

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: P243668

Luminaire Tested: **S125DR-H1090D830-X4F0-XX-UDD-A-W**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P243668
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-H1090D830-X4F0-XX-UDD-A-W
Description: DEFINE 5 DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER.
HIGH PERFORMANCE LIGHT ENGINE
Light Source: (184) 3000K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3988.1 lumens
Efficiency: N/A
Efficacy: 126.6 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

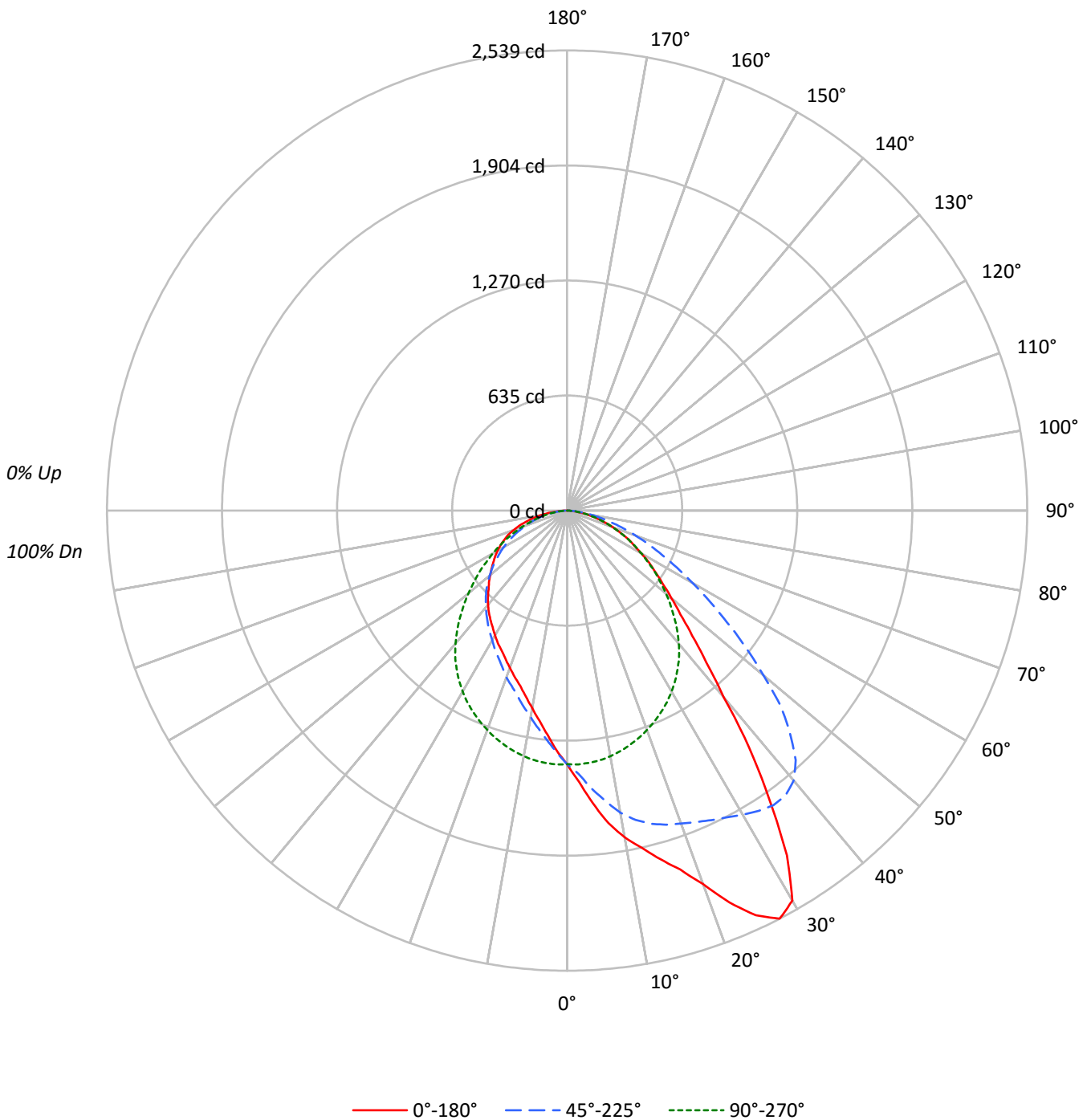
Input Watts (W): 31.5
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	9945	9945	9945
5°	11554	9967	8857
10°	13219	9935	7994
15°	14655	9845	7365
20°	16592	9746	6987
25°	19321	9621	6692
30°	20397	9463	6529
35°	16867	9231	6390
40°	12477	8898	6297
45°	9810	8413	6159
50°	8307	7868	6137
55°	7396	7327	6160
60°	6711	6726	6291
65°	6222	6165	6470
70°	5590	5519	6508
75°	4767	4847	6420
80°	3901	3970	5992
85°	2683	2822	5089



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	135.2	3.4
10°-20°	403.9	10.1
20°-30°	656.7	16.5
30°-40°	798.9	20.0
40°-50°	731.1	18.3
50°-60°	585.1	14.7
60°-70°	407.5	10.2
70°-80°	216.6	5.4
80°-90°	53.2	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°	1195.8	30.0
0°-40°	1994.7	50.0
0°-60°	3310.8	83.0
0°-90°	3988.1	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3988.1	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1399	1399	1399	1399	1399	
5°	1620	1538	1397	1271	1242	161
15°	1992	1789	1338	1058	1001	571
25°	2464	1884	1227	896	853	1125
35°	1944	1984	1064	763	736	1205
45°	976	1740	837	632	613	770
55°	597	1080	591	482	497	539
65°	370	576	367	323	385	364
75°	174	255	176	169	234	188
85°	33	49	35	39	62	43
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°	1399.3	1399.3	1399.3	1399.3	1399.3	1399.3	1399.3	1399.3	1399.3	1399.3	1399.3
2.5°	1498.0	1491.8	1490.1	1490.7	1487.2	1484.4	1477.6	1468.5	1462.3	1454.3	1452.1
5°	1619.5	1604.1	1607.0	1602.4	1595.1	1585.4	1576.9	1563.3	1550.2	1537.7	1521.3
7.5°	1738.6	1735.8	1727.8	1726.7	1714.8	1698.3	1681.3	1662.6	1634.8	1615.5	1593.4
10°	1831.7	1837.4	1826.0	1826.6	1805.6	1789.1	1774.4	1750.0	1718.8	1692.7	1660.3
