

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: P243426

Luminaire Tested: **S123RDR-H775D830-X4F0-XX-UDD-A-W**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P243426
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-69)
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S123RDR-H775D830-X4F0-XX-UDD-A-W
Description: DEFINE 3 REGRESSED 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: 2655.2 lumens
Efficiency: N/A
Efficacy: 112.5 lumens/watt
Spacing Criteria (0/90/45): 1.28 / 1.22 / 1.4
Luminous Opening: Rectangular (W 3.88' x L: 0.23' x H: 0')
CIE Type: Direct

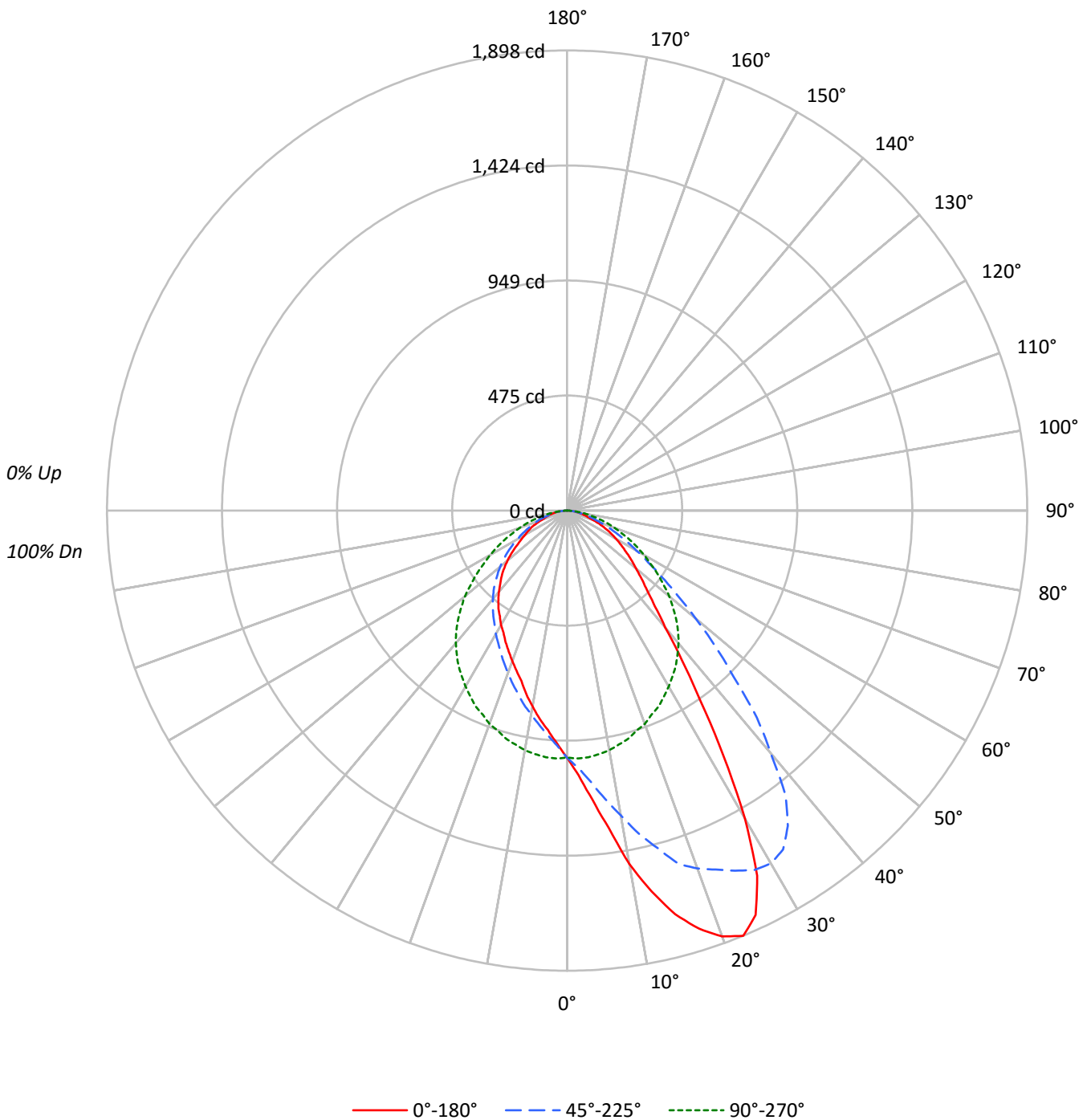
Input Watts (W): 23.6
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	0
RCR																		
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100
1	110	106	102	99	107	104	100	97	99	97	94	96	93	91	92	90	89	87
2	101	94	88	83	99	92	86	82	89	84	80	85	81	78	82	79	76	74
3	93	84	76	70	91	82	75	70	79	73	68	76	71	67	74	70	66	64
4	86	75	67	61	84	74	66	60	71	65	59	69	63	59	67	62	58	56
5	79	68	59	53	77	66	59	53	64	57	52	62	56	52	61	55	51	49
6	74	61	53	47	72	60	52	47	59	52	46	57	51	46	55	50	46	44
7	69	56	48	42	67	55	47	42	54	47	41	52	46	41	51	45	41	39
8	64	51	43	38	62	51	43	37	49	42	37	48	42	37	47	41	37	35
9	60	47	39	34	59	47	39	34	45	39	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°	12352	12352	12352
5°	14562	12421	11060
10°	18228	12348	10095
15°	21633	12225	9143
20°	24110	12077	8513
25°	24610	11929	8015
30°	20508	11726	7624
35°	14167	11563	7305
40°	9956	11299	6921
45°	7995	10899	6547
50°	6970	10379	6057
55°	6249	9605	5393
60°	5653	8875	4885
65°	4948	8177	4569
70°	3991	7361	3867
75°	3461	6407	3793
80°	3197	5466	3811
85°	2809	4409	3310



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	99.9	3.8
10°-20°	314.7	11.9
20°-30°	504.3	19.0
30°-40°	547.4	20.6
40°-50°	469.0	17.7
50°-60°	355.5	13.4
60°-70°	227.2	8.6
70°-80°	108.6	4.1
80°-90°	28.5	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°	918.9	34.6
0°-40°	1466.4	55.2
0°-60°	2290.9	86.3
0°-90°	2655.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2655.2	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1019	1019	1019	1019	1019	
5°	1197	1123	1021	928	909	123
15°	1724	1441	974	782	729	489
25°	1840	1639	892	648	599	816
35°	957	1587	781	531	494	615
45°	466	972	636	420	382	369
55°	296	476	454	300	255	267
