

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: P243678

Luminaire Tested: **S125DR-H1090D840-X4F0-XX-UDD-A-W**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P243678  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-61)  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: S125DR-H1090D840-X4F0-XX-UDD-A-W  
Description: DEFINE 5 DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER.  
HIGH PERFORMANCE LIGHT ENGINE  
Light Source: (184) 4000K CCT, 80 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 4272.9 lumens  
Efficiency: N/A  
Efficacy: 135.6 lumens/watt  
Spacing Criteria (0/90/45): 1.43 / 1.22 / 1.53  
Luminous Opening: Rectangular (W 3.88' x L: 0.39' x H: 0')  
CIE Type: Direct

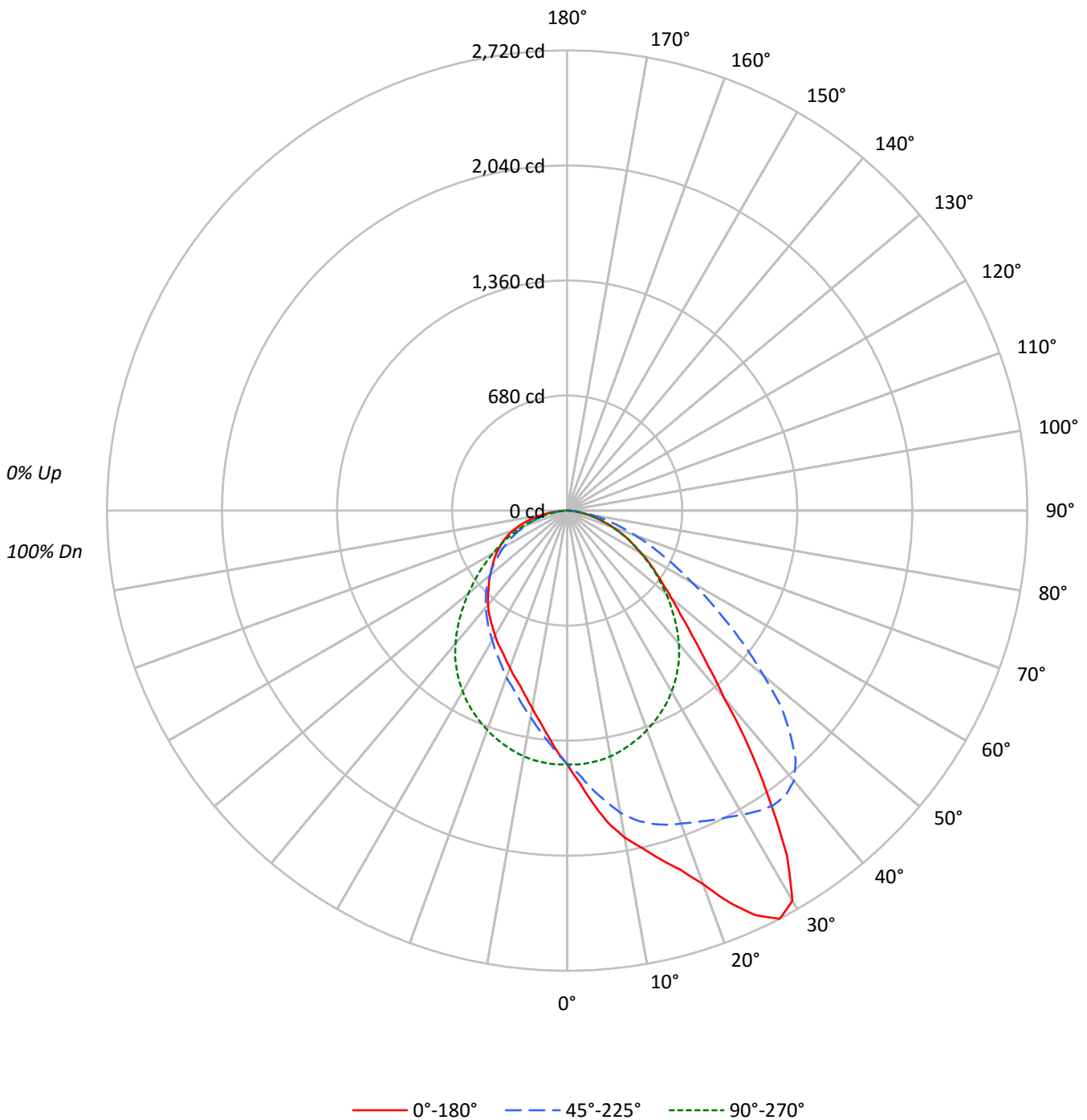
Input Watts (W): 31.5  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	109	105	101	97	107	103	99	96	99	96	93	95	92	90	91	89	87	85
2	100	92	86	80	97	90	84	79	87	82	78	84	79	76	81	77	74	72
3	92	82	74	68	89	80	73	67	77	71	66	74	69	65	72	67	63	61
4	84	73	64	58	82	71	63	57	69	62	56	66	61	56	64	59	55	53
5	78	65	56	50	75	64	56	50	62	55	49	60	54	49	58	53	48	46
6	72	59	50	44	70	58	50	44	56	49	43	54	48	43	53	47	43	40
7	67	53	45	39	65	53	44	39	51	44	38	50	43	38	48	42	38	36
8	62	49	40	35	60	48	40	35	47	40	34	46	39	34	44	38	34	32
9	58	45	37	31	57	44	36	31	43	36	31	42	36	31	41	35	31	29
10	54	41	34	28	53	41	33	28	40	33	28	39	33	28	38	32	28	26

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

	0°	90°	180°
0°	10655	10655	10655
5°	12379	10679	9490
10°	14163	10644	8564
15°	15702	10549	7891
20°	17777	10443	7486
25°	20702	10308	7171
30°	21854	10139	6996
35°	18072	9890	6847
40°	13369	9533	6746
45°	10511	9013	6600
50°	8900	8430	6575
55°	7925	7850	6600
60°	7190	7207	6741
65°	6666	6604	6932
70°	5989	5912	6974
75°	5108	5193	6879
80°	4179	4257	6422
85°	2879	3025	5456



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	144.8	3.4
10°-20°	432.8	10.1
20°-30°	703.6	16.5
30°-40°	856.0	20.0
40°-50°	783.3	18.3
50°-60°	626.9	14.7
60°-70°	436.6	10.2