12.5°	1906.6	1908.9	1907.1	1899.8	1886.2	1858.3	1844.2	1818.6	1784.6	1748.8	1723.9
15°	1991.7	1985.5	1975.8	1966.7	1946.9	1927.0	1897.5	1867.4	1824.3	1788.6	1752.2
17.5°	2076.8	2075.7	2063.8	2044.5	2019.5	1993.4	1949.1	1910.6	1864.6	1817.5	1772.1
20°	2193.7	2187.5	2169.9	2147.7	2101.8	2064.9	2009.9	1957.1	1896.9	1837.9	1785.1
22.5°	2340.1	2319.7	2302.1	2268.0	2215.3	2151.1	2089.3	2012.7	1928.7	1859.5	1793.7
25°	2463.8	2454.7	2436.0	2398.0	2337.8	2260.7	2168.7	2081.9	1976.4	1884.5	1798.8
27.5°	2538.7	2534.7	2523.4	2487.6	2437.7	2361.1	2262.9	2152.3	2032.6	1908.3	1805.6
30°	2485.4	2485.9	2492.2	2488.2	2466.1	2416.7	2329.3	2218.1	2079.6	1936.7	1807.3
32.5°	2256.1	2271.4	2320.2	2343.5	2374.7	2384.9	2345.8	2253.3	2119.4	1965.0	1813.0
35°	1944.0	1981.5	2014.4	2082.5	2163.6	2230.0	2268.6	2238.5	2135.8	1984.3	1815.8
37.5°	1650.1	1647.3	1698.3	1772.1	1858.3	1971.3	2080.8	2140.9	2107.5	1980.3	1810.7
40°	1344.8	1370.9	1402.7	1468.0	1569.0	1708.0	1838.5	1967.3	2013.8	1945.2	1790.8
42.5°	1136.0	1147.9	1179.7	1230.8	1303.4	1445.3	1574.1	1739.8	1858.9	1866.9	1747.1
45°	976.0	989.0	998.1	1048.6	1116.1	1211.5	1343.7	1510.5	1670.5	1739.8	1676.2
47.5°	847.7	855.1	875.0	905.6	949.9	1034.4	1140.0	1291.5	1465.7	1600.2	1578.6
50°	751.3	757.0	772.8	789.9	826.2	888.6	973.7	1098.0	1265.4	1412.3	1460.6
52.5°	666.2	673.5	681.5	697.9	731.4	773.4	842.6	939.7	1095.1	1245.5	1322.1
55°	596.9	599.8	608.3	620.8	646.3	678.1	733.1	821.1	930.0	1079.8	1185.4
57.5°	536.8	534.0	543.0	551.5	568.6	595.2	635.0	700.2	804.1	931.7	1041.8
60°	472.1	474.9	481.8	488.6	500.5	523.7	555.0	607.2	683.2	797.8	910.2
62.5°	416.5	418.8	420.5	430.1	440.9	457.4	482.9	525.4	588.4	683.2	783.6
65°	370.0	366.0	368.3	375.1	383.6	397.2	421.0	452.2	499.3	576.5	659.9
67.5°	315.5	316.6	317.2	321.2	328.5	341.6	358.6	384.2	422.7	483.5	556.7
70°	269.0	269.5	270.1	273.5	279.7	287.1	299.0	318.9	351.8	398.9	456.2
72.5°	221.3	223.6	223.6	226.4	230.9	234.9	246.3	262.7	287.7	325.1	373.4
75°	173.6	177.6	178.7	182.1	186.1	187.3	195.8	208.8	224.7	255.3	293.4
77.5°	135.0	135.0	137.3	141.3	141.3	144.7	153.8	159.4	171.9	192.9	221.9
80°	95.3	97.0	97.0	98.2	100.4	103.3	107.2	112.4	123.1	138.5	153.8
82.5°	62.4	63.0	63.6	66.4	65.3	68.1	69.8	76.0	81.1	88.5	98.2
85°	32.9	32.9	33.5	35.2	36.9	37.5	38.6	41.4	45.4	48.8	54.5
