

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: P243425

Luminaire Tested: **S123RDR-H560D830-X4F0-XX-UDD-A-W**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P243425  
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-H560D830-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**

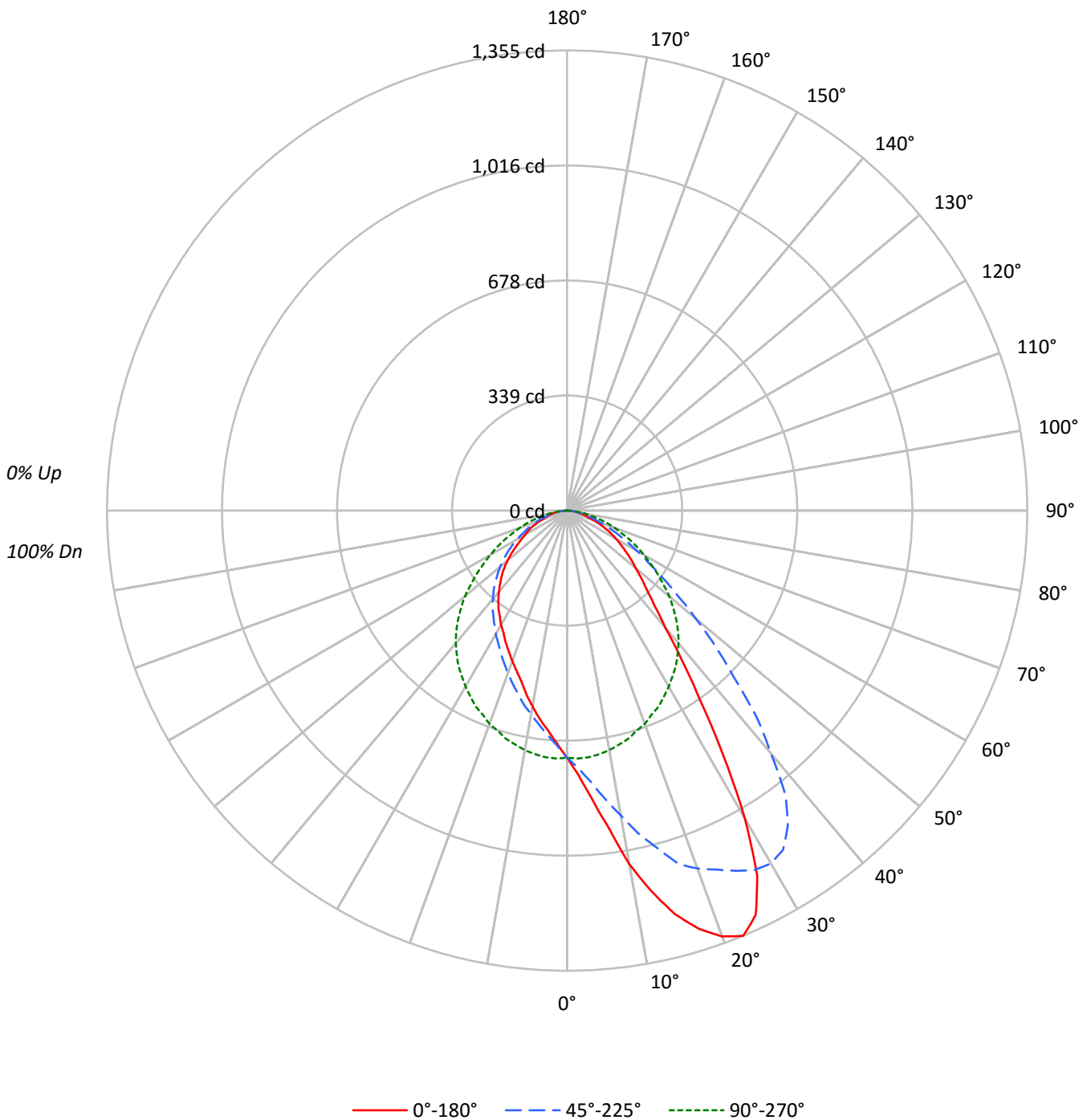
Lumens per Lamp: N/A  
Luminaire Lumens: 1895.9 lumens  
Efficiency: N/A  
Efficacy: 110.2 lumens/watt  
Spacing Criteria (0/90/45): 1.28 / 1.22 / 1.4  
Luminous Opening: Rectangular (W 3.88' x L: 0.23' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 17.2  
Input Voltage (V): 120  
Input Current (A<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: P243425