70°-80°	232.0	5.4
80°-90°	57.0	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°	1281.2	30.0
0°-40°	2137.2	50.0
0°-60°	3547.3	83.0
0°-90°	4272.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4272.9	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	1499	1499	1499	1499	1499	
5°	1735	1648	1497	1362	1330	173
15°	2134	1916	1434	1134	1072	612
25°	2640	2019	1314	960	914	1205
35°	2083	2126	1140	817	789	1291
45°	1046	1864	897	677	657	825
55°	640	1157	634	517	533	577
65°	396	618	393	346	412	390
75°	186	274	189	181	250	201
85°	35	52	37	42	67	46
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°	1499.2	1499.2	1499.2	1499.2	1499.2	1499.2	1499.2	1499.2	1499.2	1499.2	1499.2
2.5°	1605.0	1598.3	1596.5	1597.1	1593.5	1590.4	1583.1	1573.4	1566.7	1558.2	1555.8
5°	1735.1	1718.7	1721.8	1716.9	1709.0	1698.7	1689.5	1674.9	1661.0	1647.6	1630.0
7.5°	1862.8	1859.8	1851.3	1850.0	1837.3	1819.6	1801.4	1781.3	1751.5	1730.9	1707.2
10°	1962.5	1968.6	1956.4	1957.0	1934.5	1916.9	1901.1	1875.0	1841.5	1813.6	1778.9
12.5°	2042.8	2045.2	2043.4	2035.5	2020.9	1991.1	1975.9	1948.5	1912.0	1873.7	1847.0
15°	2134.0	2127.3	2116.9	2107.2	2085.9	2064.6	2033.0	2000.8	1954.6	1916.3	1877.4
17.5°	2225.1	2223.9	2211.2	2190.5	2163.7	2135.8	2088.4	2047.0	1997.8	1947.3	1898.7
20°	2350.4	2343.7	2324.9	2301.1	2251.9	2212.4	2153.4	2096.9	2032.4	1969.2	1912.7
22.5°	2507.2	2485.4	2466.5	2430.0	2373.5	2304.8	2238.5	2156.4	2066.5	1992.3	1921.8
25°	2639.8	2630.1	2610.0	2569.3	2504.8	2422.1	2323.6	2230.6	2117.5	2019.0	1927.2
27.5°	2720.0	2715.8	2703.6	2665.3	2611.8	2529.7	2424.6	2306.0	2177.7	2044.6	1934.5
30°	2662.9	2663.5	2670.2	2665.9	2642.2	2589.3	2495.7	2376.5	2228.2	2075.0	1936.4
32.5°	2417.3	2433.7	2486.0	2510.9	2544.3	2555.3	2513.3	2414.2	2270.7	2105.4	1942.4
35°	2082.9	2123.0	2158.3	2231.2	2318.2	2389.3	2430.6	2398.4	2288.4	2126.1	1945.5
37.5°	1768.0	1764.9	1819.6	1898.7	1991.1	2112.1	2229.4	2293.8	2258.0	2121.8	1940.0
40°	1440.9	1468.8	1502.9	1572.8	1681.0	1830.0	1969.8	2107.8	2157.7	2084.1	1918.7
