

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: P333090-830

Luminaire Tested: **S124RDIW-S1020D1340U830-4F0-1E-UDD-F1**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P333090-830  
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-S1020D1340U830-4F0-1E-UDD-F1  
Description: DEFINE 4 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE  
DOWNLIGHT 1020 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER, REGRESSED  
HOUSING  
UPLIGHT 1340 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 8321.9 lumens  
Efficiency: N/A  
Efficacy: 119.2 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

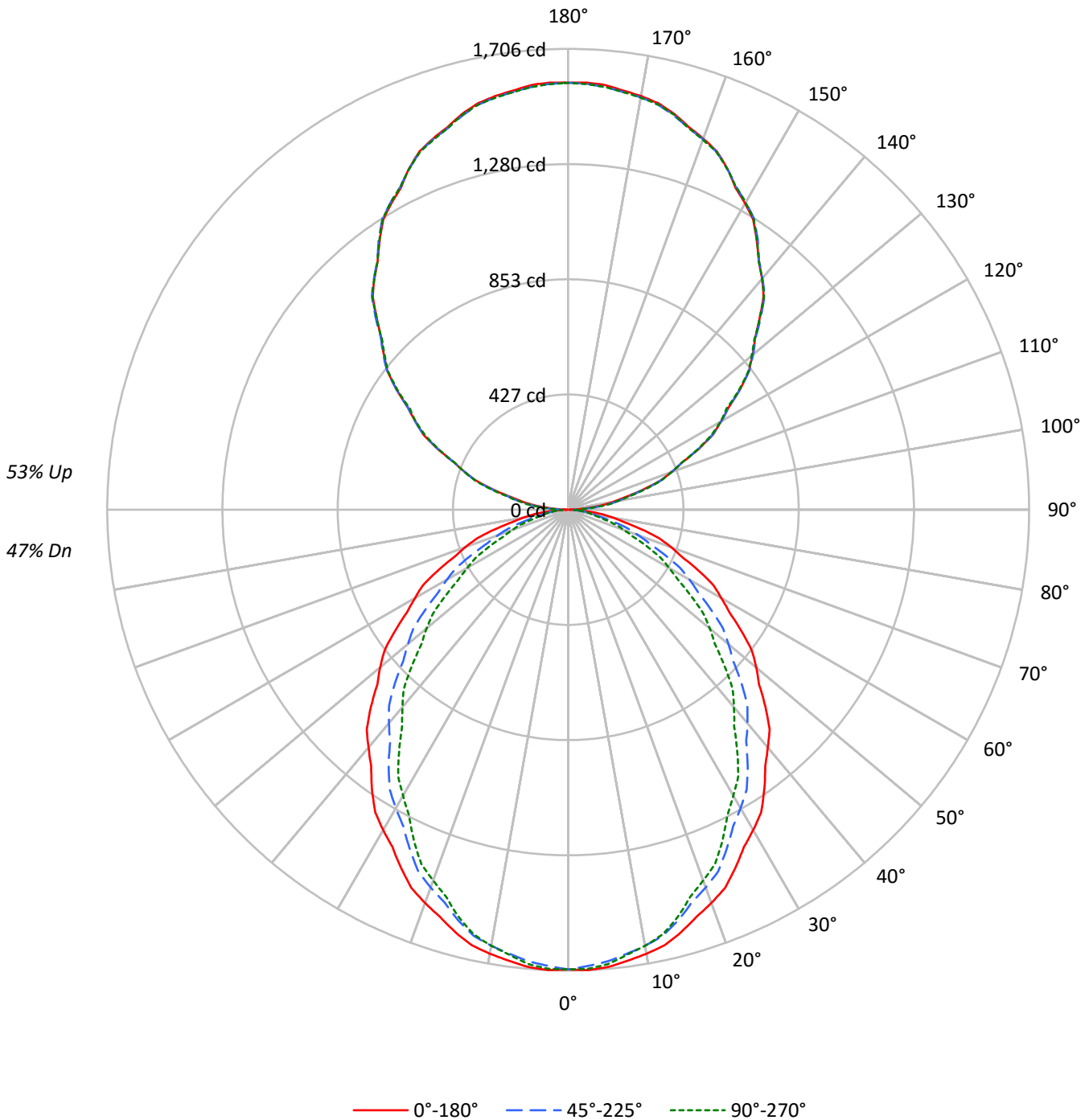
Input Watts (W): 69.8  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



