

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: P242126

Luminaire Tested: **S121DR-S1025D835-X4F0-XX-UDD-A-W**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P242126  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-18)  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: S121DR-S1025D835-X4F0-XX-UDD-A-W  
Description: DEFINE 1 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: 4243.9 lumens  
Efficiency: N/A  
Efficacy: 103.3 lumens/watt  
Spacing Criteria (0/90/45): 1.27 / 1.22 / 1.37  
Luminous Opening: Rectangular (W 3.88' x L: 0.09' x H: 0')  
CIE Type: Direct

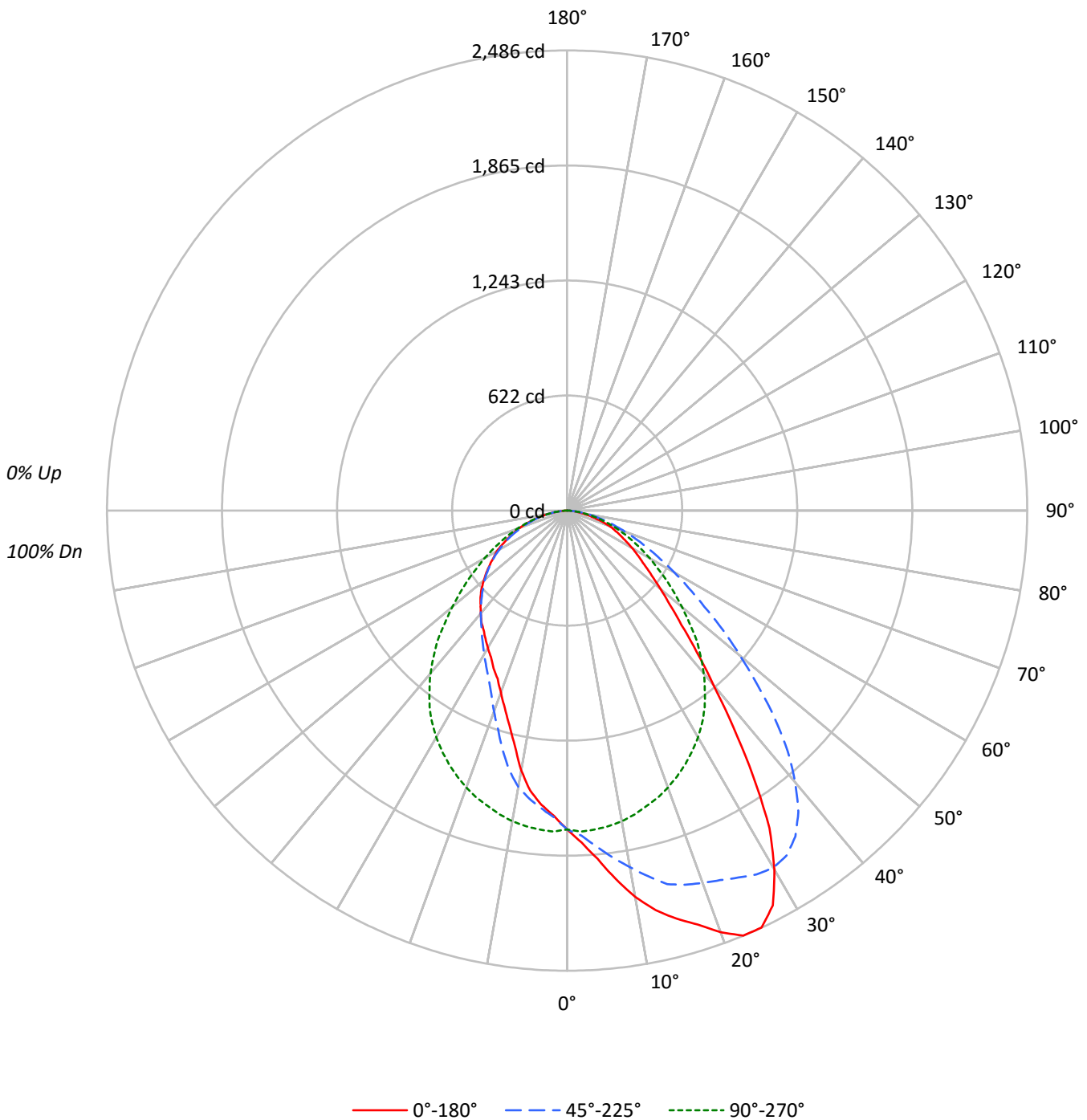
Input Watts (W): 41.1  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	0	
RCR																						
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100				100
1	110	105	102	98	107	103	100	96	99	96	93	95	93	91	92	90	88				86	
2	101	93	87	82	98	91	85	81	88	83	79	85	80	77	82	78	75				73	
3	92	83	75	69	90	81	74	68	78	72	67	75	70	66	73	69	65				63	
4	85	74	66	59	83	73	65	59	70	63	58	68	62	57	66	61	57				54	
5	79	66	58	52	77	65	57	51	63	56	51	61	55	50	60	54	50				48	
6	73	60	52	46	71	59	51	45	57	50	45	56	49	45	54	49	44				42	
7	68	55	46	41	66	54	46	40	52	45	40	51	45	40	50	44	40				38	
8	63	50	42	36	62	50	42	36	48	41	36	47	41	36	46	40	36				34	
9	59	46	38	33	58	46	38	33	44	38	33	43	37	33	42	37	32				31	
10	56	43	35	30	54	42	35	30	41	34	30	40	34	30	39	34	30				28	

