

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: P243328

Luminaire Tested: **S123DR-H775D835-X4F0-XX-UDD-A-W**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P243328
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-H775D835-X4F0-XX-UDD-A-W
Description: DEFINE 3 DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER.
HIGH PERFORMANCE LIGHT ENGINE
Light Source: (184) 3500K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3072.6 lumens
Efficiency: N/A
Efficacy: 130.2 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

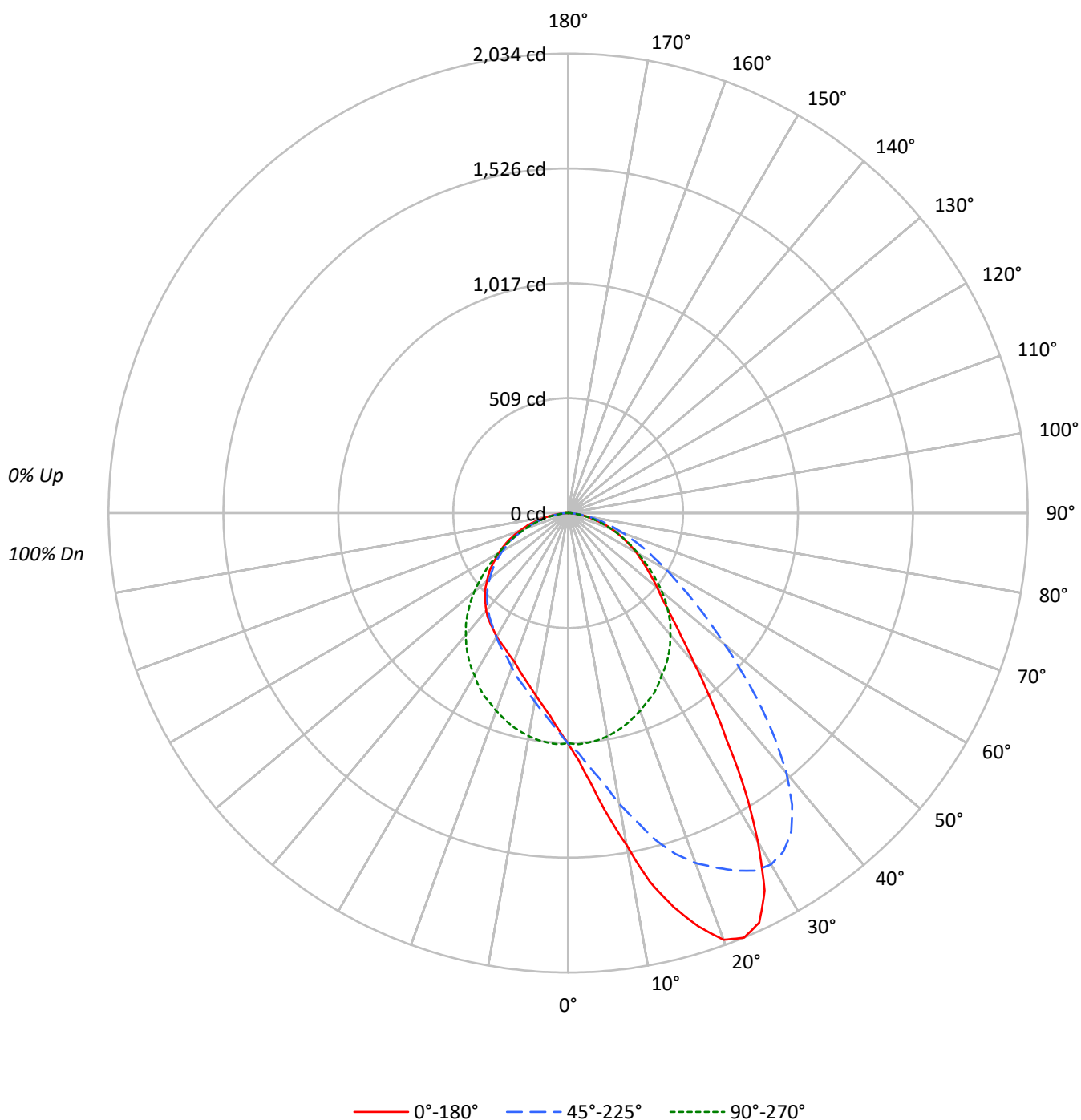
Input Watts (W): 23.6
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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					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	92	86	81	98	91	85	80	87	82	78	84	80	76	81	77	74	72		
3	92	82	74	68	89	80	73	67	77	71	66	75	69	65	72	68	64	62		
4	84	73	64	58	82	72	64	58	69	62	57	67	61	56	65	60	55	53		
5	78	65	57	50	76	64	56	50	62	55	50	60	54	49	58	53	49	46		
6	72	59	50	44	70	58	50	44	56	49	44	55	48	43	53	47	43	41		
7	67	54	45	39	65	53	45	39	51	44	39	50	43	39	49	43	38	36		
8	62	49	41	35	61	48	41	35	47	40	35	46	39	35	45	39	34	33		
9	58	45	37	32	57	45	37	32	43	36	31	42	36	31	41	35	31	29		
10	55	42	34	29	53	41	34	29	40	33	29	39	33	28	38	33	28	27		

