

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: P242736

Luminaire Tested: **S124RDR-S350D830-X4F0-XX-UDD-A-W**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P242736
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-31)
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S124RDR-S350D830-X4F0-XX-UDD-A-W
Description: DEFINE 4 REGRESSED DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER
STANDARD LIGHT ENGINE
Light Source: (92) 3000K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1291.0 lumens
Efficiency: N/A
Efficacy: 111.3 lumens/watt
Spacing Criteria (0/90/45): 1.27 / 1.22 / 1.39
Luminous Opening: Rectangular (W 3.88' x L: 0.31' x H: 0')
CIE Type: Direct

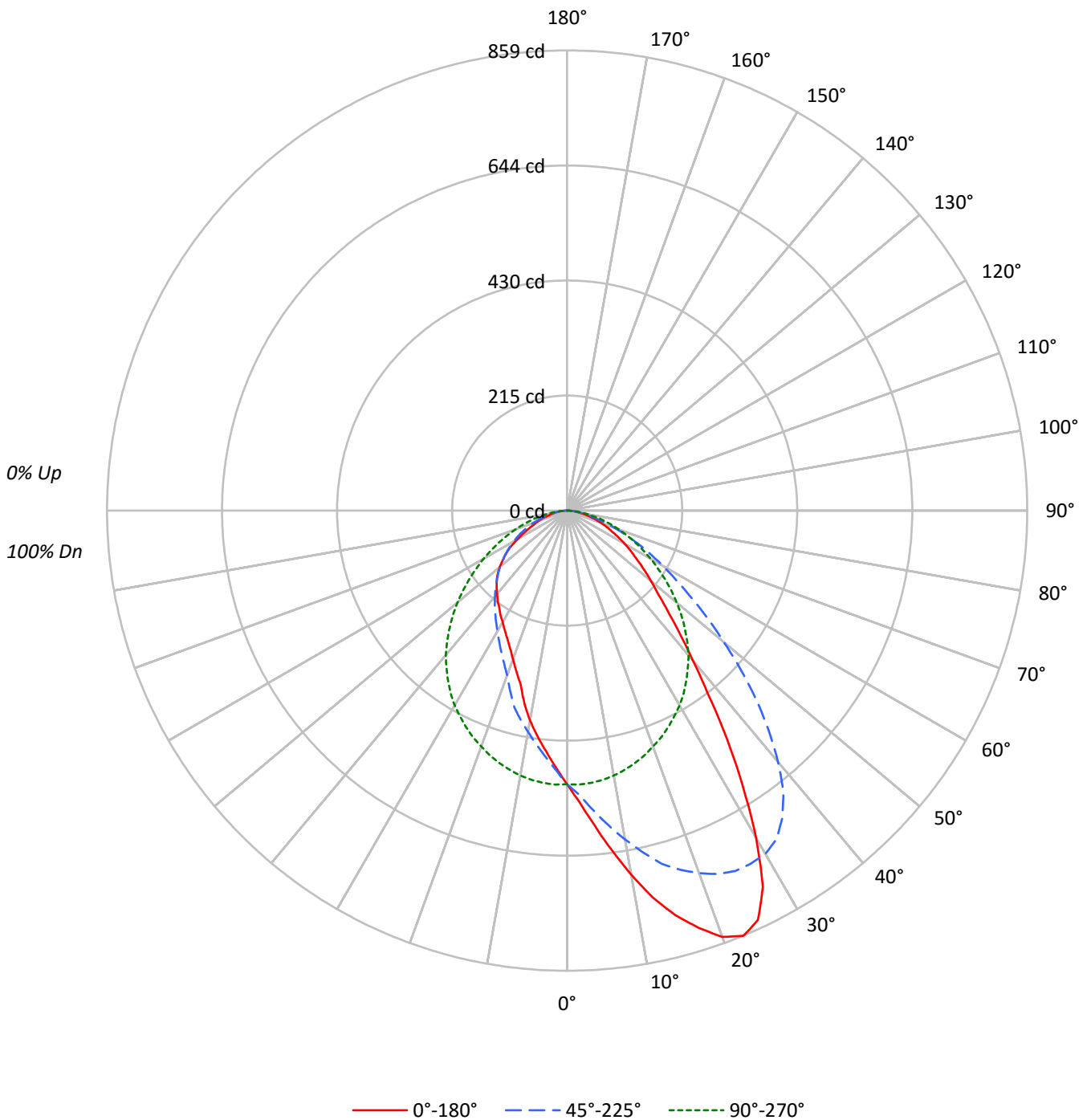
Input Watts (W): 11.6
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P242736

