

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: P333944

Luminaire Tested: **S123DW-S1165D935-4F0-1E-UDD-A**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P333944  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-20)  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: S123DW-S1165D935-4F0-1E-UDD-A  
Description: DEFINE 3 DIRECT LED LUMINAIRE, ASYMMETRIC DIFFUSER  
PENDANT/SURFACE/WALL MOUNT, 1165 LUMENS PER FOOT  
Light Source: 3500K CCT, 90 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 3974.6 lumens  
Efficiency: N/A  
Efficacy: 96.7 lumens/watt  
Spacing Criteria (0/90/45): 1.37 / 1.23 / 1.5  
Luminous Opening: Rectangular (W 4' x L: 0.5' x H: 0')  
CIE Type: Direct

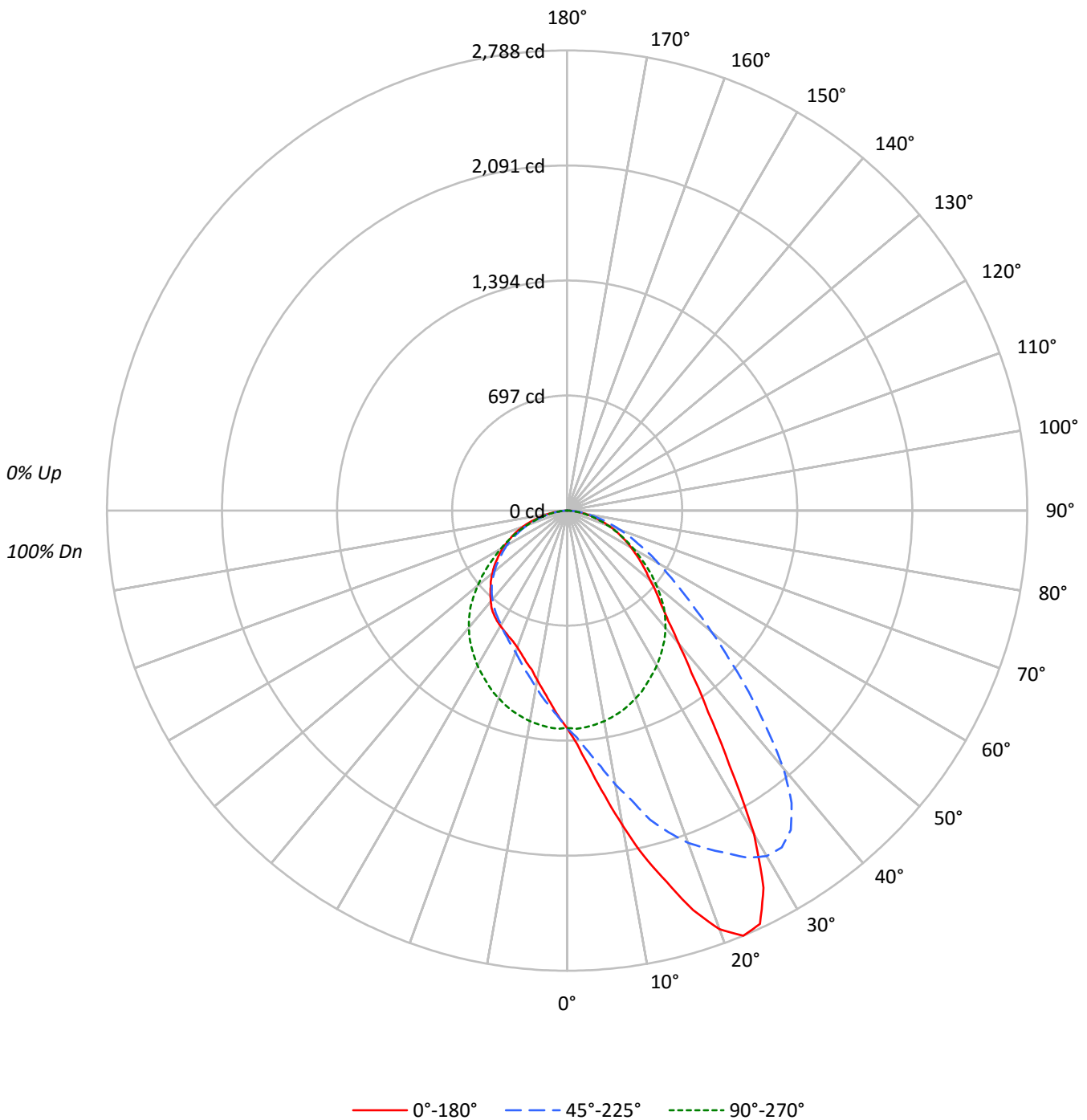
Input Watts (W): 41.1  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	119	119	119	119	116	116	116	116	111	111	111		106	106	106		102	102	102	100
1	110	105	101	98	107	103	99	96	99	96	93		95	92	90		91	89	87	85
2	100	93	86	81	98	91	85	80	87	82	78		84	80	76		81	78	74	72
3	92	82	74	68	89	80	73	67	77	71	66		75	69	65		72	68	64	62
4	84	73	65	58	82	72	64	58	69	62	57		67	61	56		65	60	56	53
5	78	66	57	51	76	64	56	50	62	55	50		60	54	49		59	53	49	47
6	72	59	51	44	70	58	50	44	56	49	44		55	48	43		53	48	43	41
7	67	54	45	39	65	53	45	39	52	44	39		50	44	39		49	43	38	36
8	62	49	41	35	61	49	41	35	47	40	35		46	39	35		45	39	35	33
9	58	45	37	32	57	45	37	32	43	36	32		42	36	31		41	36	31	29
10	55	42	34	29	53	41	34	29	40	33	29		39	33	29		38	33	28	27

