

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: P333098-930

Luminaire Tested: **S124RDIW-S1195D470U930-4F0-1E-UDD-F1**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P333098-930
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: S124RDIW-S1195D470U930-4F0-1E-UDD-F1
Description: DEFINE 4 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 1195 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER, REGRESSED
HOUSING
UPLIGHT 470 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 5255.0 lumens
Efficiency: N/A
Efficacy: 100.3 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

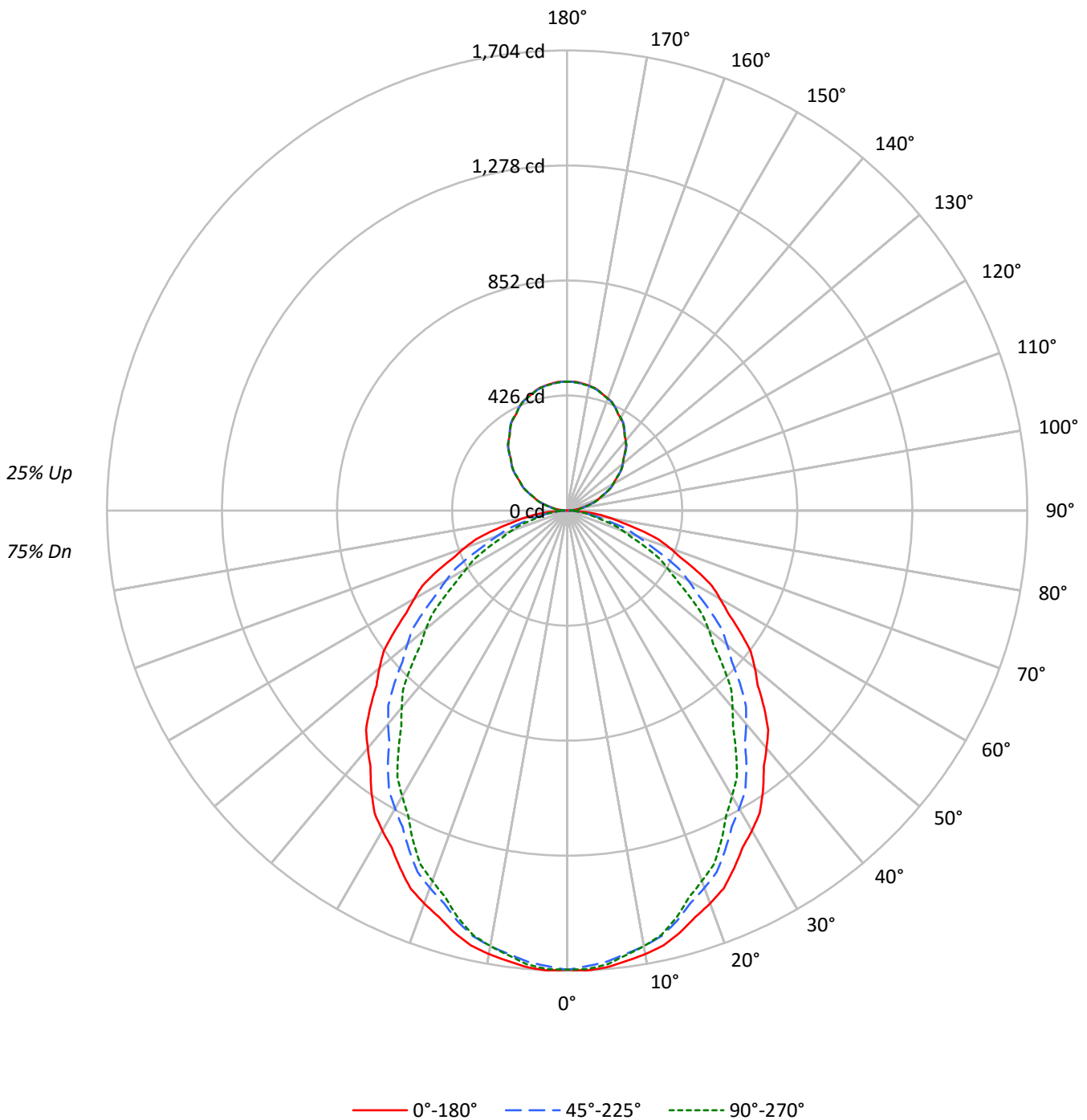
Input Watts (W): 52.4
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	113	113	113	113	107	107	107	107	97	97	97	88	88	88	79	79	79	75
1	104	99	96	92	99	95	91	88	86	83	81	78	76	74	70	69	68	64
2	95	87	81	76	90	83	78	73	76	71	68	69	65	62	62	60	57	54
3	87	77	70	64	82	74	67	62	67	62	57	61	57	53	56	52	49	46
4	80	69	61	54	76	66	58	53	60	54	49	55	50	46	50	46	43	40
5	73	61	53	47	70	59	51	46	54	48	43	49	44	40	45	41	38	35
6	68	55	47	41	64	53	46	40	49	43	38	45	40	35	41	37	33	31
7	63	50	42	36	60	48	41	35	45	38	34	41	36	32	38	33	30	27
8	59	46	38	33	56	44	37	32	41	35	30	38	32	28	35	30	27	25
9	55	42	34	29	52	41	33	29	38	31	27	35	29	26	32	28	24	22
10	51	39	31	26	49	37	31	26	35	29	25	32	27	23	30	25	22	20

