

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: P333082-935

Luminaire Tested: **S124RDIW-S1020D770U935-4F0-1E-UDD-F1**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P333082-935
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-S1020D770U935-4F0-1E-UDD-F1
Description: DEFINE 4 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 1020 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER, REGRESSED
HOUSING
UPLIGHT 770 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 5886.8 lumens
Efficiency: N/A
Efficacy: 109.8 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

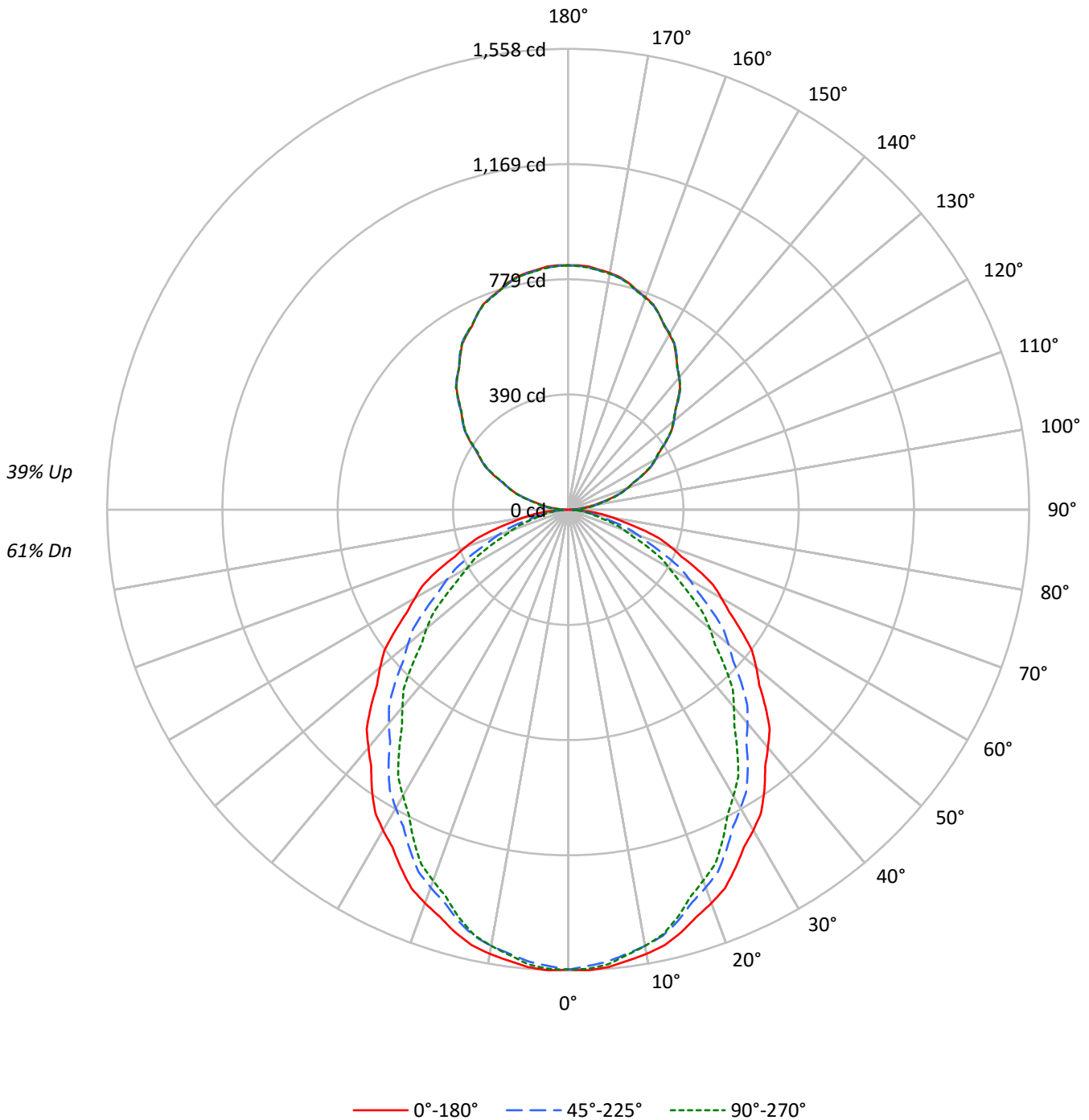
Input Watts (W): 53.6
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10
RCR																	
0	110	110	110	110	103	103	103	103	89	89	89	77	77	77	66	66	66
1	101	96	92	89	94	90	87	84	79	77	74	69	67	65	59	58	57
2	92	85	78	73	86	79	74	69	70	66	62	61	58	55	52	50	48
3	84	75	67	61	78	70	64	58	62	57	53	54	50	47	47	44	41
4	77	66	58	52	72	62	55	50	55	49	45	48	44	40	42	39	36
5	71	59	51	45	66	56	49	43	49	44	39	43	39	35	38	34	31
6	65	53	45	39	61	50	43	38	45	39	34	39	35	31	35	31	28
7	61	48	40	35	57	46	38	33	41	35	30	36	31	28	32	28	25
8	56	44	36	31	53	42	35	30	37	31	27	33	28	25	29	25	22
9	53	40	33	28	49	38	31	27	34	28	24	30	26	22	27	23	20
10	49	37	30	25	46	35	28	24	32	26	22	28	24	20	25	21	19

