

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: P332970-940

Luminaire Tested: **S124RDIP-S1020D810U940-4F0-1E-UDD-F**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332970-940
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-S1020D810U940-4F0-1E-UDD-F
Description: DEFINE 4 DIRECT-INDIRECT PENDANT LED LUMINAIRE
DOWNLIGHT 1020 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER, REGRESSED
HOUSING
UPLIGHT 810 LUMENS PER FOOT, NO LENS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 6606.4 lumens
Efficiency: N/A
Efficacy: 121.4 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: General Diffuse

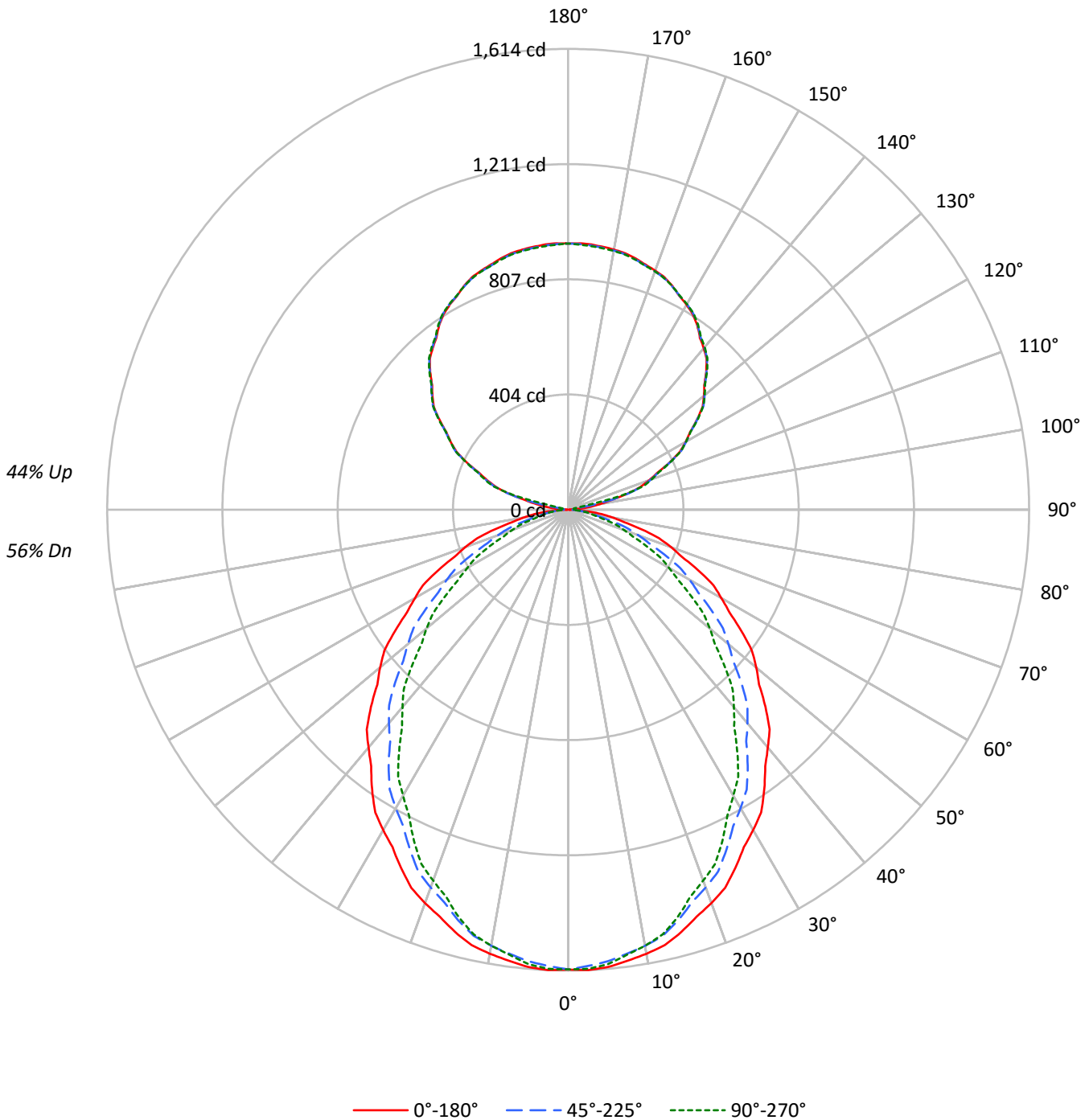
Input Watts (W): 54.4
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	109	109	109	109	101	101	101	101	87	87	87	74	74	74	62	62	62	56
1	100	95	91	88	92	89	86	83	77	74	72	66	64	62	55	54	53	48
2	91	84	77	72	84	78	73	68	68	64	60	58	55	52	49	47	45	41
3	83	74	66	61	77	69	62	57	60	55	51	51	48	45	44	41	39	35
4	76	65	58	52	71	61	54	49	53	48	44	46	42	38	39	36	34	30
5	70	58	50	44	65	55	48	42	48	42	38	41	37	34	35	32	29	26
6	65	53	44	39	60	49	42	37	43	37	33	38	33	30	32	29	26	23
7	60	48	40	34	56	45	38	32	39	34	29	34	30	26	30	26	23	21
8	56	43	36	30	52	41	34	29	36	30	26	31	27	24	27	24	21	19
9	52	40	32	27	48	37	31	26	33	27	24	29	24	21	25	22	19	17
10	48	36	29	24	45	34	28	23	30	25	21	27	22	19	23	20	17	15

