

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: P332365-930

Luminaire Tested: **S123RDIP-S1165D365U930-4F0-1E-UDD-F4**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P332365-930  
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-17,  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: S123RDIP-S1165D365U930-4F0-1E-UDD-F4  
Description: DEFINE 3 DIRECT-INDIRECT PENDANT LED LUMINAIRE  
DOWNLIGHT 1165 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER, REGRESSED  
HOUSING  
UPLIGHT 365 LUMENS PER FOOT, BATWING OPTIC  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 4641.7 lumens  
Efficiency: N/A  
Efficacy: 93.2 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

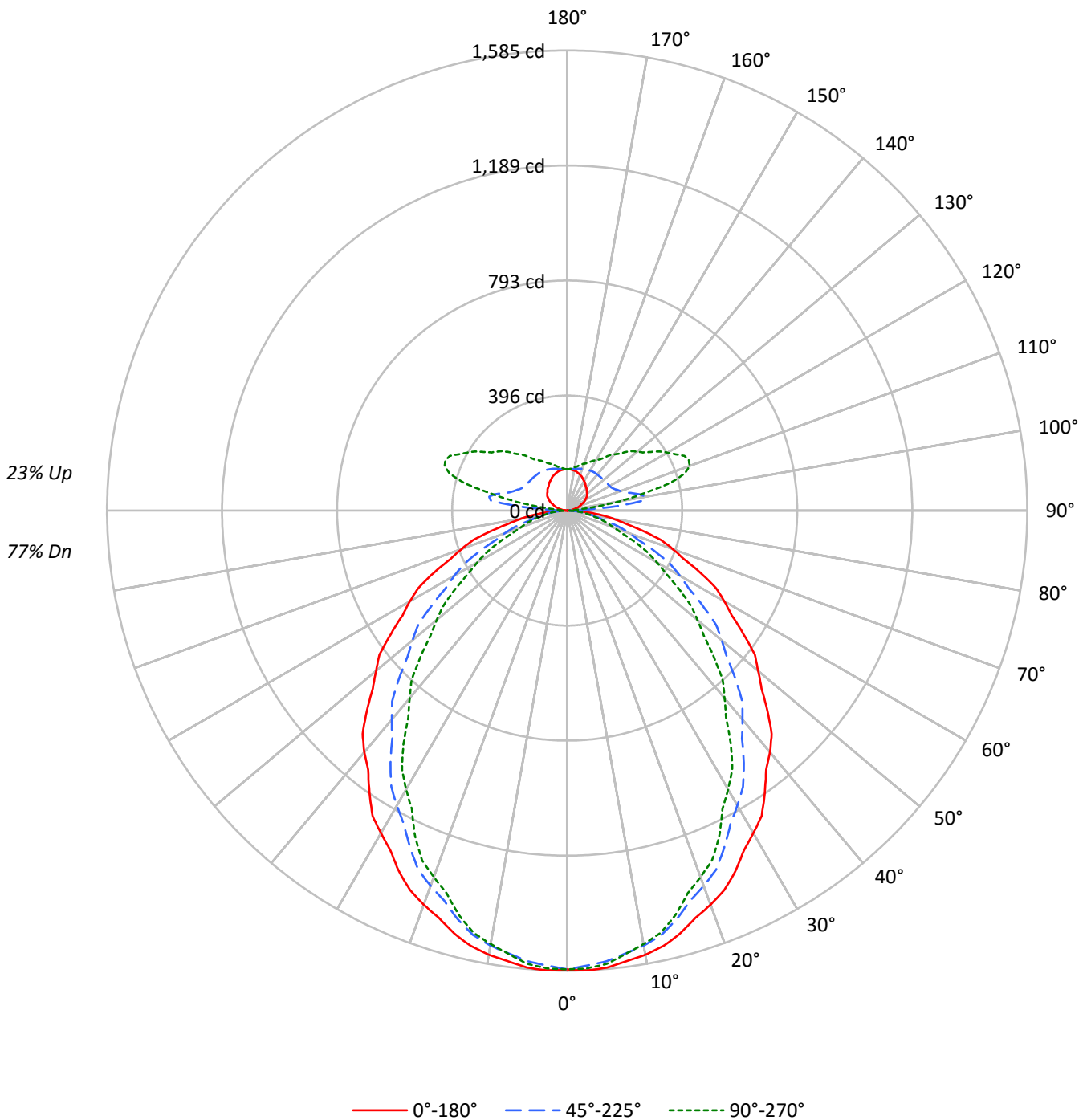
Input Watts (W): 49.8  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	114	114	114	114	108	108	108	108	98	98	98	89	89	89	81	81	81	77
1	104	100	96	93	99	96	92	89	87	84	82	79	77	76	72	71	69	66
2	95	88	82	77	91	84	79	74	77	73	69	70	67	64	64	62	59	56
3	87	78	70	64	83	75	68	62	68	63	58	63	58	55	57	54	51	48
4	80	69	61	55	76	66	59	53	61	55	50	56	51	47	52	48	44	42
5	74	62	54	48	70	60	52	46	55	49	44	51	45	41	47	42	39	36
6	68	56	48	42	65	54	46	41	50	43	39	46	41	37	43	38	35	32
7	64	51	43	37	60	49	42	36	45	39	34	42	37	33	39	34	31	29
8	59	47	39	33	56	45	37	32	42	35	31	39	33	29	36	31	28	26
9	55	43	35	30	53	41	34	29	38	32	28	36	30	27	33	29	25	23
10	52	39	32	27	49	38	31	26	36	30	25	33	28	24	31	26	23	21