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	13726	13726	13726
5°	13757	13588	13674
10°	13671	13426	13426
15°	13514	13143	13046
20°	13298	12773	12538
25°	13023	12339	12026
30°	12755	11882	11384
35°	12458	11406	10738
40°	12101	10866	10043
45°	11772	10330	9334
50°	11396	9712	8584
55°	10994	9070	7769
60°	10551	8365	6936
65°	10147	7484	6117
70°	9557	6515	5193
75°	8812	5402	4223
80°	7685	4114	3873
85°	6512	3742	3492



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	159.7	3.0
10°-20°	445.4	8.5
20°-30°	643.1	12.2
30°-40°	729.0	13.9
40°-50°	704.0	13.4
50°-60°	585.4	11.1
60°-70°	404.2	7.7
70°-80°	204.9	3.9
80°-90°	54.0	1.0
90°-100°	31.5	0.6
100°-110°	93.3	1.8
110°-120°	158.4	3.0
120°-130°	208.9	4.0
130°-140°	234.6	4.5
140°-150°	230.5	4.4
150°-160°	193.9	3.7
160°-170°	129.0	2.5
170°-180°	45.2	0.9
0°-30°	1248.2	23.8
0°-40°	1977.3	37.6
0°-60°	3266.6	62.2
0°-90°	3929.7	74.8
90°-120°	283.3	5.4
90°-150°	957.2	18.2
90°-180°	1325.0	25.2
0°-180°	5255.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1700	1700	1700	1700	1700	
5°	1698	1692	1677	1689	1687	161
15°	1617	1604	1573	1570	1561	455
25°	1462	1437	1385	1364	1350	673
35°	1264	1221	1157	1114	1090	790
45°	1031	981	905	843	818	795
55°	781	727	644	579	552	698
65°	531	474	392	338	320	524
75°	282	234	173	144	135	298
85°	70	46	40	38	38	79
90°	1	5	8	10	11	5
95°	22	25	28	29	29	25
105°	86	86	88	89	90	91
115°	161	161	160	160	160	159
125°	235	235	234	234	233	209
135°	303	305	305	304	303	234
145°	368	369	369	369	368	230
155°	421	421	421	422	421	194
165°	458	457	457	459	457	129
175°	477	475	475	477	475	45
180°	478	478	478	478	478	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1700.2	1700.2	1700.2	1700.2	1700.2	1700.2	1700.2	1700.2	1700.2	1700.2	1700.2
2.5°	1704.4	1703.5	1702.6	1701.6	1700.7	1699.0	1696.5	1693.9	1691.3	1688.8	1691.3
5°	1697.6	1696.5	1695.3	1694.2	1693.1	1690.7	1687.3	1683.8	1680.3	1676.8	1679.7
7.5°	1682.3	1681.1	1679.8	1678.6	1677.4	1674.5	1670.1	1665.6	1661.0	1656.5	1658.4
10°	1667.7	1666.2	1664.8	1663.4	1661.9	1658.6	1653.4	1648.2	1643.0	1637.8	1638.9
12.5°	1648.9	1647.3	1645.6	1643.9	1642.3	1638.3	1632.2	1626.1	1619.9	1613.8	1614.5
15°	1616.9	1614.3	1611.8	1609.2	1606.5	1601.6	1594.4	1587.1	1579.9	1572.6	1572.1
17.5°	1578.2	1574.3	1570.6	1566.8	1563.1	1556.9	1548.2	1539.5	1530.8	1522.2	1520.5
20°	1547.9	1544.2	1540.4	1536.7	1532.9	1526.1	1516.3	1506.4	1496.6	1486.8	1484.4
22.5°	1514.6	1510.4	1506.2	1501.9	1497.7	1490.4	1479.8	1469.3	1458.7	1448.2	1444.7
