

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: P333934

Luminaire Tested: **S123DW-S1165D927-4F0-1E-UDD-A**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P333934  
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-S1165D927-4F0-1E-UDD-A  
Description: DEFINE 3 DIRECT LED LUMINAIRE, ASYMMETRIC DIFFUSER  
PENDANT/SURFACE/WALL MOUNT, 1165 LUMENS PER FOOT  
Light Source: 2700K CCT, 90 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 3656.9 lumens  
Efficiency: N/A  
Efficacy: 89.0 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

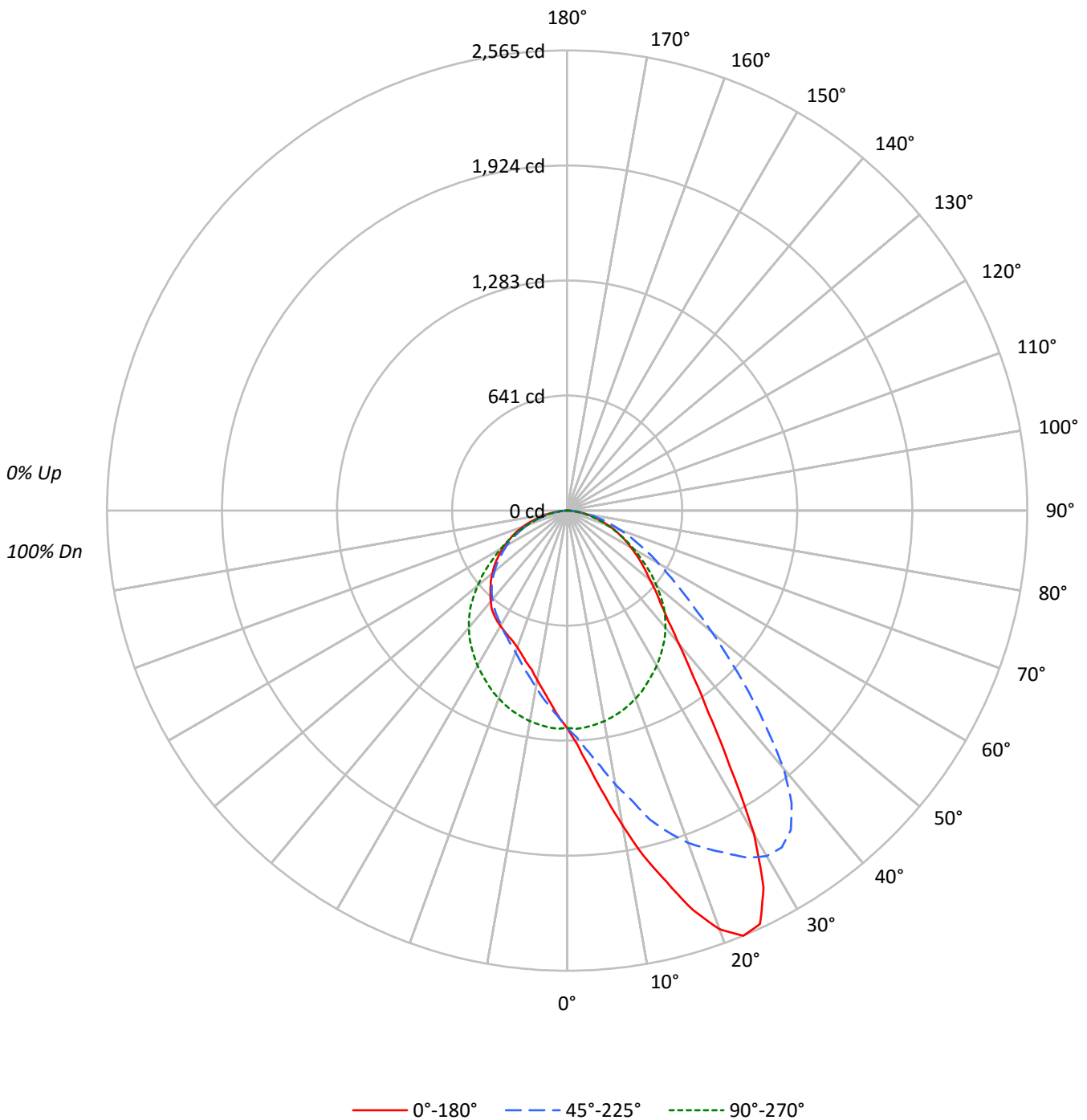
Input Watts (W): 41.1  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



