

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: P332472-930

Luminaire Tested: **S123RDIW-S1165D460U930-4F0-1E-UDD-F**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P332472-930  
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-5,  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: S123RDIW-S1165D460U930-4F0-1E-UDD-F  
Description: DEFINE 3 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE  
DOWNLIGHT 1165 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER, REGRESSED  
HOUSING  
UPLIGHT 460 LUMENS PER FOOT, NO LENS  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 5074.7 lumens  
Efficiency: N/A  
Efficacy: 96.8 lumens/watt  
Spacing Criteria (0/90/45): 1.21 / 1.06 / 1.22  
Luminous Opening: Rectangular (W 0.25' x L: 4' x H: 0')  
CIE Type: Semi-Direct

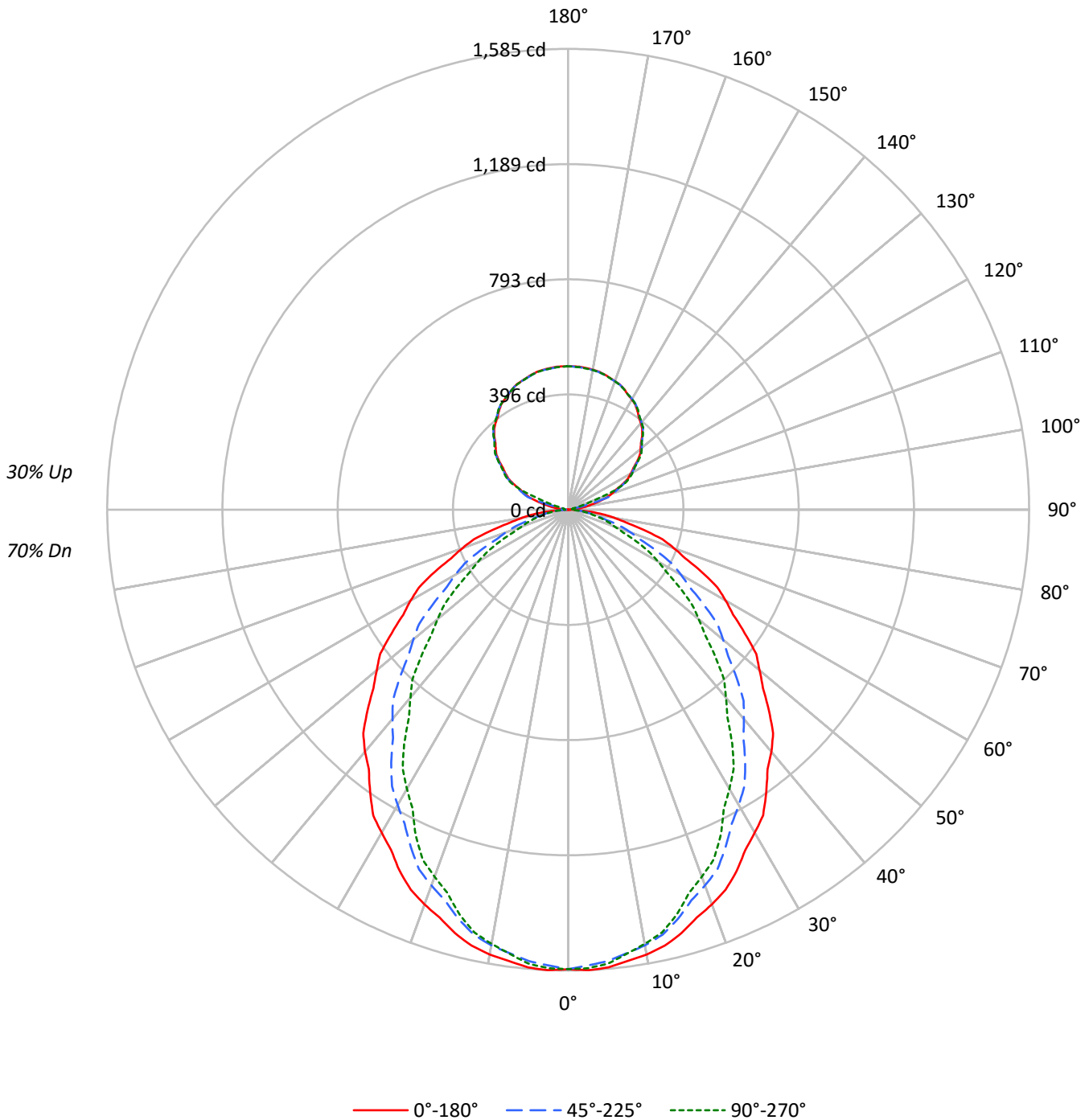
Input Watts (W): 52.4  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	112	112	112	112	106	106	106	106	95	95	95	84	84	84	75	75	75	70
1	103	99	95	91	97	93	90	87	84	81	79	75	73	71	67	65	64	60
2	94	87	80	75	89	82	77	72	74	70	66	66	63	60	59	57	55	51
3	86	77	69	63	81	73	66	61	66	60	56	59	55	52	53	50	47	44
4	79	68	60	54	75	65	58	52	59	53	48	53	48	45	48	44	41	38
5	73	61	53	47	69	58	51	45	53	47	42	48	43	39	43	39	36	33
6	67	55	47	41	64	53	45	40	48	42	37	43	38	34	39	35	32	29
7	62	50	42	36	59	48	40	35	44	37	33	40	35	31	36	32	29	26
8	58	46	38	32	55	44	36	31	40	34	29	36	31	28	33	29	26	24
9	54	42	34	29	51	40	33	28	37	31	27	34	29	25	31	26	23	21
10	51	39	31	26	48	37	30	26	34	28	24	31	26	23	29	24	21	19