TEST NUMBER: P333090-830

CATALOG NUMBER: S124RDIW-S1020D1340U830-4F0-1E-UDD-F1

### 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	107	107	107	107	98	98	98	98	82	82	82	67	67	67	54	54	54	47				47
1	97	93	89	86	89	86	83	80	72	70	68	59	58	56	48	47	46				40	
2	89	82	76	71	82	75	70	66	63	60	56	52	50	47	42	41	39				34	
3	81	72	65	59	74	67	60	55	56	52	48	47	43	40	38	35	33				29	
4	74	64	56	50	68	59	52	47	50	45	41	42	38	35	34	31	29				25	
5	68	57	49	43	63	53	46	40	45	39	35	37	33	30	31	28	25				22	
6	63	51	43	37	58	47	40	35	40	35	31	34	30	27	28	25	22				19	
7	58	46	38	33	54	43	36	31	37	31	27	31	27	24	25	22	20				17	
8	54	42	34	29	50	39	32	28	34	28	24	28	24	21	23	20	18				16	
9	50	38	31	26	46	36	29	25	31	25	22	26	22	19	22	19	16				14	
10	47	35	28	23	43	33	26	22	28	23	20	24	20	17	20	17	15				13	

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

	0°	45°	90°
0°	13739	13739	13739
5°	13771	13602	13686
10°	13684	13439	13439
15°	13527	13157	13059
20°	13311	12785	12550
25°	13036	12351	12038
30°	12767	11893	11395
35°	12471	11417	10749
40°	12113	10877	10053
45°	11783	10340	9344
50°	11408	9722	8593
55°	11005	9080	7776
60°	10563	8375	6944
65°	10157	7494	6124
70°	9567	6522	5200
75°	8821	5405	4226
80°	7694	4119	3877
85°	6521	3742	3501



TEST NUMBER: P333090-830

CATALOG NUMBER: S124RDIW-S1020D1340U830-4F0-1E-UDD-F1

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	159.9	1.9
10°-20°	445.8	5.4
20°-30°	643.8	7.7
30°-40°	729.7	8.8
40°-50°	704.7	8.5
50°-60°	586.0	7.0
60°-70°	404.6	4.9
70°-80°	205.1	2.5
80°-90°	57.3	0.7
90°-100°	104.3	1.3
100°-110°	308.8	3.7
110°-120°	524.1	6.3
120°-130°	691.1	8.3
130°-140°	776.2	9.3
140°-150°	762.7	9.2
150°-160°	641.5	7.7
160°-170°	426.8	5.1
170°-180°	149.5	1.8
0°-30°	1249.5	15.0
0°-40°	1979.2	23.8
0°-60°	3269.8	39.3
0°-90°	3936.9	47.3
90°-120°	937.2	11.3
90°-150°	3167.3	38.1
90°-180°	4385.0	52.7
0°-180°	8321.9	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1702	1702	1702	1702	1702	
5°	1699	1694	1678	1691	1689	161
15°	1618	1606	1574	1571	1562	456
25°	1464	1438	1387	1365	1351	674
35°	1265	1222	1158	1115	1091	790
45°	1032	982	906	844	818	795
55°	782	728	645	580	552	699
65°	532	474	392	338	321	525
75°	283	234	173	145	136	299
85°	70	46	40	38	38	79
90°	4	17	27	34	37	8
95°	73	84	93	96	97	82
105°	285	286	291	295	298	302
115°	533	533	530	529	528	525
125°	776	776	775	772	770	692
135°	1001	1008	1008	1006	1002	774
145°	1216	1221	1222	1221	1218	761
155°	1394	1393	1392	1397	1392	641
165°	1517	1513	1511	1518	1513	427
175°	1578	1572	1571	1578	1571	150
180°	1580	1580	1580	1580	1580	



