

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: P332959

Luminaire Tested: **S124RDIP-S1020D365U835-4F0-1E-UDD-F1**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332959
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-10,
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S124RDIP-S1020D365U835-4F0-1E-UDD-F1
Description: DEFINE 4 DIRECT-INDIRECT PENDANT LED LUMINAIRE
DOWNLIGHT 1020 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER, REGRESSED
HOUSING
UPLIGHT 365 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 5440.9 lumens
Efficiency: N/A
Efficacy: 125.1 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.09 / 1.24
Luminous Opening: Rectangular (W 0.33' x L: 4' x H: 0')
CIE Type: Semi-Direct

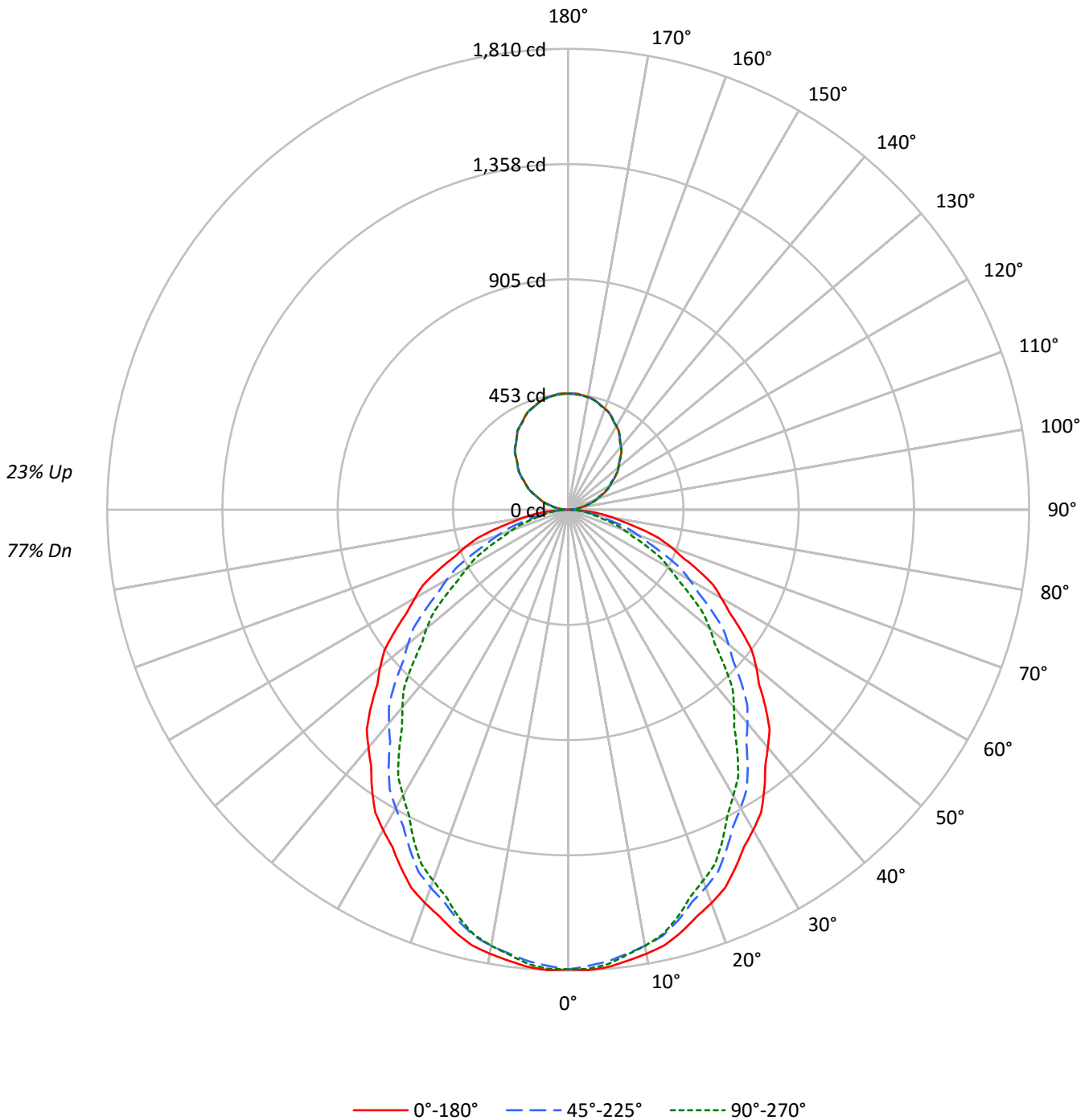
Input Watts (W): 43.5
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	50	30	10	0	
RCR																						
0	114	114	114	114	108	108	108	108	98	98	98	89	89	89	81	81	81	77				77
1	104	100	96	92	99	95	92	89	87	84	82	79	77	75	72	70	69				65	
2	95	88	81	76	91	84	78	74	77	72	68	70	67	63	64	61	59				55	
3	87	78	70	64	83	74	67	62	68	63	58	62	58	54	57	53	50				47	
4	80	69	61	55	76	66	59	53	61	55	50	56	51	47	51	47	44				41	
5	74	62	53	47	70	59	52	46	55	48	43	50	45	41	46	42	38				36	
6	68	56	47	41	65	54	46	40	50	43	38	46	40	36	42	38	34				32	
7	63	51	42	37	60	49	41	36	45	39	34	42	36	32	39	34	30				28	
8	59	46	38	33	56	45	37	32	41	35	30	38	33	29	36	31	27				25	
9	55	42	35	29	52	41	34	29	38	32	27	35	30	26	33	28	25				23	
10	52	39	32	27	49	38	31	26	35	29	25	33	28	24	31	26	23				21	

