

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: P243079

Luminaire Tested: **S121RDR-H1025D927-X4F0-XX-UDD-A-W**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P243079  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-67)  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: S121RDR-H1025D927-X4F0-XX-UDD-A-W  
Description: DEFINE 1 REGRESSED DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER.  
HIGH PERFORMANCE LIGHT ENGINE  
Light Source: (184) 2700K CCT, 90 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

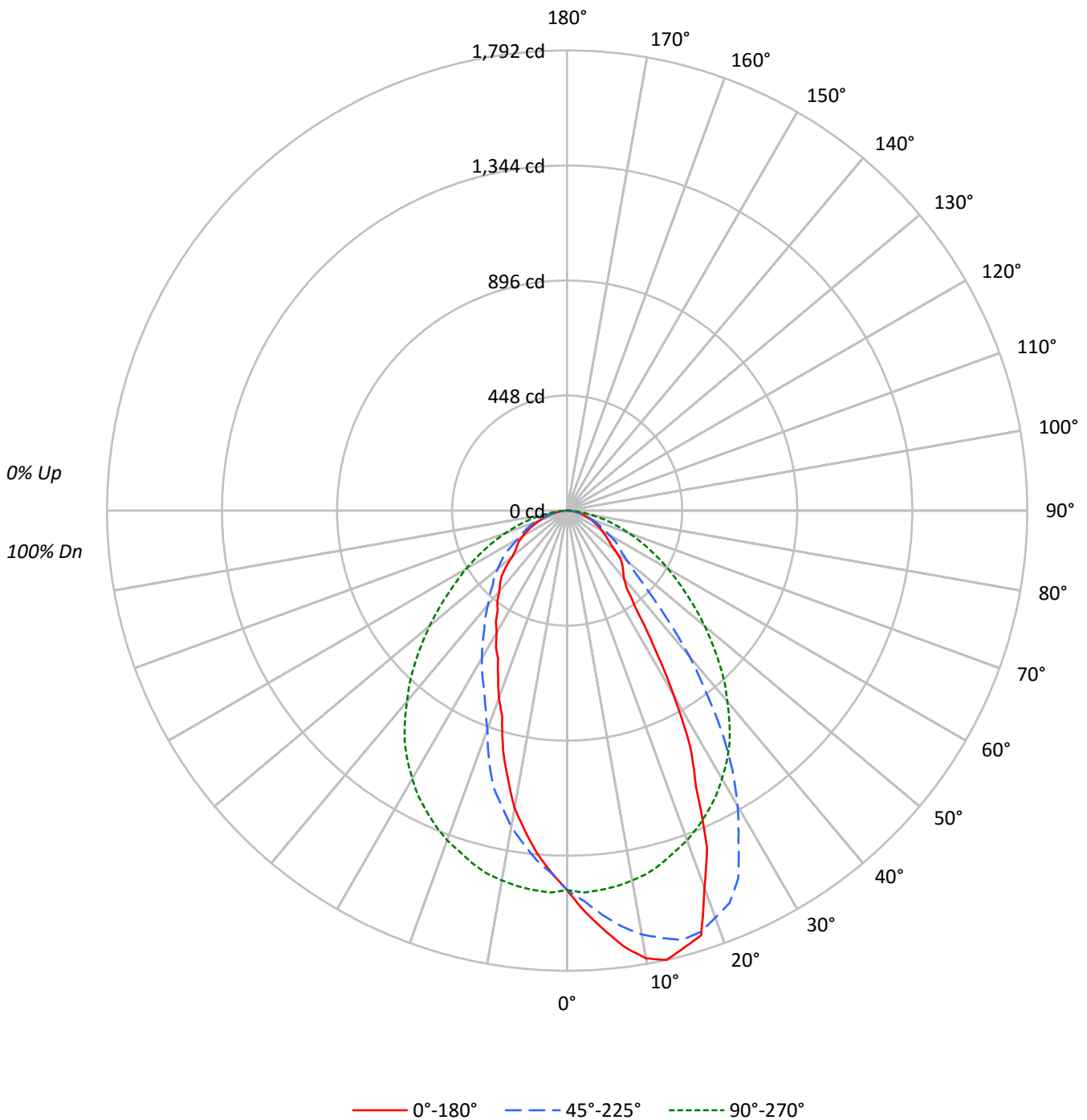
Lumens per Lamp: N/A  
Luminaire Lumens: 2605.0 lumens  
Efficiency: N/A  
Efficacy: 69.1 lumens/watt  
Spacing Criteria (0/90/45): 0.89 / 1.21 / 1.07  
Luminous Opening: Rectangular (W 3.88' x L: 0.09' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 37.7  
Input Voltage (V): 120  
Input Current (Ain): 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	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	81	87	83	80	84	81	78				76	
3	94	85	78	73	92	84	77	72	81	75	71	78	73	70	76	72	68				66	
4	87	77	69	63	85	76	69	63	73	67	62	71	66	61	69	64	61				59	
5	81	70	62	56	79	69	61	56	67	60	55	65	59	55	63	58	54				52	
6	76	64	56	50	74	63	55	50	61	55	50	60	54	49	58	53	49				47	
7	71	59	51	45	69	58	50	45	56	50	45	55	49	44	54	48	44				42	
8	66	54	46	41	65	53	46	41	52	46	41	51	45	41	50	44	40				39	
9	62	50	43	38	61	50	42	38	49	42	37	48	42	37	47	41	37				35	
10	59	47	39	35	58	46	39	35	45	39	34	44	38	34	44	38	34				33	