CATALOG NUMBER: S124RDR-S350D830-X4F0-XX-UDD-A-W

Luminous Intensity Polar Plot





TEST NUMBER: P242736

CATALOG NUMBER: S124RDR-S350D830-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	98	107	103	100	97	99	96	94	95	93	91	92	90	88	86
2	101	93	87	82	98	92	86	81	88	83	79	85	81	77	82	79	76	74
3	93	83	76	70	90	81	75	69	79	73	68	76	71	67	73	69	65	63
4	85	74	66	60	83	73	65	59	71	64	59	68	63	58	66	61	57	55
5	79	67	58	52	77	66	58	52	64	57	51	62	56	51	60	55	50	48
6	73	61	52	46	71	60	52	46	58	51	46	56	50	45	55	49	45	43
7	68	55	47	41	66	54	47	41	53	46	41	52	45	40	50	44	40	38
8	64	51	42	37	62	50	42	37	49	42	37	47	41	36	46	40	36	34
9	59	47	39	33	58	46	38	33	45	38	33	44	38	33	43	37	33	31
10	56	43	35	30	55	43	35	30	42	35	30	41	34	30	40	34	30	28

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	4540	4540	4540
5°	5265	4553	4024
10°	6229	4534	3592
15°	7195	4492	3087
20°	8011	4434	2791
25°	8270	4377	2591
30°	7240	4309	2471
35°	5636	4207	2398
40°	4226	4090	2359
45°	3336	3903	2338
50°	2817	3688	2271
55°	2455	3450	2149
60°	2210	3205	1902
65°	1948	2938	1636
70°	1754	2664	1476
75°	1470	2359	1257
80°	1244	2012	1177
85°	1050	1571	1050



TEST NUMBER: P242736

CATALOG NUMBER: S124RDR-S350D830-X4F0-XX-UDD-A-W

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	49.5	3.8
10°-20°	149.3	11.6
20°-30°	233.9	18.1
30°-40°	259.8	20.1
40°-50°	230.2	17.8
50°-60°	179.4	13.9
60°-70°	117.3	9.1
70°-80°	57.6	4.5
80°-90°	14.0	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°	432.7	33.5
0°-40°	692.5	53.6
0°-60°	1102.1	85.4
0°-90°	1291.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1291.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	511	511	511	511	511	
5°	590	562	510	462	451	59
15°	782	683	488	380	335	222
25°	843	742	446	291	264	377
35°	519	700	388	234	221	325
45°	265	499	310	186	186	209
55°	158	282	223	140	139	144
65°	93	145	140	91	78	93
75°	43	55	69	44	37	47
85°	10	11	15	11	10	12
90°	0	0	0	0	0	