CATALOG NUMBER: S123RDR-H560D830-X4F0-XX-UDD-A-W

### Luminous Intensity Polar Plot





TEST NUMBER: P243425

CATALOG NUMBER: S123RDR-H560D830-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	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°	8819	8819	8819
5°	10398	8869	7898
10°	13016	8816	7208
15°	15446	8729	6529
20°	17215	8624	6079
25°	17572	8517	5723
30°	14643	8373	5445
35°	10115	8257	5216
40°	7109	8068	4942
45°	5708	7782	4675
50°	4976	7411	4324
55°	4461	6858	3850
60°	4036	6337	3488
65°	3534	5840	3261
70°	2849	5256	2761
75°	2473	4576	2707
80°	2283	3902	2722
85°	2017	3143	2364



TEST NUMBER: P243425

CATALOG NUMBER: S123RDR-H560D830-X4F0-XX-UDD-A-W

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	71.4	3.8
10°-20°	224.7	11.9
20°-30°	360.1	19.0
30°-40°	390.9	20.6
40°-50°	334.9	17.7
50°-60°	253.9	13.4
60°-70°	162.2	8.6
70°-80°	77.6	4.1
80°-90°	20.4	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°	656.1	34.6
0°-40°	1047.0	55.2
0°-60°	1635.8	86.3
0°-90°	1895.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1895.9	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	728	728	728	728	728	
5°	855	802	729	663	649	88
15°	1231	1029	696	559	520	349
25°	1314	1170	637	462	428	583
35°	684	1133	558	379	352	439
45°	333	694	454	300	273	263
55°	211	340	324	215	182	190
65°	123	164	204	130	114	122
75°	53	64	98	62	58	57
85°	14	15	23	18	17	16
90°	0	0	0	0	0	



TEST NUMBER: P243425

CATALOG NUMBER: S123RDR-H560D830-X4F0-XX-UDD-A-W

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	727.6	727.6	727.6	727.6	727.6	727.6	727.6	727.6	727.6	727.6	727.6
2.5°	779.8	780.7	779.2	778.8	778.5	773.5	771.9	769.4	760.6	758.4	756.9
5°	854.6	852.0	854.9	849.5	843.6	840.1	834.5	821.9	810.9	802.1	796.4
7.5°	943.2	944.1	941.3	936.2	924.3	919.3	903.9	888.8	874.4	856.1	842.6
10°	1057.5	1050.0	1051.5	1035.8	1023.3	1008.2	987.1	963.0	937.5	911.7	892.6
12.5°	1148.6	1154.0	1150.2	1142.7	1118.5	1103.7	1084.5	1049.3	1009.1	974.6	945.4
15°	1230.9	1223.7	1224.7	1206.4	1197.6	1184.1	1152.4	1117.5	1091.4	1028.9	994.4
17.5°	1291.3	1290.6	1289.7	1274.3	1263.6	1235.3	1203.0	1167.2	1134.5	1091.1	1047.8
20°	1334.6	1339.3	1338.1	1325.5	1306.7	1279.3	1259.8	1215.2	1161.5	1121.9	1068.8
22.5°	1355.4	1355.7	1356.3	1350.3	1337.8	1320.2	1292.5	1256.7	1208.9	1144.2	1085.2
25°	1313.9	1315.5	1323.6	1328.7	1332.1	1324.3	1309.8	1277.4	1236.3	1170.3	1109.0
27.5°	1212.1	1217.1	1226.2	1256.4	1268.6	1285.6	1291.6	1278.7	1248.2	1193.2	1123.5
30°	1046.2	1060.3	1069.1	1103.4	1151.5	1196.7	1218.1	1239.1	1236.3	1199.8	1129.1
32.5°	856.4	865.6	891.0	927.8	965.8	1032.1	1106.2	1157.1	1185.7	1183.8	1133.9
35°	683.6	696.8	718.5	746.5	799.0	867.8	951.6	1031.8	1103.4	1133.2	1115.3
37.5°	554.8	556.1	576.5	616.1	648.8	709.4	785.1	884.1	978.0	1055.9	1073.2
40°	449.3	458.1	468.8	493.6	532.2	590.3	640.6	738.0	835.4	933.1	1002.9
42.5°	382.7	382.7	394.6	410.3	436.1	471.0	531.0	619.2	706.9	826.9	905.5
45°	333.0	336.2	341.5	351.6	369.8	396.8	443.3	503.3	592.9	693.7	811.8
47.5°	297.2	296.9	301.6	307.6	321.7	342.1	369.5	418.2	484.5	593.2	697.5
50°	263.9	265.2	268.6	273.6	283.1	297.5	314.8	351.6	407.5	493.6	602.9
52.5°	238.1	237.8	240.7	243.8	251.0	259.2	274.6	301.9	340.6	409.1	499.9
55°	211.1	212.4	215.8	217.7	223.7	229.0	241.9	257.3	288.4	339.9	422.6
57.5°	187.9	189.4	191.3	193.2	197.3	202.6	213.3	222.8	245.4	282.4	348.4
60°	166.5	165.9	168.1	171.2	173.4	178.1	184.1	193.8	209.6	235.9	284.3
62.5°	145.1	145.5	145.8	147.7	151.7	155.8	161.2	168.4	177.8	197.3	231.5
65°	123.2	123.5	124.1	126.0	130.1	132.6	138.2	144.5	152.1	163.7	187.6
67.5°	103.7	104.9	104.9	106.5	108.1	110.6	114.7	119.4	125.7	134.2	149.5
70°	80.4	80.1	81.7	84.8	86.4	90.8	93.6	96.8	102.4	107.8	121.0
72.5°	64.7	64.7	64.7	66.0	66.3	67.2	69.1	75.7	80.1	85.5	92.7
75°	52.8	53.1	53.1	53.4	53.7	54.7	55.3	57.2	58.4	64.1	68.5
77.5°	42.1	42.4	42.4	42.7	43.0	43.4	44.6	44.6	45.6	46.8	48.7
80°	32.7	32.4	32.4	32.7	32.7	33.6	33.6	34.2	34.6	35.2	36.1
82.5°	23.2	22.9	23.2	22.9	23.2	23.6	24.2	23.9	24.5	25.1	25.4
85°	14.5	14.8	14.8	15.4	15.1	14.8	15.1	15.1	15.1	15.1	15.7
87.5°	6.3	6.9	6.9	6.6	6.9	6.9	6.3	6.9	6.9	6.9	7.2
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: P243425

