

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: P243153

Luminaire Tested: **S122DR-H1005D830-X4F0-XX-UDD-A-W**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P243153  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-58)  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: S122DR-H1005D830-X4F0-XX-UDD-A-W  
Description: DEFINE 2 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: 3975.1 lumens  
Efficiency: N/A  
Efficacy: 105.4 lumens/watt  
Spacing Criteria (0/90/45): 1.09 / 1.16 / 1.24  
Luminous Opening: Rectangular (W 3.88' x L: 0.15' x H: 0')  
CIE Type: Direct

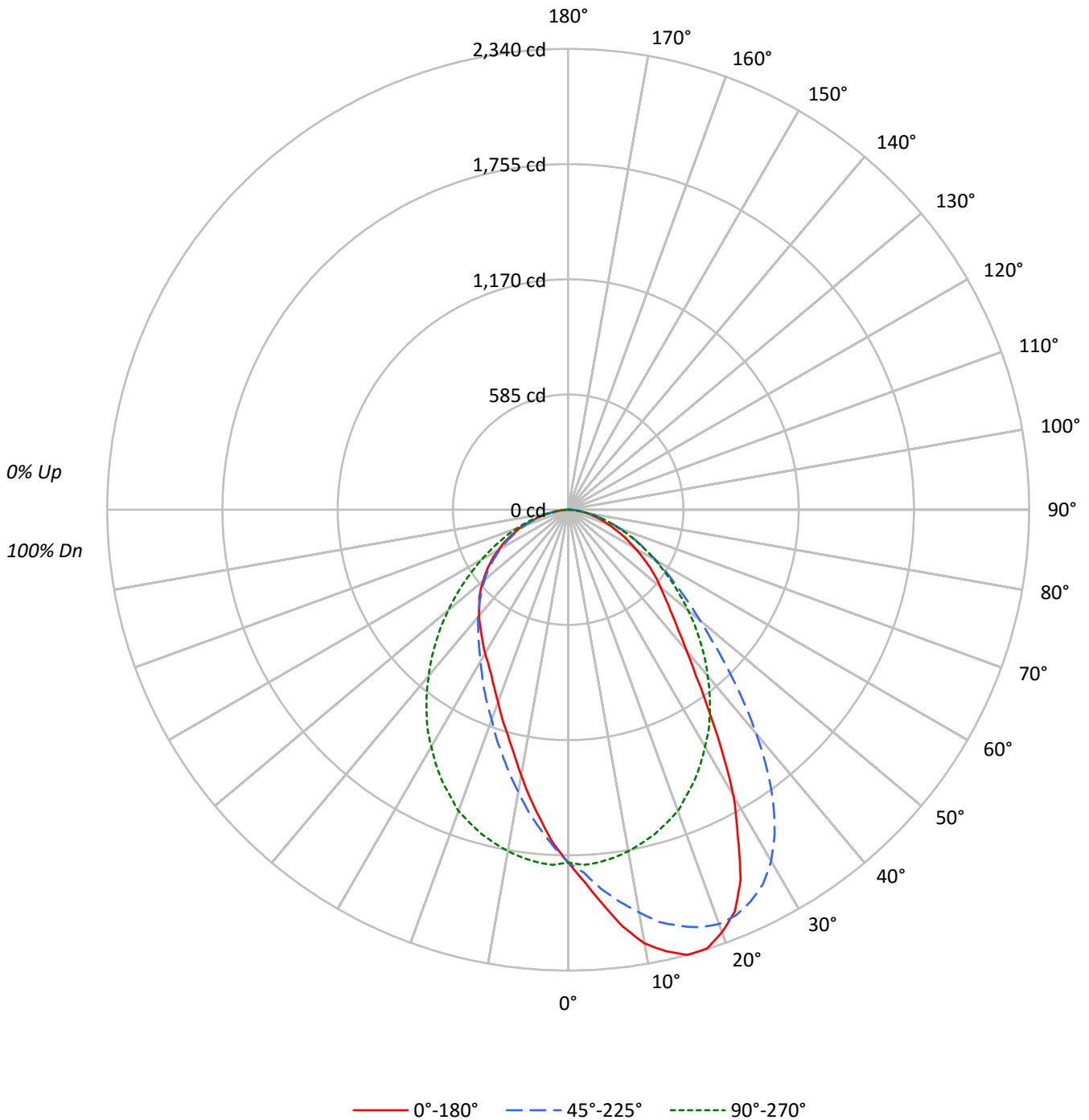
Input Watts (W): 37.7  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	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					100			
1	110	106	102	98	107	103	100	97	99	96	94	95	93	91	92	90	88					86				
2	101	93	87	82	98	92	86	81	88	83	79	85	81	77	82	79	76					74				
3	93	83	76	70	90	82	75	69	79	73	68	76	71	67	73	69	66					63				
4	86	74	66	60	83	73	66	60	71	64	59	68	63	58	66	61	57					55				
5	79	67	59	52	77	66	58	52	64	57	52	62	56	51	60	55	51					49				
6	73	61	52	46	72	60	52	46	58	51	46	57	50	45	55	49	45					43				
7	68	56	47	41	67	55	47	41	53	46	41	52	46	41	51	45	40					39				
8	64	51	43	37	62	50	43	37	49	42	37	48	41	37	47	41	37					35				
9	60	47	39	34	58	46	39	34	45	38	34	44	38	34	43	38	33					32				
10	56	44	36	31	55	43	36	31	42	35	31	41	35	31	40	35	31					29				

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

	0°	90°	180°
0°	34122	34122	34122
5°	38436	34367	30272
10°	43265	34059	26492
15°	46150	33600	23350
20°	46283	32992	21073
25°	43530	31895	19424
30°	36951	30563	18548
35°	28889	29136	17851
40°	23211	27381	17507
45°	19966	25574	17181
50°	18115	23537	16698
55°	16687	21443	16249
60°	15002	19322	15509
65°	13508	17361	14761
70°	12035	15432	13812
75°	10833	13269	12099
80°	9455	10695	9455
85°	8108	7977	5223



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	170.7	4.3
10°-20°	490.5	12.3
20°-30°	713.4	17.9
30°-40°	765.2	19.3