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	12358	12358	12358
5°	14723	12416	10974
10°	18386	12341	10089
15°	22658	12207	9467
20°	25929	12013	9007
25°	26758	11880	8840
30°	23508	11597	8847
35°	18042	11425	8855
40°	13723	11146	8923
45°	11043	10787	8914
50°	9719	10211	8838
55°	8958	9461	8781
60°	8441	8657	8601
65°	7844	7913	8435
70°	7180	7099	8073
75°	6383	6187	7521
80°	5347	5117	6582
85°	3769	3699	4937

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	100.3	3.3
10°-20°	322.0	10.5
20°-30°	531.9	17.3
30°-40°	608.7	19.8
40°-50°	551.6	18.0
50°-60°	445.7	14.5
60°-70°	310.6	10.1
70°-80°	162.9	5.3
80°-90°	38.8	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°	954.2	31.1
0°-40°	1563.0	50.9
0°-60°	2560.3	83.3
0°-90°	3072.6	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3072.6	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1020	1020	1020	1020	1020	
5°	1210	1132	1020	923	902	125
15°	1806	1499	973	784	754	514
25°	2001	1746	888	677	661	894
35°	1219	1721	772	592	598	773
45°	644	1202	629	507	520	508
55°	424	675	448	398	416	381
65°	274	369	276	272	294	271
75°	136	168	132	137	161	146
85°	27	34	27	30	36	35
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°	1019.5	1019.5	1019.5	1019.5	1019.5	1019.5	1019.5	1019.5	1019.5	1019.5	1019.5
2.5°	1097.9	1100.3	1096.5	1098.9	1093.3	1090.0	1084.9	1082.5	1071.3	1063.4	1060.6
5°	1210.0	1210.0	1210.9	1205.3	1198.8	1187.1	1171.7	1161.9	1150.7	1131.5	1121.7
7.5°	1350.9	1343.9	1339.3	1329.0	1320.1	1301.0	1284.2	1264.1	1238.0	1206.2	1189.4
10°	1493.8	1501.3	1496.6	1485.8	1463.0	1431.7	1407.0	1378.0	1337.4	1306.6	1262.7
12.5°	1672.1	1662.3	1654.8	1638.5	1613.3	1580.1	1541.9	1498.9	1446.6	1395.8	1346.7
15°	1805.6	1807.0	1806.5	1785.1	1760.3	1715.5	1680.0	1608.6	1542.3	1499.4	1418.2
17.5°	1918.6	1924.6	1917.6	1885.4	1863.5	1836.9	1791.6	1712.2	1652.0	1582.5	1492.8
20°	2010.1	2011.0	1999.8	1976.0	1950.8	1920.9	1861.2	1800.5	1741.7	1648.3	1562.9
22.5°	2034.3	2036.7	2034.3	2024.1	2003.5	1971.8	1927.0	1871.0	1796.7	1697.3	1618.0
25°	2000.7	1999.3	2007.3	2001.2	2000.3	1990.0	1960.6	1915.3	1842.0	1746.3	1645.5
27.5°	1883.1	1873.3	1893.4	1919.5	1923.2	1939.6	1940.0	1919.0	1866.3	1784.6	1674.9
30°	1679.6	1688.9	1698.7	1753.3	1783.7	1826.1	1863.0	1876.6	1856.5	1796.3	1693.6
32.5°	1458.3	1488.2	1515.7	1553.5	1597.9	1669.8	1728.1	1779.5	1801.4	1774.8	1693.6
35°	1219.3	1235.2	1278.6	1326.7	1390.6	1446.6	1562.4	1637.1	1703.8	1721.1	1672.1
37.5°	1032.6	1047.0	1062.0	1099.3	1171.2	1264.6	1360.3	1458.3	1557.3	1628.2	1625.4
40°	867.3	870.6	883.7	915.9	975.6	1058.7	1159.1	1277.2	1405.6	1502.2	1542.8
42.5°	740.4	740.4	756.7	794.0	828.6	889.3	986.4	1090.5	1231.0	1355.1	1442.0
45°	644.2	645.1	658.2	684.8	711.9	759.5	831.4	929.4	1074.1	1202.5	1323.4
47.5°	565.8	574.6	582.1	596.1	623.2	665.2	717.5	801.0	904.2	1044.2	1185.2
50°	515.4	517.2	522.8	531.2	552.2	579.8	625.1	688.5	780.0	904.2	1046.6
52.5°	465.9	465.9	471.5	481.7	493.9	516.3	549.0	601.7	670.3	782.8	910.7
55°	423.9	425.3	426.2	434.6	444.9	461.7	487.3	521.9	584.9	675.0	786.6
57.5°	382.8	387.9	386.5	393.1	400.5	412.7	430.9	460.7	508.8	577.4	677.8
60°	348.2	347.3	349.6	352.4	357.6	366.0	382.8	404.7	444.9	502.3	584.4
62.5°	309.0	308.1	310.9	314.2	318.8	325.8	338.0	354.8	386.5	429.5	500.9
65°	273.5	272.6	274.0	275.9	281.0	286.6	296.0	310.0	331.0	368.8	423.4
67.5°	238.1	238.1	239.0	240.9	244.1	248.3	255.8	264.2	285.2	310.4	353.4
70°	202.6	203.1	203.1	204.9	207.7	211.0	217.1	224.5	237.6	260.0	294.6
72.5°	171.8	171.8	170.9	171.8	173.7	175.1	178.8	185.8	195.6	211.9	238.1
75°	136.3	138.6	138.2	137.7	139.1	141.4	144.7	150.3	156.4	168.1	187.7
77.5°	104.6	106.0	106.0	106.4	107.8	109.7	110.6	116.2	121.8	128.8	143.3
80°	76.6	77.5	76.6	77.0	78.0	79.8	81.7	82.6	86.8	92.9	99.9
82.5°	51.3	49.9	51.8	51.3	52.3	52.7	53.7	54.1	57.0	60.7	65.4
85°	27.1	29.4	28.9	29.9	28.9	29.4	29.9	31.7	32.2	34.5	37.3
87.5°	10.3	11.2	11.2	11.2	11.2	11.2	12.1	12.6	13.5	14.0	14.9
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):

