

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: P243440

Luminaire Tested: **S123RDR-H560D930-X4F0-XX-UDD-A-W**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P243440
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-H560D930-X4F0-XX-UDD-A-W
Description: DEFINE 3 REGRESSED DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER.
HIGH PERFORMANCE LIGHT ENGINE
Light Source: (184) 3000K CCT, 90 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1640.0 lumens
Efficiency: N/A
Efficacy: 95.3 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

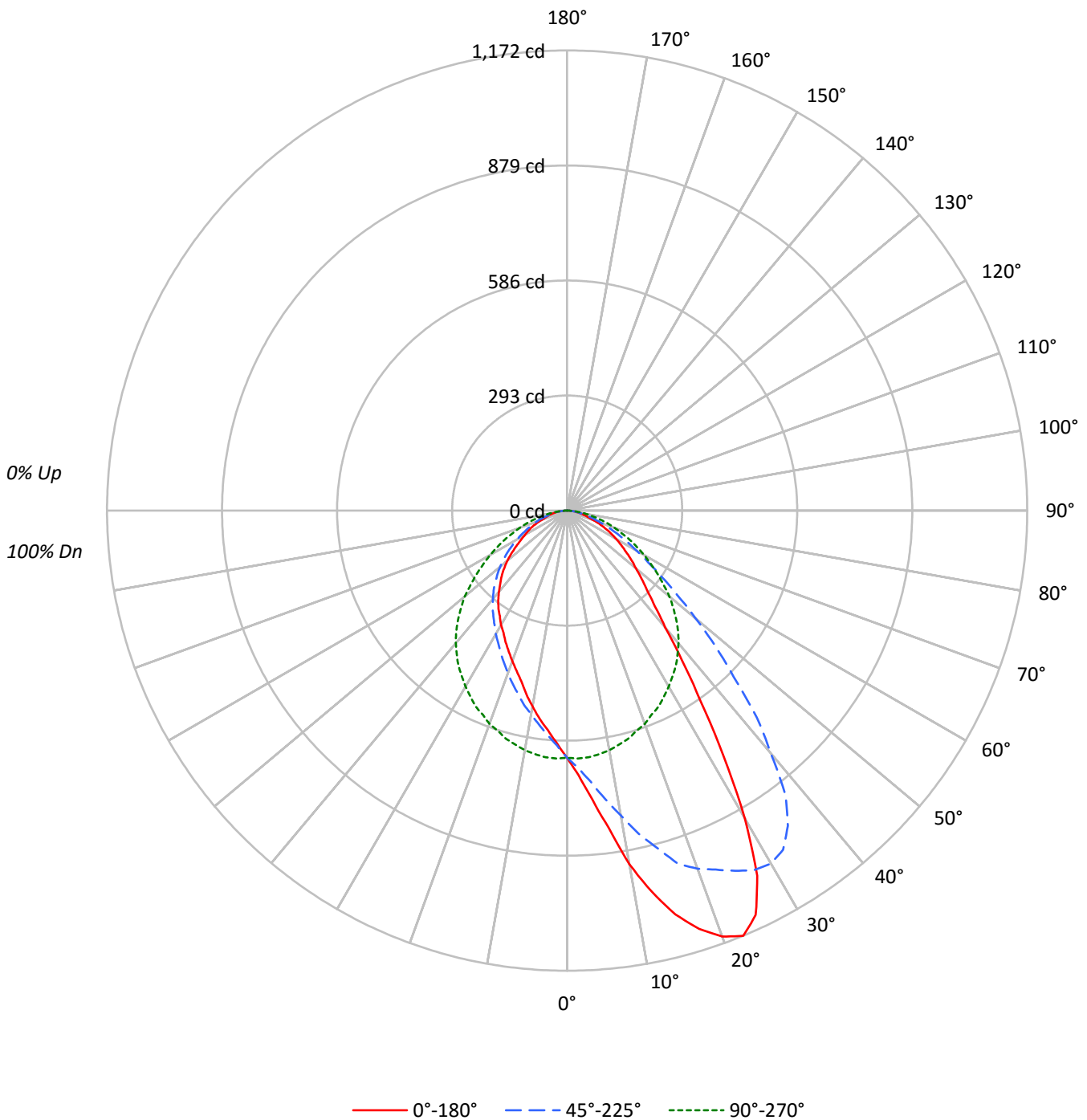
Input Watts (W): 17.2
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