65°	172	229	285	182	159	171
75°	74	90	137	86	81	80
85°	20	21	32	25	24	23
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°	1019.0	1019.0	1019.0	1019.0	1019.0	1019.0	1019.0	1019.0	1019.0	1019.0	1019.0
2.5°	1092.1	1093.4	1091.2	1090.8	1090.3	1083.3	1081.1	1077.6	1065.2	1062.2	1060.0
5°	1196.8	1193.3	1197.2	1189.8	1181.4	1176.6	1168.6	1151.0	1135.6	1123.3	1115.4
7.5°	1320.9	1322.2	1318.2	1311.2	1294.5	1287.4	1265.9	1244.8	1224.5	1199.0	1180.1
10°	1481.0	1470.5	1472.7	1450.7	1433.1	1412.0	1382.5	1348.6	1313.0	1276.9	1250.0
12.5°	1608.6	1616.1	1610.8	1600.3	1566.4	1545.7	1518.9	1469.6	1413.3	1364.9	1324.0
15°	1723.9	1713.8	1715.1	1689.6	1677.3	1658.4	1613.9	1565.1	1528.6	1441.0	1392.6
17.5°	1808.4	1807.5	1806.2	1784.6	1769.7	1730.1	1684.8	1634.6	1588.8	1528.1	1467.4
20°	1869.1	1875.7	1874.0	1856.4	1830.0	1791.7	1764.4	1701.9	1626.7	1571.2	1496.9
22.5°	1898.2	1898.6	1899.5	1891.1	1873.5	1848.9	1810.2	1760.0	1693.1	1602.5	1519.8
25°	1840.1	1842.3	1853.7	1860.8	1865.6	1854.6	1834.4	1789.0	1731.4	1639.0	1553.2
27.5°	1697.5	1704.6	1717.3	1759.6	1776.7	1800.5	1808.8	1790.8	1748.1	1671.1	1573.4
30°	1465.2	1485.0	1497.3	1545.3	1612.6	1676.0	1705.9	1735.4	1731.4	1680.4	1581.4
32.5°	1199.4	1212.2	1247.8	1299.3	1352.6	1445.4	1549.2	1620.5	1660.6	1657.9	1588.0
35°	957.4	975.9	1006.3	1045.4	1118.9	1215.3	1332.8	1445.0	1545.3	1587.1	1562.0
37.5°	777.0	778.8	807.4	862.8	908.6	993.5	1099.6	1238.2	1369.7	1478.8	1503.0
40°	629.2	641.5	656.5	691.2	745.4	826.8	897.2	1033.6	1170.0	1306.8	1404.5
42.5°	535.9	535.9	552.6	574.6	610.7	659.6	743.6	867.2	990.0	1158.1	1268.1
45°	466.4	470.8	478.3	492.4	517.9	555.7	620.8	704.9	830.3	971.5	1137.0
47.5°	416.2	415.8	422.4	430.8	450.6	479.2	517.4	585.6	678.5	830.7	976.8
50°	369.6	371.4	376.2	383.2	396.4	416.7	440.9	492.4	570.7	691.2	844.4
52.5°	333.5	333.1	337.0	341.4	351.6	363.0	384.6	422.8	477.0	572.9	700.0
55°	295.7	297.4	302.3	304.9	313.3	320.8	338.8	360.4	403.9	476.1	591.8
57.5°	263.1	265.3	268.0	270.6	276.3	283.8	298.8	312.0	343.6	395.6	488.0
60°	233.2	232.3	235.4	239.8	242.9	249.5	257.8	271.5	293.5	330.4	398.2
62.5°	203.3	203.7	204.2	206.8	212.5	218.2	225.7	235.8	249.0	276.3	324.3
65°	172.5	172.9	173.8	176.4	182.2	185.7	193.6	202.4	213.0	229.2	262.7
67.5°	145.2	147.0	147.0	149.2	151.4	154.9	160.6	167.2	176.0	187.9	209.4
70°	112.6	112.2	114.4	118.8	121.0	127.2	131.1	135.5	143.4	150.9	169.4