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	12999	12999	12999
5°	13028	12869	12949
10°	12946	12714	12714
15°	12797	12447	12354
20°	12594	12095	11874
25°	12333	11685	11388
30°	12078	11251	10781
35°	11798	10801	10170
40°	11460	10290	9511
45°	11147	9782	8840
50°	10792	9198	8130
55°	10412	8590	7357
60°	9993	7923	6570
65°	9608	7089	5794
70°	9050	6170	4919
75°	8344	5115	3999
80°	7280	3896	3668
85°	6169	3548	3316



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	151.3	2.3
10°-20°	421.8	6.4
20°-30°	609.1	9.2
30°-40°	690.4	10.5
40°-50°	666.7	10.1
50°-60°	554.4	8.4
60°-70°	382.8	5.8
70°-80°	194.0	2.9
80°-90°	52.5	0.8
90°-100°	31.9	0.5
100°-110°	203.3	3.1
110°-120°	388.9	5.9
120°-130°	493.7	7.5
130°-140°	528.2	8.0
140°-150°	493.9	7.5
150°-160°	398.3	6.0
160°-170°	256.9	3.9
170°-180°	88.5	1.3
0°-30°	1182.1	17.9
0°-40°	1872.5	28.3
0°-60°	3093.5	46.8
0°-90°	3722.8	56.4
90°-120°	624.1	9.4
90°-150°	2139.8	32.4
90°-180°	2884.0	43.7
0°-180°	6606.4	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1610	1610	1610	1610	1610	
5°	1608	1602	1588	1599	1598	152
15°	1531	1519	1489	1486	1478	431
25°	1385	1361	1312	1291	1278	638
35°	1197	1156	1096	1055	1032	748
45°	976	929	857	799	774	753
55°	740	689	610	548	523	661
65°	503	449	371	320	303	497
75°	268	221	164	137	128	282
85°	67	43	38	36	36	75
90°	2	10	15	19	21	5
95°	38	16	15	19	20	49
105°	210	214	218	222	199	220
115°	392	394	393	395	395	385
125°	551	553	552	554	555	492
135°	683	683	685	687	688	526
145°	788	790	790	791	792	492
155°	864	864	862	865	863	398
165°	911	908	908	913	907	257
175°	932	928	929	934	927	89
180°	932	932	932	932	932	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1610.2	1610.2	1610.2	1610.2	1610.2	1610.2	1610.2	1610.2	1610.2	1610.2	1610.2
2.5°	1614.1	1613.2	1612.3	1611.5	1610.6	1608.9	1606.5	1604.1	1601.7	1599.3	1601.7
5°	1607.7	1606.6	1605.5	1604.4	1603.3	1601.1	1597.9	1594.6	1591.3	1588.0	1590.7
7.5°	1593.1	1592.0	1590.8	1589.7	1588.5	1585.8	1581.5	1577.3	1573.0	1568.7	1570.5
10°	1579.3	1578.0	1576.5	1575.2	1573.9	1570.7	1565.8	1560.9	1555.9	1551.0	1552.0
12.5°	1561.6	1560.0	1558.4	1556.8	1555.2	1551.5	1545.7	1539.9	1534.1	1528.3	1528.9
15°	1531.2	1528.7	1526.3	1523.8	1521.3	1516.7	1509.8	1503.0	1496.2	1489.3	1488.8
17.5°	1494.5	1490.9	1487.4	1483.8	1480.2	1474.4	1466.2	1457.9	1449.7	1441.5	1439.9
20°	1465.9	1462.3	1458.7	1455.2	1451.6	1445.2	1435.9	1426.6	1417.3	1407.9	1405.8
22.5°	1434.3	1430.3	1426.3	1422.4	1418.4	1411.3	1401.4	1391.4	1381.4	1371.5	1368.2
