

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: P243449

Luminaire Tested: **S123RDR-H340D940-X4F0-XX-UDD-A-W**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P243449
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-H340D940-X4F0-XX-UDD-A-W
Description: DEFINE 3 REGRESSED DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER.
HIGH PERFORMANCE LIGHT ENGINE
Light Source: (184) 4000K CCT, 90 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1126.3 lumens
Efficiency: N/A
Efficacy: 100.6 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

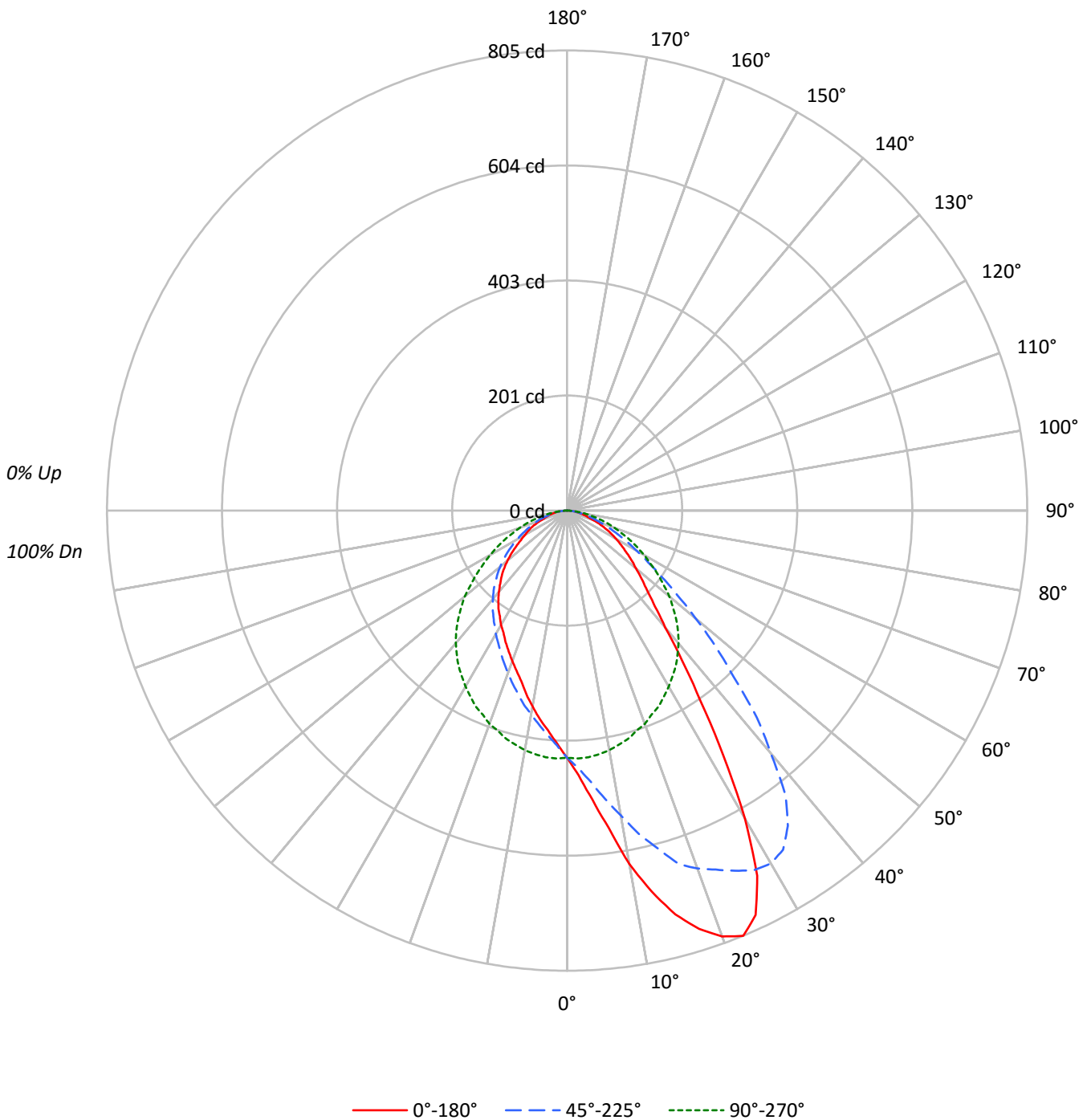
Input Watts (W): 11.2
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P243449

