

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: P242580

Luminaire Tested: **S123RDR-S560D930-X4F0-XX-UDD-A-W**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P242580  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-30)  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: S123RDR-S560D930-X4F0-XX-UDD-A-W  
Description: DEFINE 3 REGRESSED DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER  
STANDARD LIGHT ENGINE  
Light Source: (92) 3000K CCT, 90 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

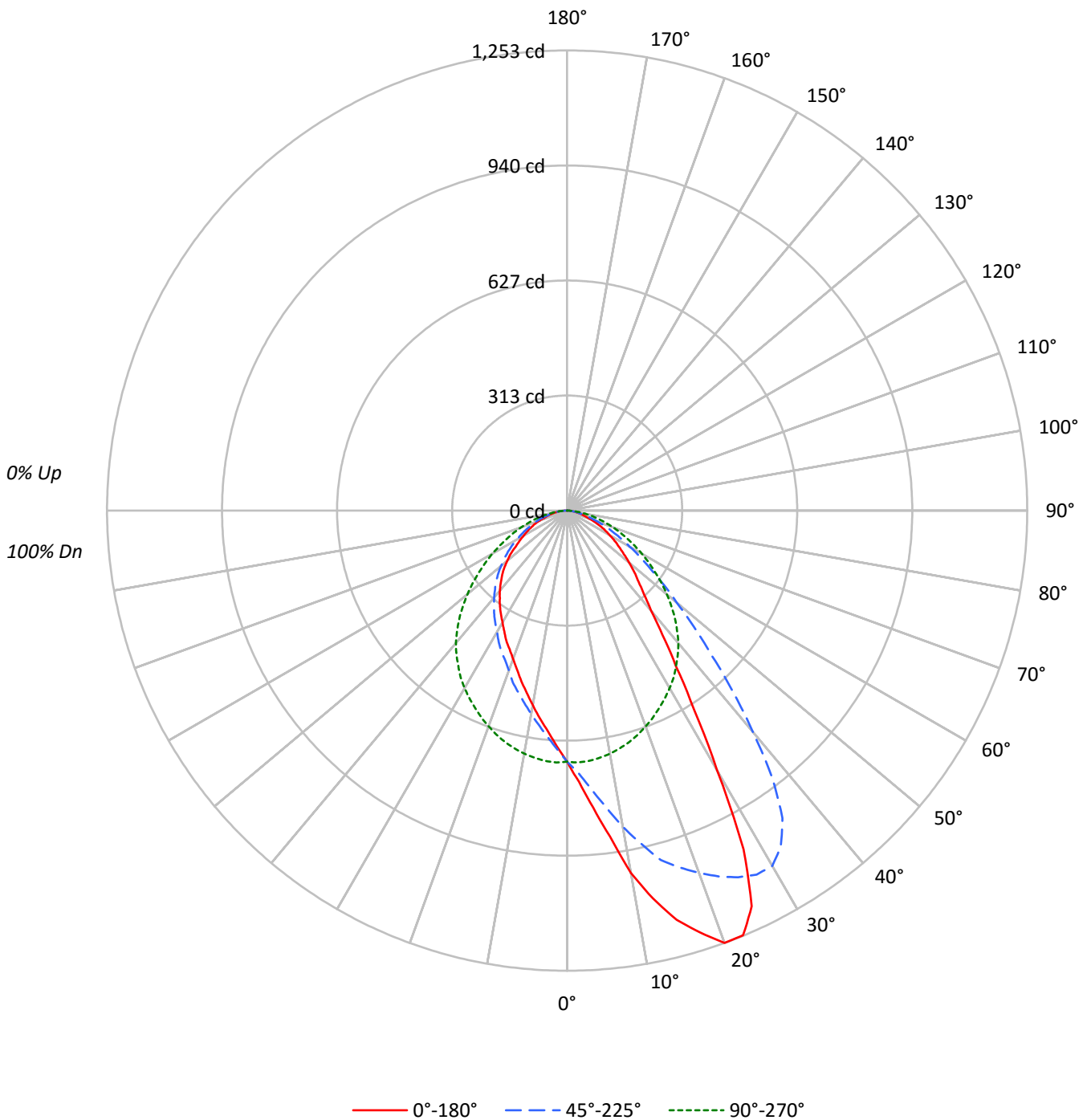
Lumens per Lamp: N/A  
Luminaire Lumens: 1702.6 lumens  
Efficiency: N/A  
Efficacy: 90.6 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 1.22 / 1.35  
Luminous Opening: Rectangular (W 3.88' x L: 0.23' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 18.8  
Input Voltage (V): 120  
Input Current (A<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: P242580

