

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: P243338

Luminaire Tested: **S123DR-H775D930-X4F0-XX-UDD-A-W**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P243338
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-59)
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S123DR-H775D930-X4F0-XX-UDD-A-W
Description: DEFINE 3 DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER.
HIGH PERFORMANCE LIGHT ENGINE
Light Source: (184) 3000K CCT, 90 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2505.1 lumens
Efficiency: N/A
Efficacy: 106.1 lumens/watt
Spacing Criteria (0/90/45): 1.39 / 1.21 / 1.5
Luminous Opening: Rectangular (W 3.88' x L: 0.23' x H: 0')
CIE Type: Direct

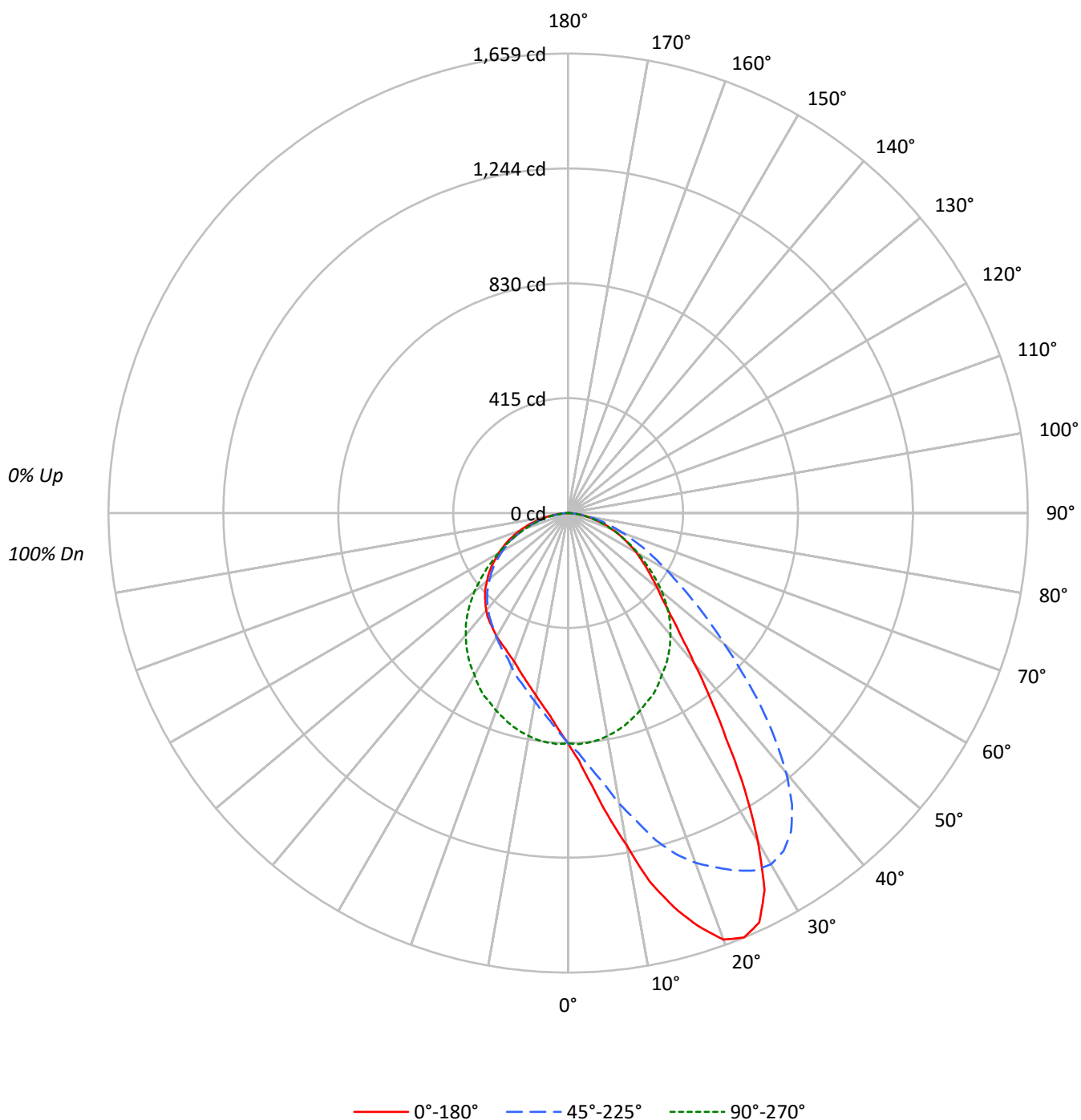
Input Watts (W): 23.6
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	10075	10075	10075
5°	12003	10123	8947
10°	14990	10062	8226
15°	18473	9952	7718
20°	21139	9794	7345
25°	21816	9687	7207
30°	19167	9455	7212
35°	14710	9315	7220
40°	11189	9087	7274
45°	9003	8794	7268
50°	7924	8325	7205
55°	7303	7713	7158
60°	6882	7057	7011
65°	6396	6450	6878
70°	5855	5787	6581
75°	5203	5044	6130
80°	4356	4174	5368
85°	3074	3018	4019

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	81.8	3.3
10°-20°	262.6	10.5
20°-30°	433.6	17.3
30°-40°	496.3	19.8
40°-50°	449.8	18.0
50°-60°	363.4	14.5
60°-70°	253.2	10.1
70°-80°	132.8	5.3
80°-90°	31.7	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°	778.0	31.1
0°-40°	1274.3	50.9
0°-60°	2087.4	83.3
0°-90°	2505.1	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2505.1	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	831	831	831	831	831	
5°	986	922	832	752	735	102
15°	1472	1222	793	639	615	419
25°	1631	1424	724	552	539	729
35°	994	1403	630	483	488	630
45°	525	980	513	413	424	414
55°	346	550	365	324	339	310
65°	223	301	225	222	240	221
75°	111	137	108	112	131	119
85°	22	28	22	24	29	28
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°	831.2	831.2	831.2	831.2	831.2	831.2	831.2	831.2	831.2	831.2	831.2
2.5°	895.1	897.0	894.0	895.9	891.3	888.7	884.5	882.6	873.4	867.0	864.7
5°	986.5	986.5	987.2	982.7	977.3	967.8	955.3	947.3	938.1	922.5	914.6
7.5°	1101.4	1095.7	1091.9	1083.5	1076.3	1060.7	1047.0	1030.6	1009.3	983.4	969.7
