

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: P242229

Luminaire Tested: **S121RDR-S1025D835-X4F0-XX-UDD-A-W**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P242229  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-28)  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: S121RDR-S1025D835-X4F0-XX-UDD-A-W  
Description: DEFINE 1 REGRESSED 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: 3571.6 lumens  
Efficiency: N/A  
Efficacy: 86.9 lumens/watt  
Spacing Criteria (0/90/45): 0.96 / 1.23 / 1.1  
Luminous Opening: Rectangular (W 3.88' x L: 0.09' x H: 0')  
CIE Type: Direct

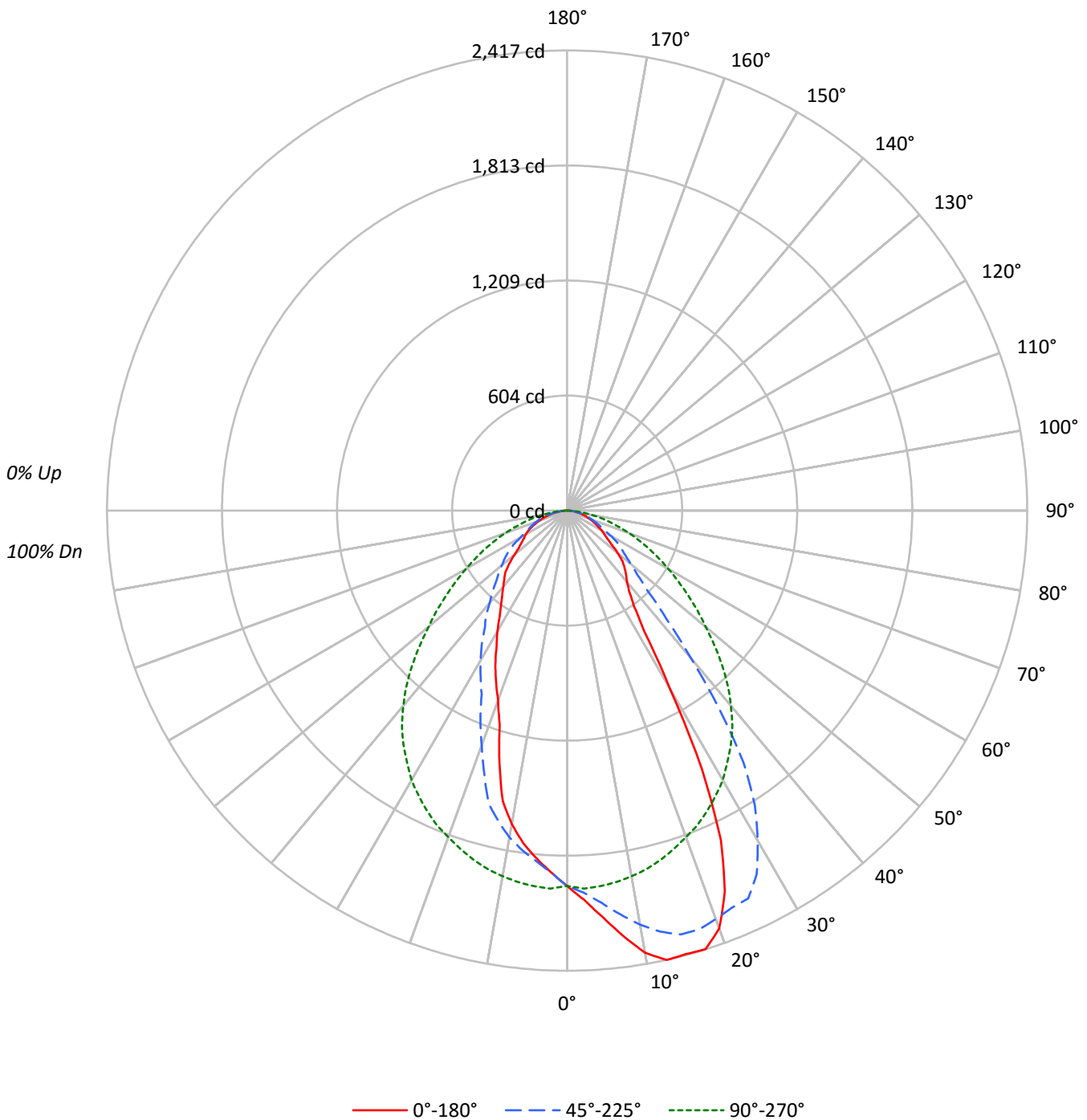
Input Watts (W): 41.1  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	111	107	103	100	108	104	101	98	100	97	95	96	94	92	93	91	89					87				
2	102	95	89	84	100	93	88	83	90	85	82	87	83	80	84	81	78					76				
3	94	85	78	73	92	84	77	72	81	75	71	78	74	70	76	72	68					67				
4	88	77	69	64	85	76	69	63	73	67	62	71	66	61	69	65	61					59				
5	81	70	62	56	79	69	62	56	67	60	55	65	59	55	63	58	54					52				
6	76	64	56	50	74	63	56	50	61	55	50	60	54	49	58	53	49					47				
7	71	59	51	45	69	58	51	45	57	50	45	55	49	45	54	48	44					43				
8	67	54	47	41	65	54	46	41	52	46	41	51	45	41	50	45	40					39				
9	63	50	43	38	61	50	43	38	49	42	37	48	42	37	47	41	37					35				
10	59	47	40	35	58	46	39	35	45	39	35	44	39	34	44	38	34					33				

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

	0°	90°	180°
0°	58409	58409	58409
5°	63745	58918	54575
10°	70948	58684	50302
15°	73973	58239	42101
20°	73654	57554	33414
25°	62460	56912	29172
30°	36766	55932	25051
35°	22090	54228	21873
40°	18918	51768	20179
45°	17888	48255	19191
50°	15986	43828	16604
55°	13323	40004	15007
60°	12385	36450	14933
65°	11428	33204	14443
70°	10786	29914	13610
75°	10177	26468	12387
80°	9112	22131	10869
85°	8567	17372	8567



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	189.0	5.3
10°-20°	538.4	15.1
20°-30°	735.4	20.6
30°-40°	685.1	19.2
40°-50°	566.4	15.9
50°-60°	417.6	11.7
