

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: P333093-930

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

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P333093-930
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: S124RDIW-S1020D1560U930-4F0-1E-UDD-F
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, NO LENS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 8491.0 lumens
Efficiency: N/A
Efficacy: 110.8 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: General Diffuse

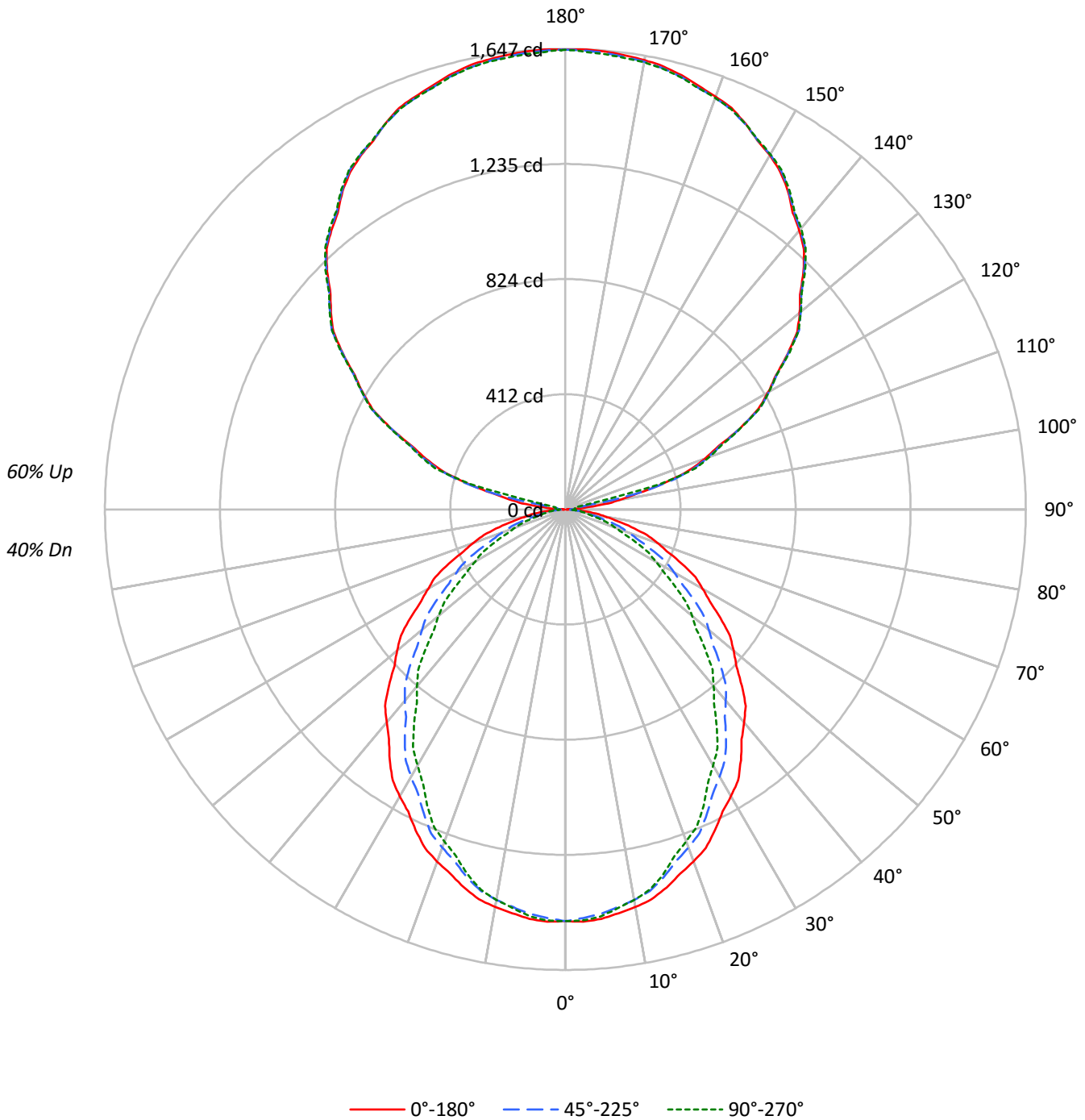
Input Watts (W): 76.6
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	0
RCR																		
0	105	105	105	105	95	95	95	95	78	78	78	62	62	62	47	47	47	40
1	96	92	88	84	87	84	80	78	68	66	64	55	53	52	42	41	40	34
2	87	80	74	69	79	73	68	64	60	57	53	48	46	44	37	36	34	29
3	80	71	64	58	72	65	59	54	53	49	45	43	40	37	33	31	29	25
4	73	63	55	49	66	57	51	46	47	42	39	38	35	32	30	27	25	21
5	67	56	48	42	61	51	44	39	42	37	33	34	31	28	27	24	22	19
6	62	50	42	36	56	46	39	34	38	33	29	31	27	24	24	22	20	17
7	57	45	37	32	52	42	35	30	35	29	26	28	24	22	22	20	17	15
8	53	41	33	28	48	38	31	26	32	26	23	26	22	19	20	18	16	13
9	49	37	30	25	45	34	28	24	29	24	20	24	20	17	19	16	14	12
10	46	34	27	23	42	32	25	21	27	22	18	22	18	16	18	15	13	11