10°	1217.9	1224.0	1220.2	1211.4	1192.8	1167.3	1147.1	1123.5	1090.4	1065.3	1029.5
12.5°	1363.3	1355.3	1349.2	1335.9	1315.3	1288.3	1257.1	1222.1	1179.4	1138.0	1098.0
15°	1472.1	1473.3	1472.9	1455.4	1435.2	1398.7	1369.7	1311.5	1257.5	1222.4	1156.2
17.5°	1564.2	1569.2	1563.5	1537.2	1519.3	1497.6	1460.7	1396.0	1346.9	1290.2	1217.1
20°	1638.8	1639.6	1630.4	1611.0	1590.5	1566.1	1517.4	1467.9	1420.0	1343.9	1274.2
22.5°	1658.6	1660.5	1658.6	1650.2	1633.5	1607.6	1571.1	1525.4	1464.9	1383.8	1319.1
25°	1631.2	1630.1	1636.5	1631.6	1630.8	1622.4	1598.5	1561.5	1501.8	1423.8	1341.6
27.5°	1535.3	1527.3	1543.7	1565.0	1568.0	1581.3	1581.7	1564.6	1521.6	1455.0	1365.5
30°	1369.4	1377.0	1385.0	1429.5	1454.2	1488.9	1518.9	1530.0	1513.6	1464.5	1380.8
32.5°	1189.0	1213.3	1235.8	1266.6	1302.8	1361.4	1408.9	1450.8	1468.7	1447.0	1380.8
35°	994.1	1007.0	1042.4	1081.6	1133.8	1179.4	1273.8	1334.7	1389.1	1403.2	1363.3
37.5°	841.9	853.7	865.8	896.3	954.9	1031.0	1109.0	1189.0	1269.6	1327.5	1325.2
40°	707.1	709.8	720.5	746.7	795.4	863.2	945.0	1041.3	1145.9	1224.7	1257.8
42.5°	603.6	603.6	616.9	647.4	675.5	725.0	804.2	889.1	1003.6	1104.8	1175.6
45°	525.2	526.0	536.6	558.3	580.4	619.2	677.8	757.7	875.7	980.4	1079.0
47.5°	461.3	468.5	474.6	486.0	508.1	542.3	585.0	653.1	737.2	851.4	966.3
50°	420.2	421.7	426.3	433.1	450.2	472.7	509.6	561.4	636.0	737.2	853.3
52.5°	379.8	379.8	384.4	392.8	402.7	420.9	447.6	490.6	546.5	638.2	742.5
55°	345.6	346.7	347.5	354.3	362.7	376.4	397.3	425.5	476.9	550.3	641.3
57.5°	312.1	316.3	315.1	320.5	326.5	336.4	351.3	375.6	414.8	470.8	552.6
60°	283.9	283.2	285.1	287.3	291.5	298.4	312.1	330.0	362.7	409.5	476.5
62.5°	251.9	251.2	253.5	256.1	259.9	265.6	275.5	289.2	315.1	350.1	408.4
65°	223.0	222.3	223.4	224.9	229.1	233.7	241.3	252.7	269.8	300.7	345.2
67.5°	194.1	194.1	194.9	196.4	199.0	202.5	208.6	215.4	232.5	253.1	288.1
70°	165.2	165.6	165.6	167.1	169.4	172.0	177.0	183.1	193.7	212.0	240.2
72.5°	140.1	140.1	139.3	140.1	141.6	142.7	145.8	151.5	159.5	172.8	194.1
75°	111.1	113.0	112.7	112.3	113.4	115.3	118.0	122.5	127.5	137.0	153.0
77.5°	85.3	86.4	86.4	86.8	87.9	89.4	90.2	94.8	99.3	105.0	116.8
80°	62.4	63.2	62.4	62.8	63.6	65.1	66.6	67.4	70.8	75.7	81.4