72.5°	90.6	90.6	90.6	92.4	92.8	94.2	96.8	106.0	112.2	119.7	129.8
75°	73.9	74.4	74.4	74.8	75.2	76.6	77.4	80.1	81.8	89.8	95.9
77.5°	59.0	59.4	59.4	59.8	60.3	60.7	62.5	62.5	63.8	65.6	68.2
80°	45.8	45.3	45.3	45.8	45.8	47.1	47.1	48.0	48.4	49.3	50.6
82.5°	32.6	32.1	32.6	32.1	32.6	33.0	33.9	33.4	34.3	35.2	35.6
85°	20.2	20.7	20.7	21.6	21.1	20.7	21.1	21.1	21.1	21.1	22.0
87.5°	8.8	9.7	9.7	9.2	9.7	9.7	8.8	9.7	9.7	9.7	10.1
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):

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	1019.0	1019.0	1019.0	1019.0	1019.0	1019.0	1019.0	1019.0	1019.0	1019.0	1019.0
2.5°	1058.6	1056.9	1050.3	1044.1	1034.9	1030.9	1025.6	1023.4	1016.4	1006.7	1002.3
5°	1107.9	1094.7	1082.0	1066.6	1053.8	1038.8	1030.5	1020.8	1005.8	992.2	982.5
7.5°	1160.3	1140.9	1117.2	1091.6	1068.8	1047.2	1028.7	1013.3	994.0	975.0	960.1
10°	1217.9	1184.9	1146.6	1114.1	1081.1	1049.8	1026.5	1003.2	978.1	954.4	936.3
12.5°	1280.0	1233.3	1187.1	1138.3	1089.0	1052.9	1018.2	988.2	960.1	935.0	913.4
15°	1344.2	1280.4	1221.4	1166.4	1097.8	1049.4	1011.1	974.2	939.0	908.2	887.0
17.5°	1390.0	1316.9	1242.6	1164.7	1105.7	1045.9	998.4	951.7	919.2	887.5	858.9
20°	1432.2	1349.5	1261.0	1188.4	1106.2	1033.1	981.2	936.3	891.0	857.1	832.9
22.5°	1450.2	1375.4	1286.1	1185.4	1103.1	1028.3	961.4	910.8	870.3	833.4	801.7
25°	1453.8	1370.2	1278.6	1181.4	1091.2	1010.2	942.5	891.9	839.1	800.8	776.2
27.5°	1469.2	1354.8	1265.0	1168.2	1076.7	992.2	920.9	864.6	815.3	774.4	742.7
30°	1473.1	1348.2	1236.0	1143.6	1049.4	966.7	894.5	837.8	784.1	742.3	713.7
32.5°	1474.9	1339.4	1205.6	1104.4	1014.6	936.8	870.8	809.2	758.1	714.1	684.6
35°	1468.7	1327.0	1169.1	1060.0	973.7	897.2	836.0	781.4	724.7	683.3	652.1
37.5°	1444.5	1307.7	1148.4	1008.0	925.8	853.6	801.7	748.0	695.6	650.8	618.6
40°	1398.8	1279.5	1109.7	964.5	871.2	806.5	758.1	714.1	661.3	618.2	586.5
42.5°	1325.7	1241.2	1074.0	915.2	817.1	755.9	715.4	677.6	630.1	589.2	554.4
45°	1217.5	1187.6	1026.5	865.0	758.1	700.5	665.3	635.8	592.7	555.3	523.2
47.5°	1100.4	1107.0	978.6	814.0	704.4	649.4	618.6	592.7	560.1	520.1	490.6
50°	965.4	1001.4	911.2	762.5	650.8	596.6	566.3	550.4	520.1	486.6	458.9
52.5°	841.7	898.9	843.0	706.2	598.0	544.7	516.6	500.7	480.5	452.8	424.6
55°	713.7	786.3	745.8	645.5	544.3	490.6	466.8	454.5	437.8	416.2	390.7