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	12551	12551	12551
5°	12580	12426	12503
10°	12500	12276	12276
15°	12357	12018	11929
20°	12160	11679	11465
25°	11908	11282	10996
30°	11663	10864	10409
35°	11392	10430	9819
40°	11065	9936	9183
45°	10764	9445	8535
50°	10420	8881	7850
55°	10054	8294	7104
60°	9649	7650	6344
65°	9278	6844	5593
70°	8738	5958	4749
75°	8057	4938	3862
80°	7029	3761	3543
85°	5956	3418	3196



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	146.0	2.5
10°-20°	407.3	6.9
20°-30°	588.1	10.0
30°-40°	666.6	11.3
40°-50°	643.7	10.9
50°-60°	535.3	9.1
60°-70°	369.6	6.3
70°-80°	187.4	3.2
80°-90°	50.5	0.9
90°-100°	54.5	0.9
100°-110°	161.4	2.7
110°-120°	274.0	4.7
120°-130°	361.3	6.1
130°-140°	405.8	6.9
140°-150°	398.7	6.8
150°-160°	335.4	5.7
160°-170°	223.1	3.8
170°-180°	78.1	1.3
0°-30°	1141.4	19.4
0°-40°	1808.0	30.7
0°-60°	2987.0	50.7
0°-90°	3594.5	61.1
90°-120°	489.9	8.3
90°-150°	1655.8	28.1
90°-180°	2292.0	38.9
0°-180°	5886.8	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1555	1555	1555	1555	1555	
5°	1552	1547	1533	1544	1543	147
15°	1478	1467	1438	1435	1427	416
25°	1337	1314	1267	1247	1234	616
35°	1156	1117	1058	1019	996	722
45°	943	897	827	771	748	727
55°	714	665	589	530	505	639
65°	486	433	358	309	293	479
75°	258	214	158	132	124	273
85°	64	42	37	35	34	72
90°	2	9	14	18	19	5
95°	38	44	49	50	50	43
105°	149	150	152	154	156	158
115°	279	278	277	277	276	275
125°	406	406	405	404	403	362
135°	523	527	527	526	524	405
145°	636	638	639	638	636	398
155°	728	728	728	730	728	335
165°	793	791	790	793	791	223
175°	825	822	821	825	821	78
180°	826	826	826	826	826	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1554.7	1554.7	1554.7	1554.7	1554.7	1554.7	1554.7	1554.7	1554.7	1554.7	1554.7
2.5°	1558.5	1557.6	1556.8	1556.0	1555.1	1553.5	1551.2	1548.9	1546.5	1544.2	1546.5
5°	1552.3	1551.3	1550.2	1549.1	1548.1	1545.9	1542.8	1539.6	1536.5	1533.3	1535.9
7.5°	1538.3	1537.1	1536.0	1534.9	1533.8	1531.2	1527.1	1522.9	1518.8	1514.7	1516.4
10°	1524.9	1523.6	1522.2	1521.0	1519.7	1516.6	1511.8	1507.1	1502.3	1497.5	1498.6
12.5°	1507.8	1506.2	1504.7	1503.2	1501.7	1498.1	1492.5	1486.9	1481.3	1475.7	1476.3
15°	1478.5	1476.1	1473.8	1471.4	1469.0	1464.5	1457.8	1451.2	1444.7	1438.0	1437.5
17.5°	1443.0	1439.6	1436.1	1432.7	1429.3	1423.6	1415.7	1407.7	1399.8	1391.8	1390.3
20°	1415.4	1412.0	1408.5	1405.1	1401.6	1395.4	1386.5	1377.4	1368.5	1359.4	1357.4
22.5°	1384.9	1381.0	1377.2	1373.4	1369.5	1362.7	1353.1	1343.5	1333.9	1324.2	1321.0