25°	1462.0	1456.8	1451.6	1446.4	1441.2	1432.6	1420.8	1408.9	1397.1	1385.2	1380.3
27.5°	1406.8	1400.3	1393.8	1387.2	1380.6	1371.1	1358.4	1345.7	1333.0	1320.4	1314.3
30°	1368.3	1361.1	1353.8	1346.5	1339.4	1328.9	1315.3	1301.7	1288.2	1274.6	1267.3
32.5°	1327.6	1319.5	1311.3	1303.2	1295.0	1283.9	1269.8	1255.8	1241.7	1227.7	1219.3
35°	1264.1	1254.8	1245.6	1236.3	1227.1	1215.2	1200.8	1186.3	1171.8	1157.4	1147.5
37.5°	1196.2	1186.6	1177.0	1167.5	1158.0	1145.2	1129.2	1113.1	1097.1	1081.1	1070.1
40°	1148.3	1138.7	1129.2	1119.7	1110.0	1097.1	1080.6	1064.0	1047.6	1031.1	1019.0
42.5°	1102.4	1092.4	1082.4	1072.4	1062.4	1048.8	1031.6	1014.4	997.3	980.1	967.7
45°	1031.1	1020.3	1009.7	999.0	988.3	974.2	956.9	939.6	922.2	904.8	890.6
47.5°	957.4	946.3	935.3	924.2	913.2	898.6	880.6	862.5	844.5	826.5	811.7
50°	907.4	896.1	884.8	873.6	862.3	847.3	828.8	810.3	791.8	773.3	758.9
52.5°	856.4	845.3	834.3	823.2	812.2	797.1	778.2	759.2	740.2	721.2	706.5
55°	781.1	769.6	758.0	746.4	734.8	719.7	700.8	682.1	663.2	644.4	629.4
57.5°	706.6	694.6	682.6	670.6	658.5	643.3	624.8	606.2	587.7	569.2	553.9
60°	653.5	642.0	630.4	618.8	607.2	592.2	573.7	555.2	536.6	518.1	503.1
62.5°	605.6	593.6	581.6	569.6	557.5	542.0	523.0	504.0	485.0	466.1	452.2
65°	531.2	518.7	506.3	493.8	481.4	465.9	447.4	428.9	410.4	391.8	379.4
67.5°	453.8	441.9	430.0	418.1	406.2	391.6	374.4	357.3	340.1	322.9	312.2
70°	404.9	392.7	380.6	368.4	356.3	341.9	325.5	309.0	292.5	276.0	266.4
72.5°	352.8	341.9	330.8	319.8	308.8	295.5	280.0	264.4	248.8	233.3	225.1
75°	282.5	271.8	261.1	250.4	239.7	227.6	213.9	200.3	186.8	173.2	166.5
77.5°	211.2	202.1	193.0	183.9	174.8	164.8	153.8	142.8	131.8	120.8	116.9
80°	165.3	156.9	148.5	140.1	131.8	123.3	114.5	105.9	97.2	88.5	87.6
82.5°	125.8	118.1	110.4	102.6	95.0	88.6	83.6	78.7	73.7	68.7	68.1
85°	70.3	64.5	58.7	52.9	47.1	43.9	43.0	42.1	41.3	40.4	39.8
87.5°	24.2	22.5	20.9	19.2	17.5	16.6	16.5	16.4	16.3	16.2	16.1
90°	1.1	2.0	2.9	3.8	4.7	5.5	6.2	6.8	7.5	8.2	8.6
92.5°	7.9	9.0	9.9	11.0	12.1	12.8	13.3	13.7	14.2	14.6	14.9
95°	22.2	22.9	23.6	24.4	25.1	25.8	26.3	26.9	27.5	28.0	28.3
97.5°	38.7	39.3	39.9	40.5	41.1	41.7	42.4	43.0	43.7	44.4	44.7
100°	51.7	52.0	52.3	52.7	53.1	53.6	54.3	55.0	55.8	56.5	56.7
102.5°	65.3	65.5	65.6	65.7	65.9	66.3	66.9	67.6	68.2	69.0	69.1
105°	86.1	86.2	86.3	86.3	86.4	86.6	86.9	87.2	87.6	87.9	88.1
107.5°	107.9	107.9	108.1	108.2	108.3	108.4	108.4	108.4	108.5	108.5	108.8
110°	122.6	122.8	122.9	123.1	123.3	123.4	123.3	123.2	123.1	123.0	122.9



