

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: P333094-930

Luminaire Tested: **S124RDIW-S1020D1560U930-4F0-1E-UDD-F1**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P333094-930  
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-S1020D1560U930-4F0-1E-UDD-F1  
Description: DEFINE 4 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE  
DOWNLIGHT 1020 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER, REGRESSED  
HOUSING  
UPLIGHT 1560 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

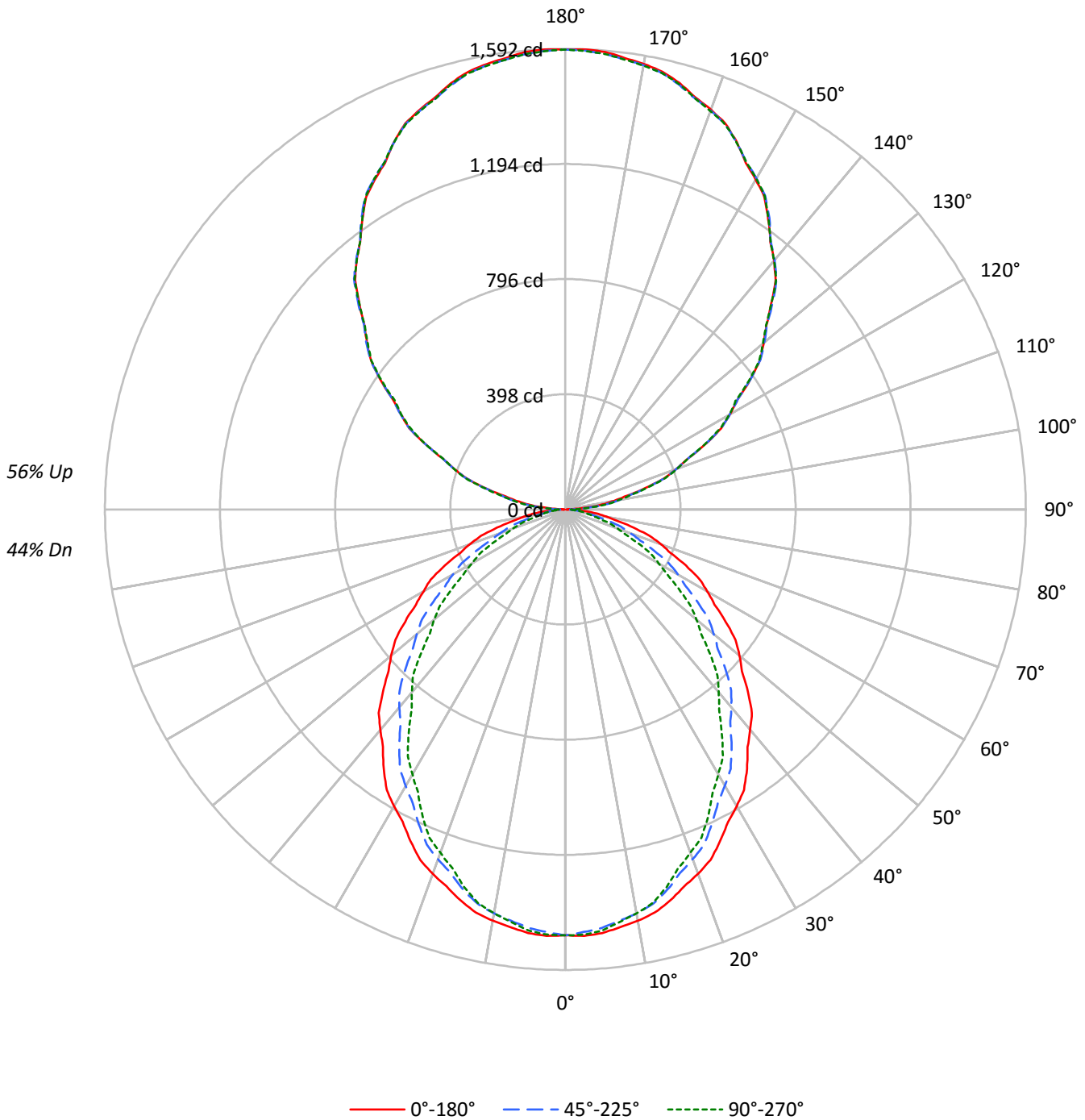
Lumens per Lamp: N/A  
Luminaire Lumens: 7816.1 lumens  
Efficiency: N/A  
Efficacy: 102.0 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 1.09 / 1.24  
Luminous Opening: Rectangular (W 0.33' x L: 4' x H: 0')  
CIE Type: General Diffuse  
  
