

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: P332221-935

Luminaire Tested: **S123DIW-S1165D755U935-4F0-1E-UDD-F1**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P332221-935  
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-9,  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: S123DIW-S1165D755U935-4F0-1E-UDD-F1  
Description: DEFINE 3 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE  
DOWNLIGHT 1165 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER  
UPLIGHT 755 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

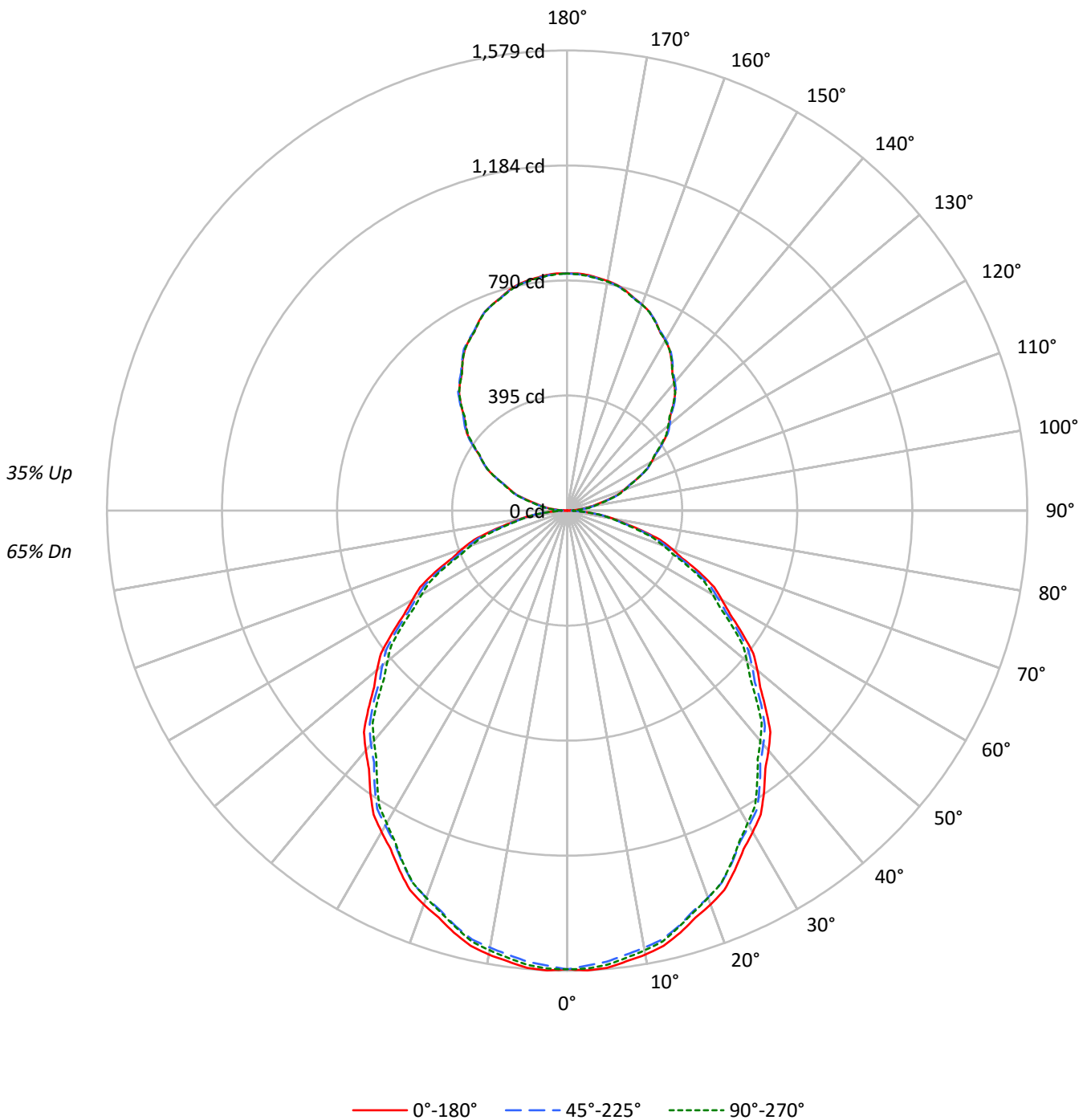
Lumens per Lamp: N/A  
Luminaire Lumens: 6352.2 lumens  
Efficiency: N/A  
Efficacy: 106.2 lumens/watt  
Spacing Criteria (0/90/45): 1.21 / 1.18 / 1.31  
Luminous Opening: Rectangular (W 0.25' x L: 4' x H: 0')  
CIE Type: Semi-Direct  
  