CATALOG NUMBER: S123RDR-H560D830-X4F0-XX-UDD-A-W

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	727.6	727.6	727.6	727.6	727.6	727.6	727.6	727.6	727.6	727.6	727.6
2.5°	755.9	754.7	749.9	745.5	738.9	736.1	732.3	730.8	725.7	718.8	715.7
5°	791.1	781.7	772.6	761.6	752.5	741.8	735.8	728.9	718.2	708.5	701.6
7.5°	828.5	814.7	797.7	779.5	763.1	747.7	734.5	723.5	709.7	696.2	685.5
10°	869.6	846.1	818.7	795.5	771.9	749.6	733.0	716.3	698.4	681.4	668.6
12.5°	913.9	880.6	847.6	812.8	777.6	751.8	727.0	705.6	685.5	667.6	652.2
15°	959.8	914.3	872.2	832.9	783.9	749.3	722.0	695.6	670.5	648.5	633.4
17.5°	992.5	940.3	887.2	831.6	789.5	746.8	712.9	679.6	656.3	633.7	613.3
20°	1022.6	963.6	900.4	848.6	789.8	737.7	700.6	668.6	636.2	612.0	594.7
22.5°	1035.5	982.1	918.3	846.4	787.6	734.2	686.5	650.3	621.4	595.0	572.4
25°	1038.0	978.3	913.0	843.6	779.2	721.3	673.0	636.8	599.1	571.8	554.2
27.5°	1049.0	967.3	903.3	834.1	768.8	708.5	657.6	617.4	582.2	553.0	530.3
30°	1051.9	962.6	882.5	816.5	749.3	690.2	638.7	598.2	559.9	530.0	509.6
32.5°	1053.1	956.4	860.8	788.6	724.5	668.9	621.8	577.8	541.3	509.9	488.9
35°	1048.7	947.6	834.8	756.9	695.3	640.6	596.9	558.0	517.4	487.9	465.6
37.5°	1031.4	933.7	820.0	719.8	661.0	609.5	572.4	534.1	496.7	464.7	441.7
40°	998.8	913.6	792.4	688.7	622.1	575.9	541.3	509.9	472.2	441.4	418.8
42.5°	946.6	886.3	766.9	653.5	583.4	539.8	510.9	483.8	449.9	420.7	395.9
45°	869.3	848.0	733.0	617.7	541.3	500.2	475.0	454.0	423.2	396.5	373.6
47.5°	785.8	790.5	698.7	581.2	503.0	463.7	441.7	423.2	399.9	371.4	350.3
50°	689.3	715.1	650.7	544.5	464.7	426.0	404.3	393.0	371.4	347.5	327.7
52.5°	601.0	641.9	602.0	504.3	427.0	389.0	368.8	357.5	343.1	323.3	303.2
55°	509.6	561.4	532.5	460.9	388.6	350.3	333.3	324.5	312.6	297.2	279.0
57.5°	433.9	489.2	471.0	415.3	351.2	316.7	301.6	291.6	284.3	270.2	255.4
60°	359.7	410.9	403.7	362.9	314.2	281.2	269.6	261.4	255.4	245.1	230.6
62.5°	290.3	339.9	344.3	312.3	278.0	248.2	237.5	231.9	227.1	219.0	205.8
65°	230.3	274.0	283.1	258.6	240.0	217.4	207.0	203.6	200.1	190.7	180.7
67.5°	180.3	214.6	226.5	212.7	199.5	186.3	178.1	173.4	170.9	165.3	158.3
70°	137.9	167.5	177.5	171.5	162.7	157.7	151.4	148.3	145.8	138.6	134.8
72.5°	103.4	123.5	136.0	134.2	132.3	128.8	125.0	124.1	120.3	115.6	112.2
75°	75.7	87.3	98.7	102.7	102.1	103.4	99.3	97.7	95.5	92.1	89.2
77.5°	54.4	61.3	69.1	74.1	76.7	77.0	77.0	76.0	74.5	71.9	69.7
80°	37.7	39.3	46.5	51.2	53.7	55.6	55.6	55.9	54.4	53.4	51.8
82.5°	26.1	27.0	28.6	32.4	35.5	37.7	38.0	37.7	37.1	36.8	34.6
85°	16.3	16.0	16.0	17.0	19.5	21.7	22.0	22.6	22.3	22.0	19.8
87.5°	6.9	6.9	7.2	6.9	7.9	8.2	8.8	10.4	10.1	8.5	7.9
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: P243425