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

	0°	90°	180°
0°	51028	51028	51028
5°	56161	51443	47434
10°	63766	51259	42898
15°	70016	50693	36871
20°	76410	50191	32994
25°	81258	49399	30721
30°	76621	48374	29311
35°	63314	46856	28467
40°	47467	44427	28089
45°	36581	41425	27761
50°	30336	37268	27123
55°	26185	33841	26340
60°	24065	30519	25997
65°	22239	27588	24524
70°	21060	24777	23494
75°	17309	21889	20870
80°	13650	17831	17200
85°	10573	13089	11593



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	165.6	3.9
10°-20°	483.1	11.4
20°-30°	739.7	17.4
30°-40°	844.0	19.9
40°-50°	757.3	17.8
50°-60°	594.1	14.0
60°-70°	404.1	9.5
70°-80°	208.1	4.9
80°-90°	47.9	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°	1388.3	32.7
0°-40°	2232.3	52.6
0°-60°	3583.7	84.4
0°-90°	4243.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4243.9	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	1722	1722	1722	1722	1722	
5°	1888	1822	1730	1614	1595	188
15°	2282	2089	1653	1342	1202	650
25°	2486	2188	1511	1003	940	1121
35°	1750	2149	1295	804	787	1085
45°	873	1586	989	651	662	692
55°	507	905	655	504	510	462
65°	317	482	394	344	350	316
75°	151	212	191	176	182	163
85°	31	42	38	36	34	37
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°	1722.2	1722.2	1722.2	1722.2	1722.2	1722.2	1722.2	1722.2	1722.2	1722.2	1722.2
2.5°	1794.9	1794.9	1797.8	1797.1	1794.1	1788.9	1784.5	1779.3	1765.9	1757.1	1765.2
5°	1888.2	1891.9	1895.6	1894.9	1883.8	1874.1	1860.1	1856.4	1832.6	1821.5	1817.8
7.5°	2006.8	2006.1	2007.5	1994.9	1985.3	1975.7	1957.1	1934.2	1906.0	1890.4	1875.6
10°	2119.4	2126.1	2123.1	2107.6	2092.8	2082.4	2052.7	2024.6	1989.8	1956.4	1937.9
12.5°	2211.3	2207.6	2220.2	2205.4	2187.6	2168.3	2139.4	2114.2	2069.0	2023.8	1986.0
15°	2282.5	2278.8	2280.2	2269.1	2250.6	2233.6	2203.9	2177.2	2134.3	2089.1	2049.0
17.5°	2344.7	2348.4	2341.8	2328.4	2303.2	2283.2	2246.2	2209.8	2164.6	2119.4	2080.2
20°	2423.3	2427.0	2414.4	2395.1	2370.7	2336.6	2298.0	2246.2	2195.8	2140.2	2091.3
22.5°	2485.5	2483.3	2478.9	2460.3	2434.4	2402.5	2346.9	2289.9	2229.9	2160.9	2097.9
25°	2485.5	2488.5	2490.7	2481.1	2464.0	2437.4	2399.6	2339.5	2272.1	2187.6	2099.4
27.5°	2405.5	2418.8	2428.5	2428.5	2424.8	2424.0	2401.8	2364.0	2301.0	2215.8	2118.0
30°	2239.5	2257.3	2272.1	2295.1	2322.5	2340.3	2346.9	2332.1	2299.5	2227.6	2126.1
32.5°	2035.0	2033.5	2063.9	2100.9	2155.0	2192.8	2230.6	2252.8	2251.3	2208.4	2123.9