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	138.0	138.0	138.1	138.1	138.2	138.1	137.9	137.8	137.6	137.5	137.5
115°	161.1	161.1	161.1	161.1	161.1	161.0	160.9	160.7	160.5	160.4	160.3
117.5°	182.8	182.9	183.0	183.0	183.0	183.0	183.0	182.8	182.7	182.5	182.3
120°	197.3	197.6	198.0	198.3	198.6	198.6	198.4	198.1	197.9	197.6	197.2
122.5°	212.4	212.5	212.6	212.7	212.9	212.9	212.8	212.6	212.5	212.5	212.1
125°	234.6	234.6	234.6	234.6	234.6	234.6	234.5	234.4	234.3	234.2	234.1
127.5°	254.8	255.0	255.3	255.5	255.8	255.8	255.7	255.5	255.4	255.3	255.1
130°	269.0	269.2	269.5	269.7	269.9	270.0	270.0	270.0	270.0	270.0	269.9
132.5°	283.4	283.6	283.8	284.0	284.1	284.2	284.1	284.1	284.1	284.0	283.8
135°	302.6	303.0	303.5	304.0	304.5	304.8	304.8	304.8	304.8	304.8	304.6
137.5°	323.4	323.7	323.8	324.1	324.3	324.5	324.7	324.8	324.9	325.1	324.8
140°	337.3	337.5	337.6	337.8	337.9	338.0	338.0	338.0	338.0	338.0	337.9
142.5°	350.0	350.2	350.3	350.5	350.7	350.7	350.7	350.6	350.5	350.4	350.4
145°	367.6	367.9	368.3	368.6	368.9	369.1	369.2	369.2	369.3	369.4	369.3
147.5°	385.1	385.4	385.8	386.2	386.6	386.8	386.7	386.6	386.6	386.5	386.5
150°	395.7	396.0	396.3	396.6	397.0	397.1	397.1	397.1	397.1	397.1	397.1
152.5°	405.7	405.9	406.1	406.3	406.5	406.7	406.7	406.8	406.8	406.9	407.1
155°	421.2	421.2	421.2	421.2	421.2	421.1	421.0	420.9	420.9	420.8	421.1
157.5°	434.1	434.0	433.9	433.7	433.6	433.5	433.5	433.5	433.4	433.4	433.7
160°	441.9	441.8	441.7	441.6	441.6	441.5	441.4	441.3	441.2	441.2	441.4
162.5°	449.0	448.7	448.5	448.3	448.1	447.9	447.8	447.8	447.7	447.6	448.1
165°	458.4	458.2	458.0	457.7	457.5	457.3	457.1	457.0	456.8	456.6	457.1
167.5°	465.8	465.5	465.1	464.8	464.4	464.2	464.2	464.3	464.3	464.3	464.8
170°	469.9	469.5	469.1	468.7	468.3	468.1	468.2	468.3	468.4	468.5	469.0
172.5°	472.9	472.5	472.2	471.9	471.5	471.3	471.3	471.4	471.4	471.4	472.0
175°	477.0	476.5	476.1	475.7	475.3	475.1	475.0	474.9	474.8	474.7	475.3
177.5°	478.3	477.9	477.6	477.3	477.0	476.8	476.8	476.8	476.8	476.8	477.3
180°	477.7	477.7	477.7	477.7	477.7	477.7	477.7	477.7	477.7	477.7	477.7