TEST NUMBER: P333934

CATALOG NUMBER: S123DW-S1165D927-4F0-1E-UDD-A

### Luminous Intensity Polar Plot





TEST NUMBER: P333934

CATALOG NUMBER: S123DW-S1165D927-4F0-1E-UDD-A

**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°	6521	6521	6521
5°	7776	6549	5803
10°	9733	6515	5242
15°	11938	6463	4880
20°	14222	6381	4647
25°	15101	6282	4594
30°	12943	6209	4619
35°	9002	6105	4667
40°	6780	5984	4652
45°	5629	5804	4593
50°	5043	5436	4551
55°	4715	5040	4495
60°	4423	4625	4449
65°	4157	4216	4306
70°	3898	3750	4101
75°	3491	3283	3760
80°	3056	2693	3239
85°	2390	1958	2174



TEST NUMBER: P333934

CATALOG NUMBER: S123DW-S1165D927-4F0-1E-UDD-A

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	119.2	3.3
10°-20°	382.7	10.5
20°-30°	644.0	17.6
30°-40°	727.8	19.9
40°-50°	651.9	17.8
50°-60°	526.2	14.4
60°-70°	366.6	10.0
70°-80°	192.4	5.3
80°-90°	46.1	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°	1145.9	31.3
0°-40°	1873.7	51.2
0°-60°	3051.7	83.5
0°-90°	3656.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3656.9	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	1212	1212	1212	1212	1212	
5°	1439	1349	1212	1098	1074	148
15°	2143	1783	1160	915	876	618
25°	2543	2107	1058	786	774	1124
35°	1370	2173	929	694	710	884
45°	740	1432	762	594	604	583
55°	502	778	537	459	479	451
65°	326	436	331	312	338	325
75°	168	207	158	157	181	179
85°	39	45	32	31	35	47
90°	0	0	0	0	0	



TEST NUMBER: P333934

CATALOG NUMBER: S123DW-S1165D927-4F0-1E-UDD-A

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1211.6	1211.6	1211.6	1211.6	1211.6	1211.6	1211.6	1211.6	1211.6	1211.6	1211.6
2.5°	1304.3	1303.2	1300.2	1302.6	1297.9	1291.4	1290.8	1285.0	1267.9	1266.8	1262.1
5°	1439.4	1434.7	1434.1	1433.5	1425.3	1414.1	1393.0	1391.2	1363.0	1349.0	1331.9
7.5°	1602.5	1600.8	1596.1	1590.8	1563.2	1549.7	1529.8	1503.9	1471.1	1439.4	1419.4
10°	1781.0	1800.4	1776.3	1759.9	1744.6	1715.8	1682.4	1640.7	1599.0	1550.3	1513.3
12.5°	1972.4	1979.4	1979.4	1964.1	1938.3	1890.8	1825.0	1778.1	1740.5	1651.3	1619.6
15°	2142.6	2178.4	2155.5	2102.7	2103.9	2062.2	1984.7	1899.6	1854.4	1783.3	1686.5
17.5°	2335.1	2341.6	2334.6	2285.2	2261.2	2200.7	2130.9	2051.6	1966.5	1880.2	1779.8