TEST NUMBER: P333090-830

CATALOG NUMBER: S124RDIW-S1020D1340U830-4F0-1E-UDD-F1

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1701.9	1701.9	1701.9	1701.9	1701.9	1701.9	1701.9	1701.9	1701.9	1701.9	1701.9
2.5°	1706.1	1705.2	1704.2	1703.4	1702.4	1700.6	1698.1	1695.5	1693.0	1690.5	1693.0
5°	1699.3	1698.2	1697.0	1695.8	1694.7	1692.3	1688.9	1685.5	1682.0	1678.5	1681.4
7.5°	1683.9	1682.7	1681.5	1680.3	1679.0	1676.2	1671.7	1667.2	1662.6	1658.1	1660.0
10°	1669.3	1667.9	1666.4	1665.0	1663.6	1660.2	1655.0	1649.8	1644.5	1639.4	1640.5
12.5°	1650.6	1648.9	1647.2	1645.6	1643.9	1639.9	1633.8	1627.7	1621.6	1615.4	1616.1
15°	1618.5	1615.9	1613.4	1610.7	1608.1	1603.2	1595.9	1588.7	1581.5	1574.2	1573.7
17.5°	1579.7	1575.9	1572.2	1568.4	1564.6	1558.4	1549.7	1541.1	1532.4	1523.6	1522.0
20°	1549.4	1545.7	1541.9	1538.1	1534.4	1527.6	1517.8	1507.9	1498.1	1488.2	1485.9
22.5°	1516.1	1511.8	1507.6	1503.4	1499.2	1491.8	1481.3	1470.7	1460.2	1449.6	1446.1
25°	1463.5	1458.2	1453.0	1447.8	1442.6	1434.1	1422.2	1410.3	1398.5	1386.6	1381.7
27.5°	1408.2	1401.7	1395.2	1388.6	1382.1	1372.4	1359.7	1347.1	1334.4	1321.6	1315.6
30°	1369.6	1362.4	1355.2	1347.9	1340.7	1330.2	1316.6	1303.0	1289.4	1275.8	1268.6
32.5°	1329.0	1320.8	1312.6	1304.5	1296.3	1285.2	1271.1	1257.1	1242.9	1228.9	1220.5
35°	1265.4	1256.1	1246.8	1237.6	1228.3	1216.4	1201.9	1187.5	1173.0	1158.5	1148.7
37.5°	1197.3	1187.8	1178.3	1168.7	1159.1	1146.3	1130.3	1114.3	1098.2	1082.1	1071.1
40°	1149.4	1139.8	1130.3	1120.7	1111.2	1098.2	1081.7	1065.1	1048.6	1032.1	1019.9
42.5°	1103.5	1093.5	1083.5	1073.5	1063.5	1049.8	1032.6	1015.4	998.2	981.0	968.7
45°	1032.1	1021.4	1010.7	999.9	989.2	975.2	957.8	940.5	923.0	905.7	891.6
47.5°	958.4	947.3	936.2	925.2	914.1	899.6	881.5	863.4	845.3	827.3	812.6
50°	908.3	897.0	885.7	874.4	863.1	848.2	829.7	811.2	792.6	774.1	759.6
52.5°	857.2	846.1	835.1	824.1	812.9	798.0	778.9	760.0	740.9	722.0	707.3
55°	781.9	770.3	758.7	747.2	735.6	720.4	701.5	682.7	663.9	645.1	630.0
57.5°	707.4	695.3	683.2	671.2	659.2	643.9	625.4	606.8	588.2	569.8	554.5
60°	654.2	642.6	631.0	619.4	607.8	592.8	574.3	555.7	537.2	518.7	503.6
62.5°	606.2	594.2	582.1	570.0	558.1	542.5	523.5	504.5	485.5	466.6	452.6
65°	531.7	519.2	506.8	494.4	481.9	466.4	447.9	429.3	410.8	392.3	379.8
67.5°	454.3	442.3	430.5	418.5	406.5	392.0	374.8	357.6	340.4	323.2	312.5
70°	405.3	393.1	381.0	368.8	356.7	342.3	325.8	309.2	292.8	276.3	266.7
72.5°	353.2	342.1	331.1	320.2	309.2	295.9	280.3	264.7	249.1	233.6	225.4
75°	282.8	272.1	261.4	250.6	240.0	227.7	214.1	200.6	186.9	173.3	166.6
77.5°	211.4	202.3	193.2	184.1	175.0	164.9	153.9	143.0	132.0	120.9	117.1
80°	165.5	157.1	148.7	140.3	132.0	123.4	114.7	106.0	97.3	88.6	87.8
82.5°	125.9	118.2	110.5	102.7	95.1	88.7	83.8	78.8	73.8	68.8	68.1
85°	70.4	64.6	58.8	53.0	47.2	43.8	43.0	42.1	41.3	40.4	39.8
87.5°	24.7	23.5	22.2	20.9	19.7	19.1	19.3	19.6	19.8	20.0	20.1
90°	3.7	6.7	9.6	12.6	15.6	18.2	20.4	22.5	24.7	26.9	28.6
92.5°	26.2	29.6	33.0	36.4	39.9	42.3	43.8	45.3	46.8	48.4	49.4
95°	73.3	75.8	78.2	80.7	83.1	85.3	87.2	89.1	91.0	92.9	93.7
97.5°	128.1	130.1	132.1	133.9	135.9	138.0	140.3	142.5	144.7	146.9	147.9
100°	171.2	172.2	173.3	174.4	175.5	177.2	179.6	182.1	184.5	187.0	187.6
102.5°	216.1	216.6	217.0	217.4	217.8	219.1	221.4	223.7	225.8	228.1	228.8
105°	284.8	285.1	285.4	285.6	285.9	286.5	287.7	288.8	289.8	291.0	291.7
107.5°	356.9	357.2	357.6	357.9	358.3	358.4	358.6	358.8	359.0	359.1	359.9
110°	405.9	406.3	406.9	407.5	408.0	408.1	407.8	407.6	407.4	407.1	406.5