TEST NUMBER: P242736

CATALOG NUMBER: S124RDR-S350D830-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	510.7	510.7	510.7	510.7	510.7	510.7	510.7	510.7	510.7	510.7	510.7
2.5°	545.7	547.6	545.7	545.5	543.4	542.8	542.0	539.3	534.4	531.5	532.1
5°	590.1	595.3	592.4	592.0	587.5	582.9	580.1	573.5	566.5	561.7	557.8
7.5°	639.5	642.6	640.6	638.3	630.5	628.0	621.2	613.4	601.7	592.8	584.8
10°	690.1	692.6	691.8	686.4	681.1	670.2	664.0	651.9	636.0	623.5	611.8
12.5°	739.9	742.6	733.8	735.4	724.1	716.1	705.4	689.3	670.4	653.3	637.9
15°	781.9	778.6	778.6	774.5	763.2	751.3	741.2	725.1	702.1	682.7	662.4
17.5°	816.5	817.9	816.3	805.8	797.6	785.4	767.3	749.0	729.0	703.1	682.9
20°	846.9	846.9	845.1	838.5	827.0	813.8	793.9	773.5	746.3	720.2	696.7
22.5°	859.3	860.1	857.9	852.7	842.6	829.9	813.6	792.8	764.6	734.4	703.9
25°	843.2	847.2	847.6	846.1	843.0	835.2	820.6	799.4	774.3	742.4	711.1
27.5°	791.4	796.5	798.6	803.1	811.6	814.6	812.8	798.6	774.3	742.8	711.8
30°	705.4	709.5	722.9	740.4	753.9	766.3	777.0	779.9	767.5	739.9	706.8
32.5°	609.9	615.9	629.2	648.4	673.3	696.3	723.7	738.3	741.0	727.2	697.1
35°	519.4	523.5	535.8	555.6	582.7	613.8	651.9	681.5	701.7	700.2	681.5
37.5°	432.5	438.3	450.8	467.1	493.8	533.6	569.6	609.3	645.5	663.2	653.7
40°	364.2	364.4	376.6	393.4	418.1	451.7	491.8	537.1	578.6	612.6	619.2
42.5°	310.3	310.3	317.3	335.8	351.9	382.9	420.8	465.7	516.1	556.6	576.8
45°	265.4	267.3	273.9	284.8	298.8	325.5	356.2	398.0	452.5	499.0	528.0
47.5°	230.0	233.3	237.3	247.1	258.7	277.4	303.5	342.6	387.9	439.5	479.6
50°	203.7	204.1	209.5	214.4	224.1	238.3	260.5	291.8	332.5	381.7	427.6
52.5°	181.1	180.9	183.5	190.1	197.5	207.8	224.7	252.5	287.5	330.3	378.0
55°	158.4	159.5	161.9	166.9	172.8	180.7	194.9	216.3	244.7	282.3	325.3
57.5°	141.2	141.8	144.0	145.9	151.7	157.4	168.9	184.4	209.3	240.7	282.9
60°	124.3	124.5	125.1	128.2	132.5	137.9	145.1	157.6	177.8	206.0	237.7
62.5°	107.8	108.2	109.3	111.3	114.4	117.7	125.3	134.8	150.6	173.7	201.4
65°	92.6	92.8	94.2	95.1	97.7	101.0	106.6	113.4	124.9	145.1	166.7
67.5°	79.8	79.8	79.8	81.1	83.1	85.4	89.1	94.9	104.1	117.1	137.2
70°	67.5	67.5	67.9	68.5	69.5	71.4	73.3	77.4	83.7	93.8	108.4
72.5°	56.0	56.2	56.6	56.6	57.0	58.4	59.7	61.9	66.3	73.3	84.4
75°	42.8	43.4	44.4	45.3	46.3	46.1	47.5	49.2	50.6	55.1	61.9
77.5°	33.7	33.3	33.3	34.2	34.4	34.6	35.6	37.0	38.3	40.7	43.2
80°	24.3	24.3	24.9	25.1	24.9	25.1	26.1	26.7	27.2	28.0	30.2
82.5°	16.9	17.3	16.9	17.1	17.3	17.5	18.3	18.3	18.7	18.9	19.5
85°	10.3	10.5	10.7	10.3	10.3	10.3	10.7	10.9	11.3	11.1	11.5
87.5°	4.5	4.3	4.5	4.5	4.7	4.5	4.7	5.1	4.7	4.9	4.9
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: P242736

