

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: P332964-935

Luminaire Tested: **S124RDIP-S1020D590U935-4F0-1E-UDD-F**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332964-935
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-6,
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S124RDIP-S1020D590U935-4F0-1E-UDD-F
Description: DEFINE 4 DIRECT-INDIRECT PENDANT LED LUMINAIRE
DOWNLIGHT 1020 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER, REGRESSED
HOUSING
UPLIGHT 590 LUMENS PER FOOT, NO LENS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 5625.1 lumens
Efficiency: N/A
Efficacy: 115.3 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

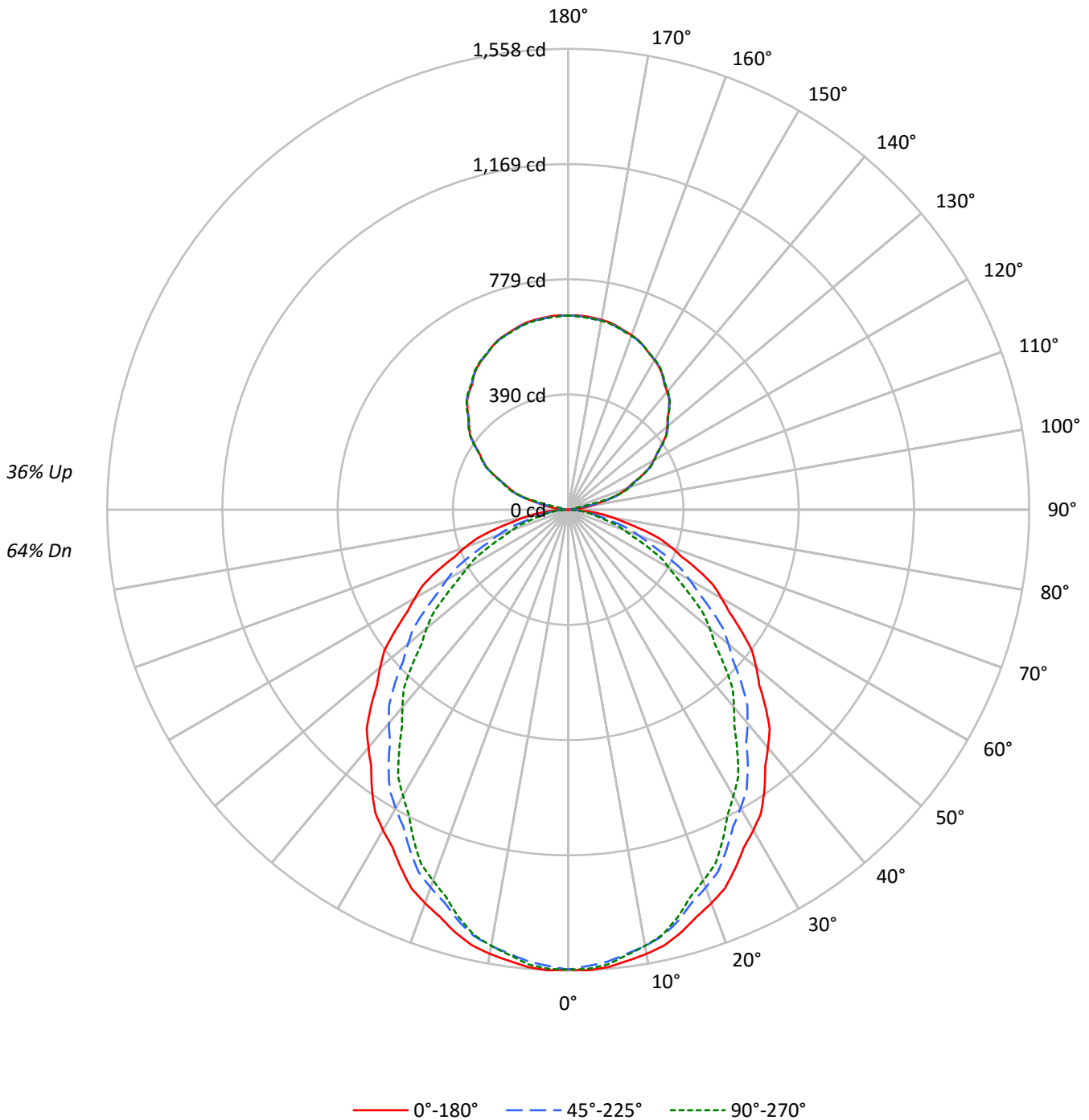
Input Watts (W): 48.8
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P332964-935