TEST NUMBER: P333090-830

CATALOG NUMBER: S124RDIW-S1020D1340U830-4F0-1E-UDD-F1

**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	456.7	456.8	456.9	457.0	457.1	456.9	456.5	455.9	455.4	455.0	454.9
115°	532.9	532.9	532.9	532.9	532.9	532.7	532.2	531.6	531.0	530.5	530.3
117.5°	604.8	605.0	605.3	605.5	605.7	605.6	605.2	604.8	604.5	604.1	603.1
120°	652.7	653.8	654.9	656.0	657.0	657.2	656.4	655.6	654.8	653.9	652.6
122.5°	702.6	703.0	703.5	703.9	704.4	704.4	704.0	703.6	703.2	702.9	701.9
125°	776.2	776.2	776.2	776.2	776.2	776.1	775.8	775.5	775.2	775.0	774.4
127.5°	842.9	843.8	844.6	845.4	846.2	846.4	845.9	845.6	845.1	844.6	844.1
130°	889.9	890.7	891.6	892.3	893.2	893.5	893.5	893.5	893.5	893.5	893.0
132.5°	937.8	938.4	939.0	939.6	940.2	940.4	940.2	939.9	939.7	939.5	939.0
135°	1001.1	1002.8	1004.4	1006.0	1007.7	1008.4	1008.4	1008.4	1008.4	1008.4	1008.0
137.5°	1070.1	1070.8	1071.6	1072.3	1073.1	1073.7	1074.1	1074.6	1075.0	1075.4	1074.7
140°	1116.1	1116.5	1117.1	1117.7	1118.2	1118.4	1118.4	1118.4	1118.4	1118.4	1118.2
142.5°	1158.1	1158.6	1159.1	1159.7	1160.3	1160.4	1160.2	1160.0	1159.8	1159.5	1159.5
145°	1216.3	1217.4	1218.4	1219.6	1220.6	1221.3	1221.5	1221.8	1222.1	1222.4	1222.1
147.5°	1273.9	1275.3	1276.6	1277.9	1279.1	1279.7	1279.5	1279.3	1279.0	1278.8	1278.7
150°	1309.2	1310.2	1311.4	1312.4	1313.5	1314.0	1314.0	1314.0	1314.0	1314.0	1314.0
152.5°	1342.4	1343.0	1343.7	1344.3	1345.0	1345.5	1345.7	1345.9	1346.1	1346.3	1347.0
155°	1393.5	1393.5	1393.5	1393.5	1393.5	1393.4	1393.1	1392.8	1392.5	1392.3	1393.4
157.5°	1436.5	1436.1	1435.6	1435.0	1434.5	1434.3	1434.3	1434.2	1434.2	1434.1	1434.9
160°	1462.0	1461.7	1461.4	1461.1	1460.8	1460.6	1460.3	1460.1	1459.8	1459.5	1460.3
162.5°	1485.4	1484.7	1484.0	1483.3	1482.6	1482.1	1481.9	1481.6	1481.3	1481.0	1482.5
165°	1516.9	1516.2	1515.3	1514.5	1513.7	1513.1	1512.5	1511.9	1511.4	1510.8	1512.5
167.5°	1541.2	1540.0	1538.9	1537.8	1536.6	1536.1	1536.2	1536.2	1536.3	1536.3	1537.9
170°	1554.8	1553.5	1552.2	1550.8	1549.4	1548.9	1549.2	1549.4	1549.7	1549.9	1551.6
172.5°	1564.6	1563.5	1562.4	1561.2	1560.1	1559.5	1559.6	1559.6	1559.7	1559.7	1561.6
175°	1578.1	1576.7	1575.4	1574.0	1572.6	1571.8	1571.6	1571.3	1571.0	1570.7	1572.6
177.5°	1582.4	1581.4	1580.3	1579.2	1578.1	1577.6	1577.6	1577.6	1577.6	1577.6	1579.1
180°	1580.5	1580.5	1580.5	1580.5	1580.5	1580.5	1580.5	1580.5	1580.5	1580.5	1580.5