Input Watts (W): 59.8  
Input Voltage (V): 120  
Input Current (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	111	111	111	111	104	104	104	104	91	91	91		80	80	80		69	69	69	65
1	101	96	92	89	95	91	87	84	80	77	75		70	68	67		61	60	59	54
2	92	84	78	73	86	79	74	69	70	66	62		62	58	56		54	51	49	45
3	84	74	66	60	78	70	63	58	62	57	52		55	50	47		48	45	42	38
4	77	66	57	51	72	62	55	49	55	49	45		49	44	40		43	39	36	33
5	71	59	50	44	66	55	48	42	49	43	38		44	39	35		38	35	31	29
6	65	53	44	38	61	50	42	37	44	38	34		40	34	31		35	31	28	25
7	60	48	39	34	56	45	38	32	40	34	30		36	31	27		32	28	25	22
8	56	43	35	30	52	41	34	29	37	31	26		33	28	24		29	25	22	20
9	52	40	32	27	49	38	31	26	34	28	24		30	25	22		27	23	20	18
10	49	36	29	24	46	35	28	23	31	25	21		28	23	20		25	21	18	16

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

	0°	45°	90°
0°	16942	16942	16942
5°	17022	16788	16904
10°	16909	16642	16746
15°	16711	16454	16485
20°	16479	16186	16200
25°	16170	15865	15833
30°	15830	15509	15392
35°	15473	15135	14939
40°	15100	14720	14491
45°	14690	14338	13988
50°	14277	13870	13485
55°	13741	13386	12979
60°	13199	12820	12411
65°	12720	12202	11826
70°	12013	11500	10990
75°	10975	10580	10131
80°	9899	9478	9397
85°	8682	8361	8028