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	14577	14577	14577
5°	14610	14431	14521
10°	14519	14258	14258
15°	14352	13959	13855
20°	14123	13564	13315
25°	13831	13104	12772
30°	13546	12618	12089
35°	13231	12113	11404
40°	12852	11540	10666
45°	12501	10970	9913
50°	12103	10315	9117
55°	11676	9633	8251
60°	11207	8885	7367
65°	10776	7950	6497
70°	10150	6918	5516
75°	9357	5736	4485
80°	8164	4370	4114
85°	6919	3974	3714



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	169.6	3.1
10°-20°	473.0	8.7
20°-30°	683.0	12.6
30°-40°	774.2	14.2
40°-50°	747.6	13.7
50°-60°	621.7	11.4
60°-70°	429.3	7.9
70°-80°	217.6	4.0
80°-90°	57.2	1.1
90°-100°	30.1	0.6
100°-110°	89.3	1.6
110°-120°	151.5	2.8
120°-130°	199.8	3.7
130°-140°	224.4	4.1
140°-150°	220.5	4.1
150°-160°	185.4	3.4
160°-170°	123.4	2.3
170°-180°	43.2	0.8
0°-30°	1325.6	24.4
0°-40°	2099.9	38.6
0°-60°	3469.2	63.8
0°-90°	4173.2	76.7
90°-120°	270.9	5.0
90°-150°	915.6	16.8
90°-180°	1268.0	23.3
0°-180°	5440.9	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1806	1806	1806	1806	1806	
5°	1803	1797	1781	1794	1792	171
15°	1717	1704	1670	1667	1658	484
25°	1553	1526	1471	1448	1434	715
35°	1342	1297	1229	1183	1157	839
45°	1095	1042	961	896	868	844
55°	830	772	684	615	586	742
65°	564	503	416	359	340	557
75°	300	248	184	153	144	317
85°	75	48	43	40	40	84
90°	1	5	8	10	11	5
95°	21	24	27	28	28	24
105°	82	83	84	85	86	87
115°	154	154	153	153	153	152
125°	224	224	224	223	223	200
135°	289	291	292	291	290	224
145°	352	353	353	353	352	220
155°	403	403	402	404	402	185
165°	438	438	437	439	438	124
175°	456	454	454	456	454	43
180°	457	457	457	457	457	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1805.7	1805.7	1805.7	1805.7	1805.7	1805.7	1805.7	1805.7	1805.7	1805.7	1805.7
2.5°	1810.1	1809.1	1808.1	1807.2	1806.2	1804.3	1801.6	1798.9	1796.2	1793.5	1796.2
5°	1802.9	1801.7	1800.5	1799.2	1798.0	1795.5	1791.9	1788.2	1784.5	1780.8	1783.9
7.5°	1786.6	1785.3	1784.0	1782.7	1781.4	1778.4	1773.6	1768.8	1764.0	1759.2	1761.2
10°	1771.1	1769.6	1768.0	1766.5	1765.0	1761.4	1755.9	1750.4	1744.8	1739.3	1740.5
12.5°	1751.2	1749.4	1747.6	1745.9	1744.1	1739.9	1733.4	1726.9	1720.4	1713.9	1714.6
15°	1717.2	1714.4	1711.7	1708.9	1706.1	1700.9	1693.2	1685.5	1677.9	1670.2	1669.6
17.5°	1676.0	1672.0	1668.0	1664.0	1660.0	1653.4	1644.2	1635.0	1625.8	1616.5	1614.8
20°	1643.9	1639.9	1635.9	1631.9	1627.9	1620.7	1610.3	1599.8	1589.4	1578.9	1576.5
22.5°	1608.5	1604.0	1599.5	1595.1	1590.6	1582.7	1571.6	1560.4	1549.2	1538.0	1534.3