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

	0°	90°	180°
0°	7087	7087	7087
5°	8452	7118	6308
10°	10579	7082	5697
15°	12975	7024	5304
20°	15457	6935	5050
25°	16413	6827	4994
30°	14068	6748	5019
35°	9784	6636	5072
40°	7369	6504	5056
45°	6119	6308	4992
50°	5481	5908	4947
55°	5124	5478	4885
60°	4807	5027	4835
65°	4517	4582	4680
70°	4236	4076	4458
75°	3795	3568	4086
80°	3322	2926	3521
85°	2600	2130	2365



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	129.5	3.3
10°-20°	416.0	10.5
20°-30°	699.9	17.6
30°-40°	791.0	19.9
40°-50°	708.5	17.8
50°-60°	571.9	14.4
60°-70°	398.5	10.0
70°-80°	209.2	5.3
80°-90°	50.1	1.3
90°-100°	0.0	0.0
100°-110°	0.0	0.0
110°-120°	0.0	0.0
120°-130°	0.0	0.0
130°-140°	0.0	0.0
140°-150°	0.0	0.0
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	1245.4	31.3
0°-40°	2036.4	51.2
0°-60°	3316.8	83.5
0°-90°	3974.6	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3974.6	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	1317	1317	1317	1317	1317	
5°	1564	1466	1318	1193	1168	161
15°	2329	1938	1261	994	952	672
25°	2764	2290	1150	854	841	1222
35°	1489	2362	1010	755	772	961
45°	804	1557	829	646	656	634
55°	546	845	584	499	521	490
65°	355	474	360	339	368	353
75°	182	225	172	170	196	195
85°	42	48	34	34	38	51
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1316.8	1316.8	1316.8	1316.8	1316.8	1316.8	1316.8	1316.8	1316.8	1316.8	1316.8
2.5°	1417.7	1416.4	1413.2	1415.7	1410.6	1403.6	1403.0	1396.6	1378.1	1376.8	1371.7
5°	1564.4	1559.3	1558.7	1558.0	1549.1	1537.0	1514.0	1512.1	1481.5	1466.1	1447.6
7.5°	1741.8	1739.8	1734.7	1729.0	1699.0	1684.3	1662.6	1634.6	1598.8	1564.4	1542.7
10°	1935.7	1956.8	1930.6	1912.7	1896.2	1864.9	1828.5	1783.2	1737.9	1685.0	1644.8
12.5°	2143.7	2151.4	2151.4	2134.8	2106.7	2055.0	1983.6	1932.5	1891.7	1794.7	1760.3
15°	2328.7	2367.6	2342.8	2285.3	2286.6	2241.3	2157.1	2064.6	2015.5	1938.3	1833.0
17.5°	2538.0	2545.0	2537.4	2483.8	2457.6	2391.9	2316.0	2229.8	2137.3	2043.5	1934.4
20°	2698.8	2694.9	2672.6	2647.7	2592.9	2544.4	2459.5	2360.6	2233.0	2141.2	2019.3
22.5°	2788.1	2781.1	2773.4	2753.6	2710.3	2657.3	2583.3	2472.9	2353.0	2217.7	2072.3
25°	2763.9	2772.1	2773.4	2767.7	2751.7	2720.5	2660.5	2574.4	2453.1	2290.5	2143.7
27.5°	2576.3	2597.3	2624.1	2642.0	2670.7	2689.8	2670.7	2616.5	2516.9	2371.5	2190.9