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	148.3	2.3
10°-20°	418.7	6.6
20°-30°	618.4	9.7
30°-40°	722.4	11.4
40°-50°	726.3	11.4
50°-60°	638.0	10.0
60°-70°	475.3	7.5
70°-80°	270.8	4.3
80°-90°	80.1	1.3
90°-100°	53.0	0.8
100°-110°	158.6	2.5
110°-120°	269.8	4.2
120°-130°	354.9	5.6
130°-140°	398.9	6.3
140°-150°	392.1	6.2
150°-160°	330.1	5.2
160°-170°	219.7	3.5
170°-180°	76.9	1.2
0°-30°	1185.3	18.7
0°-40°	1907.7	30.0
0°-60°	3272.0	51.5
0°-90°	4098.1	64.5
90°-120°	481.4	7.6
90°-150°	1627.3	25.6
90°-180°	2254.0	35.5
0°-180°	6352.2	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1574	1574	1574	1574	1574	
5°	1575	1568	1554	1566	1564	149
15°	1500	1494	1476	1486	1479	423
25°	1362	1353	1336	1337	1333	627
35°	1178	1169	1152	1144	1137	736
45°	965	959	942	926	919	745
55°	732	730	713	699	692	656
65°	499	492	479	469	464	493
75°	264	259	254	248	244	282
85°	70	68	68	65	65	77
90°	1	7	15	18	19	6
95°	38	42	47	50	50	42
105°	144	145	151	151	152	154
115°	272	273	272	273	272	269
125°	398	399	398	396	393	354
135°	516	519	519	516	515	397
145°	626	627	629	628	626	391
155°	716	716	717	719	715	330
165°	780	778	778	782	778	220
175°	812	809	809	812	808	77
180°	814	814	814	814	814	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1574.0	1574.0	1574.0	1574.0	1574.0	1574.0	1574.0	1574.0	1574.0	1574.0	1574.0
2.5°	1579.4	1578.5	1577.5	1576.6	1575.5	1573.7	1571.2	1568.5	1565.8	1563.1	1565.6
5°	1575.4	1573.9	1572.4	1570.9	1569.3	1566.9	1563.7	1560.3	1557.0	1553.7	1556.7
7.5°	1560.0	1558.4	1556.9	1555.4	1553.9	1551.4	1548.0	1544.6	1541.2	1537.7	1540.4
10°	1547.0	1545.4	1543.9	1542.4	1540.9	1538.3	1534.3	1530.4	1526.5	1522.6	1525.3
12.5°	1529.7	1528.4	1527.1	1525.9	1524.6	1522.1	1518.5	1514.8	1511.1	1507.4	1509.4
15°	1499.6	1498.4	1497.2	1496.0	1494.8	1492.2	1488.3	1484.4	1480.5	1476.5	1478.9
17.5°	1464.6	1463.1	1461.5	1460.0	1458.4	1455.7	1451.7	1447.9	1443.9	1440.0	1441.7
20°	1438.6	1436.8	1435.0	1433.2	1431.5	1428.6	1424.7	1420.8	1416.9	1413.0	1414.2
22.5°	1409.5	1407.6	1405.8	1404.0	1402.2	1399.4	1395.4	1391.5	1387.7	1383.7	1384.7
25°	1361.5	1359.7	1357.9	1356.1	1354.4	1351.4	1347.6	1343.7	1339.7	1335.8	1336.1
27.5°	1310.4	1308.6	1306.9	1305.1	1303.4	1300.5	1296.2	1292.0	1287.8	1283.6	1283.8
30°	1273.6	1272.0	1270.6	1269.0	1267.6	1264.7	1260.5	1256.3	1252.1	1247.8	1247.8
32.5°	1236.7	1234.8	1232.8	1230.8	1228.8	1226.2	1223.0	1219.7	1216.4	1213.2	1211.5
35°	1177.5	1175.7	1173.9	1172.1	1170.3	1167.4	1163.5	1159.6	1155.6	1151.8	1150.0
37.5°	1116.8	1114.6	1112.2	1110.0	1107.7	1104.6	1100.6	1096.7	1092.7	1088.6	1086.5
40°	1074.6	1072.8	1071.0	1069.2	1067.4	1064.4	1060.1	1055.9	1051.7	1047.6	1045.2
42.5°	1032.3	1030.4	1028.3	1026.2	1024.2	1021.1	1016.8	1012.6	1008.4	1004.3	1001.9
45°	965.0	963.8	962.6	961.4	960.2	957.6	953.7	949.8	945.9	941.9	938.4
47.5°	898.1	896.4	894.7	892.9	891.1	888.5	884.8	881.1	877.4	873.7	870.2
50°	852.6	851.2	849.6	848.2	846.6	844.0	840.0	836.1	832.2	828.3	825.0
52.5°	805.0	804.0	803.0	801.9	800.9	798.3	794.2	790.1	785.9	781.7	778.9
55°	732.2	731.9	731.6	731.3	731.0	728.9	725.0	721.1	717.1	713.3	710.0
57.5°	662.9	661.9	660.8	659.9	658.8	656.8	653.6	650.5	647.4	644.2	641.3
60°	613.1	612.8	612.5	612.2	611.9	609.9	606.3	602.7	599.1	595.5	592.8
62.5°	568.7	567.9	567.1	566.4	565.6	563.4	559.7	556.1	552.6	549.0	546.2
65°	499.4	497.9	496.4	494.9	493.4	491.1	488.1	485.1	482.1	479.1	476.7
67.5°	426.0	424.7	423.4	422.1	420.8	419.0	416.6	414.4	412.1	409.8	407.7
70°	381.7	379.9	378.1	376.3	374.4	372.6	370.8	369.0	367.2	365.4	363.3
72.5°	335.1	333.8	332.4	331.1	329.8	328.1	326.1	324.0	322.0	319.9	318.1
75°	263.9	262.7	261.5	260.3	259.1	258.0	257.2	256.2	255.4	254.4	253.0
77.5°	200.9	200.2	199.5	198.9	198.2	197.3	196.2	195.2	194.1	193.0	192.0
80°	159.7	158.8	157.9	157.0	156.1	155.3	154.7	154.1	153.5	152.9	152.7
82.5°	119.7	119.4	119.2	119.1	118.9	118.7	118.6	118.6	118.4	118.3	117.8
85°	70.3	69.7	69.1	68.5	67.9	67.7	67.7	67.7	67.7	67.7	67.1
87.5°	28.2	27.8	27.4	26.9	26.5	26.3	26.5	26.6	26.8	26.9	26.8
90°	0.6	2.1	3.4	4.9	6.3	7.9	9.8	11.6	13.5	15.3	15.9
92.5°	15.5	16.4	17.4	18.3	19.3	20.3	21.4	22.5	23.5	24.5	25.0
95°	37.7	38.7	39.7	40.7	41.7	42.7	43.9	45.0	46.1	47.3	47.9
97.5°	67.0	67.7	68.4	69.2	69.9	70.7	71.5	72.3	73.2	74.0	74.6
100°	86.9	87.7	88.6	89.5	90.3	91.1	91.8	92.6	93.2	93.9	94.4
102.5°	109.9	110.5	111.0	111.4	111.9	112.7	113.7	114.6	115.5	116.4	116.8
105°	143.8	144.0	144.4	144.6	144.9	145.7	147.0	148.3	149.6	150.8	150.8
107.5°	183.1	183.3	183.5	183.7	183.8	184.2	184.7	185.2	185.7	186.2	186.7
110°	207.7	208.0	208.3	208.5	208.8	209.1	209.4	209.7	210.0	210.3	210.9



