

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: P242634

Luminaire Tested: **S124DR-S575D830-X4F0-XX-UDD-A-W**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P242634  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-21)  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: S124DR-S575D830-X4F0-XX-UDD-A-W  
Description: DEFINE 4 DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER  
STANDARD LIGHT ENGINE  
Light Source: (92) 3000K CCT, 80 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 2254.1 lumens  
Efficiency: N/A  
Efficacy: 119.9 lumens/watt  
Spacing Criteria (0/90/45): 1.3 / 1.22 / 1.41  
Luminous Opening: Rectangular (W 3.88' x L: 0.31' x H: 0')  
CIE Type: Direct

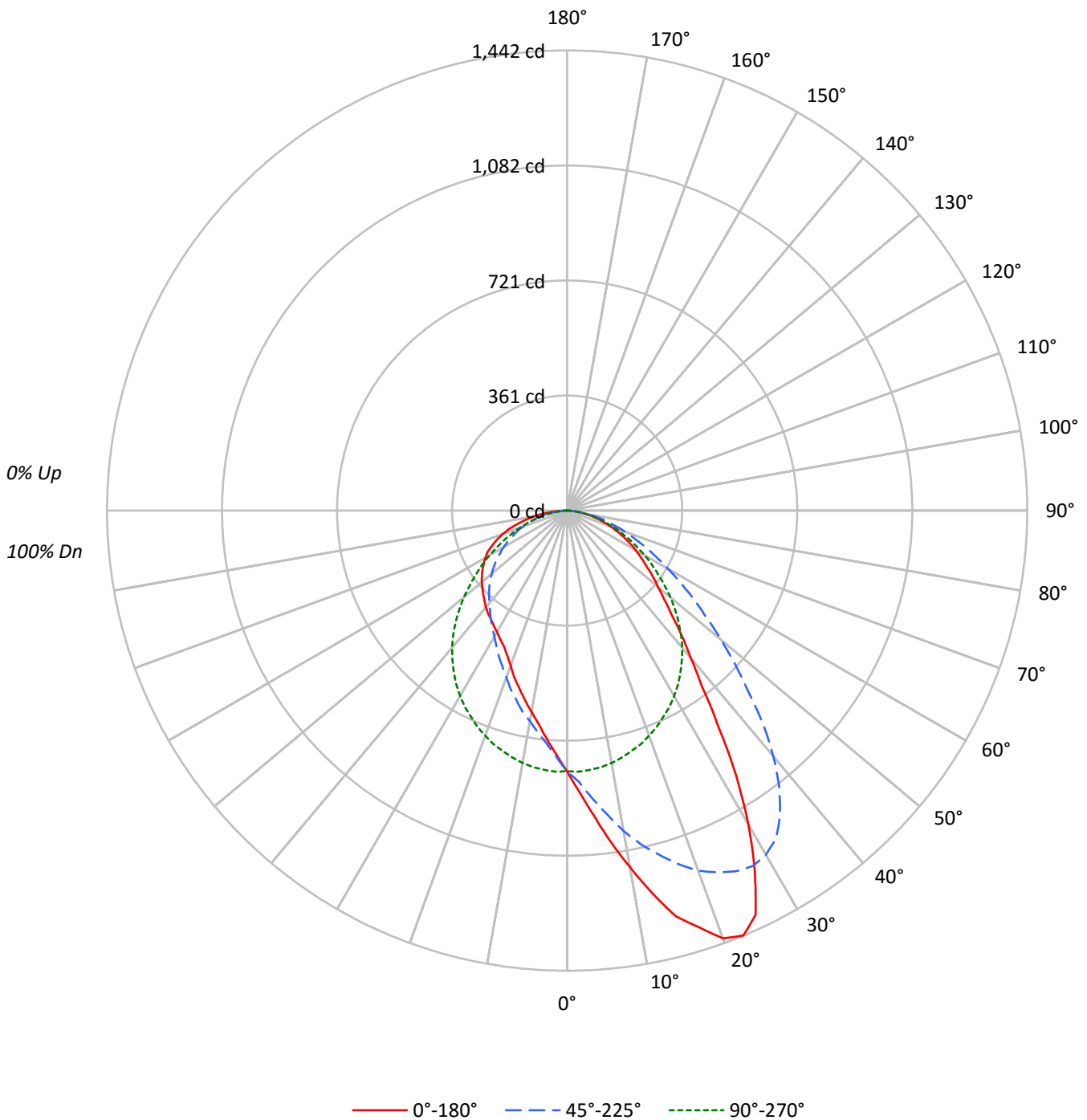
Input Watts (W): 18.8  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