87.5°	13.6	13.1	13.1	14.2	14.2	14.8	15.3	16.5	18.7	18.7	21.0
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°	1399.3	1399.3	1399.3	1399.3	1399.3	1399.3	1399.3	1399.3	1399.3	1399.3	1399.3
2.5°	1450.4	1445.8	1437.9	1431.1	1422.6	1416.3	1410.1	1402.1	1394.2	1385.7	1376.6
5°	1508.2	1494.6	1479.3	1464.0	1445.8	1431.1	1415.2	1397.0	1381.7	1364.7	1346.5
7.5°	1574.6	1550.8	1524.1	1494.1	1465.7	1440.1	1414.0	1389.1	1366.4	1340.8	1315.9
10°	1638.8	1597.3	1563.8	1523.0	1482.7	1445.3	1409.5	1376.6	1343.7	1311.9	1281.3
12.5°	1682.4	1635.3	1593.4	1546.3	1499.2	1452.1	1405.0	1359.6	1320.4	1281.8	1249.5
15°	1712.5	1679.6	1624.0	1567.3	1505.4	1444.1	1390.8	1338.0	1291.5	1246.7	1208.1
17.5°	1731.2	1688.7	1634.2	1574.6	1506.5	1442.4	1378.3	1315.3	1262.0	1213.7	1170.1
20°	1736.3	1686.4	1629.7	1567.8	1499.7	1429.4	1357.3	1288.6	1230.8	1175.7	1131.5
22.5°	1731.2	1673.4	1612.6	1552.5	1481.0	1409.5	1334.0	1259.1	1192.7	1136.0	1089.5
25°	1722.7	1652.9	1589.4	1518.5	1452.1	1384.0	1306.2	1226.8	1157.6	1098.6	1046.3
27.5°	1712.0	1631.9	1553.6	1483.8	1411.8	1344.8	1273.3	1192.2	1120.1	1055.4	1006.6
30°	1699.5	1604.1	1517.3	1434.5	1366.4	1299.4	1229.6	1153.0	1080.4	1018.5	965.8
32.5°	1685.3	1574.6	1472.5	1383.4	1310.8	1248.9	1183.7	1110.5	1039.0	972.6	926.6
35°	1665.4	1534.3	1424.3	1327.8	1252.3	1185.4	1128.1	1063.9	993.0	931.2	883.5
37.5°	1642.2	1498.6	1375.5	1271.1	1188.8	1120.1	1067.3	1015.1	948.8	889.2	843.2
40°	1610.9	1455.5	1323.8	1210.9	1123.0	1055.4	1003.8	959.0	903.9	843.8	802.4
42.5°	1570.1	1407.8	1265.4	1145.1	1060.0	987.9	939.7	898.8	851.7	799.5	758.7
45°	1523.6	1353.3	1200.1	1082.1	989.6	920.9	873.8	837.0	801.2	754.7	716.7
47.5°	1450.9	1289.2	1141.1	1010.6	919.8	853.4	809.2	774.0	747.3	710.4	673.0
50°	1364.7	1216.6	1071.3	940.2	848.3	784.2	742.2	711.6	688.9	660.5	632.1
52.5°	1269.9	1134.9	994.7	872.1	780.2	719.5	675.2	648.0	633.3	610.6	588.4
55°	1159.3	1042.9	912.4	800.7	710.4	648.6	610.6	591.3	574.8	563.5	543.6
57.5°	1048.1	949.9	833.6	722.9	640.1	585.0	551.0	529.4	517.5	509.6	495.4
60°	926.6	849.4	742.8	646.9	573.1	520.9	490.8	473.2	462.5	457.9	448.3
62.5°	810.9	751.9	654.8	574.8	509.0	463.0	433.0	418.8	412.0	406.9	401.2
65°	696.8	650.3	573.7	498.8	443.2	401.7	377.9	366.6	361.5	355.8	355.2