40°-50°	685.8	17.3
50°-60°	546.7	13.8
60°-70°	369.8	9.3
70°-80°	188.6	4.7
80°-90°	44.2	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°	1374.6	34.6
0°-40°	2139.8	53.8
0°-60°	3372.4	84.8
0°-90°	3975.1	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3975.1	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	1791	1791	1791	1791	1791	
5°	2010	1933	1797	1628	1583	199
15°	2340	2188	1704	1290	1184	655
25°	2071	2194	1518	1008	924	932
35°	1242	1815	1253	794	768	787
45°	741	1148	949	630	638	580
55°	502	668	646	475	489	449
65°	300	388	385	312	328	297
75°	147	184	180	155	164	157
85°	37	42	36	28	24	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°	1791.4	1791.4	1791.4	1791.4	1791.4	1791.4	1791.4	1791.4	1791.4	1791.4	1791.4
2.5°	1890.8	1896.8	1891.5	1889.5	1885.5	1884.2	1873.6	1865.0	1859.7	1845.1	1846.4
5°	2010.2	2023.4	2016.1	2015.5	2000.9	1991.6	1982.3	1969.1	1949.2	1933.3	1920.7
7.5°	2136.1	2129.5	2127.5	2120.2	2109.6	2096.4	2075.8	2056.6	2031.4	2008.2	1991.0
10°	2236.9	2234.9	2238.2	2219.7	2213.1	2192.5	2174.6	2144.8	2112.3	2075.8	2053.3
12.5°	2296.6	2302.6	2307.2	2299.9	2284.0	2278.0	2248.2	2206.4	2195.2	2145.4	2118.2
15°	2340.3	2343.0	2343.7	2335.7	2327.7	2312.5	2294.6	2268.1	2231.6	2188.5	2168.0
17.5°	2337.7	2337.0	2341.0	2336.4	2331.7	2327.1	2313.2	2292.6	2264.1	2223.7	2189.2
20°	2283.3	2295.3	2304.5	2306.5	2305.9	2308.5	2301.9	2288.6	2268.1	2238.9	2199.8
22.5°	2209.1	2204.4	2224.3	2223.0	2231.6	2251.5	2260.1	2254.8	2246.9	2228.3	2197.1
25°	2071.2	2075.8	2089.7	2104.3	2138.1	2150.1	2175.9	2195.8	2198.5	2193.8	2174.6
27.5°	1864.3	1897.5	1904.8	1924.0	1971.1	2010.2	2062.6	2093.7	2138.1	2142.1	2133.5
30°	1680.0	1678.7	1690.0	1724.4	1767.5	1826.5	1894.2	1974.4	2025.4	2060.6	2073.2
32.5°	1453.3	1458.6	1487.7	1530.2	1573.9	1632.9	1711.2	1809.3	1877.6	1950.5	1991.6
35°	1242.4	1259.0	1286.9	1316.0	1363.8	1444.6	1531.5	1613.0	1717.8	1815.3	1881.6
37.5°	1068.7	1091.3	1112.5	1140.3	1186.7	1249.1	1327.3	1435.4	1539.5	1656.8	1754.3
40°	933.5	942.1	956.7	983.9	1015.0	1077.4	1156.2	1237.1	1349.8	1484.4	1612.4