TEST NUMBER: P242634

CATALOG NUMBER: S124DR-S575D830-X4F0-XX-UDD-A-W

### Luminous Intensity Polar Plot





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CATALOG NUMBER: S124DR-S575D830-X4F0-XX-UDD-A-W

**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	109	105	101	97	107	103	99	96	98	95	93		95	92	90		91	89	87	85
2	100	92	86	80	98	90	84	79	87	82	78		84	79	76		81	77	74	72
3	92	82	74	68	89	80	73	67	77	71	66		74	69	65		72	67	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	51	44	70	58	50	44	56	49	44		55	48	43		53	47	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	40	35		45	39	35	33
9	58	45	37	32	57	45	37	32	44	37	32		43	36	32		42	36	31	30
10	55	42	34	29	54	41	34	29	40	34	29		39	33	29		39	33	29	27

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

	0°	90°	180°
0°	7261	7261	7261
5°	8551	7280	6425
10°	10238	7248	5785
15°	12113	7174	5313
20°	13489	7099	4891
25°	13706	6989	4600
30°	11663	6884	4508
35°	8966	6713	4509
40°	6989	6510	4594
45°	5828	6206	4670
50°	5129	5836	4829
55°	4699	5392	5024
60°	4404	4994	5259
65°	4099	4547	5452
70°	3748	4106	5575
75°	3349	3613	5509
80°	2805	2964	5334
85°	2070	2142	5110



TEST NUMBER: P242634

CATALOG NUMBER: S124DR-S575D830-X4F0-XX-UDD-A-W

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	79.5	3.5
10°-20°	245.4	10.9
20°-30°	389.8	17.3
30°-40°	433.1	19.2
40°-50°	393.9	17.5
50°-60°	321.9	14.3
60°-70°	229.8	10.2
70°-80°	126.4	5.6
80°-90°	34.2	1.5
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°	714.7	31.7
0°-40°	1147.9	50.9
0°-60°	1863.7	82.7
0°-90°	2254.1	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2254.1	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	817	817	817	817	817	
5°	958	905	816	733	720	97
15°	1316	1117	780	614	577	372
25°	1398	1248	713	505	469	620
35°	826	1164	619	417	416	523
45°	464	803	494	346	372	364
55°	303	484	348	270	324	274
65°	195	269	216	188	259	193
75°	98	126	105	105	160	103
85°	20	26	21	30	50	25
90°	0	0	0	0	0	