20°	2483.1	2479.5	2459.0	2436.1	2385.6	2341.0	2262.9	2172.0	2054.5	1970.0	1857.9
22.5°	2565.3	2558.8	2551.7	2533.6	2493.6	2444.9	2376.8	2275.3	2164.9	2040.5	1906.6
25°	2542.9	2550.6	2551.7	2546.5	2531.8	2503.0	2447.8	2368.6	2257.1	2107.4	1972.4
27.5°	2370.4	2389.7	2414.4	2430.8	2457.2	2474.9	2457.2	2407.3	2315.8	2181.9	2015.8
30°	2082.7	2059.2	2117.4	2190.7	2240.6	2328.7	2378.0	2380.9	2334.6	2223.6	2062.8
32.5°	1683.6	1721.7	1739.3	1833.8	1957.7	2059.2	2169.6	2267.6	2290.5	2226.0	2090.4
35°	1370.1	1402.4	1449.3	1496.3	1613.7	1714.7	1887.2	2037.5	2157.3	2173.1	2086.8
37.5°	1138.8	1157.6	1186.4	1236.3	1316.7	1441.7	1578.5	1774.0	1938.9	2055.1	2043.4
40°	965.1	969.7	1003.2	1039.0	1101.2	1199.9	1320.2	1488.1	1695.9	1876.1	1951.2
42.5°	834.7	846.5	855.9	889.9	936.3	1004.4	1114.2	1245.6	1431.7	1646.0	1810.9
45°	739.6	751.4	760.2	783.1	818.3	868.2	946.3	1073.1	1218.1	1432.3	1630.1
47.5°	673.9	672.7	680.3	698.5	723.8	763.7	821.2	905.8	1044.9	1223.9	1431.1
50°	602.3	611.7	614.0	627.5	646.3	673.9	719.7	788.9	898.1	1050.8	1237.4
52.5°	551.8	553.0	560.6	569.4	585.3	605.2	643.4	693.9	773.7	898.1	1066.0
55°	502.5	502.5	508.9	516.6	526.0	545.3	571.8	611.7	676.8	777.8	919.9
57.5°	456.7	459.0	464.9	466.7	474.9	488.4	511.3	543.0	592.9	674.5	791.9
60°	410.9	416.2	415.6	420.3	427.3	437.3	456.1	480.8	524.2	586.4	681.5
62.5°	371.0	369.2	369.2	375.1	382.1	391.5	402.1	422.6	457.9	511.3	588.8
65°	326.4	325.2	329.3	332.8	335.2	342.2	351.6	370.4	395.1	436.2	499.0
67.5°	287.6	284.1	287.0	288.2	292.3	298.2	307.6	319.3	339.3	373.9	424.4
70°	247.7	244.8	244.2	245.4	248.9	253.0	259.5	270.6	288.8	315.2	349.9
72.5°	206.6	204.9	204.9	207.8	209.0	211.3	215.4	225.4	238.9	257.1	288.8
75°	167.9	167.9	167.9	168.5	170.2	172.6	176.1	181.4	192.5	206.6	228.3
77.5°	132.7	133.3	132.1	131.5	134.4	135.6	136.2	142.1	148.5	159.1	176.1
80°	98.6	95.7	96.9	98.6	99.8	100.4	102.1	103.3	108.6	113.9	125.0
82.5°	66.9	64.6	64.6	67.5	67.5	68.1	69.9	71.6	72.8	77.5	82.2
85°	38.7	38.7	39.3	39.3	39.9	39.3	41.1	41.7	41.7	44.6	48.1
87.5°	17.6	16.4	17.0	17.6	17.0	17.6	18.2	18.8	19.4	20.0	20.5
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: P333934

