

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: P333113-930

Luminaire Tested: **S124RDIW-S1195D1560U930-4F0-1E-UDD-F**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P333113-930  
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-S1195D1560U930-4F0-1E-UDD-F  
Description: DEFINE 4 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE  
DOWNLIGHT 1195 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: 9018.0 lumens  
Efficiency: N/A  
Efficacy: 108.8 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

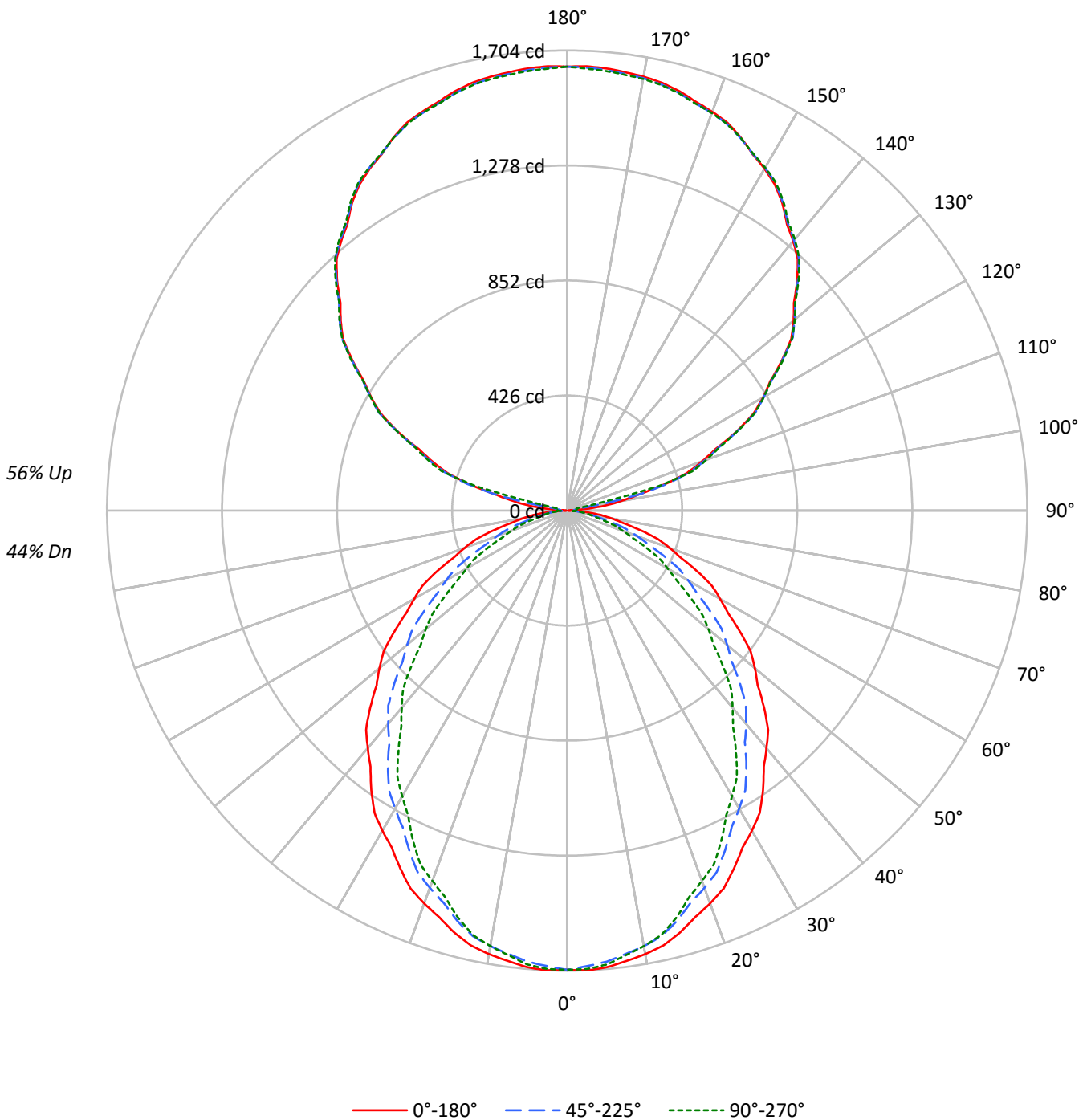
Input Watts (W): 82.9  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	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	32
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°	13726	13726	13726
5°	13757	13588	13674
10°	13671	13426	13426
15°	13514	13143	13046
20°	13298	12773	12538
25°	13023	12339	12026
30°	12755	11882	11384
35°	12458	11406	10738
40°	12101	10866	10043
45°	11772	10330	9334
50°	11396	9712	8584
55°	10994	9070	7769
60°	10551	8365	6936
65°	10147	7484	6117
70°	9557	6515	5193
75°	8812	5402	4223
80°	7685	4114	3873
85°	6512	3742	3492