TEST NUMBER: P243440

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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°	7629	7629	7629
5°	8994	7672	6832
10°	11260	7626	6235
15°	13362	7551	5647
20°	14891	7460	5258
25°	15200	7368	4950
30°	12667	7242	4708
35°	8751	7143	4512
40°	6149	6980	4274
45°	4939	6732	4044
50°	4305	6411	3741
55°	3859	5932	3331
60°	3491	5481	3018
65°	3055	5051	2822
70°	2467	4547	2389
75°	2140	3957	2342
80°	1975	3378	2352
85°	1738	2726	2044



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	61.7	3.8
10°-20°	194.4	11.9
20°-30°	311.5	19.0
30°-40°	338.1	20.6
40°-50°	289.7	17.7
50°-60°	219.6	13.4
60°-70°	140.3	8.6
70°-80°	67.1	4.1
80°-90°	17.6	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°	567.6	34.6
0°-40°	905.7	55.2
0°-60°	1415.0	86.3
0°-90°	1640.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1640.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	629	629	629	629	629	
5°	739	694	630	573	562	76
15°	1065	890	602	483	450	302
25°	1136	1012	551	400	370	504
35°	591	980	483	328	305	380
45°	288	600	393	259	236	228
55°	183	294	281	186	158	165
65°	106	142	176	112	98	106
75°	46	55	84	53	50	49
85°	12	13	20	16	15	14
90°	0	0	0	0	0	