35°	1750.4	1771.1	1807.4	1859.3	1929.0	1991.2	2073.5	2116.5	2150.6	2149.1	2095.0
37.5°	1473.2	1476.2	1517.0	1588.1	1649.6	1745.9	1853.4	1943.1	2025.3	2052.0	2034.2
40°	1227.2	1247.9	1275.4	1334.7	1396.2	1480.6	1617.0	1737.0	1838.6	1917.1	1938.6
42.5°	1037.5	1048.6	1075.3	1127.2	1182.0	1282.8	1382.8	1511.0	1639.2	1764.5	1828.9
45°	873.0	883.3	907.8	944.1	995.2	1074.5	1177.5	1302.0	1439.1	1585.9	1677.8
47.5°	752.9	756.6	775.2	802.6	850.7	908.5	991.5	1112.3	1250.9	1393.9	1528.8
50°	658.1	664.0	676.6	698.1	733.7	787.7	853.7	944.9	1073.1	1221.3	1358.4
52.5°	575.1	579.5	594.3	606.2	633.6	679.6	736.6	819.6	927.8	1061.2	1202.7
55°	506.9	511.3	518.7	532.1	553.6	584.7	633.6	699.6	792.2	904.8	1037.5
57.5°	455.0	457.2	458.7	467.6	484.7	509.9	551.3	603.2	675.1	778.1	895.9
60°	406.1	405.4	411.3	418.0	428.3	443.9	474.3	521.0	585.4	669.2	778.9
62.5°	357.2	360.9	364.6	369.8	376.5	385.4	409.8	444.6	495.8	567.7	658.1
65°	317.2	317.9	320.9	321.6	329.8	338.7	357.2	380.9	423.1	481.7	556.5
67.5°	278.6	279.4	278.6	280.9	284.6	292.0	301.6	320.9	353.5	400.9	466.1
70°	243.1	240.8	237.9	241.6	245.3	249.0	255.7	270.5	294.9	330.5	384.6
72.5°	195.6	197.1	198.6	200.1	200.8	206.0	211.9	222.3	241.6	269.0	310.5
75°	151.2	151.2	153.4	154.9	161.6	163.0	169.7	177.1	192.7	211.9	244.6
77.5°	111.2	110.4	114.1	114.9	118.6	123.0	126.7	134.1	146.0	162.3	183.8
80°	80.0	80.8	80.0	80.0	82.3	85.2	90.4	94.1	102.3	112.6	128.2
82.5°	53.4	53.4	54.1	54.1	56.3	56.3	59.3	62.2	67.4	74.1	85.2
85°	31.1	31.1	30.4	30.4	31.1	31.1	34.1	36.3	37.1	41.5	45.2
87.5°	13.3	13.3	12.6	13.3	12.6	13.3	12.6	14.1	14.8	15.6	17.0
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°	1722.2	1722.2	1722.2	1722.2	1722.2	1722.2	1722.2	1722.2	1722.2	1722.2	1722.2
2.5°	1763.0	1760.8	1760.0	1751.9	1743.7	1734.1	1732.6	1735.6	1723.0	1707.4	1706.7
5°	1808.9	1800.8	1788.9	1773.4	1760.0	1742.2	1733.3	1729.6	1710.4	1688.1	1683.7
7.5°	1860.1	1840.1	1818.6	1794.9	1771.1	1745.2	1728.9	1719.3	1692.6	1665.2	1654.0
10°	1909.0	1883.0	1850.4	1814.1	1780.8	1745.2	1720.7	1703.7	1671.1	1637.0	1620.0
12.5°	1965.3	1922.3	1876.4	1831.2	1790.4	1744.5	1707.4	1681.5	1643.7	1607.4	1582.2
15°	2006.1	1943.8	1908.2	1843.8	1792.6	1737.0	1691.8	1652.6	1611.1	1571.1	1545.9
17.5°	2037.9	1989.0	1926.8	1855.6	1786.7	1726.7	1670.4	1626.6	1571.8	1528.1	1500.6
20°	2048.3	1998.6	1934.9	1857.1	1788.2	1711.1	1644.4	1591.8	1533.3	1479.9	1442.1