CATALOG NUMBER: S123RDR-H560D830-X4F0-XX-UDD-A-W

**CANDELA DISTRIBUTION (continued):**

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	727.6	727.6	727.6	727.6	727.6	727.6	727.6	727.6	727.6	727.6	727.6
2.5°	713.8	709.7	706.0	701.9	696.8	692.1	691.5	690.9	692.4	689.3	688.0
5°	696.2	688.4	682.4	674.9	669.5	662.6	658.8	657.9	657.6	655.7	653.2
7.5°	677.0	668.6	660.1	651.6	642.8	635.6	631.5	629.3	627.4	624.3	621.8
10°	659.1	648.5	639.3	627.7	618.3	608.9	605.1	602.0	600.1	595.7	592.2
12.5°	639.0	625.5	615.5	602.9	594.4	586.3	580.3	574.3	569.9	563.3	560.5
15°	621.4	607.3	590.3	582.8	570.9	558.6	552.0	552.0	542.9	537.6	534.1
17.5°	597.9	585.6	573.7	558.3	541.3	534.1	526.6	520.0	513.7	512.1	505.8
20°	577.1	562.7	550.4	533.8	518.4	509.9	501.1	493.9	489.2	484.8	481.3
22.5°	556.7	542.3	523.4	507.1	496.7	485.4	476.0	469.7	465.6	459.0	455.9
25°	535.4	518.1	501.1	485.1	472.2	462.5	452.7	449.3	442.0	438.6	434.2
27.5°	514.0	493.3	477.2	463.4	449.0	439.5	432.9	426.7	420.4	418.5	416.0
30°	490.1	471.0	455.6	442.0	428.2	420.1	412.2	406.5	401.2	397.1	394.3
32.5°	466.2	450.2	435.4	419.7	407.2	398.4	391.8	386.8	384.2	377.3	374.8
35°	444.2	427.9	412.2	397.4	387.4	378.9	372.9	368.2	362.9	358.5	356.0
37.5°	421.6	406.9	390.8	378.3	367.0	360.0	353.4	347.2	343.1	340.6	337.4
40°	399.6	383.9	371.7	357.8	347.8	339.9	333.0	328.3	323.3	321.1	317.0
42.5°	378.9	363.8	349.7	337.1	328.0	320.5	313.9	308.5	304.4	300.4	298.2
45°	355.0	341.8	328.9	316.4	307.9	299.7	292.5	287.8	282.1	278.7	277.4
47.5°	334.9	321.1	307.3	295.6	286.8	278.0	272.1	266.4	261.7	258.3	256.4
50°	311.0	298.2	286.8	275.2	266.7	257.3	250.1	244.7	239.4	236.9	233.7
52.5°	290.6	278.0	264.2	253.9	244.1	235.9	229.3	225.0	220.2	216.5	214.3
55°	265.2	252.9	241.9	230.9	221.2	214.6	209.2	201.7	197.6	193.8	187.9
57.5°	242.9	231.2	219.6	208.9	199.8	192.0	185.4	180.3	175.0	172.2	168.1
60°	219.3	207.0	196.4	188.2	178.1	169.7	165.3	159.3	154.9	150.5	149.2