25°	1336.9	1332.1	1327.3	1322.6	1317.8	1310.0	1299.2	1288.3	1277.5	1266.6	1262.1
27.5°	1286.3	1280.4	1274.5	1268.4	1262.5	1253.7	1242.1	1230.5	1218.9	1207.3	1201.8
30°	1251.1	1244.5	1237.9	1231.3	1224.7	1215.1	1202.7	1190.2	1177.8	1165.4	1158.8
32.5°	1214.0	1206.5	1199.0	1191.6	1184.1	1174.0	1161.1	1148.3	1135.4	1122.6	1114.9
35°	1155.9	1147.5	1138.9	1130.5	1122.1	1111.2	1097.9	1084.8	1071.5	1058.3	1049.3
37.5°	1093.7	1085.0	1076.3	1067.6	1058.9	1047.1	1032.5	1017.9	1003.2	988.5	978.4
40°	1050.0	1041.2	1032.5	1023.7	1015.0	1003.2	988.1	972.9	957.9	942.8	931.7
42.5°	1008.1	998.9	989.7	980.6	971.5	959.0	943.3	927.6	911.9	896.1	884.8
45°	942.8	933.1	923.3	913.4	903.6	890.8	874.9	859.1	843.2	827.3	814.4
47.5°	875.5	865.3	855.2	845.2	835.0	821.7	805.2	788.7	772.1	755.7	742.3
50°	829.7	819.4	809.1	798.7	788.4	774.8	757.9	741.0	724.0	707.1	693.9
52.5°	783.1	772.9	762.8	752.8	742.6	728.9	711.5	694.2	676.8	659.5	646.1
55°	714.3	703.7	693.1	682.5	671.9	658.1	640.8	623.6	606.5	589.3	575.5
57.5°	646.2	635.2	624.1	613.1	602.2	588.1	571.3	554.3	537.4	520.5	506.5
60°	597.6	587.0	576.4	565.8	555.3	541.5	524.6	507.6	490.7	473.8	460.0
62.5°	553.8	542.8	531.8	520.7	509.8	495.6	478.2	460.9	443.5	426.2	413.5
65°	485.7	474.3	463.0	451.6	440.2	426.0	409.1	392.2	375.2	358.3	347.0
67.5°	415.0	404.1	393.2	382.3	371.3	358.1	342.3	326.7	310.9	295.2	285.4
70°	370.2	359.1	348.0	336.9	325.8	312.7	297.6	282.5	267.4	252.4	243.7
72.5°	322.6	312.5	302.5	292.5	282.4	270.3	256.1	241.8	227.6	213.4	205.9
75°	258.3	248.6	238.8	228.9	219.2	208.0	195.6	183.2	170.7	158.3	152.2
77.5°	193.1	184.8	176.5	168.2	159.9	150.7	140.6	130.6	120.5	110.5	106.9
80°	151.2	143.5	135.9	128.2	120.5	112.7	104.8	96.9	88.9	80.9	80.2
82.5°	115.0	108.0	100.9	93.8	86.9	81.0	76.5	72.0	67.4	62.9	62.3
85°	64.3	59.0	53.7	48.4	43.1	40.0	39.3	38.5	37.7	36.9	36.3
87.5°	22.3	20.9	19.5	18.2	16.8	16.1	16.1	16.1	16.1	16.2	16.1
90°	1.9	3.4	5.1	6.6	8.2	9.6	10.7	11.8	12.9	14.0	14.9
92.5°	13.7	15.5	17.2	19.0	20.8	22.1	22.9	23.7	24.5	25.3	25.8
95°	38.3	39.6	40.9	42.2	43.5	44.6	45.5	46.6	47.6	48.6	49.0
97.5°	67.0	68.0	69.1	70.0	71.0	72.2	73.4	74.5	75.7	76.8	77.3
100°	89.5	90.1	90.6	91.2	91.7	92.6	93.9	95.2	96.5	97.8	98.1
102.5°	113.0	113.2	113.4	113.7	113.9	114.6	115.7	116.9	118.0	119.2	119.7
105°	148.9	149.0	149.2	149.3	149.5	149.8	150.4	150.9	151.5	152.1	152.5
107.5°	186.6	186.8	186.9	187.1	187.3	187.4	187.5	187.6	187.7	187.8	188.1
110°	212.2	212.4	212.8	213.0	213.3	213.4	213.2	213.1	212.9	212.8	212.5