42.5°	1217.1	1229.9	1264.0	1318.7	1396.5	1548.5	1686.5	1864.0	1991.7	2000.2	1871.9
45°	1045.7	1059.7	1069.4	1123.5	1195.9	1298.0	1439.7	1618.4	1789.8	1864.0	1795.9
47.5°	908.3	916.2	937.5	970.3	1017.7	1108.3	1221.4	1383.7	1570.4	1714.5	1691.4
50°	804.9	811.0	828.0	846.3	885.2	952.1	1043.3	1176.4	1355.8	1513.2	1564.9
52.5°	713.8	721.7	730.2	747.8	783.7	828.7	902.8	1006.8	1173.4	1334.5	1416.6
55°	639.6	642.6	651.7	665.1	692.5	726.5	785.5	879.7	996.5	1157.0	1270.0
57.5°	575.1	572.1	581.8	590.9	609.2	637.8	680.3	750.2	861.5	998.3	1116.2
60°	505.8	508.9	516.2	523.5	536.2	561.2	594.6	650.5	732.0	854.8	975.2
62.5°	446.2	448.7	450.5	460.8	472.4	490.0	517.4	563.0	630.5	732.0	839.6
65°	396.4	392.1	394.6	401.9	411.0	425.6	451.1	484.5	535.0	617.7	707.1
67.5°	338.0	339.2	339.9	344.1	352.0	366.0	384.2	411.6	452.9	518.0	596.4
70°	288.2	288.8	289.4	293.0	299.7	307.6	320.4	341.7	376.9	427.4	488.8
72.5°	237.1	239.5	239.5	242.6	247.4	251.7	263.9	281.5	308.2	348.4	400.0
75°	186.0	190.3	191.5	195.2	199.4	200.6	209.7	223.7	240.8	273.6	314.3
77.5°	144.7	144.7	147.1	151.4	151.4	155.0	164.8	170.8	184.2	206.7	237.7
80°	102.1	104.0	104.0	105.2	107.6	110.6	114.9	120.4	131.9	148.3	164.8
82.5°	66.9	67.5	68.1	71.1	69.9	73.0	74.8	81.5	86.9	94.8	105.2
85°	35.3	35.3	35.9	37.7	39.5	40.1	41.3	44.4	48.6	52.3	58.4
87.5°	14.6	14.0	14.0	15.2	15.2	15.8	16.4	17.6	20.1	20.1	22.5
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°	1499.2	1499.2	1499.2	1499.2	1499.2	1499.2	1499.2	1499.2	1499.2	1499.2	1499.2
2.5°	1554.0	1549.1	1540.6	1533.3	1524.2	1517.5	1510.8	1502.3	1493.8	1484.6	1474.9
5°	1616.0	1601.4	1585.0	1568.5	1549.1	1533.3	1516.3	1496.8	1480.4	1462.2	1442.7
7.5°	1687.1	1661.6	1633.0	1600.8	1570.4	1543.0	1515.0	1488.3	1464.0	1436.6	1409.9
10°	1755.8	1711.4	1675.6	1631.8	1588.6	1548.5	1510.2	1474.9	1439.7	1405.6	1372.8
12.5°	1802.6	1752.2	1707.2	1656.7	1606.2	1555.8	1505.3	1456.7	1414.7	1373.4	1338.7
15°	1834.8	1799.6	1740.0	1679.2	1612.9	1547.3	1490.1	1433.6	1383.7	1335.7	1294.4
17.5°	1854.9	1809.3	1750.9	1687.1	1614.1	1545.4	1476.7	1409.3	1352.1	1300.4	1253.6