CATALOG NUMBER: S123RDR-H340D940-X4F0-XX-UDD-A-W

Luminous Intensity Polar Plot





TEST NUMBER: P243449

CATALOG NUMBER: S123RDR-H340D940-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°	5240	5240	5240
5°	6177	5269	4692
10°	7732	5237	4282
15°	9177	5185	3879
20°	10228	5124	3612
25°	10439	5059	3400
30°	8699	4974	3235
35°	6009	4905	3099
40°	4223	4793	2935
45°	3391	4623	2777
50°	2957	4403	2568
55°	2650	4074	2289
60°	2398	3765	2073
65°	2099	3468	1939
70°	1694	3122	1641
75°	1471	2716	1606
80°	1354	2317	1612
85°	1196	1864	1405



TEST NUMBER: P243449

CATALOG NUMBER: S123RDR-H340D940-X4F0-XX-UDD-A-W

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	42.4	3.8
10°-20°	133.5	11.9
20°-30°	213.9	19.0
30°-40°	232.2	20.6
40°-50°	199.0	17.7
50°-60°	150.8	13.4
60°-70°	96.4	8.6
70°-80°	46.1	4.1
80°-90°	12.1	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°	389.8	34.6
0°-40°	622.0	55.2
0°-60°	971.8	86.3
0°-90°	1126.3	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1126.3	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	432	432	432	432	432	
5°	508	476	433	394	386	52
15°	731	611	413	332	309	207
25°	780	695	378	275	254	346
35°	406	673	332	225	209	261
45°	198	412	270	178	162	156
55°	125	202	193	128	108	113
65°	73	97	121	77	68	73
75°	31	38	58	37	34	34
85°	9	9	13	11	10	10
90°	0	0	0	0	0	



TEST NUMBER: P243449

CATALOG NUMBER: S123RDR-H340D940-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	432.3	432.3	432.3	432.3	432.3	432.3	432.3	432.3	432.3	432.3	432.3
2.5°	463.2	463.8	462.9	462.7	462.5	459.5	458.6	457.1	451.9	450.6	449.6
5°	507.7	506.2	507.9	504.7	501.1	499.1	495.7	488.3	481.7	476.5	473.1
7.5°	560.3	560.9	559.2	556.2	549.1	546.1	537.0	528.0	519.4	508.6	500.6
10°	628.2	623.8	624.7	615.4	607.9	598.9	586.4	572.1	556.9	541.6	530.3
12.5°	682.4	685.5	683.3	678.8	664.4	655.7	644.3	623.4	599.5	579.0	561.6
15°	731.3	727.0	727.5	716.7	711.5	703.5	684.6	663.9	648.4	611.3	590.7
17.5°	767.1	766.7	766.2	757.0	750.7	733.9	714.7	693.4	674.0	648.2	622.5
20°	792.9	795.7	794.9	787.4	776.2	760.0	748.4	721.9	690.0	666.5	635.0
22.5°	805.2	805.4	805.7	802.2	794.7	784.3	767.8	746.6	718.2	679.8	644.7
25°	780.5	781.5	786.3	789.3	791.4	786.7	778.1	758.9	734.4	695.2	658.8
27.5°	720.1	723.1	728.5	746.4	753.7	763.7	767.3	759.6	741.5	708.9	667.4
30°	621.5	629.9	635.1	655.5	684.0	710.9	723.6	736.1	734.4	712.8	670.8
32.5°	508.8	514.2	529.3	551.2	573.7	613.1	657.2	687.4	704.4	703.3	673.6
35°	406.1	414.0	426.9	443.5	474.6	515.5	565.3	612.9	655.5	673.2	662.6
37.5°	329.6	330.4	342.5	366.0	385.4	421.4	466.4	525.2	581.0	627.3	637.6
40°	266.9	272.1	278.5	293.2	316.2	350.7	380.6	438.4	496.3	554.3	595.8
42.5°	227.3	227.3	234.4	243.8	259.1	279.8	315.4	367.9	419.9	491.2	537.9
45°	197.8	199.7	202.9	208.9	219.7	235.7	263.4	299.0	352.2	412.1	482.3
47.5°	176.6	176.4	179.2	182.7	191.1	203.3	219.5	248.4	287.8	352.4	414.3
50°	156.8	157.5	159.6	162.6	168.2	176.8	187.0	208.9	242.1	293.2	358.2
52.5°	141.5	141.3	143.0	144.8	149.1	154.0	163.1	179.4	202.3	243.0	296.9
55°	125.4	126.2	128.2	129.3	132.9	136.1	143.7	152.9	171.3	201.9	251.0
57.5°	111.6	112.5	113.7	114.8	117.2	120.4	126.7	132.3	145.8	167.8	207.0
60°	98.9	98.5	99.9	101.7	103.0	105.8	109.4	115.2	124.5	140.2	168.9
62.5°	86.2	86.4	86.6	87.7	90.1	92.6	95.7	100.0	105.6	117.2	137.6
65°	73.2	73.4	73.7	74.8	77.3	78.8	82.1	85.9	90.3	97.2	111.4
67.5°	61.6	62.3	62.3	63.3	64.2	65.7	68.1	70.9	74.7	79.7	88.8
70°	47.8	47.6	48.5	50.4	51.3	53.9	55.6	57.5	60.8	64.0	71.9
72.5°	38.4	38.4	38.4	39.2	39.4	39.9	41.1	45.0	47.6	50.8	55.1
75°	31.4	31.5	31.5	31.7	31.9	32.5	32.8	34.0	34.7	38.1	40.7
77.5°	25.0	25.2	25.2	25.4	25.6	25.8	26.5	26.5	27.1	27.8	28.9
80°	19.4	19.2	19.2	19.4	19.4	20.0	20.0	20.3	20.5	20.9	21.5
82.5°	13.8	13.6	13.8	13.6	13.8	14.0	14.4	14.2	14.6	14.9	15.1
85°	8.6	8.8	8.8	9.1	9.0	8.8	9.0	9.0	9.0	9.0	9.3
87.5°	3.7	4.1	4.1	3.9	4.1	4.1	3.7	4.1	4.1	4.1	4.3
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: P243449