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

	0°	45°	90°
0°	17009	17009	17009
5°	17074	16839	16935
10°	16978	16628	16571
15°	16796	16238	16067
20°	16544	15753	15385
25°	16286	15206	14719
30°	15945	14574	13779
35°	15594	13943	12917
40°	15271	13200	11849
45°	14846	12466	10886
50°	14380	11632	9808
55°	13902	10678	8801
60°	13464	9657	7698
65°	12893	8550	6594
70°	12180	7179	5325
75°	11137	5648	5011
80°	9930	5002	4612
85°	8386	4434	4113



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	148.4	2.9
10°-20°	412.9	8.1
20°-30°	594.5	11.7
30°-40°	669.6	13.2
40°-50°	640.6	12.6
50°-60°	524.6	10.3
60°-70°	354.0	7.0
70°-80°	178.1	3.5
80°-90°	48.5	1.0
90°-100°	17.9	0.4
100°-110°	85.4	1.7
110°-120°	205.2	4.0
120°-130°	261.3	5.1
130°-140°	279.2	5.5
140°-150°	261.1	5.1
150°-160°	210.6	4.1
160°-170°	135.9	2.7
170°-180°	46.8	0.9
0°-30°	1155.7	22.8
0°-40°	1825.4	36.0
0°-60°	2990.6	58.9
0°-90°	3571.2	70.4
90°-120°	308.6	6.1
90°-150°	1110.2	21.9
90°-180°	1504.0	29.6
0°-180°	5074.7	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1580	1580	1580	1580	1580	
5°	1580	1573	1558	1569	1567	150
15°	1507	1492	1457	1451	1442	424
25°	1371	1338	1280	1254	1239	630
35°	1187	1139	1061	1008	983	742
45°	975	915	819	748	715	752
55°	741	675	569	497	469	664
65°	506	434	336	276	259	501
75°	268	206	136	124	120	286
85°	68	41	36	33	33	76
90°	0	4	9	10	11	4
95°	22	8	11	14	14	28
105°	109	111	80	19	16	116
115°	205	207	210	214	215	202
125°	289	291	293	294	294	258
135°	359	362	363	364	363	277
145°	415	417	418	419	419	259
155°	457	456	456	458	456	210
165°	482	481	480	483	481	136
175°	493	491	492	494	491	47
180°	493	493	493	493	493	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1580.2	1580.2	1580.2	1580.2	1580.2	1580.2	1580.2	1580.2	1580.2	1580.2	1580.2
2.5°	1585.3	1584.4	1583.5	1582.6	1581.7	1579.8	1577.1	1574.3	1571.7	1568.9	1571.4
5°	1580.2	1578.7	1577.4	1575.9	1574.5	1572.1	1568.6	1565.2	1561.8	1558.4	1561.0
7.5°	1565.5	1564.1	1562.5	1561.0	1559.4	1556.4	1552.0	1547.5	1543.1	1538.6	1540.1
10°	1553.3	1551.3	1549.3	1547.3	1545.3	1541.7	1536.6	1531.5	1526.3	1521.3	1521.5
12.5°	1535.9	1533.7	1531.4	1529.2	1527.0	1522.7	1516.5	1510.2	1503.9	1497.6	1497.5
15°	1507.2	1504.0	1500.9	1497.7	1494.6	1489.1	1481.1	1473.1	1465.1	1457.2	1455.7
17.5°	1471.0	1467.4	1463.7	1460.0	1456.5	1449.5	1439.4	1429.2	1419.1	1409.0	1406.0
20°	1444.3	1439.8	1435.3	1430.7	1426.1	1418.5	1407.6	1396.8	1385.9	1375.2	1371.4
22.5°	1414.6	1409.3	1404.1	1398.9	1393.7	1385.3	1373.8	1362.3	1350.8	1339.2	1334.6
