

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: P242298

Luminaire Tested: **S122DR-S1005D835-X4F0-XX-UDD-A-W**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P242298
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-19)
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S122DR-S1005D835-X4F0-XX-UDD-A-W
Description: DEFINE 2 DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER
STANDARD LIGHT ENGINE
Light Source: (92) 3500K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4254.2 lumens
Efficiency: N/A
Efficacy: 103.5 lumens/watt
Spacing Criteria (0/90/45): 1.09 / 1.16 / 1.23
Luminous Opening: Rectangular (W 3.88' x L: 0.15' x H: 0')
CIE Type: Direct

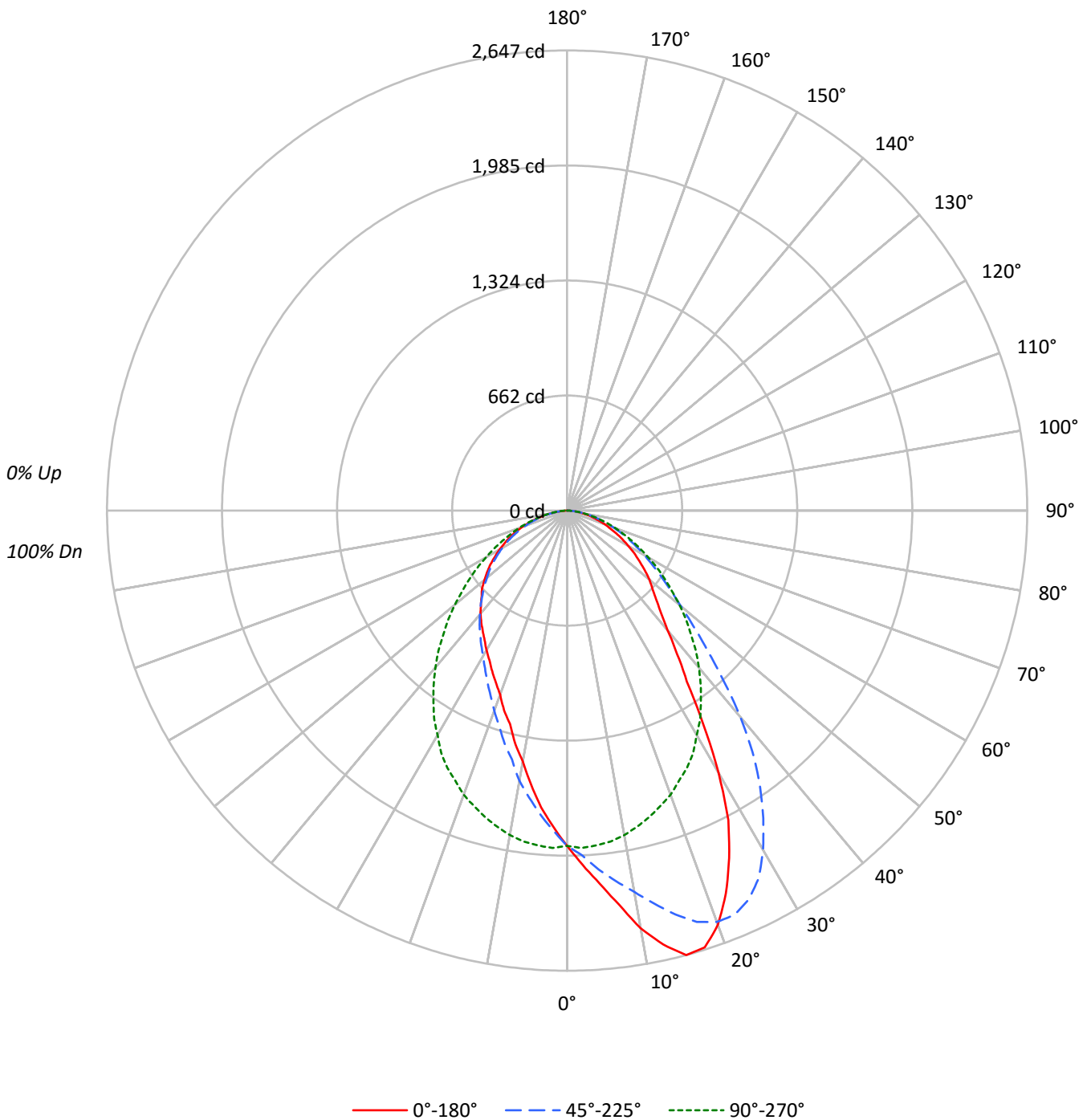
Input Watts (W): 41.1
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	110	106	102	98	107	103	100	97	99	96	94	95	93	91	92	90	88	86
2	101	94	87	82	98	92	86	81	88	83	79	85	81	78	82	79	76	74
3	93	83	76	70	90	82	75	69	79	73	68	76	71	67	74	69	66	64
4	86	75	66	60	83	73	66	60	71	64	59	69	63	58	66	62	58	55
5	79	67	59	53	77	66	58	52	64	57	52	62	56	51	60	55	51	49
6	74	61	53	47	72	60	52	46	58	51	46	57	51	46	55	50	45	43
7	69	56	48	42	67	55	47	42	54	46	41	52	46	41	51	45	41	39
8	64	51	43	38	63	51	43	38	49	42	37	48	42	37	47	41	37	35
9	60	47	39	34	59	47	39	34	46	39	34	45	38	34	44	38	34	32
10	56	44	36	31	55	43	36	31	42	36	31	41	35	31	41	35	31	29

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	36732	36732	36732
5°	41180	36971	32763
10°	47190	36668	28353
15°	52204	35996	25050
20°	51407	35274	22834
25°	46355	34314	21433
30°	38305	32780	20409
35°	27918	31175	19681
40°	22299	29281	19275
45°	19484	27091	18727
50°	18316	24972	18361
55°	16883	22814	17870
60°	15471	20526	17109
65°	14098	18470	16365
70°	12792	16468	15271
75°	11348	14233	13527
80°	9752	11792	10892
85°	8742	8742	6469



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	183.7	4.3
10°-20°	534.6	12.6
20°-30°	775.9	18.2
30°-40°	817.9	19.2
40°-50°	723.7	17.0
50°-60°	577.7	13.6
60°-70°	392.4	9.2
70°-80°	200.8	4.7