Input Watts (W): 76.6  
Input Voltage (V): 120  
Input Current (Ain): 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	106	106	106	106	97	97	97	97	80	80	80	64	64	64	50	50	50	44				
1	97	92	89	85	88	85	81	79	70	68	66	57	55	54	45	44	43	37				
2	88	81	75	70	80	74	69	65	62	58	55	50	48	45	40	38	36	31				
3	80	71	64	58	73	66	59	54	55	50	46	45	41	39	35	33	31	27				
4	74	63	55	50	67	58	51	46	49	44	40	40	36	33	32	29	27	23				
5	68	56	48	43	62	52	45	40	44	38	34	36	32	29	29	26	24	20				
6	62	51	43	37	57	47	40	35	39	34	30	32	28	25	26	23	21	18				
7	58	46	38	32	53	42	35	30	36	30	26	30	26	23	24	21	19	16				
8	54	41	34	29	49	38	32	27	33	27	24	27	23	20	22	19	17	14				
9	50	38	31	26	46	35	29	24	30	25	21	25	21	18	20	17	15	13				
10	47	35	28	23	43	32	26	22	27	22	19	23	19	16	19	16	14	12				

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	11885	11885	11885
5°	11912	11766	11839
10°	11837	11625	11625
15°	11701	11381	11295
20°	11515	11059	10856
25°	11276	10684	10413
30°	11044	10288	9857
35°	10787	9876	9298
40°	10478	9409	8696
45°	10193	8944	8082
50°	9868	8410	7433
55°	9520	7854	6726
60°	9137	7245	6006
65°	8785	6481	5297
70°	8275	5641	4497
75°	7629	4676	3656
80°	6657	3561	3357
85°	5641	3242	3029