CATALOG NUMBER: S124RDIP-S1020D590U935-4F0-1E-UDD-F

Luminous Intensity Polar Plot





TEST NUMBER: P332964-935

CATALOG NUMBER: S124RDIP-S1020D590U935-4F0-1E-UDD-F

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	104	104	104	104	91	91	91	79	79	79	69	69	69
1	101	97	93	90	95	91	88	85	80	78	76	71	69	67	61	60	59
2	92	85	79	74	87	80	75	70	71	67	63	62	59	57	54	52	50
3	85	75	68	62	79	71	64	59	63	58	54	55	51	48	49	46	43
4	78	67	59	53	73	63	56	50	56	50	46	50	45	42	44	40	37
5	71	60	52	45	67	56	49	44	50	44	40	45	40	36	39	36	33
6	66	54	46	40	62	51	44	38	46	40	35	41	36	32	36	32	29
7	61	49	41	35	57	46	39	34	41	35	31	37	32	28	33	29	26
8	57	44	37	31	53	42	35	30	38	32	28	34	29	26	30	26	23
9	53	41	33	28	50	39	32	27	35	29	25	31	27	23	28	24	21
10	50	37	30	25	47	36	29	24	32	27	23	29	24	21	26	22	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



TEST NUMBER: P332964-935

CATALOG NUMBER: S124RDIP-S1020D590U935-4F0-1E-UDD-F

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	146.0	2.6
10°-20°	407.3	7.2
20°-30°	588.1	10.5
30°-40°	666.6	11.9
40°-50°	643.7	11.4
50°-60°	535.3	9.5
60°-70°	369.6	6.6
70°-80°	187.4	3.3
80°-90°	50.0	0.9
90°-100°	22.5	0.4
100°-110°	143.2	2.5
110°-120°	273.9	4.9
120°-130°	347.7	6.2
130°-140°	372.1	6.6
140°-150°	347.9	6.2
150°-160°	280.6	5.0
160°-170°	181.0	3.2
170°-180°	62.4	1.1
0°-30°	1141.4	20.3
0°-40°	1808.0	32.1
0°-60°	2987.0	53.1
0°-90°	3593.9	63.9
90°-120°	439.6	7.8
90°-150°	1507.3	26.8
90°-180°	2031.0	36.1
0°-180°	5625.1	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	7	11	14	15	4
95°	27	11	11	14	14	35
105°	148	151	153	156	140	155
115°	276	277	277	278	278	272
125°	388	390	389	390	391	346
135°	481	481	483	484	485	371
145°	555	556	556	557	558	347
155°	609	609	608	609	608	280
165°	642	640	640	643	639	181
175°	657	654	654	658	653	63
180°	657	657	657	657	657	



