

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: P243178

Luminaire Tested: **S122DR-H1005D940-X4F0-XX-UDD-A-W**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P243178  
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-H1005D940-X4F0-XX-UDD-A-W  
Description: DEFINE 2 DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER.  
HIGH PERFORMANCE LIGHT ENGINE  
Light Source: (184) 4000K CCT, 90 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 3760.7 lumens  
Efficiency: N/A  
Efficacy: 99.8 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

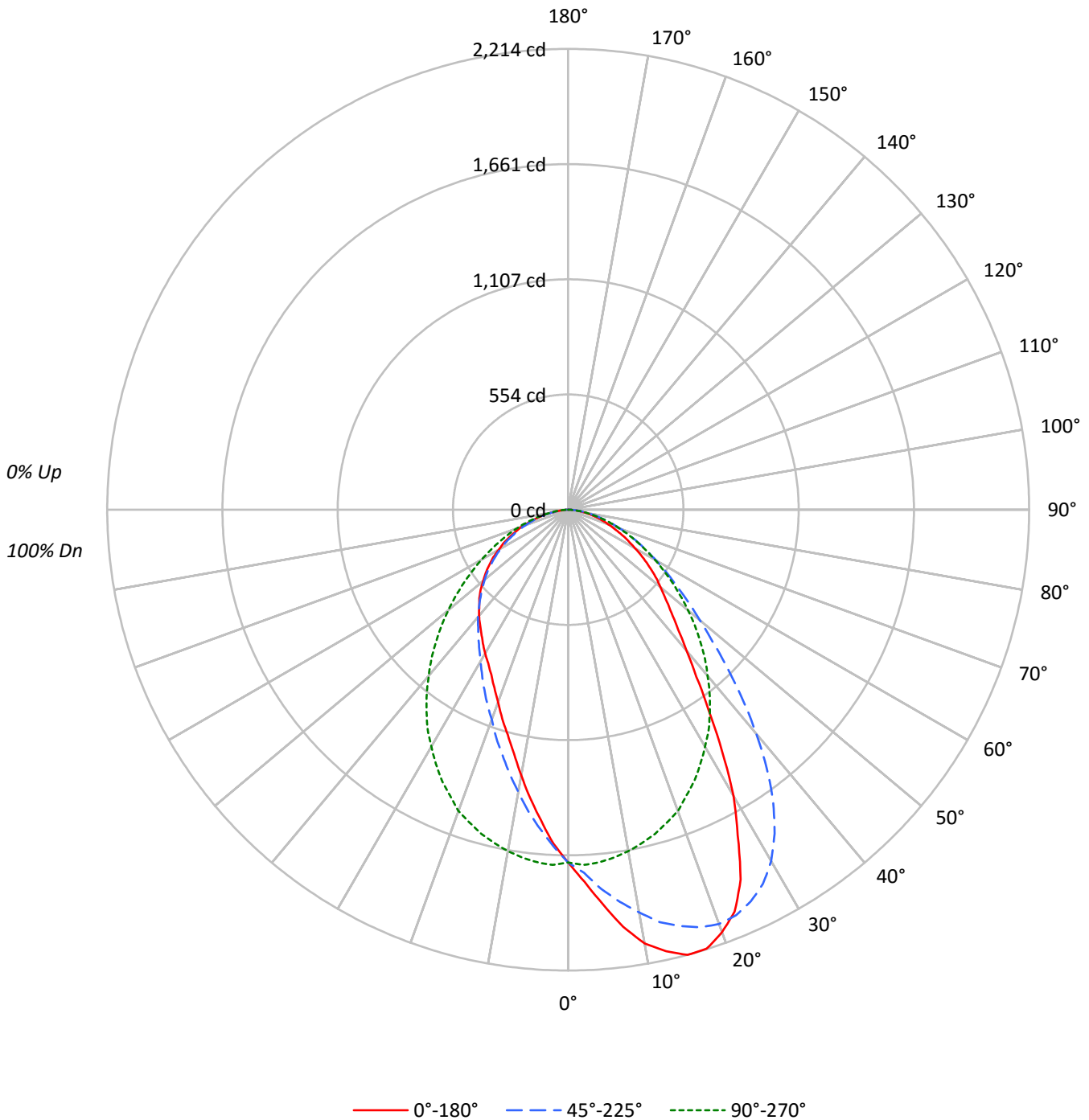
Input Watts (W): 37.7  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	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°	32282	32282	32282
5°	36363	32512	28639
10°	40933	32221	25065
15°	43661	31788	22090
20°	43788	31214	19936
25°	41182	30174	18377
30°	34958	28916	17547
35°	27332	27566	16889
40°	21958	25904	16563
45°	18889	24195	16254
50°	17137	22266	15797
55°	15787	20287	15372
60°	14194	18278	14671
65°	12778	16424	13967
70°	11389	14602	13065
75°	10244	12555	11451
80°	8940	10114	8940
85°	7671	7540	4939