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	138.3	1.8
10°-20°	385.6	4.9
20°-30°	556.9	7.1
30°-40°	631.2	8.1
40°-50°	609.5	7.8
50°-60°	506.9	6.5
60°-70°	350.0	4.5
70°-80°	177.4	2.3
80°-90°	50.3	0.6
90°-100°	104.8	1.3
100°-110°	310.6	4.0
110°-120°	527.1	6.7
120°-130°	695.1	8.9
130°-140°	780.6	10.0
140°-150°	767.1	9.8
150°-160°	645.2	8.3
160°-170°	429.2	5.5
170°-180°	150.3	1.9
0°-30°	1080.8	13.8
0°-40°	1712.0	21.9
0°-60°	2828.4	36.2
0°-90°	3406.1	43.6
90°-120°	942.5	12.1
90°-150°	3185.3	40.8
90°-180°	4410.0	56.4
0°-180°	7816.1	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1472	1472	1472	1472	1472	
5°	1470	1465	1452	1462	1461	139
15°	1400	1389	1362	1359	1352	394
25°	1266	1244	1199	1181	1169	583
35°	1094	1057	1002	965	944	684
45°	893	850	783	730	708	688
55°	676	630	558	501	478	605
65°	460	410	339	293	277	454
75°	245	202	150	125	117	258
85°	61	39	35	33	33	69
90°	4	17	27	34	37	8
95°	74	85	93	97	97	82
105°	286	288	293	296	300	304
115°	536	536	534	532	531	528
125°	781	781	779	777	774	695
135°	1007	1014	1014	1012	1008	779
145°	1223	1228	1229	1228	1224	765
155°	1401	1401	1400	1405	1400	645
165°	1526	1522	1520	1526	1522	430
175°	1587	1581	1580	1587	1580	151
180°	1590	1590	1590	1590	1590	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1472.2	1472.2	1472.2	1472.2	1472.2	1472.2	1472.2	1472.2	1472.2	1472.2	1472.2
2.5°	1475.8	1475.0	1474.1	1473.4	1472.6	1471.0	1468.8	1466.6	1464.4	1462.2	1464.4
5°	1469.9	1468.9	1467.9	1466.9	1465.9	1463.9	1460.9	1457.9	1454.9	1451.9	1454.4
7.5°	1456.6	1455.6	1454.5	1453.4	1452.4	1449.9	1446.0	1442.1	1438.2	1434.3	1435.9
10°	1444.0	1442.8	1441.4	1440.2	1439.0	1436.1	1431.6	1427.1	1422.5	1418.1	1419.0
12.5°	1427.8	1426.3	1424.8	1423.4	1422.0	1418.5	1413.2	1407.9	1402.6	1397.3	1397.9
15°	1400.0	1397.7	1395.5	1393.3	1391.0	1386.7	1380.5	1374.2	1368.0	1361.7	1361.2
17.5°	1366.4	1363.2	1359.9	1356.7	1353.4	1348.0	1340.5	1333.0	1325.5	1317.9	1316.5
20°	1340.3	1337.0	1333.7	1330.5	1327.2	1321.4	1312.9	1304.3	1295.8	1287.3	1285.3
22.5°	1311.4	1307.7	1304.1	1300.5	1296.8	1290.4	1281.3	1272.2	1263.1	1253.9	1250.9
25°	1265.9	1261.3	1256.9	1252.4	1247.8	1240.5	1230.2	1219.9	1209.7	1199.4	1195.1
27.5°	1218.1	1212.4	1206.8	1201.1	1195.5	1187.2	1176.2	1165.2	1154.2	1143.2	1138.0
30°	1184.7	1178.4	1172.2	1166.0	1159.7	1150.6	1138.9	1127.1	1115.3	1103.6	1097.3
32.5°	1149.6	1142.5	1135.4	1128.4	1121.3	1111.7	1099.5	1087.4	1075.1	1063.0	1055.7
35°	1094.5	1086.5	1078.5	1070.5	1062.5	1052.2	1039.7	1027.2	1014.6	1002.1	993.6
37.5°	1035.7	1027.4	1019.2	1010.9	1002.7	991.6	977.7	963.8	949.9	936.0	926.5
40°	994.3	985.9	977.7	969.4	961.2	949.9	935.6	921.3	907.0	892.8	882.2
42.5°	954.6	945.9	937.2	928.5	919.9	908.1	893.2	878.3	863.5	848.6	837.9
45°	892.8	883.5	874.2	865.0	855.7	843.5	828.5	813.5	798.4	783.4	771.2
47.5°	829.0	819.4	809.8	800.3	790.7	778.1	762.5	746.8	731.2	715.6	702.9
50°	785.7	775.9	766.1	756.4	746.6	733.7	717.7	701.6	685.6	669.6	657.0
52.5°	741.5	731.9	722.4	712.8	703.2	690.2	673.8	657.4	640.9	624.5	611.8
55°	676.4	666.3	656.3	646.3	636.3	623.1	606.8	590.5	574.3	558.0	544.9
57.5°	611.9	601.4	591.0	580.6	570.2	556.9	541.0	524.9	508.8	492.8	479.6
60°	565.9	555.9	545.8	535.8	525.8	512.7	496.8	480.7	464.6	448.7	435.6
62.5°	524.4	514.0	503.5	493.1	482.7	469.3	452.8	436.4	420.0	403.6	391.5
65°	459.9	449.1	438.4	427.6	416.9	403.4	387.4	371.4	355.3	339.3	328.6
67.5°	393.0	382.6	372.3	362.0	351.6	339.1	324.2	309.3	294.4	279.6	270.3
70°	350.6	340.1	329.5	319.0	308.5	296.1	281.8	267.5	253.2	239.0	230.7
72.5°	305.5	296.0	286.4	277.0	267.4	255.9	242.5	228.9	215.5	202.0	194.9
75°	244.6	235.4	226.1	216.8	207.6	197.0	185.2	173.5	161.7	149.9	144.1
77.5°	182.9	175.0	167.1	159.2	151.4	142.7	133.1	123.7	114.1	104.6	101.3
80°	143.2	135.9	128.7	121.4	114.1	106.7	99.2	91.7	84.1	76.6	75.9
82.5°	108.9	102.2	95.6	88.9	82.3	76.7	72.5	68.2	63.8	59.5	58.9
85°	60.9	55.8	50.9	45.8	40.8	37.9	37.2	36.4	35.7	35.0	34.4
87.5°	21.4	20.5	19.5	18.5	17.4	17.1	17.3	17.5	17.8	18.0	18.2
90°	3.7	6.7	9.7	12.7	15.7	18.3	20.5	22.7	24.9	27.1	28.7
92.5°	26.3	29.8	33.2	36.6	40.1	42.6	44.1	45.7	47.1	48.7	49.7
95°	73.8	76.2	78.7	81.1	83.6	85.8	87.7	89.6	91.6	93.4	94.2
97.5°	128.8	130.8	132.7	134.8	136.7	138.8	141.0	143.2	145.5	147.7	148.7
100°	172.1	173.2	174.3	175.4	176.5	178.2	180.8	183.2	185.6	188.1	188.7
102.5°	217.4	217.8	218.3	218.7	219.1	220.5	222.7	224.9	227.1	229.4	230.2
105°	286.4	286.7	287.0	287.2	287.6	288.2	289.3	290.4	291.5	292.6	293.4
107.5°	359.0	359.3	359.6	360.0	360.3	360.5	360.7	360.9	361.0	361.2	361.9
110°	408.1	408.7	409.2	409.8	410.3	410.5	410.2	409.9	409.6	409.4	408.8