20°	1860.4	1806.9	1746.1	1679.8	1606.9	1531.5	1454.3	1380.7	1318.7	1259.7	1212.3
22.5°	1854.9	1792.9	1727.8	1663.4	1586.8	1510.2	1429.3	1349.1	1277.9	1217.1	1167.3
25°	1845.8	1771.0	1702.9	1626.9	1555.8	1482.8	1399.5	1314.4	1240.2	1177.0	1121.1
27.5°	1834.2	1748.5	1664.6	1589.8	1512.6	1440.9	1364.3	1277.3	1200.1	1130.8	1078.5
30°	1820.9	1718.7	1625.7	1536.9	1464.0	1392.2	1317.5	1235.4	1157.6	1091.3	1034.8
32.5°	1805.7	1687.1	1577.7	1482.2	1404.4	1338.1	1268.2	1189.8	1113.2	1042.1	992.8
35°	1784.4	1643.9	1526.0	1422.6	1341.8	1270.0	1208.6	1139.9	1063.9	997.7	946.6
37.5°	1759.4	1605.6	1473.7	1361.8	1273.7	1200.1	1143.6	1087.6	1016.5	952.7	903.4
40°	1726.0	1559.4	1418.4	1297.4	1203.2	1130.8	1075.5	1027.5	968.5	904.0	859.7
42.5°	1682.2	1508.4	1355.8	1226.9	1135.7	1058.5	1006.8	963.0	912.6	856.6	812.8
45°	1632.4	1450.0	1285.8	1159.4	1060.3	986.7	936.3	896.7	858.4	808.6	767.9
47.5°	1554.6	1381.3	1222.6	1082.8	985.5	914.4	867.0	829.3	800.7	761.2	721.0
50°	1462.2	1303.5	1147.8	1007.4	908.9	840.2	795.2	762.4	738.1	707.7	677.3
52.5°	1360.6	1215.9	1065.8	934.4	836.0	770.9	723.5	694.3	678.5	654.2	630.5
55°	1242.1	1117.4	977.6	857.8	761.2	694.9	654.2	633.5	615.9	603.7	582.4
57.5°	1122.9	1017.7	893.1	774.5	685.8	626.8	590.3	567.2	554.5	546.0	530.8
60°	992.8	910.1	795.8	693.1	614.0	558.1	525.9	507.0	495.5	490.6	480.3
62.5°	868.8	805.6	701.6	615.9	545.3	496.1	463.9	448.7	441.4	435.9	429.8
65°	746.6	696.7	614.7	534.4	474.8	430.4	404.9	392.7	387.3	381.2	380.6
67.5°	636.5	590.9	525.3	459.6	409.8	372.1	349.6	337.4	331.3	331.9	328.9
70°	528.3	493.1	439.6	386.1	343.5	313.7	292.4	284.5	282.1	281.5	279.1
72.5°	427.4	407.3	360.5	315.5	282.1	259.0	242.0	235.3	232.2	231.0	231.0
75°	338.6	324.0	283.9	249.9	224.3	205.5	193.9	189.1	184.8	187.3	185.4
77.5°	254.1	242.0	214.6	190.3	170.8	155.0	149.6	145.3	142.9	142.3	144.7
80°	178.7	171.4	154.4	135.0	120.4	111.3	107.6	104.0	102.1	100.9	102.1
82.5°	114.9	110.6	98.5	86.9	78.4	73.6	69.9	68.1	65.1	65.7	66.9
85°	62.6	61.4	53.5	49.9	41.9	41.3	38.9	37.1	37.7	36.5	38.3