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	161.5	4.3
10°-20°	464.1	12.3
20°-30°	674.9	17.9
30°-40°	724.0	19.3
40°-50°	648.9	17.3
50°-60°	517.3	13.8
60°-70°	349.9	9.3
70°-80°	178.5	4.7
80°-90°	41.8	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°	1300.4	34.6
0°-40°	2024.4	53.8
0°-60°	3190.5	84.8
0°-90°	3760.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3760.7	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	1695	1695	1695	1695	1695	
5°	1902	1829	1700	1540	1498	188
15°	2214	2070	1612	1220	1120	620
25°	1960	2076	1436	953	874	881
35°	1175	1717	1186	751	726	745
45°	701	1086	898	596	603	549
55°	475	632	611	449	463	424
65°	284	367	364	295	310	281
75°	139	174	171	147	156	148
85°	35	40	34	27	23	41
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°	1694.8	1694.8	1694.8	1694.8	1694.8	1694.8	1694.8	1694.8	1694.8	1694.8	1694.8
2.5°	1788.9	1794.5	1789.5	1787.6	1783.8	1782.6	1772.6	1764.4	1759.4	1745.6	1746.8
5°	1901.8	1914.3	1907.4	1906.8	1893.0	1884.2	1875.4	1862.9	1844.1	1829.0	1817.1
7.5°	2020.9	2014.7	2012.8	2005.9	1995.9	1983.3	1963.9	1945.7	1921.8	1899.9	1883.6
10°	2116.3	2114.4	2117.5	2100.0	2093.7	2074.3	2057.3	2029.1	1998.4	1963.9	1942.5
12.5°	2172.7	2178.4	2182.8	2175.9	2160.8	2155.2	2126.9	2087.4	2076.8	2029.7	2004.0
15°	2214.1	2216.6	2217.3	2209.7	2202.2	2187.8	2170.8	2145.8	2111.3	2070.5	2051.0
17.5°	2211.6	2211.0	2214.8	2210.4	2206.0	2201.6	2188.4	2169.0	2142.0	2103.7	2071.1
20°	2160.2	2171.5	2180.3	2182.1	2181.5	2184.0	2177.7	2165.2	2145.8	2118.2	2081.2
22.5°	2089.9	2085.5	2104.4	2103.1	2111.3	2130.1	2138.2	2133.2	2125.7	2108.1	2078.6
25°	1959.5	1963.9	1977.0	1990.8	2022.8	2034.1	2058.6	2077.4	2079.9	2075.5	2057.3
27.5°	1763.8	1795.1	1802.0	1820.2	1864.8	1901.8	1951.3	1980.8	2022.8	2026.6	2018.4
30°	1589.4	1588.2	1598.8	1631.4	1672.2	1728.0	1792.0	1867.9	1916.2	1949.4	1961.4
32.5°	1374.9	1379.9	1407.5	1447.7	1489.0	1544.9	1618.9	1711.7	1776.3	1845.3	1884.2
35°	1175.4	1191.1	1217.5	1245.1	1290.2	1366.7	1448.9	1526.1	1625.2	1717.4	1780.1
37.5°	1011.1	1032.4	1052.5	1078.8	1122.7	1181.7	1255.7	1358.0	1456.4	1567.5	1659.7
40°	883.1	891.3	905.1	930.8	960.3	1019.3	1093.9	1170.4	1277.0	1404.4	1525.4
42.5°	782.8	780.9	796.0	812.3	839.2	883.1	948.4	1024.9	1130.9	1243.8	1366.1
45°	701.2	701.9	708.1	725.1	746.4	771.5	821.7	893.8	974.1	1086.4	1216.2
47.5°	634.8	636.6	646.0	658.0	670.5	693.7	727.0	774.0	849.3	943.4	1065.0
50°	578.3	581.4	587.7	596.5	605.9	622.2	647.3	684.3	743.9	823.6	933.9
52.5°	528.1	529.4	531.3	539.4	546.9	562.0	580.8	609.7	656.7	723.2	809.1
55°	475.4	474.2	478.6	485.5	492.4	503.0	522.5	545.7	578.9	631.6	702.5
57.5°	421.5	423.4	426.5	430.3	442.8	454.1	468.5	489.9	516.2	557.6	616.6
60°	372.6	372.6	376.3	381.4	389.5	397.0	410.8	430.3	453.5	485.5	535.0
62.5°	324.9	327.4	331.2	333.7	341.2	350.6	361.3	376.3	397.7	423.4	460.4
65°	283.5	282.3	286.0	291.0	296.7	303.0	314.9	327.4	343.7	366.9	397.7
67.5°	240.9	244.6	245.9	248.4	252.8	260.9	266.6	279.7	292.9	313.6	339.3
70°	204.5	207.0	208.9	212.0	215.8	219.5	225.2	235.8	249.0	263.4	281.6
72.5°	171.9	173.7	171.9	175.0	176.9	180.6	188.2	193.2	203.2	215.8	232.1
75°	139.2	140.5	139.9	143.0	143.6	147.4	151.2	155.6	166.8	173.7	185.0