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	1.6
10°-20°	385.6	4.5
20°-30°	556.9	6.6
30°-40°	631.2	7.4
40°-50°	609.5	7.2
50°-60°	506.9	6.0
60°-70°	350.0	4.1
70°-80°	177.4	2.1
80°-90°	50.3	0.6
90°-100°	56.2	0.7
100°-110°	358.5	4.2
110°-120°	685.8	8.1
120°-130°	870.5	10.3
130°-140°	931.4	11.0
140°-150°	871.0	10.3
150°-160°	702.4	8.3
160°-170°	453.0	5.3
170°-180°	156.1	1.8
0°-30°	1080.8	12.7
0°-40°	1712.0	20.2
0°-60°	2828.4	33.3
0°-90°	3406.1	40.1
90°-120°	1100.5	13.0
90°-150°	3773.4	44.4
90°-180°	5085.0	59.9
0°-180°	8491.0	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	6
95°	68	28	27	34	36	87
105°	370	377	384	392	350	387
115°	691	694	693	696	696	680
125°	971	976	974	977	979	867
135°	1205	1204	1209	1211	1214	928
145°	1389	1393	1393	1394	1397	868
155°	1523	1524	1521	1525	1522	702
165°	1607	1601	1601	1610	1600	454
175°	1644	1637	1638	1647	1634	156
180°	1644	1644	1644	1644	1644	



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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°	15.5	15.7	15.8	16.0	16.1	17.3	19.5	21.7	23.9	26.1	27.7
95°	67.6	58.3	49.1	39.8	30.5	25.9	26.3	26.5	26.7	27.1	28.7
97.5°	143.6	149.4	155.2	161.0	166.8	154.4	123.9	93.4	62.9	32.4	32.6
100°	201.6	206.6	211.5	216.4	221.3	204.9	167.2	129.5	91.8	54.1	49.5
102.5°	266.5	270.2	273.8	277.4	281.0	280.3	275.4	270.5	265.5	260.7	210.5
105°	370.1	371.7	373.3	375.0	376.7	378.1	379.5	380.9	382.2	383.6	386.0
107.5°	466.2	467.1	467.9	468.7	469.5	470.8	472.7	474.6	476.4	478.3	479.5
110°	531.2	532.0	532.8	533.6	534.4	535.7	537.3	538.9	540.5	542.2	542.7



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	594.1	595.6	597.0	598.5	600.0	601.1	601.9	602.7	603.4	604.2	604.1
115°	691.0	691.8	692.6	693.4	694.2	694.6	694.2	694.0	693.7	693.4	694.0
117.5°	778.3	779.3	780.5	781.5	782.7	783.5	784.1	784.7	785.3	785.9	785.8
120°	837.3	838.4	839.5	840.6	841.6	842.0	841.8	841.6	841.2	841.0	841.6
122.5°	892.3	893.0	893.6	894.3	895.0	895.5	895.9	896.3	896.7	897.1	897.4
125°	971.3	972.4	973.5	974.6	975.7	975.9	975.4	974.9	974.3	973.8	974.6
127.5°	1046.0	1046.4	1046.6	1046.8	1047.2	1047.9	1049.2	1050.4	1051.7	1053.0	1052.8
130°	1094.3	1094.5	1094.8	1095.1	1095.4	1095.9	1096.7	1097.6	1098.4	1099.2	1099.4
132.5°	1138.5	1139.0	1139.5	1140.0	1140.5	1141.3	1142.3	1143.3	1144.4	1145.4	1145.7
135°	1204.9	1204.6	1204.4	1204.1	1203.8	1204.2	1205.3	1206.4	1207.5	1208.6	1209.2
137.5°	1263.7	1263.8	1263.9	1264.0	1264.1	1264.8	1266.0	1267.2	1268.4	1269.6	1270.2
140°	1302.0	1302.6	1303.2	1303.7	1304.2	1304.8	1305.3	1305.9	1306.4	1306.9	1307.8
142.5°	1336.4	1337.4	1338.5	1339.5	1340.4	1341.1	1341.4	1341.7	1342.1	1342.4	1343.0
145°	1389.4	1390.2	1391.0	1391.8	1392.6	1393.0	1393.0	1393.0	1393.0	1393.0	1393.3
147.5°	1431.4	1432.9	1434.4	1436.0	1437.5	1438.1	1437.9	1437.6	1437.3	1437.0	1437.3
150°	1461.9	1463.0	1464.0	1465.2	1466.2	1466.6	1466.4	1466.2	1465.8	1465.6	1465.6
152.5°	1487.4	1488.3	1489.2	1490.0	1490.9	1491.2	1490.6	1490.1	1489.6	1489.1	1489.6
155°	1523.4	1523.6	1523.9	1524.2	1524.4	1524.2	1523.4	1522.6	1521.8	1520.9	1522.0
157.5°	1553.6	1553.5	1553.3	1553.1	1553.0	1552.4	1551.4	1550.5	1549.6	1548.7	1550.1
160°	1571.3	1570.5	1569.7	1568.9	1568.1	1567.5	1567.2	1566.9	1566.7	1566.4	1568.1
162.5°	1587.1	1586.0	1584.9	1584.0	1582.9	1582.3	1581.9	1581.7	1581.4	1581.1	1582.7
165°	1607.0	1605.6	1604.3	1602.9	1601.5	1600.8	1600.8	1600.8	1600.8	1600.8	1603.0
167.5°	1622.7	1621.3	1619.8	1618.5	1617.0	1616.2	1616.1	1615.9	1615.8	1615.6	1618.0
170°	1631.6	1629.9	1628.2	1626.6	1625.0	1624.3	1624.6	1624.9	1625.1	1625.4	1627.6
172.5°	1637.4	1635.8	1634.2	1632.6	1630.9	1630.2	1630.5	1630.8	1631.0	1631.3	1633.5
175°	1643.8	1642.2	1640.5	1638.9	1637.3	1636.6	1636.9	1637.1	1637.4	1637.7	1640.1
177.5°	1646.8	1645.3	1643.7	1642.2	1640.7	1640.1	1640.5	1641.0	1641.4	1641.8	1643.6
180°	1643.8	1643.8	1643.8	1643.8	1643.8	1643.8	1643.8	1643.8	1643.8	1643.8	1643.8