60°-70°	267.0	7.5
70°-80°	137.4	3.8
80°-90°	35.3	1.0
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°	1462.7	41.0
0°-40°	2147.8	60.1
0°-60°	3131.9	87.7
0°-90°	3571.6	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3571.6	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	1971	1971	1971	1971	1971	
5°	2143	2068	1981	1849	1835	211
15°	2412	2305	1899	1593	1372	680
25°	1910	2248	1741	1063	892	829
35°	611	1616	1499	754	605	415
45°	427	602	1152	528	458	327
55°	258	345	774	377	290	237
65°	163	188	474	219	206	162
75°	89	97	231	122	108	93
85°	25	26	51	29	25	28
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°	1971.3	1971.3	1971.3	1971.3	1971.3	1971.3	1971.3	1971.3	1971.3	1971.3	1971.3
2.5°	2046.9	2045.4	2047.6	2046.1	2044.6	2040.9	2038.0	2029.1	2015.7	2008.3	2015.7
5°	2143.2	2149.1	2146.9	2143.9	2137.3	2131.3	2118.0	2109.9	2086.1	2067.6	2072.8
7.5°	2252.9	2260.3	2250.7	2244.0	2240.3	2223.2	2208.4	2185.4	2159.5	2138.8	2126.9
10°	2358.1	2360.3	2357.4	2351.4	2338.8	2320.3	2298.8	2272.9	2240.3	2208.4	2186.9
12.5°	2417.4	2421.1	2425.6	2415.2	2405.5	2390.7	2368.5	2342.6	2302.5	2265.5	2241.0
15°	2411.5	2414.4	2422.6	2418.9	2414.4	2407.8	2395.2	2373.7	2345.5	2304.8	2269.9
17.5°	2415.9	2418.1	2421.9	2408.5	2401.1	2392.9	2376.6	2361.8	2338.1	2306.2	2280.3
20°	2335.9	2372.2	2367.8	2385.5	2392.9	2392.2	2376.6	2348.5	2315.9	2283.3	2271.4
22.5°	2164.0	2192.9	2196.6	2224.0	2258.1	2285.5	2319.6	2332.2	2307.0	2258.1	2241.8
25°	1910.5	1931.3	1952.0	1991.3	2027.6	2103.9	2173.6	2226.2	2255.1	2248.4	2216.6
27.5°	1535.5	1513.3	1595.5	1640.8	1742.3	1853.4	1951.3	2047.6	2093.6	2155.1	2186.2
30°	1074.6	1072.3	1134.6	1213.1	1365.1	1467.3	1650.4	1805.3	1926.1	2001.7	2086.1
32.5°	754.4	765.5	811.5	859.7	943.4	1110.1	1250.2	1463.6	1669.7	1834.9	1938.7
35°	610.7	612.1	622.5	651.4	702.5	795.2	904.1	1111.6	1391.0	1615.6	1770.4
37.5°	535.1	539.5	542.5	558.8	577.3	616.6	685.5	829.3	1060.5	1311.0	1580.0
40°	489.1	492.8	495.8	501.0	512.1	530.6	575.8	644.7	778.1	1008.6	1308.0