82.5°	41.9	40.7	42.2	41.9	42.6	43.0	43.8	44.1	46.4	49.5	53.3
85°	22.1	24.0	23.6	24.4	23.6	24.0	24.4	25.9	26.3	28.2	30.4
87.5°	8.4	9.1	9.1	9.1	9.1	9.1	9.9	10.3	11.0	11.4	12.2
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°	831.2	831.2	831.2	831.2	831.2	831.2	831.2	831.2	831.2	831.2	831.2
2.5°	866.2	862.8	857.8	852.5	846.8	841.1	838.4	835.0	828.2	821.3	816.0
5°	908.1	898.6	885.6	876.1	862.4	849.5	839.2	832.0	820.9	807.6	798.9
7.5°	954.9	937.8	917.2	896.3	875.7	856.3	840.3	826.6	809.5	793.1	779.8
10°	1010.1	977.0	948.4	918.0	887.5	860.1	837.3	817.5	795.4	775.6	759.3
12.5°	1058.8	1020.4	980.8	937.8	896.7	861.3	832.0	806.1	779.4	756.6	739.9
15°	1112.5	1058.4	1003.6	954.9	905.0	861.6	823.2	793.1	762.7	736.8	717.4
17.5°	1174.1	1101.8	1032.9	962.9	918.7	862.8	815.6	776.0	744.8	718.9	693.8
20°	1210.6	1138.7	1054.2	982.3	909.2	851.8	799.2	759.3	722.7	693.0	672.5
22.5°	1230.4	1154.7	1066.4	992.6	907.3	843.0	787.1	739.9	700.7	671.0	647.8
25°	1258.2	1154.7	1072.9	984.2	910.4	832.7	769.5	724.3	683.2	648.9	624.5
27.5°	1270.8	1165.0	1073.6	968.2	892.1	813.3	749.4	701.4	655.8	622.3	601.3
30°	1281.1	1166.9	1058.4	955.7	870.8	791.6	729.2	675.5	632.9	600.9	578.9
32.5°	1281.8	1161.9	1037.9	932.1	842.2	766.1	705.2	654.6	610.1	576.2	554.5
35°	1275.0	1149.8	1014.3	895.9	809.1	739.9	679.0	629.5	584.2	551.9	529.8
37.5°	1257.5	1136.1	992.2	862.0	769.9	702.6	650.8	603.6	558.7	526.4	508.1
40°	1220.2	1114.0	963.3	825.9	730.3	663.0	617.7	574.3	534.3	500.9	482.6
42.5°	1170.7	1080.9	928.3	787.4	686.2	621.1	581.2	546.1	505.4	476.5	457.8
45°	1100.7	1036.0	893.2	747.1	642.4	578.5	542.0	513.0	478.0	449.1	432.7
47.5°	1021.5	981.9	847.9	701.8	596.4	536.2	501.6	478.4	448.7	424.0	407.6
50°	932.4	917.6	798.1	656.1	553.4	491.7	459.7	441.5	416.4	396.6	382.5
52.5°	835.8	844.9	745.6	609.7	511.9	449.5	419.0	402.3	386.3	369.6	356.2
55°	737.6	759.3	682.0	559.1	464.3	409.9	380.2	365.0	353.2	339.1	329.6
57.5°	645.5	679.3	616.2	505.0	420.5	368.4	340.2	326.9	318.2	310.6	301.8
60°	556.0	595.2	548.4	454.4	376.8	329.2	304.1	291.1	287.0	281.3	272.9
62.5°	476.9	516.8	481.8	402.3	332.6	291.9	269.1	258.4	252.3	250.4	245.5
65°	402.7	440.0	413.3	347.9	290.8	254.6	234.4	224.9	221.5	221.1	217.3