80°-90°	47.5	1.1
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°	1494.2	35.1
0°-40°	2312.1	54.3
0°-60°	3613.5	84.9
0°-90°	4254.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4254.2	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1928	1928	1928	1928	1928	
5°	2154	2073	1934	1756	1714	214
15°	2647	2405	1825	1388	1270	734
25°	2206	2469	1633	1086	1020	1000
35°	1201	1934	1341	872	846	777
45°	723	1145	1006	689	695	567
55°	508	659	687	518	538	456
65°	313	391	410	342	363	311
75°	154	189	193	173	184	164
85°	40	44	40	33	30	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°	1928.4	1928.4	1928.4	1928.4	1928.4	1928.4	1928.4	1928.4	1928.4	1928.4	1928.4
2.5°	2039.6	2040.3	2041.8	2029.9	2028.5	2028.5	2018.1	2009.2	1998.8	1984.7	1986.2
5°	2153.7	2161.9	2164.8	2155.9	2142.6	2141.1	2128.5	2107.8	2088.5	2072.9	2061.8
7.5°	2285.6	2288.6	2282.7	2272.3	2263.4	2246.3	2225.6	2205.6	2175.9	2149.3	2130.0
10°	2439.8	2444.2	2431.6	2414.6	2400.5	2379.7	2345.7	2310.8	2268.6	2227.8	2195.2
12.5°	2556.9	2569.5	2552.4	2553.9	2527.2	2496.8	2454.6	2441.3	2377.5	2316.7	2281.2
15°	2647.3	2646.5	2648.0	2633.9	2616.2	2611.7	2568.7	2522.0	2438.3	2404.9	2347.1
17.5°	2633.9	2644.3	2650.3	2645.8	2642.8	2636.2	2617.6	2582.8	2536.9	2480.5	2411.6
20°	2536.1	2550.9	2553.2	2570.2	2579.8	2592.4	2597.6	2589.5	2563.5	2518.3	2460.5
22.5°	2384.9	2386.4	2394.6	2423.5	2447.2	2483.5	2502.8	2539.1	2533.2	2516.8	2470.9
25°	2205.6	2198.2	2224.1	2237.4	2285.6	2336.0	2372.3	2412.4	2447.9	2469.4	2455.3
27.5°	2007.0	1991.4	2030.7	2065.5	2099.6	2148.5	2203.4	2268.6	2318.2	2385.7	2402.0
30°	1741.6	1748.3	1785.4	1823.2	1882.4	1959.5	2023.3	2096.6	2175.9	2253.8	2307.9
32.5°	1455.6	1485.9	1506.0	1569.0	1619.4	1707.5	1808.3	1904.7	2008.4	2099.6	2190.8
35°	1200.6	1230.3	1262.9	1305.1	1378.5	1463.7	1554.9	1678.6	1813.5	1934.3	2033.6
37.5°	1039.1	1033.9	1053.9	1085.0	1148.0	1221.4	1329.6	1455.6	1617.1	1751.3	1884.7
40°	896.8	893.8	907.1	935.3	980.5	1030.9	1122.8	1230.3	1377.7	1551.2	1717.9
42.5°	798.9	801.9	807.8	825.6	853.0	892.3	955.3	1042.8	1174.7	1335.5	1517.8