CATALOG NUMBER: S123RDR-S560D930-X4F0-XX-UDD-A-W

### Luminous Intensity Polar Plot





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CATALOG NUMBER: S123RDR-S560D930-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	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					100			
1	110	106	102	99	108	104	100	97	100	97	94	96	93	91	92	90	89	87					87			
2	101	94	88	83	99	92	87	82	89	84	80	86	82	78	83	79	77	74					74			
3	93	84	76	71	91	82	75	70	79	74	69	77	72	68	74	70	66	64					64			
4	86	75	67	61	84	74	66	61	71	65	60	69	64	59	67	62	58	56					56			
5	80	68	60	53	78	67	59	53	65	58	53	63	57	52	61	56	52	50					50			
6	74	62	53	47	72	61	53	47	59	52	47	57	51	46	56	50	46	44					44			
7	69	56	48	42	67	55	48	42	54	47	42	53	46	42	51	46	41	39					39			
8	64	52	44	38	63	51	43	38	50	43	38	48	42	38	47	42	37	36					36			
9	60	48	40	35	59	47	40	35	46	39	34	45	39	34	44	38	34	32					32			
10	57	44	37	32	55	44	36	32	43	36	31	42	36	31	41	35	31	29					29			

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

	0°	90°	180°
0°	8288	8288	8288
5°	9880	8324	7330
10°	12335	8276	6622
15°	14480	8191	6038
20°	16160	8065	5543
25°	15902	7931	5237
30°	11431	7809	4924
35°	7632	7649	4722
40°	5622	7457	4511
45°	4716	7121	4304
50°	4162	6679	4018
55°	3650	6173	3624
60°	3251	5692	3321
65°	2854	5171	3089
70°	2240	4710	2821
75°	1976	4112	2576
80°	1717	3497	2534
85°	1391	2809	2684



TEST NUMBER: P242580

CATALOG NUMBER: S123RDR-S560D930-X4F0-XX-UDD-A-W

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	67.1	3.9
10°-20°	210.2	12.3
20°-30°	331.1	19.4
30°-40°	344.3	20.2
40°-50°	294.5	17.3
50°-60°	224.5	13.2
60°-70°	143.8	8.4
70°-80°	68.9	4.0
80°-90°	18.1	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°	608.4	35.7
0°-40°	952.7	56.0
0°-60°	1471.7	86.4
0°-90°	1702.6	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1702.6	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	684	684	684	684	684	
5°	812	762	684	618	602	83
15°	1154	985	653	513	481	327
25°	1189	1102	593	424	392	517
35°	516	1022	517	346	319	335
45°	275	555	415	273	251	216
55°	173	277	292	197	172	156
65°	100	136	180	123	108	98
75°	42	50	88	63	55	45
85°	10	11	20	19	19	11
90°	0	0	0	0	0	