30°	2263.7	2238.1	2301.3	2381.0	2435.3	2531.0	2584.6	2587.8	2537.4	2416.8	2242.0
32.5°	1829.8	1871.3	1890.4	1993.1	2127.8	2238.1	2358.1	2464.6	2489.5	2419.3	2271.9
35°	1489.1	1524.2	1575.2	1626.3	1753.9	1863.6	2051.2	2214.5	2344.7	2361.9	2268.1
37.5°	1237.7	1258.2	1289.4	1343.6	1431.1	1566.9	1715.6	1928.1	2107.3	2233.7	2220.9
40°	1048.9	1054.0	1090.4	1129.3	1196.9	1304.1	1434.9	1617.4	1843.2	2039.1	2120.7
42.5°	907.2	920.0	930.2	967.2	1017.6	1091.6	1210.9	1353.9	1556.1	1789.0	1968.3
45°	803.9	816.7	826.2	851.1	889.4	943.6	1028.5	1166.3	1323.9	1556.7	1771.7
47.5°	732.4	731.2	739.5	759.2	786.7	830.0	892.6	984.4	1135.7	1330.2	1555.5
50°	654.6	664.8	667.4	682.0	702.4	732.4	782.2	857.5	976.2	1142.0	1344.9
52.5°	599.7	601.0	609.3	618.9	636.1	657.8	699.3	754.1	840.9	976.2	1158.6
55°	546.1	546.1	553.2	561.4	571.7	592.7	621.4	664.8	735.6	845.4	999.8
57.5°	496.4	498.9	505.3	507.2	516.1	530.8	555.7	590.2	644.4	733.1	860.7
60°	446.6	452.3	451.7	456.8	464.5	475.3	495.7	522.5	569.7	637.4	740.7
62.5°	403.2	401.3	401.3	407.7	415.3	425.6	437.0	459.4	497.6	555.7	639.9
65°	354.7	353.5	357.9	361.8	364.3	372.0	382.2	402.6	429.4	474.0	542.3
67.5°	312.6	308.8	312.0	313.3	317.7	324.1	334.3	347.1	368.8	406.4	461.3
70°	269.2	266.0	265.4	266.7	270.5	275.0	282.0	294.1	313.9	342.6	380.3
72.5°	224.6	222.7	222.7	225.9	227.1	229.7	234.1	245.0	259.7	279.4	313.9
75°	182.5	182.5	182.5	183.1	185.0	187.6	191.4	197.1	209.3	224.6	248.2
77.5°	144.2	144.8	143.6	142.9	146.1	147.4	148.0	154.4	161.4	172.9	191.4
80°	107.2	104.0	105.3	107.2	108.5	109.1	111.0	112.3	118.0	123.8	135.9
82.5°	72.7	70.2	70.2	73.4	73.4	74.0	75.9	77.8	79.1	84.2	89.3
85°	42.1	42.1	42.7	42.7	43.4	42.7	44.7	45.3	45.3	48.5	52.3
87.5°	19.1	17.9	18.5	19.1	18.5	19.1	19.8	20.4	21.1	21.7	22.3
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	1316.8	1316.8	1316.8	1316.8	1316.8	1316.8	1316.8	1316.8	1316.8	1316.8	1316.8
2.5°	1367.9	1362.8	1357.7	1348.7	1341.1	1330.2	1327.1	1323.2	1311.7	1301.5	1293.9
5°	1440.6	1425.3	1403.0	1382.6	1366.0	1343.6	1330.9	1317.5	1298.3	1281.1	1267.1
7.5°	1510.2	1483.4	1452.1	1418.3	1385.8	1354.5	1329.6	1307.3	1282.4	1258.2	1239.7
10°	1596.3	1552.9	1504.4	1452.1	1407.4	1364.1	1327.7	1295.8	1261.3	1231.4	1206.5
12.5°	1694.6	1625.0	1553.6	1487.2	1432.3	1367.9	1322.0	1279.2	1239.0	1201.4	1172.7