**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	3.2
10°-20°	412.9	8.9
20°-30°	594.5	12.8
30°-40°	669.6	14.4
40°-50°	640.6	13.8
50°-60°	524.6	11.3
60°-70°	354.0	7.6
70°-80°	178.1	3.8
80°-90°	48.2	1.0
90°-100°	79.2	1.7
100°-110°	224.3	4.8
110°-120°	220.6	4.8
120°-130°	176.0	3.8
130°-140°	138.8	3.0
140°-150°	103.6	2.2
150°-160°	72.2	1.6
160°-170°	42.4	0.9
170°-180°	13.8	0.3
0°-30°	1155.7	24.9
0°-40°	1825.4	39.3
0°-60°	2990.6	64.4
0°-90°	3570.9	76.9
90°-120°	524.1	11.3
90°-150°	942.4	20.3
90°-180°	1071.0	23.1
0°-180°	4641.7	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°	1	4	7	8	8	4
95°	10	32	171	50	33	11
105°	33	49	232	405	366	36
115°	59	74	177	388	446	58
125°	82	97	165	300	352	73
135°	96	115	163	247	285	74
145°	110	126	161	202	223	69
155°	125	135	156	177	185	57
165°	136	140	149	158	161	38
175°	142	142	143	145	145	13
180°	142	142	142	142	142	



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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	15.2	14.1	14.3	14.4	14.6	14.8	14.5
90°	0.6	1.1	1.7	2.6	3.2	3.8	4.6	5.5	6.4	7.2	6.9
92.5°	3.6	5.3	7.7	9.9	12.4	16.6	24.2	36.6	48.8	44.3	33.4
95°	9.8	10.7	13.9	18.8	26.3	37.4	62.0	104.8	152.1	170.9	138.6
97.5°	16.7	17.0	19.5	23.7	31.1	43.3	66.7	115.0	193.9	264.8	283.2
100°	21.4	21.6	23.6	27.6	34.6	45.8	66.0	108.6	184.4	272.9	329.6
102.5°	26.2	26.7	28.5	32.3	38.5	48.8	66.9	103.1	170.6	257.9	331.9
105°	33.4	34.3	36.0	39.5	44.9	53.9	69.5	99.1	153.6	231.6	314.3
107.5°	41.2	42.0	43.7	47.0	52.2	60.5	74.2	98.8	142.8	208.5	283.6
110°	46.6	47.5	49.0	52.2	57.1	65.1	78.1	100.0	138.6	195.3	264.2



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	51.8	52.6	54.1	57.2	62.1	70.0	82.0	102.3	136.2	186.5	247.4
115°	59.0	60.3	62.0	64.8	69.7	77.5	88.5	106.0	135.4	177.2	227.1
117.5°	66.4	67.7	69.1	71.8	77.3	84.5	95.3	111.0	135.9	171.6	214.7
120°	71.4	72.3	73.8	76.6	82.1	89.3	99.7	114.6	136.9	169.1	208.3
122.5°	75.8	76.7	78.1	81.3	86.5	94.2	104.3	118.1	138.4	167.5	203.0
125°	82.1	82.7	84.4	87.6	93.0	100.9	111.0	123.6	140.9	165.3	196.2
127.5°	86.9	87.7	89.9	93.1	99.1	107.0	116.7	128.1	143.7	164.4	190.2
130°	89.9	90.7	93.4	96.8	102.9	110.6	120.2	131.1	145.5	163.6	186.9
132.5°	92.2	93.3	96.1	100.3	106.3	113.9	123.1	133.9	146.9	163.4	184.0
135°	96.2	97.3	100.5	104.8	111.0	118.7	127.6	137.5	149.0	163.1	180.1
137.5°	100.0	101.3	104.4	108.9	115.0	122.1	130.8	140.1	150.3	162.4	176.7
140°	102.6	104.0	106.9	111.5	117.2	124.5	132.8	141.5	151.2	162.2	174.6
142.5°	105.3	106.6	109.7	113.8	119.6	126.3	134.4	142.8	152.0	161.8	172.8
145°	109.7	110.6	113.2	117.6	122.5	129.1	136.6	144.3	152.4	161.0	170.2
147.5°	114.3	114.8	117.3	121.1	125.8	131.4	138.3	145.3	152.4	160.0	167.9
150°	117.2	117.6	119.8	123.6	127.6	132.8	139.4	145.5	152.4	159.1	166.2
152.5°	120.3	120.3	122.6	125.9	129.5	134.4	140.1	145.9	151.7	157.9	164.4
155°	124.7	124.7	126.5	129.4	132.6	136.6	141.5	146.1	151.0	155.9	161.6
157.5°	128.3	128.6	130.0	132.5	135.2	138.3	142.2	146.3	150.0	154.1	158.5
160°	131.1	131.1	132.2	134.5	136.6	139.4	142.9	146.3	149.5	152.7	156.5
162.5°	133.1	133.1	134.1	135.9	137.7	140.1	143.2	146.1	148.6	151.3	154.3
165°	136.2	136.0	136.6	138.0	139.2	141.2	143.5	145.5	147.2	149.3	151.6
167.5°	138.6	138.3	138.6	139.7	140.5	141.8	143.4	145.0	145.9	147.2	148.9
170°	140.0	139.4	139.7	140.6	141.2	141.8	143.2	144.3	145.0	145.8	147.2
172.5°	141.0	140.6	140.6	141.3	141.6	141.9	143.2	144.1	144.2	144.6	145.6
175°	142.0	141.8	141.5	142.0	142.0	142.4	142.9	143.5	143.2	143.2	143.7
177.5°	142.6	142.4	142.1	142.4	142.4	142.4	142.6	143.0	142.6	142.4	142.6
180°	142.4	142.4	142.4	142.4	142.4	142.4	142.4	142.4	142.4	142.4	142.4