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	238.8	238.8	238.8	238.9	238.9	238.8	238.6	238.3	238.1	237.8	237.8
115°	278.6	278.6	278.6	278.6	278.6	278.4	278.2	277.9	277.6	277.3	277.2
117.5°	316.2	316.3	316.4	316.5	316.7	316.6	316.4	316.2	316.0	315.8	315.3
120°	341.2	341.8	342.3	342.9	343.5	343.5	343.2	342.8	342.3	341.9	341.1
122.5°	367.3	367.6	367.7	368.0	368.2	368.2	368.1	367.8	367.6	367.5	367.0
125°	405.8	405.8	405.8	405.8	405.8	405.7	405.5	405.4	405.3	405.1	404.8
127.5°	440.7	441.1	441.5	442.0	442.4	442.5	442.2	442.0	441.8	441.6	441.3
130°	465.2	465.6	466.1	466.5	466.9	467.1	467.1	467.1	467.1	467.1	466.8
132.5°	490.3	490.6	490.9	491.2	491.5	491.6	491.5	491.4	491.3	491.1	490.9
135°	523.4	524.2	525.0	525.9	526.8	527.2	527.2	527.2	527.2	527.2	526.9
137.5°	559.4	559.8	560.2	560.6	561.0	561.3	561.5	561.7	562.0	562.2	561.8
140°	583.4	583.7	584.0	584.3	584.5	584.7	584.7	584.7	584.7	584.7	584.5
142.5°	605.4	605.7	606.0	606.2	606.6	606.7	606.5	606.4	606.3	606.1	606.1
145°	635.8	636.4	637.0	637.6	638.1	638.4	638.6	638.8	638.9	639.0	638.9
147.5°	666.0	666.7	667.4	668.0	668.7	669.0	668.9	668.7	668.7	668.6	668.4
150°	684.4	684.9	685.5	686.1	686.6	687.0	687.0	687.0	687.0	687.0	687.0
152.5°	701.8	702.1	702.5	702.8	703.2	703.4	703.4	703.6	703.7	703.8	704.1
155°	728.5	728.5	728.5	728.5	728.5	728.4	728.2	728.1	728.0	727.9	728.4
157.5°	751.0	750.7	750.4	750.2	749.9	749.8	749.8	749.8	749.8	749.7	750.1
160°	764.3	764.1	764.0	763.9	763.7	763.5	763.4	763.3	763.1	763.0	763.4
162.5°	776.5	776.2	775.8	775.4	775.1	774.8	774.6	774.6	774.4	774.2	775.0
165°	793.1	792.6	792.2	791.8	791.3	791.0	790.7	790.4	790.1	789.8	790.7
167.5°	805.6	805.1	804.5	803.9	803.3	803.0	803.1	803.1	803.1	803.1	804.0
170°	812.9	812.1	811.4	810.7	810.0	809.7	809.9	810.0	810.1	810.3	811.1
172.5°	817.9	817.3	816.7	816.1	815.5	815.3	815.3	815.4	815.4	815.4	816.4
175°	825.0	824.2	823.5	822.9	822.2	821.7	821.6	821.4	821.3	821.1	822.2
177.5°	827.2	826.7	826.1	825.6	825.0	824.8	824.8	824.8	824.8	824.8	825.5
180°	826.2	826.2	826.2	826.2	826.2	826.2	826.2	826.2	826.2	826.2	826.2