77.5°	109.1	110.4	111.0	112.3	113.5	115.4	117.3	121.7	128.0	134.2	143.0
80°	81.5	81.5	83.4	84.0	84.7	85.9	89.1	90.3	94.7	96.6	103.5
82.5°	56.5	57.1	57.7	57.7	58.3	59.6	60.2	62.7	64.0	67.1	70.2
85°	35.1	35.8	35.8	35.8	37.6	37.0	37.0	38.3	40.1	40.1	41.4
87.5°	17.6	18.2	18.2	18.2	18.8	18.8	18.8	18.8	18.8	20.1	19.4
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°	1694.8	1694.8	1694.8	1694.8	1694.8	1694.8	1694.8	1694.8	1694.8	1694.8	1694.8
2.5°	1746.2	1745.6	1743.1	1731.8	1723.0	1711.7	1709.8	1708.0	1692.3	1675.3	1670.3
5°	1807.7	1796.4	1780.7	1761.9	1743.1	1722.4	1710.5	1700.4	1676.6	1650.2	1635.2
7.5°	1867.9	1845.9	1821.5	1792.0	1760.6	1727.4	1706.1	1686.0	1653.4	1618.9	1598.2
10°	1919.3	1889.8	1856.0	1817.1	1773.8	1728.7	1697.3	1665.9	1624.5	1582.5	1554.9
12.5°	1962.0	1924.3	1879.8	1827.1	1787.6	1725.5	1681.6	1640.2	1594.4	1539.9	1509.7
15°	1994.6	1957.6	1897.4	1844.1	1792.0	1709.2	1655.9	1612.0	1550.5	1497.2	1449.5
17.5°	2034.1	1981.4	1921.8	1845.3	1787.6	1692.9	1632.7	1575.6	1509.1	1446.4	1393.7
20°	2051.7	1996.5	1932.5	1847.2	1773.8	1675.3	1595.1	1539.9	1459.6	1387.4	1327.8
22.5°	2054.2	2001.5	1931.9	1841.6	1750.0	1649.6	1557.4	1485.3	1405.0	1328.5	1261.4
25°	2043.5	1993.3	1921.2	1831.5	1723.6	1622.0	1519.2	1435.7	1342.9	1263.9	1195.5
27.5°	2014.7	1973.9	1905.5	1809.6	1696.7	1579.4	1467.1	1376.1	1284.6	1194.9	1129.6
30°	1968.3	1941.3	1882.3	1780.7	1662.2	1533.0	1420.7	1314.7	1215.6	1131.5	1061.3
32.5°	1908.7	1895.5	1846.6	1746.2	1627.0	1482.1	1364.9	1255.7	1147.8	1068.2	996.0
35°	1832.8	1839.7	1798.3	1707.3	1582.5	1430.7	1299.6	1185.5	1080.1	995.4	928.9
37.5°	1734.3	1768.2	1741.8	1656.5	1525.4	1378.7	1231.3	1116.5	1006.1	924.5	866.2
40°	1623.9	1683.5	1670.9	1599.4	1464.0	1317.8	1165.4	1041.8	933.9	856.8	801.0
42.5°	1494.1	1580.6	1594.4	1529.8	1403.1	1241.9	1091.4	972.2	868.1	792.2	738.9
45°	1348.5	1455.8	1502.2	1451.4	1332.2	1168.5	1015.5	898.2	795.3	730.7	686.2
47.5°	1202.4	1331.6	1394.3	1369.9	1249.4	1090.1	940.2	825.4	728.2	671.8	629.7
50°	1058.1	1196.8	1288.3	1272.0	1167.9	1015.5	864.3	751.4	662.4	610.3	574.5
52.5°	931.4	1062.5	1162.3	1170.4	1077.0	930.2	784.0	679.3	603.4	556.4	526.2
55°	806.6	928.3	1037.4	1057.5	981.6	840.5	710.0	610.9	541.9	503.0	478.6
57.5°	695.0	805.4	913.9	949.0	887.5	760.2	630.4	543.2	483.6	453.5	432.2
60°	600.3	700.0	793.4	829.2	787.2	671.1	557.6	479.8	430.3	403.3	386.4
62.5°	517.5	594.6	677.4	716.9	688.7	587.7	488.6	419.6	379.5	356.3	343.1
65°	442.8	502.4	567.6	613.4	582.1	506.8	424.0	364.4	330.6	309.2	299.8
67.5°	373.8	423.4	475.4	511.8	496.1	427.8	358.1	311.7	283.5	267.2	258.4
70°	311.1	348.1	390.1	418.4	407.1	354.4	299.2	262.2	238.3	227.1	219.5
72.5°	255.3	279.1	311.1	334.3	322.4	285.4	245.9	216.4	198.8	185.7	180.0
75°	202.6	223.3	245.9	261.6	252.1	224.5	193.2	170.6	158.7	150.5	146.8
77.5°	153.7	170.0	185.7	193.2	188.8	168.7	147.4	129.8	119.8	114.8	110.4
80°	110.4	119.8	130.5	137.4	134.9	121.1	106.0	92.2	87.8	81.5	80.3
82.5°	74.0	81.5	84.0	87.2	85.3	79.0	68.4	60.2	56.5	53.3	52.7
85°	43.9	45.8	48.9	48.9	47.0	42.7	37.0	34.5	30.7	30.1	28.2
87.5°	19.4	19.4	19.4	19.4	19.4	18.2	15.7	14.4	13.2	12.5	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):**