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	459.3	459.4	459.5	459.6	459.7	459.5	459.0	458.5	458.0	457.5	457.5
115°	536.0	536.0	536.0	536.0	536.0	535.7	535.2	534.6	534.1	533.5	533.3
117.5°	608.3	608.5	608.7	608.9	609.2	609.1	608.7	608.3	607.9	607.6	606.6
120°	656.5	657.5	658.7	659.7	660.8	661.0	660.1	659.3	658.5	657.7	656.3
122.5°	706.6	707.0	707.5	707.9	708.3	708.4	708.0	707.6	707.3	706.9	706.0
125°	780.6	780.6	780.6	780.6	780.6	780.5	780.2	779.9	779.7	779.4	778.9
127.5°	847.7	848.6	849.4	850.2	851.0	851.3	850.8	850.4	849.9	849.5	848.9
130°	895.0	895.8	896.6	897.4	898.2	898.6	898.6	898.6	898.6	898.6	898.1
132.5°	943.1	943.8	944.4	944.9	945.6	945.7	945.5	945.3	945.1	944.9	944.4
135°	1006.8	1008.4	1010.1	1011.8	1013.4	1014.2	1014.2	1014.2	1014.2	1014.2	1013.7
137.5°	1076.2	1076.9	1077.7	1078.5	1079.2	1079.9	1080.3	1080.7	1081.2	1081.6	1080.8
140°	1122.4	1122.9	1123.5	1124.1	1124.5	1124.9	1124.9	1124.9	1124.9	1124.9	1124.5
142.5°	1164.7	1165.2	1165.8	1166.3	1166.9	1167.0	1166.8	1166.6	1166.4	1166.1	1166.1
145°	1223.2	1224.3	1225.4	1226.5	1227.6	1228.2	1228.5	1228.8	1229.1	1229.3	1229.1
147.5°	1281.2	1282.5	1283.9	1285.2	1286.5	1287.0	1286.8	1286.5	1286.4	1286.1	1285.9
150°	1316.6	1317.7	1318.8	1319.9	1321.0	1321.5	1321.5	1321.5	1321.5	1321.5	1321.5
152.5°	1350.1	1350.7	1351.4	1352.0	1352.7	1353.2	1353.3	1353.6	1353.8	1354.0	1354.6
155°	1401.4	1401.4	1401.4	1401.4	1401.4	1401.3	1401.0	1400.8	1400.5	1400.2	1401.3
157.5°	1444.7	1444.2	1443.7	1443.2	1442.8	1442.5	1442.4	1442.3	1442.3	1442.3	1443.1
160°	1470.3	1470.0	1469.7	1469.5	1469.2	1468.9	1468.7	1468.4	1468.1	1467.9	1468.7
162.5°	1493.9	1493.2	1492.5	1491.8	1491.0	1490.5	1490.3	1490.0	1489.7	1489.5	1490.9
165°	1525.6	1524.8	1524.0	1523.1	1522.3	1521.7	1521.1	1520.5	1520.0	1519.5	1521.1
167.5°	1550.0	1548.8	1547.7	1546.5	1545.4	1544.8	1544.9	1544.9	1545.0	1545.1	1546.7
170°	1563.7	1562.4	1561.0	1559.6	1558.3	1557.7	1558.0	1558.3	1558.5	1558.8	1560.4
172.5°	1573.5	1572.4	1571.2	1570.1	1569.0	1568.4	1568.5	1568.6	1568.6	1568.6	1570.5
175°	1587.1	1585.7	1584.4	1583.0	1581.6	1580.8	1580.5	1580.2	1580.0	1579.7	1581.6
177.5°	1591.5	1590.4	1589.3	1588.2	1587.1	1586.6	1586.6	1586.6	1586.6	1586.6	1588.1
180°	1589.5	1589.5	1589.5	1589.5	1589.5	1589.5	1589.5	1589.5	1589.5	1589.5	1589.5