15°	1767.9	1686.3	1607.1	1519.7	1439.3	1364.1	1311.7	1260.7	1215.4	1178.4	1142.7
17.5°	1840.7	1751.3	1650.5	1545.3	1450.8	1364.1	1292.6	1237.7	1182.2	1137.6	1103.1
20°	1900.6	1795.4	1677.3	1566.9	1459.8	1360.2	1279.8	1210.9	1149.7	1101.8	1061.6
22.5°	1952.3	1824.7	1701.6	1581.6	1459.1	1350.0	1256.2	1184.8	1117.2	1070.6	1027.2
25°	1984.8	1837.5	1715.0	1576.5	1443.2	1332.2	1230.1	1149.7	1083.3	1028.5	984.4
27.5°	2015.5	1835.6	1697.1	1547.8	1424.0	1313.7	1203.9	1117.8	1048.2	988.9	943.6
30°	2046.1	1838.7	1665.8	1518.5	1393.4	1278.6	1172.7	1085.9	1011.9	951.3	909.2
32.5°	2065.2	1836.8	1637.1	1477.6	1344.9	1246.7	1138.8	1048.2	971.7	912.4	872.2
35°	2070.3	1826.0	1603.3	1418.3	1292.0	1193.1	1103.1	1010.0	930.2	874.7	828.8
37.5°	2059.5	1806.2	1566.3	1364.7	1228.2	1129.9	1051.4	971.7	895.1	833.2	793.0
40°	2024.4	1787.1	1521.6	1307.3	1161.8	1068.0	1003.6	925.8	850.5	792.4	755.4
42.5°	1957.4	1748.1	1472.5	1243.5	1092.9	999.1	941.1	879.2	809.0	755.4	718.4
45°	1840.0	1688.2	1423.4	1179.7	1025.3	928.3	876.0	828.8	764.3	711.4	679.5
47.5°	1690.1	1607.1	1352.6	1112.7	954.5	860.7	805.8	766.9	716.5	673.7	642.5
50°	1532.5	1502.5	1280.5	1043.8	883.6	792.4	740.1	705.6	671.8	629.1	601.0
52.5°	1350.7	1381.3	1196.3	972.3	811.5	722.2	673.7	648.2	618.2	585.1	561.4
55°	1182.2	1249.2	1096.7	890.7	740.1	654.6	608.0	583.8	565.9	539.8	518.7
57.5°	1018.9	1104.4	993.4	808.4	669.9	595.3	549.3	521.9	510.4	495.7	478.5
60°	876.6	960.8	881.1	725.4	599.1	528.9	489.4	467.0	455.5	446.0	431.9
62.5°	749.7	835.2	771.4	641.2	529.5	465.7	432.6	410.9	402.6	398.8	387.3
65°	635.5	708.8	664.2	553.2	463.8	406.4	375.1	359.8	351.5	349.6	342.0
67.5°	536.6	593.3	558.9	475.3	402.6	350.3	322.8	309.4	302.4	301.8	295.4
70°	439.6	491.9	467.0	393.0	332.4	293.5	270.5	259.0	255.2	254.6	251.4
72.5°	364.3	396.8	378.3	319.6	276.3	241.8	226.5	214.4	209.9	211.2	209.3
75°	280.7	308.2	296.7	253.9	216.3	193.3	179.3	171.6	167.8	169.7	167.2
77.5°	214.4	233.5	222.0	189.5	165.2	148.0	137.2	132.1	128.2	128.2	127.0
80°	152.5	162.7	157.0	139.1	119.9	105.9	97.6	94.4	92.5	91.9	91.2
82.5°	97.6	105.9	98.9	88.0	76.6	69.5	65.7	61.2	60.0	60.6	60.0
85°	54.9	58.1	55.5	47.9	42.7	38.9	36.4	34.5	33.2	33.8	32.5
87.5°	23.6	24.2	22.3	19.8	18.5	16.6	16.6	15.3	14.0	14.0	13.4
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