TEST NUMBER: P332964-935

CATALOG NUMBER: S124RDIP-S1020D590U935-4F0-1E-UDD-F

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°	22.2	20.8	19.3	17.8	16.4	15.7	15.6	15.6	15.5	15.5	15.4
90°	1.5	2.7	3.9	5.1	6.3	7.3	8.2	9.0	9.9	10.8	11.5
92.5°	6.2	6.3	6.3	6.4	6.5	6.9	7.8	8.7	9.6	10.4	11.1
95°	27.0	23.3	19.6	15.8	12.1	10.3	10.5	10.6	10.7	10.8	11.5
97.5°	57.3	59.7	62.0	64.3	66.6	61.6	49.5	37.4	25.1	13.0	13.0
100°	80.5	82.5	84.5	86.4	88.4	81.9	66.8	51.7	36.7	21.6	19.7
102.5°	106.5	107.9	109.3	110.8	112.3	112.0	110.0	108.1	106.1	104.1	84.1
105°	147.8	148.5	149.1	149.8	150.4	151.0	151.6	152.1	152.7	153.3	154.2
107.5°	186.2	186.6	186.9	187.2	187.5	188.0	188.8	189.6	190.3	191.1	191.6
110°	212.2	212.5	212.8	213.2	213.4	214.0	214.6	215.2	215.9	216.6	216.8



TEST NUMBER: P332964-935

CATALOG NUMBER: S124RDIP-S1020D590U935-4F0-1E-UDD-F

CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	237.3	237.9	238.5	239.1	239.7	240.1	240.4	240.7	241.1	241.3	241.3
115°	276.0	276.4	276.6	277.0	277.3	277.4	277.3	277.2	277.1	277.0	277.2
117.5°	310.9	311.3	311.8	312.2	312.6	313.0	313.2	313.5	313.7	313.9	313.9
120°	334.5	334.9	335.4	335.8	336.2	336.4	336.3	336.1	336.0	336.0	336.1
122.5°	356.5	356.7	357.0	357.2	357.5	357.7	357.9	358.0	358.2	358.3	358.4
125°	388.0	388.4	388.9	389.3	389.8	389.9	389.6	389.4	389.2	389.0	389.3
127.5°	417.8	417.9	418.1	418.2	418.3	418.6	419.1	419.6	420.1	420.6	420.5
130°	437.1	437.2	437.3	437.5	437.6	437.7	438.1	438.4	438.8	439.1	439.2
132.5°	454.8	455.0	455.2	455.4	455.6	455.9	456.3	456.7	457.1	457.5	457.6
135°	481.3	481.2	481.1	481.0	480.9	481.0	481.5	481.9	482.3	482.8	483.0
137.5°	504.8	504.8	504.9	504.9	505.0	505.2	505.7	506.2	506.7	507.1	507.4
140°	520.1	520.3	520.6	520.7	521.0	521.2	521.4	521.7	521.9	522.1	522.4
142.5°	533.9	534.3	534.7	535.0	535.5	535.7	535.8	536.0	536.1	536.2	536.5
145°	555.0	555.3	555.6	555.9	556.3	556.5	556.5	556.5	556.5	556.5	556.6
147.5°	571.8	572.4	573.0	573.6	574.2	574.5	574.4	574.3	574.1	574.0	574.1
150°	583.9	584.4	584.9	585.3	585.7	585.9	585.7	585.7	585.6	585.4	585.4
152.5°	594.2	594.5	594.9	595.2	595.6	595.6	595.5	595.3	595.0	594.9	595.0
155°	608.6	608.6	608.7	608.8	609.0	608.8	608.6	608.2	607.9	607.5	608.0
157.5°	620.6	620.5	620.4	620.4	620.4	620.1	619.7	619.4	619.0	618.6	619.2
160°	627.7	627.3	627.0	626.7	626.4	626.1	626.0	625.9	625.8	625.7	626.4
162.5°	634.0	633.5	633.1	632.7	632.3	632.1	631.9	631.8	631.7	631.6	632.2
165°	641.9	641.4	640.8	640.2	639.7	639.5	639.5	639.5	639.5	639.5	640.3
167.5°	648.2	647.6	647.0	646.5	645.9	645.6	645.6	645.5	645.4	645.3	646.4
170°	651.8	651.1	650.4	649.8	649.1	648.8	648.9	649.0	649.2	649.3	650.1
172.5°	654.1	653.4	652.8	652.1	651.5	651.2	651.3	651.4	651.5	651.6	652.6
175°	656.7	656.0	655.3	654.7	654.0	653.8	653.8	654.0	654.1	654.2	655.1
177.5°	657.8	657.2	656.6	656.0	655.4	655.1	655.3	655.5	655.7	655.8	656.6
180°	656.7	656.7	656.7	656.7	656.7	656.7	656.7	656.7	656.7	656.7	656.7