42.5°	827.4	825.4	841.3	858.6	887.1	933.5	1002.4	1083.3	1195.4	1314.7	1444.0
45°	741.2	741.9	748.5	766.4	789.0	815.5	868.5	944.8	1029.6	1148.3	1285.5
47.5°	670.9	672.9	682.9	695.5	708.7	733.3	768.4	818.1	897.7	997.1	1125.8
50°	611.3	614.6	621.2	630.5	640.4	657.7	684.2	723.3	786.3	870.5	987.2
52.5°	558.2	559.6	561.6	570.2	578.1	594.0	613.9	644.4	694.1	764.4	855.3
55°	502.5	501.2	505.9	513.2	520.4	531.7	552.3	576.8	611.9	667.6	742.5
57.5°	445.5	447.5	450.8	454.8	468.1	480.0	495.3	517.8	545.6	589.4	651.7
60°	393.8	393.8	397.8	403.1	411.7	419.7	434.3	454.8	479.3	513.2	565.5
62.5°	343.4	346.1	350.1	352.7	360.7	370.6	381.9	397.8	420.3	447.5	486.6
65°	299.7	298.3	302.3	307.6	313.6	320.2	332.8	346.1	363.3	387.8	420.3
67.5°	254.6	258.6	259.9	262.5	267.2	275.8	281.8	295.7	309.6	331.5	358.7
70°	216.1	218.8	220.8	224.1	228.1	232.0	238.0	249.3	263.2	278.5	297.7
72.5°	181.7	183.6	181.7	185.0	187.0	190.9	198.9	204.2	214.8	228.1	245.3
75°	147.2	148.5	147.8	151.2	151.8	155.8	159.8	164.4	176.4	183.6	195.6
77.5°	115.4	116.7	117.3	118.7	120.0	122.0	124.0	128.6	135.2	141.9	151.2
80°	86.2	86.2	88.2	88.8	89.5	90.8	94.1	95.5	100.1	102.1	109.4
82.5°	59.7	60.3	61.0	61.0	61.7	63.0	63.6	66.3	67.6	70.9	74.3
85°	37.1	37.8	37.8	37.8	39.8	39.1	39.1	40.4	42.4	42.4	43.8
87.5°	18.6	19.2	19.2	19.2	19.9	19.9	19.9	19.9	19.9	21.2	20.6
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°	1791.4	1791.4	1791.4	1791.4	1791.4	1791.4	1791.4	1791.4	1791.4	1791.4	1791.4
2.5°	1845.8	1845.1	1842.4	1830.5	1821.2	1809.3	1807.3	1805.3	1788.7	1770.8	1765.5
5°	1910.7	1898.8	1882.2	1862.3	1842.4	1820.6	1808.0	1797.4	1772.2	1744.3	1728.4
7.5°	1974.4	1951.2	1925.3	1894.2	1861.0	1825.9	1803.3	1782.1	1747.6	1711.2	1689.3
10°	2028.7	1997.6	1961.8	1920.7	1874.9	1827.2	1794.0	1760.9	1717.1	1672.7	1643.5
12.5°	2073.8	2034.0	1987.0	1931.3	1889.5	1823.9	1777.5	1733.7	1685.3	1627.6	1595.8
15°	2108.3	2069.2	2005.5	1949.2	1894.2	1806.6	1750.3	1703.9	1638.9	1582.6	1532.2
17.5°	2150.1	2094.4	2031.4	1950.5	1889.5	1789.4	1725.8	1665.4	1595.1	1528.8	1473.2