25°	1384.6	1379.6	1374.7	1369.8	1364.8	1356.7	1345.5	1334.3	1323.0	1311.8	1307.2
27.5°	1332.2	1326.1	1319.9	1313.7	1307.5	1298.4	1286.4	1274.4	1262.4	1250.4	1244.6
30°	1295.7	1288.9	1282.1	1275.2	1268.4	1258.5	1245.6	1232.7	1219.9	1207.0	1200.2
32.5°	1257.3	1249.6	1241.8	1234.1	1226.4	1215.8	1202.6	1189.3	1175.9	1162.6	1154.7
35°	1197.1	1188.4	1179.6	1170.8	1162.1	1150.8	1137.1	1123.5	1109.7	1096.0	1086.7
37.5°	1132.7	1123.7	1114.7	1105.6	1096.6	1084.5	1069.3	1054.2	1038.9	1023.8	1013.3
40°	1087.4	1078.3	1069.3	1060.2	1051.2	1038.9	1023.3	1007.6	992.0	976.4	964.9
42.5°	1044.0	1034.6	1025.0	1015.6	1006.1	993.2	977.0	960.6	944.4	928.1	916.4
45°	976.4	966.3	956.2	946.0	935.9	922.6	906.2	889.7	873.3	856.8	843.5
47.5°	906.7	896.2	885.7	875.3	864.8	851.0	833.9	816.8	799.7	782.7	768.7
50°	859.3	848.6	837.9	827.2	816.5	802.5	785.0	767.4	749.8	732.4	718.6
52.5°	811.0	800.5	790.1	779.6	769.1	754.9	736.9	719.0	701.0	683.1	669.1
55°	739.8	728.8	717.8	706.9	695.9	681.5	663.7	645.9	628.1	610.3	596.0
57.5°	669.2	657.8	646.4	635.0	623.7	609.1	591.7	574.1	556.5	539.0	524.6
60°	618.9	608.0	597.0	586.0	575.1	560.8	543.3	525.8	508.2	490.7	476.4
62.5°	573.5	562.1	550.7	539.3	528.0	513.3	495.3	477.3	459.3	441.4	428.2
65°	503.0	491.2	479.5	467.7	455.9	441.2	423.7	406.2	388.6	371.1	359.4
67.5°	429.8	418.5	407.2	395.9	384.6	370.9	354.5	338.3	322.0	305.8	295.6
70°	383.4	371.9	360.4	348.9	337.4	323.9	308.3	292.6	277.0	261.4	252.4
72.5°	334.1	323.7	313.3	302.9	292.5	279.9	265.2	250.4	235.7	221.0	213.2
75°	267.5	257.4	247.3	237.1	227.0	215.4	202.6	189.8	176.8	164.0	157.7
77.5°	200.0	191.4	182.8	174.2	165.6	156.0	145.6	135.3	124.8	114.4	110.8
80°	156.6	148.6	140.7	132.8	124.8	116.7	108.5	100.3	92.0	83.8	83.0
82.5°	119.1	111.8	104.5	97.2	90.0	83.9	79.3	74.5	69.8	65.1	64.5
85°	66.6	61.1	55.6	50.1	44.7	41.5	40.7	39.9	39.1	38.3	37.6
87.5°	23.1	21.7	20.2	18.9	17.5	16.8	16.8	16.9	16.9	16.9	16.9
90°	2.1	3.8	5.5	7.2	8.9	10.3	11.6	12.8	14.1	15.3	16.2
92.5°	8.8	8.9	9.0	9.1	9.2	9.8	11.1	12.3	13.6	14.8	15.7
95°	38.3	33.1	27.8	22.6	17.3	14.7	14.9	15.1	15.2	15.3	16.2
97.5°	81.4	84.7	88.0	91.3	94.6	87.6	70.3	53.0	35.7	18.4	18.5
100°	114.3	117.2	119.9	122.7	125.5	116.2	94.8	73.5	52.1	30.7	28.0
102.5°	151.1	153.2	155.2	157.3	159.3	159.0	156.1	153.4	150.6	147.8	119.4
105°	209.8	210.8	211.7	212.7	213.6	214.5	215.2	216.0	216.8	217.5	218.9
107.5°	264.4	264.8	265.3	265.8	266.3	267.0	268.0	269.1	270.2	271.3	271.9
110°	301.2	301.7	302.1	302.6	303.1	303.7	304.7	305.6	306.6	307.5	307.8