25°	1371.3	1364.2	1357.1	1349.9	1342.8	1332.7	1319.6	1306.5	1293.4	1280.3	1274.3
27.5°	1318.7	1310.9	1303.0	1295.2	1287.3	1276.1	1261.5	1246.9	1232.3	1217.7	1209.4
30°	1282.9	1274.3	1265.8	1257.2	1248.7	1236.4	1220.5	1204.5	1188.6	1172.6	1162.9
32.5°	1247.0	1237.3	1227.6	1217.9	1208.3	1195.0	1178.1	1161.2	1144.4	1127.6	1117.0
35°	1186.7	1176.5	1166.2	1156.0	1145.7	1131.8	1114.1	1096.5	1078.8	1061.1	1048.9
37.5°	1125.8	1114.4	1102.9	1091.5	1080.2	1065.0	1046.2	1027.4	1008.5	989.6	975.8
40°	1086.8	1074.2	1061.7	1049.2	1036.7	1020.3	1000.0	979.8	959.6	939.4	924.5
42.5°	1042.7	1030.1	1017.7	1005.1	992.5	975.8	955.0	934.0	913.1	892.3	876.0
45°	975.3	962.5	949.7	936.9	924.0	906.6	884.7	862.7	840.8	818.9	802.7
47.5°	907.8	893.8	879.7	865.7	851.6	833.6	811.6	789.7	767.8	745.9	728.2
50°	858.7	845.3	831.8	818.5	805.1	786.9	763.9	740.8	717.7	694.6	676.9
52.5°	814.6	800.1	785.5	771.0	756.4	737.8	714.9	692.1	669.3	646.5	628.1
55°	740.8	726.8	712.8	698.9	684.9	665.9	641.6	617.4	593.2	569.0	552.5
57.5°	672.5	657.4	642.1	627.0	611.7	592.0	567.7	543.3	519.0	494.7	479.1
60°	625.4	609.8	594.1	578.5	562.7	543.1	519.4	495.9	472.2	448.6	433.2
62.5°	578.2	562.6	546.9	531.2	515.6	495.9	472.3	448.7	425.0	401.4	386.9
65°	506.2	490.6	474.9	459.3	443.6	424.6	402.4	380.2	358.0	335.7	321.8
67.5°	434.2	418.3	402.5	386.7	370.9	352.3	331.0	309.7	288.4	267.1	256.7
70°	387.0	371.7	356.3	340.9	325.5	307.9	288.0	268.0	248.1	228.1	218.2
72.5°	339.9	324.7	309.6	294.4	279.2	262.6	244.5	226.4	208.3	190.2	182.1
75°	267.8	254.2	240.5	226.8	213.2	198.5	182.9	167.1	151.5	135.8	133.0
77.5°	202.2	189.9	177.5	165.2	152.8	141.5	131.5	121.4	111.3	101.3	99.7
80°	160.2	148.5	136.8	125.1	113.5	104.7	98.7	92.7	86.7	80.7	79.9
82.5°	120.2	110.1	100.0	89.9	79.9	73.5	70.7	67.8	65.1	62.3	61.4
85°	67.9	61.6	55.4	49.2	42.9	39.3	38.5	37.6	36.8	35.9	35.3
87.5°	24.7	22.3	20.0	17.6	15.3	14.3	14.4	14.7	14.8	15.1	14.9
90°	0.3	1.1	2.0	2.8	3.6	4.6	5.6	6.7	7.7	8.8	9.1
92.5°	6.8	6.6	6.4	6.1	5.9	6.2	7.0	7.7	8.6	9.4	9.9
95°	22.3	19.0	15.7	12.3	9.0	7.7	8.6	9.5	10.4	11.3	11.9
97.5°	44.9	43.4	41.9	40.4	38.9	35.2	29.4	23.5	17.7	11.8	12.5
100°	61.9	63.5	65.1	66.8	68.4	62.9	50.2	37.5	24.8	12.1	12.7
102.5°	81.2	82.4	83.6	84.8	85.9	79.6	65.7	51.9	38.0	24.1	22.1
105°	109.2	110.1	111.0	111.9	112.8	109.5	102.2	94.9	87.6	80.2	65.8
107.5°	138.6	139.3	140.1	140.7	141.5	142.4	143.6	144.7	145.9	147.0	136.5
110°	158.2	158.9	159.6	160.2	160.9	161.6	162.5	163.4	164.3	165.2	162.5