20°	2168.6	2110.3	2042.7	1952.5	1874.9	1770.8	1686.0	1627.6	1542.8	1466.5	1403.5
22.5°	2171.3	2115.6	2042.0	1946.5	1849.7	1743.7	1646.2	1570.0	1485.1	1404.2	1333.3
25°	2160.0	2107.0	2030.7	1935.9	1821.9	1714.5	1605.8	1517.6	1419.5	1335.9	1263.7
27.5°	2129.5	2086.4	2014.2	1912.7	1793.4	1669.4	1550.7	1454.6	1357.8	1263.0	1194.0
30°	2080.5	2051.9	1989.6	1882.2	1756.9	1620.3	1501.7	1389.6	1284.9	1196.0	1121.8
32.5°	2017.5	2003.5	1951.8	1845.8	1719.8	1566.6	1442.7	1327.3	1213.3	1129.1	1052.8
35°	1937.2	1944.5	1900.8	1804.7	1672.7	1512.3	1373.7	1253.0	1141.7	1052.2	981.9
37.5°	1833.2	1869.0	1841.1	1750.9	1612.4	1457.2	1301.4	1180.1	1063.4	977.2	915.6
40°	1716.5	1779.5	1766.2	1690.6	1547.4	1392.9	1231.8	1101.2	987.2	905.6	846.6
42.5°	1579.2	1670.7	1685.3	1617.0	1483.1	1312.7	1153.6	1027.6	917.6	837.4	781.0
45°	1425.4	1538.8	1587.9	1534.2	1408.2	1235.1	1073.4	949.4	840.7	772.4	725.3
47.5°	1270.9	1407.5	1473.8	1448.0	1320.7	1152.3	993.8	872.5	769.7	710.1	665.6
50°	1118.5	1265.0	1361.8	1344.5	1234.5	1073.4	913.6	794.3	700.1	645.1	607.3
52.5°	984.5	1123.1	1228.5	1237.1	1138.3	983.2	828.7	718.0	637.8	588.1	556.2
55°	852.6	981.2	1096.6	1117.8	1037.6	888.4	750.5	645.7	572.8	531.7	505.9
57.5°	734.6	851.3	966.0	1003.1	938.1	803.5	666.3	574.1	511.2	479.3	456.8
60°	634.5	739.9	838.7	876.5	832.0	709.4	589.4	507.2	454.8	426.3	408.4
62.5°	547.0	628.5	716.0	757.8	728.0	621.2	516.5	443.5	401.1	376.6	362.7
65°	468.1	531.1	600.0	648.4	615.3	535.7	448.2	385.2	349.4	326.9	316.9
67.5°	395.1	447.5	502.5	541.0	524.4	452.2	378.6	329.5	299.7	282.4	273.2
70°	328.8	368.0	412.4	442.2	430.3	374.6	316.2	277.1	251.9	240.0	232.0
72.5°	269.8	295.0	328.8	353.4	340.8	301.7	259.9	228.7	210.2	196.2	190.3
75°	214.1	236.0	259.9	276.5	266.5	237.3	204.2	180.3	167.7	159.1	155.1
77.5°	162.4	179.7	196.2	204.2	199.6	178.3	155.8	137.2	126.6	121.3	116.7
80°	116.7	126.6	137.9	145.2	142.5	128.0	112.0	97.5	92.8	86.2	84.9
82.5°	78.2	86.2	88.8	92.2	90.2	83.5	72.3	63.6	59.7	56.4	55.7