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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°	14.3	14.1	13.9	13.9	13.6	13.4	13.2	13.0
90°	7.2	7.5	7.7	8.3	8.1	8.3	8.6	8.3
92.5°	24.3	19.2	17.0	15.5	15.0	14.1	14.4	13.9
95°	103.7	70.3	55.0	44.7	39.2	36.6	34.6	33.4
97.5°	258.5	207.1	169.9	135.5	114.2	101.3	93.4	91.0
100°	339.7	316.3	282.7	241.7	212.6	191.6	180.3	180.7
102.5°	366.6	365.9	346.3	320.3	297.7	281.0	271.7	265.0
105°	374.5	403.3	408.8	401.4	388.1	377.2	367.9	366.5
107.5°	351.8	398.6	423.9	434.1	434.4	430.6	427.5	424.9
110°	330.2	383.2	419.5	439.7	447.8	450.0	449.5	448.9





TEST NUMBER: P332365-930

CATALOG NUMBER: S123RDIP-S1165D365U930-4F0-1E-UDD-F4

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	308.8	362.9	403.6	429.5	444.3	451.4	453.6	453.7
115°	280.3	330.4	372.8	404.2	425.8	438.5	444.3	445.7
117.5°	259.8	303.0	341.0	372.9	395.5	410.0	418.2	420.2
120°	248.9	287.8	322.4	351.5	374.2	390.4	397.3	399.0
122.5°	240.4	275.6	307.6	334.7	354.9	369.4	377.0	379.2
125°	229.0	260.5	288.1	311.2	329.6	342.3	349.5	351.5
127.5°	219.2	247.1	272.1	293.1	309.5	320.3	326.9	328.6
130°	212.9	238.9	262.2	281.8	297.0	307.4	313.5	315.8
132.5°	207.2	231.0	252.7	271.4	285.8	296.1	301.5	303.1
135°	199.3	219.8	238.6	254.9	269.1	277.8	282.9	284.9
137.5°	192.2	209.0	225.2	239.5	251.3	260.1	264.4	265.8
140°	188.2	202.8	216.6	229.0	240.0	248.1	252.7	252.4
142.5°	184.3	196.8	208.8	219.6	228.9	236.1	240.2	239.9
145°	179.5	189.0	198.2	206.6	213.8	219.8	222.2	222.7
147.5°	175.6	183.2	190.6	196.6	202.0	206.1	208.3	208.6
150°	172.8	179.5	185.6	191.0	195.3	198.5	200.2	200.2
152.5°	170.3	176.0	181.4	186.0	189.3	192.2	193.3	193.3
155°	166.6	171.1	175.5	178.9	181.5	183.8	184.4	184.7
157.5°	162.5	166.3	169.7	172.4	174.6	176.3	176.8	176.8
160°	160.2	163.4	166.2	168.3	170.2	172.0	172.0	171.7
162.5°	157.4	160.1	162.8	164.6	165.9	167.4	167.4	167.1
165°	153.8	155.6	157.6	159.1	160.2	161.3	161.0	161.0
167.5°	150.7	152.1	153.2	154.3	154.7	155.6	155.3	155.3
170°	148.6	149.5	150.7	151.2	151.6	152.1	151.8	151.8
172.5°	146.8	147.5	148.4	148.7	148.8	149.4	148.9	148.6
175°	144.3	144.6	145.2	145.2	145.2	145.5	145.2	145.0
177.5°	142.8	143.0	143.2	143.2	143.0	143.2	142.8	142.8
180°	142.4	142.4	142.4	142.4	142.4	142.4	142.4	142.4

(END OF REPORT)