

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: P243611

Luminaire Tested: **S124RDR-H350D930-X4F0-XX-UDD-A-W**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P243611
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-70)
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S124RDR-H350D930-X4F0-XX-UDD-A-W
Description: DEFINE 4 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: 1131.1 lumens
Efficiency: N/A
Efficacy: 101.0 lumens/watt
Spacing Criteria (0/90/45): 1.27 / 1.23 / 1.39
Luminous Opening: Rectangular (W 3.88' x L: 0.31' x H: 0')
CIE Type: Direct

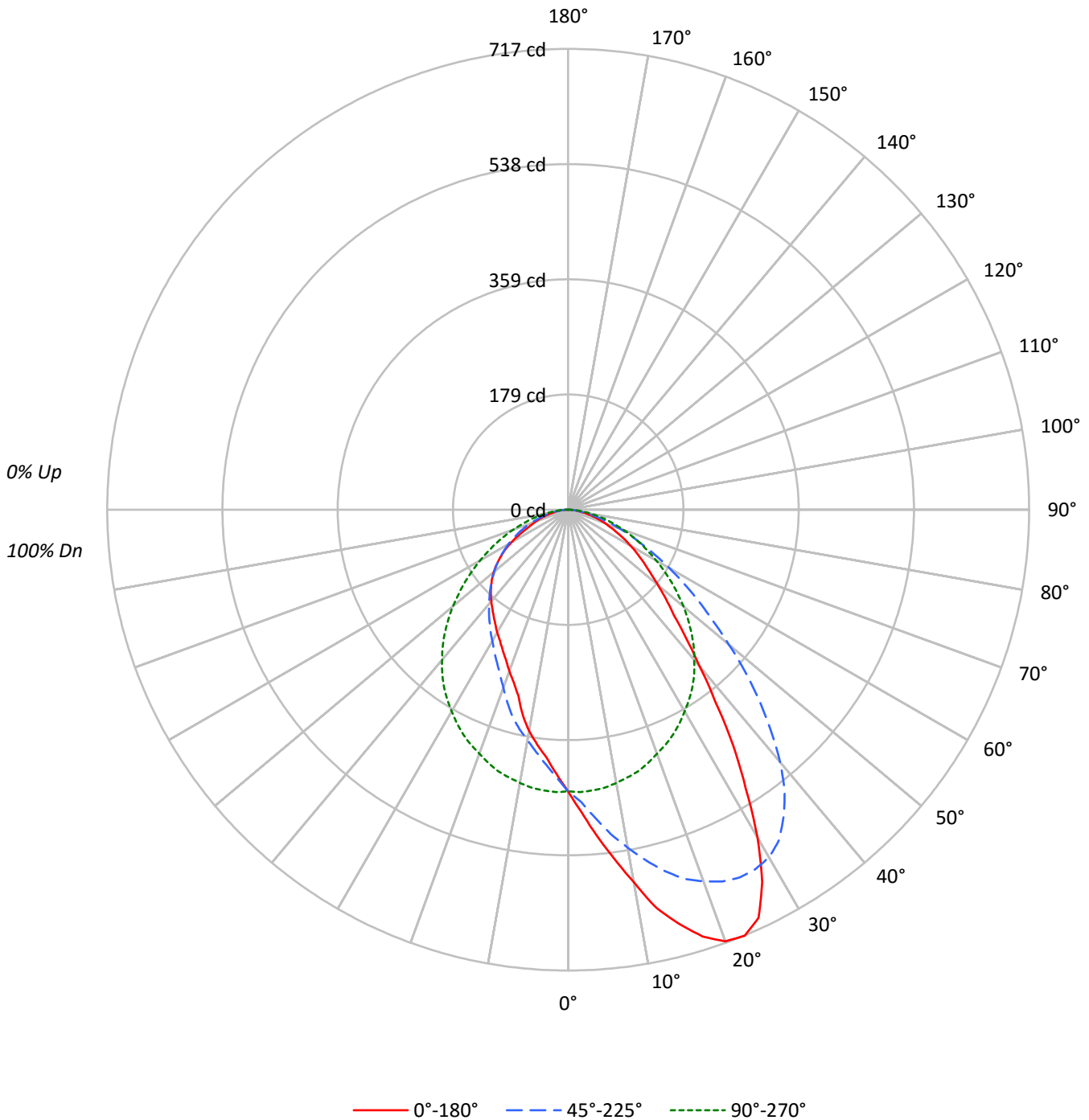
Input Watts (W): 11.2
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P243611