87.5°	25.5	24.3	22.5	20.7	18.2	16.4	15.2	16.4	14.6	16.4	15.8
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°	1499.2	1499.2	1499.2	1499.2	1499.2	1499.2	1499.2	1499.2	1499.2	1499.2	1499.2
2.5°	1470.1	1463.4	1455.5	1448.2	1437.2	1429.9	1426.3	1427.5	1423.2	1422.0	1421.4
5°	1431.1	1415.9	1401.4	1389.2	1376.4	1361.8	1351.5	1348.5	1347.2	1344.2	1337.5
7.5°	1391.0	1371.6	1352.7	1335.1	1316.9	1299.8	1289.5	1281.0	1276.1	1267.6	1265.8
10°	1348.5	1324.8	1304.7	1279.2	1257.3	1239.6	1226.3	1219.0	1214.7	1206.8	1200.1
12.5°	1307.7	1282.8	1251.8	1228.7	1205.6	1187.4	1172.2	1160.0	1157.0	1146.6	1141.1
15°	1264.0	1233.6	1205.6	1178.8	1157.0	1133.9	1124.7	1113.8	1102.8	1093.7	1091.9
17.5°	1222.0	1185.5	1158.2	1132.0	1105.3	1088.3	1076.1	1068.8	1060.3	1055.4	1046.9
20°	1171.5	1141.8	1111.4	1087.0	1063.9	1049.3	1032.9	1026.2	1020.2	1008.6	1005.0
22.5°	1129.0	1093.1	1067.6	1043.3	1022.6	1001.9	990.4	983.7	974.6	968.5	963.6
25°	1084.6	1054.8	1022.6	998.3	980.6	960.0	952.1	943.6	935.7	930.2	925.3
27.5°	1041.4	1008.6	982.5	958.2	939.9	925.3	914.4	905.3	899.8	895.5	892.5
30°	996.5	966.1	941.7	919.2	898.6	886.4	876.1	872.4	866.3	863.3	858.4
32.5°	955.7	924.7	901.6	882.2	863.9	851.8	845.7	840.2	834.1	828.7	828.0
35°	909.5	882.8	861.5	840.2	826.8	817.1	810.4	804.9	800.1	795.8	793.4
37.5°	868.8	843.2	819.5	804.3	789.7	781.2	773.9	772.1	767.3	767.9	764.2
40°	825.0	801.9	781.8	766.6	756.9	747.8	742.9	736.9	733.8	734.4	731.4
42.5°	782.5	761.2	742.9	728.9	718.6	711.9	707.7	702.8	699.2	696.7	696.1
45°	739.3	720.4	705.2	691.3	682.7	676.7	671.2	665.1	662.1	660.9	660.2
47.5°	696.7	679.7	663.3	653.6	645.7	640.2	634.7	629.9	627.4	625.6	622.6
50°	653.0	635.9	624.4	612.2	605.5	598.2	592.2	589.7	586.7	586.1	589.1
52.5°	607.4	594.0	583.6	573.9	566.0	558.1	552.0	549.0	550.8	550.8	554.5
55°	564.2	550.2	540.5	532.6	524.1	516.8	510.7	510.7	510.7	514.3	519.2
57.5°	516.2	504.0	496.7	487.6	479.7	474.8	470.6	470.0	472.4	478.5	483.9
60°	467.5	459.0	451.1	443.8	435.9	432.3	431.7	430.4	434.1	440.2	451.7