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	159.7	1.8
10°-20°	445.4	4.9
20°-30°	643.1	7.1
30°-40°	729.0	8.1
40°-50°	704.0	7.8
50°-60°	585.4	6.5
60°-70°	404.2	4.5
70°-80°	204.9	2.3
80°-90°	57.3	0.6
90°-100°	56.2	0.6
100°-110°	358.5	4.0
110°-120°	685.8	7.6
120°-130°	870.5	9.7
130°-140°	931.4	10.3
140°-150°	871.0	9.7
150°-160°	702.4	7.8
160°-170°	453.0	5.0
170°-180°	156.1	1.7
0°-30°	1248.2	13.8
0°-40°	1977.3	21.9
0°-60°	3266.6	36.2
0°-90°	3933.0	43.6
90°-120°	1100.5	12.2
90°-150°	3773.4	41.8
90°-180°	5085.0	56.4
0°-180°	9018.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1700	1700	1700	1700	1700	
5°	1698	1692	1677	1689	1687	161
15°	1617	1604	1573	1570	1561	455
25°	1462	1437	1385	1364	1350	673
35°	1264	1221	1157	1114	1090	790
45°	1031	981	905	843	818	795
55°	781	727	644	579	552	698
65°	531	474	392	338	320	524
75°	282	234	173	144	135	298
85°	70	46	40	38	38	79
90°	4	17	27	34	37	7
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°	1700.2	1700.2	1700.2	1700.2	1700.2	1700.2	1700.2	1700.2	1700.2	1700.2	1700.2
2.5°	1704.4	1703.5	1702.6	1701.6	1700.7	1699.0	1696.5	1693.9	1691.3	1688.8	1691.3
5°	1697.6	1696.5	1695.3	1694.2	1693.1	1690.7	1687.3	1683.8	1680.3	1676.8	1679.7
7.5°	1682.3	1681.1	1679.8	1678.6	1677.4	1674.5	1670.1	1665.6	1661.0	1656.5	1658.4
10°	1667.7	1666.2	1664.8	1663.4	1661.9	1658.6	1653.4	1648.2	1643.0	1637.8	1638.9
12.5°	1648.9	1647.3	1645.6	1643.9	1642.3	1638.3	1632.2	1626.1	1619.9	1613.8	1614.5
15°	1616.9	1614.3	1611.8	1609.2	1606.5	1601.6	1594.4	1587.1	1579.9	1572.6	1572.1
17.5°	1578.2	1574.3	1570.6	1566.8	1563.1	1556.9	1548.2	1539.5	1530.8	1522.2	1520.5
20°	1547.9	1544.2	1540.4	1536.7	1532.9	1526.1	1516.3	1506.4	1496.6	1486.8	1484.4
22.5°	1514.6	1510.4	1506.2	1501.9	1497.7	1490.4	1479.8	1469.3	1458.7	1448.2	1444.7
25°	1462.0	1456.8	1451.6	1446.4	1441.2	1432.6	1420.8	1408.9	1397.1	1385.2	1380.3
27.5°	1406.8	1400.3	1393.8	1387.2	1380.6	1371.1	1358.4	1345.7	1333.0	1320.4	1314.3
30°	1368.3	1361.1	1353.8	1346.5	1339.4	1328.9	1315.3	1301.7	1288.2	1274.6	1267.3
32.5°	1327.6	1319.5	1311.3	1303.2	1295.0	1283.9	1269.8	1255.8	1241.7	1227.7	1219.3
35°	1264.1	1254.8	1245.6	1236.3	1227.1	1215.2	1200.8	1186.3	1171.8	1157.4	1147.5
37.5°	1196.2	1186.6	1177.0	1167.5	1158.0	1145.2	1129.2	1113.1	1097.1	1081.1	1070.1
40°	1148.3	1138.7	1129.2	1119.7	1110.0	1097.1	1080.6	1064.0	1047.6	1031.1	1019.0
42.5°	1102.4	1092.4	1082.4	1072.4	1062.4	1048.8	1031.6	1014.4	997.3	980.1	967.7
45°	1031.1	1020.3	1009.7	999.0	988.3	974.2	956.9	939.6	922.2	904.8	890.6
47.5°	957.4	946.3	935.3	924.2	913.2	898.6	880.6	862.5	844.5	826.5	811.7
50°	907.4	896.1	884.8	873.6	862.3	847.3	828.8	810.3	791.8	773.3	758.9
52.5°	856.4	845.3	834.3	823.2	812.2	797.1	778.2	759.2	740.2	721.2	706.5
55°	781.1	769.6	758.0	746.4	734.8	719.7	700.8	682.1	663.2	644.4	629.4
57.5°	706.6	694.6	682.6	670.6	658.5	643.3	624.8	606.2	587.7	569.2	553.9
60°	653.5	642.0	630.4	618.8	607.2	592.2	573.7	555.2	536.6	518.1	503.1