CATALOG NUMBER: S124RDR-H350D930-X4F0-XX-UDD-A-W

Luminous Intensity Polar Plot





TEST NUMBER: P243611

CATALOG NUMBER: S124RDR-H350D930-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	105	102	98	107	103	100	97	99	96	93		95	93	91		92	90	88	86
2	101	93	87	82	98	91	86	81	88	83	79		85	81	77		82	78	75	73
3	92	83	75	69	90	81	74	68	78	72	67		76	70	66		73	69	65	63
4	85	74	66	59	83	73	65	59	70	63	58		68	62	57		66	61	57	55
5	79	66	58	52	77	65	57	51	63	56	51		61	55	50		60	54	50	48
6	73	60	52	46	71	59	51	45	58	50	45		56	50	45		54	49	44	42
7	68	55	46	41	66	54	46	40	53	45	40		51	45	40		50	44	40	38
8	63	50	42	36	62	50	42	36	48	41	36		47	41	36		46	40	36	34
9	59	46	38	33	58	46	38	33	45	38	33		43	37	33		42	37	32	31
10	56	43	35	30	54	42	35	30	41	35	30		40	34	30		39	34	30	28

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	3895	3895	3895
5°	4538	3912	3453
10°	5315	3896	3157
15°	6141	3876	2758
20°	6761	3821	2528
25°	6869	3786	2364
30°	6047	3719	2266
35°	4852	3656	2193
40°	3691	3539	2158
45°	2930	3409	2132
50°	2515	3240	2095
55°	2222	3031	1995
60°	1989	2812	1826
65°	1752	2600	1535
70°	1562	2360	1383
75°	1360	2147	1230
80°	1152	1843	1136
85°	1010	1581	1152



TEST NUMBER: P243611

CATALOG NUMBER: S124RDR-H350D930-X4F0-XX-UDD-A-W

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	42.5	3.8
10°-20°	129.0	11.4
20°-30°	201.3	17.8
30°-40°	224.4	19.8
40°-50°	201.7	17.8
50°-60°	159.4	14.1
60°-70°	105.9	9.4
70°-80°	53.1	4.7
80°-90°	13.8	1.2
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°	372.7	33.0
0°-40°	597.2	52.8
0°-60°	958.3	84.7
0°-90°	1131.1	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1131.1	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	438	438	438	438	438	
5°	509	481	438	398	387	51
15°	667	582	421	334	300	190
25°	700	631	386	262	241	313
35°	447	584	337	213	202	278
45°	233	421	271	170	170	185
55°	143	247	196	129	129	129
65°	83	127	124	85	73	83
75°	40	50	62	42	36	42
85°	10	11	16	12	11	11
90°	0	0	0	0	0	