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1472.2	1472.2	1472.2	1472.2	1472.2	1472.2	1472.2	1472.2
2.5°	1466.6	1468.8	1471.0	1472.1	1471.9	1471.7	1471.5	1471.3
5°	1456.9	1459.4	1461.9	1462.9	1462.4	1461.9	1461.4	1460.9
7.5°	1437.5	1439.1	1440.7	1441.1	1440.3	1439.5	1438.7	1437.9
10°	1420.1	1421.1	1422.0	1422.0	1421.1	1420.1	1419.0	1418.1
12.5°	1398.5	1399.1	1399.7	1399.3	1397.9	1396.5	1395.1	1393.8
15°	1360.7	1360.2	1359.7	1358.5	1356.8	1355.0	1353.3	1351.5
17.5°	1315.2	1313.8	1312.4	1310.3	1307.7	1305.0	1302.4	1299.7
20°	1283.3	1281.3	1279.3	1276.7	1273.4	1270.2	1266.9	1263.6
22.5°	1247.9	1244.9	1241.9	1239.1	1236.4	1233.8	1231.1	1228.5
25°	1190.8	1186.6	1182.3	1178.9	1176.5	1173.9	1171.4	1169.0
27.5°	1132.7	1127.5	1122.2	1117.8	1114.2	1110.5	1106.9	1103.3
30°	1091.0	1084.8	1078.5	1073.3	1069.3	1065.4	1061.4	1057.4
32.5°	1048.5	1041.2	1034.0	1028.4	1024.6	1020.8	1017.0	1013.2
35°	985.0	976.6	968.0	961.6	957.0	952.5	948.0	943.5
37.5°	917.0	907.5	898.0	891.0	886.5	881.9	877.4	872.9
40°	871.7	861.2	850.7	843.2	838.7	834.1	829.6	825.2
42.5°	827.1	816.4	805.7	798.0	793.3	788.6	783.8	779.2
45°	758.9	746.6	734.3	725.9	721.5	716.9	712.4	707.9
47.5°	690.2	677.4	664.6	655.8	650.9	645.9	640.9	636.0
50°	644.5	632.0	619.5	610.8	606.1	601.3	596.6	591.8
52.5°	599.0	586.3	573.6	564.8	559.8	554.8	549.8	544.9
55°	531.9	518.9	505.9	497.0	492.2	487.5	482.7	477.9
57.5°	466.4	453.1	439.9	431.5	427.9	424.3	420.7	417.1
60°	422.6	409.5	396.6	388.0	384.0	380.0	376.0	372.0
62.5°	379.5	367.5	355.5	347.8	344.6	341.4	338.2	335.0
65°	317.7	307.0	296.2	289.3	286.3	283.3	280.3	277.3
67.5°	261.0	251.8	242.5	236.2	232.8	229.6	226.2	223.0
70°	222.4	214.2	205.9	200.5	198.0	195.5	193.0	190.5
72.5°	187.8	180.8	173.7	169.1	166.7	164.4	162.2	159.9
75°	138.4	132.6	126.9	123.3	121.7	120.3	118.7	117.2
77.5°	97.9	94.6	91.2	89.3	88.8	88.4	87.9	87.5
80°	75.2	74.4	73.6	73.1	72.9	72.6	72.4	72.2
82.5°	58.4	57.9	57.3	56.9	56.7	56.4	56.2	55.9
85°	33.9	33.4	32.9	32.7	32.7	32.7	32.7	32.7
87.5°	18.3	18.4	18.5	18.8	19.1	19.4	19.7	20.0
90°	30.3	32.0	33.6	34.7	35.2	35.8	36.4	36.9
92.5°	50.6	51.6	52.6	53.2	53.6	53.9	54.2	54.5
95°	95.1	95.9	96.7	97.1	97.1	97.1	97.1	97.1
97.5°	149.8	150.7	151.7	152.2	152.2	152.2	152.2	152.2
100°	189.1	189.7	190.3	190.5	190.5	190.5	190.5	190.5
102.5°	230.9	231.7	232.4	232.9	233.2	233.4	233.6	233.8
105°	294.2	295.1	295.9	296.7	297.5	298.3	299.1	299.9
107.5°	362.7	363.5	364.3	364.6	364.5	364.5	364.4	364.4
110°	408.3	407.7	407.2	407.3	408.1	409.0	409.8	410.6