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

	0°	90°	180°
0°	43781	43781	43781
5°	48722	44132	39873
10°	53275	44005	35406
15°	54043	43635	29568
20°	49261	43078	24456
25°	38800	42298	20802
30°	28366	41272	18759
35°	16928	39904	17051
40°	13275	37542	15905
45°	12793	35043	15131
50°	11404	32235	12842
55°	9960	29331	12264
60°	9310	26845	11887
65°	8673	24412	11014
70°	8204	22013	10041
75°	7521	19588	8929
80°	6842	15869	7798
85°	6425	12137	5677



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CATALOG NUMBER: S121RDR-H1025D927-X4F0-XX-UDD-A-W

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	141.1	5.4
10°-20°	393.5	15.1
20°-30°	523.2	20.1
30°-40°	499.1	19.2
40°-50°	414.2	15.9
50°-60°	308.0	11.8
60°-70°	199.4	7.7
70°-80°	101.5	3.9
80°-90°	24.8	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°	1057.8	40.6
0°-40°	1556.9	59.8
0°-60°	2279.2	87.5
0°-90°	2605.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2605.0	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	1478	1478	1478	1478	1478	
5°	1638	1581	1484	1366	1341	160
15°	1762	1731	1422	1112	964	490
25°	1187	1577	1294	766	636	551
35°	468	1048	1103	562	471	319
45°	305	452	836	410	361	233
55°	193	245	568	296	237	175
65°	124	140	348	178	157	123
75°	66	72	171	89	78	70
85°	19	18	36	19	17	21
90°	0	0	0	0	0	