45°	723.3	728.5	736.7	746.3	764.1	798.2	836.7	901.9	1008.7	1145.0	1321.4
47.5°	664.0	665.5	674.4	683.3	693.7	714.4	748.5	790.0	871.6	987.9	1145.8
50°	618.1	612.9	618.8	625.5	636.6	650.0	670.7	709.3	759.6	849.3	976.1
52.5°	561.8	563.3	568.4	569.9	579.6	592.9	611.4	635.1	679.6	744.8	843.4
55°	508.4	512.1	515.1	519.5	528.4	538.1	552.9	570.7	606.2	658.9	735.9
57.5°	458.0	459.5	461.7	471.4	476.5	485.4	500.3	516.6	540.3	581.0	641.8
60°	406.1	406.1	412.1	415.8	423.2	432.1	443.2	458.8	479.5	511.4	558.1
62.5°	358.7	358.0	359.4	366.1	371.3	379.5	390.6	403.2	422.4	449.9	486.2
65°	312.8	311.3	315.7	317.2	323.1	331.3	340.2	354.3	369.8	390.6	424.7
67.5°	266.8	269.0	272.0	275.0	277.9	287.6	293.5	303.9	317.2	335.0	358.7
70°	229.7	229.7	229.7	232.0	236.4	240.9	246.8	254.9	267.5	282.4	303.1
72.5°	188.2	191.2	194.2	192.0	197.9	200.1	207.5	211.2	223.1	231.2	249.0
75°	154.2	154.2	154.2	157.9	160.1	162.3	166.8	171.2	177.1	189.0	198.6
77.5°	121.5	120.8	121.5	122.3	125.2	128.2	129.7	133.4	139.3	145.3	154.2
80°	88.9	90.4	91.2	92.6	92.6	94.1	94.9	100.1	103.8	107.5	112.7
82.5°	63.7	63.7	63.7	63.7	64.5	65.2	67.4	68.2	68.9	71.9	75.6
85°	40.0	39.3	39.3	40.8	40.0	40.0	41.5	43.0	43.0	43.7	45.9
87.5°	19.3	19.3	20.0	19.3	19.3	20.0	20.0	19.3	20.0	20.8	21.5
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°	1928.4	1928.4	1928.4	1928.4	1928.4	1928.4	1928.4	1928.4	1928.4	1928.4	1928.4
2.5°	1991.4	1985.5	1981.8	1968.4	1956.6	1944.7	1941.0	1942.5	1926.2	1910.6	1903.9
5°	2055.9	2041.0	2027.0	2007.0	1983.2	1957.3	1944.0	1933.6	1907.6	1879.5	1863.2
7.5°	2114.4	2095.2	2070.0	2034.4	2001.8	1963.2	1939.5	1919.5	1883.2	1845.4	1822.4
10°	2167.0	2138.1	2103.3	2057.4	2015.1	1965.5	1930.6	1895.8	1851.3	1803.9	1774.2
12.5°	2212.2	2170.7	2136.7	2074.4	2022.5	1957.3	1914.3	1861.7	1814.3	1755.7	1726.8
15°	2289.3	2217.4	2152.2	2085.5	2024.0	1937.3	1891.3	1825.4	1763.9	1694.2	1660.9
17.5°	2346.4	2268.6	2167.8	2087.0	2018.8	1926.2	1860.2	1781.7	1712.0	1634.9	1590.4