TEST NUMBER: P243611

CATALOG NUMBER: S124RDR-H350D930-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	438.2	438.2	438.2	438.2	438.2	438.2	438.2	438.2	438.2	438.2	438.2
2.5°	470.7	469.0	468.8	466.6	466.4	464.2	463.5	461.6	457.9	455.0	455.1
5°	508.6	507.2	507.0	504.8	504.1	501.4	497.1	492.0	486.0	481.1	477.8
7.5°	547.5	549.8	547.3	547.3	542.3	539.1	530.7	526.5	516.2	509.1	501.6
10°	588.8	591.0	590.0	587.9	581.4	574.8	566.1	557.7	545.2	534.0	526.5
12.5°	634.8	628.2	632.4	626.1	620.8	610.3	601.9	585.2	575.3	558.9	544.2
15°	667.3	664.7	664.5	660.3	654.5	642.9	633.8	616.4	599.5	582.3	565.7
17.5°	696.3	696.6	694.2	687.4	679.9	668.6	656.3	640.8	621.5	602.4	582.8
20°	714.7	714.9	713.2	709.6	701.4	691.2	678.5	658.2	636.4	615.2	595.6
22.5°	717.4	717.9	717.4	715.2	709.6	701.2	689.6	672.4	650.4	626.1	602.8
25°	700.4	702.1	702.2	705.3	702.4	699.2	690.6	676.1	655.8	631.3	605.8
27.5°	653.6	658.4	662.8	668.3	673.2	677.7	678.4	670.7	653.3	630.4	606.2
30°	589.1	594.7	603.6	609.4	624.8	634.5	647.6	650.5	642.2	624.6	601.2
32.5°	514.0	520.0	523.4	542.5	564.5	580.4	602.2	615.2	618.5	610.1	591.0
35°	447.1	448.1	450.7	472.4	494.2	518.3	545.4	567.9	583.3	584.2	574.8
37.5°	375.4	376.6	386.7	403.3	422.2	448.7	479.9	512.0	540.1	553.1	550.4
40°	318.1	317.8	328.5	342.8	361.3	388.8	421.0	456.0	486.0	513.2	519.6
42.5°	271.7	272.9	282.1	290.5	308.2	327.5	362.0	398.3	436.9	466.6	486.4
45°	233.1	236.2	242.5	250.4	263.7	281.4	309.6	345.7	385.2	420.8	444.6
47.5°	206.5	207.3	210.6	220.3	229.2	243.5	267.6	298.3	333.3	373.2	404.5
50°	181.9	184.0	185.2	191.0	199.7	213.3	231.9	254.8	289.4	326.1	365.2
52.5°	160.8	162.0	164.2	169.5	176.3	185.8	200.5	220.7	249.5	283.5	320.3
55°	143.4	143.5	145.7	149.5	154.8	162.1	176.1	190.6	216.2	247.1	280.6
57.5°	127.6	126.6	128.7	130.9	136.0	142.3	151.4	166.2	186.2	212.5	242.7
60°	111.9	112.8	112.6	115.2	117.9	124.2	131.9	141.6	158.0	182.1	207.7
62.5°	97.3	97.1	98.8	100.3	102.2	107.3	113.7	121.7	134.5	152.2	177.0
65°	83.3	83.6	85.0	86.2	88.2	91.5	96.2	102.7	113.0	126.6	147.4
67.5°	70.7	71.8	72.5	72.9	74.7	77.1	81.2	86.5	93.5	104.4	121.8
70°	60.1	60.4	60.8	61.9	62.8	64.2	67.2	70.1	76.5	84.5	97.1
72.5°	50.2	49.8	50.9	51.2	51.5	52.9	54.8	56.3	60.4	67.2	75.1
75°	39.6	39.8	39.9	40.4	41.8	42.0	42.8	44.5	47.4	50.2	55.5
77.5°	29.7	30.2	30.0	30.5	31.1	31.6	31.9	33.4	35.5	37.7	40.3
80°	22.5	22.5	22.5	22.9	22.5	23.7	23.7	24.2	24.7	25.8	27.6
82.5°	15.4	15.7	15.9	16.0	16.2	16.2	16.4	16.7	17.4	17.7	18.3
85°	9.9	9.6	9.7	9.7	9.7	9.7	10.1	10.4	10.4	10.6	11.1
87.5°	4.4	4.4	4.4	4.4	4.3	4.4	4.6	4.6	4.8	4.8	5.1
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: P243611

