

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: P243420

Luminaire Tested: **S123RDR-H560D927-X4F0-XX-UDD-A-W**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P243420
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-H560D927-X4F0-XX-UDD-A-W
Description: DEFINE 3 REGRESSED DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER.
HIGH PERFORMANCE LIGHT ENGINE
Light Source: (184) 2700K CCT, 90 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1593.5 lumens
Efficiency: N/A
Efficacy: 92.6 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

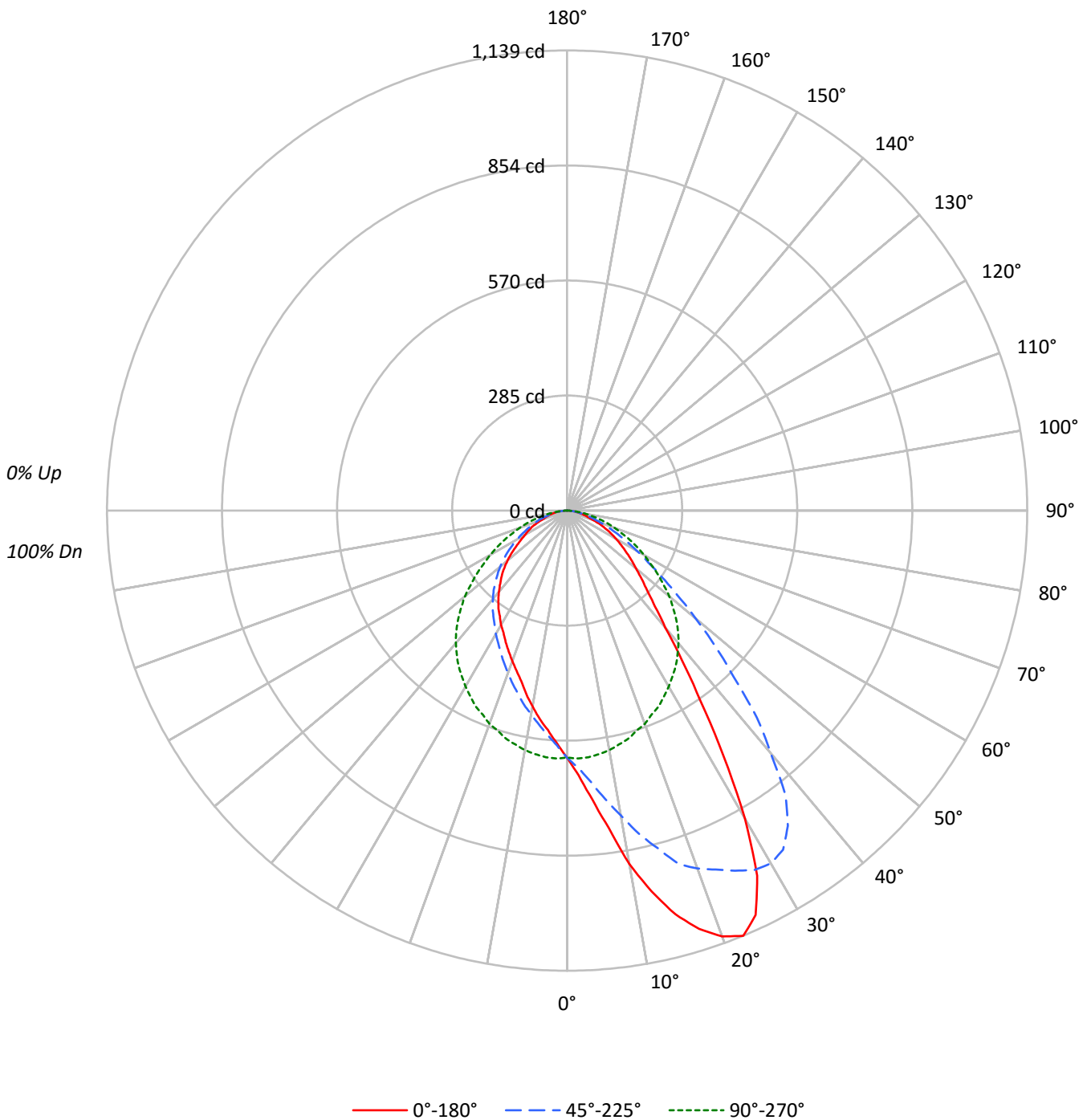
Input Watts (W): 17.2
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P243420

