

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: P242488

Luminaire Tested: **S123DR-S775D940-X4F0-XX-UDD-A-W**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P242488
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-20)
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S123DR-S775D940-X4F0-XX-UDD-A-W
Description: DEFINE 3 DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER
STANDARD LIGHT ENGINE
Light Source: (92) 4000K CCT, 90 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2777.4 lumens
Efficiency: N/A
Efficacy: 105.2 lumens/watt
Spacing Criteria (0/90/45): 1.37 / 1.23 / 1.5
Luminous Opening: Rectangular (W 3.88' x L: 0.23' x H: 0')
CIE Type: Direct

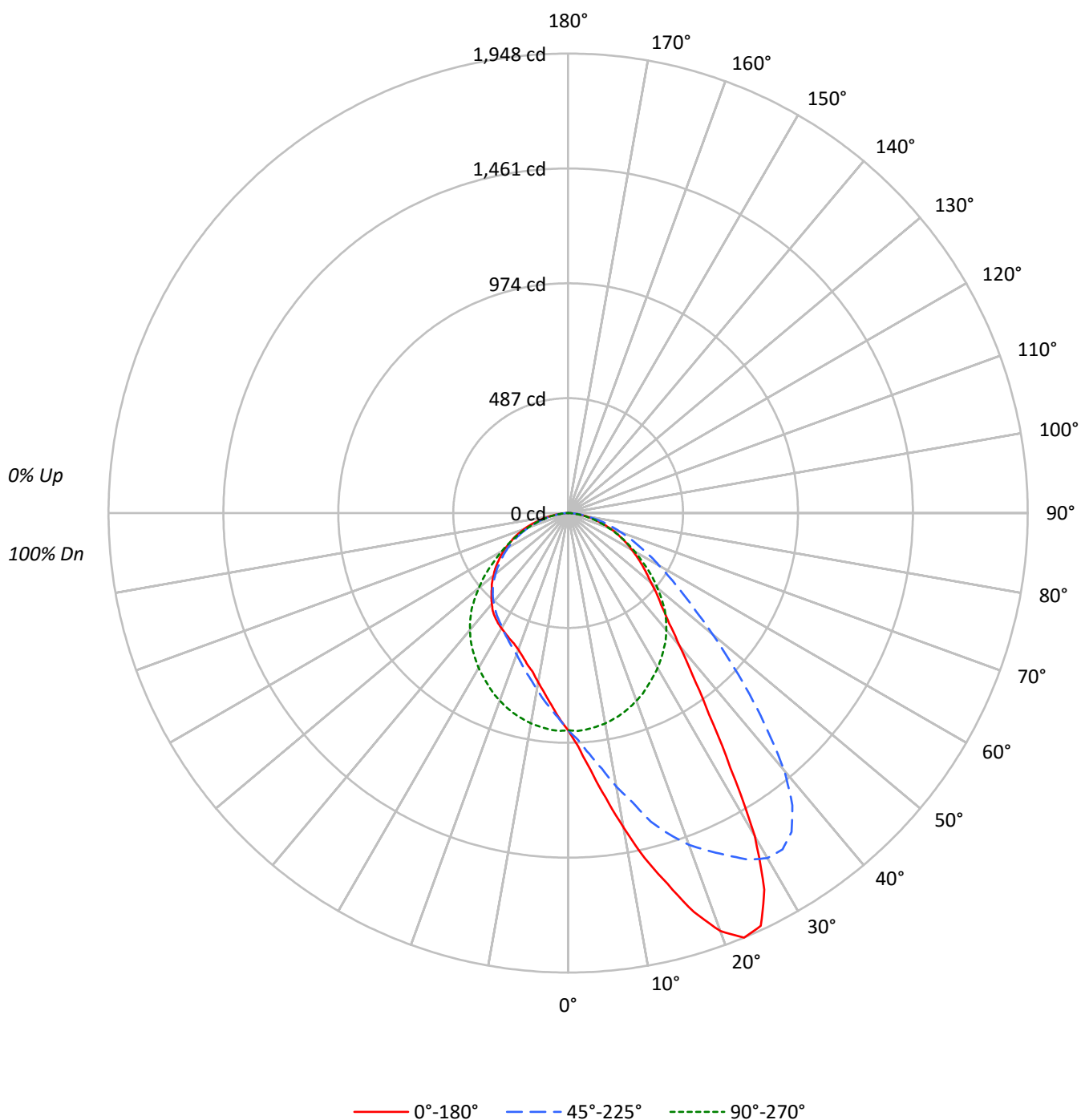
Input Watts (W): 26.4
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10
RCR																				
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100		
1	110	105	101	98	107	103	99	96	99	96	93	95	92	90	91	89	87	85		
2	100	93	86	81	98	91	85	80	87	82	78	84	80	76	81	78	74	72		
3	92	82	74	68	89	80	73	67	77	71	66	75	69	65	72	68	64	62		
4	84	73	65	58	82	72	64	58	69	62	57	67	61	56	65	60	56	53		
5	78	66	57	51	76	64	56	50	62	55	50	60	54	49	59	53	49	47		
6	72	59	51	44	70	58	50	44	56	49	44	55	48	43	53	48	43	41		
7	67	54	45	39	65	53	45	39	52	44	39	50	44	39	49	43	38	36		
8	62	49	41	35	61	49	41	35	47	40	35	46	39	35	45	39	35	33		
9	58	45	37	32	57	45	37	32	43	36	32	42	36	31	41	36	31	29		
10	55	42	34	29	53	41	34	29	40	33	29	39	33	29	38	33	28	27		