CATALOG NUMBER: S124RDR-H350D930-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	438.2	438.2	438.2	438.2	438.2	438.2	438.2	438.2	438.2	438.2	438.2
2.5°	454.1	453.6	451.0	448.3	445.8	443.2	442.3	439.8	436.7	434.0	430.9
5°	474.4	470.3	464.7	458.9	452.9	447.5	443.2	438.4	433.0	426.5	421.3
7.5°	494.9	487.4	478.2	469.6	459.4	451.2	443.0	436.2	428.3	419.1	412.1
10°	514.9	502.4	491.1	477.7	464.7	453.4	443.0	431.6	421.2	411.3	401.6
12.5°	530.7	518.3	502.1	485.5	468.8	454.1	440.1	426.6	413.7	401.7	391.0
15°	548.8	530.9	510.9	492.7	469.8	451.7	435.7	421.2	406.3	391.8	380.0
17.5°	562.1	541.0	516.2	495.2	473.2	450.7	431.4	413.2	396.1	380.9	368.8
20°	572.4	547.3	522.5	495.9	469.6	446.6	424.9	403.9	386.7	370.2	357.4
22.5°	576.8	550.4	522.9	494.0	466.1	439.9	417.4	395.7	376.3	359.2	344.4
25°	578.7	549.7	521.2	488.4	460.1	433.5	408.4	386.0	366.1	346.8	332.1
27.5°	577.2	546.1	513.3	482.4	450.4	424.2	397.6	374.9	354.1	335.5	319.1
30°	573.1	537.9	505.3	470.7	439.8	412.3	386.4	362.3	341.3	322.4	306.2
32.5°	562.5	528.7	491.7	457.9	424.6	397.5	373.9	350.2	328.9	309.1	293.4
35°	549.3	516.2	477.5	442.2	409.2	381.8	358.0	336.9	315.9	294.9	278.8
37.5°	532.8	499.2	461.8	423.7	391.5	364.9	343.2	321.9	301.0	281.8	263.8
40°	510.4	479.7	442.2	403.9	371.5	345.9	324.6	305.0	286.5	267.6	248.3
42.5°	482.6	459.2	420.5	382.8	351.0	325.6	306.7	289.1	271.3	251.9	234.5
45°	452.9	433.0	397.8	359.7	329.5	304.8	286.7	271.2	254.4	237.2	219.0
47.5°	419.5	404.6	374.2	336.5	304.8	283.6	266.9	252.7	237.6	222.2	204.4
50°	381.8	372.7	346.8	312.5	282.3	260.8	246.9	234.3	221.3	206.0	190.8
52.5°	344.0	342.3	318.1	287.9	259.4	239.4	225.9	214.3	203.8	189.3	176.5
55°	304.4	309.6	289.4	261.6	236.2	216.9	205.0	195.6	186.4	174.1	161.8
57.5°	269.3	275.1	261.3	235.7	212.0	195.6	185.3	176.8	168.8	157.5	149.3
60°	230.4	241.0	233.6	210.2	189.3	174.6	165.0	158.2	151.5	141.8	134.6
62.5°	199.7	207.0	202.7	185.3	166.7	154.8	146.3	139.9	134.6	127.1	120.1
65°	166.7	175.9	173.7	162.3	145.9	135.0	128.5	123.6	118.1	112.1	106.3
67.5°	137.0	146.6	146.1	138.2	126.1	117.1	110.9	107.3	102.9	97.1	93.5
70°	110.2	119.1	119.5	115.5	107.0	98.5	94.0	90.8	87.4	83.1	80.5
72.5°	85.7	93.7	95.1	93.2	87.7	82.1	78.2	75.9	73.0	69.5	67.2
75°	64.0	69.8	73.0	72.2	70.0	66.2	64.0	62.5	59.6	57.0	55.1
77.5°	45.6	50.2	53.4	54.8	53.8	52.2	50.2	49.0	45.9	44.7	43.7
80°	30.5	34.6	37.5	38.4	38.9	38.6	36.7	36.0	34.5	34.0	32.9
82.5°	18.8	21.0	23.0	25.3	26.3	26.3	25.3	25.4	24.1	23.4	23.0
85°	11.4	11.9	12.3	14.0	15.4	15.9	15.4	15.5	15.0	14.5	14.0
87.5°	5.3	5.3	5.5	5.8	6.1	7.2	7.5	8.0	7.3	7.3	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: P243611