CATALOG NUMBER: S123DW-S1165D927-4F0-1E-UDD-A

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	1211.6	1211.6	1211.6	1211.6	1211.6	1211.6	1211.6	1211.6	1211.6	1211.6	1211.6
2.5°	1258.6	1253.9	1249.2	1240.9	1233.9	1223.9	1221.0	1217.5	1206.9	1197.5	1190.5
5°	1325.5	1311.4	1290.8	1272.1	1256.8	1236.3	1224.5	1212.2	1194.6	1178.7	1165.8
7.5°	1389.5	1364.8	1336.0	1304.9	1275.0	1246.2	1223.3	1202.8	1179.9	1157.6	1140.6
10°	1468.7	1428.8	1384.2	1336.0	1295.0	1255.0	1221.6	1192.2	1160.5	1132.9	1110.0
12.5°	1559.1	1495.1	1429.4	1368.3	1317.8	1258.6	1216.3	1177.0	1140.0	1105.3	1078.9
15°	1626.6	1551.5	1478.7	1398.3	1324.3	1255.0	1206.9	1159.9	1118.3	1084.2	1051.3
17.5°	1693.5	1611.4	1518.6	1421.7	1334.9	1255.0	1189.3	1138.8	1087.7	1046.6	1014.9
20°	1748.7	1651.9	1543.3	1441.7	1343.1	1251.5	1177.5	1114.2	1057.8	1013.8	976.8
22.5°	1796.3	1678.9	1565.6	1455.2	1342.5	1242.1	1155.8	1090.1	1027.9	985.0	945.1
25°	1826.2	1690.6	1577.9	1450.5	1327.8	1225.7	1131.8	1057.8	996.7	946.3	905.8
27.5°	1854.4	1688.8	1561.5	1424.1	1310.2	1208.7	1107.7	1028.4	964.5	909.9	868.2
30°	1882.6	1691.8	1532.7	1397.1	1282.0	1176.4	1078.9	999.1	931.0	875.2	836.5
32.5°	1900.2	1690.0	1506.3	1359.5	1237.4	1147.0	1047.8	964.5	894.0	839.4	802.4
35°	1904.9	1680.0	1475.2	1304.9	1188.7	1097.7	1014.9	929.2	855.9	804.8	762.5
37.5°	1894.9	1661.8	1441.1	1255.6	1130.0	1039.6	967.4	894.0	823.6	766.6	729.7
40°	1862.6	1644.2	1400.0	1202.8	1069.0	982.7	923.4	851.8	782.5	729.1	695.0
42.5°	1801.0	1608.4	1354.8	1144.1	1005.6	919.3	865.8	808.9	744.3	695.0	661.0
45°	1692.9	1553.2	1309.6	1085.4	943.3	854.1	806.0	762.5	703.2	654.5	625.2
47.5°	1555.0	1478.7	1244.5	1023.8	878.2	791.9	741.4	705.6	659.2	619.9	591.1
50°	1410.0	1382.4	1178.1	960.4	813.0	729.1	680.9	649.2	618.1	578.8	553.0
52.5°	1242.7	1270.9	1100.7	894.6	746.7	664.5	619.9	596.4	568.8	538.3	516.6
55°	1087.7	1149.4	1009.1	819.5	680.9	602.3	559.4	537.1	520.7	496.6	477.2
57.5°	937.5	1016.1	914.0	743.7	616.4	547.7	505.4	480.2	469.6	456.1	440.3
60°	806.6	884.0	810.7	667.4	551.2	486.6	450.2	429.7	419.1	410.3	397.4
62.5°	689.7	768.4	709.7	589.9	487.2	428.5	398.0	378.0	370.4	366.9	356.3
65°	584.7	652.2	611.1	508.9	426.8	373.9	345.2	331.1	323.4	321.7	314.6
67.5°	493.7	545.9	514.2	437.3	370.4	322.3	297.0	284.7	278.2	277.7	271.8
70°	404.5	452.6	429.7	361.6	305.8	270.0	248.9	238.3	234.8	234.2	231.3
72.5°	335.2	365.1	348.1	294.1	254.2	222.5	208.4	197.2	193.1	194.3	192.5
75°	258.3	283.5	273.0	233.6	199.0	177.9	165.0	157.9	154.4	156.1	153.8
77.5°	197.2	214.8	204.3	174.3	152.0	136.2	126.2	121.5	118.0	118.0	116.8
80°	140.3	149.7	144.4	128.0	110.4	97.4	89.8	86.9	85.1	84.5	83.9
82.5°	89.8	97.4	91.0	81.0	70.4	64.0	60.5	56.4	55.2	55.8	55.2
85°	50.5	53.4	51.1	44.0	39.3	35.8	33.5	31.7	30.5	31.1	29.9
87.5°	21.7	22.3	20.5	18.2	17.0	15.3	15.3	14.1	12.9	12.9	12.3
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: P333934