62.5°	419.5	414.0	404.3	400.6	394.0	389.7	389.7	390.9	396.4	406.1	416.5
65°	373.3	365.4	358.1	354.4	350.2	346.5	346.5	351.4	359.3	368.4	381.2
67.5°	325.9	319.2	314.3	310.7	305.8	304.0	305.8	311.3	321.0	330.1	343.5
70°	274.8	273.6	269.3	264.5	262.0	262.0	263.9	269.9	277.2	291.2	302.8
72.5°	228.0	228.0	225.6	222.5	220.7	222.5	223.7	229.8	238.9	251.1	263.9
75°	185.4	183.6	181.8	180.6	180.0	181.2	183.0	187.9	198.8	210.4	220.7
77.5°	143.5	142.3	140.4	141.7	141.7	142.3	147.7	153.2	159.3	168.4	179.3
80°	103.4	104.0	102.1	101.5	104.6	105.8	110.0	114.3	118.6	128.9	136.8
82.5°	68.1	69.3	68.7	69.9	71.1	71.1	76.0	80.3	83.9	91.2	97.3
85°	38.9	39.5	39.5	41.3	42.6	41.9	46.2	48.6	50.5	55.9	59.6
87.5°	17.0	17.6	18.2	18.2	18.2	20.7	21.3	22.5	23.1	24.3	26.1
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: P243678

CATALOG NUMBER: S125DR-H1090D840-X4F0-XX-UDD-A-W

**CANDELA DISTRIBUTION (continued):**

	165°	170°	175°	180°
0°	1499.2	1499.2	1499.2	1499.2
2.5°	1415.9	1415.3	1418.4	1420.2
5°	1333.3	1331.4	1329.0	1330.2
7.5°	1259.7	1254.8	1253.6	1253.6
10°	1194.7	1189.8	1188.6	1186.7
12.5°	1139.3	1132.0	1129.0	1126.0
15°	1087.0	1085.8	1079.1	1072.4
17.5°	1039.0	1040.8	1034.1	1031.1
20°	998.9	993.4	991.0	989.8
22.5°	958.2	953.9	953.9	949.6
25°	921.7	918.0	918.6	914.4
27.5°	887.6	887.0	886.4	885.2
30°	856.0	853.6	851.2	852.4
32.5°	825.6	822.0	820.1	819.5
35°	794.0	792.8	790.4	789.1
37.5°	763.0	763.6	760.6	760.0
40°	729.6	728.9	728.3	727.1
42.5°	694.3	692.5	693.7	693.1
45°	659.0	657.2	658.4	656.6
47.5°	624.4	625.6	625.6	626.2
50°	590.3	592.8	592.8	594.6
52.5°	558.7	563.6	563.6	563.0
55°	524.7	530.1	532.0	532.6
57.5°	492.5	497.9	503.4	504.6
60°	457.8	467.5	473.0	474.2
62.5°	426.8	435.9	443.2	443.8
65°	392.1	403.1	409.8	412.2
67.5°	356.9	365.4	374.5	378.2
70°	316.7	327.1	333.2	335.6
72.5°	274.8	286.4	294.3	295.5
75°	234.7	243.2	249.3	250.5
77.5°	189.1	197.6	203.1	204.3
80°	143.5	150.8	154.4	156.9
82.5°	101.5	106.4	108.2	110.6
85°	62.6	66.3	66.9	66.9
87.5°	27.4	28.0	28.0	29.2
90°	0.0	0.0	0.0	0.0

(END OF REPORT)