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	11154	11154	11154
5°	13302	11203	9927
10°	16649	11145	8967
15°	20421	11056	8347
20°	24326	10915	7947
25°	25831	10745	7859
30°	22139	10620	7900
35°	15398	10444	7983
40°	11598	10236	7957
45°	9630	9927	7856
50°	8625	9299	7784
55°	8064	8620	7688
60°	7566	7913	7610
65°	7110	7213	7365
70°	6666	6415	7017
75°	5971	5615	6430
80°	5228	4607	5542
85°	4089	3352	3727

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	90.5	3.3
10°-20°	290.7	10.5
20°-30°	489.1	17.6
30°-40°	552.8	19.9
40°-50°	495.1	17.8
50°-60°	399.6	14.4
60°-70°	278.5	10.0
70°-80°	146.2	5.3
80°-90°	35.0	1.3
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°	870.3	31.3
0°-40°	1423.0	51.2
0°-60°	2317.8	83.5
0°-90°	2777.4	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2777.4	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	920	920	920	920	920	
5°	1093	1024	921	834	816	112
15°	1627	1354	881	695	665	470
25°	1931	1601	803	597	588	854
35°	1041	1650	706	527	540	672
45°	562	1088	579	451	458	443
55°	382	591	408	349	364	342
65°	248	331	252	237	257	247
75°	128	157	120	119	137	136
85°	29	34	24	24	27	36
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°	920.2	920.2	920.2	920.2	920.2	920.2	920.2	920.2	920.2	920.2	920.2
2.5°	990.7	989.8	987.5	989.3	985.7	980.8	980.4	975.9	963.0	962.1	958.6
5°	1093.2	1089.6	1089.2	1088.7	1082.5	1074.0	1058.0	1056.6	1035.2	1024.5	1011.6
7.5°	1217.1	1215.8	1212.2	1208.2	1187.3	1177.0	1161.9	1142.2	1117.3	1093.2	1078.0
10°	1352.7	1367.4	1349.1	1336.6	1325.0	1303.2	1277.8	1246.1	1214.5	1177.5	1149.4
12.5°	1498.0	1503.4	1503.4	1491.8	1472.2	1436.0	1386.1	1350.4	1321.9	1254.1	1230.1
15°	1627.3	1654.5	1637.1	1597.0	1597.9	1566.2	1507.4	1442.7	1408.4	1354.5	1280.9
17.5°	1773.5	1778.4	1773.1	1735.6	1717.4	1671.4	1618.4	1558.2	1493.6	1428.0	1351.8
20°	1885.9	1883.2	1867.6	1850.2	1811.9	1778.0	1718.7	1649.6	1560.4	1496.2	1411.1
22.5°	1948.3	1943.4	1938.1	1924.2	1893.9	1856.9	1805.2	1728.1	1644.2	1549.7	1448.1
25°	1931.4	1937.2	1938.1	1934.0	1922.9	1901.0	1859.1	1799.0	1714.2	1600.6	1498.0
27.5°	1800.3	1815.0	1833.7	1846.2	1866.3	1879.6	1866.3	1828.4	1758.8	1657.2	1531.0
30°	1581.8	1564.0	1608.1	1663.9	1701.8	1768.6	1806.1	1808.3	1773.1	1688.8	1566.7
32.5°	1278.7	1307.6	1321.0	1392.8	1486.9	1564.0	1647.8	1722.3	1739.7	1690.6	1587.6
35°	1040.6	1065.1	1100.8	1136.4	1225.6	1302.3	1433.4	1547.5	1638.5	1650.5	1585.0
37.5°	864.9	879.2	901.0	938.9	1000.0	1095.0	1198.9	1347.3	1472.6	1560.9	1552.0
40°	733.0	736.5	761.9	789.1	836.4	911.3	1002.7	1130.2	1288.0	1424.9	1482.0
42.5°	634.0	642.9	650.0	675.9	711.1	762.8	846.2	946.1	1087.4	1250.1	1375.4
45°	561.8	570.7	577.4	594.7	621.5	659.4	718.7	815.0	925.1	1087.8	1238.1
47.5°	511.8	510.9	516.7	530.5	549.7	580.0	623.7	687.9	793.6	929.6	1087.0
50°	457.4	464.6	466.3	476.6	490.9	511.8	546.6	599.2	682.1	798.0	939.8
52.5°	419.1	420.0	425.8	432.5	444.5	459.7	488.6	527.0	587.6	682.1	809.6
55°	381.6	381.6	386.5	392.3	399.5	414.2	434.2	464.6	514.1	590.7	698.6
57.5°	346.9	348.6	353.1	354.4	360.7	370.9	388.3	412.4	450.3	512.3	601.4
60°	312.1	316.1	315.7	319.2	324.6	332.1	346.4	365.1	398.1	445.4	517.6
62.5°	281.8	280.4	280.4	284.9	290.2	297.4	305.4	321.0	347.8	388.3	447.2
65°	247.9	247.0	250.1	252.8	254.6	259.9	267.1	281.3	300.0	331.3	379.0
67.5°	218.5	215.8	218.0	218.9	222.0	226.5	233.6	242.5	257.7	284.0	322.3
70°	188.1	185.9	185.5	186.4	189.0	192.2	197.1	205.5	219.4	239.4	265.7
72.5°	156.9	155.6	155.6	157.8	158.7	160.5	163.6	171.2	181.5	195.3	219.4
75°	127.5	127.5	127.5	128.0	129.3	131.1	133.8	137.8	146.2	156.9	173.4
77.5°	100.8	101.2	100.3	99.9	102.1	103.0	103.4	107.9	112.8	120.8	133.8
80°	74.9	72.7	73.6	74.9	75.8	76.2	77.6	78.5	82.5	86.5	95.0
82.5°	50.8	49.0	49.0	51.3	51.3	51.7	53.1	54.4	55.3	58.9	62.4
85°	29.4	29.4	29.9	29.9	30.3	29.9	31.2	31.7	31.7	33.9	36.6
87.5°	13.4	12.5	12.9	13.4	12.9	13.4	13.8	14.3	14.7	15.2	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):