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	233.2	233.4	233.6	233.8	233.9	234.0	234.1	234.2	234.2	234.3	235.0
115°	271.6	272.0	272.4	272.9	273.3	273.4	273.1	272.9	272.5	272.2	272.4
117.5°	310.2	310.5	310.7	311.1	311.3	311.3	310.9	310.6	310.2	309.8	309.8
120°	334.2	335.1	336.0	336.8	337.7	337.7	337.0	336.3	335.6	334.8	334.8
122.5°	359.3	359.9	360.5	361.2	361.8	361.9	361.5	361.2	360.8	360.4	360.1
125°	397.5	398.0	398.4	398.8	399.2	399.2	399.0	398.7	398.4	398.1	397.6
127.5°	432.7	433.7	434.6	435.5	436.4	436.7	436.4	436.1	435.8	435.5	434.6
130°	456.3	457.4	458.6	459.7	460.8	461.2	460.8	460.4	459.9	459.5	458.9
132.5°	479.8	481.0	482.1	483.2	484.4	484.7	484.5	484.1	483.8	483.5	482.8
135°	515.7	516.6	517.5	518.3	519.1	519.5	519.4	519.2	519.1	518.9	518.3
137.5°	549.0	549.7	550.4	551.1	551.8	552.3	552.7	553.1	553.5	553.8	553.2
140°	572.0	572.7	573.4	574.1	574.8	575.2	575.4	575.5	575.7	575.8	575.7
142.5°	593.0	593.7	594.3	595.0	595.7	596.2	596.5	596.8	597.0	597.3	597.1
145°	625.7	625.9	626.2	626.5	626.8	627.2	627.6	628.0	628.4	628.9	628.7
147.5°	654.3	654.8	655.3	655.8	656.3	656.8	657.2	657.5	658.0	658.4	658.4
150°	674.2	674.5	674.8	675.1	675.4	675.6	675.9	676.2	676.5	676.7	676.7
152.5°	690.6	691.0	691.4	691.8	692.2	692.4	692.6	692.8	692.9	693.1	693.4
155°	716.4	716.4	716.4	716.4	716.4	716.4	716.6	716.8	716.9	717.0	717.6
157.5°	738.4	738.2	738.0	737.9	737.7	737.7	737.8	737.9	738.0	738.1	738.7
160°	752.2	751.9	751.7	751.3	751.1	750.9	750.9	750.9	750.9	750.9	751.7
162.5°	764.5	764.1	763.6	763.3	762.8	762.8	762.8	762.9	763.1	763.2	763.9
165°	780.3	779.9	779.5	779.0	778.6	778.3	778.3	778.3	778.3	778.3	779.2
167.5°	793.0	792.4	791.9	791.3	790.7	790.5	790.6	790.7	790.8	790.9	791.8
170°	800.1	799.5	799.0	798.4	797.8	797.5	797.5	797.5	797.5	797.5	798.6
172.5°	805.7	805.2	804.6	804.0	803.5	803.1	803.1	803.1	803.1	803.1	804.1
175°	811.6	811.1	810.5	809.9	809.3	809.1	809.1	809.1	809.1	809.1	809.9
177.5°	814.1	813.6	813.1	812.7	812.3	812.0	812.0	812.0	812.0	812.0	812.7
180°	813.6	813.6	813.6	813.6	813.6	813.6	813.6	813.6	813.6	813.6	813.6