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1554.7	1554.7	1554.7	1554.7	1554.7	1554.7	1554.7	1554.7
2.5°	1548.9	1551.2	1553.5	1554.6	1554.4	1554.2	1553.9	1553.8
5°	1538.5	1541.2	1543.9	1544.9	1544.4	1543.9	1543.3	1542.8
7.5°	1518.1	1519.8	1521.5	1521.9	1521.0	1520.2	1519.3	1518.5
10°	1499.7	1500.7	1501.8	1501.8	1500.7	1499.7	1498.6	1497.5
12.5°	1476.9	1477.6	1478.2	1477.7	1476.3	1474.8	1473.3	1471.9
15°	1437.0	1436.4	1435.9	1434.7	1432.9	1431.0	1429.2	1427.3
17.5°	1388.9	1387.4	1386.0	1383.8	1381.0	1378.2	1375.4	1372.5
20°	1355.2	1353.1	1351.0	1348.2	1344.8	1341.4	1337.9	1334.5
22.5°	1317.8	1314.7	1311.6	1308.5	1305.7	1303.0	1300.1	1297.4
25°	1257.6	1253.1	1248.6	1245.0	1242.4	1239.8	1237.1	1234.5
27.5°	1196.2	1190.7	1185.1	1180.4	1176.6	1172.8	1169.0	1165.2
30°	1152.2	1145.6	1138.9	1133.5	1129.3	1125.1	1120.8	1116.6
32.5°	1107.2	1099.6	1091.9	1086.1	1082.0	1078.0	1074.0	1070.0
35°	1040.3	1031.3	1022.3	1015.5	1010.6	1005.9	1001.2	996.3
37.5°	968.5	958.4	948.3	940.9	936.2	931.3	926.6	921.9
40°	920.6	909.5	898.4	890.4	885.7	880.9	876.2	871.4
42.5°	873.5	862.2	850.8	842.7	837.8	832.8	827.8	822.9
45°	801.4	788.4	775.5	766.6	761.9	757.1	752.3	747.6
47.5°	728.8	715.4	701.9	692.6	687.3	682.1	676.8	671.7
50°	680.6	667.4	654.2	645.1	640.1	635.0	630.0	625.0
52.5°	632.6	619.1	605.7	596.4	591.2	585.9	580.7	575.5
55°	561.7	548.0	534.3	524.9	519.8	514.8	509.8	504.7
57.5°	492.5	478.5	464.6	455.7	451.9	448.1	444.3	440.5
60°	446.3	432.5	418.8	409.7	405.5	401.3	397.1	392.9
62.5°	400.8	388.1	375.4	367.3	363.9	360.6	357.1	353.8
65°	335.5	324.2	312.8	305.6	302.4	299.2	296.0	292.8
67.5°	275.6	265.9	256.1	249.4	245.9	242.5	238.9	235.5
70°	234.9	226.2	217.5	211.7	209.1	206.5	203.8	201.2
72.5°	198.4	191.0	183.5	178.6	176.1	173.7	171.3	168.8
75°	146.2	140.1	134.0	130.2	128.5	127.0	125.4	123.8
77.5°	103.4	99.9	96.3	94.3	93.8	93.3	92.8	92.4
80°	79.4	78.6	77.7	77.2	77.0	76.7	76.5	76.2
82.5°	61.6	61.1	60.5	60.1	59.8	59.6	59.3	59.1
85°	35.8	35.3	34.8	34.5	34.5	34.5	34.5	34.5
87.5°	16.1	16.0	16.0	16.1	16.4	16.6	16.9	17.1
90°	15.8	16.6	17.5	18.0	18.3	18.6	18.9	19.2
92.5°	26.3	26.9	27.4	27.7	27.9	28.1	28.2	28.4
95°	49.4	49.9	50.3	50.5	50.5	50.5	50.5	50.5
97.5°	77.8	78.4	78.9	79.1	79.1	79.1	79.1	79.1
100°	98.3	98.6	98.9	99.0	99.0	99.0	99.0	99.0
102.5°	120.0	120.5	120.8	121.1	121.2	121.3	121.4	121.6
105°	152.9	153.3	153.8	154.2	154.6	155.1	155.5	155.9
107.5°	188.6	188.9	189.3	189.5	189.5	189.5	189.4	189.4
110°	212.2	212.0	211.6	211.7	212.2	212.6	213.0	213.4