TEST NUMBER: P243440

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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	629.4	629.4	629.4	629.4	629.4	629.4	629.4	629.4	629.4	629.4	629.4
2.5°	674.5	675.3	674.0	673.7	673.4	669.1	667.7	665.5	657.9	656.0	654.7
5°	739.2	737.0	739.5	734.8	729.7	726.7	721.8	710.9	701.4	693.8	688.9
7.5°	815.8	816.6	814.2	809.9	799.5	795.2	781.9	768.8	756.3	740.6	728.9
10°	914.8	908.2	909.6	896.0	885.1	872.1	853.9	833.0	810.9	788.7	772.1
12.5°	993.6	998.2	994.9	988.4	967.5	954.7	938.1	907.7	872.9	843.0	817.7
15°	1064.8	1058.5	1059.3	1043.6	1036.0	1024.3	996.8	966.7	944.1	890.0	860.1
17.5°	1116.9	1116.4	1115.6	1102.3	1093.0	1068.6	1040.6	1009.6	981.3	943.8	906.3
20°	1154.4	1158.5	1157.4	1146.6	1130.3	1106.6	1089.8	1051.2	1004.7	970.5	924.5
22.5°	1172.4	1172.7	1173.2	1168.0	1157.2	1141.9	1118.0	1087.0	1045.7	989.8	938.7
25°	1136.5	1137.9	1144.9	1149.3	1152.3	1145.5	1133.0	1105.0	1069.4	1012.3	959.3
27.5°	1048.5	1052.8	1060.7	1086.8	1097.4	1112.1	1117.2	1106.1	1079.7	1032.2	971.8
30°	905.0	917.2	924.8	954.4	996.0	1035.1	1053.6	1071.8	1069.4	1037.9	976.7
32.5°	740.8	748.7	770.7	802.5	835.4	892.7	956.9	1000.9	1025.6	1024.0	980.8
35°	591.4	602.8	621.5	645.7	691.1	750.6	823.2	892.5	954.4	980.2	964.8
37.5°	479.9	481.0	498.7	532.9	561.2	613.6	679.1	764.7	846.0	913.4	928.3
40°	388.6	396.2	405.5	426.9	460.4	510.6	554.1	638.4	722.6	807.1	867.5
42.5°	331.0	331.0	341.3	354.9	377.2	407.4	459.3	535.6	611.5	715.3	783.2
45°	288.1	290.8	295.4	304.1	319.9	343.2	383.5	435.4	512.8	600.1	702.2
47.5°	257.1	256.8	260.9	266.1	278.3	295.9	319.6	361.7	419.1	513.1	603.3
50°	228.3	229.4	232.4	236.7	244.9	257.4	272.3	304.1	352.5	426.9	521.5
52.5°	206.0	205.7	208.2	210.9	217.1	224.2	237.5	261.2	294.6	353.8	432.4
55°	182.6	183.7	186.7	188.3	193.5	198.1	209.3	222.6	249.5	294.0	365.5
57.5°	162.5	163.9	165.5	167.1	170.7	175.3	184.5	192.7	212.2	244.3	301.4
60°	144.0	143.5	145.4	148.1	150.0	154.1	159.3	167.7	181.3	204.1	245.9
62.5°	125.6	125.8	126.1	127.7	131.3	134.8	139.4	145.7	153.8	170.7	200.3
65°	106.5	106.8	107.3	109.0	112.5	114.7	119.6	125.0	131.5	141.6	162.2
67.5°	89.7	90.8	90.8	92.1	93.5	95.7	99.2	103.3	108.7	116.0	129.4
70°	69.6	69.3	70.7	73.4	74.7	78.5	81.0	83.7	88.6	93.2	104.6
72.5°	56.0	56.0	56.0	57.1	57.3	58.2	59.8	65.5	69.3	73.9	80.2
75°	45.7	45.9	45.9	46.2	46.5	47.3	47.8	49.5	50.5	55.4	59.2
77.5°	36.4	36.7	36.7	37.0	37.2	37.5	38.6	38.6	39.4	40.5	42.1
80°	28.3	28.0	28.0	28.3	28.3	29.1	29.1	29.6	29.9	30.4	31.3
82.5°	20.1	19.8	20.1	19.8	20.1	20.4	20.9	20.7	21.2	21.7	22.0
85°	12.5	12.8	12.8	13.3	13.0	12.8	13.0	13.0	13.0	13.0	13.6
87.5°	5.4	6.0	6.0	5.7	6.0	6.0	5.4	6.0	6.0	6.0	6.3
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°	629.4	629.4	629.4	629.4	629.4	629.4	629.4	629.4	629.4	629.4	629.4
2.5°	653.9	652.8	648.7	644.9	639.2	636.7	633.5	632.1	627.8	621.8	619.1
5°	684.3	676.1	668.3	658.8	650.9	641.6	636.5	630.5	621.2	612.8	606.8
7.5°	716.6	704.7	690.0	674.2	660.1	646.8	635.4	625.9	613.9	602.2	593.0
10°	752.2	731.9	708.2	688.1	667.7	648.4	634.0	619.6	604.1	589.5	578.3
12.5°	790.6	761.8	733.2	703.0	672.6	650.3	628.9	610.4	593.0	577.5	564.2
15°	830.2	790.8	754.4	720.4	678.0	648.2	624.5	601.7	579.9	560.9	547.9
17.5°	858.5	813.4	767.5	719.4	682.9	646.0	616.6	587.8	567.7	548.1	530.5
20°	884.6	833.5	778.9	734.0	683.2	638.1	606.0	578.3	550.3	529.4	514.4
22.5°	895.7	849.5	794.4	732.1	681.3	635.1	593.8	562.5	537.5	514.7	495.2
25°	897.9	846.3	789.7	729.7	674.0	624.0	582.1	550.9	518.3	494.6	479.4
27.5°	907.4	836.8	781.3	721.5	665.0	612.8	568.8	534.0	503.6	478.3	458.7
30°	909.9	832.7	763.4	706.3	648.2	597.1	552.5	517.4	484.3	458.5	440.8
32.5°	910.9	827.2	744.6	682.1	626.7	578.6	537.8	499.8	468.2	441.1	422.9
35°	907.1	819.6	722.1	654.7	601.4	554.1	516.3	482.7	447.6	422.0	402.8
37.5°	892.2	807.7	709.3	622.6	571.8	527.2	495.2	462.0	429.7	401.9	382.1
40°	863.9	790.3	685.4	595.7	538.1	498.1	468.2	441.1	408.5	381.8	362.3