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	1694.8	1694.8	1694.8	1694.8	1694.8	1694.8	1694.8	1694.8	1694.8	1694.8	1694.8
2.5°	1665.9	1659.7	1650.9	1640.8	1632.1	1618.3	1613.9	1613.9	1617.0	1613.2	1610.1
5°	1622.6	1610.1	1597.6	1578.1	1561.8	1539.9	1533.6	1527.3	1526.7	1520.4	1512.3
7.5°	1576.2	1557.4	1531.7	1504.1	1486.5	1462.7	1449.5	1445.8	1433.9	1422.6	1409.4
10°	1522.3	1493.4	1462.7	1436.4	1408.8	1378.0	1362.3	1351.7	1339.8	1326.0	1316.6
12.5°	1457.1	1424.4	1396.2	1365.5	1342.3	1299.0	1294.0	1280.2	1256.3	1235.6	1228.1
15°	1416.9	1359.8	1327.8	1299.6	1264.5	1220.0	1203.7	1188.6	1166.0	1152.9	1142.2
17.5°	1346.0	1294.6	1254.5	1216.8	1183.0	1148.5	1124.0	1111.5	1093.3	1082.0	1071.3
20°	1281.4	1225.6	1183.6	1139.7	1104.6	1073.2	1052.5	1036.8	1027.4	1016.1	1005.5
22.5°	1216.2	1157.9	1117.7	1073.2	1031.8	1013.0	988.5	975.3	962.8	954.0	942.7
25°	1140.3	1093.9	1043.7	1009.2	972.8	953.4	930.2	917.6	907.6	897.6	891.9
27.5°	1072.6	1025.5	979.1	944.6	913.9	895.1	880.6	868.7	856.2	848.6	844.3
30°	1002.3	959.0	918.3	885.0	861.2	840.5	831.7	820.4	811.0	807.9	801.0
32.5°	939.6	891.3	858.7	828.6	808.5	794.1	787.8	775.9	774.0	770.9	767.1
35°	876.9	835.5	804.1	778.4	761.5	750.8	742.6	739.5	736.4	733.2	730.1
37.5°	814.8	782.2	752.7	732.0	718.2	710.0	708.1	701.9	701.2	696.9	696.9
40°	759.0	725.7	705.0	688.7	677.4	673.6	668.6	667.4	665.5	664.2	666.7
42.5°	703.1	680.5	663.0	646.0	637.3	634.1	632.9	631.0	629.7	633.5	634.8
45°	651.1	631.6	616.6	604.7	599.6	595.9	595.9	597.8	597.1	599.0	599.0
47.5°	602.8	585.2	572.7	568.3	562.0	560.7	561.4	560.7	563.9	566.4	568.9
50°	557.0	541.3	531.3	526.9	525.6	523.7	526.2	527.5	529.4	531.9	533.1
52.5°	506.2	498.6	492.4	488.0	487.4	488.0	487.4	491.7	493.6	497.4	496.8
55°	462.9	457.3	452.9	447.8	447.2	449.1	450.4	454.1	456.6	459.8	459.1
57.5°	422.1	417.7	412.7	411.5	410.8	411.5	417.1	416.5	420.2	422.8	424.0
60°	377.6	374.5	370.1	370.1	371.9	373.2	375.1	378.2	382.0	381.4	385.7
62.5°	336.8	333.1	331.8	333.7	333.1	336.2	338.1	338.1	343.1	345.0	346.2
65°	296.1	294.8	292.9	292.9	294.8	295.4	298.6	300.4	302.3	306.1	309.2
67.5°	257.8	254.7	254.7	253.4	255.9	257.8	259.7	262.2	263.4	267.8	269.7
70°	217.6	216.4	215.8	217.0	217.0	218.9	222.0	225.2	227.7	228.3	232.1
72.5°	178.8	178.8	178.8	180.6	181.9	183.8	184.4	186.9	190.7	191.3	193.2
75°	143.6	144.3	143.6	144.3	144.9	146.8	148.0	150.5	153.0	153.7	154.9
77.5°	111.0	109.8	108.5	110.4	111.6	115.4	114.8	116.0	118.5	117.3	118.5
80°	77.8	79.7	77.1	80.9	80.9	80.3	81.5	83.4	82.8	84.0	82.8
82.5°	52.7	50.8	50.8	52.7	53.3	51.4	52.7	53.3	53.9	52.7	52.1
85°	28.9	28.2	29.5	27.6	28.2	27.0	27.0	25.7	27.0	25.7	24.5
87.5°	10.7	10.0	10.7	8.8	8.2	7.5	6.9	6.9	5.6	5.6	5.6
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: P243178