TEST NUMBER: P243079

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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1477.6	1477.6	1477.6	1477.6	1477.6	1477.6	1477.6	1477.6	1477.6	1477.6	1477.6
2.5°	1562.3	1558.4	1562.9	1561.2	1554.0	1555.7	1546.7	1541.2	1527.8	1522.8	1522.8
5°	1638.1	1643.7	1640.3	1641.5	1634.2	1629.8	1620.3	1609.7	1593.0	1580.7	1576.3
7.5°	1713.9	1715.6	1717.2	1712.8	1704.4	1696.6	1683.2	1667.6	1649.3	1633.7	1621.4
10°	1770.7	1774.6	1772.4	1765.7	1759.6	1747.9	1733.4	1716.7	1696.6	1676.0	1661.0
12.5°	1791.9	1795.2	1800.3	1796.4	1795.8	1790.2	1775.7	1755.1	1730.6	1705.0	1687.7
15°	1761.8	1759.6	1773.0	1769.6	1768.5	1766.3	1770.2	1765.7	1752.9	1730.6	1709.4
17.5°	1733.9	1732.8	1746.2	1749.5	1744.5	1737.3	1732.8	1727.3	1721.1	1721.7	1718.9
20°	1562.3	1596.3	1603.0	1620.8	1658.7	1683.8	1708.9	1707.8	1689.9	1687.1	1686.0
22.5°	1424.2	1437.0	1430.8	1459.8	1480.4	1525.6	1569.6	1625.3	1662.6	1653.2	1647.0
25°	1186.8	1226.9	1245.3	1281.5	1333.9	1391.3	1416.4	1475.4	1532.8	1577.4	1611.4
27.5°	1039.7	1048.6	1060.3	1097.6	1117.1	1169.5	1263.1	1343.4	1396.9	1445.3	1535.0
30°	829.1	833.0	873.7	894.3	951.7	1002.9	1084.3	1148.9	1256.4	1328.3	1397.4
32.5°	633.0	629.6	674.2	698.1	755.0	824.1	914.9	975.1	1080.4	1197.9	1280.4
35°	468.0	467.5	491.4	508.1	570.6	623.5	738.8	817.4	932.7	1048.1	1154.5
37.5°	381.1	380.6	385.6	400.1	426.2	485.9	541.6	658.0	770.6	884.2	1017.4
40°	343.2	346.0	347.1	353.8	362.7	380.6	414.5	495.9	606.2	741.6	875.3
42.5°	323.2	323.2	324.3	326.0	330.4	335.4	356.0	387.2	475.8	583.9	733.8
45°	305.3	305.9	307.0	308.1	307.0	309.8	319.3	332.1	366.6	451.9	596.7
47.5°	284.2	283.6	286.4	288.1	290.3	293.6	294.2	300.9	315.9	360.5	465.8
50°	247.4	247.9	250.7	257.4	264.7	270.8	274.7	279.1	284.2	305.3	361.1
52.5°	214.0	214.5	216.2	221.2	227.9	235.7	247.9	258.0	261.9	268.6	299.8
55°	192.8	192.8	195.0	197.8	199.5	205.0	213.4	224.5	239.0	244.6	258.0
57.5°	175.0	175.0	176.1	176.1	178.3	181.1	186.7	192.2	204.5	222.3	230.7
60°	157.1	157.1	158.2	158.2	161.0	162.1	166.0	169.4	176.1	188.3	205.0
62.5°	140.4	139.3	140.4	141.0	142.6	144.3	147.1	151.0	154.9	162.1	174.4
65°	123.7	123.1	124.3	125.4	126.5	128.7	130.4	133.2	136.5	140.4	146.5
67.5°	109.2	108.7	109.2	110.9	110.3	111.4	114.2	115.3	118.7	122.6	127.6
70°	94.7	93.6	94.7	94.7	95.3	96.9	96.9	99.7	102.5	104.8	109.2
72.5°	79.1	79.7	79.1	79.7	80.8	81.3	82.5	84.1	85.8	88.0	90.8
75°	65.7	65.7	66.3	66.9	68.0	68.0	68.5	69.6	70.8	71.9	75.2
77.5°	52.4	52.9	53.5	54.0	54.0	54.6	55.2	55.7	57.4	57.9	59.6
80°	40.1	40.7	40.7	40.7	41.8	40.7	41.8	42.9	42.9	43.5	44.6
82.5°	29.0	29.5	29.0	29.5	30.1	30.1	29.5	30.1	30.1	31.2	31.2
85°	18.9	17.8	17.8	17.8	17.8	17.8	18.4	18.9	18.4	18.4	18.9
87.5°	7.8	7.8	7.8	7.8	8.4	7.8	8.4	8.4	8.4	7.8	8.4
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: P243079