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1574.0	1574.0	1574.0	1574.0	1574.0	1574.0	1574.0	1574.0
2.5°	1568.0	1570.4	1572.8	1573.9	1573.6	1573.4	1573.1	1573.0
5°	1559.7	1562.7	1565.7	1566.9	1566.3	1565.7	1565.1	1564.5
7.5°	1543.2	1545.8	1548.6	1549.7	1549.4	1549.0	1548.7	1548.3
10°	1528.0	1530.7	1533.4	1534.5	1533.9	1533.3	1532.7	1532.1
12.5°	1511.4	1513.4	1515.4	1516.2	1515.8	1515.4	1515.1	1514.8
15°	1481.4	1483.8	1486.2	1486.5	1484.7	1482.9	1481.1	1479.3
17.5°	1443.4	1445.1	1446.7	1447.3	1446.7	1446.0	1445.3	1444.7
20°	1415.4	1416.6	1417.8	1417.9	1417.0	1416.1	1415.2	1414.3
22.5°	1385.7	1386.6	1387.6	1387.5	1386.4	1385.2	1384.1	1382.9
25°	1336.4	1336.7	1337.0	1336.7	1335.8	1334.9	1334.0	1333.1
27.5°	1284.1	1284.3	1284.5	1284.1	1283.0	1281.8	1280.7	1279.5
30°	1247.8	1247.8	1247.8	1246.8	1244.7	1242.6	1240.4	1238.4
32.5°	1209.8	1208.2	1206.4	1205.1	1203.9	1202.7	1201.6	1200.5
35°	1148.1	1146.3	1144.5	1142.9	1141.3	1139.9	1138.3	1136.9
37.5°	1084.3	1082.2	1080.0	1078.5	1077.5	1076.5	1075.6	1074.6
40°	1042.8	1040.3	1037.9	1036.1	1034.9	1033.7	1032.5	1031.3
42.5°	999.4	997.0	994.6	992.8	991.6	990.4	989.2	988.0
45°	934.8	931.2	927.6	925.0	923.5	922.0	920.5	918.9
47.5°	866.7	863.2	859.5	857.1	855.8	854.5	853.2	851.9
50°	821.7	818.4	815.0	812.5	810.7	808.9	807.1	805.3
52.5°	776.1	773.3	770.4	768.1	766.3	764.5	762.7	760.9
55°	706.6	703.4	700.0	697.6	696.1	694.6	693.1	691.6
57.5°	638.3	635.4	632.4	630.1	628.4	626.6	624.8	623.1
60°	590.1	587.4	584.7	582.6	581.1	579.5	578.1	576.5
62.5°	543.5	540.8	538.1	536.2	535.2	534.2	533.2	532.2
65°	474.3	471.9	469.5	467.9	466.9	466.1	465.1	464.3
67.5°	405.6	403.5	401.4	399.7	398.5	397.2	395.9	394.7
70°	361.2	359.1	357.0	355.2	353.7	352.1	350.7	349.2
72.5°	316.2	314.4	312.5	311.2	310.4	309.6	308.8	308.1
75°	251.4	249.9	248.4	247.2	246.3	245.4	244.5	243.6
77.5°	191.0	189.9	188.9	188.4	188.4	188.4	188.4	188.4
80°	152.3	152.1	151.7	151.6	151.6	151.6	151.6	151.6
82.5°	117.2	116.7	116.1	115.7	115.5	115.3	115.0	114.8
85°	66.5	65.9	65.3	65.0	65.0	65.0	65.0	65.0
87.5°	26.6	26.5	26.3	26.3	26.4	26.4	26.5	26.6
90°	16.4	17.0	17.7	18.0	18.3	18.6	18.9	19.2
92.5°	25.5	25.9	26.3	26.5	26.3	26.2	26.0	25.8
95°	48.4	49.0	49.6	49.9	49.9	49.9	49.9	49.9
97.5°	75.3	75.9	76.6	76.9	76.9	76.8	76.7	76.7
100°	94.8	95.2	95.7	96.0	96.3	96.6	96.9	97.1
102.5°	117.3	117.7	118.1	118.3	118.3	118.2	118.1	118.1
105°	150.8	150.8	150.8	150.9	151.3	151.5	151.8	152.1
107.5°	187.1	187.6	188.0	188.2	188.0	187.9	187.7	187.5
110°	211.4	212.0	212.5	212.7	212.4	212.1	211.8	211.5





