.0	49.6
0°-180°	7758.8	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°	2	12	26	29	30	6
95°	35	114	614	179	120	38
105°	120	178	833	1457	1318	128
115°	212	265	637	1397	1603	210
125°	295	349	595	1077	1264	262
135°	346	413	586	887	1025	267
145°	395	452	579	728	801	247
155°	449	484	560	637	664	206
165°	490	504	537	569	579	138
175°	511	511	515	522	521	48
180°	512	512	512	512	512	



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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°	27.3	25.0	22.6	20.6	18.2	17.3	17.9	18.5	19.2	19.8	19.3
90°	2.1	4.1	6.2	9.4	11.4	13.5	16.6	19.7	22.8	25.9	24.9
92.5°	12.8	19.1	27.7	35.8	44.6	59.9	87.0	131.6	175.3	159.3	120.2
95°	35.2	38.3	49.8	67.3	94.3	134.6	222.7	377.1	547.1	614.4	498.3
97.5°	60.1	61.1	70.0	85.3	111.9	155.6	239.8	413.8	697.1	952.1	1018.6
100°	76.7	77.7	85.0	99.4	124.3	164.7	237.3	390.6	663.1	981.1	1185.3
102.5°	94.1	95.9	102.4	116.0	138.4	175.5	240.6	370.7	613.3	927.3	1193.5
105°	120.2	123.3	129.5	142.0	161.6	193.8	249.7	356.4	552.2	832.9	1130.3
107.5°	147.9	151.1	157.0	169.2	187.7	217.6	266.7	355.3	513.3	749.7	1019.7
110°	167.8	170.9	176.1	187.5	205.1	234.2	280.8	359.5	498.3	702.4	950.0



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	186.1	189.2	194.4	205.7	223.4	251.6	294.9	367.8	490.1	670.9	889.6
115°	212.4	216.5	222.7	233.1	250.7	278.7	318.1	381.3	487.0	637.1	816.4
117.5°	238.7	243.4	248.6	258.2	277.9	303.8	342.7	399.0	488.8	617.2	772.2
120°	256.9	260.0	265.2	275.6	295.2	321.2	358.5	412.3	492.1	608.1	749.0
122.5°	272.7	275.8	281.0	292.1	311.0	338.6	375.1	424.8	497.9	602.4	730.0
125°	295.2	297.4	303.5	315.0	334.7	362.6	398.9	444.4	506.6	594.7	705.5
127.5°	312.5	315.6	323.2	334.8	356.6	384.6	419.5	460.7	516.6	590.9	684.0
130°	323.2	326.4	335.6	348.1	369.9	397.8	432.0	471.4	523.2	588.4	672.3
132.5°	331.5	335.5	345.6	360.5	382.3	409.5	442.8	481.3	528.2	587.6	661.6
135°	346.1	350.2	361.6	377.1	398.9	426.9	459.0	494.2	535.7	586.4	647.6
137.5°	359.7	364.1	375.2	391.8	413.4	439.3	470.1	503.7	540.6	584.1	635.3
140°	368.8	374.0	384.3	400.9	421.7	447.5	477.6	508.7	543.9	583.3	627.9
142.5°	378.8	383.2	394.3	409.2	430.0	454.2	483.4	513.6	546.4	581.7	621.2
145°	394.8	397.8	407.2	422.7	440.3	464.1	491.1	519.1	548.0	579.2	612.3
147.5°	410.9	412.8	421.9	435.3	452.4	472.6	497.3	522.4	548.0	575.2	603.6
150°	421.7	422.7	431.0	444.4	459.0	477.6	501.4	523.2	548.0	571.9	597.8
152.5°	432.5	432.7	441.0	452.7	465.6	483.4	503.9	524.9	545.5	567.8	591.2
155°	448.6	448.6	454.9	465.2	476.5	491.1	508.7	525.3	542.9	560.5	581.2
157.5°	461.5	462.3	467.3	476.4	486.1	497.3	511.4	526.3	539.4	554.1	570.0
160°	471.4	471.4	475.5	483.8	491.1	501.4	513.9	526.3	537.7	549.1	562.6
162.5°	478.8	478.8	482.1	488.8	495.3	503.9	514.7	525.5	534.4	544.1	555.1
165°	490.1	489.0	491.1	496.2	500.4	507.7	515.9	523.2	529.4	536.6	544.9
167.5°	498.6	497.3	498.3	502.3	505.2	509.7	515.8	521.6	524.4	529.2	535.2
170°	503.5	501.4	502.5	505.6	507.7	509.7	514.9	519.1	521.1	524.2	529.4
172.5°	506.8	505.6	505.8	508.1	509.3	510.6	514.9	518.3	518.6	520.0	523.6
175°	510.8	509.7	508.7	510.8	510.8	511.8	513.9	515.9	514.9	514.9	517.0
177.5°	512.6	511.8	511.0	511.8	511.8	511.8	512.6	514.2	512.6	511.8	512.6
180°	511.8	511.8	511.8	511.8	511.8	511.8	511.8	511.8	511.8	511.8	511.8