TEST NUMBER: P333090-830

CATALOG NUMBER: S124RDIW-S1020D1340U830-4F0-1E-UDD-F1

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1701.9	1701.9	1701.9	1701.9	1701.9	1701.9	1701.9	1701.9
2.5°	1695.5	1698.1	1700.6	1701.9	1701.6	1701.4	1701.1	1700.9
5°	1684.2	1687.2	1690.1	1691.2	1690.6	1690.1	1689.5	1688.9
7.5°	1661.9	1663.7	1665.6	1666.0	1665.1	1664.2	1663.2	1662.3
10°	1641.7	1642.9	1644.0	1644.0	1642.9	1641.7	1640.5	1639.4
12.5°	1616.7	1617.5	1618.2	1617.7	1616.1	1614.5	1612.9	1611.3
15°	1573.1	1572.4	1571.9	1570.6	1568.6	1566.5	1564.5	1562.5
17.5°	1520.4	1518.8	1517.2	1514.9	1511.7	1508.7	1505.6	1502.5
20°	1483.6	1481.3	1478.9	1475.9	1472.2	1468.4	1464.6	1460.8
22.5°	1442.7	1439.2	1435.8	1432.5	1429.4	1426.3	1423.2	1420.2
25°	1376.7	1371.8	1366.9	1362.9	1360.1	1357.2	1354.2	1351.4
27.5°	1309.5	1303.4	1297.3	1292.2	1288.1	1283.8	1279.7	1275.5
30°	1261.3	1254.1	1246.8	1240.9	1236.2	1231.6	1227.0	1222.4
32.5°	1212.1	1203.7	1195.3	1188.9	1184.5	1180.1	1175.7	1171.3
35°	1138.8	1129.0	1119.1	1111.6	1106.4	1101.2	1096.0	1090.7
37.5°	1060.2	1049.1	1038.1	1030.0	1024.8	1019.5	1014.4	1009.2
40°	1007.8	995.6	983.4	974.8	969.6	964.3	959.1	953.9
42.5°	956.2	943.9	931.4	922.6	917.1	911.6	906.2	900.8
45°	877.3	863.1	848.9	839.2	834.1	828.8	823.6	818.4
47.5°	797.9	783.2	768.4	758.2	752.4	746.7	740.9	735.3
50°	745.1	730.7	716.1	706.2	700.7	695.1	689.7	684.2
52.5°	692.5	677.8	663.1	652.9	647.1	641.4	635.7	630.0
55°	614.9	599.9	584.8	574.6	569.0	563.5	558.1	552.5
57.5°	539.1	523.9	508.6	498.9	494.6	490.5	486.4	482.2
60°	488.5	473.4	458.5	448.6	443.9	439.3	434.7	430.1
62.5°	438.8	424.8	410.9	402.1	398.4	394.7	391.0	387.3
65°	367.3	354.9	342.4	334.5	331.0	327.5	324.0	320.6
67.5°	301.7	291.1	280.3	273.1	269.2	265.4	261.6	257.8
70°	257.1	247.6	238.1	231.8	228.9	226.0	223.1	220.3
72.5°	217.2	209.1	200.9	195.5	192.7	190.1	187.5	184.8
75°	160.0	153.4	146.7	142.5	140.7	139.0	137.2	135.5
77.5°	113.2	109.3	105.4	103.2	102.6	102.2	101.6	101.1
80°	86.9	86.1	85.1	84.5	84.3	84.0	83.7	83.4
82.5°	67.5	66.9	66.3	65.8	65.5	65.2	64.9	64.7
85°	39.2	38.6	38.1	37.8	37.8	37.8	37.8	37.8
87.5°	20.2	20.3	20.4	20.5	20.9	21.2	21.6	22.0
90°	30.2	31.8	33.4	34.5	35.1	35.6	36.1	36.7
92.5°	50.3	51.4	52.3	53.0	53.3	53.6	53.9	54.3
95°	94.5	95.4	96.1	96.6	96.6	96.6	96.6	96.6
97.5°	148.9	149.9	150.8	151.4	151.4	151.4	151.4	151.4
100°	188.1	188.7	189.2	189.5	189.5	189.5	189.5	189.5
102.5°	229.6	230.4	231.1	231.6	231.9	232.1	232.2	232.5
105°	292.6	293.4	294.2	295.0	295.8	296.6	297.5	298.2
107.5°	360.6	361.4	362.2	362.5	362.5	362.4	362.4	362.3
110°	406.0	405.4	404.9	405.0	405.9	406.6	407.5	408.3