TEST NUMBER: P242634

CATALOG NUMBER: S124DR-S575D830-X4F0-XX-UDD-A-W

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	816.9	816.9	816.9	816.9	816.9	816.9	816.9	816.9	816.9	816.9	816.9
2.5°	882.5	882.2	878.8	878.1	875.7	872.7	872.0	866.6	855.8	850.7	849.4
5°	958.3	965.1	956.3	954.6	953.6	942.4	936.7	929.9	914.3	905.2	898.1
7.5°	1047.0	1047.3	1043.6	1039.9	1033.4	1024.0	1011.1	996.2	978.3	960.0	947.1
10°	1134.3	1137.0	1132.6	1131.9	1114.6	1103.8	1082.2	1063.9	1042.9	1019.6	998.2
12.5°	1226.3	1220.9	1219.2	1201.3	1201.6	1179.6	1153.6	1134.6	1099.4	1071.7	1041.6
15°	1316.3	1308.9	1304.1	1284.2	1274.4	1247.0	1220.2	1199.6	1157.3	1117.0	1086.6
17.5°	1368.4	1377.6	1365.4	1357.3	1330.5	1312.6	1285.9	1243.6	1212.1	1162.0	1127.2
20°	1426.0	1426.6	1420.5	1412.1	1392.1	1367.8	1338.0	1290.6	1251.0	1201.3	1148.5
22.5°	1441.5	1441.5	1439.8	1432.1	1418.2	1399.6	1369.5	1331.9	1281.8	1226.7	1173.9
25°	1397.5	1396.2	1399.2	1408.0	1402.3	1396.2	1378.9	1349.5	1304.8	1247.6	1190.8
27.5°	1273.0	1281.8	1300.1	1321.7	1337.3	1351.2	1350.2	1337.6	1305.8	1256.4	1195.9
30°	1136.3	1147.8	1160.7	1182.3	1224.3	1248.3	1274.7	1294.7	1283.5	1245.9	1190.4
32.5°	986.1	986.7	1007.4	1032.8	1070.3	1122.1	1167.8	1213.5	1233.1	1217.9	1173.9
35°	826.3	831.1	851.7	876.1	923.1	979.6	1042.6	1098.7	1145.1	1163.7	1140.0
37.5°	692.3	707.2	722.8	750.5	793.5	844.6	912.3	982.3	1050.4	1091.6	1096.0
40°	602.3	610.8	621.3	641.2	676.4	726.5	782.7	865.9	939.4	1005.7	1027.3
42.5°	531.3	535.3	540.7	558.3	583.0	632.8	682.9	753.6	827.4	909.9	949.9
45°	463.6	468.7	479.5	490.0	510.3	544.8	592.5	652.7	726.9	803.3	870.3
47.5°	412.8	416.2	423.0	434.5	452.8	476.1	516.7	567.8	640.2	714.3	786.1
50°	370.9	373.6	378.7	388.8	402.0	422.3	454.1	501.2	555.0	629.7	699.8
52.5°	337.7	338.4	341.8	347.9	357.7	373.9	398.6	435.5	484.6	549.2	618.9
55°	303.2	304.5	307.9	313.0	322.1	333.0	352.9	382.0	425.7	483.6	544.1
57.5°	274.8	276.1	278.8	280.9	289.0	298.1	314.4	335.3	369.5	421.0	476.1
60°	247.7	247.0	250.4	252.1	257.2	264.6	276.5	296.4	325.2	364.8	414.5
62.5°	221.3	220.3	223.0	225.4	227.7	233.8	243.0	257.5	279.5	314.4	355.6
65°	194.9	193.6	195.2	198.0	200.7	204.0	211.2	225.0	243.6	269.4	302.2
67.5°	167.8	169.5	169.5	171.2	172.9	177.7	182.7	193.6	206.8	227.7	256.8
70°	144.2	144.5	145.8	145.8	146.9	150.9	155.0	160.7	173.6	192.5	215.2
72.5°	120.5	122.2	121.1	122.5	123.2	125.5	128.2	133.7	144.2	157.0	175.3
75°	97.5	98.5	98.5	98.8	99.8	100.8	103.2	107.3	115.1	125.5	138.7
77.5°	75.1	75.1	75.8	77.2	77.2	78.8	80.9	83.9	88.3	96.1	104.6
80°	54.8	55.5	55.2	55.8	55.8	57.2	57.9	61.9	63.6	68.4	74.8
82.5°	36.5	37.2	37.2	38.2	38.9	38.9	39.9	40.9	42.6	46.7	48.4
85°	20.3	21.0	20.3	21.0	22.0	22.3	23.3	23.7	25.0	26.1	28.4
87.5°	7.4	8.5	8.5	8.8	9.5	9.8	10.2	9.8	11.2	11.5	12.9
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: P242634