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	177.0	177.6	178.1	178.7	179.4	180.1	181.0	181.9	182.8	183.7	183.7
115°	204.7	205.2	205.7	206.2	206.7	207.3	208.1	208.8	209.5	210.3	211.1
117.5°	231.6	232.3	232.8	233.4	234.1	234.6	234.9	235.3	235.7	236.0	236.7
120°	248.3	249.1	249.8	250.5	251.3	251.8	252.0	252.3	252.5	252.7	253.4
122.5°	265.4	266.0	266.5	267.2	267.7	268.2	268.6	268.8	269.1	269.5	269.9
125°	288.6	289.3	289.9	290.6	291.2	291.7	292.0	292.4	292.7	293.0	293.2
127.5°	311.2	311.9	312.5	313.2	313.8	314.3	314.7	315.1	315.5	315.9	316.2
130°	325.3	326.0	326.6	327.3	327.9	328.4	328.7	329.1	329.4	329.6	330.0
132.5°	338.8	339.4	340.1	340.7	341.4	341.8	342.1	342.3	342.6	342.8	343.2
135°	359.3	359.8	360.3	360.8	361.3	361.7	362.0	362.3	362.6	363.0	363.2
137.5°	376.9	377.6	378.1	378.8	379.4	379.8	380.0	380.2	380.3	380.5	380.9
140°	388.7	389.1	389.6	390.1	390.6	390.9	391.2	391.4	391.7	391.9	392.2
142.5°	399.5	400.0	400.5	401.0	401.5	401.8	402.0	402.3	402.5	402.8	403.0
145°	414.7	415.2	415.8	416.4	416.9	417.3	417.4	417.6	417.8	417.9	418.1
147.5°	428.9	429.3	429.7	430.1	430.4	430.7	430.9	431.0	431.2	431.4	431.5
150°	437.7	438.0	438.2	438.5	438.7	438.9	439.0	439.2	439.4	439.5	439.7
152.5°	445.6	445.7	445.9	446.0	446.1	446.2	446.3	446.4	446.5	446.6	446.9
155°	456.7	456.6	456.4	456.3	456.2	456.1	456.2	456.2	456.3	456.4	456.8
157.5°	465.5	465.4	465.4	465.4	465.4	465.3	465.2	465.1	465.0	465.0	465.5
160°	470.7	470.6	470.5	470.4	470.3	470.3	470.2	470.1	470.0	469.9	470.4
162.5°	475.6	475.5	475.2	475.1	474.8	474.7	474.6	474.5	474.4	474.3	474.9
165°	481.7	481.4	481.2	480.9	480.7	480.5	480.5	480.4	480.3	480.2	480.9
167.5°	486.4	486.1	485.8	485.4	485.1	484.9	484.9	484.9	484.9	484.9	485.6
170°	489.0	488.7	488.4	488.0	487.7	487.5	487.5	487.5	487.5	487.5	488.2
172.5°	490.7	490.4	490.0	489.6	489.2	489.0	489.1	489.2	489.3	489.3	489.9
175°	493.0	492.6	492.2	491.8	491.4	491.2	491.3	491.4	491.5	491.5	492.1
177.5°	493.6	493.3	492.9	492.6	492.3	492.2	492.3	492.3	492.4	492.4	492.9
180°	493.0	493.0	493.0	493.0	493.0	493.0	493.0	493.0	493.0	493.0	493.0