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	336.9	337.7	338.6	339.4	340.3	340.9	341.3	341.7	342.1	342.6	342.6
115°	391.8	392.3	392.8	393.2	393.7	393.9	393.7	393.5	393.4	393.2	393.5
117.5°	441.3	441.9	442.6	443.2	443.8	444.3	444.6	445.0	445.3	445.7	445.6
120°	474.8	475.5	476.1	476.7	477.2	477.5	477.3	477.2	477.1	476.9	477.2
122.5°	506.0	506.4	506.8	507.1	507.6	507.8	508.0	508.3	508.5	508.7	508.9
125°	550.8	551.4	552.1	552.7	553.3	553.4	553.1	552.9	552.5	552.2	552.7
127.5°	593.2	593.3	593.5	593.7	593.8	594.2	594.9	595.7	596.4	597.1	597.0
130°	620.5	620.7	620.8	621.0	621.2	621.4	621.9	622.4	622.9	623.3	623.5
132.5°	645.6	645.9	646.2	646.5	646.8	647.2	647.7	648.4	648.9	649.5	649.7
135°	683.3	683.1	683.0	682.8	682.7	682.9	683.5	684.1	684.7	685.4	685.6
137.5°	716.6	716.7	716.8	716.8	716.8	717.2	717.9	718.6	719.3	720.0	720.3
140°	738.3	738.7	739.0	739.3	739.6	739.9	740.2	740.6	740.8	741.1	741.6
142.5°	757.9	758.4	759.0	759.6	760.1	760.5	760.6	760.9	761.1	761.3	761.6
145°	787.8	788.4	788.8	789.3	789.7	790.0	790.0	790.0	790.0	790.0	790.1
147.5°	811.7	812.6	813.4	814.3	815.2	815.6	815.4	815.2	815.0	814.9	815.0
150°	829.0	829.6	830.3	830.9	831.4	831.7	831.5	831.4	831.3	831.1	831.1
152.5°	843.5	844.0	844.5	845.0	845.5	845.6	845.3	845.1	844.7	844.5	844.7
155°	863.9	864.0	864.2	864.3	864.5	864.3	863.9	863.4	862.9	862.5	863.1
157.5°	881.0	880.9	880.8	880.7	880.7	880.3	879.8	879.3	878.8	878.2	879.0
160°	891.1	890.6	890.1	889.7	889.2	888.9	888.8	888.6	888.4	888.2	889.2
162.5°	900.0	899.4	898.8	898.2	897.6	897.2	897.1	897.0	896.8	896.6	897.6
165°	911.2	910.5	909.7	908.9	908.2	907.8	907.8	907.8	907.8	907.8	909.0
167.5°	920.2	919.4	918.6	917.7	916.9	916.5	916.4	916.3	916.2	916.1	917.5
170°	925.2	924.3	923.4	922.4	921.5	921.1	921.2	921.4	921.6	921.8	922.9
172.5°	928.5	927.6	926.7	925.8	924.9	924.4	924.6	924.8	924.9	925.1	926.3
175°	932.2	931.2	930.3	929.4	928.4	928.1	928.3	928.4	928.5	928.7	930.1
177.5°	933.9	933.0	932.1	931.2	930.4	930.1	930.3	930.6	930.9	931.0	932.0
180°	932.2	932.2	932.2	932.2	932.2	932.2	932.2	932.2	932.2	932.2	932.2