42.5°	458.0	456.5	463.2	465.4	471.3	481.7	501.7	538.8	615.8	772.2	1030.1
45°	426.9	429.1	429.1	432.0	437.2	443.2	451.3	474.3	513.6	602.5	804.8
47.5°	394.3	393.5	398.0	400.2	405.4	410.6	416.5	428.3	451.3	503.2	620.3
50°	346.8	348.3	356.5	363.9	371.3	378.0	385.4	392.8	407.6	435.8	507.6
52.5°	296.4	296.4	305.3	310.5	320.9	337.2	349.8	360.9	370.5	384.6	427.6
55°	257.9	258.6	261.6	266.0	273.5	281.6	297.9	317.2	333.5	345.3	369.1
57.5°	231.2	232.0	232.7	236.4	240.1	243.1	252.7	267.5	289.0	310.5	324.6
60°	209.0	208.2	208.2	210.5	213.4	217.1	222.3	228.3	240.1	263.1	288.3
62.5°	183.8	185.3	185.3	187.5	189.7	193.4	195.6	201.6	208.2	218.6	244.6
65°	163.0	164.5	163.0	165.3	166.7	169.0	172.7	175.6	181.6	188.2	198.6
67.5°	142.3	143.0	144.5	145.3	146.7	147.5	150.4	154.1	157.9	162.3	170.4
70°	124.5	124.5	124.5	126.0	127.5	127.5	129.7	131.2	134.9	139.3	143.8
72.5°	105.2	106.0	106.0	105.2	108.2	108.9	109.7	111.2	114.1	117.8	121.5
75°	88.9	87.4	87.4	88.2	90.4	90.4	91.2	91.9	94.1	97.1	99.3
77.5°	69.7	69.7	70.4	71.1	71.9	71.9	73.4	73.4	76.3	77.8	79.3
80°	53.4	54.8	55.6	54.8	54.8	55.6	55.6	57.1	57.8	58.5	60.0
82.5°	40.0	40.8	39.3	39.3	40.0	40.0	40.8	40.8	41.5	42.2	42.2
85°	25.2	25.2	25.9	25.2	25.9	25.2	25.2	26.7	25.9	25.9	26.7
87.5°	11.9	12.6	11.9	12.6	11.9	12.6	12.6	12.6	12.6	12.6	11.9
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°	1971.3	1971.3	1971.3	1971.3	1971.3	1971.3	1971.3	1971.3	1971.3	1971.3	1971.3
2.5°	2013.5	2012.8	2009.1	2000.9	1995.0	1983.9	1983.9	1987.6	1968.3	1955.0	1954.2
5°	2060.2	2052.8	2040.2	2024.6	2010.6	1991.3	1983.9	1980.9	1955.0	1935.0	1928.3
7.5°	2109.9	2091.3	2069.8	2044.6	2020.9	1993.5	1979.4	1968.3	1935.0	1910.5	1895.7
10°	2161.7	2132.1	2098.7	2062.4	2029.8	1992.8	1969.8	1950.5	1912.0	1877.9	1860.9
12.5°	2207.7	2166.2	2123.9	2076.5	2032.0	1985.4	1953.5	1928.3	1883.1	1842.3	1821.6
15°	2229.2	2184.7	2149.9	2084.7	2024.6	1977.2	1936.4	1898.6	1850.5	1805.3	1773.4
17.5°	2247.7	2198.8	2152.8	2091.3	2021.7	1960.2	1911.2	1863.1	1811.2	1763.8	1724.5