42.5°	818.8	766.6	663.4	565.3	504.7	466.9	441.9	418.5	389.2	363.9	342.4
45°	752.0	733.5	634.0	534.3	468.2	432.6	410.9	392.7	366.1	343.0	323.1
47.5°	679.7	683.8	604.4	502.8	435.1	401.1	382.1	366.1	346.0	321.2	303.0
50°	596.2	618.5	562.8	471.0	401.9	368.5	349.8	340.0	321.2	300.6	283.4
52.5°	519.9	555.2	520.7	436.2	369.3	336.4	319.0	309.3	296.8	279.6	262.3
55°	440.8	485.6	460.6	398.7	336.2	303.0	288.3	280.7	270.4	257.1	241.3
57.5°	375.3	423.1	407.4	359.3	303.8	273.9	260.9	252.2	245.9	233.7	220.9
60°	311.2	355.5	349.2	313.9	271.8	243.2	233.2	226.1	220.9	212.0	199.5
62.5°	251.1	294.0	297.9	270.1	240.5	214.7	205.5	200.6	196.5	189.4	178.0
65°	199.2	237.0	244.9	223.7	207.6	188.1	179.1	176.1	173.1	165.0	156.3
67.5°	156.0	185.6	195.9	184.0	172.6	161.2	154.1	150.0	147.8	142.9	137.0
70°	119.3	144.8	153.5	148.4	140.8	136.4	131.0	128.3	126.1	119.8	116.6
72.5°	89.4	106.8	117.7	116.0	114.4	111.4	108.2	107.3	104.1	100.0	97.0
75°	65.5	75.5	85.3	88.9	88.3	89.4	85.9	84.5	82.6	79.6	77.2
77.5°	47.0	53.0	59.8	64.1	66.3	66.6	66.6	65.8	64.4	62.2	60.3
80°	32.6	34.0	40.2	44.3	46.5	48.1	48.1	48.4	47.0	46.2	44.8
82.5°	22.6	23.4	24.7	28.0	30.7	32.6	32.9	32.6	32.1	31.8	29.9
85°	14.1	13.9	13.9	14.7	16.8	18.8	19.0	19.6	19.3	19.0	17.1
87.5°	6.0	6.0	6.3	6.0	6.8	7.1	7.6	9.0	8.7	7.3	6.8
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°	629.4	629.4	629.4	629.4	629.4	629.4	629.4	629.4	629.4	629.4	629.4
2.5°	617.4	613.9	610.7	607.1	602.8	598.7	598.1	597.6	599.0	596.2	595.2
5°	602.2	595.4	590.3	583.7	579.1	573.1	569.9	569.1	568.8	567.2	565.0
7.5°	585.6	578.3	571.0	563.6	556.0	549.8	546.2	544.3	542.7	540.0	537.8
10°	570.2	560.9	553.0	543.0	534.8	526.7	523.4	520.7	519.1	515.3	512.3
12.5°	552.8	541.1	532.4	521.5	514.2	507.1	501.9	496.8	493.0	487.3	484.8
15°	537.5	525.3	510.6	504.1	493.8	483.2	477.5	477.5	469.6	465.0	462.0
17.5°	517.2	506.6	496.2	482.9	468.2	462.0	455.5	449.8	444.3	443.0	437.5
20°	499.2	486.7	476.1	461.7	448.4	441.1	433.5	427.2	423.1	419.3	416.3
22.5°	481.6	469.1	452.8	438.6	429.7	419.9	411.7	406.3	402.8	397.0	394.3
25°	463.1	448.1	433.5	419.6	408.5	400.0	391.6	388.6	382.4	379.4	375.6
27.5°	444.6	426.7	412.8	400.8	388.3	380.2	374.5	369.1	363.6	362.0	359.8
30°	423.9	407.4	394.1	382.4	370.4	363.3	356.6	351.7	347.0	343.5	341.1
32.5°	403.3	389.4	376.7	363.1	352.2	344.6	338.9	334.5	332.4	326.4	324.2
35°	384.3	370.1	356.6	343.8	335.1	327.7	322.6	318.5	313.9	310.1	307.9
37.5°	364.7	351.9	338.1	327.2	317.4	311.4	305.7	300.3	296.8	294.6	291.9
40°	345.7	332.1	321.5	309.5	300.8	294.0	288.1	284.0	279.6	277.7	274.2
42.5°	327.7	314.7	302.5	291.6	283.7	277.2	271.5	266.9	263.3	259.8	257.9
45°	307.1	295.7	284.5	273.7	266.3	259.3	253.0	248.9	244.0	241.1	240.0
47.5°	289.7	277.7	265.8	255.7	248.1	240.5	235.3	230.5	226.4	223.4	221.8
50°	269.0	257.9	248.1	238.1	230.7	222.6	216.3	211.7	207.1	204.9	202.2
52.5°	251.4	240.5	228.6	219.6	211.2	204.1	198.4	194.6	190.5	187.2	185.3
55°	229.4	218.8	209.3	199.7	191.3	185.6	181.0	174.5	170.9	167.7	162.5
57.5°	210.1	200.0	190.0	180.7	172.8	166.0	160.3	156.0	151.4	148.9	145.4
60°	189.7	179.1	169.9	162.8	154.1	146.8	142.9	137.8	134.0	130.2	129.1
62.5°	169.6	159.8	150.6	143.2	135.3	129.6	124.7	122.3	118.5	115.5	114.4
65°	148.7	140.5	131.8	123.7	118.8	112.2	109.5	105.4	103.3	101.9	101.6
67.5°	128.0	120.7	112.8	106.5	101.9	97.6	94.3	92.7	90.5	88.9	87.5
70°	109.2	102.2	95.4	90.2	86.7	83.4	81.3	78.3	76.1	73.9	70.9
72.5°	90.8	85.1	79.4	75.3	71.7	69.8	66.9	62.2	60.1	59.5	59.2
75°	73.6	67.4	63.3	61.1	57.9	53.3	51.4	50.8	50.5	50.0	50.0
77.5°	56.8	53.0	50.3	45.7	44.0	43.8	42.4	42.1	41.6	41.9	41.9
80°	41.3	39.1	35.9	34.5	34.0	34.2	33.7	34.0	33.4	33.7	33.2
82.5°	27.4	25.5	26.1	25.3	25.3	25.8	25.5	24.7	24.7	24.5	24.5
85°	16.3	16.0	16.6	16.6	16.3	15.5	16.0	15.8	14.9	15.2	15.2
87.5°	7.1	7.1	7.1	6.8	7.1	6.8	6.8	6.8	6.0	6.0	6.0
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: P243440