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	1019.5	1019.5	1019.5	1019.5	1019.5	1019.5	1019.5	1019.5	1019.5	1019.5	1019.5
2.5°	1062.5	1058.3	1052.2	1045.6	1038.6	1031.6	1028.4	1024.2	1015.8	1007.4	1000.8
5°	1113.8	1102.1	1086.3	1074.6	1057.8	1041.9	1029.3	1020.4	1006.9	990.6	979.8
7.5°	1171.2	1150.2	1125.0	1099.3	1074.1	1050.3	1030.7	1013.9	992.9	972.8	956.5
10°	1238.9	1198.3	1163.3	1125.9	1088.6	1055.0	1027.0	1002.7	975.6	951.4	931.3
12.5°	1298.7	1251.5	1203.0	1150.2	1099.8	1056.4	1020.4	988.7	956.0	928.0	907.5
15°	1364.5	1298.2	1231.0	1171.2	1110.1	1056.9	1009.7	972.8	935.5	903.7	879.9
17.5°	1440.1	1351.4	1266.9	1181.0	1126.9	1058.3	1000.4	951.8	913.5	881.8	851.0
20°	1484.9	1396.7	1293.1	1204.8	1115.2	1044.7	980.3	931.3	886.5	850.1	824.8
22.5°	1509.2	1416.3	1308.0	1217.4	1112.9	1034.0	965.4	907.5	859.4	823.0	794.5
25°	1543.3	1416.3	1315.9	1207.2	1116.6	1021.4	943.9	888.3	837.9	795.9	766.0
27.5°	1558.7	1428.9	1316.9	1187.6	1094.2	997.6	919.1	860.3	804.3	763.2	737.6
30°	1571.3	1431.2	1298.2	1172.2	1068.1	971.0	894.4	828.6	776.3	737.1	710.0
32.5°	1572.2	1425.2	1273.0	1143.2	1033.0	939.7	865.0	802.9	748.3	706.7	680.1
35°	1563.8	1410.2	1244.0	1098.9	992.4	907.5	832.8	772.1	716.5	676.9	649.8
37.5°	1542.3	1393.4	1217.0	1057.3	944.4	861.7	798.2	740.4	685.3	645.6	623.2
40°	1496.6	1366.3	1181.5	1013.0	895.8	813.2	757.6	704.4	655.4	614.3	591.9
42.5°	1435.9	1325.7	1138.5	965.8	841.7	761.8	712.8	669.9	619.9	584.4	561.6
45°	1350.0	1270.6	1095.6	916.3	788.0	709.5	664.7	629.3	586.3	550.8	530.8
47.5°	1252.9	1204.4	1040.0	860.8	731.5	657.7	615.3	586.8	550.4	520.0	500.0
50°	1143.7	1125.5	978.9	804.8	678.7	603.1	563.9	541.5	510.7	486.4	469.1
52.5°	1025.1	1036.3	914.5	747.8	627.9	551.3	514.0	493.4	473.8	453.3	436.9
55°	904.7	931.3	836.5	685.7	569.5	502.8	466.3	447.7	433.2	415.9	404.3
57.5°	791.7	833.3	755.8	619.5	515.8	451.9	417.3	401.0	390.3	380.9	370.2
60°	682.0	730.1	672.7	557.4	462.1	403.8	373.0	357.1	352.0	345.0	334.7
62.5°	584.9	633.9	591.0	493.4	408.0	358.0	330.0	317.0	309.5	307.2	301.1
65°	493.9	539.6	507.0	426.7	356.6	312.3	287.6	275.9	271.7	271.2	266.5
67.5°	415.0	459.3	429.5	361.8	302.5	266.5	247.9	238.5	234.3	234.8	231.5
70°	342.2	373.4	355.7	302.5	256.7	225.0	210.5	200.3	197.0	197.0	196.1
72.5°	274.5	299.2	285.7	245.1	209.1	184.9	172.3	166.2	163.4	162.9	163.4
75°	214.7	236.2	224.1	192.3	165.2	147.0	136.3	132.1	130.7	129.8	130.2
77.5°	160.6	174.1	166.7	146.1	123.7	111.1	106.0	101.8	100.4	100.8	101.8
80°	113.4	120.9	116.7	103.6	88.7	80.3	76.6	73.3	71.9	73.3	73.3
82.5°	71.9	77.5	73.8	65.4	57.9	52.3	48.5	47.6	47.1	46.2	47.6
85°	39.2	42.0	40.1	37.3	32.2	29.9	27.1	26.6	26.6	26.6	26.6
87.5°	15.4	17.3	14.9	14.9	14.0	11.7	11.7	11.2	10.7	11.2	11.2
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):