67.5°	594.1	551.5	490.3	429.0	382.5	347.3	326.3	314.9	309.3	309.8	307.0
70°	493.1	460.2	410.3	360.3	320.6	292.8	272.9	265.6	263.3	262.7	260.5
72.5°	398.9	380.2	336.5	294.5	263.3	241.7	225.8	219.6	216.8	215.6	215.6
75°	316.1	302.4	265.0	233.2	209.4	191.8	181.0	176.5	172.5	174.8	173.1
77.5°	237.2	225.8	200.3	177.6	159.4	144.7	139.6	135.6	133.3	132.8	135.0
80°	166.8	160.0	144.1	126.0	112.4	103.8	100.4	97.0	95.3	94.2	95.3
82.5°	107.2	103.3	91.9	81.1	73.2	68.7	65.3	63.6	60.7	61.3	62.4
85°	58.4	57.3	49.9	46.5	39.2	38.6	36.3	34.6	35.2	34.0	35.7
87.5°	23.8	22.7	21.0	19.3	17.0	15.3	14.2	15.3	13.6	15.3	14.8
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°	1399.3	1399.3	1399.3	1399.3	1399.3	1399.3	1399.3	1399.3	1399.3	1399.3	1399.3
2.5°	1372.1	1365.8	1358.4	1351.6	1341.4	1334.6	1331.2	1332.3	1328.4	1327.2	1326.7
5°	1335.7	1321.6	1307.9	1296.6	1284.7	1271.1	1261.4	1258.6	1257.4	1254.6	1248.4
7.5°	1298.3	1280.1	1262.5	1246.1	1229.1	1213.2	1203.5	1195.6	1191.0	1183.1	1181.4
10°	1258.6	1236.4	1217.7	1193.9	1173.5	1157.0	1144.5	1137.7	1133.7	1126.4	1120.1
12.5°	1220.6	1197.3	1168.3	1146.8	1125.2	1108.2	1094.0	1082.7	1079.8	1070.2	1065.1
15°	1179.7	1151.3	1125.2	1100.3	1079.8	1058.3	1049.8	1039.5	1029.3	1020.8	1019.1
17.5°	1140.5	1106.5	1081.0	1056.6	1031.6	1015.7	1004.4	997.6	989.6	985.1	977.1
20°	1093.4	1065.6	1037.3	1014.6	993.0	979.4	964.1	957.8	952.2	941.4	938.0
22.5°	1053.7	1020.2	996.4	973.7	954.4	935.1	924.4	918.1	909.6	903.9	899.4
25°	1012.3	984.5	954.4	931.7	915.3	896.0	888.6	880.7	873.3	868.2	863.6
27.5°	972.0	941.4	917.0	894.3	877.3	863.6	853.4	844.9	839.8	835.8	833.0
30°	930.0	901.7	879.0	858.0	838.7	827.3	817.7	814.3	808.6	805.8	801.2
32.5°	892.0	863.1	841.5	823.3	806.3	795.0	789.3	784.2	778.5	773.4	772.8
35°	848.9	823.9	804.1	784.2	771.7	762.6	756.4	751.3	746.7	742.8	740.5
37.5°	810.9	787.0	764.9	750.7	737.1	729.2	722.3	720.6	716.1	716.7	713.3
40°	770.0	748.4	729.7	715.5	706.5	697.9	693.4	687.7	684.9	685.5	682.6
42.5°	730.3	710.4	693.4	680.4	670.7	664.5	660.5	656.0	652.5	650.3	649.7
45°	690.0	672.4	658.2	645.2	637.2	631.6	626.4	620.8	617.9	616.8	616.2
47.5°	650.3	634.4	619.1	610.0	602.6	597.5	592.4	587.9	585.6	583.9	581.1
50°	609.4	593.5	582.8	571.4	565.2	558.4	552.7	550.4	547.6	547.0	549.8