CATALOG NUMBER: S124RDR-S350D830-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	510.7	510.7	510.7	510.7	510.7	510.7	510.7	510.7	510.7	510.7	510.7
2.5°	530.1	527.2	525.7	522.4	518.5	516.5	514.6	512.0	508.5	504.8	502.1
5°	552.9	548.0	541.8	534.4	527.8	521.4	515.9	510.3	503.9	497.3	490.8
7.5°	575.5	566.7	557.2	545.9	535.0	524.9	515.9	507.0	496.9	487.9	479.4
10°	599.4	586.2	571.6	556.2	540.8	527.4	514.2	502.3	489.1	477.4	467.5
12.5°	618.7	602.7	584.4	564.2	544.9	528.0	512.4	495.9	480.5	467.5	453.5
15°	640.6	619.4	595.7	572.7	548.6	526.6	506.2	488.1	471.0	453.1	440.6
17.5°	655.6	631.1	603.1	576.4	548.8	523.3	500.2	479.2	459.7	441.8	427.0
20°	668.7	641.0	609.1	577.6	545.7	517.9	492.6	468.7	448.4	428.6	413.2
22.5°	676.2	644.7	609.1	575.7	542.4	511.7	483.4	458.2	435.6	415.9	398.4
25°	676.6	643.6	608.0	570.2	534.0	502.1	473.3	446.3	421.6	401.9	383.8
27.5°	674.9	636.9	601.1	562.6	525.3	491.4	461.5	432.9	408.5	387.5	368.9
30°	670.0	628.4	589.3	549.0	511.1	478.8	446.9	419.8	394.0	372.0	353.3
32.5°	659.3	618.1	575.3	533.8	495.3	461.7	431.9	404.5	379.4	356.8	336.6
35°	644.5	602.7	557.0	514.6	477.0	442.4	414.0	387.7	363.6	339.5	318.5
37.5°	627.4	583.8	538.7	492.2	454.7	421.8	395.3	370.0	346.5	324.5	301.2
40°	601.1	562.2	515.2	469.2	430.5	399.0	374.9	352.5	328.8	307.0	283.8
42.5°	569.2	537.5	489.9	443.6	405.6	375.5	353.5	331.7	310.7	289.7	265.2
45°	532.9	507.8	463.4	418.9	380.5	350.4	329.8	310.5	291.6	271.4	248.6
47.5°	492.6	474.1	435.4	388.9	352.9	325.3	305.6	289.5	272.8	252.5	231.9
50°	450.2	439.3	402.3	360.7	326.8	301.9	281.5	266.7	253.3	234.0	216.1
52.5°	405.0	400.4	370.6	331.3	298.8	274.5	257.8	244.9	231.3	216.1	199.6
55°	358.9	361.9	335.4	301.0	270.2	249.6	233.8	222.6	211.1	197.5	184.6
57.5°	310.9	322.6	302.9	271.8	242.0	222.6	210.5	200.6	191.0	179.4	167.7
60°	268.7	278.2	268.1	241.6	216.3	198.6	187.5	180.3	170.6	160.3	151.9
62.5°	227.6	237.9	232.9	212.8	189.7	175.1	165.6	159.1	152.5	143.8	135.0
65°	194.5	201.0	198.2	183.3	166.7	153.7	144.7	139.7	133.1	126.5	118.7
67.5°	155.6	168.5	166.5	158.2	142.2	131.9	125.5	121.0	114.8	109.9	104.3
70°	122.4	134.2	134.0	127.6	119.8	110.3	106.2	102.5	97.1	92.4	88.1
72.5°	94.7	105.1	107.2	102.7	97.9	91.4	87.5	85.2	80.0	77.2	73.9
75°	70.2	78.0	80.0	80.0	77.6	73.9	70.4	68.7	65.0	62.1	60.1
77.5°	49.4	54.7	57.8	58.4	58.6	57.2	53.9	52.7	49.8	48.8	46.5
80°	32.5	35.8	39.5	40.7	41.8	41.4	40.1	39.3	36.6	35.6	34.8
82.5°	20.0	21.4	24.3	27.4	26.7	28.2	27.2	26.5	24.7	24.5	23.7
85°	11.7	11.9	12.3	14.2	15.2	15.6	15.8	15.4	14.8	14.8	13.4
87.5°	4.9	4.7	5.1	5.1	5.3	6.2	6.8	7.0	6.4	5.8	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: P242736