67.5°	338.3	374.5	350.1	295.0	246.6	217.3	202.1	194.5	191.1	191.4	188.8
70°	279.0	304.5	290.0	246.6	209.3	183.4	171.6	163.3	160.6	160.6	159.8
72.5°	223.8	244.0	232.9	199.8	170.5	150.7	140.4	135.5	133.2	132.8	133.2
75°	175.1	192.6	182.7	156.8	134.7	119.9	111.1	107.7	106.6	105.8	106.2
77.5°	130.9	142.0	135.9	119.1	100.9	90.6	86.4	83.0	81.8	82.2	83.0
80°	92.5	98.6	95.1	84.5	72.3	65.5	62.4	59.8	58.6	59.8	59.8
82.5°	58.6	63.2	60.1	53.3	47.2	42.6	39.6	38.8	38.4	37.7	38.8
85°	32.0	34.3	32.7	30.4	26.3	24.4	22.1	21.7	21.7	21.7	21.7
87.5°	12.6	14.1	12.2	12.2	11.4	9.5	9.5	9.1	8.8	9.1	9.1
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):

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	831.2	831.2	831.2	831.2	831.2	831.2	831.2	831.2	831.2	831.2	831.2
2.5°	813.7	808.7	805.7	801.5	796.6	790.1	787.4	790.1	788.6	785.9	787.1
5°	791.2	784.8	776.4	769.5	761.9	752.4	749.4	747.9	745.6	744.4	742.5
7.5°	769.2	759.7	749.4	739.9	728.8	720.5	716.6	714.0	713.2	707.5	705.2
10°	746.3	734.5	724.3	711.3	701.8	690.8	686.2	683.2	679.7	675.9	673.3
12.5°	722.4	710.6	697.6	685.4	675.9	663.7	657.7	654.2	651.6	648.9	645.9
15°	701.4	689.6	671.7	662.6	651.2	639.0	635.2	627.6	628.3	623.8	620.7
17.5°	679.3	661.8	649.3	635.6	627.2	618.5	611.2	603.2	602.1	598.7	597.5
20°	654.6	636.3	627.6	613.5	602.1	593.3	586.9	586.1	583.8	578.9	577.0
22.5°	630.3	615.4	603.2	590.3	580.0	568.6	565.6	566.7	562.5	561.4	557.2
25°	608.2	595.2	580.0	567.8	559.5	552.2	548.0	546.5	545.0	543.9	542.0
27.5°	584.6	570.9	557.9	548.0	540.1	535.1	532.4	529.0	528.6	528.6	527.9
30°	561.0	548.8	540.1	527.5	520.3	517.2	514.9	513.8	514.9	514.9	515.3
32.5°	539.3	527.5	517.2	508.5	501.2	499.0	498.6	498.6	500.1	500.1	501.2
35°	516.8	505.0	495.5	489.4	483.3	483.0	483.3	484.1	486.0	486.4	487.9
37.5°	492.5	483.3	476.1	468.5	467.0	467.7	468.5	469.3	470.0	473.1	473.1
40°	470.0	463.2	455.9	451.0	448.3	450.2	451.4	451.8	454.0	455.9	457.5
42.5°	448.0	441.5	435.8	431.6	430.4	432.0	433.1	434.3	436.5	438.1	440.7
45°	423.2	419.0	414.1	410.7	411.0	413.3	413.3	417.1	418.6	419.4	421.3
47.5°	400.4	395.8	392.4	390.9	390.5	392.4	393.5	396.6	397.3	400.0	401.5
50°	376.0	372.6	369.9	368.0	368.4	369.2	371.8	374.9	375.6	378.7	381.3