TEST NUMBER: P242580

CATALOG NUMBER: S123RDR-S560D930-X4F0-XX-UDD-A-W

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	683.8	683.8	683.8	683.8	683.8	683.8	683.8	683.8	683.8	683.8	683.8
2.5°	739.4	740.6	736.7	736.2	731.8	730.6	730.6	724.5	720.6	715.7	712.7
5°	812.0	816.7	814.3	809.0	800.3	798.2	792.7	783.9	773.9	761.6	755.8
7.5°	895.1	904.8	903.0	894.8	885.4	879.6	864.1	851.5	832.5	815.2	801.7
10°	1002.2	995.5	990.2	982.3	973.8	960.1	943.7	921.2	895.1	874.6	851.8
12.5°	1082.4	1082.7	1075.7	1067.5	1054.6	1041.8	1020.7	992.0	960.7	928.8	901.8
15°	1153.9	1155.6	1151.2	1142.7	1125.8	1102.6	1072.2	1060.8	1017.5	985.3	953.1
17.5°	1204.8	1205.1	1204.2	1192.8	1174.3	1158.5	1130.1	1103.5	1062.5	1018.9	975.9
20°	1252.8	1249.9	1250.5	1237.3	1224.4	1205.4	1177.9	1134.2	1102.0	1049.7	1004.9
22.5°	1251.6	1251.6	1254.3	1251.9	1243.4	1230.0	1209.8	1174.6	1131.3	1078.3	1026.5
25°	1189.0	1186.6	1200.4	1204.2	1219.1	1221.8	1215.3	1195.1	1156.2	1101.8	1039.4
27.5°	1039.7	1031.2	1059.9	1088.3	1126.1	1150.1	1174.6	1180.2	1161.8	1117.3	1052.0
30°	816.7	844.2	857.1	903.3	954.8	1016.3	1070.1	1121.4	1134.0	1117.0	1065.8
32.5°	643.4	666.5	676.7	714.8	761.9	836.6	924.1	1001.9	1062.8	1083.3	1057.6
35°	515.8	516.0	540.6	558.2	602.7	676.7	755.2	852.4	949.0	1022.1	1029.8
37.5°	425.6	426.8	442.6	460.1	495.8	537.4	610.3	692.3	808.5	917.6	974.4
40°	355.3	358.0	369.1	386.4	410.4	439.9	493.8	569.9	663.0	788.0	890.1
42.5°	310.3	315.0	319.3	331.6	344.2	371.4	412.4	466.9	549.4	665.9	787.7
45°	275.1	277.5	281.9	288.0	301.5	320.8	350.1	389.6	459.8	555.0	672.9
47.5°	248.2	246.8	251.7	257.0	266.1	280.1	300.6	334.9	387.5	467.2	569.3
50°	220.7	220.4	223.6	227.4	235.9	245.6	261.7	286.0	325.8	389.0	480.6
52.5°	194.9	196.4	198.5	203.4	209.0	216.3	230.4	246.2	279.0	331.3	403.9
55°	172.7	173.6	176.8	179.4	183.8	191.7	200.8	215.4	238.9	276.9	339.8
57.5°	153.4	153.1	156.3	156.6	162.2	168.9	176.2	187.6	205.5	235.6	279.5
60°	134.1	133.2	135.8	137.9	140.5	145.8	151.6	162.7	176.2	197.0	233.3
62.5°	116.5	116.2	118.0	120.0	122.1	126.7	131.4	139.3	149.3	166.0	192.9
65°	99.5	100.4	101.3	102.2	103.3	106.3	110.9	116.8	124.1	136.4	157.2
67.5°	82.0	83.1	83.4	85.5	87.8	89.3	91.9	97.5	103.0	114.2	126.5
70°	63.2	62.9	63.2	64.1	67.3	70.5	74.3	78.2	81.4	88.7	98.6
72.5°	52.1	51.5	52.4	52.4	53.6	53.9	55.9	59.4	63.8	68.2	74.6
75°	42.2	42.2	42.2	42.2	43.3	43.9	44.8	45.7	47.1	49.5	54.7
77.5°	32.8	32.8	33.4	33.7	34.0	34.2	34.8	35.7	36.3	37.5	40.1
80°	24.6	24.9	24.6	24.9	24.9	25.5	25.8	26.6	26.9	28.4	29.3
82.5°	17.0	16.7	17.0	17.3	17.3	17.9	17.9	18.4	18.4	19.0	19.9
85°	10.0	9.4	10.0	9.7	10.2	9.7	10.0	10.5	10.5	10.8	12.0
87.5°	2.9	3.5	2.9	3.2	3.2	3.5	3.5	3.5	4.1	3.8	4.1
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: P242580