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	1019.5	1019.5	1019.5	1019.5	1019.5	1019.5	1019.5	1019.5	1019.5	1019.5	1019.5
2.5°	998.0	992.0	988.2	983.1	977.0	969.1	965.8	969.1	967.2	964.0	965.4
5°	970.5	962.6	952.3	943.9	934.5	922.9	919.1	917.3	914.5	913.1	910.7
7.5°	943.4	931.7	919.1	907.5	893.9	883.7	879.0	875.7	874.8	867.8	865.0
10°	915.4	900.9	888.3	872.5	860.8	847.3	841.7	837.9	833.7	829.0	825.8
12.5°	886.0	871.5	855.7	840.7	829.0	814.1	806.6	802.4	799.2	795.9	792.2
15°	860.3	845.9	823.9	812.7	798.7	783.8	779.1	769.8	770.7	765.1	761.4
17.5°	833.3	811.8	796.4	779.6	769.3	758.6	749.7	739.9	738.5	734.3	732.9
20°	802.9	780.5	769.8	752.5	738.5	727.8	719.8	718.9	716.1	710.0	707.7
22.5°	773.0	754.8	739.9	724.0	711.4	697.4	693.7	695.1	689.9	688.5	683.4
25°	746.0	730.1	711.4	696.5	686.2	677.3	672.2	670.3	668.5	667.1	664.7
27.5°	717.0	700.2	684.3	672.2	662.4	656.3	653.1	648.9	648.4	648.4	647.5
30°	688.1	673.1	662.4	647.0	638.1	634.4	631.6	630.2	631.6	631.6	632.1
32.5°	661.5	647.0	634.4	623.7	614.8	612.0	611.5	611.5	613.4	613.4	614.8
35°	633.9	619.5	607.8	600.3	592.8	592.4	592.8	593.8	596.1	596.6	598.4
37.5°	604.0	592.8	584.0	574.6	572.8	573.7	574.6	575.6	576.5	580.2	580.2
40°	576.5	568.1	559.2	553.2	549.9	552.2	553.6	554.1	556.9	559.2	561.1
42.5°	549.4	541.5	534.5	529.4	528.0	529.8	531.2	532.6	535.4	537.3	540.6
45°	519.1	514.0	507.9	503.7	504.2	507.0	507.0	511.6	513.5	514.4	516.8
47.5°	491.1	485.5	481.3	479.4	478.9	481.3	482.7	486.4	487.3	490.6	492.5
50°	461.2	457.0	453.7	451.4	451.9	452.8	456.1	459.8	460.7	464.5	467.7
52.5°	429.9	426.2	423.4	424.3	425.7	425.7	429.0	431.3	433.7	436.5	439.7
55°	399.1	394.0	394.5	393.1	394.5	397.7	399.1	402.9	404.7	406.1	410.8
57.5°	365.5	364.6	363.2	361.8	364.6	366.0	368.3	370.6	373.9	375.8	379.0
60°	331.0	329.6	329.6	331.4	332.4	335.2	338.9	340.3	341.2	345.0	349.2
62.5°	299.2	297.8	297.4	300.2	300.2	303.0	304.4	306.7	310.4	311.8	317.4
65°	265.1	264.2	264.2	266.5	267.0	272.1	272.1	272.1	274.5	279.6	282.4
67.5°	229.7	230.1	231.5	232.9	234.8	236.2	236.7	239.5	243.2	246.5	252.1
70°	194.2	196.5	199.3	198.9	200.3	202.6	203.1	205.9	209.1	213.3	219.9
72.5°	162.4	163.8	166.7	166.7	168.5	169.9	172.3	174.1	178.3	182.1	184.9
75°	130.7	131.2	133.5	134.9	136.3	137.2	139.6	142.8	145.2	148.4	152.6
77.5°	102.7	101.8	103.6	104.1	105.0	106.9	108.8	112.0	113.9	117.6	119.0
80°	72.8	74.7	75.2	75.6	76.6	78.9	80.3	81.7	83.6	86.8	88.2
82.5°	48.1	49.0	50.4	50.9	51.8	52.3	52.7	55.1	56.5	57.4	62.1
85°	28.0	29.4	28.5	28.5	29.4	29.9	31.7	31.7	33.6	32.7	35.0
87.5°	12.1	11.7	11.7	12.1	11.7	11.2	12.6	12.6	12.1	12.6	12.6
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: P243328