52.5°	350.5	347.5	345.2	346.0	347.1	347.1	349.8	351.7	353.6	355.8	358.5
55°	325.4	321.2	321.6	320.5	321.6	324.3	325.4	328.4	330.0	331.1	334.9
57.5°	298.0	297.2	296.1	295.0	297.2	298.4	300.3	302.2	304.9	306.4	309.0
60°	269.8	268.7	268.7	270.2	271.0	273.3	276.3	277.4	278.2	281.3	284.7
62.5°	244.0	242.8	242.4	244.7	244.7	247.0	248.1	250.0	253.1	254.2	258.8
65°	216.2	215.4	215.4	217.3	217.7	221.9	221.9	221.9	223.8	228.0	230.3
67.5°	187.2	187.6	188.8	189.9	191.4	192.6	193.0	195.2	198.3	201.0	205.5
70°	158.3	160.2	162.5	162.1	163.3	165.2	165.6	167.8	170.5	173.9	179.3
72.5°	132.4	133.6	135.9	135.9	137.4	138.5	140.4	142.0	145.4	148.4	150.7
75°	106.6	106.9	108.8	110.0	111.1	111.9	113.8	116.5	118.4	121.0	124.5
77.5°	83.7	83.0	84.5	84.9	85.6	87.2	88.7	91.3	92.9	95.9	97.0
80°	59.4	60.9	61.3	61.7	62.4	64.3	65.5	66.6	68.1	70.8	71.9
82.5°	39.2	40.0	41.1	41.5	42.2	42.6	43.0	44.9	46.1	46.8	50.6
85°	22.8	24.0	23.2	23.2	24.0	24.4	25.9	25.9	27.4	26.6	28.5
87.5°	9.9	9.5	9.5	9.9	9.5	9.1	10.3	10.3	9.9	10.3	10.3
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: P243338

CATALOG NUMBER: S123DR-H775D930-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	831.2	831.2	831.2	831.2
2.5°	785.2	785.2	782.1	783.2
5°	738.7	740.2	736.4	735.3
7.5°	704.5	702.9	700.3	700.3
10°	671.0	669.5	668.3	668.3
12.5°	642.1	640.5	638.2	640.1
15°	616.2	616.6	615.0	615.0
17.5°	596.4	593.0	591.8	591.4
20°	572.8	573.5	572.0	569.4
22.5°	557.9	556.0	554.5	554.1
25°	542.7	540.8	540.4	538.9
27.5°	527.5	527.9	526.7	526.7
30°	514.9	516.1	514.9	515.3
32.5°	502.4	502.4	502.4	500.9
35°	488.7	489.1	488.7	487.9
37.5°	474.6	474.6	475.0	475.7
40°	459.0	459.0	459.7	459.7
42.5°	440.3	442.2	443.4	441.5
45°	423.6	424.0	424.4	424.0
47.5°	404.9	403.8	404.2	404.9
50°	381.7	384.4	384.4	382.1
52.5°	359.3	360.0	361.6	361.6
55°	337.2	337.6	338.0	338.7
57.5°	312.1	312.5	312.5	312.1
60°	287.0	289.2	288.9	289.2
62.5°	259.9	263.4	264.5	264.1
65°	234.4	235.2	237.1	239.8
67.5°	207.4	209.3	212.4	211.6
70°	180.8	183.4	184.2	185.7
72.5°	154.1	157.6	158.3	159.1
75°	128.3	129.8	131.3	130.9
77.5°	100.1	102.4	105.0	103.5
80°	75.0	75.4	77.6	76.9
82.5°	49.5	52.5	52.5	51.0
85°	28.9	28.9	28.9	28.9
87.5°	9.9	9.5	10.3	9.9
90°	0.0	0.0	0.0	0.0

(END OF REPORT)