57.5°	607.6	685.1	659.6	581.7	491.9	443.5	422.4	408.3	398.2	378.4	357.7
60°	503.8	575.5	565.4	508.2	440.0	393.8	377.5	366.1	357.7	343.2	323.0
62.5°	406.6	476.1	482.2	437.4	389.4	347.6	332.6	324.7	318.1	306.7	288.2
65°	322.5	383.7	396.4	362.1	336.2	304.5	290.0	285.1	280.3	267.1	253.0
67.5°	252.6	300.5	317.2	297.9	279.4	260.9	249.5	242.9	239.4	231.4	221.8
70°	193.2	234.5	248.6	240.2	227.9	220.9	212.1	207.7	204.2	194.0	188.8
72.5°	144.8	172.9	190.5	187.9	185.2	180.4	175.1	173.8	168.5	161.9	157.1
75°	106.0	122.3	138.2	143.9	143.0	144.8	139.0	136.8	133.8	128.9	125.0
77.5°	76.1	85.8	96.8	103.8	107.4	107.8	107.8	106.5	104.3	100.8	97.7
80°	52.8	55.0	65.1	71.7	75.2	77.9	77.9	78.3	76.1	74.8	72.6
82.5°	36.5	37.8	40.0	45.3	49.7	52.8	53.2	52.8	51.9	51.5	48.4
85°	22.9	22.4	22.4	23.8	27.3	30.4	30.8	31.7	31.2	30.8	27.7
87.5°	9.7	9.7	10.1	9.7	11.0	11.4	12.3	14.5	14.1	11.9	11.0
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):

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	1019.0	1019.0	1019.0	1019.0	1019.0	1019.0	1019.0	1019.0	1019.0	1019.0	1019.0
2.5°	999.7	994.0	988.7	983.0	975.9	969.3	968.4	967.6	969.8	965.4	963.6
5°	975.0	964.0	955.7	945.1	937.6	928.0	922.7	921.4	920.9	918.3	914.8
7.5°	948.2	936.3	924.4	912.6	900.2	890.1	884.4	881.3	878.7	874.3	870.8
10°	923.1	908.2	895.4	879.1	865.9	852.7	847.4	843.0	840.4	834.2	829.4
12.5°	895.0	876.0	862.0	844.4	832.5	821.0	812.7	804.3	798.2	788.9	785.0
15°	870.3	850.5	826.8	816.2	799.5	782.3	773.1	773.1	760.3	752.8	748.0
17.5°	837.3	820.2	803.4	781.9	758.1	748.0	737.4	728.2	719.4	717.2	708.4
20°	808.3	788.0	770.9	747.6	726.0	714.1	701.8	691.7	685.1	678.9	674.1
22.5°	779.7	759.4	733.0	710.2	695.6	679.8	666.6	657.8	652.1	642.8	638.4
25°	749.8	725.6	701.8	679.4	661.3	647.7	634.0	629.2	619.1	614.2	608.1
27.5°	719.8	690.8	668.4	649.0	628.8	615.6	606.3	597.5	588.7	586.1	582.6
30°	686.4	659.6	638.0	619.1	599.7	588.3	577.3	569.4	561.9	556.2	552.2
32.5°	653.0	630.5	609.8	587.8	570.2	557.9	548.7	541.6	538.1	528.4	524.9
35°	622.2	599.3	577.3	556.6	542.5	530.6	522.3	515.7	508.2	502.0	498.5
37.5°	590.5	569.8	547.4	529.8	513.9	504.2	495.0	486.2	480.5	477.0	472.6
40°	559.7	537.7	520.5	501.2	487.1	476.1	466.4	459.8	452.8	449.7	444.0
42.5°	530.6	509.5	489.7	472.1	459.4	448.8	439.6	432.1	426.4	420.6	417.6
45°	497.2	478.7	460.7	443.1	431.2	419.8	409.6	403.0	395.1	390.3	388.5