22.5°	2044.6	1988.3	1923.1	1846.7	1777.1	1685.9	1616.3	1553.3	1488.1	1431.0	1379.1
25°	2036.4	1971.2	1899.3	1827.5	1749.6	1660.0	1579.9	1511.0	1432.5	1370.2	1308.0
27.5°	2032.0	1946.8	1866.0	1788.2	1714.1	1627.4	1541.4	1464.3	1377.6	1302.0	1222.0
30°	2030.5	1929.0	1827.5	1737.0	1668.9	1580.7	1495.5	1413.9	1312.4	1227.2	1145.7
32.5°	2027.5	1914.2	1794.9	1686.7	1608.8	1529.6	1439.1	1358.4	1243.5	1154.6	1067.1
35°	2007.5	1888.2	1757.1	1634.0	1542.9	1460.6	1379.9	1295.4	1176.1	1080.5	996.7
37.5°	1964.6	1860.1	1720.0	1581.4	1472.5	1388.7	1313.9	1222.0	1106.4	1001.9	924.1
40°	1900.8	1815.6	1680.0	1529.6	1401.3	1309.5	1230.2	1148.6	1029.3	929.3	858.9
42.5°	1817.8	1751.9	1624.4	1468.8	1332.4	1229.4	1148.6	1067.9	958.2	861.9	798.9
45°	1708.9	1668.1	1556.2	1402.8	1265.7	1146.4	1059.0	988.6	887.1	798.9	741.1
47.5°	1588.1	1570.3	1476.9	1329.5	1185.0	1069.4	967.1	893.0	813.7	738.8	687.7
50°	1442.1	1456.2	1382.8	1247.2	1107.1	988.6	888.5	808.5	739.6	681.8	636.6
52.5°	1305.8	1339.1	1279.8	1150.9	1025.6	902.6	801.8	728.5	674.4	626.9	587.7
55°	1153.8	1202.0	1166.4	1055.3	930.8	821.8	721.1	655.1	608.4	572.1	538.8
57.5°	1007.8	1076.0	1050.1	950.0	844.1	738.1	643.2	578.0	544.7	518.0	489.8
60°	878.2	940.4	936.7	851.5	745.5	651.4	573.6	515.0	485.4	467.6	443.2
62.5°	761.8	824.8	818.9	741.8	658.1	570.6	504.7	451.3	429.8	410.5	395.0
65°	643.2	697.3	700.3	643.2	562.5	492.1	435.7	393.5	374.2	362.4	351.3
67.5°	535.8	588.4	593.6	548.4	477.2	416.5	374.2	338.7	321.6	311.2	303.1
70°	441.7	484.7	494.3	456.5	396.5	349.0	313.5	286.0	274.9	264.6	261.6
72.5°	357.9	392.8	399.4	364.6	320.1	284.6	257.1	236.4	228.2	217.9	215.6
75°	284.6	309.0	309.8	286.8	253.4	226.0	203.8	191.2	182.3	174.9	173.4
77.5°	206.8	228.2	234.9	217.9	190.5	167.5	154.9	145.2	139.3	135.6	134.9
80°	149.7	163.8	166.7	151.9	135.6	121.5	112.6	104.5	100.8	97.1	95.6
82.5°	93.4	106.0	106.7	96.3	88.2	78.6	71.1	68.2	66.0	63.7	63.7
85°	50.4	57.1	56.3	51.9	48.2	43.0	40.0	38.5	37.1	35.6	35.6
87.5°	19.3	21.5	21.5	22.2	19.3	17.0	15.6	16.3	15.6	15.6	15.6
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°	1722.2	1722.2	1722.2	1722.2	1722.2	1722.2	1722.2	1722.2	1722.2	1722.2	1722.2
2.5°	1701.5	1698.5	1691.1	1679.2	1672.6	1657.8	1658.5	1661.5	1662.2	1660.0	1659.2
5°	1671.1	1662.2	1650.3	1635.5	1625.1	1614.0	1606.6	1611.1	1608.8	1608.1	1604.4
7.5°	1637.7	1625.9	1611.1	1596.2	1584.4	1569.6	1563.6	1558.5	1552.5	1551.8	1548.8