CATALOG NUMBER: S123RDR-H560D927-X4F0-XX-UDD-A-W

Luminous Intensity Polar Plot





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CATALOG NUMBER: S123RDR-H560D927-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	107	104	100	97	99	97	94	96	93	91	92	90	89	87					87			
2	101	94	88	83	99	92	86	82	89	84	80	85	81	78	82	79	76	74					74			
3	93	84	76	70	91	82	75	70	79	73	68	76	71	67	74	70	66	64					64			
4	86	75	67	61	84	74	66	60	71	65	59	69	63	59	67	62	58	56					56			
5	79	68	59	53	77	66	59	53	64	57	52	62	56	52	61	55	51	49					49			
6	74	61	53	47	72	60	52	47	59	52	46	57	51	46	55	50	46	44					44			
7	69	56	48	42	67	55	47	42	54	47	41	52	46	41	51	45	41	39					39			
8	64	51	43	38	62	51	43	37	49	42	37	48	42	37	47	41	37	35					35			
9	60	47	39	34	59	47	39	34	45	39	34	44	38	34	43	38	33	32					32			
10	56	44	36	31	55	43	36	31	42	35	31	41	35	31	40	35	31	29					29			

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	7413	7413	7413
5°	8739	7454	6637
10°	10940	7410	6058
15°	12983	7336	5488
20°	14469	7248	5109
25°	14769	7158	4809
30°	12307	7037	4575
35°	8503	6940	4384
40°	5975	6782	4154
45°	4798	6541	3929
50°	4183	6229	3636
55°	3749	5765	3238
60°	3394	5326	2931
65°	2969	4907	2742
70°	2396	4416	2321
75°	2079	3845	2276
80°	1920	3281	2283
85°	1683	2642	1989



TEST NUMBER: P243420

CATALOG NUMBER: S123RDR-H560D927-X4F0-XX-UDD-A-W

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	60.0	3.8
10°-20°	188.9	11.9
20°-30°	302.6	19.0
30°-40°	328.5	20.6
40°-50°	281.5	17.7
50°-60°	213.4	13.4
60°-70°	136.3	8.6
70°-80°	65.2	4.1
80°-90°	17.1	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°	551.5	34.6
0°-40°	880.0	55.2
0°-60°	1374.8	86.3
0°-90°	1593.5	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1593.5	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	612	612	612	612	612	
5°	718	674	613	557	546	74
15°	1035	865	585	470	437	293
25°	1104	984	535	389	360	490
35°	575	952	469	318	296	369
45°	280	583	382	252	229	221
55°	177	286	273	180	153	160
65°	104	138	171	109	96	103
75°	44	54	82	52	49	48
85°	12	13	19	15	14	14
90°	0	0	0	0	0	