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1580.2	1580.2	1580.2	1580.2	1580.2	1580.2	1580.2	1580.2
2.5°	1573.9	1576.5	1578.9	1580.0	1579.5	1579.1	1578.6	1578.1
5°	1563.5	1566.1	1568.6	1569.6	1569.0	1568.5	1567.9	1567.3
7.5°	1541.5	1543.0	1544.3	1544.6	1543.6	1542.6	1541.6	1540.7
10°	1521.8	1522.1	1522.4	1521.8	1520.4	1519.0	1517.5	1516.1
12.5°	1497.3	1497.1	1497.0	1496.1	1494.4	1492.7	1491.1	1489.5
15°	1454.3	1452.9	1451.5	1449.8	1447.7	1445.8	1443.7	1441.8
17.5°	1403.0	1399.9	1396.9	1393.9	1390.9	1388.0	1385.0	1382.0
20°	1367.7	1364.0	1360.3	1356.7	1353.3	1349.9	1346.5	1343.1
22.5°	1330.0	1325.4	1320.8	1316.9	1313.7	1310.5	1307.3	1304.2
25°	1268.4	1262.3	1256.4	1251.8	1248.7	1245.5	1242.4	1239.3
27.5°	1201.1	1192.8	1184.5	1177.9	1173.1	1168.4	1163.6	1158.8
30°	1153.2	1143.6	1133.9	1126.8	1122.3	1117.7	1113.1	1108.6
32.5°	1106.4	1095.8	1085.2	1077.5	1072.7	1067.9	1063.2	1058.3
35°	1036.7	1024.4	1012.2	1003.5	998.3	993.2	988.1	983.0
37.5°	961.8	947.9	934.0	923.9	917.6	911.3	905.0	898.6
40°	909.8	895.0	880.2	869.5	862.9	856.4	849.9	843.3
42.5°	859.9	843.7	827.5	816.5	810.7	804.8	798.9	793.0
45°	786.4	770.2	754.0	742.5	735.6	728.8	721.9	715.1
47.5°	710.5	692.9	675.2	663.4	657.3	651.2	645.1	639.0
50°	659.3	641.6	623.9	611.9	605.4	598.8	592.2	585.7
52.5°	609.8	591.4	573.1	560.9	555.1	549.3	543.4	537.5
55°	536.0	519.4	503.0	491.9	486.2	480.5	474.7	469.0
57.5°	463.5	447.8	432.3	422.0	417.2	412.4	407.5	402.7
60°	417.8	402.4	387.0	376.9	372.1	367.2	362.4	357.6
62.5°	372.4	358.0	343.5	333.8	328.6	323.6	318.5	313.5
65°	307.9	293.9	280.0	271.4	268.3	265.1	262.0	258.9
67.5°	246.2	235.8	225.3	218.5	215.2	211.7	208.4	205.0
70°	208.1	198.2	188.3	181.7	178.6	175.5	172.3	169.2
72.5°	173.9	165.8	157.6	152.9	151.6	150.3	149.0	147.7
75°	130.1	127.3	124.4	122.8	122.2	121.6	121.1	120.5
77.5°	98.2	96.6	95.1	94.0	93.4	92.9	92.3	91.7
80°	79.0	78.2	77.3	76.6	76.1	75.5	74.9	74.4
82.5°	60.6	59.8	58.9	58.4	58.3	58.1	58.0	58.0
85°	34.7	34.2	33.6	33.3	33.3	33.3	33.3	33.3
87.5°	14.8	14.6	14.4	14.3	14.0	13.9	13.7	13.5
90°	9.5	9.8	10.1	10.4	10.5	10.7	10.8	11.0
92.5°	10.4	10.9	11.5	11.7	11.9	12.0	12.1	12.1
95°	12.5	13.0	13.6	13.9	13.9	13.9	13.9	13.9
97.5°	13.1	13.8	14.4	14.8	14.8	14.9	15.0	15.1
100°	13.4	14.0	14.7	15.1	15.2	15.2	15.3	15.4
102.5°	20.1	18.0	16.1	15.1	15.2	15.4	15.5	15.7
105°	51.4	37.0	22.6	15.5	15.7	15.8	16.0	16.1
107.5°	125.9	115.4	104.8	94.1	83.2	72.3	61.5	50.6
110°	159.8	157.1	154.4	147.3	135.7	124.0	112.3	100.8