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1700.2	1700.2	1700.2	1700.2	1700.2	1700.2	1700.2	1700.2
2.5°	1693.9	1696.5	1699.0	1700.1	1699.9	1699.7	1699.4	1699.2
5°	1682.6	1685.5	1688.4	1689.5	1689.0	1688.4	1687.8	1687.3
7.5°	1660.2	1662.1	1663.9	1664.4	1663.5	1662.6	1661.6	1660.7
10°	1640.1	1641.2	1642.4	1642.4	1641.2	1640.1	1638.9	1637.8
12.5°	1615.2	1615.9	1616.6	1616.1	1614.5	1612.9	1611.3	1609.6
15°	1571.5	1570.9	1570.3	1569.0	1567.0	1565.0	1563.0	1561.0
17.5°	1518.9	1517.3	1515.6	1513.4	1510.3	1507.2	1504.1	1501.0
20°	1482.1	1479.8	1477.5	1474.5	1470.7	1467.0	1463.1	1459.4
22.5°	1441.3	1437.8	1434.4	1431.1	1428.0	1424.9	1421.9	1418.8
25°	1375.3	1370.4	1365.5	1361.6	1358.7	1355.8	1352.9	1350.1
27.5°	1308.2	1302.1	1296.1	1290.9	1286.8	1282.6	1278.5	1274.3
30°	1260.0	1252.9	1245.6	1239.7	1235.0	1230.4	1225.8	1221.2
32.5°	1210.9	1202.5	1194.1	1187.7	1183.3	1178.9	1174.5	1170.1
35°	1137.7	1127.9	1118.0	1110.5	1105.3	1100.1	1094.9	1089.6
37.5°	1059.1	1048.1	1037.1	1029.0	1023.8	1018.6	1013.4	1008.2
40°	1006.8	994.7	982.5	973.8	968.6	963.4	958.2	953.0
42.5°	955.3	942.9	930.5	921.6	916.2	910.8	905.3	899.8
45°	876.4	862.3	848.1	838.4	833.2	828.0	822.8	817.6
47.5°	797.0	782.4	767.7	757.4	751.7	746.0	740.2	734.5
50°	744.4	729.9	715.4	705.5	700.0	694.5	689.0	683.5
52.5°	691.9	677.2	662.4	652.2	646.5	640.8	635.0	629.3
55°	614.3	599.3	584.2	574.0	568.5	563.0	557.5	552.0
57.5°	538.7	523.3	508.1	498.4	494.2	490.0	485.8	481.7
60°	488.0	473.0	458.0	448.2	443.5	438.9	434.2	429.6
62.5°	438.3	424.4	410.5	401.7	398.0	394.4	390.6	386.9
65°	367.0	354.6	342.1	334.1	330.7	327.2	323.8	320.2
67.5°	301.5	290.7	280.1	272.8	269.0	265.1	261.3	257.5
70°	256.9	247.4	237.8	231.6	228.7	225.8	222.9	220.0
72.5°	217.0	208.8	200.6	195.3	192.6	190.0	187.3	184.6
75°	159.9	153.2	146.5	142.4	140.6	138.8	137.1	135.4
77.5°	113.1	109.2	105.3	103.1	102.6	102.1	101.6	101.0
80°	86.8	85.9	85.0	84.5	84.2	83.9	83.6	83.3
82.5°	67.5	66.9	66.2	65.7	65.5	65.1	64.9	64.6
85°	39.2	38.6	38.1	37.7	37.7	37.7	37.7	37.7
87.5°	16.0	15.8	15.7	15.7	16.0	16.3	16.6	16.8
90°	9.1	9.6	10.1	10.4	10.6	10.8	10.9	11.1
92.5°	15.2	15.5	15.8	16.0	16.1	16.2	16.3	16.4
95°	28.5	28.8	29.0	29.2	29.2	29.2	29.2	29.2
97.5°	45.0	45.3	45.6	45.7	45.7	45.7	45.7	45.7
100°	56.8	57.0	57.2	57.2	57.2	57.2	57.2	57.2
102.5°	69.4	69.6	69.9	70.0	70.0	70.1	70.2	70.3
105°	88.5	88.7	88.9	89.2	89.4	89.7	89.9	90.2
107.5°	109.0	109.3	109.5	109.6	109.6	109.6	109.5	109.5
110°	122.7	122.5	122.4	122.4	122.6	122.9	123.1	123.4