47.5°	469.0	449.7	430.3	414.0	401.7	389.4	381.0	373.1	366.5	361.7	359.0
50°	435.6	417.6	401.7	385.4	373.6	360.4	350.2	342.8	335.3	331.8	327.4
52.5°	407.0	389.4	370.0	355.5	341.9	330.4	321.2	315.0	308.4	303.2	300.1
55°	371.4	354.2	338.8	323.4	309.8	300.5	293.0	282.5	276.8	271.5	263.1
57.5°	340.1	323.8	307.6	292.6	279.8	268.8	259.6	252.6	245.1	241.1	235.4
60°	307.1	290.0	275.0	263.6	249.5	237.6	231.4	223.1	216.9	210.8	209.0
62.5°	274.6	258.7	243.8	231.9	219.1	209.9	202.0	198.0	191.8	187.0	185.2
65°	240.7	227.5	213.4	200.2	192.3	181.7	177.3	170.7	167.2	165.0	164.6
67.5°	207.2	195.4	182.6	172.5	165.0	158.0	152.7	150.0	146.5	143.9	141.7
70°	176.9	165.4	154.4	146.1	140.4	135.1	131.6	126.7	123.2	119.7	114.8
72.5°	147.0	137.7	128.5	121.9	116.2	113.1	108.2	100.8	97.2	96.4	95.9
75°	119.2	109.1	102.5	99.0	93.7	86.2	83.2	82.3	81.8	81.0	81.0
77.5°	92.0	85.8	81.4	73.9	71.3	70.8	68.6	68.2	67.3	67.8	67.8
80°	66.9	63.4	58.1	55.9	55.0	55.4	54.6	55.0	54.1	54.6	53.7
82.5°	44.4	41.4	42.2	40.9	40.9	41.8	41.4	40.0	40.0	39.6	39.6
85°	26.4	26.0	26.8	26.8	26.4	25.1	26.0	25.5	24.2	24.6	24.6
87.5°	11.4	11.4	11.4	11.0	11.4	11.0	11.0	11.0	9.7	9.7	9.7
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: P243426

CATALOG NUMBER: S123RDR-H775D830-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	1019.0	1019.0	1019.0	1019.0
2.5°	964.5	963.6	962.3	961.0
5°	914.8	910.8	910.4	909.0
7.5°	868.1	866.4	863.3	866.8
10°	825.4	826.8	823.7	820.2
12.5°	781.0	778.4	773.5	776.2
15°	741.8	737.4	734.8	728.6
17.5°	700.9	697.4	697.4	693.4
20°	665.3	661.8	662.6	660.0
22.5°	635.4	632.7	628.8	629.2
25°	607.2	603.2	598.8	599.3
27.5°	576.0	572.4	571.6	568.5
30°	548.2	545.2	544.7	544.7
32.5°	521.4	520.1	517.9	516.6
35°	498.1	496.3	492.8	493.7
37.5°	469.0	467.3	466.8	466.4
40°	441.8	440.4	436.9	437.4
42.5°	414.5	412.3	410.1	409.2
45°	385.0	384.6	381.0	381.9
47.5°	356.8	356.0	354.2	352.0
50°	325.6	325.2	323.8	321.2
52.5°	295.2	293.9	291.3	288.6
55°	260.9	257.0	257.4	255.2
57.5°	232.8	231.0	227.5	226.2
60°	205.5	203.7	203.3	201.5
62.5°	182.6	180.8	179.5	179.5
65°	161.9	159.7	159.3	159.3
67.5°	139.0	136.8	136.4	135.5
70°	110.4	110.0	109.1	109.1
72.5°	95.0	94.6	95.0	93.3
75°	81.0	80.5	80.5	81.0
77.5°	67.3	67.3	66.9	66.9
80°	53.2	53.7	53.2	54.6
82.5°	40.0	39.2	39.6	38.7
85°	24.6	24.6	23.8	23.8
87.5°	9.7	9.7	9.7	9.7
90°	0.0	0.0	0.0	0.0

(END OF REPORT)