25°	1552.7	1547.1	1541.6	1536.1	1530.5	1521.5	1508.9	1496.3	1483.7	1471.1	1465.9
27.5°	1494.0	1487.1	1480.2	1473.2	1466.3	1456.1	1442.6	1429.2	1415.7	1402.2	1395.8
30°	1453.1	1445.4	1437.8	1430.1	1422.4	1411.3	1396.9	1382.4	1368.0	1353.6	1345.9
32.5°	1410.0	1401.3	1392.6	1384.0	1375.3	1363.5	1348.6	1333.7	1318.7	1303.8	1294.9
35°	1342.5	1332.7	1322.8	1313.0	1303.2	1290.6	1275.2	1259.9	1244.5	1229.1	1218.7
37.5°	1270.3	1260.2	1250.1	1239.9	1229.8	1216.2	1199.2	1182.2	1165.1	1148.1	1136.4
40°	1219.5	1209.3	1199.2	1189.0	1178.9	1165.1	1147.6	1130.0	1112.5	1095.0	1082.1
42.5°	1170.8	1160.2	1149.5	1138.9	1128.3	1113.8	1095.6	1077.3	1059.1	1040.8	1027.7
45°	1095.0	1083.7	1072.3	1060.9	1049.5	1034.6	1016.2	997.8	979.3	960.9	945.9
47.5°	1016.8	1005.0	993.3	981.6	969.8	954.4	935.2	916.0	896.8	877.7	862.1
50°	963.7	951.7	939.7	927.7	915.7	899.9	880.3	860.6	840.9	821.3	805.9
52.5°	909.5	897.7	886.0	874.3	862.5	846.6	826.4	806.3	786.1	766.0	750.4
55°	829.6	817.3	805.0	792.7	780.4	764.3	744.3	724.3	704.4	684.4	668.4
57.5°	750.5	737.7	724.9	712.1	699.4	683.1	663.5	643.8	624.1	604.5	588.3
60°	694.1	681.8	669.5	657.2	644.9	628.9	609.3	589.6	569.9	550.3	534.3
62.5°	643.2	630.4	617.6	604.8	592.1	575.6	555.4	535.3	515.1	495.0	480.2
65°	564.1	550.9	537.7	524.5	511.3	494.8	475.2	455.5	435.8	416.2	403.0
67.5°	482.0	469.3	456.7	444.0	431.3	415.9	397.6	379.4	361.1	342.9	331.5
70°	430.0	417.1	404.2	391.3	378.4	363.2	345.7	328.1	310.6	293.1	283.0
72.5°	374.7	363.0	351.3	339.7	328.0	313.9	297.4	280.8	264.3	247.8	239.1
75°	300.0	288.7	277.3	265.9	254.6	241.6	227.2	212.8	198.3	183.9	176.8
77.5°	224.3	214.6	205.0	195.3	185.7	175.0	163.3	151.7	140.0	128.3	124.2
80°	175.6	166.7	157.8	148.9	140.0	130.9	121.7	112.5	103.2	94.0	93.1
82.5°	133.6	125.4	117.2	109.0	100.9	94.1	88.9	83.6	78.3	73.0	72.3
85°	74.7	68.5	62.4	56.2	50.1	46.5	45.6	44.7	43.8	42.9	42.2
87.5°	25.7	23.9	22.1	20.3	18.5	17.5	17.4	17.3	17.2	17.0	16.9
90°	1.1	1.9	2.8	3.7	4.5	5.3	5.9	6.5	7.1	7.8	8.2
92.5°	7.6	8.6	9.5	10.5	11.5	12.2	12.7	13.1	13.6	14.0	14.3
95°	21.2	21.9	22.6	23.3	24.0	24.7	25.2	25.8	26.3	26.9	27.1
97.5°	37.0	37.6	38.2	38.7	39.3	39.9	40.5	41.2	41.8	42.5	42.8
100°	49.5	49.8	50.1	50.4	50.7	51.2	51.9	52.7	53.4	54.1	54.2
102.5°	62.5	62.6	62.7	62.9	63.0	63.4	64.0	64.7	65.3	65.9	66.2
105°	82.3	82.4	82.5	82.6	82.6	82.8	83.2	83.5	83.8	84.1	84.3
107.5°	103.2	103.3	103.4	103.5	103.6	103.6	103.7	103.7	103.8	103.8	104.0
110°	117.3	117.5	117.6	117.8	117.9	118.0	117.9	117.8	117.7	117.7	117.5