TEST NUMBER: P243420

CATALOG NUMBER: S123RDR-H560D927-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	611.6	611.6	611.6	611.6	611.6	611.6	611.6	611.6	611.6	611.6	611.6
2.5°	655.4	656.2	654.9	654.6	654.3	650.1	648.8	646.7	639.3	637.4	636.1
5°	718.2	716.1	718.5	714.0	709.0	706.1	701.3	690.8	681.5	674.1	669.4
7.5°	792.7	793.5	791.1	786.9	776.9	772.6	759.7	747.0	734.9	719.6	708.2
10°	888.8	882.5	883.8	870.6	860.0	847.4	829.7	809.3	787.9	766.3	750.2
12.5°	965.4	969.9	966.7	960.4	940.0	927.6	911.5	881.9	848.2	819.1	794.5
15°	1034.6	1028.5	1029.3	1014.0	1006.6	995.2	968.6	939.3	917.3	864.8	835.7
17.5°	1085.3	1084.7	1084.0	1071.0	1062.0	1038.3	1011.1	981.0	953.5	917.1	880.6
20°	1121.7	1125.7	1124.6	1114.1	1098.2	1075.2	1058.9	1021.4	976.2	942.9	898.3
22.5°	1139.1	1139.4	1139.9	1134.9	1124.4	1109.6	1086.3	1056.2	1016.1	961.7	912.1
25°	1104.3	1105.6	1112.5	1116.7	1119.6	1113.0	1100.9	1073.7	1039.1	983.6	932.1
27.5°	1018.7	1023.0	1030.6	1056.0	1066.3	1080.5	1085.5	1074.7	1049.1	1002.9	944.3
30°	879.3	891.2	898.6	927.4	967.8	1005.8	1023.7	1041.4	1039.1	1008.4	949.0
32.5°	719.8	727.5	748.9	779.8	811.7	867.4	929.7	972.5	996.6	995.0	953.0
35°	574.6	585.7	603.9	627.4	671.5	729.3	799.8	867.2	927.4	952.5	937.4
37.5°	466.3	467.4	484.5	517.8	545.3	596.2	659.9	743.1	822.0	887.5	902.0
40°	377.6	385.0	394.0	414.8	447.3	496.2	538.4	620.3	702.1	784.2	842.9
42.5°	321.6	321.6	331.7	344.9	366.5	395.8	446.3	520.5	594.1	695.0	761.0
45°	279.9	282.5	287.0	295.5	310.8	333.5	372.6	423.0	498.3	583.0	682.3
47.5°	249.8	249.5	253.5	258.5	270.4	287.6	310.5	351.5	407.2	498.5	586.2
50°	221.8	222.9	225.8	230.0	237.9	250.1	264.6	295.5	342.5	414.8	506.7
52.5°	200.2	199.9	202.3	204.9	211.0	217.8	230.8	253.8	286.2	343.8	420.1
55°	177.4	178.5	181.4	183.0	188.0	192.5	203.3	216.3	242.4	285.7	355.2
57.5°	157.9	159.2	160.8	162.4	165.8	170.3	179.3	187.2	206.2	237.4	292.8
60°	140.0	139.4	141.3	143.9	145.8	149.7	154.7	162.9	176.1	198.3	239.0
62.5°	122.0	122.3	122.5	124.1	127.5	131.0	135.5	141.5	149.5	165.8	194.6
65°	103.5	103.8	104.3	105.9	109.3	111.4	116.2	121.5	127.8	137.6	157.6
67.5°	87.1	88.2	88.2	89.5	90.8	92.9	96.4	100.3	105.6	112.8	125.7
70°	67.6	67.3	68.7	71.3	72.6	76.3	78.7	81.3	86.1	90.6	101.7
72.5°	54.4	54.4	54.4	55.5	55.7	56.5	58.1	63.6	67.3	71.8	77.9
75°	44.4	44.6	44.6	44.9	45.2	45.9	46.5	48.1	49.1	53.9	57.6
77.5°	35.4	35.6	35.6	35.9	36.2	36.4	37.5	37.5	38.3	39.3	40.9
80°	27.5	27.2	27.2	27.5	27.5	28.3	28.3	28.8	29.0	29.6	30.4
82.5°	19.5	19.3	19.5	19.3	19.5	19.8	20.3	20.1	20.6	21.1	21.4
85°	12.1	12.4	12.4	12.9	12.7	12.4	12.7	12.7	12.7	12.7	13.2
87.5°	5.3	5.8	5.8	5.5	5.8	5.8	5.3	5.8	5.8	5.8	6.1
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: P243420