TEST NUMBER: P332221-935

CATALOG NUMBER: S123DIW-S1165D755U935-4F0-1E-UDD-F1

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	235.7	236.3	237.0	237.3	237.3	237.2	237.1	237.1
115°	272.5	272.7	272.9	272.9	272.7	272.5	272.4	272.2
117.5°	309.8	309.7	309.7	309.5	309.1	308.7	308.3	307.9
120°	334.6	334.4	334.3	334.1	333.8	333.6	333.2	332.9
122.5°	359.7	359.3	359.0	358.6	358.2	357.7	357.4	357.0
125°	397.0	396.4	395.9	395.3	394.8	394.2	393.6	393.0
127.5°	433.9	433.1	432.3	431.5	430.9	430.2	429.6	429.0
130°	458.4	457.8	457.2	456.4	455.5	454.4	453.5	452.5
132.5°	482.2	481.5	480.8	480.1	479.3	478.5	477.8	477.0
135°	517.8	517.2	516.7	516.3	515.9	515.7	515.4	515.1
137.5°	552.6	552.0	551.5	550.9	550.4	549.7	549.2	548.7
140°	575.5	575.4	575.2	574.6	573.7	572.7	571.7	570.7
142.5°	597.0	596.8	596.7	596.2	595.5	594.7	593.9	593.1
145°	628.5	628.4	628.3	627.9	627.3	626.8	626.2	625.7
147.5°	658.4	658.4	658.4	658.0	657.1	656.3	655.4	654.5
150°	676.7	676.7	676.7	676.3	675.5	674.7	673.8	673.0
152.5°	693.6	693.8	694.1	693.8	693.0	692.3	691.6	690.9
155°	718.2	718.8	719.3	719.1	718.1	717.1	716.1	715.1
157.5°	739.3	739.9	740.5	740.4	739.6	738.8	738.0	737.2
160°	752.3	753.0	753.7	753.8	753.3	752.7	752.1	751.6
162.5°	764.6	765.3	766.0	765.9	765.0	764.1	763.2	762.2
165°	780.1	780.9	781.8	781.7	780.8	779.7	778.8	777.7
167.5°	792.6	793.6	794.4	794.4	793.6	792.6	791.8	790.9
170°	799.5	800.6	801.5	801.5	800.6	799.5	798.6	797.5
172.5°	804.9	805.8	806.7	806.7	805.6	804.7	803.7	802.7
175°	810.8	811.6	812.4	812.4	811.4	810.4	809.4	808.4
177.5°	813.4	814.1	814.8	814.7	813.9	813.0	812.3	811.5
180°	813.6	813.6	813.6	813.6	813.6	813.6	813.6	813.6

(END OF REPORT)