20°	2242.5	2201.0	2144.7	2079.5	2013.5	1942.4	1886.8	1825.3	1760.8	1712.6	1671.1
22.5°	2212.9	2178.8	2120.2	2058.0	1994.2	1917.9	1854.9	1788.2	1708.9	1656.3	1609.6
25°	2175.1	2142.5	2084.7	2020.2	1957.2	1883.1	1809.0	1740.8	1655.6	1592.6	1532.6
27.5°	2145.4	2096.5	2038.7	1966.8	1906.1	1835.7	1757.8	1688.9	1597.0	1527.4	1457.7
30°	2111.3	2055.8	1984.6	1908.3	1843.8	1779.3	1703.7	1634.8	1533.3	1454.0	1367.3
32.5°	2013.5	2014.3	1929.8	1844.5	1775.6	1706.7	1639.3	1565.9	1465.1	1371.7	1282.8
35°	1886.0	1935.7	1873.5	1775.6	1690.4	1626.7	1571.1	1499.2	1387.3	1291.0	1190.2
37.5°	1715.6	1803.0	1810.5	1708.9	1614.8	1540.0	1485.1	1425.1	1312.5	1208.7	1108.7
40°	1545.2	1660.8	1706.7	1636.3	1534.0	1448.1	1393.2	1338.4	1232.4	1120.5	1027.9
42.5°	1336.2	1523.7	1580.7	1560.0	1450.3	1357.7	1299.9	1250.2	1147.2	1037.5	945.6
45°	1100.5	1354.0	1437.0	1458.4	1365.8	1266.5	1199.8	1151.6	1061.2	964.9	869.3
47.5°	884.1	1162.8	1299.9	1322.1	1273.2	1176.8	1100.5	1050.1	978.2	895.2	800.4
50°	674.4	959.7	1156.1	1190.2	1178.3	1080.5	1010.1	950.8	896.0	821.9	732.9
52.5°	536.5	767.0	1000.5	1064.2	1067.9	990.8	916.7	862.6	809.3	750.7	669.9
55°	428.3	592.9	829.3	937.5	947.8	894.5	826.3	774.4	734.4	679.6	611.4
57.5°	360.9	458.7	664.0	810.0	814.4	799.6	734.4	691.4	658.1	610.7	550.6
60°	308.3	363.9	512.1	682.5	704.8	704.8	652.9	615.1	583.2	547.7	490.6
62.5°	266.8	297.2	388.3	542.5	599.5	608.4	575.8	542.5	518.8	483.2	430.6
65°	224.5	247.5	300.9	419.5	498.0	514.3	498.0	473.6	455.0	418.0	376.5
67.5°	184.5	206.8	240.1	317.9	403.9	423.9	420.9	408.3	389.1	361.6	317.9
70°	152.7	166.0	190.5	235.7	317.2	347.6	356.5	345.3	328.3	298.7	266.8
72.5°	126.0	136.4	148.2	180.8	237.1	277.2	292.0	286.1	273.5	245.3	218.6
75°	103.0	109.7	117.8	133.4	170.4	215.7	232.7	231.2	218.6	194.9	173.4
77.5°	83.0	85.2	91.2	100.8	119.3	160.1	173.4	177.9	168.2	148.2	131.2
80°	62.3	65.2	68.2	73.4	82.3	106.0	123.0	129.7	121.5	109.7	92.6
82.5°	43.7	44.5	47.4	50.4	54.8	64.5	82.3	89.7	82.3	69.7	64.5
85°	27.4	26.7	27.4	28.2	32.6	34.8	45.9	51.1	49.7	42.2	36.3