CATALOG NUMBER: S122DR-H1005D940-X4F0-XX-UDD-A-W

**CANDELA DISTRIBUTION (continued):**

	165°	170°	175°	180°
0°	1694.8	1694.8	1694.8	1694.8
2.5°	1614.5	1607.6	1604.5	1607.0
5°	1503.5	1505.4	1494.1	1497.8
7.5°	1407.5	1399.4	1401.9	1397.5
10°	1305.9	1301.5	1294.6	1295.9
12.5°	1237.5	1208.0	1206.2	1200.5
15°	1141.6	1125.3	1121.5	1120.2
17.5°	1065.0	1051.2	1056.3	1052.5
20°	996.0	996.7	988.5	983.5
22.5°	935.2	933.9	930.8	925.8
25°	883.8	883.8	876.2	874.4
27.5°	836.7	838.0	831.7	831.7
30°	801.6	797.2	796.6	797.8
32.5°	766.5	761.5	762.1	761.5
35°	728.8	730.1	728.2	726.3
37.5°	696.9	696.9	696.9	695.0
40°	665.5	666.7	664.9	666.1
42.5°	634.1	634.8	634.8	632.2
45°	602.8	602.1	600.9	603.4
47.5°	570.2	570.2	569.5	570.8
50°	534.4	535.7	533.8	533.1
52.5°	498.0	498.6	498.0	499.3
55°	461.0	461.0	461.6	462.9
57.5°	422.8	427.1	424.0	426.5
60°	385.1	385.7	386.4	385.1
62.5°	349.4	348.7	349.4	351.2
65°	310.5	311.7	311.1	309.9
67.5°	272.2	271.0	272.8	271.0
70°	231.4	234.0	232.1	234.6
72.5°	194.4	193.8	195.1	191.9
75°	155.6	155.6	156.2	155.6
77.5°	119.2	117.9	117.3	115.4
80°	82.2	82.2	79.7	81.5
82.5°	50.2	50.8	51.4	47.7
85°	23.8	23.8	23.2	22.6
87.5°	5.0	5.0	5.6	6.3
90°	0.0	0.0	0.0	0.0

(END OF REPORT)