TEST NUMBER: P332472-930

CATALOG NUMBER: S123RDIW-S1165D460U930-4F0-1E-UDD-F

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	183.8	183.8	183.8	182.6	180.2	177.7	175.3	172.8
115°	211.9	212.7	213.5	214.1	214.4	214.7	215.1	215.4
117.5°	237.3	238.0	238.6	239.0	239.0	239.1	239.2	239.3
120°	254.0	254.7	255.4	255.7	255.7	255.7	255.7	255.7
122.5°	270.4	270.8	271.3	271.5	271.6	271.7	271.7	271.8
125°	293.3	293.5	293.7	293.8	294.0	294.2	294.3	294.5
127.5°	316.4	316.7	316.9	317.0	316.8	316.7	316.5	316.3
130°	330.3	330.6	330.9	331.0	330.8	330.7	330.5	330.4
132.5°	343.5	343.8	344.1	344.2	344.0	343.7	343.5	343.3
135°	363.5	363.7	363.9	363.9	363.7	363.5	363.2	363.0
137.5°	381.3	381.6	382.0	382.2	382.0	381.9	381.7	381.6
140°	392.6	392.9	393.2	393.3	393.1	393.0	392.8	392.6
142.5°	403.3	403.6	403.8	403.8	403.6	403.4	403.2	402.9
145°	418.2	418.4	418.6	418.7	418.7	418.7	418.7	418.7
147.5°	431.7	431.9	432.0	431.9	431.5	431.1	430.8	430.4
150°	439.9	440.0	440.2	440.2	439.9	439.7	439.4	439.2
152.5°	447.2	447.4	447.8	447.7	447.4	446.9	446.6	446.2
155°	457.2	457.6	458.0	458.0	457.5	457.0	456.5	456.1
157.5°	465.9	466.4	466.9	466.8	466.2	465.6	465.0	464.3
160°	470.9	471.4	471.9	471.9	471.3	470.8	470.2	469.6
162.5°	475.5	476.1	476.5	476.6	476.1	475.6	475.1	474.6
165°	481.5	482.2	482.8	482.8	482.2	481.8	481.2	480.6
167.5°	486.2	486.8	487.5	487.5	486.8	486.2	485.6	484.9
170°	488.9	489.5	490.2	490.2	489.5	488.9	488.2	487.5
172.5°	490.6	491.2	491.9	491.9	491.1	490.4	489.8	489.0
175°	492.7	493.3	493.8	493.8	493.2	492.5	491.9	491.2
177.5°	493.5	494.0	494.6	494.5	493.8	493.2	492.5	491.9
180°	493.0	493.0	493.0	493.0	493.0	493.0	493.0	493.0

(END OF REPORT)