TEST NUMBER: P333090-830

CATALOG NUMBER: S124RDIW-S1020D1340U830-4F0-1E-UDD-F1

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	454.8	454.7	454.5	454.6	454.7	454.9	455.1	455.2
115°	530.0	529.7	529.4	529.1	528.9	528.6	528.3	528.1
117.5°	602.3	601.3	600.4	599.6	599.1	598.6	598.0	597.5
120°	651.3	649.9	648.6	648.1	648.7	649.2	649.8	650.3
122.5°	701.0	700.1	699.2	698.2	697.2	696.3	695.3	694.3
125°	773.9	773.4	772.8	772.2	771.8	771.2	770.6	770.1
127.5°	843.6	843.0	842.4	842.0	841.6	841.1	840.7	840.3
130°	892.5	891.9	891.4	890.6	889.5	888.3	887.3	886.2
132.5°	938.4	937.9	937.4	936.9	936.4	935.9	935.6	935.1
135°	1007.4	1006.8	1006.3	1005.6	1004.8	1004.0	1003.1	1002.3
137.5°	1074.0	1073.4	1072.6	1072.3	1072.5	1072.7	1072.8	1073.0
140°	1117.9	1117.7	1117.4	1117.1	1116.8	1116.5	1116.3	1116.1
142.5°	1159.4	1159.4	1159.3	1159.2	1159.2	1159.1	1159.1	1159.0
145°	1221.8	1221.5	1221.3	1220.8	1219.9	1219.1	1218.3	1217.5
147.5°	1278.4	1278.2	1278.0	1277.7	1277.4	1277.1	1277.0	1276.7
150°	1314.0	1314.0	1314.0	1313.9	1313.6	1313.3	1313.1	1312.9
152.5°	1347.6	1348.3	1349.0	1348.9	1348.2	1347.5	1346.8	1346.0
155°	1394.5	1395.5	1396.7	1396.7	1395.5	1394.5	1393.4	1392.3
157.5°	1435.7	1436.5	1437.4	1437.3	1436.3	1435.4	1434.5	1433.6
160°	1461.1	1462.0	1462.7	1462.4	1461.1	1459.8	1458.4	1457.1
162.5°	1483.9	1485.4	1486.9	1487.0	1485.5	1484.2	1482.9	1481.5
165°	1514.1	1515.7	1517.4	1517.7	1516.6	1515.4	1514.4	1513.3
167.5°	1539.5	1541.2	1542.8	1542.8	1541.1	1539.4	1537.8	1536.1
170°	1553.2	1554.8	1556.5	1556.3	1554.4	1552.6	1550.7	1548.8
172.5°	1563.4	1565.3	1567.2	1567.1	1565.2	1563.3	1561.4	1559.5
175°	1574.5	1576.4	1578.4	1578.4	1576.4	1574.5	1572.6	1570.7
177.5°	1580.6	1582.2	1583.7	1583.6	1581.9	1580.1	1578.4	1576.6
180°	1580.5	1580.5	1580.5	1580.5	1580.5	1580.5	1580.5	1580.5

(END OF REPORT)