CATALOG NUMBER: S123RDR-H560D927-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	611.6	611.6	611.6	611.6	611.6	611.6	611.6	611.6	611.6	611.6	611.6
2.5°	635.3	634.3	630.3	626.6	621.1	618.7	615.5	614.2	610.0	604.2	601.5
5°	664.9	657.0	649.3	640.1	632.4	623.4	618.4	612.6	603.6	595.4	589.6
7.5°	696.3	684.7	670.4	655.1	641.4	628.5	617.4	608.1	596.5	585.1	576.2
10°	730.9	711.1	688.1	668.6	648.8	630.0	616.0	602.0	587.0	572.7	561.9
12.5°	768.1	740.2	712.4	683.1	653.5	631.9	611.0	593.1	576.2	561.1	548.2
15°	806.7	768.4	733.0	700.0	658.8	629.8	606.8	584.6	563.5	545.0	532.3
17.5°	834.2	790.3	745.7	699.0	663.6	627.7	599.1	571.2	551.6	532.6	515.4
20°	859.5	809.9	756.8	713.2	663.8	620.0	588.8	561.9	534.7	514.4	499.9
22.5°	870.3	825.4	771.8	711.4	662.0	617.1	577.0	546.6	522.3	500.1	481.1
25°	872.4	822.3	767.3	709.0	654.9	606.3	565.6	535.2	503.6	480.6	465.8
27.5°	881.7	813.0	759.2	701.1	646.1	595.4	552.7	518.9	489.3	464.7	445.7
30°	884.1	809.1	741.7	686.3	629.8	580.1	536.8	502.8	470.5	445.5	428.3
32.5°	885.1	803.8	723.5	662.8	608.9	562.2	522.6	485.6	455.0	428.6	410.9
35°	881.4	796.4	701.6	636.1	584.4	538.4	501.7	469.0	434.9	410.1	391.3
37.5°	866.9	784.8	689.2	605.0	555.6	512.3	481.1	448.9	417.5	390.5	371.3
40°	839.4	767.9	666.0	578.8	522.8	484.0	455.0	428.6	396.9	371.0	352.0
42.5°	795.6	744.9	644.6	549.2	490.4	453.6	429.4	406.6	378.1	353.6	332.7
45°	730.6	712.7	616.0	519.1	455.0	420.4	399.3	381.6	355.7	333.2	314.0
47.5°	660.4	664.4	587.3	488.5	422.8	389.7	371.3	355.7	336.1	312.1	294.4
50°	579.3	601.0	546.9	457.6	390.5	358.1	339.8	330.3	312.1	292.0	275.4
52.5°	505.1	539.5	505.9	423.8	358.9	326.9	310.0	300.5	288.4	271.7	254.8
55°	428.3	471.9	447.6	387.4	326.6	294.4	280.2	272.8	262.7	249.8	234.5
57.5°	364.7	411.1	395.8	349.1	295.2	266.2	253.5	245.0	239.0	227.1	214.7
60°	302.3	345.4	339.3	305.0	264.1	236.3	226.6	219.7	214.7	206.0	193.8
62.5°	244.0	285.7	289.4	262.5	233.7	208.6	199.6	194.9	190.9	184.0	173.0
65°	193.6	230.3	237.9	217.3	201.7	182.7	174.0	171.1	168.2	160.3	151.8
67.5°	151.6	180.4	190.4	178.8	167.7	156.6	149.7	145.8	143.6	138.9	133.1
70°	115.9	140.7	149.2	144.2	136.8	132.6	127.3	124.6	122.5	116.4	113.3
72.5°	86.9	103.8	114.3	112.8	111.2	108.3	105.1	104.3	101.1	97.2	94.3
75°	63.6	73.4	82.9	86.3	85.8	86.9	83.4	82.1	80.3	77.4	75.0
77.5°	45.7	51.5	58.1	62.3	64.4	64.7	64.7	63.9	62.6	60.5	58.6
80°	31.7	33.0	39.1	43.0	45.2	46.7	46.7	47.0	45.7	44.9	43.6
82.5°	21.9	22.7	24.0	27.2	29.8	31.7	32.0	31.7	31.2	30.9	29.0
85°	13.7	13.5	13.5	14.3	16.4	18.2	18.5	19.0	18.7	18.5	16.6
87.5°	5.8	5.8	6.1	5.8	6.6	6.9	7.4	8.7	8.4	7.1	6.6
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: P243420