85°	46.4	48.4	51.7	51.7	49.7	45.1	39.1	36.5	32.5	31.8	29.8
87.5°	20.6	20.6	20.6	20.6	20.6	19.2	16.6	15.2	13.9	13.3	12.6
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°	1791.4	1791.4	1791.4	1791.4	1791.4	1791.4	1791.4	1791.4	1791.4	1791.4	1791.4
2.5°	1760.9	1754.3	1745.0	1734.4	1725.1	1710.5	1705.9	1705.9	1709.2	1705.2	1701.9
5°	1715.1	1701.9	1688.6	1668.1	1650.8	1627.6	1621.0	1614.4	1613.7	1607.1	1598.5
7.5°	1666.1	1646.2	1619.0	1589.8	1571.3	1546.1	1532.2	1528.2	1515.6	1503.7	1489.7
10°	1609.1	1578.6	1546.1	1518.2	1489.1	1456.6	1440.0	1428.7	1416.1	1401.6	1391.6
12.5°	1540.1	1505.6	1475.8	1443.3	1418.8	1373.0	1367.7	1353.2	1328.0	1306.1	1298.1
15°	1497.7	1437.4	1403.5	1373.7	1336.6	1289.5	1272.3	1256.4	1232.5	1218.6	1207.3
17.5°	1422.8	1368.4	1326.0	1286.2	1250.4	1213.9	1188.1	1174.8	1155.6	1143.7	1132.4
20°	1354.5	1295.5	1251.1	1204.6	1167.5	1134.4	1112.5	1095.9	1086.0	1074.0	1062.8
22.5°	1285.5	1223.9	1181.4	1134.4	1090.6	1070.7	1044.9	1030.9	1017.7	1008.4	996.5
25°	1205.3	1156.2	1103.2	1066.7	1028.3	1007.7	983.2	970.0	959.3	948.7	942.8
27.5°	1133.7	1084.0	1034.9	998.5	966.0	946.1	930.8	918.2	905.0	897.0	892.4
30°	1059.5	1013.7	970.6	935.5	910.3	888.4	879.1	867.2	857.2	853.9	846.6
32.5°	993.2	942.1	907.6	875.8	854.6	839.3	832.7	820.1	818.1	814.8	810.8
35°	926.9	883.1	849.9	822.8	804.9	793.6	785.0	781.7	778.3	775.0	771.7
37.5°	861.2	826.7	795.6	773.7	759.1	750.5	748.5	741.9	741.2	736.6	736.6
40°	802.2	767.1	745.2	728.0	716.0	712.0	706.7	705.4	703.4	702.1	704.8
42.5°	743.2	719.3	700.8	682.9	673.6	670.3	669.0	667.0	665.6	669.6	670.9
45°	688.2	667.6	651.7	639.1	633.8	629.8	629.8	631.8	631.2	633.2	633.2
47.5°	637.1	618.6	605.3	600.7	594.0	592.7	593.4	592.7	596.0	598.7	601.3
50°	588.7	572.2	561.6	556.9	555.6	553.6	556.2	557.6	559.6	562.2	563.5
52.5°	535.0	527.1	520.4	515.8	515.1	515.8	515.1	519.8	521.8	525.7	525.1
55°	489.3	483.3	478.7	473.4	472.7	474.7	476.0	480.0	482.7	486.0	485.3
57.5°	446.2	441.5	436.2	434.9	434.3	434.9	440.9	440.2	444.2	446.9	448.2
60°	399.1	395.8	391.2	391.2	393.2	394.5	396.5	399.8	403.8	403.1	407.7