CATALOG NUMBER: S123RDR-S560D930-X4F0-XX-UDD-A-W

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	683.8	683.8	683.8	683.8	683.8	683.8	683.8	683.8	683.8	683.8	683.8
2.5°	711.6	710.7	706.6	701.9	695.8	691.7	688.5	686.7	681.4	675.0	670.6
5°	749.6	740.8	731.5	720.1	709.5	698.7	692.0	684.1	674.4	663.6	656.0
7.5°	787.4	772.2	755.5	738.2	720.6	705.1	690.8	679.1	664.4	649.5	639.3
10°	832.2	807.0	780.9	754.3	730.0	707.2	689.6	672.4	653.9	636.1	622.6
12.5°	872.9	837.7	806.7	772.5	739.7	711.3	684.1	663.0	639.9	620.5	604.7
15°	905.9	872.0	835.7	785.9	744.7	710.1	679.4	652.7	625.8	602.4	587.5
17.5°	940.5	889.0	841.2	802.6	748.7	706.9	670.9	639.9	610.6	586.6	567.9
20°	960.4	910.9	857.9	804.9	752.3	704.0	660.4	625.2	594.5	566.4	549.4
22.5°	972.4	914.7	858.2	800.3	743.5	692.8	649.8	610.3	576.3	550.0	528.0
25°	981.2	914.4	853.0	796.8	739.7	685.2	634.0	593.0	557.0	528.6	506.4
27.5°	988.2	910.9	840.4	779.2	721.5	666.2	620.0	576.1	540.0	510.5	486.2
30°	989.9	906.5	825.4	757.8	699.0	649.2	599.5	557.9	519.3	487.4	465.1
32.5°	992.3	895.7	805.2	732.4	671.8	622.6	578.7	539.5	499.7	468.3	445.5
35°	984.1	893.1	784.8	702.2	641.9	594.2	553.5	516.9	478.0	447.6	424.4
37.5°	959.2	878.7	764.3	668.5	606.2	562.3	528.3	495.0	459.0	425.6	404.2
40°	917.3	855.3	739.7	638.4	572.5	527.2	497.3	471.3	436.7	406.0	382.6
42.5°	855.0	823.4	716.3	606.8	534.5	491.2	467.2	443.2	413.9	382.6	360.9
45°	776.0	780.9	682.6	572.8	499.9	456.0	432.3	415.4	388.4	362.7	340.1
47.5°	680.0	721.5	646.6	537.1	462.5	421.2	400.4	384.9	366.2	339.5	318.8
50°	586.3	652.7	601.5	501.1	427.6	386.7	366.2	354.2	338.4	318.5	298.9
52.5°	499.9	572.5	547.1	461.0	389.9	353.3	333.4	324.0	312.3	293.9	276.6
55°	421.8	494.1	487.1	420.6	352.1	318.5	303.2	292.1	283.6	269.6	255.5
57.5°	353.9	423.8	425.3	375.8	319.3	285.1	271.9	263.1	257.3	246.2	232.4
60°	290.4	353.3	365.6	330.5	283.6	254.4	241.5	234.8	230.4	221.9	211.9
62.5°	237.7	288.9	303.2	280.4	249.4	222.5	213.1	206.7	204.0	197.0	188.5
65°	190.0	234.5	247.9	233.9	216.0	194.1	185.9	180.3	177.7	173.6	167.1
67.5°	149.9	184.4	199.0	187.3	180.6	165.1	159.5	156.3	154.0	151.0	145.5
70°	114.7	138.7	154.0	151.3	146.1	138.7	134.9	132.9	130.5	128.2	123.5
72.5°	86.6	101.3	115.3	117.7	113.6	113.6	110.4	109.8	108.6	105.7	103.6
75°	61.2	72.6	82.5	86.3	88.1	89.6	88.1	87.8	87.5	85.2	83.7
77.5°	42.4	49.8	56.5	63.2	65.6	67.6	67.9	69.1	68.2	66.7	66.2
80°	30.7	32.2	36.6	42.2	46.5	48.3	49.5	50.1	49.8	49.5	48.3
82.5°	20.2	21.4	22.8	26.3	29.9	33.1	33.7	33.4	34.2	34.5	33.7
85°	12.0	12.3	12.9	13.5	15.5	18.7	19.6	20.2	20.8	20.8	19.0
87.5°	4.7	4.4	5.0	5.0	5.9	6.1	7.9	9.4	9.7	8.5	8.5
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: P242580