CATALOG NUMBER: S123RDR-H560D927-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	611.6	611.6	611.6	611.6	611.6	611.6	611.6	611.6	611.6	611.6	611.6
2.5°	599.9	596.5	593.3	589.9	585.7	581.7	581.2	580.7	582.0	579.3	578.3
5°	585.1	578.5	573.5	567.2	562.7	556.9	553.7	552.9	552.7	551.1	549.0
7.5°	569.0	561.9	554.8	547.7	540.3	534.2	530.8	528.9	527.3	524.7	522.6
10°	554.0	545.0	537.4	527.6	519.7	511.7	508.6	505.9	504.3	500.7	497.7
12.5°	537.1	525.7	517.3	506.7	499.6	492.7	487.7	482.7	479.0	473.5	471.1
15°	522.3	510.4	496.2	489.8	479.8	469.5	463.9	463.9	456.3	451.8	448.9
17.5°	502.5	492.2	482.2	469.2	455.0	448.9	442.6	437.0	431.7	430.4	425.1
20°	485.1	472.9	462.6	448.6	435.7	428.6	421.2	415.1	411.1	407.4	404.5
22.5°	467.9	455.8	439.9	426.2	417.5	408.0	400.0	394.8	391.3	385.8	383.1
25°	450.0	435.4	421.2	407.7	396.9	388.7	380.5	377.6	371.5	368.6	364.9
27.5°	432.0	414.6	401.1	389.5	377.3	369.4	363.9	358.6	353.3	351.7	349.6
30°	411.9	395.8	382.9	371.5	359.9	353.0	346.4	341.7	337.2	333.8	331.4
32.5°	391.9	378.4	366.0	352.8	342.2	334.8	329.3	325.1	322.9	317.1	315.0
35°	373.4	359.6	346.4	334.0	325.6	318.5	313.4	309.5	305.0	301.3	299.2
37.5°	354.4	342.0	328.5	317.9	308.4	302.6	297.1	291.8	288.4	286.2	283.6
40°	335.9	322.7	312.4	300.8	292.3	285.7	279.9	275.9	271.7	269.9	266.4
42.5°	318.5	305.8	293.9	283.3	275.7	269.3	263.8	259.3	255.9	252.4	250.6
45°	298.4	287.3	276.5	265.9	258.8	251.9	245.8	241.9	237.1	234.2	233.2
47.5°	281.5	269.9	258.2	248.5	241.1	233.7	228.7	223.9	220.0	217.1	215.5
50°	261.4	250.6	241.1	231.3	224.2	216.3	210.2	205.7	201.2	199.1	196.5
52.5°	244.3	233.7	222.1	213.4	205.2	198.3	192.8	189.1	185.1	181.9	180.1
55°	222.9	212.6	203.3	194.1	185.9	180.4	175.9	169.5	166.1	162.9	157.9
57.5°	204.1	194.3	184.6	175.6	167.9	161.3	155.8	151.6	147.1	144.7	141.3
60°	184.3	174.0	165.0	158.2	149.7	142.6	138.9	133.9	130.2	126.5	125.4
62.5°	164.8	155.3	146.3	139.2	131.5	126.0	121.2	118.8	115.1	112.2	111.2
65°	144.4	136.5	128.1	120.1	115.4	109.1	106.4	102.5	100.3	99.0	98.8
67.5°	124.4	117.2	109.6	103.5	99.0	94.8	91.6	90.0	87.9	86.3	85.0
70°	106.2	99.3	92.7	87.7	84.2	81.1	79.0	76.0	73.9	71.8	68.9
72.5°	88.2	82.6	77.1	73.1	69.7	67.9	65.0	60.5	58.4	57.8	57.6
75°	71.6	65.5	61.5	59.4	56.2	51.8	49.9	49.4	49.1	48.6	48.6
77.5°	55.2	51.5	48.9	44.4	42.8	42.5	41.2	40.9	40.4	40.7	40.7
80°	40.1	38.0	34.9	33.5	33.0	33.3	32.7	33.0	32.5	32.7	32.2
82.5°	26.7	24.8	25.3	24.6	24.6	25.1	24.8	24.0	24.0	23.8	23.8
85°	15.8	15.6	16.1	16.1	15.8	15.1	15.6	15.3	14.5	14.8	14.8
87.5°	6.9	6.9	6.9	6.6	6.9	6.6	6.6	6.6	5.8	5.8	5.8
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: P243420

CATALOG NUMBER: S123RDR-H560D927-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	611.6	611.6	611.6	611.6
2.5°	578.8	578.3	577.5	576.7
5°	549.0	546.6	546.3	545.5
7.5°	521.0	519.9	518.1	520.2
10°	495.4	496.2	494.3	492.2
12.5°	468.7	467.1	464.2	465.8
15°	445.2	442.6	441.0	437.3
17.5°	420.6	418.5	418.5	416.2
20°	399.3	397.1	397.7	396.1
22.5°	381.3	379.7	377.3	377.6
25°	364.4	362.0	359.4	359.6
27.5°	345.7	343.5	343.0	341.2
30°	329.0	327.2	326.9	326.9
32.5°	312.9	312.1	310.8	310.0
35°	298.9	297.9	295.7	296.3
37.5°	281.5	280.4	280.2	279.9
40°	265.1	264.3	262.2	262.5
42.5°	248.7	247.4	246.1	245.6
45°	231.0	230.8	228.7	229.2
47.5°	214.2	213.6	212.6	211.2
50°	195.4	195.1	194.3	192.8
52.5°	177.2	176.4	174.8	173.2
55°	156.6	154.2	154.5	153.2
57.5°	139.7	138.6	136.5	135.7
60°	123.3	122.3	122.0	120.9
62.5°	109.6	108.5	107.7	107.7
65°	97.2	95.9	95.6	95.6
67.5°	83.4	82.1	81.9	81.3
70°	66.3	66.0	65.5	65.5
72.5°	57.0	56.8	57.0	56.0
75°	48.6	48.3	48.3	48.6
77.5°	40.4	40.4	40.1	40.1
80°	32.0	32.2	32.0	32.7
82.5°	24.0	23.5	23.8	23.2
85°	14.8	14.8	14.3	14.3
87.5°	5.8	5.8	5.8	5.8
90°	0.0	0.0	0.0	0.0

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