52.5°	566.9	554.4	544.7	535.7	528.3	520.9	515.2	512.4	514.1	514.1	517.5
55°	526.6	513.5	504.4	497.1	489.1	482.3	476.6	476.6	476.6	480.0	484.6
57.5°	481.8	470.4	463.6	455.1	447.7	443.2	439.2	438.6	440.9	446.6	451.7
60°	436.4	428.4	421.0	414.2	406.9	403.4	402.9	401.7	405.1	410.8	421.6
62.5°	391.5	386.4	377.3	373.9	367.7	363.7	363.7	364.9	370.0	379.0	388.7
65°	348.4	341.0	334.2	330.8	326.8	323.4	323.4	328.0	335.4	343.9	355.8
67.5°	304.1	297.9	293.4	290.0	285.4	283.7	285.4	290.5	299.6	308.1	320.6
70°	256.5	255.3	251.4	246.8	244.6	244.6	246.3	251.9	258.8	271.8	282.6
72.5°	212.8	212.8	210.5	207.7	206.0	207.7	208.8	214.5	223.0	234.4	246.3
75°	173.1	171.4	169.7	168.5	168.0	169.1	170.8	175.3	185.6	196.3	206.0
77.5°	133.9	132.8	131.1	132.2	132.2	132.8	137.9	143.0	148.7	157.2	167.4
80°	96.5	97.0	95.3	94.8	97.6	98.7	102.7	106.7	110.6	120.3	127.7
82.5°	63.6	64.7	64.1	65.3	66.4	66.4	70.9	74.9	78.3	85.1	90.8
85°	36.3	36.9	36.9	38.6	39.7	39.2	43.1	45.4	47.1	52.2	55.6
87.5°	15.9	16.5	17.0	17.0	17.0	19.3	19.9	21.0	21.6	22.7	24.4
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: P243668

CATALOG NUMBER: S125DR-H1090D830-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	1399.3	1399.3	1399.3	1399.3
2.5°	1321.6	1321.0	1323.8	1325.5
5°	1244.4	1242.7	1240.4	1241.5
7.5°	1175.7	1171.2	1170.1	1170.1
10°	1115.0	1110.5	1109.3	1107.6
12.5°	1063.4	1056.6	1053.7	1050.9
15°	1014.6	1013.4	1007.2	1001.0
17.5°	969.7	971.4	965.2	962.4
20°	932.3	927.2	924.9	923.8
22.5°	894.3	890.3	890.3	886.3
25°	860.2	856.8	857.4	853.4
27.5°	828.5	827.9	827.3	826.2
30°	798.9	796.7	794.4	795.5
32.5°	770.6	767.2	765.5	764.9
35°	741.1	739.9	737.7	736.5
37.5°	712.1	712.7	709.9	709.3
40°	680.9	680.4	679.8	678.7
42.5°	648.0	646.3	647.4	646.9
45°	615.1	613.4	614.5	612.8
47.5°	582.8	583.9	583.9	584.5
50°	551.0	553.2	553.2	555.0
52.5°	521.5	526.0	526.0	525.4
55°	489.7	494.8	496.5	497.1
57.5°	459.6	464.7	469.8	471.0
60°	427.3	436.4	441.5	442.6
62.5°	398.3	406.9	413.7	414.2
65°	366.0	376.2	382.5	384.7
67.5°	333.1	341.0	349.5	352.9
70°	295.6	305.3	311.0	313.2
72.5°	256.5	267.3	274.6	275.8
75°	219.0	227.0	232.6	233.8
77.5°	176.5	184.4	189.5	190.7
80°	133.9	140.7	144.1	146.4
82.5°	94.8	99.3	101.0	103.3
85°	58.4	61.9	62.4	62.4
87.5°	25.5	26.1	26.1	27.2
90°	0.0	0.0	0.0	0.0

(END OF REPORT)