20°	2393.8	2301.2	2190.8	2090.0	2004.0	1894.3	1820.9	1740.2	1654.9	1565.2	1516.3
22.5°	2422.0	2323.4	2214.5	2078.8	1974.3	1868.4	1771.3	1680.9	1594.2	1495.6	1443.7
25°	2423.5	2334.5	2218.9	2073.7	1950.6	1829.8	1718.7	1632.7	1528.2	1437.8	1362.9
27.5°	2399.0	2328.6	2216.7	2063.3	1923.2	1784.6	1663.8	1569.7	1459.3	1361.4	1286.6
30°	2344.9	2307.9	2199.6	2045.5	1889.1	1737.2	1600.8	1490.4	1380.7	1281.4	1204.3
32.5°	2261.2	2260.4	2168.5	2020.3	1852.8	1677.2	1534.9	1423.0	1298.4	1201.4	1128.7
35°	2146.3	2181.9	2121.8	1980.3	1805.4	1620.8	1468.2	1340.7	1214.7	1121.3	1052.4
37.5°	2000.3	2082.6	2058.8	1926.9	1744.6	1560.8	1394.8	1261.4	1140.6	1044.2	976.8
40°	1848.4	1961.0	1977.3	1863.9	1679.4	1488.9	1310.3	1177.6	1060.5	974.6	906.4
42.5°	1685.3	1821.7	1873.6	1788.3	1608.2	1413.3	1234.7	1096.1	980.5	897.5	838.9
45°	1499.3	1673.5	1754.2	1702.4	1527.5	1328.8	1145.0	1005.7	900.5	821.9	775.2
47.5°	1331.1	1520.0	1623.1	1598.6	1440.7	1243.6	1062.0	926.4	821.9	758.2	714.4
50°	1150.2	1345.9	1477.1	1483.0	1345.9	1151.0	968.6	842.7	748.5	690.0	655.9
52.5°	993.1	1177.6	1323.6	1361.4	1239.9	1054.6	884.9	759.6	679.6	627.0	597.3
55°	860.4	1018.3	1176.9	1234.7	1134.7	956.8	797.4	687.0	609.2	572.1	545.5
57.5°	734.5	873.0	1023.5	1084.3	1020.5	864.1	710.0	612.9	546.9	513.6	492.8
60°	638.8	742.6	873.0	949.4	896.0	760.4	630.0	538.8	486.9	458.0	438.7
62.5°	549.9	638.8	744.1	812.3	789.3	663.3	549.9	472.1	429.1	402.4	389.8
65°	468.4	541.0	626.2	690.7	671.5	574.4	478.8	409.8	374.3	352.8	341.7
67.5°	398.7	454.3	515.1	574.4	558.1	486.2	405.4	349.8	322.4	303.1	296.4
70°	333.5	373.5	426.1	471.4	458.8	402.4	341.7	295.7	272.7	257.2	250.5
72.5°	271.3	302.4	339.4	374.3	366.9	322.4	274.2	242.3	226.0	212.0	206.8
75°	214.2	239.4	263.8	288.3	286.1	249.8	220.1	193.4	179.4	168.2	166.0
77.5°	167.5	183.1	200.8	216.4	212.7	189.0	164.5	148.2	137.1	129.7	129.0
80°	120.8	129.0	140.8	151.2	146.0	137.1	118.6	107.5	100.1	92.6	89.7
82.5°	79.3	87.5	93.4	97.8	94.1	86.0	76.3	69.7	66.0	61.5	60.8
85°	45.9	50.4	53.4	54.8	53.4	48.2	43.0	40.0	36.3	34.1	33.4