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1610.2	1610.2	1610.2	1610.2	1610.2	1610.2	1610.2	1610.2
2.5°	1604.1	1606.5	1608.9	1610.1	1609.8	1609.6	1609.4	1609.2
5°	1593.4	1596.2	1598.9	1600.0	1599.5	1598.9	1598.4	1597.9
7.5°	1572.3	1574.0	1575.7	1576.2	1575.3	1574.4	1573.5	1572.6
10°	1553.2	1554.3	1555.3	1555.3	1554.3	1553.2	1552.0	1551.0
12.5°	1529.6	1530.3	1530.9	1530.4	1528.9	1527.4	1525.9	1524.4
15°	1488.3	1487.6	1487.1	1485.9	1484.0	1482.0	1480.2	1478.2
17.5°	1438.4	1436.9	1435.4	1433.2	1430.2	1427.4	1424.4	1421.5
20°	1403.6	1401.4	1399.2	1396.3	1392.8	1389.2	1385.6	1382.1
22.5°	1364.9	1361.6	1358.3	1355.2	1352.3	1349.4	1346.5	1343.6
25°	1302.4	1297.8	1293.2	1289.4	1286.7	1284.0	1281.2	1278.5
27.5°	1238.9	1233.1	1227.4	1222.5	1218.6	1214.6	1210.7	1206.8
30°	1193.3	1186.4	1179.6	1173.9	1169.6	1165.2	1160.8	1156.5
32.5°	1146.7	1138.8	1130.9	1124.8	1120.6	1116.4	1112.3	1108.1
35°	1077.4	1068.1	1058.7	1051.7	1046.7	1041.8	1036.9	1031.9
37.5°	1003.0	992.6	982.1	974.5	969.6	964.6	959.7	954.8
40°	953.4	941.9	930.4	922.2	917.3	912.3	907.4	902.5
42.5°	904.6	893.0	881.2	872.8	867.6	862.5	857.3	852.2
45°	830.0	816.5	803.2	794.0	789.1	784.1	779.2	774.3
47.5°	754.8	740.9	726.9	717.3	711.9	706.4	701.0	695.6
50°	704.9	691.3	677.5	668.1	662.9	657.6	652.5	647.3
52.5°	655.1	641.2	627.3	617.7	612.2	606.8	601.4	596.0
55°	581.8	567.6	553.3	543.6	538.3	533.2	528.0	522.7
57.5°	510.1	495.6	481.2	472.0	468.0	464.0	460.1	456.2
60°	462.2	447.9	433.7	424.4	420.0	415.6	411.3	406.9
62.5°	415.1	401.9	388.8	380.4	376.9	373.4	369.9	366.4
65°	347.5	335.7	324.0	316.5	313.2	309.9	306.6	303.3
67.5°	285.4	275.4	265.2	258.3	254.7	251.1	247.4	243.9
70°	243.3	234.3	225.2	219.3	216.6	213.8	211.1	208.4
72.5°	205.5	197.8	190.0	184.9	182.4	179.9	177.4	174.9
75°	151.4	145.1	138.8	134.8	133.1	131.5	129.8	128.2
77.5°	107.1	103.4	99.7	97.6	97.1	96.7	96.1	95.7
80°	82.2	81.4	80.5	80.0	79.7	79.5	79.2	78.9
82.5°	63.8	63.3	62.7	62.2	62.0	61.7	61.4	61.2
85°	37.1	36.6	36.0	35.8	35.8	35.8	35.8	35.8
87.5°	16.9	16.8	16.8	16.9	17.1	17.4	17.7	18.0
90°	17.2	18.1	19.1	19.7	20.0	20.3	20.6	21.0
92.5°	16.7	17.6	18.5	19.0	19.1	19.1	19.2	19.3
95°	17.2	18.1	19.1	19.6	19.8	19.9	20.1	20.2
97.5°	18.6	18.7	18.8	18.9	19.1	19.2	19.4	19.5
100°	25.4	22.7	20.2	18.9	19.1	19.2	19.4	19.5
102.5°	91.0	62.6	34.2	20.0	20.0	20.0	20.1	20.1
105°	220.3	221.7	223.1	221.1	215.4	209.8	204.3	198.7
107.5°	272.6	273.2	273.9	274.6	275.2	275.7	276.3	277.0
110°	308.1	308.4	308.7	309.1	309.6	310.0	310.5	310.9