10°	1604.4	1589.6	1572.5	1551.0	1534.7	1516.2	1498.4	1488.8	1477.7	1469.5	1452.5
12.5°	1565.1	1539.9	1520.7	1498.4	1468.8	1439.1	1419.1	1391.7	1376.9	1362.1	1342.1
15°	1519.9	1487.3	1454.0	1409.5	1383.6	1342.1	1312.4	1292.4	1269.4	1254.6	1237.6
17.5°	1455.4	1421.4	1379.1	1328.7	1282.8	1240.5	1219.0	1193.1	1183.5	1150.9	1147.9
20°	1391.7	1340.6	1288.0	1236.8	1185.7	1155.3	1127.9	1110.9	1093.1	1072.3	1065.6
22.5°	1319.8	1253.1	1197.6	1150.1	1103.4	1070.1	1056.8	1037.5	1020.4	1008.6	997.5
25°	1232.4	1170.9	1114.6	1070.1	1027.9	1002.7	985.6	971.5	964.1	950.8	946.3
27.5°	1151.6	1090.1	1044.9	1003.4	969.3	947.1	932.3	919.7	910.0	907.8	902.6
30°	1069.4	1016.7	973.8	938.2	907.8	895.9	881.9	875.9	870.0	867.0	861.1
32.5°	995.2	948.6	910.8	876.7	858.9	847.8	840.4	834.4	830.0	828.5	827.0
35°	927.8	884.8	853.7	829.2	815.9	804.1	800.3	795.2	792.9	792.2	791.5
37.5°	868.5	828.5	804.8	783.3	773.7	762.6	763.3	761.1	759.6	755.1	758.1
40°	808.5	777.4	752.9	735.9	729.2	725.5	724.0	722.5	723.3	723.3	722.5
42.5°	753.7	726.2	710.7	694.4	691.4	688.4	688.4	686.2	687.0	690.7	692.2
45°	704.0	682.5	668.4	655.1	655.1	651.4	654.4	653.6	655.8	658.1	659.5
47.5°	654.4	635.1	624.7	618.0	615.1	615.1	617.3	621.0	622.5	623.2	624.7
50°	604.7	590.6	581.7	578.0	577.3	581.0	583.2	582.5	584.7	587.7	589.9
52.5°	561.0	548.4	542.5	541.0	541.0	543.9	544.7	546.9	548.4	548.4	551.3
55°	515.8	506.9	502.4	501.7	502.4	503.9	506.9	508.4	507.6	509.1	509.1
57.5°	470.6	463.9	461.7	463.9	463.9	466.9	466.9	466.9	466.1	469.1	468.4
60°	428.3	420.9	423.1	422.4	424.6	424.6	426.9	426.9	424.6	427.6	429.1
62.5°	386.1	384.6	381.6	381.6	383.9	384.6	382.4	384.6	385.4	387.6	389.1
65°	341.6	336.4	338.7	337.9	340.1	343.9	340.9	340.9	343.1	346.1	347.6
67.5°	299.4	294.9	297.2	297.9	297.9	299.4	297.2	298.6	301.6	305.3	307.5
70°	256.4	254.9	255.7	254.9	254.9	258.6	259.4	258.6	261.6	265.3	266.0
72.5°	212.7	214.2	212.7	214.2	215.6	213.4	214.2	216.4	219.4	221.6	225.3
75°	172.7	170.4	171.2	174.9	174.1	175.6	174.9	177.1	182.3	180.8	181.6
77.5°	133.4	132.7	133.4	134.1	134.9	137.1	136.4	140.1	140.8	141.5	143.0
80°	94.9	95.6	96.3	97.8	100.0	99.3	100.8	101.5	104.5	101.5	103.7
82.5°	64.5	63.7	65.2	65.2	67.4	68.9	66.7	66.7	66.7	66.0	66.0
85°	35.6	37.8	37.8	37.8	36.3	36.3	37.1	36.3	36.3	36.3	35.6
87.5°	15.6	15.6	14.8	14.1	14.8	14.1	14.1	13.3	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