CATALOG NUMBER: S123DW-S1165D927-4F0-1E-UDD-A

**CANDELA DISTRIBUTION (continued):**

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	1211.6	1211.6	1211.6	1211.6	1211.6	1211.6	1211.6	1211.6	1211.6	1211.6	1211.6
2.5°	1186.4	1182.2	1176.4	1167.6	1160.5	1149.4	1149.4	1151.1	1151.1	1150.5	1149.4
5°	1155.2	1146.4	1135.9	1123.5	1110.6	1097.7	1095.4	1090.7	1087.1	1084.8	1081.9
7.5°	1123.5	1108.9	1094.2	1077.2	1062.5	1050.2	1041.4	1033.7	1029.0	1023.8	1019.6
10°	1091.3	1071.9	1053.7	1035.5	1015.5	999.7	989.7	982.7	977.4	972.7	970.3
12.5°	1053.1	1030.2	1009.7	992.6	970.3	953.9	944.5	942.2	935.7	924.5	918.7
15°	1016.1	995.6	971.5	945.1	934.5	914.6	903.4	898.1	894.6	887.0	884.6
17.5°	985.6	958.0	930.4	911.0	891.7	875.8	869.4	862.3	857.6	850.6	848.8
20°	947.4	923.4	898.7	877.6	857.0	839.4	834.1	829.5	824.8	821.8	819.5
22.5°	908.7	884.6	865.3	845.9	823.6	813.6	807.7	802.4	799.5	797.8	795.4
25°	872.9	851.8	828.9	811.3	793.6	786.0	782.5	779.6	777.2	774.3	773.7
27.5°	841.2	817.7	798.3	781.3	768.4	761.9	757.8	756.1	756.1	757.2	757.8
30°	804.8	783.7	768.4	754.3	742.6	736.7	736.1	736.1	738.5	739.1	740.2
32.5°	771.3	754.9	739.6	726.1	717.9	714.4	717.3	717.3	719.1	720.9	723.2
35°	739.1	723.8	712.0	700.3	692.7	694.4	695.6	696.8	699.7	703.2	705.6
37.5°	708.5	694.4	682.1	672.7	668.0	671.5	674.5	676.8	680.3	683.3	685.6
40°	675.1	665.1	653.3	645.1	646.3	648.1	650.4	653.3	656.3	658.0	660.4
42.5°	644.0	633.4	625.2	618.7	620.5	622.8	624.0	625.2	628.7	632.2	633.4
45°	612.3	604.0	595.8	591.7	592.9	594.1	595.2	597.0	599.9	602.3	602.9
47.5°	576.4	570.6	565.3	560.6	562.9	562.4	564.1	567.6	568.8	570.0	573.5
50°	542.4	537.1	530.7	529.5	529.5	529.5	530.1	534.8	534.8	537.1	539.5
52.5°	504.8	501.9	498.4	496.0	494.9	494.9	497.8	499.5	500.7	504.2	506.6
55°	467.9	464.3	460.8	459.0	457.9	459.0	463.7	464.9	467.9	469.6	471.4
57.5°	429.1	426.8	423.8	422.6	422.6	423.2	426.8	429.7	430.3	436.2	438.5
60°	391.0	386.8	384.5	384.5	383.3	388.6	387.4	393.3	394.5	398.0	402.1
62.5°	351.6	345.8	345.2	345.2	347.5	348.1	350.4	352.2	355.7	360.4	363.4
65°	308.8	305.8	309.9	309.4	308.2	311.7	311.7	314.6	318.2	322.3	328.7
67.5°	268.9	266.5	267.7	267.1	268.9	271.2	273.0	275.3	279.4	284.1	288.2
70°	228.3	230.1	227.2	229.5	231.3	231.9	233.0	236.6	241.3	244.2	248.9
72.5°	189.0	188.4	189.6	190.2	192.0	193.1	194.3	198.4	203.7	206.0	209.6
75°	151.4	150.9	152.6	152.6	155.6	156.7	157.9	159.7	164.4	167.9	170.8
77.5°	117.4	118.0	117.4	119.8	118.6	119.2	122.7	124.4	125.0	132.7	133.8
80°	83.4	84.5	85.1	85.7	86.3	85.1	89.2	91.0	91.0	95.1	98.0
82.5°	54.0	54.6	56.4	56.9	56.9	58.7	58.1	59.3	61.0	62.2	66.3
85°	29.9	31.7	32.3	31.7	32.3	31.1	32.9	33.5	34.0	34.0	34.0
87.5°	11.7	12.3	11.7	12.3	11.7	12.3	12.3	11.2	11.2	12.9	10.6
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: P333934

CATALOG NUMBER: S123DW-S1165D927-4F0-1E-UDD-A

**CANDELA DISTRIBUTION (continued):**

	165°	170°	175°	180°
0°	1211.6	1211.6	1211.6	1211.6
2.5°	1145.3	1144.7	1148.8	1145.9
5°	1078.3	1080.1	1074.2	1074.2
7.5°	1017.9	1015.5	1016.1	1012.0
10°	963.3	959.8	958.6	959.2
12.5°	918.1	918.1	908.7	908.7
15°	884.6	873.5	872.3	875.8
17.5°	847.6	841.2	841.8	840.6
20°	819.5	815.9	815.4	811.3
22.5°	793.6	793.1	793.6	788.9
25°	773.1	776.0	773.7	773.7
27.5°	759.0	759.0	757.2	757.2
30°	742.6	742.0	743.2	743.2
32.5°	726.1	727.3	727.3	727.9
35°	709.1	709.7	711.5	710.3
37.5°	686.8	689.7	689.2	690.3
40°	661.0	662.7	662.2	662.2
42.5°	634.6	635.7	634.0	632.8
45°	605.2	604.0	605.8	603.5
47.5°	572.9	573.5	574.1	576.4
50°	540.6	544.2	544.2	543.6
52.5°	508.9	510.1	513.1	513.1
55°	476.1	477.2	478.4	479.0
57.5°	442.6	442.0	444.4	445.0
60°	406.8	406.8	411.5	413.3
62.5°	368.6	371.0	375.7	372.2
65°	331.7	336.4	335.8	338.1
67.5°	292.9	295.9	300.6	300.6
70°	253.6	256.5	258.9	260.6
72.5°	215.4	216.6	223.1	219.5
75°	174.9	179.0	182.6	180.8
77.5°	136.2	141.5	142.6	140.9
80°	102.1	101.6	105.1	104.5
82.5°	68.1	67.5	68.7	69.3
85°	36.4	38.2	35.8	35.2
87.5°	10.6	10.6	10.0	9.4
90°	0.0	0.0	0.0	0.0

(END OF REPORT)