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	132.0	132.0	132.1	132.1	132.1	132.1	131.9	131.8	131.7	131.5	131.5
115°	154.1	154.1	154.1	154.1	154.1	154.0	153.8	153.7	153.5	153.4	153.3
117.5°	174.8	174.9	175.0	175.0	175.1	175.1	175.0	174.9	174.7	174.6	174.4
120°	188.7	189.0	189.3	189.6	190.0	190.0	189.8	189.5	189.3	189.1	188.7
122.5°	203.1	203.2	203.4	203.5	203.6	203.6	203.5	203.4	203.3	203.2	202.9
125°	224.4	224.4	224.4	224.4	224.4	224.3	224.3	224.2	224.1	224.0	223.9
127.5°	243.7	243.9	244.2	244.4	244.6	244.7	244.6	244.4	244.3	244.2	244.0
130°	257.3	257.5	257.7	258.0	258.2	258.3	258.3	258.3	258.3	258.3	258.2
132.5°	271.1	271.3	271.4	271.6	271.8	271.8	271.8	271.7	271.7	271.6	271.4
135°	289.4	289.9	290.3	290.8	291.3	291.5	291.5	291.5	291.5	291.5	291.4
137.5°	309.3	309.6	309.8	310.0	310.2	310.4	310.5	310.6	310.8	310.9	310.7
140°	322.6	322.8	322.9	323.1	323.3	323.3	323.3	323.3	323.3	323.3	323.3
142.5°	334.8	334.9	335.1	335.2	335.4	335.5	335.4	335.3	335.3	335.2	335.2
145°	351.6	351.9	352.2	352.5	352.9	353.1	353.1	353.2	353.3	353.4	353.3
147.5°	368.3	368.7	369.0	369.4	369.8	369.9	369.9	369.8	369.8	369.7	369.6
150°	378.5	378.8	379.1	379.4	379.7	379.9	379.9	379.9	379.9	379.9	379.9
152.5°	388.1	388.3	388.4	388.6	388.8	388.9	389.0	389.1	389.1	389.2	389.4
155°	402.8	402.8	402.8	402.8	402.8	402.8	402.7	402.6	402.6	402.5	402.8
157.5°	415.3	415.1	415.0	414.9	414.7	414.6	414.6	414.6	414.6	414.6	414.8
160°	422.6	422.5	422.5	422.4	422.3	422.2	422.2	422.1	422.0	421.9	422.2
162.5°	429.4	429.2	429.0	428.8	428.6	428.5	428.4	428.3	428.2	428.1	428.6
165°	438.5	438.3	438.1	437.8	437.6	437.4	437.2	437.1	436.9	436.8	437.2
167.5°	445.5	445.2	444.9	444.5	444.2	444.0	444.1	444.1	444.1	444.1	444.6
170°	449.5	449.1	448.7	448.3	447.9	447.8	447.8	447.9	448.0	448.1	448.5
172.5°	452.3	452.0	451.6	451.3	451.0	450.8	450.8	450.9	450.9	450.9	451.4
175°	456.2	455.8	455.4	455.0	454.6	454.4	454.3	454.2	454.2	454.1	454.6
177.5°	457.5	457.2	456.8	456.5	456.2	456.1	456.1	456.1	456.1	456.1	456.5
180°	456.9	456.9	456.9	456.9	456.9	456.9	456.9	456.9	456.9	456.9	456.9