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	920.2	920.2	920.2	920.2	920.2	920.2	920.2	920.2	920.2	920.2	920.2
2.5°	955.9	952.3	948.7	942.5	937.1	929.6	927.3	924.7	916.6	909.5	904.2
5°	1006.7	996.0	980.4	966.1	954.5	938.9	930.0	920.7	907.3	895.2	885.4
7.5°	1055.3	1036.6	1014.7	991.1	968.4	946.5	929.1	913.5	896.1	879.2	866.3
10°	1115.5	1085.2	1051.3	1014.7	983.5	953.2	927.8	905.5	881.4	860.5	843.1
12.5°	1184.1	1135.5	1085.6	1039.2	1000.9	955.9	923.8	893.9	865.8	839.5	819.4
15°	1235.4	1178.3	1123.1	1062.0	1005.8	953.2	916.6	881.0	849.3	823.5	798.5
17.5°	1286.2	1223.8	1153.4	1079.8	1013.8	953.2	903.3	864.9	826.1	794.9	770.9
20°	1328.1	1254.6	1172.1	1095.0	1020.1	950.5	894.3	846.2	803.4	770.0	741.9
22.5°	1364.3	1275.1	1189.0	1105.2	1019.6	943.4	877.9	827.9	780.7	748.1	717.8
25°	1387.0	1284.0	1198.4	1101.7	1008.5	930.9	859.6	803.4	757.0	718.7	687.9
27.5°	1408.4	1282.7	1185.9	1081.6	995.1	918.0	841.3	781.1	732.5	691.0	659.4
30°	1429.8	1284.9	1164.1	1061.1	973.7	893.5	819.4	758.8	707.1	664.7	635.3
32.5°	1443.2	1283.6	1144.0	1032.6	939.8	871.2	795.8	732.5	679.0	637.5	609.5
35°	1446.7	1276.0	1120.4	991.1	902.8	833.7	770.9	705.8	650.0	611.2	579.1
37.5°	1439.2	1262.2	1094.5	953.6	858.2	789.6	734.7	679.0	625.5	582.3	554.2
40°	1414.6	1248.8	1063.3	913.5	811.9	746.3	701.3	646.9	594.3	553.7	527.9
42.5°	1367.8	1221.6	1029.0	868.9	763.7	698.2	657.6	614.4	565.3	527.9	502.0
45°	1285.8	1179.7	994.7	824.4	716.5	648.7	612.1	579.1	534.1	497.1	474.8
47.5°	1181.0	1123.1	945.2	777.5	667.0	601.4	563.1	535.9	500.7	470.8	449.0
50°	1070.9	1049.9	894.8	729.4	617.5	553.7	517.2	493.1	469.5	439.6	420.0
52.5°	943.8	965.2	835.9	679.5	567.1	504.7	470.8	453.0	432.0	408.8	392.3
55°	826.1	872.9	766.4	622.4	517.2	457.4	424.9	407.9	395.5	377.2	362.5
57.5°	712.0	771.7	694.2	564.9	468.1	416.0	383.9	364.7	356.7	346.4	334.4
60°	612.6	671.4	615.7	506.9	418.6	369.6	342.0	326.4	318.3	311.6	301.8
62.5°	523.9	583.6	539.0	448.1	370.0	325.5	302.3	287.1	281.3	278.6	270.6
65°	444.1	495.3	464.1	386.5	324.1	284.0	262.2	251.5	245.7	244.3	239.0
67.5°	374.9	414.6	390.6	332.1	281.3	244.8	225.6	216.2	211.3	210.9	206.4
70°	307.2	343.7	326.4	274.6	232.3	205.1	189.0	181.0	178.3	177.9	175.7
72.5°	254.6	277.3	264.4	223.4	193.0	169.0	158.3	149.8	146.7	147.6	146.2
75°	196.2	215.3	207.3	177.4	151.1	135.1	125.3	119.9	117.3	118.6	116.8
77.5°	149.8	163.2	155.2	132.4	115.5	103.4	95.9	92.3	89.6	89.6	88.7
80°	106.6	113.7	109.7	97.2	83.8	74.0	68.2	66.0	64.6	64.2	63.8
82.5°	68.2	74.0	69.1	61.5	53.5	48.6	45.9	42.8	41.9	42.4	41.9
85°	38.3	40.6	38.8	33.4	29.9	27.2	25.4	24.1	23.2	23.6	22.7
87.5°	16.5	16.9	15.6	13.8	12.9	11.6	11.6	10.7	9.8	9.8	9.4
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):