TEST NUMBER: P333082-935

CATALOG NUMBER: S124RDIW-S1020D770U935-4F0-1E-UDD-F1

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	237.7	237.6	237.6	237.6	237.7	237.8	237.9	238.0
115°	277.1	276.9	276.7	276.6	276.5	276.4	276.2	276.0
117.5°	314.9	314.4	313.8	313.5	313.2	312.9	312.6	312.4
120°	340.4	339.8	339.1	338.8	339.1	339.4	339.7	339.9
122.5°	366.4	366.0	365.5	365.0	364.5	363.9	363.5	363.0
125°	404.6	404.3	404.0	403.7	403.5	403.1	402.9	402.6
127.5°	441.0	440.7	440.4	440.1	440.0	439.7	439.5	439.3
130°	466.6	466.2	466.0	465.5	465.0	464.4	463.8	463.3
132.5°	490.6	490.3	490.0	489.7	489.6	489.3	489.0	488.9
135°	526.6	526.3	526.1	525.7	525.3	524.9	524.4	524.0
137.5°	561.5	561.1	560.8	560.6	560.7	560.8	560.9	560.9
140°	584.4	584.3	584.1	584.0	583.8	583.7	583.6	583.4
142.5°	606.1	606.1	606.1	606.1	606.0	606.0	606.0	605.9
145°	638.8	638.6	638.4	638.2	637.7	637.3	636.9	636.5
147.5°	668.3	668.2	668.0	668.0	667.8	667.7	667.5	667.4
150°	687.0	687.0	687.0	686.9	686.7	686.6	686.5	686.3
152.5°	704.5	704.8	705.2	705.2	704.8	704.5	704.0	703.7
155°	729.0	729.5	730.1	730.1	729.5	729.0	728.4	727.9
157.5°	750.5	751.0	751.4	751.4	750.9	750.4	749.9	749.4
160°	763.9	764.3	764.7	764.6	763.9	763.1	762.4	761.7
162.5°	775.8	776.5	777.3	777.3	776.6	775.9	775.2	774.5
165°	791.5	792.4	793.2	793.4	792.8	792.2	791.7	791.1
167.5°	804.9	805.6	806.5	806.5	805.6	804.8	803.9	803.0
170°	812.0	812.9	813.7	813.6	812.6	811.7	810.6	809.7
172.5°	817.3	818.3	819.2	819.2	818.2	817.3	816.2	815.3
175°	823.1	824.1	825.1	825.1	824.1	823.1	822.2	821.1
177.5°	826.3	827.1	827.9	827.9	826.9	826.0	825.1	824.2
180°	826.2	826.2	826.2	826.2	826.2	826.2	826.2	826.2

(END OF REPORT)