TEST NUMBER: P332970-940

CATALOG NUMBER: S124RDIP-S1020D810U940-4F0-1E-UDD-F

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	342.5	342.4	342.3	342.6	343.2	343.8	344.4	345.0
115°	393.9	394.1	394.5	394.7	394.7	394.7	394.7	394.7
117.5°	445.5	445.5	445.4	445.3	445.3	445.2	445.1	445.1
120°	477.5	477.9	478.1	478.1	477.9	477.5	477.2	476.9
122.5°	509.1	509.3	509.4	509.3	509.1	508.7	508.5	508.1
125°	553.1	553.6	554.0	554.4	554.6	554.6	554.8	555.0
127.5°	596.9	596.8	596.7	596.6	596.5	596.4	596.3	596.1
130°	623.7	623.8	623.9	624.0	624.0	624.0	624.0	624.0
132.5°	649.9	650.0	650.1	650.1	650.1	649.9	649.8	649.7
135°	686.0	686.3	686.6	686.9	687.2	687.5	687.9	688.1
137.5°	720.6	720.9	721.3	721.4	721.3	721.2	721.1	721.0
140°	742.1	742.5	743.0	743.3	743.5	743.6	743.8	744.0
142.5°	761.9	762.2	762.6	762.8	762.8	762.9	762.9	762.9
145°	790.2	790.4	790.6	790.8	791.1	791.4	791.8	792.0
147.5°	815.2	815.3	815.4	815.6	815.7	815.8	816.0	816.2
150°	831.1	831.1	831.1	831.2	831.3	831.4	831.6	831.8
152.5°	845.0	845.3	845.4	845.5	845.4	845.3	845.3	845.2
155°	863.7	864.3	865.0	865.0	864.5	864.1	863.6	863.2
157.5°	879.9	880.7	881.5	881.5	880.7	879.9	879.0	878.2
160°	890.1	891.1	892.0	892.0	891.1	890.1	889.2	888.2
162.5°	898.5	899.4	900.4	900.3	899.2	898.1	897.2	896.1
165°	910.3	911.5	912.8	912.7	911.2	909.9	908.5	907.0
167.5°	918.9	920.2	921.6	921.5	920.0	918.4	916.9	915.3
170°	924.2	925.4	926.7	926.5	925.0	923.5	921.9	920.3
172.5°	927.6	928.8	930.1	929.8	928.2	926.5	924.8	923.1
175°	931.5	932.9	934.2	934.1	932.2	930.3	928.4	926.6
177.5°	933.1	934.1	935.0	934.8	933.3	931.8	930.3	928.8
180°	932.2	932.2	932.2	932.2	932.2	932.2	932.2	932.2

(END OF REPORT)