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	920.2	920.2	920.2	920.2	920.2	920.2	920.2	920.2	920.2	920.2	920.2
2.5°	901.0	897.9	893.5	886.8	881.4	872.9	872.9	874.3	874.3	873.8	872.9
5°	877.4	870.7	862.7	853.3	843.5	833.7	831.9	828.4	825.7	823.9	821.7
7.5°	853.3	842.2	831.0	818.1	807.0	797.6	790.9	785.1	781.6	777.5	774.4
10°	828.8	814.1	800.3	786.5	771.3	759.3	751.7	746.3	742.3	738.8	737.0
12.5°	799.8	782.4	766.8	753.9	737.0	724.5	717.4	715.6	710.7	702.2	697.7
15°	771.7	756.1	737.9	717.8	709.8	694.6	686.1	682.1	679.5	673.7	671.9
17.5°	748.6	727.6	706.7	691.9	677.2	665.2	660.3	654.9	651.4	646.0	644.7
20°	719.6	701.3	682.6	666.5	650.9	637.5	633.5	630.0	626.4	624.2	622.4
22.5°	690.2	671.9	657.2	642.5	625.5	617.9	613.5	609.5	607.2	605.9	604.1
25°	663.0	646.9	629.5	616.1	602.8	597.0	594.3	592.1	590.3	588.1	587.6
27.5°	638.9	621.1	606.3	593.4	583.6	578.7	575.6	574.2	574.2	575.1	575.6
30°	611.2	595.2	583.6	572.9	564.0	559.5	559.1	559.1	560.9	561.3	562.2
32.5°	585.8	573.3	561.8	551.5	545.3	542.6	544.8	544.8	546.2	547.5	549.3
35°	561.3	549.7	540.8	531.9	526.1	527.4	528.3	529.2	531.4	534.1	535.9
37.5°	538.1	527.4	518.1	510.9	507.4	510.0	512.3	514.1	516.7	519.0	520.7
40°	512.7	505.1	496.2	490.0	490.9	492.2	494.0	496.2	498.4	499.8	501.6
42.5°	489.1	481.1	474.8	469.9	471.2	473.0	473.9	474.8	477.5	480.2	481.1
45°	465.0	458.8	452.5	449.4	450.3	451.2	452.1	453.4	455.6	457.4	457.9
47.5°	437.8	433.4	429.3	425.8	427.6	427.1	428.4	431.1	432.0	432.9	435.6
50°	412.0	407.9	403.0	402.1	402.1	402.1	402.6	406.2	406.2	407.9	409.7
52.5°	383.4	381.2	378.5	376.7	375.8	375.8	378.1	379.4	380.3	383.0	384.8
55°	355.3	352.7	350.0	348.6	347.8	348.6	352.2	353.1	355.3	356.7	358.0
57.5°	325.9	324.1	321.9	321.0	321.0	321.4	324.1	326.4	326.8	331.3	333.0
60°	296.9	293.8	292.0	292.0	291.1	295.1	294.3	298.7	299.6	302.3	305.4
62.5°	267.1	262.6	262.2	262.2	263.9	264.4	266.2	267.5	270.2	273.7	276.0
65°	234.5	232.3	235.4	235.0	234.1	236.7	236.7	239.0	241.6	244.8	249.7
67.5°	204.2	202.4	203.3	202.9	204.2	206.0	207.3	209.1	212.2	215.8	218.9
70°	173.4	174.8	172.5	174.3	175.7	176.1	177.0	179.7	183.2	185.5	189.0
72.5°	143.6	143.1	144.0	144.5	145.8	146.7	147.6	150.7	154.7	156.5	159.2
75°	115.0	114.6	115.9	115.9	118.1	119.0	119.9	121.3	124.8	127.5	129.7
77.5°	89.2	89.6	89.2	91.0	90.1	90.5	93.2	94.5	95.0	100.8	101.7
80°	63.3	64.2	64.6	65.1	65.5	64.6	67.8	69.1	69.1	72.2	74.5
82.5°	41.0	41.5	42.8	43.2	43.2	44.6	44.1	45.0	46.4	47.3	50.4
85°	22.7	24.1	24.5	24.1	24.5	23.6	25.0	25.4	25.9	25.9	25.9
87.5°	8.9	9.4	8.9	9.4	8.9	9.4	9.4	8.5	8.5	9.8	8.0
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: P242488