62.5°	605.6	593.6	581.6	569.6	557.5	542.0	523.0	504.0	485.0	466.1	452.2
65°	531.2	518.7	506.3	493.8	481.4	465.9	447.4	428.9	410.4	391.8	379.4
67.5°	453.8	441.9	430.0	418.1	406.2	391.6	374.4	357.3	340.1	322.9	312.2
70°	404.9	392.7	380.6	368.4	356.3	341.9	325.5	309.0	292.5	276.0	266.4
72.5°	352.8	341.9	330.8	319.8	308.8	295.5	280.0	264.4	248.8	233.3	225.1
75°	282.5	271.8	261.1	250.4	239.7	227.6	213.9	200.3	186.8	173.2	166.5
77.5°	211.2	202.1	193.0	183.9	174.8	164.8	153.8	142.8	131.8	120.8	116.9
80°	165.3	156.9	148.5	140.1	131.8	123.3	114.5	105.9	97.2	88.5	87.6
82.5°	125.8	118.1	110.4	102.6	95.0	88.6	83.6	78.7	73.7	68.7	68.1
85°	70.3	64.5	58.7	52.9	47.1	43.9	43.0	42.1	41.3	40.4	39.8
87.5°	24.7	23.5	22.2	21.0	19.7	19.2	19.4	19.6	19.8	20.0	20.1
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°	1700.2	1700.2	1700.2	1700.2	1700.2	1700.2	1700.2	1700.2
2.5°	1693.9	1696.5	1699.0	1700.1	1699.9	1699.7	1699.4	1699.2
5°	1682.6	1685.5	1688.4	1689.5	1689.0	1688.4	1687.8	1687.3
7.5°	1660.2	1662.1	1663.9	1664.4	1663.5	1662.6	1661.6	1660.7
10°	1640.1	1641.2	1642.4	1642.4	1641.2	1640.1	1638.9	1637.8
12.5°	1615.2	1615.9	1616.6	1616.1	1614.5	1612.9	1611.3	1609.6
15°	1571.5	1570.9	1570.3	1569.0	1567.0	1565.0	1563.0	1561.0
17.5°	1518.9	1517.3	1515.6	1513.4	1510.3	1507.2	1504.1	1501.0
20°	1482.1	1479.8	1477.5	1474.5	1470.7	1467.0	1463.1	1459.4
22.5°	1441.3	1437.8	1434.4	1431.1	1428.0	1424.9	1421.9	1418.8
25°	1375.3	1370.4	1365.5	1361.6	1358.7	1355.8	1352.9	1350.1
27.5°	1308.2	1302.1	1296.1	1290.9	1286.8	1282.6	1278.5	1274.3
30°	1260.0	1252.9	1245.6	1239.7	1235.0	1230.4	1225.8	1221.2
32.5°	1210.9	1202.5	1194.1	1187.7	1183.3	1178.9	1174.5	1170.1
35°	1137.7	1127.9	1118.0	1110.5	1105.3	1100.1	1094.9	1089.6
37.5°	1059.1	1048.1	1037.1	1029.0	1023.8	1018.6	1013.4	1008.2
40°	1006.8	994.7	982.5	973.8	968.6	963.4	958.2	953.0
42.5°	955.3	942.9	930.5	921.6	916.2	910.8	905.3	899.8
45°	876.4	862.3	848.1	838.4	833.2	828.0	822.8	817.6
47.5°	797.0	782.4	767.7	757.4	751.7	746.0	740.2	734.5
50°	744.4	729.9	715.4	705.5	700.0	694.5	689.0	683.5
52.5°	691.9	677.2	662.4	652.2	646.5	640.8	635.0	629.3
55°	614.3	599.3	584.2	574.0	568.5	563.0	557.5	552.0
57.5°	538.7	523.3	508.1	498.4	494.2	490.0	485.8	481.7
60°	488.0	473.0	458.0	448.2	443.5	438.9	434.2	429.6
62.5°	438.3	424.4	410.5	401.7	398.0	394.4	390.6	386.9
65°	367.0	354.6	342.1	334.1	330.7	327.2	323.8	320.2
67.5°	301.5	290.7	280.1	272.8	269.0	265.1	261.3	257.5
70°	256.9	247.4	237.8	231.6	228.7	225.8	222.9	220.0
72.5°	217.0	208.8	200.6	195.3	192.6	190.0	187.3	184.6
75°	159.9	153.2	146.5	142.4	140.6	138.8	137.1	135.4
77.5°	113.1	109.2	105.3	103.1	102.6	102.1	101.6	101.0
80°	86.8	85.9	85.0	84.5	84.2	83.9	83.6	83.3
82.5°	67.5	66.9	66.2	65.7	65.5	65.1	64.9	64.6
85°	39.2	38.6	38.1	37.7	37.7	37.7	37.7	37.7
87.5°	20.2	20.3	20.4	20.6	21.0	21.3	21.6	21.9
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: P333113-930

CATALOG NUMBER: S124RDIW-S1195D1560U930-4F0-1E-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)