CATALOG NUMBER: S124RDR-H350D930-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	438.2	438.2	438.2	438.2	438.2	438.2	438.2	438.2	438.2	438.2	438.2
2.5°	429.0	426.8	425.1	422.4	420.2	416.6	415.4	415.4	416.1	415.2	416.1
5°	417.8	413.7	409.2	405.3	401.0	398.0	394.9	394.2	393.9	391.8	392.0
7.5°	406.5	401.0	395.4	390.3	385.0	380.2	377.0	375.6	374.4	373.1	371.5
10°	394.4	388.1	381.4	375.6	370.5	364.0	360.8	359.7	356.3	355.6	353.3
12.5°	381.6	375.1	368.4	360.9	356.0	349.7	344.9	342.7	339.4	337.0	333.5
15°	371.5	363.3	354.5	347.1	340.6	333.6	327.1	322.9	318.6	312.0	308.7
17.5°	359.1	349.7	342.0	334.1	324.8	314.5	306.8	300.5	295.9	290.5	287.2
20°	345.6	336.9	327.3	316.2	306.3	294.7	287.7	282.4	278.8	275.6	273.9
22.5°	333.6	323.6	310.4	299.8	286.0	276.8	271.2	267.8	264.3	260.9	259.2
25°	320.7	308.9	292.8	279.9	269.5	262.3	256.8	253.6	250.0	248.0	245.4
27.5°	307.9	292.7	276.6	264.9	256.7	248.3	243.7	241.1	238.4	235.5	233.5
30°	292.3	275.1	261.8	251.0	242.8	235.8	232.4	228.7	226.3	224.6	223.4
32.5°	276.1	259.6	247.4	238.2	230.2	224.9	220.7	218.3	216.2	214.3	213.0
35°	260.9	244.9	234.7	225.8	219.1	213.1	209.9	207.7	206.0	204.4	203.8
37.5°	245.9	232.3	221.2	214.2	207.2	202.4	199.3	197.3	196.3	194.7	194.9
40°	231.1	218.8	209.9	201.9	195.4	191.3	188.9	188.1	186.5	186.0	186.5
42.5°	217.8	206.5	198.0	190.5	184.8	180.9	179.0	177.8	177.3	177.1	177.3
45°	204.8	194.2	186.0	179.9	174.1	170.5	168.9	168.1	167.6	168.4	168.6
47.5°	191.8	182.3	174.9	167.8	163.0	160.4	158.9	158.2	158.7	159.1	160.2
50°	179.0	170.1	162.5	156.1	152.4	150.0	149.5	148.3	149.2	149.7	150.5
52.5°	166.0	158.0	151.2	145.2	141.3	139.8	138.6	138.1	139.3	139.3	140.1
55°	152.9	145.9	139.6	134.1	131.1	129.2	128.3	127.6	128.3	128.5	128.3
57.5°	140.6	134.0	127.3	122.7	120.1	118.1	117.2	116.9	116.7	117.4	117.2
60°	127.6	121.3	116.0	111.3	108.7	107.5	105.6	106.0	106.0	106.0	104.3
62.5°	114.7	108.4	103.8	100.5	97.4	95.4	95.1	94.5	93.5	93.3	91.1
65°	101.4	96.6	92.7	89.4	86.4	84.6	84.1	82.6	81.4	79.2	77.6
67.5°	89.1	85.7	81.1	78.3	75.8	73.7	71.8	70.7	68.3	66.0	64.7
70°	76.8	73.2	70.1	67.2	64.7	62.8	60.6	58.4	56.8	55.5	54.4
72.5°	64.5	61.4	58.9	56.1	53.4	51.5	49.8	48.1	47.4	46.8	46.2
75°	53.1	50.2	47.8	45.6	44.0	41.8	41.0	40.3	39.6	38.7	37.7
77.5°	42.0	39.8	37.9	36.0	34.6	33.4	32.8	30.7	29.0	28.7	28.3
80°	31.2	29.5	28.3	27.0	25.4	23.7	23.2	22.5	22.2	22.2	22.4
82.5°	21.8	20.8	19.5	18.3	17.7	17.1	17.1	16.9	16.7	16.9	16.9
85°	13.3	11.9	11.6	11.4	11.6	11.6	11.6	11.6	11.4	11.6	11.3
87.5°	5.8	6.3	6.5	6.0	6.1	5.8	6.0	6.0	6.0	6.1	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: P243611

CATALOG NUMBER: S124RDR-H350D930-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	438.2	438.2	438.2	438.2
2.5°	415.0	415.0	413.3	412.0
5°	391.7	389.4	389.1	387.0
7.5°	369.8	369.5	368.6	368.6
10°	352.4	351.2	350.0	349.8
12.5°	327.8	329.5	327.5	327.0
15°	306.3	305.0	303.3	299.7
17.5°	286.4	283.8	283.1	281.6
20°	270.7	268.8	268.1	267.2
22.5°	255.8	255.5	253.4	252.9
25°	244.9	243.2	241.8	241.0
27.5°	232.9	231.7	231.1	229.7
30°	222.0	221.7	220.8	220.8
32.5°	212.1	211.1	211.1	210.9
35°	203.1	203.4	202.4	202.1
37.5°	194.5	194.0	194.2	193.9
40°	186.2	185.8	185.8	186.0
42.5°	177.7	177.8	178.2	178.2
45°	169.1	169.3	169.6	169.6
47.5°	161.1	160.8	161.1	160.8
50°	150.9	151.9	151.7	151.5
52.5°	140.4	140.1	140.8	140.6
55°	129.2	128.7	129.4	128.7
57.5°	116.6	116.7	116.7	116.4
60°	103.9	103.4	102.7	102.7
62.5°	89.3	87.7	86.7	87.4
65°	75.1	73.9	73.6	73.0
67.5°	63.8	62.5	61.9	61.8
70°	54.1	53.4	53.2	53.2
72.5°	45.9	45.9	45.4	45.1
75°	37.4	36.7	35.8	35.8
77.5°	28.0	27.8	27.6	27.6
80°	21.8	21.8	22.0	22.2
82.5°	16.4	16.6	16.7	16.7
85°	11.1	11.1	11.3	11.3
87.5°	6.0	6.0	6.0	5.8
90°	0.0	0.0	0.0	0.0

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