CATALOG NUMBER: S123RDR-H340D940-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	432.3	432.3	432.3	432.3	432.3	432.3	432.3	432.3	432.3	432.3	432.3
2.5°	449.1	448.3	445.5	442.9	439.0	437.3	435.1	434.1	431.1	427.0	425.2
5°	470.0	464.4	459.0	452.4	447.0	440.7	437.1	433.0	426.7	420.9	416.8
7.5°	492.2	484.0	473.9	463.1	453.4	444.2	436.4	429.8	421.6	413.6	407.3
10°	516.6	502.6	486.4	472.6	458.6	445.3	435.4	425.5	414.9	404.8	397.2
12.5°	542.9	523.2	503.6	482.8	461.9	446.6	431.9	419.2	407.3	396.6	387.5
15°	570.2	543.1	518.1	494.8	465.7	445.1	428.9	413.2	398.3	385.2	376.3
17.5°	589.6	558.6	527.1	494.0	469.0	443.6	423.5	403.7	389.9	376.5	364.3
20°	607.5	572.4	534.9	504.1	469.2	438.2	416.2	397.2	378.0	363.6	353.3
22.5°	615.2	583.4	545.6	502.8	467.9	436.2	407.8	386.3	369.2	353.5	340.1
25°	616.7	581.2	542.4	501.1	462.9	428.5	399.8	378.3	355.9	339.7	329.2
27.5°	623.2	574.7	536.6	495.5	456.7	420.9	390.6	366.8	345.8	328.5	315.1
30°	624.9	571.9	524.3	485.1	445.1	410.1	379.4	355.4	332.6	314.9	302.7
32.5°	625.6	568.1	511.4	468.5	430.4	397.4	369.4	343.2	321.6	302.9	290.4
35°	623.0	562.9	495.9	449.6	413.0	380.6	354.6	331.5	307.4	289.9	276.6
37.5°	612.7	554.7	487.1	427.6	392.7	362.1	340.1	317.3	295.1	276.0	262.4
40°	593.3	542.8	470.7	409.1	369.6	342.1	321.6	302.9	280.5	262.2	248.8
42.5°	562.4	526.5	455.6	388.2	346.6	320.7	303.5	287.4	267.3	249.9	235.2
45°	516.4	503.7	435.4	366.9	321.6	297.1	282.2	269.7	251.4	235.5	221.9
47.5°	466.8	469.6	415.1	345.3	298.8	275.5	262.4	251.4	237.6	220.6	208.1
50°	409.5	424.8	386.5	323.5	276.0	253.1	240.2	233.5	220.6	206.4	194.7
52.5°	357.0	381.3	357.6	299.6	253.6	231.1	219.1	212.4	203.8	192.1	180.1
55°	302.7	333.5	316.4	273.8	230.9	208.1	198.0	192.8	185.7	176.6	165.7
57.5°	257.8	290.6	279.8	246.7	208.7	188.1	179.2	173.2	168.9	160.5	151.7
60°	213.7	244.1	239.8	215.6	186.6	167.0	160.1	155.3	151.7	145.6	137.0
62.5°	172.5	201.9	204.6	185.5	165.2	147.4	141.1	137.7	134.9	130.1	122.3
65°	136.8	162.8	168.2	153.6	142.6	129.2	123.0	120.9	118.9	113.3	107.3
67.5°	107.1	127.5	134.6	126.4	118.5	110.7	105.8	103.0	101.5	98.2	94.1
70°	81.9	99.5	105.5	101.9	96.7	93.7	90.0	88.1	86.6	82.3	80.1
72.5°	61.4	73.4	80.8	79.7	78.6	76.5	74.3	73.7	71.5	68.7	66.6
75°	45.0	51.9	58.6	61.0	60.7	61.4	59.0	58.0	56.7	54.7	53.0
77.5°	32.3	36.4	41.1	44.0	45.5	45.7	45.7	45.2	44.2	42.7	41.4
80°	22.4	23.3	27.6	30.4	31.9	33.0	33.0	33.2	32.3	31.7	30.8
82.5°	15.5	16.1	17.0	19.2	21.1	22.4	22.6	22.4	22.0	21.8	20.5
85°	9.7	9.5	9.5	10.1	11.6	12.9	13.1	13.4	13.3	13.1	11.8
87.5°	4.1	4.1	4.3	4.1	4.7	4.9	5.2	6.2	6.0	5.0	4.7
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: P243449