TEST NUMBER: P333094-930

CATALOG NUMBER: S124RDIW-S1020D1560U930-4F0-1E-UDD-F1

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	457.3	457.2	457.1	457.1	457.3	457.5	457.6	457.8
115°	533.0	532.7	532.5	532.1	531.9	531.7	531.3	531.1
117.5°	605.7	604.8	603.8	603.1	602.5	602.0	601.4	600.9
120°	654.9	653.6	652.2	651.8	652.4	652.9	653.5	654.0
122.5°	705.0	704.1	703.2	702.2	701.2	700.3	699.3	698.3
125°	778.3	777.8	777.2	776.7	776.1	775.6	775.0	774.5
127.5°	848.4	847.8	847.3	846.8	846.4	846.0	845.5	845.1
130°	897.6	897.0	896.4	895.6	894.5	893.5	892.3	891.3
132.5°	943.8	943.2	942.6	942.2	941.8	941.3	940.9	940.4
135°	1013.1	1012.6	1012.0	1011.3	1010.5	1009.7	1008.9	1008.0
137.5°	1080.2	1079.5	1078.7	1078.5	1078.6	1078.8	1079.0	1079.1
140°	1124.3	1124.1	1123.7	1123.5	1123.2	1122.9	1122.7	1122.4
142.5°	1166.0	1166.0	1166.0	1165.9	1165.8	1165.8	1165.7	1165.6
145°	1228.8	1228.5	1228.2	1227.7	1226.9	1226.0	1225.2	1224.4
147.5°	1285.7	1285.5	1285.2	1285.0	1284.7	1284.5	1284.2	1283.9
150°	1321.5	1321.5	1321.5	1321.4	1321.1	1320.9	1320.6	1320.3
152.5°	1355.3	1355.9	1356.6	1356.6	1355.8	1355.2	1354.5	1353.7
155°	1402.4	1403.5	1404.6	1404.6	1403.5	1402.4	1401.3	1400.2
157.5°	1443.9	1444.7	1445.5	1445.4	1444.5	1443.7	1442.7	1441.8
160°	1469.5	1470.3	1471.1	1470.8	1469.5	1468.1	1466.7	1465.3
162.5°	1492.4	1493.9	1495.3	1495.4	1494.0	1492.7	1491.3	1490.0
165°	1522.7	1524.4	1526.0	1526.3	1525.2	1524.1	1523.0	1521.9
167.5°	1548.3	1550.0	1551.6	1551.6	1549.9	1548.2	1546.5	1544.7
170°	1562.1	1563.7	1565.4	1565.2	1563.3	1561.4	1559.5	1557.5
172.5°	1572.4	1574.2	1576.1	1576.1	1574.1	1572.2	1570.3	1568.4
175°	1583.6	1585.4	1587.4	1587.4	1585.4	1583.6	1581.6	1579.7
177.5°	1589.7	1591.1	1592.7	1592.6	1590.8	1589.1	1587.4	1585.6
180°	1589.5	1589.5	1589.5	1589.5	1589.5	1589.5	1589.5	1589.5

(END OF REPORT)