TEST NUMBER: P242126

CATALOG NUMBER: S121DR-S1025D835-X4F0-XX-UDD-A-W

**CANDELA DISTRIBUTION (continued):**

	165°	170°	175°	180°
0°	1722.2	1722.2	1722.2	1722.2
2.5°	1654.8	1658.5	1654.0	1651.1
5°	1600.7	1600.7	1596.2	1594.8
7.5°	1539.9	1540.7	1532.5	1526.6
10°	1448.8	1444.3	1432.5	1425.8
12.5°	1327.2	1333.9	1316.1	1302.8
15°	1221.3	1202.7	1210.2	1202.0
17.5°	1132.3	1126.4	1118.3	1119.0
20°	1054.5	1050.1	1045.6	1046.4
22.5°	993.0	989.3	987.8	982.6
25°	941.9	943.4	939.7	939.7
27.5°	899.6	897.4	895.2	892.2
30°	859.6	860.4	858.1	856.7
32.5°	824.1	824.8	823.3	821.1
35°	789.2	788.5	789.2	787.0
37.5°	757.4	756.6	757.4	760.3
40°	724.8	725.5	723.3	726.2
42.5°	692.9	693.6	693.6	692.2
45°	658.1	660.3	661.0	662.5
47.5°	624.0	627.7	626.2	626.9
50°	589.9	589.1	589.1	588.4
52.5°	552.1	549.9	549.1	549.9
55°	506.9	509.9	509.9	509.9
57.5°	469.8	470.6	472.8	469.8
60°	432.0	432.0	432.8	438.7
62.5°	389.8	390.5	392.0	392.8
65°	349.0	351.3	350.5	349.8
67.5°	309.0	309.0	309.8	308.3
70°	267.5	267.5	267.5	271.2
72.5°	224.5	224.5	225.3	226.8
75°	184.5	184.5	184.5	182.3
77.5°	140.8	141.5	141.5	142.3
80°	102.3	101.5	101.5	100.8
82.5°	64.5	65.2	64.5	63.7
85°	35.6	36.3	34.1	34.1
87.5°	12.6	12.6	11.9	13.3
90°	0.0	0.0	0.0	0.0

(END OF REPORT)