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1805.7	1805.7	1805.7	1805.7	1805.7	1805.7	1805.7	1805.7
2.5°	1798.9	1801.6	1804.3	1805.6	1805.3	1805.1	1804.8	1804.6
5°	1786.9	1790.0	1793.1	1794.3	1793.7	1793.1	1792.5	1791.9
7.5°	1763.2	1765.1	1767.1	1767.6	1766.6	1765.6	1764.6	1763.6
10°	1741.8	1743.0	1744.2	1744.2	1743.0	1741.8	1740.5	1739.3
12.5°	1715.3	1716.1	1716.8	1716.3	1714.6	1712.9	1711.2	1709.5
15°	1669.0	1668.3	1667.7	1666.3	1664.2	1662.0	1659.9	1657.7
17.5°	1613.1	1611.4	1609.7	1607.2	1603.9	1600.7	1597.4	1594.1
20°	1574.0	1571.6	1569.1	1565.9	1561.9	1557.9	1553.9	1549.9
22.5°	1530.6	1526.9	1523.3	1519.8	1516.5	1513.3	1510.0	1506.8
25°	1460.6	1455.4	1450.2	1446.0	1443.0	1439.9	1436.8	1433.8
27.5°	1389.3	1382.9	1376.4	1371.0	1366.6	1362.1	1357.7	1353.3
30°	1338.2	1330.5	1322.8	1316.5	1311.6	1306.7	1301.8	1296.9
32.5°	1286.0	1277.1	1268.2	1261.4	1256.7	1252.0	1247.4	1242.7
35°	1208.2	1197.8	1187.3	1179.4	1173.8	1168.3	1162.8	1157.2
37.5°	1124.8	1113.1	1101.4	1092.8	1087.3	1081.7	1076.2	1070.7
40°	1069.2	1056.3	1043.4	1034.2	1028.7	1023.1	1017.6	1012.1
42.5°	1014.5	1001.4	988.2	978.8	973.0	967.2	961.4	955.7
45°	930.8	915.7	900.7	890.4	884.9	879.3	873.8	868.3
47.5°	846.5	830.9	815.2	804.4	798.3	792.2	786.1	780.1
50°	790.5	775.2	759.8	749.2	743.4	737.5	731.7	725.9
52.5°	734.7	719.1	703.5	692.7	686.6	680.5	674.4	668.4
55°	652.4	636.5	620.5	609.6	603.7	597.9	592.1	586.2
57.5°	572.0	555.8	539.6	529.3	524.8	520.4	516.0	511.6
60°	518.3	502.3	486.4	475.9	471.0	466.1	461.2	456.3
62.5°	465.5	450.7	436.0	426.6	422.7	418.8	414.8	410.9
65°	389.7	376.5	363.3	354.9	351.2	347.5	343.8	340.1
67.5°	320.1	308.8	297.4	289.7	285.6	281.6	277.5	273.5
70°	272.8	262.7	252.6	245.9	242.9	239.8	236.7	233.7
72.5°	230.4	221.8	213.1	207.4	204.5	201.7	198.9	196.1
75°	169.8	162.7	155.6	151.2	149.3	147.5	145.6	143.8
77.5°	120.1	116.0	111.8	109.5	108.9	108.4	107.8	107.3
80°	92.2	91.3	90.3	89.7	89.4	89.1	88.8	88.5
82.5°	71.6	71.0	70.3	69.8	69.5	69.2	68.9	68.6
85°	41.6	41.0	40.4	40.1	40.1	40.1	40.1	40.1
87.5°	16.7	16.6	16.4	16.5	16.8	17.1	17.3	17.6
90°	8.7	9.2	9.7	10.0	10.1	10.3	10.4	10.6
92.5°	14.6	14.8	15.1	15.3	15.4	15.5	15.6	15.7
95°	27.3	27.6	27.8	27.9	27.9	27.9	27.9	27.9
97.5°	43.0	43.3	43.6	43.7	43.7	43.7	43.7	43.7
100°	54.4	54.5	54.7	54.8	54.8	54.8	54.8	54.8
102.5°	66.4	66.6	66.8	67.0	67.0	67.1	67.1	67.2
105°	84.6	84.8	85.0	85.3	85.5	85.8	86.0	86.2
107.5°	104.3	104.5	104.7	104.8	104.8	104.8	104.8	104.7
110°	117.4	117.2	117.0	117.1	117.3	117.6	117.8	118.0