87.5°	12.6	12.6	11.9	12.6	11.9	14.1	16.3	23.7	17.8	15.6	14.1
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°	1971.3	1971.3	1971.3	1971.3	1971.3	1971.3	1971.3	1971.3	1971.3	1971.3	1971.3
2.5°	1948.3	1946.1	1938.7	1928.3	1919.4	1904.6	1904.6	1908.3	1907.5	1909.0	1907.5
5°	1917.2	1906.8	1895.7	1881.6	1868.3	1849.0	1846.8	1848.3	1847.5	1846.8	1842.3
7.5°	1877.2	1865.3	1851.2	1833.4	1818.6	1800.1	1794.9	1793.4	1787.5	1785.3	1779.3
10°	1838.6	1824.5	1806.0	1784.5	1764.5	1743.0	1729.7	1722.3	1712.6	1702.3	1693.4
12.5°	1795.6	1777.1	1753.4	1727.5	1694.1	1670.4	1650.4	1637.8	1624.4	1606.7	1594.1
15°	1749.7	1711.9	1683.7	1641.5	1600.7	1592.6	1562.2	1522.2	1519.2	1432.5	1402.1
17.5°	1688.2	1657.1	1604.4	1549.6	1494.0	1448.8	1449.6	1341.4	1308.0	1307.3	1253.9
20°	1624.4	1581.5	1520.7	1465.1	1406.6	1313.2	1239.1	1203.5	1149.4	1128.7	1098.3
22.5°	1549.6	1493.3	1422.1	1346.5	1265.0	1189.4	1116.8	1082.7	1055.3	1032.3	1019.7
25°	1460.7	1403.6	1318.4	1224.3	1133.1	1062.7	1022.7	1007.1	960.4	944.1	928.6
27.5°	1371.0	1308.7	1197.6	1107.2	1032.3	984.2	942.7	916.7	894.5	853.0	834.5
30°	1285.8	1185.7	1093.8	1010.8	954.5	909.3	878.9	826.3	795.2	775.9	767.8
32.5°	1193.1	1086.4	1003.4	931.5	873.7	834.5	789.3	753.7	739.6	714.4	678.1
35°	1098.3	1001.2	914.5	856.7	807.0	753.7	725.5	691.4	655.9	636.6	633.6
37.5°	1006.4	914.5	852.2	791.5	731.4	700.3	658.8	622.5	609.9	592.1	572.9
40°	923.4	844.8	787.0	717.4	681.1	632.9	601.0	582.5	552.1	545.4	539.5
42.5°	855.2	787.8	722.6	660.3	618.1	579.5	551.4	529.9	520.2	503.9	498.7
45°	786.3	724.0	657.3	608.4	560.3	527.6	508.4	489.9	478.7	474.3	465.4
47.5°	724.0	663.3	601.8	541.7	509.1	487.6	466.1	456.5	449.8	440.2	435.0
50°	664.7	597.3	539.5	501.7	466.9	447.6	433.5	424.6	414.3	403.9	389.1
52.5°	604.7	546.9	491.3	451.3	425.4	412.8	399.4	389.8	369.1	349.0	336.5
55°	544.0	484.7	439.5	409.1	390.5	377.2	361.6	333.5	314.2	303.1	297.2
57.5°	489.1	435.8	395.7	370.5	357.2	335.0	307.5	289.8	280.1	275.7	272.7
60°	430.6	384.6	351.3	332.0	311.3	281.6	266.8	257.9	254.9	253.4	251.2