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**CANDELA DISTRIBUTION (continued):**

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	1316.8	1316.8	1316.8	1316.8	1316.8	1316.8	1316.8	1316.8	1316.8	1316.8	1316.8
2.5°	1289.4	1284.9	1278.6	1269.0	1261.3	1249.2	1249.2	1251.1	1251.1	1250.5	1249.2
5°	1255.6	1246.0	1234.5	1221.1	1207.1	1193.1	1190.5	1185.4	1181.6	1179.0	1175.8
7.5°	1221.1	1205.2	1189.2	1170.7	1154.8	1141.4	1131.8	1123.5	1118.4	1112.7	1108.2
10°	1186.1	1165.0	1145.2	1125.4	1103.8	1086.5	1075.7	1068.0	1062.3	1057.2	1054.6
12.5°	1144.6	1119.7	1097.4	1078.9	1054.6	1036.8	1026.6	1024.0	1017.0	1004.9	998.5
15°	1104.4	1082.1	1055.9	1027.2	1015.7	994.0	981.9	976.2	972.3	964.0	961.5
17.5°	1071.2	1041.2	1011.2	990.2	969.1	951.9	944.9	937.2	932.1	924.5	922.6
20°	1029.7	1003.6	976.8	953.8	931.5	912.4	906.6	901.5	896.4	893.2	890.7
22.5°	987.6	961.5	940.4	919.4	895.1	884.3	877.9	872.2	869.0	867.1	864.5
25°	948.7	925.8	900.9	881.7	862.6	854.3	850.5	847.3	844.7	841.5	840.9
27.5°	914.3	888.7	867.7	849.2	835.2	828.1	823.7	821.8	821.8	823.0	823.7
30°	874.7	851.7	835.2	819.8	807.1	800.7	800.1	800.1	802.6	803.3	804.5
32.5°	838.3	820.5	803.9	789.2	780.3	776.5	779.6	779.6	781.6	783.5	786.0
35°	803.3	786.7	773.9	761.1	752.8	754.8	756.0	757.3	760.5	764.3	766.9
37.5°	770.1	754.8	741.4	731.2	726.1	729.9	733.1	735.6	739.5	742.6	745.2
40°	733.7	722.9	710.1	701.2	702.4	704.4	706.9	710.1	713.3	715.2	717.8
42.5°	699.9	688.4	679.5	672.5	674.4	676.9	678.2	679.5	683.3	687.1	688.4
45°	665.4	656.5	647.6	643.1	644.4	645.7	646.9	648.9	652.0	654.6	655.2
47.5°	626.5	620.1	614.4	609.3	611.9	611.2	613.1	617.0	618.2	619.5	623.3
50°	589.5	583.8	576.8	575.5	575.5	575.5	576.1	581.2	581.2	583.8	586.3
52.5°	548.7	545.5	541.7	539.1	537.8	537.8	541.0	542.9	544.2	548.0	550.6
55°	508.5	504.7	500.8	498.9	497.6	498.9	504.0	505.3	508.5	510.4	512.3
57.5°	466.4	463.8	460.6	459.4	459.4	460.0	463.8	467.0	467.7	474.0	476.6
60°	424.9	420.4	417.9	417.9	416.6	422.4	421.1	427.5	428.7	432.6	437.0
62.5°	382.2	375.8	375.1	375.1	377.7	378.3	380.9	382.8	386.6	391.7	394.9
65°	335.6	332.4	336.9	336.2	335.0	338.8	338.8	342.0	345.8	350.3	357.3
67.5°	292.2	289.7	290.9	290.3	292.2	294.8	296.7	299.2	303.7	308.8	313.3
70°	248.2	250.1	246.9	249.5	251.4	252.0	253.3	257.1	262.2	265.4	270.5
72.5°	205.4	204.8	206.1	206.7	208.6	209.9	211.2	215.6	221.4	223.9	227.8
75°	164.6	164.0	165.9	165.9	169.1	170.3	171.6	173.5	178.6	182.5	185.7
77.5°	127.6	128.2	127.6	130.2	128.9	129.5	133.3	135.3	135.9	144.2	145.5
80°	90.6	91.9	92.5	93.1	93.8	92.5	97.0	98.9	98.9	103.4	106.5
82.5°	58.7	59.3	61.2	61.9	61.9	63.8	63.2	64.4	66.4	67.6	72.1
85°	32.5	34.5	35.1	34.5	35.1	33.8	35.7	36.4	37.0	37.0	37.0
87.5°	12.8	13.4	12.8	13.4	12.8	13.4	13.4	12.1	12.1	14.0	11.5
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0