TEST NUMBER: P333098-930

CATALOG NUMBER: S124RDIW-S1195D470U930-4F0-1E-UDD-F1

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	137.5	137.4	137.4	137.4	137.5	137.5	137.5	137.5
115°	160.2	160.1	160.0	160.0	159.9	159.8	159.7	159.6
117.5°	182.1	181.7	181.5	181.2	181.1	180.9	180.8	180.6
120°	196.8	196.4	196.0	195.9	196.1	196.2	196.4	196.6
122.5°	211.9	211.6	211.3	211.0	210.8	210.4	210.1	209.9
125°	233.9	233.7	233.6	233.4	233.3	233.1	232.9	232.8
127.5°	254.9	254.8	254.6	254.5	254.4	254.2	254.1	254.0
130°	269.7	269.5	269.4	269.1	268.8	268.5	268.2	267.8
132.5°	283.6	283.5	283.3	283.2	283.0	282.9	282.7	282.7
135°	304.4	304.3	304.1	303.9	303.7	303.5	303.2	303.0
137.5°	324.6	324.4	324.2	324.1	324.2	324.2	324.2	324.3
140°	337.9	337.8	337.7	337.6	337.5	337.5	337.4	337.3
142.5°	350.4	350.4	350.4	350.3	350.3	350.3	350.3	350.3
145°	369.2	369.2	369.1	368.9	368.7	368.4	368.2	367.9
147.5°	386.4	386.3	386.3	386.2	386.1	386.0	386.0	385.9
150°	397.1	397.1	397.1	397.1	397.1	397.0	396.9	396.8
152.5°	407.3	407.5	407.7	407.6	407.5	407.2	407.1	406.8
155°	421.4	421.8	422.1	422.1	421.8	421.4	421.1	420.8
157.5°	433.9	434.1	434.4	434.4	434.1	433.8	433.6	433.3
160°	441.6	441.9	442.1	442.1	441.6	441.2	440.8	440.3
162.5°	448.5	449.0	449.4	449.4	449.0	448.6	448.2	447.8
165°	457.6	458.1	458.6	458.7	458.4	458.0	457.7	457.4
167.5°	465.3	465.8	466.3	466.3	465.8	465.3	464.7	464.2
170°	469.4	469.9	470.4	470.3	469.8	469.2	468.6	468.1
172.5°	472.5	473.1	473.6	473.6	473.0	472.5	471.9	471.3
175°	475.9	476.5	477.0	477.0	476.5	475.9	475.3	474.7
177.5°	477.8	478.2	478.7	478.6	478.1	477.6	477.0	476.5
180°	477.7	477.7	477.7	477.7	477.7	477.7	477.7	477.7

(END OF REPORT)