62.5°	196.0	184.7	174.1	165.6	156.5	149.9	144.2	141.4	137.0	133.5	132.3
65°	171.9	162.4	152.4	143.0	137.3	129.8	126.6	121.9	119.4	117.8	117.5
67.5°	148.0	139.5	130.4	123.2	117.8	112.8	109.0	107.1	104.6	102.7	101.2
70°	126.3	118.1	110.3	104.3	100.2	96.5	93.9	90.5	88.0	85.5	82.0
72.5°	104.9	98.3	91.7	87.0	82.9	80.7	77.3	71.9	69.4	68.8	68.5
75°	85.1	77.9	73.2	70.7	66.9	61.6	59.4	58.8	58.4	57.8	57.8
77.5°	65.7	61.3	58.1	52.8	50.9	50.6	49.0	48.7	48.1	48.4	48.4
80°	47.8	45.2	41.5	39.9	39.3	39.6	39.0	39.3	38.6	39.0	38.3
82.5°	31.7	29.5	30.2	29.2	29.2	29.8	29.5	28.6	28.6	28.3	28.3
85°	18.9	18.5	19.2	19.2	18.9	17.9	18.5	18.2	17.3	17.6	17.6
87.5°	8.2	8.2	8.2	7.9	8.2	7.9	7.9	7.9	6.9	6.9	6.9
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: P243425

CATALOG NUMBER: S123RDR-H560D830-X4F0-XX-UDD-A-W

**CANDELA DISTRIBUTION (continued):**

	165°	170°	175°	180°
0°	727.6	727.6	727.6	727.6
2.5°	688.7	688.0	687.1	686.2
5°	653.2	650.3	650.0	649.1
7.5°	619.9	618.6	616.4	618.9
10°	589.4	590.3	588.1	585.6
12.5°	557.7	555.8	552.3	554.2
15°	529.7	526.6	524.7	520.3
17.5°	500.5	498.0	498.0	495.1
20°	475.0	472.5	473.1	471.3
22.5°	453.7	451.8	449.0	449.3
25°	433.6	430.7	427.6	427.9
27.5°	411.3	408.7	408.1	405.9
30°	391.5	389.3	389.0	389.0
32.5°	372.3	371.4	369.8	368.8
35°	355.6	354.4	351.9	352.5
37.5°	334.9	333.7	333.3	333.0
40°	315.4	314.5	312.0	312.3
42.5°	296.0	294.4	292.8	292.2
45°	274.9	274.6	272.1	272.7
47.5°	254.8	254.2	252.9	251.3
50°	232.5	232.2	231.2	229.3
52.5°	210.8	209.9	208.0	206.1
55°	186.3	183.5	183.8	182.2
57.5°	166.2	164.9	162.4	161.5
60°	146.7	145.5	145.1	143.9
62.5°	130.4	129.1	128.2	128.2
65°	115.6	114.0	113.7	113.7
67.5°	99.3	97.7	97.4	96.8
70°	78.9	78.5	77.9	77.9
72.5°	67.9	67.5	67.9	66.6
75°	57.8	57.5	57.5	57.8
77.5°	48.1	48.1	47.8	47.8
80°	38.0	38.3	38.0	39.0
82.5°	28.6	28.0	28.3	27.6
85°	17.6	17.6	17.0	17.0
87.5°	6.9	6.9	6.9	6.9
90°	0.0	0.0	0.0	0.0

(END OF REPORT)