CATALOG NUMBER: S121RDR-H1025D927-X4F0-XX-UDD-A-W

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	1477.6	1477.6	1477.6	1477.6	1477.6	1477.6	1477.6	1477.6	1477.6	1477.6	1477.6
2.5°	1525.6	1521.1	1517.2	1510.5	1502.2	1489.9	1488.2	1488.8	1473.7	1459.3	1457.0
5°	1566.8	1559.6	1547.3	1532.8	1519.4	1498.8	1489.9	1483.8	1460.9	1441.4	1433.6
7.5°	1610.8	1593.5	1576.8	1554.0	1531.7	1504.9	1488.2	1475.4	1445.3	1419.7	1406.3
10°	1645.4	1624.2	1600.2	1571.3	1540.6	1507.7	1482.7	1462.6	1426.4	1394.6	1377.9
12.5°	1669.9	1645.9	1617.5	1583.0	1547.9	1504.4	1473.7	1447.0	1403.0	1365.1	1345.0
15°	1682.7	1657.1	1622.0	1584.1	1547.9	1502.2	1461.5	1422.5	1379.0	1331.7	1306.6
17.5°	1694.4	1661.0	1621.4	1577.9	1541.2	1493.2	1443.1	1392.4	1343.4	1298.8	1258.1
20°	1686.0	1657.6	1613.6	1568.5	1527.2	1471.5	1418.6	1366.2	1304.9	1253.1	1212.4
22.5°	1647.0	1642.0	1594.7	1546.2	1498.8	1445.3	1384.0	1332.2	1266.5	1205.2	1156.2
25°	1601.3	1595.2	1569.6	1517.8	1464.3	1408.6	1353.4	1293.8	1218.0	1154.5	1098.2
27.5°	1562.9	1549.0	1530.6	1482.1	1424.7	1369.0	1312.2	1254.2	1173.4	1102.7	1038.6
30°	1484.9	1498.3	1477.6	1444.2	1377.9	1323.9	1269.3	1206.3	1126.1	1044.7	979.0
32.5°	1361.2	1442.0	1421.4	1394.6	1329.4	1270.4	1218.6	1156.7	1068.1	987.9	919.9
35°	1252.0	1321.6	1368.4	1336.1	1278.7	1210.2	1157.3	1103.2	1010.7	928.8	863.6
37.5°	1146.1	1220.2	1298.2	1268.7	1221.3	1147.8	1092.1	1038.6	952.8	870.3	805.1
40°	1007.4	1115.5	1190.7	1202.4	1153.9	1079.8	1025.8	970.6	894.8	812.9	743.3
42.5°	874.2	1013.0	1073.7	1133.9	1084.3	1014.6	954.5	907.6	834.7	762.8	687.0
45°	734.9	892.6	982.3	1028.6	1010.7	947.2	881.5	836.3	775.0	708.2	636.3
47.5°	614.0	763.9	892.0	918.2	935.5	873.1	811.8	766.1	713.2	658.0	589.5
50°	487.0	642.4	779.5	826.9	859.7	802.9	738.8	699.3	654.7	605.1	544.4
52.5°	378.9	524.3	668.1	748.9	760.0	730.5	671.4	632.4	596.7	552.2	497.0
55°	300.9	413.4	557.2	651.3	661.9	654.7	601.8	567.8	541.6	504.2	458.0
57.5°	249.6	321.5	451.3	560.0	575.6	582.3	538.8	508.1	484.7	455.2	413.4
60°	215.6	253.5	352.7	459.1	502.0	513.7	475.3	453.0	433.5	406.7	367.7
62.5°	190.6	207.8	269.7	372.2	427.4	437.4	417.9	401.2	385.0	359.4	324.8
65°	158.8	177.2	207.8	287.5	355.5	360.5	364.4	348.2	335.4	314.3	283.6
67.5°	133.2	147.7	167.7	220.6	285.3	299.8	309.8	302.5	290.3	269.1	242.9
70°	113.1	121.5	136.0	165.5	217.9	249.1	259.6	254.1	247.9	225.1	202.8
72.5°	94.2	100.8	109.2	127.0	164.4	197.8	213.4	210.6	203.9	186.7	168.3
75°	78.0	80.8	87.5	97.5	119.2	150.4	168.8	171.1	163.3	147.1	132.6
77.5°	61.3	64.1	68.0	74.1	88.0	109.2	124.3	129.8	124.8	113.1	98.6
80°	46.8	48.5	51.3	54.0	59.6	74.1	89.7	93.0	90.3	80.8	71.9
82.5°	31.2	32.3	34.5	36.8	39.6	46.2	59.6	61.8	61.3	52.9	46.8
85°	18.9	18.9	19.5	21.2	22.3	25.1	32.3	35.7	34.0	28.4	25.6
87.5°	7.8	8.4	7.8	7.8	7.8	8.4	10.6	14.5	11.1	8.4	7.8
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: P243079