CATALOG NUMBER: S123RDR-H560D930-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	629.4	629.4	629.4	629.4
2.5°	595.7	595.2	594.3	593.5
5°	565.0	562.5	562.3	561.5
7.5°	536.2	535.1	533.2	535.4
10°	509.8	510.6	508.7	506.6
12.5°	482.4	480.7	477.8	479.4
15°	458.2	455.5	453.8	450.0
17.5°	432.9	430.7	430.7	428.3
20°	410.9	408.7	409.3	407.6
22.5°	392.4	390.8	388.3	388.6
25°	375.0	372.6	369.9	370.1
27.5°	355.7	353.6	353.0	351.1
30°	338.6	336.7	336.4	336.4
32.5°	322.0	321.2	319.9	319.0
35°	307.6	306.5	304.4	304.9
37.5°	289.7	288.6	288.3	288.1
40°	272.8	272.0	269.9	270.1
42.5°	256.0	254.6	253.3	252.7
45°	237.8	237.5	235.3	235.9
47.5°	220.4	219.9	218.8	217.4
50°	201.1	200.8	200.0	198.4
52.5°	182.4	181.5	179.9	178.3
55°	161.2	158.7	159.0	157.6
57.5°	143.8	142.7	140.5	139.7
60°	126.9	125.8	125.6	124.5
62.5°	112.8	111.7	110.9	110.9
65°	100.0	98.6	98.4	98.4
67.5°	85.9	84.5	84.2	83.7
70°	68.2	67.9	67.4	67.4
72.5°	58.7	58.4	58.7	57.6
75°	50.0	49.7	49.7	50.0
77.5°	41.6	41.6	41.3	41.3
80°	32.9	33.2	32.9	33.7
82.5°	24.7	24.2	24.5	23.9
85°	15.2	15.2	14.7	14.7
87.5°	6.0	6.0	6.0	6.0
90°	0.0	0.0	0.0	0.0

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