87.5°	22.2	22.2	22.2	23.7	21.5	21.5	18.5	16.3	15.6	14.8	13.3
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):

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	1928.4	1928.4	1928.4	1928.4	1928.4	1928.4	1928.4	1928.4	1928.4	1928.4	1928.4
2.5°	1896.5	1892.1	1876.5	1868.4	1855.0	1842.4	1834.3	1838.0	1840.9	1839.5	1837.2
5°	1848.4	1834.3	1812.8	1794.3	1780.9	1756.5	1746.1	1740.9	1736.4	1731.3	1726.1
7.5°	1795.0	1775.0	1744.6	1720.9	1697.2	1666.0	1650.5	1641.6	1632.0	1620.8	1610.5
10°	1737.2	1706.1	1673.5	1636.4	1606.8	1579.3	1554.9	1538.6	1523.7	1509.7	1499.3
12.5°	1676.4	1639.4	1597.1	1543.0	1509.7	1467.4	1468.9	1437.0	1411.8	1404.4	1391.8
15°	1611.2	1560.8	1509.7	1449.6	1423.7	1388.1	1365.9	1343.7	1323.6	1309.6	1305.9
17.5°	1540.1	1472.6	1423.0	1378.5	1336.2	1299.9	1280.7	1262.9	1245.8	1225.1	1224.3
20°	1456.3	1400.0	1344.4	1306.6	1262.9	1225.8	1200.6	1182.8	1168.7	1157.6	1148.0
22.5°	1377.0	1314.0	1264.4	1222.1	1179.1	1151.0	1132.4	1115.4	1104.3	1091.7	1082.8
25°	1291.0	1242.9	1187.3	1140.6	1105.0	1085.7	1069.4	1054.6	1047.2	1039.1	1028.7
27.5°	1217.7	1164.3	1109.5	1073.1	1040.5	1023.5	1010.9	999.8	993.1	987.9	981.2
30°	1139.1	1085.0	1044.2	1008.7	982.7	965.7	958.3	952.3	944.2	941.2	938.3
32.5°	1063.5	1016.1	982.7	953.1	928.6	919.0	912.3	907.1	901.2	898.2	891.6
35°	993.1	952.3	918.3	901.2	881.2	871.6	866.4	859.0	853.0	850.1	849.3
37.5°	925.7	888.6	865.6	842.7	833.0	827.8	820.4	815.2	813.0	812.3	811.5
40°	860.4	831.5	811.5	793.7	790.0	781.1	775.2	770.8	770.8	771.5	770.8
42.5°	801.2	776.0	758.9	744.1	739.6	735.2	729.3	730.0	731.5	734.5	731.5
45°	741.1	722.6	710.0	702.6	694.4	689.2	688.5	690.7	691.5	692.2	694.4
47.5°	684.8	672.9	661.1	652.2	648.5	647.7	646.3	650.0	653.7	654.4	658.1
50°	635.9	621.8	612.2	607.0	604.0	602.5	604.0	608.5	611.4	615.1	617.4
52.5°	581.0	572.1	566.2	562.5	561.8	563.3	563.3	568.4	573.6	574.4	575.1
55°	531.4	524.0	522.5	515.8	518.8	518.0	521.7	524.7	529.2	533.6	534.3
57.5°	481.0	474.3	469.9	470.6	471.4	474.3	477.3	482.5	487.7	492.8	492.8
60°	430.6	427.6	425.4	425.4	426.9	431.3	435.0	440.2	443.2	446.2	448.4