CATALOG NUMBER: S123RDR-H340D940-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	432.3	432.3	432.3	432.3	432.3	432.3	432.3	432.3	432.3	432.3	432.3
2.5°	424.1	421.6	419.4	417.0	414.0	411.2	410.8	410.4	411.4	409.5	408.7
5°	413.6	408.9	405.4	400.9	397.7	393.6	391.4	390.8	390.6	389.5	388.0
7.5°	402.2	397.2	392.1	387.1	381.9	377.6	375.2	373.8	372.7	370.9	369.4
10°	391.6	385.2	379.8	372.9	367.3	361.7	359.5	357.6	356.5	353.9	351.8
12.5°	379.6	371.6	365.6	358.2	353.1	348.3	344.7	341.2	338.6	334.6	333.0
15°	369.2	360.8	350.7	346.2	339.1	331.8	327.9	327.9	322.5	319.3	317.3
17.5°	355.2	347.9	340.8	331.7	321.6	317.3	312.8	308.9	305.2	304.2	300.5
20°	342.9	334.3	327.0	317.1	308.0	302.9	297.7	293.4	290.6	288.0	285.9
22.5°	330.7	322.1	310.9	301.2	295.1	288.4	282.8	279.0	276.6	272.7	270.8
25°	318.0	307.8	297.7	288.2	280.5	274.7	269.0	266.9	262.6	260.6	257.9
27.5°	305.3	293.0	283.5	275.3	266.7	261.1	257.2	253.5	249.7	248.6	247.1
30°	291.2	279.8	270.6	262.6	254.4	249.5	244.9	241.5	238.3	235.9	234.2
32.5°	277.0	267.5	258.7	249.4	241.9	236.7	232.7	229.8	228.3	224.2	222.7
35°	263.9	254.2	244.9	236.1	230.1	225.1	221.5	218.7	215.6	213.0	211.5
37.5°	250.5	241.7	232.2	224.7	218.0	213.9	210.0	206.2	203.8	202.3	200.5
40°	237.4	228.1	220.8	212.6	206.6	201.9	197.8	195.0	192.1	190.7	188.3
42.5°	225.1	216.1	207.7	200.3	194.9	190.4	186.5	183.3	180.9	178.4	177.1
45°	210.9	203.1	195.4	187.9	182.9	178.1	173.8	171.0	167.6	165.6	164.8
47.5°	199.0	190.7	182.5	175.6	170.4	165.2	161.6	158.3	155.5	153.4	152.3
50°	184.8	177.1	170.4	163.5	158.5	152.9	148.6	145.4	142.2	140.7	138.9
52.5°	172.6	165.2	157.0	150.8	145.0	140.2	136.2	133.6	130.8	128.6	127.3
55°	157.5	150.2	143.7	137.2	131.4	127.5	124.3	119.8	117.4	115.2	111.6
57.5°	144.3	137.4	130.5	124.1	118.7	114.0	110.1	107.1	104.0	102.3	99.9
60°	130.3	123.0	116.7	111.8	105.8	100.8	98.2	94.6	92.0	89.4	88.7
62.5°	116.5	109.7	103.4	98.4	92.9	89.0	85.7	84.0	81.4	79.3	78.6
65°	102.1	96.5	90.5	84.9	81.6	77.1	75.2	72.4	70.9	70.0	69.8
67.5°	87.9	82.9	77.5	73.2	70.0	67.0	64.8	63.6	62.2	61.0	60.1
70°	75.0	70.2	65.5	62.0	59.5	57.3	55.8	53.8	52.3	50.8	48.7
72.5°	62.3	58.4	54.5	51.7	49.3	48.0	45.9	42.7	41.2	40.9	40.7
75°	50.6	46.3	43.5	42.0	39.8	36.6	35.3	34.9	34.7	34.3	34.3
77.5°	39.0	36.4	34.5	31.4	30.2	30.0	29.1	28.9	28.6	28.7	28.7
80°	28.4	26.9	24.6	23.7	23.3	23.5	23.1	23.3	23.0	23.1	22.8
82.5°	18.9	17.5	17.9	17.4	17.4	17.7	17.5	17.0	17.0	16.8	16.8
85°	11.2	11.0	11.4	11.4	11.2	10.6	11.0	10.8	10.3	10.5	10.5
87.5°	4.9	4.9	4.9	4.7	4.9	4.7	4.7	4.7	4.1	4.1	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: P243449