TEST NUMBER: P332959

CATALOG NUMBER: S124RDIP-S1020D365U835-4F0-1E-UDD-F1

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	131.5	131.4	131.4	131.4	131.5	131.5	131.5	131.6
115°	153.2	153.1	153.0	153.0	152.9	152.8	152.7	152.7
117.5°	174.1	173.8	173.6	173.4	173.2	173.0	172.9	172.7
120°	188.3	187.9	187.5	187.4	187.5	187.7	187.8	188.0
122.5°	202.7	202.4	202.1	201.8	201.6	201.3	201.0	200.7
125°	223.7	223.6	223.4	223.2	223.1	222.9	222.8	222.6
127.5°	243.9	243.7	243.5	243.4	243.3	243.2	243.0	242.9
130°	258.0	257.8	257.7	257.4	257.1	256.8	256.5	256.2
132.5°	271.3	271.1	271.0	270.8	270.7	270.6	270.5	270.3
135°	291.2	291.1	290.9	290.7	290.5	290.2	290.0	289.8
137.5°	310.5	310.3	310.1	310.0	310.0	310.1	310.1	310.2
140°	323.2	323.1	323.0	322.9	322.9	322.8	322.7	322.6
142.5°	335.2	335.2	335.1	335.1	335.1	335.1	335.1	335.1
145°	353.2	353.1	353.1	352.9	352.7	352.4	352.2	352.0
147.5°	369.6	369.5	369.4	369.4	369.3	369.2	369.1	369.1
150°	379.9	379.9	379.9	379.8	379.8	379.7	379.6	379.5
152.5°	389.6	389.8	390.0	389.9	389.7	389.5	389.3	389.1
155°	403.1	403.4	403.7	403.7	403.4	403.1	402.8	402.5
157.5°	415.0	415.3	415.5	415.5	415.2	415.0	414.7	414.4
160°	422.4	422.6	422.9	422.8	422.4	422.0	421.6	421.2
162.5°	429.0	429.4	429.8	429.8	429.5	429.1	428.7	428.3
165°	437.7	438.2	438.6	438.7	438.4	438.1	437.8	437.5
167.5°	445.1	445.5	446.0	446.0	445.5	445.0	444.5	444.0
170°	449.0	449.5	450.0	449.9	449.4	448.8	448.3	447.7
172.5°	452.0	452.5	453.0	453.0	452.5	451.9	451.4	450.8
175°	455.2	455.7	456.3	456.3	455.7	455.2	454.6	454.1
177.5°	456.9	457.4	457.8	457.8	457.3	456.8	456.3	455.8
180°	456.9	456.9	456.9	456.9	456.9	456.9	456.9	456.9

(END OF REPORT)