CATALOG NUMBER: S121RDR-H1025D927-X4F0-XX-UDD-A-W

**CANDELA DISTRIBUTION (continued):**

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	1477.6	1477.6	1477.6	1477.6	1477.6	1477.6	1477.6	1477.6	1477.6	1477.6	1477.6
2.5°	1450.9	1448.7	1440.3	1432.5	1423.6	1413.0	1413.6	1415.2	1411.3	1410.2	1414.1
5°	1422.5	1414.7	1401.9	1389.1	1379.0	1365.7	1357.9	1361.8	1359.0	1354.0	1350.6
7.5°	1392.4	1381.3	1362.9	1346.7	1333.3	1308.3	1302.7	1296.0	1290.4	1279.3	1277.1
10°	1356.7	1340.6	1317.2	1294.3	1269.8	1250.3	1231.9	1224.1	1209.1	1199.1	1196.3
12.5°	1320.0	1293.2	1267.0	1233.6	1205.7	1177.3	1161.2	1150.0	1135.0	1110.5	1098.8
15°	1282.1	1241.4	1206.3	1169.5	1150.6	1112.1	1081.5	1046.9	1028.6	987.3	963.4
17.5°	1231.4	1184.6	1137.2	1107.1	1067.6	1014.1	962.8	945.0	917.1	890.4	863.6
20°	1162.8	1119.9	1074.8	1029.7	969.5	907.6	888.1	857.5	826.9	810.7	796.8
22.5°	1099.9	1053.6	1000.1	940.5	878.7	830.2	804.6	782.3	763.3	748.9	732.7
25°	1040.3	992.3	916.0	855.3	801.2	765.6	752.8	723.8	703.7	693.1	679.2
27.5°	974.5	908.8	847.5	784.5	736.6	716.5	687.0	664.2	643.0	622.4	617.4
30°	912.1	839.1	778.4	727.1	692.0	664.2	634.1	607.3	593.4	585.6	572.8
32.5°	850.3	776.2	719.3	679.2	641.3	611.8	583.4	569.4	548.3	531.0	519.9
35°	784.0	719.3	674.2	627.4	591.2	562.2	547.7	516.0	504.2	499.2	487.5
37.5°	725.5	668.1	622.4	586.7	547.2	523.8	495.3	488.1	472.5	459.1	455.2
40°	677.0	622.9	580.0	533.8	509.3	478.6	464.7	445.2	439.6	434.6	425.7
42.5°	624.0	577.8	528.8	497.6	461.3	447.4	425.7	420.1	406.7	401.7	398.4
45°	578.9	536.0	489.2	451.3	430.7	410.1	401.7	387.8	381.7	375.5	369.4
47.5°	534.9	490.3	453.0	417.3	394.5	385.0	370.0	359.9	353.3	347.1	341.0
50°	494.2	449.1	407.3	381.7	365.5	352.1	342.7	334.3	324.8	311.5	297.5
52.5°	450.2	409.5	375.5	350.5	336.0	323.2	314.8	300.3	281.9	267.4	260.8
55°	406.2	367.7	338.2	318.2	308.1	295.9	276.9	255.7	244.0	241.8	240.1
57.5°	368.9	332.6	305.3	289.7	278.0	256.3	236.2	228.4	225.1	224.0	222.9
60°	327.1	294.7	275.2	258.5	239.0	218.4	212.3	211.2	207.8	206.2	205.0
62.5°	288.6	260.8	242.9	222.9	202.3	198.4	193.9	191.1	189.4	185.5	183.9
65°	251.3	229.0	209.5	188.3	181.1	178.3	174.4	170.5	166.0	163.3	161.0
67.5°	215.6	193.9	173.3	165.5	161.6	157.1	152.1	146.5	144.3	140.4	139.9
70°	180.5	160.5	149.3	144.3	137.1	133.2	127.6	125.4	121.5	119.8	118.1
72.5°	147.1	132.6	128.2	120.9	115.9	109.8	107.0	104.8	102.5	99.7	99.7
75°	114.8	110.9	102.5	96.9	91.9	88.6	87.5	83.6	83.0	81.3	80.2
77.5°	91.4	83.6	80.8	74.7	71.3	69.6	68.5	66.3	64.1	63.5	63.0
80°	64.6	60.7	57.4	54.6	51.8	50.7	49.6	49.0	47.9	46.8	46.2
82.5°	42.3	40.1	37.9	36.2	35.7	34.0	32.9	32.3	31.2	31.2	31.2
85°	22.8	22.3	21.2	20.1	18.9	18.9	18.4	17.8	17.8	16.2	16.2
87.5°	7.2	7.2	6.7	6.7	5.6	6.1	5.6	5.6	5.0	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: P243079