CATALOG NUMBER: S123DR-H775D835-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	1019.5	1019.5	1019.5	1019.5
2.5°	963.0	963.0	959.3	960.7
5°	906.1	907.9	903.3	901.9
7.5°	864.1	862.2	858.9	858.9
10°	823.0	821.1	819.7	819.7
12.5°	787.5	785.6	782.8	785.2
15°	755.8	756.2	754.4	754.4
17.5°	731.5	727.3	725.9	725.4
20°	702.5	703.5	701.6	698.3
22.5°	684.3	682.0	680.1	679.7
25°	665.7	663.3	662.9	661.0
27.5°	647.0	647.5	646.1	646.1
30°	631.6	633.0	631.6	632.1
32.5°	616.2	616.2	616.2	614.3
35°	599.4	599.8	599.4	598.4
37.5°	582.1	582.1	582.6	583.5
40°	563.0	563.0	563.9	563.9
42.5°	540.1	542.4	543.8	541.5
45°	519.6	520.0	520.5	520.0
47.5°	496.7	495.3	495.7	496.7
50°	468.2	471.5	471.5	468.7
52.5°	440.7	441.6	443.5	443.5
55°	413.6	414.1	414.5	415.5
57.5°	382.8	383.2	383.2	382.8
60°	352.0	354.8	354.3	354.8
62.5°	318.8	323.0	324.4	324.0
65°	287.6	288.5	290.8	294.1
67.5°	254.4	256.7	260.5	259.5
70°	221.7	225.0	225.9	227.8
72.5°	189.1	193.3	194.2	195.1
75°	157.3	159.2	161.0	160.6
77.5°	122.8	125.6	128.8	127.0
80°	92.0	92.4	95.2	94.3
82.5°	60.7	64.4	64.4	62.6
85°	35.5	35.5	35.5	35.5
87.5°	12.1	11.7	12.6	12.1
90°	0.0	0.0	0.0	0.0

(END OF REPORT)