CATALOG NUMBER: S124DR-S575D830-X4F0-XX-UDD-A-W

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	816.9	816.9	816.9	816.9	816.9	816.9	816.9	816.9	816.9	816.9	816.9
2.5°	849.7	845.0	841.6	838.9	831.4	827.0	823.6	818.9	813.5	807.7	800.6
5°	891.0	879.5	871.0	858.1	846.0	835.8	825.3	815.9	804.3	791.8	782.7
7.5°	933.3	917.4	896.0	879.5	859.5	842.2	827.0	811.1	794.2	778.0	762.7
10°	973.2	951.2	926.8	898.1	871.0	847.0	824.6	803.0	782.0	761.0	743.1
12.5°	1016.2	987.4	948.5	913.6	882.5	848.3	820.3	792.5	766.1	743.8	722.1
15°	1053.7	1014.1	972.5	927.5	887.6	850.0	813.1	779.6	751.2	722.1	701.8
17.5°	1077.4	1028.4	983.7	936.7	890.6	843.6	805.4	767.8	732.6	704.2	678.8
20°	1100.8	1052.0	992.8	945.8	888.3	839.5	793.5	750.5	713.3	682.5	656.1
22.5°	1121.1	1062.9	1003.7	938.0	880.8	828.4	776.9	733.6	695.4	662.6	637.5
25°	1125.8	1061.2	996.9	935.3	870.3	809.1	763.4	712.6	672.0	637.9	610.8
27.5°	1127.5	1059.2	987.8	920.8	853.8	797.9	738.4	694.0	652.1	615.9	590.1
30°	1123.8	1051.7	973.5	899.4	832.1	770.2	720.1	670.7	627.7	591.8	564.8
32.5°	1111.9	1036.1	955.3	875.7	805.4	745.1	693.0	646.7	605.0	569.8	541.1
35°	1086.9	1012.8	927.2	845.6	774.2	713.0	666.3	618.6	576.6	543.1	515.7
37.5°	1053.4	984.4	897.4	812.5	743.8	681.5	634.5	590.5	552.6	518.1	489.6
40°	1006.7	947.8	860.5	778.3	702.5	644.0	600.6	561.0	523.5	491.3	464.6
42.5°	952.9	903.5	824.6	736.3	663.9	605.0	563.1	528.6	493.7	464.6	437.9
45°	886.9	853.1	777.3	696.7	620.6	565.1	524.8	493.7	463.9	434.8	412.5
47.5°	813.5	794.5	728.5	651.4	578.3	522.8	488.0	458.2	431.1	405.7	385.8
50°	739.4	731.3	676.1	602.3	533.3	481.9	446.7	422.0	399.6	378.0	359.4
52.5°	666.3	668.0	619.6	553.6	491.0	441.9	407.1	384.4	365.8	349.2	333.0
55°	591.5	601.0	562.1	501.8	444.6	400.0	368.5	347.9	334.3	319.8	307.3
57.5°	522.8	538.7	504.9	449.7	401.3	358.7	330.9	315.0	300.1	290.7	280.9
60°	455.8	470.7	445.7	401.0	356.0	320.8	294.7	280.9	268.3	262.3	255.8
62.5°	396.3	409.1	392.2	351.6	314.0	280.5	259.5	246.3	238.9	232.1	228.4
65°	340.1	351.2	335.3	305.2	271.7	244.7	226.7	216.2	208.1	205.4	200.7
67.5°	284.6	294.7	286.3	259.9	231.5	210.1	195.9	184.8	180.0	177.3	174.3
70°	236.2	246.3	237.2	214.9	194.2	177.0	163.8	158.0	153.0	151.9	147.2
72.5°	195.2	201.3	192.2	176.0	159.0	145.2	135.7	129.6	127.6	125.5	123.5
75°	152.6	158.7	152.6	139.1	126.6	116.4	107.6	105.2	102.2	101.2	99.5
77.5°	114.4	120.1	115.4	106.3	96.4	88.0	82.9	79.5	79.2	77.2	77.8
80°	82.6	86.0	81.6	75.8	68.4	62.9	59.6	57.9	55.8	55.2	56.5
82.5°	53.5	54.5	52.8	49.4	44.3	41.3	39.3	37.2	37.2	37.6	37.2
85°	30.8	30.5	30.1	26.7	25.0	22.7	21.3	21.0	20.6	21.3	22.0
87.5°	12.9	13.2	12.9	11.5	10.5	9.5	9.1	8.8	9.1	9.5	9.8
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: P242634