CATALOG NUMBER: S123DR-S775D940-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	920.2	920.2	920.2	920.2
2.5°	869.8	869.4	872.5	870.3
5°	819.0	820.3	815.9	815.9
7.5°	773.1	771.3	771.7	768.6
10°	731.6	728.9	728.1	728.5
12.5°	697.3	697.3	690.2	690.2
15°	671.9	663.4	662.5	665.2
17.5°	643.8	638.9	639.3	638.4
20°	622.4	619.7	619.3	616.1
22.5°	602.8	602.3	602.8	599.2
25°	587.2	589.4	587.6	587.6
27.5°	576.5	576.5	575.1	575.1
30°	564.0	563.5	564.4	564.4
32.5°	551.5	552.4	552.4	552.8
35°	538.6	539.0	540.4	539.5
37.5°	521.6	523.9	523.4	524.3
40°	502.0	503.4	502.9	502.9
42.5°	482.0	482.8	481.5	480.6
45°	459.7	458.8	460.1	458.3
47.5°	435.1	435.6	436.0	437.8
50°	410.6	413.3	413.3	412.8
52.5°	386.5	387.4	389.7	389.7
55°	361.6	362.5	363.4	363.8
57.5°	336.2	335.7	337.5	337.9
60°	309.0	309.0	312.5	313.9
62.5°	280.0	281.8	285.3	282.7
65°	251.9	255.5	255.0	256.8
67.5°	222.5	224.7	228.3	228.3
70°	192.6	194.8	196.6	198.0
72.5°	163.6	164.5	169.4	166.7
75°	132.9	136.0	138.7	137.3
77.5°	103.4	107.4	108.3	107.0
80°	77.6	77.1	79.8	79.4
82.5°	51.7	51.3	52.2	52.6
85°	27.6	29.0	27.2	26.8
87.5°	8.0	8.0	7.6	7.1
90°	0.0	0.0	0.0	0.0

(END OF REPORT)