62.5°	356.0	352.0	350.7	352.7	352.0	355.4	357.4	357.4	362.7	364.6	366.0
65°	312.9	311.6	309.6	309.6	311.6	312.3	315.6	317.6	319.6	323.5	326.9
67.5°	272.5	269.2	269.2	267.8	270.5	272.5	274.5	277.1	278.5	283.1	285.1
70°	230.1	228.7	228.1	229.4	229.4	231.4	234.7	238.0	240.7	241.3	245.3
72.5°	189.0	189.0	189.0	190.9	192.3	194.3	194.9	197.6	201.5	202.2	204.2
75°	151.8	152.5	151.8	152.5	153.2	155.1	156.5	159.1	161.8	162.4	163.8
77.5°	117.3	116.0	114.7	116.7	118.0	122.0	121.3	122.7	125.3	124.0	125.3
80°	82.2	84.2	81.5	85.5	85.5	84.9	86.2	88.2	87.5	88.8	87.5
82.5°	55.7	53.7	53.7	55.7	56.4	54.4	55.7	56.4	57.0	55.7	55.0
85°	30.5	29.8	31.2	29.2	29.8	28.5	28.5	27.2	28.5	27.2	25.9
87.5°	11.3	10.6	11.3	9.3	8.6	8.0	7.3	7.3	6.0	6.0	6.0
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: P243153

CATALOG NUMBER: S122DR-H1005D830-X4F0-XX-UDD-A-W

**CANDELA DISTRIBUTION (continued):**

	165°	170°	175°	180°
0°	1791.4	1791.4	1791.4	1791.4
2.5°	1706.5	1699.2	1695.9	1698.6
5°	1589.2	1591.2	1579.2	1583.2
7.5°	1487.7	1479.1	1481.8	1477.1
10°	1380.3	1375.7	1368.4	1369.7
12.5°	1308.1	1276.9	1274.9	1269.0
15°	1206.6	1189.4	1185.4	1184.1
17.5°	1125.8	1111.2	1116.5	1112.5
20°	1052.8	1053.5	1044.9	1039.6
22.5°	988.5	987.2	983.9	978.6
25°	934.1	934.1	926.2	924.2
27.5°	884.4	885.8	879.1	879.1
30°	847.3	842.7	842.0	843.3
32.5°	810.2	804.9	805.5	804.9
35°	770.4	771.7	769.7	767.7
37.5°	736.6	736.6	736.6	734.6
40°	703.4	704.8	702.8	704.1
42.5°	670.3	670.9	670.9	668.3
45°	637.1	636.5	635.1	637.8
47.5°	602.7	602.7	602.0	603.3
50°	564.9	566.2	564.2	563.5
52.5°	526.4	527.1	526.4	527.7
55°	487.3	487.3	488.0	489.3
57.5°	446.9	451.5	448.2	450.8
60°	407.1	407.7	408.4	407.1
62.5°	369.3	368.6	369.3	371.3
65°	328.2	329.5	328.8	327.5
67.5°	287.7	286.4	288.4	286.4
70°	244.6	247.3	245.3	248.0
72.5°	205.5	204.9	206.2	202.9
75°	164.4	164.4	165.1	164.4
77.5°	126.0	124.6	124.0	122.0
80°	86.9	86.9	84.2	86.2
82.5°	53.0	53.7	54.4	50.4
85°	25.2	25.2	24.5	23.9
87.5°	5.3	5.3	6.0	6.6
90°	0.0	0.0	0.0	0.0

(END OF REPORT)