CATALOG NUMBER: S123RDR-S560D930-X4F0-XX-UDD-A-W

**CANDELA DISTRIBUTION (continued):**

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	683.8	683.8	683.8	683.8	683.8	683.8	683.8	683.8	683.8	683.8	683.8
2.5°	669.1	665.3	662.7	656.8	653.0	648.9	644.8	647.5	647.2	646.9	646.9
5°	649.5	642.8	636.6	628.7	623.8	617.6	612.9	612.3	613.5	609.4	607.1
7.5°	631.1	622.3	613.5	605.3	596.2	589.2	584.8	583.1	579.9	577.2	574.9
10°	611.5	600.6	592.2	581.3	571.4	562.6	557.0	553.2	551.2	549.1	545.3
12.5°	591.3	580.7	569.3	556.7	547.4	536.8	533.0	528.6	524.2	521.9	516.3
15°	571.7	557.9	546.5	533.6	523.1	513.1	507.3	498.8	497.6	494.7	489.4
17.5°	552.6	537.4	520.7	511.9	501.4	490.9	481.5	478.9	470.1	467.2	462.2
20°	529.2	515.5	503.5	490.9	473.6	463.9	456.9	453.1	446.4	442.3	439.4
22.5°	509.0	495.0	480.6	465.4	451.9	440.8	436.1	429.7	426.8	420.6	417.4
25°	490.0	474.8	458.1	442.3	432.0	423.8	415.6	410.4	405.1	402.5	396.6
27.5°	466.9	451.6	435.6	423.3	411.5	403.4	395.4	391.1	384.3	379.9	376.7
30°	448.4	429.7	416.2	405.4	389.3	381.7	376.1	370.3	365.6	360.9	357.7
32.5°	427.1	410.4	397.8	383.7	372.3	363.8	356.2	351.3	347.4	343.1	339.8
35°	404.5	390.2	377.0	363.5	354.5	346.0	337.5	333.1	329.3	325.2	322.3
37.5°	384.0	370.6	358.3	345.4	334.3	327.0	319.9	317.0	311.7	308.8	305.9
40°	365.3	352.1	338.7	326.4	314.7	309.4	303.2	298.3	293.6	291.5	288.3
42.5°	344.8	331.6	320.8	307.3	298.3	290.7	285.1	279.5	276.3	273.1	271.6
45°	324.6	312.9	301.8	288.6	279.5	273.4	267.0	262.0	258.8	256.7	253.5
47.5°	305.3	293.3	282.2	270.5	261.7	254.7	247.9	244.7	240.3	238.0	235.6
50°	283.9	273.4	261.4	250.9	242.1	235.0	229.8	225.4	221.6	218.4	216.9
52.5°	264.3	252.9	242.9	233.3	223.9	215.7	211.0	206.4	203.7	199.9	198.2
55°	242.4	231.5	222.8	213.1	204.0	197.3	191.4	187.3	184.4	180.3	178.0
57.5°	222.2	212.8	202.0	193.5	183.8	178.6	173.6	167.7	164.2	161.0	158.6
60°	201.7	190.6	181.5	173.6	165.4	158.1	153.7	149.3	145.5	142.3	140.2
62.5°	180.3	170.9	162.5	153.7	146.4	140.2	134.9	131.4	128.2	126.5	124.4
65°	158.4	150.7	142.0	134.9	127.9	123.2	119.1	115.9	113.6	112.1	110.4
67.5°	138.2	130.8	122.9	115.6	110.9	107.1	104.2	101.3	100.1	98.4	97.2
70°	118.5	110.9	104.2	98.9	94.3	91.6	89.9	87.8	86.6	84.3	83.1
72.5°	97.2	92.2	87.8	83.7	80.2	77.9	75.5	72.9	70.8	68.2	67.0
75°	79.9	74.9	71.1	68.2	65.9	62.6	59.4	56.8	55.9	55.0	54.7
77.5°	62.3	59.1	56.2	53.9	50.6	47.7	46.8	46.2	46.0	45.4	45.4
80°	46.5	43.6	41.6	38.6	36.9	36.9	36.9	36.3	36.6	36.6	36.6
82.5°	31.6	29.0	28.1	27.5	27.5	27.8	27.8	28.1	27.8	28.4	28.1
85°	17.9	18.1	18.7	18.4	18.7	18.7	19.3	19.0	19.3	18.7	19.3
87.5°	8.2	9.1	9.4	9.7	10.0	9.7	10.0	10.0	10.2	10.2	10.2
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: P242580

CATALOG NUMBER: S123RDR-S560D930-X4F0-XX-UDD-A-W

**CANDELA DISTRIBUTION (continued):**

	165°	170°	175°	180°
0°	683.8	683.8	683.8	683.8
2.5°	643.4	643.1	643.4	642.2
5°	606.2	605.9	605.0	602.4
7.5°	572.5	572.0	569.6	570.2
10°	543.3	543.6	540.0	538.0
12.5°	514.9	513.1	510.5	508.1
15°	490.6	487.7	480.6	481.2
17.5°	460.4	458.1	457.8	453.7
20°	434.7	433.2	433.8	429.7
22.5°	414.5	413.0	409.8	409.2
25°	394.9	392.5	390.2	391.6
27.5°	375.0	373.2	370.6	370.6
30°	356.2	354.5	353.3	351.8
32.5°	337.2	337.2	334.9	334.9
35°	321.1	319.3	318.8	319.1
37.5°	305.6	303.2	302.1	300.9
40°	288.6	286.3	285.7	285.1
42.5°	269.6	269.0	268.7	267.5
45°	252.6	252.3	250.6	251.1
47.5°	234.5	233.0	232.1	233.0
50°	215.7	215.1	212.5	213.1
52.5°	197.0	194.4	193.8	193.2
55°	175.9	173.3	172.1	171.5
57.5°	155.1	154.3	153.1	154.0
60°	137.3	137.3	137.3	137.0
62.5°	123.5	122.6	122.4	122.9
65°	109.5	109.2	108.0	107.7
67.5°	96.6	95.4	95.4	94.8
70°	81.7	81.1	79.3	79.6
72.5°	65.6	65.0	65.0	64.4
75°	54.4	54.2	53.9	55.0
77.5°	45.4	45.4	45.7	45.1
80°	36.6	36.6	36.3	36.3
82.5°	27.5	27.8	28.1	27.5
85°	19.3	19.0	19.6	19.3
87.5°	10.8	10.2	10.2	10.5
90°	0.0	0.0	0.0	0.0

(END OF REPORT)