CATALOG NUMBER: S124DR-S575D830-X4F0-XX-UDD-A-W

**CANDELA DISTRIBUTION (continued):**

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	816.9	816.9	816.9	816.9	816.9	816.9	816.9	816.9	816.9	816.9	816.9
2.5°	797.2	794.2	789.8	783.7	778.6	773.2	771.9	769.8	773.9	770.5	769.5
5°	774.9	767.8	758.7	748.2	742.1	733.3	731.6	728.2	724.8	724.5	721.1
7.5°	751.6	741.7	730.2	719.4	709.9	700.5	694.4	693.7	688.3	685.6	682.2
10°	729.2	716.4	702.5	692.3	680.8	670.7	663.6	659.5	656.1	652.4	649.0
12.5°	702.8	689.0	678.1	667.0	652.7	645.6	632.8	625.0	625.0	626.0	615.9
15°	683.5	670.0	652.4	636.8	629.4	614.5	608.1	600.0	594.9	589.8	585.7
17.5°	659.9	643.3	629.7	612.1	598.3	587.1	578.3	573.9	565.8	558.3	553.3
20°	637.9	619.9	605.4	586.4	570.9	556.3	549.2	542.4	536.7	530.6	524.8
22.5°	615.5	596.6	578.0	559.7	545.5	529.9	523.1	513.3	507.9	505.2	499.5
25°	591.8	571.5	551.2	533.6	518.7	505.2	496.1	489.0	482.9	480.2	476.4
27.5°	566.1	546.2	526.9	506.6	489.3	479.5	472.1	466.3	462.6	458.5	456.8
30°	541.8	520.8	499.8	481.2	465.6	455.8	449.0	445.3	442.6	440.9	439.2
32.5°	517.1	496.4	474.1	457.5	444.0	435.5	430.8	427.0	426.0	425.7	425.4
35°	490.3	469.3	449.0	433.8	420.6	417.2	412.8	410.8	410.1	412.5	413.5
37.5°	464.6	445.0	426.0	410.8	402.0	396.6	394.9	394.6	396.9	399.0	401.3
40°	439.9	421.0	403.4	390.5	382.4	379.3	378.7	380.3	383.1	385.4	388.1
42.5°	415.9	397.3	381.7	369.9	364.8	362.1	362.8	364.4	368.5	371.5	375.9
45°	390.8	375.3	359.7	349.9	345.2	345.8	345.8	348.9	352.6	357.0	361.4
47.5°	367.5	351.6	338.4	329.9	327.6	326.5	328.2	332.3	337.4	342.4	348.5
50°	343.8	328.9	317.7	310.3	307.6	308.6	311.3	315.0	321.5	328.2	334.7
52.5°	319.8	306.6	296.4	289.7	288.0	290.0	292.7	299.1	304.5	312.0	320.1
55°	294.7	283.2	275.1	270.0	269.4	270.4	273.4	279.8	288.0	297.1	304.5
57.5°	270.0	260.2	252.4	248.7	249.1	249.7	254.5	262.3	270.4	280.2	289.7
60°	245.0	236.2	230.1	227.4	227.7	229.8	235.9	243.0	253.8	263.3	273.4
62.5°	221.3	213.9	208.1	205.7	205.1	210.1	215.9	223.3	234.2	245.0	256.2
65°	195.6	189.5	184.8	183.4	184.4	187.8	195.2	205.1	214.2	225.4	236.9
67.5°	170.5	165.5	162.1	162.8	163.8	168.5	174.9	183.4	193.6	205.1	216.9
70°	146.9	142.1	139.4	139.8	141.8	147.9	153.3	161.7	172.9	184.8	194.2
72.5°	122.5	119.8	117.4	119.1	121.1	124.9	132.0	140.4	149.9	160.7	170.9
75°	97.8	97.8	96.4	97.5	100.5	104.6	109.6	118.4	128.2	137.0	145.2
77.5°	76.8	75.8	76.5	77.5	79.5	84.6	90.3	96.8	104.6	113.7	120.5
80°	55.5	55.8	57.5	59.6	60.2	64.0	70.0	75.8	81.6	89.0	95.4
82.5°	38.2	38.6	39.3	42.0	42.6	46.7	50.1	55.8	60.9	65.3	70.4
85°	22.7	22.7	24.4	25.4	27.1	29.8	32.1	35.5	40.3	43.7	48.7
87.5°	10.8	10.8	12.2	12.9	13.9	15.6	16.2	20.0	21.3	23.0	26.1
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: P242634

CATALOG NUMBER: S124DR-S575D830-X4F0-XX-UDD-A-W

**CANDELA DISTRIBUTION (continued):**

	165°	170°	175°	180°
0°	816.9	816.9	816.9	816.9
2.5°	768.8	768.1	765.8	765.4
5°	719.1	717.4	716.4	720.1
7.5°	681.5	680.2	677.1	676.1
10°	645.6	644.3	641.6	640.9
12.5°	611.1	608.1	608.1	609.1
15°	581.3	580.0	576.3	577.3
17.5°	550.9	549.5	544.5	549.5
20°	522.5	519.8	517.4	517.1
22.5°	495.4	493.0	493.4	490.7
25°	473.7	471.4	470.7	469.0
27.5°	456.1	454.8	453.4	454.1
30°	440.2	439.9	439.2	439.2
32.5°	427.0	427.0	427.7	427.7
35°	414.9	415.9	416.6	415.5
37.5°	404.0	404.7	405.7	406.7
40°	391.2	393.5	394.2	395.9
42.5°	379.0	381.7	383.7	383.7
45°	366.5	369.2	371.5	371.5
47.5°	353.6	357.3	359.7	360.0
50°	340.4	345.2	347.5	349.2
52.5°	327.6	332.3	335.7	336.4
55°	312.3	319.1	322.8	324.2
57.5°	298.8	304.9	308.9	310.0
60°	282.6	289.3	294.7	295.8
62.5°	266.0	273.1	277.8	280.9
65°	246.3	253.5	258.2	259.2
67.5°	225.7	233.1	236.2	238.2
70°	203.7	209.5	212.8	214.5
72.5°	178.7	184.8	188.8	188.8
75°	153.0	158.4	160.4	160.4
77.5°	126.2	129.3	132.0	132.6
80°	100.5	102.2	104.2	104.2
82.5°	74.1	75.5	77.5	77.2
85°	48.1	51.1	50.8	50.1
87.5°	27.1	27.4	28.4	29.1
90°	0.0	0.0	0.0	0.0

(END OF REPORT)