62.5°	380.2	339.4	313.5	292.0	262.3	246.8	238.6	234.2	234.2	232.0	230.5
65°	326.8	294.9	272.7	241.6	226.0	219.4	216.4	214.2	211.9	211.2	208.2
67.5°	283.1	254.9	226.0	209.7	200.1	196.4	193.4	192.7	189.7	187.5	185.3
70°	238.6	211.2	187.5	180.1	174.9	173.4	170.4	167.5	165.3	162.3	160.8
72.5°	194.2	168.2	160.1	156.4	151.2	149.0	145.3	143.0	139.3	137.8	136.4
75°	148.2	137.8	133.4	130.4	126.7	121.5	120.1	117.8	116.3	114.1	111.9
77.5°	117.8	111.9	106.7	103.0	100.0	96.3	93.4	92.6	91.2	88.9	88.2
80°	88.2	83.7	81.5	77.8	74.1	71.9	70.4	69.7	67.4	66.7	66.0
82.5°	60.8	57.1	55.6	51.1	49.7	49.7	48.9	47.4	45.9	45.2	44.5
85°	34.1	32.6	30.4	31.1	28.9	28.9	28.2	27.4	26.7	25.9	25.2
87.5°	13.3	12.6	11.9	11.1	11.1	8.9	8.9	8.9	9.6	8.9	8.2
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: P242229

CATALOG NUMBER: S121RDR-S1025D835-X4F0-XX-UDD-A-W

**CANDELA DISTRIBUTION (continued):**

	165°	170°	175°	180°
0°	1971.3	1971.3	1971.3	1971.3
2.5°	1909.8	1911.2	1906.1	1903.1
5°	1842.3	1840.1	1837.1	1834.9
7.5°	1773.4	1771.2	1771.2	1762.3
10°	1689.7	1683.7	1679.3	1671.9
12.5°	1582.9	1574.1	1571.1	1562.2
15°	1381.4	1362.8	1350.2	1372.5
17.5°	1241.3	1193.1	1196.8	1178.3
20°	1097.5	1078.3	1087.9	1059.7
22.5°	1004.2	992.3	981.2	975.3
25°	917.5	903.4	886.3	892.3
27.5°	808.5	808.5	797.4	801.8
30°	752.9	747.0	728.5	732.2
32.5°	666.2	658.8	656.6	658.1
35°	624.7	612.9	609.2	604.7
37.5°	566.9	562.5	563.2	560.3
40°	528.4	524.7	520.2	521.7
42.5°	495.0	492.8	488.4	489.1
45°	462.4	460.2	458.0	458.0
47.5°	426.1	421.7	418.0	413.5
50°	378.7	369.8	363.1	360.2
52.5°	327.6	323.1	318.7	318.7
55°	294.9	292.7	291.2	290.5
57.5°	272.0	270.5	270.5	268.3
60°	251.2	251.2	250.5	252.0
62.5°	231.2	229.0	229.7	229.7
65°	208.2	207.5	206.8	206.0
67.5°	183.8	183.0	183.8	182.3
70°	159.3	159.3	158.6	157.1
72.5°	134.1	135.6	134.1	133.4
75°	110.4	109.7	110.4	108.2
77.5°	88.2	85.2	86.7	87.4
80°	65.2	65.2	64.5	63.7
82.5°	43.7	44.5	43.0	43.0
85°	25.2	25.2	23.7	25.2
87.5°	7.4	7.4	7.4	8.9
90°	0.0	0.0	0.0	0.0

(END OF REPORT)