CATALOG NUMBER: S121RDR-H1025D927-X4F0-XX-UDD-A-W

**CANDELA DISTRIBUTION (continued):**

	165°	170°	175°	180°
0°	1477.6	1477.6	1477.6	1477.6
2.5°	1409.7	1409.7	1407.4	1409.7
5°	1348.4	1343.4	1341.7	1340.6
7.5°	1270.4	1265.9	1261.5	1257.0
10°	1190.7	1184.0	1180.1	1176.8
12.5°	1087.1	1078.7	1063.1	1067.6
15°	959.5	960.0	923.8	963.9
17.5°	855.3	858.1	843.6	841.3
20°	789.0	787.9	782.3	775.6
22.5°	721.0	716.0	713.7	703.2
25°	657.5	648.6	651.3	636.3
27.5°	611.2	604.0	601.8	600.6
30°	565.0	549.9	544.9	548.3
32.5°	518.2	517.1	515.4	516.0
35°	478.6	476.4	471.4	471.4
37.5°	451.3	451.9	449.1	446.9
40°	417.9	415.1	414.5	411.2
42.5°	393.9	388.4	386.1	386.7
45°	366.1	362.7	359.9	361.1
47.5°	333.2	329.9	323.7	322.1
50°	288.6	284.2	281.4	278.6
52.5°	255.2	254.6	253.5	253.0
55°	239.0	237.4	237.4	237.4
57.5°	222.3	221.2	220.6	221.8
60°	203.9	202.8	200.6	200.6
62.5°	181.1	180.0	179.4	177.2
65°	158.2	157.7	156.6	157.1
67.5°	137.1	136.5	136.5	134.8
70°	116.5	116.5	114.8	115.9
72.5°	97.5	96.9	96.9	96.9
75°	79.1	78.6	78.0	78.0
77.5°	62.4	62.4	61.3	61.3
80°	45.1	45.1	44.6	45.7
82.5°	30.1	31.2	30.1	30.1
85°	16.2	16.7	16.7	16.7
87.5°	5.0	4.5	4.5	4.5
90°	0.0	0.0	0.0	0.0

(END OF REPORT)