TEST NUMBER: P332964-935

CATALOG NUMBER: S124RDIP-S1020D590U935-4F0-1E-UDD-F

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°	15.3	15.2	15.2	15.2	15.5	15.8	16.0	16.3
90°	12.1	12.7	13.4	13.9	14.1	14.3	14.6	14.7
92.5°	11.7	12.4	13.0	13.3	13.4	13.4	13.5	13.5
95°	12.1	12.7	13.4	13.8	13.9	14.0	14.1	14.2
97.5°	13.1	13.2	13.3	13.3	13.4	13.5	13.6	13.8
100°	17.9	16.0	14.2	13.3	13.4	13.5	13.6	13.8
102.5°	64.1	44.1	24.0	14.0	14.1	14.1	14.1	14.1
105°	155.2	156.2	157.1	155.7	151.8	147.8	143.9	140.0
107.5°	192.0	192.5	193.0	193.4	193.8	194.2	194.7	195.1
110°	217.1	217.2	217.5	217.7	218.1	218.3	218.7	219.0



TEST NUMBER: P332964-935

CATALOG NUMBER: S124RDIP-S1020D590U935-4F0-1E-UDD-F

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	241.3	241.3	241.2	241.3	241.8	242.2	242.6	243.0
115°	277.4	277.7	277.8	278.0	278.0	278.0	278.0	278.0
117.5°	313.8	313.8	313.7	313.7	313.7	313.7	313.6	313.6
120°	336.4	336.6	336.8	336.8	336.6	336.4	336.1	336.0
122.5°	358.6	358.7	358.9	358.8	358.6	358.3	358.2	357.9
125°	389.6	389.9	390.3	390.5	390.6	390.7	390.8	391.0
127.5°	420.5	420.4	420.3	420.3	420.2	420.1	420.0	419.9
130°	439.3	439.4	439.5	439.5	439.5	439.5	439.5	439.5
132.5°	457.8	457.9	458.0	458.0	457.9	457.8	457.7	457.6
135°	483.2	483.5	483.6	483.9	484.1	484.3	484.6	484.7
137.5°	507.6	507.9	508.1	508.2	508.2	508.1	508.0	507.9
140°	522.7	523.1	523.4	523.6	523.7	523.8	523.9	524.0
142.5°	536.7	536.9	537.2	537.4	537.4	537.4	537.4	537.4
145°	556.6	556.8	556.9	557.1	557.2	557.5	557.8	557.9
147.5°	574.2	574.3	574.4	574.5	574.6	574.7	574.8	574.9
150°	585.4	585.4	585.4	585.5	585.6	585.7	585.8	585.9
152.5°	595.2	595.4	595.6	595.6	595.6	595.5	595.4	595.4
155°	608.4	608.8	609.2	609.3	609.0	608.6	608.4	608.0
157.5°	619.7	620.4	620.9	620.9	620.4	619.7	619.2	618.6
160°	627.0	627.7	628.4	628.4	627.7	627.0	626.4	625.7
162.5°	632.9	633.5	634.2	634.2	633.4	632.7	632.0	631.2
165°	641.2	642.0	643.0	642.9	641.9	640.9	640.0	638.9
167.5°	647.3	648.2	649.2	649.1	648.1	647.0	645.8	644.8
170°	651.0	651.9	652.8	652.6	651.6	650.5	649.4	648.3
172.5°	653.4	654.3	655.1	655.0	653.8	652.6	651.4	650.2
175°	656.2	657.1	658.1	658.0	656.7	655.3	654.0	652.7
177.5°	657.3	658.0	658.7	658.5	657.5	656.4	655.3	654.3
180°	656.7	656.7	656.7	656.7	656.7	656.7	656.7	656.7

(END OF REPORT)