62.5°	384.6	381.7	379.5	380.9	385.4	387.6	392.1	394.3	397.2	400.2	400.9
65°	335.7	334.2	336.5	338.0	338.7	342.4	347.6	349.8	352.8	354.3	359.4
67.5°	291.3	291.3	290.5	292.7	297.2	297.9	303.1	309.0	309.0	312.0	315.7
70°	246.1	247.5	249.0	250.5	254.2	255.7	259.4	261.6	264.6	266.8	269.0
72.5°	204.5	204.5	206.0	205.3	208.3	212.0	214.9	217.1	220.1	223.1	225.3
75°	163.8	163.8	165.3	166.0	169.7	173.4	172.7	174.2	177.1	180.1	181.6
77.5°	126.7	125.2	126.7	127.5	129.0	131.9	132.7	134.9	138.6	137.8	139.3
80°	91.2	88.9	91.2	91.9	91.9	95.6	95.6	97.1	99.3	97.1	99.3
82.5°	58.5	57.8	59.3	59.3	60.8	60.0	61.5	61.5	63.7	63.0	63.7
85°	32.6	31.9	32.6	31.9	32.6	33.4	33.4	32.6	32.6	34.1	31.9
87.5°	12.6	11.9	11.1	11.1	10.4	9.6	8.9	8.9	8.9	7.4	7.4
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: P242298

CATALOG NUMBER: S122DR-S1005D835-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	1928.4	1928.4	1928.4	1928.4
2.5°	1829.8	1828.3	1828.3	1821.7
5°	1715.7	1713.5	1709.8	1713.5
7.5°	1607.5	1597.9	1596.4	1589.0
10°	1486.7	1480.8	1480.0	1465.9
12.5°	1394.8	1378.5	1382.2	1375.5
15°	1285.8	1285.8	1282.9	1270.3
17.5°	1208.0	1207.3	1200.6	1205.1
20°	1139.8	1135.4	1126.5	1126.5
22.5°	1075.4	1076.1	1066.5	1070.2
25°	1027.9	1022.0	1017.6	1019.8
27.5°	979.0	976.8	976.1	969.4
30°	937.5	930.1	931.6	927.9
32.5°	890.1	888.6	886.4	883.4
35°	847.8	848.6	844.9	846.4
37.5°	810.0	813.0	810.8	810.8
40°	773.0	773.0	773.0	775.2
42.5°	737.4	735.9	734.5	733.7
45°	695.9	698.1	698.9	695.2
47.5°	659.6	660.3	659.6	664.0
50°	621.1	619.6	621.1	619.6
52.5°	580.3	581.0	579.6	579.6
55°	537.3	538.8	538.1	538.1
57.5°	493.6	494.3	495.8	492.1
60°	447.6	451.3	450.6	449.1
62.5°	405.4	406.1	406.1	406.1
65°	361.7	363.1	360.9	363.1
67.5°	314.2	315.0	316.5	317.2
70°	270.5	269.8	272.0	274.2
72.5°	224.6	226.8	225.3	226.8
75°	180.1	182.3	181.6	183.8
77.5°	137.8	138.6	138.6	139.3
80°	99.3	97.8	96.3	99.3
82.5°	61.5	63.0	61.5	60.8
85°	31.9	31.1	29.6	29.6
87.5°	7.4	6.7	6.7	5.9
90°	0.0	0.0	0.0	0.0

(END OF REPORT)