CATALOG NUMBER: S123RDR-H340D940-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	432.3	432.3	432.3	432.3
2.5°	409.1	408.7	408.2	407.6
5°	388.0	386.3	386.2	385.6
7.5°	368.2	367.5	366.2	367.7
10°	350.1	350.7	349.4	347.9
12.5°	331.3	330.2	328.1	329.2
15°	314.7	312.8	311.7	309.1
17.5°	297.3	295.8	295.8	294.1
20°	282.2	280.7	281.1	280.0
22.5°	269.5	268.4	266.7	266.9
25°	257.6	255.9	254.0	254.2
27.5°	244.3	242.8	242.4	241.1
30°	232.6	231.2	231.1	231.1
32.5°	221.2	220.6	219.7	219.1
35°	211.3	210.5	209.0	209.4
37.5°	199.0	198.2	198.0	197.8
40°	187.4	186.8	185.3	185.5
42.5°	175.8	174.9	174.0	173.6
45°	163.3	163.1	161.6	162.0
47.5°	151.4	151.0	150.2	149.3
50°	138.1	137.9	137.4	136.2
52.5°	125.2	124.7	123.6	122.4
55°	110.7	109.0	109.2	108.3
57.5°	98.7	98.0	96.5	95.9
60°	87.2	86.4	86.2	85.5
62.5°	77.5	76.7	76.1	76.1
65°	68.7	67.8	67.6	67.6
67.5°	59.0	58.0	57.9	57.5
70°	46.8	46.7	46.3	46.3
72.5°	40.3	40.1	40.3	39.6
75°	34.3	34.2	34.2	34.3
77.5°	28.6	28.6	28.4	28.4
80°	22.6	22.8	22.6	23.1
82.5°	17.0	16.6	16.8	16.4
85°	10.5	10.5	10.1	10.1
87.5°	4.1	4.1	4.1	4.1
90°	0.0	0.0	0.0	0.0

(END OF REPORT)