TEST NUMBER: P333944

CATALOG NUMBER: S123DW-S1165D935-4F0-1E-UDD-A

**CANDELA DISTRIBUTION (continued):**

	165°	170°	175°	180°
0°	1316.8	1316.8	1316.8	1316.8
2.5°	1244.8	1244.1	1248.6	1245.4
5°	1172.0	1173.9	1167.6	1167.6
7.5°	1106.3	1103.8	1104.4	1099.9
10°	1047.0	1043.1	1041.9	1042.5
12.5°	997.8	997.8	987.6	987.6
15°	961.5	949.4	948.1	951.9
17.5°	921.3	914.3	914.9	913.6
20°	890.7	886.8	886.2	881.7
22.5°	862.6	861.9	862.6	857.5
25°	840.3	843.4	840.9	840.9
27.5°	824.9	824.9	823.0	823.0
30°	807.1	806.4	807.7	807.7
32.5°	789.2	790.5	790.5	791.1
35°	770.7	771.4	773.3	772.0
37.5°	746.5	749.7	749.0	750.3
40°	718.4	720.3	719.7	719.7
42.5°	689.7	691.0	689.0	687.8
45°	657.8	656.5	658.4	655.9
47.5°	622.7	623.3	624.0	626.5
50°	587.6	591.4	591.4	590.8
52.5°	553.2	554.4	557.6	557.6
55°	517.4	518.7	520.0	520.6
57.5°	481.1	480.4	483.0	483.6
60°	442.1	442.1	447.2	449.2
62.5°	400.7	403.2	408.3	404.5
65°	360.5	365.6	364.9	367.5
67.5°	318.4	321.6	326.7	326.7
70°	275.6	278.8	281.4	283.3
72.5°	234.1	235.4	242.4	238.6
75°	190.1	194.6	198.4	196.5
77.5°	148.0	153.8	155.0	153.1
80°	111.0	110.4	114.2	113.6
82.5°	74.0	73.4	74.6	75.3
85°	39.6	41.5	38.9	38.3
87.5°	11.5	11.5	10.8	10.2
90°	0.0	0.0	0.0	0.0

(END OF REPORT)