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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°	29.4	31.0	32.6	33.5	33.6	33.8	33.8	33.9
95°	30.3	32.0	33.6	34.6	34.8	35.1	35.4	35.6
97.5°	32.8	32.9	33.1	33.3	33.6	33.9	34.2	34.4
100°	44.8	40.2	35.5	33.3	33.6	33.9	34.2	34.4
102.5°	160.5	110.3	60.3	35.2	35.2	35.3	35.4	35.4
105°	388.5	391.0	393.5	389.7	379.9	370.1	360.3	350.4
107.5°	480.7	481.9	483.1	484.2	485.3	486.2	487.3	488.4
110°	543.3	543.9	544.4	545.1	545.9	546.7	547.6	548.4



TEST NUMBER: P333093-930

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

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	604.0	603.8	603.7	604.2	605.3	606.3	607.3	608.4
115°	694.6	695.0	695.6	695.9	695.9	695.9	695.9	695.9
117.5°	785.7	785.5	785.5	785.4	785.2	785.1	785.1	784.9
120°	842.0	842.6	843.2	843.2	842.6	842.0	841.6	841.0
122.5°	897.7	898.1	898.4	898.2	897.7	897.2	896.6	896.1
125°	975.4	976.2	977.1	977.6	977.9	978.1	978.4	978.7
127.5°	1052.6	1052.5	1052.3	1052.1	1051.9	1051.7	1051.4	1051.2
130°	1099.8	1100.0	1100.2	1100.4	1100.4	1100.4	1100.4	1100.4
132.5°	1146.0	1146.2	1146.5	1146.6	1146.3	1146.1	1145.9	1145.7
135°	1209.7	1210.2	1210.8	1211.4	1211.9	1212.4	1213.0	1213.5
137.5°	1270.8	1271.4	1272.0	1272.2	1272.0	1271.9	1271.7	1271.5
140°	1308.6	1309.5	1310.3	1310.8	1311.1	1311.3	1311.6	1311.9
142.5°	1343.6	1344.2	1344.8	1345.1	1345.2	1345.2	1345.2	1345.3
145°	1393.6	1393.8	1394.1	1394.6	1395.1	1395.6	1396.2	1396.7
147.5°	1437.5	1437.7	1437.9	1438.2	1438.4	1438.7	1439.0	1439.2
150°	1465.6	1465.6	1465.6	1465.7	1466.0	1466.2	1466.6	1466.8
152.5°	1490.0	1490.4	1490.9	1491.0	1490.9	1490.7	1490.5	1490.4
155°	1523.1	1524.2	1525.3	1525.4	1524.6	1523.8	1523.0	1522.2
157.5°	1551.5	1553.0	1554.4	1554.4	1553.0	1551.5	1550.1	1548.7
160°	1569.7	1571.3	1573.0	1573.0	1571.3	1569.7	1568.1	1566.4
162.5°	1584.5	1586.1	1587.7	1587.6	1585.8	1583.9	1582.0	1580.1
165°	1605.2	1607.4	1609.6	1609.4	1607.0	1604.5	1602.1	1599.6
167.5°	1620.4	1622.8	1625.2	1625.1	1622.3	1619.6	1616.8	1614.1
170°	1629.8	1632.0	1634.2	1633.9	1631.2	1628.4	1625.7	1622.9
172.5°	1635.7	1637.9	1640.1	1639.6	1636.7	1633.8	1630.8	1627.8
175°	1642.6	1645.1	1647.6	1647.1	1643.8	1640.5	1637.3	1634.0
177.5°	1645.4	1647.1	1648.9	1648.5	1645.8	1643.2	1640.5	1637.9
180°	1643.8	1643.8	1643.8	1643.8	1643.8	1643.8	1643.8	1643.8

(END OF REPORT)