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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°	19.3	19.3	19.2	19.4	18.9	18.8	18.8	18.4
90°	25.9	26.9	28.0	30.1	29.0	30.1	31.1	30.1
92.5°	87.2	69.2	61.1	55.7	53.9	50.7	51.8	49.9
95°	373.0	252.8	197.9	160.6	140.9	131.6	124.3	120.2
97.5°	929.7	744.7	611.1	487.1	410.7	364.1	336.1	327.2
100°	1221.5	1137.6	1016.4	869.2	764.6	688.9	648.5	649.6
102.5°	1318.5	1315.7	1245.1	1151.8	1070.4	1010.6	976.8	953.0
105°	1346.8	1450.5	1470.2	1443.2	1395.5	1356.2	1323.0	1317.9
107.5°	1265.2	1433.4	1524.2	1561.1	1561.9	1548.6	1537.5	1527.9
110°	1187.3	1378.0	1508.5	1581.0	1610.0	1618.3	1616.2	1614.2



TEST NUMBER: P332389-940

CATALOG NUMBER: S123RDIP-S1165D1195U940-4F0-1E-UDD-F4

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	1110.2	1305.0	1451.3	1544.5	1597.6	1623.3	1631.1	1631.6
115°	1008.1	1188.3	1340.6	1453.6	1531.2	1576.8	1597.6	1602.8
117.5°	934.1	1089.7	1226.5	1341.0	1422.1	1474.3	1504.1	1511.2
120°	895.1	1035.0	1159.3	1264.0	1345.8	1403.8	1428.7	1434.9
122.5°	864.4	991.0	1106.3	1203.5	1276.2	1328.4	1355.8	1363.6
125°	823.7	936.6	1036.0	1118.9	1185.3	1230.8	1256.7	1264.0
127.5°	788.0	888.7	978.4	1053.8	1112.9	1151.8	1175.3	1181.9
130°	765.6	858.9	942.8	1013.3	1068.2	1105.5	1127.2	1135.5
132.5°	744.9	830.7	908.8	976.0	1027.5	1064.8	1084.1	1089.9
135°	716.9	790.5	857.8	916.9	967.7	998.7	1017.4	1024.7
137.5°	691.4	751.7	809.8	860.9	903.7	935.1	950.8	955.6
140°	676.5	729.3	779.1	823.7	863.0	892.1	908.6	907.6
142.5°	662.5	707.8	750.9	789.7	823.2	848.9	863.8	862.8
145°	645.4	679.7	712.8	742.8	768.7	790.5	798.8	800.8
147.5°	631.6	658.7	685.5	706.8	726.5	741.2	749.0	749.8
150°	621.6	645.4	667.2	686.9	702.4	713.8	720.1	720.1
152.5°	612.5	633.0	652.3	668.7	680.9	691.4	695.2	695.2
155°	598.8	615.4	631.0	643.4	652.7	661.0	663.1	664.1
157.5°	584.3	598.2	610.2	619.9	628.0	634.3	635.9	635.7
160°	576.0	587.5	597.8	605.0	612.3	618.5	618.5	617.5
162.5°	566.1	575.9	585.3	591.7	596.6	601.9	601.9	600.9
165°	553.2	559.5	566.7	571.9	576.0	580.1	579.2	579.2
167.5°	542.1	546.8	551.0	554.7	556.5	559.5	558.4	558.4
170°	534.6	537.7	541.8	543.9	544.9	547.1	546.0	546.0
172.5°	528.0	530.2	533.6	534.8	535.0	537.1	535.2	534.4
175°	519.1	520.0	522.2	522.2	522.2	523.2	522.2	521.1
177.5°	513.4	514.2	515.1	515.1	514.2	515.1	513.4	513.4
180°	511.8	511.8	511.8	511.8	511.8	511.8	511.8	511.8

(END OF REPORT)