CATALOG NUMBER: S124RDR-S350D830-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	510.7	510.7	510.7	510.7	510.7	510.7	510.7	510.7	510.7	510.7	510.7
2.5°	499.2	497.1	494.5	491.4	487.7	484.4	482.9	484.2	484.8	483.1	482.9
5°	486.2	481.1	477.0	470.8	465.9	461.7	458.9	457.6	458.0	454.7	453.9
7.5°	471.8	466.3	459.5	452.5	445.9	440.1	437.1	435.6	432.1	430.7	428.4
10°	458.0	449.8	443.2	434.6	426.8	419.6	416.1	413.2	409.7	408.0	404.5
12.5°	443.8	434.0	426.6	417.5	409.5	400.4	397.1	391.2	385.2	381.3	376.6
15°	430.7	419.2	410.3	399.6	390.1	380.3	371.4	361.5	357.8	350.0	345.5
17.5°	415.0	403.1	393.2	379.4	365.2	353.3	343.4	333.1	327.6	322.2	320.0
20°	399.6	388.9	373.7	357.0	340.8	327.2	319.6	313.4	307.2	303.7	301.2
22.5°	385.0	370.6	352.3	334.0	317.7	307.8	301.7	295.3	290.5	287.3	283.8
25°	368.3	350.4	331.7	311.1	300.0	290.8	283.8	278.6	275.5	271.2	269.6
27.5°	352.1	330.5	309.3	295.3	283.8	274.9	268.5	264.8	260.7	257.8	255.6
30°	332.7	310.7	292.2	279.0	267.3	260.3	255.4	250.8	247.7	245.5	243.8
32.5°	313.6	291.6	276.8	262.4	253.7	246.9	241.6	238.5	236.2	233.1	232.3
35°	295.3	275.7	262.1	249.4	239.9	233.8	229.6	226.1	224.1	223.3	222.6
37.5°	277.4	261.1	246.1	235.8	227.0	222.2	216.9	215.2	213.8	211.9	212.8
40°	260.5	245.5	232.5	221.4	214.6	209.3	206.4	204.3	203.1	203.1	203.1
42.5°	245.9	231.3	218.7	209.1	202.3	197.9	194.7	193.0	192.8	192.6	193.8
45°	230.7	217.1	204.3	196.1	190.3	185.8	184.0	182.5	182.5	183.3	183.5
47.5°	215.4	202.7	192.4	182.9	177.6	174.7	173.1	172.2	172.2	173.3	174.1
50°	201.7	189.1	179.0	170.8	165.8	163.2	161.7	161.3	161.7	161.7	163.2
52.5°	186.6	175.7	165.8	159.3	153.5	151.0	150.4	149.8	150.0	150.8	151.2
55°	172.0	161.9	152.5	145.9	141.8	140.1	138.3	138.5	138.1	138.5	138.5
57.5°	157.2	148.4	139.1	133.7	130.3	127.8	125.7	126.3	125.7	125.7	125.5
60°	143.0	133.1	126.1	121.4	117.3	115.2	113.4	113.8	113.2	112.8	111.9
62.5°	127.6	119.8	113.2	108.6	105.6	103.1	101.2	100.6	99.0	97.3	95.3
65°	112.8	106.0	100.0	95.7	92.6	90.7	89.3	88.1	85.0	81.7	80.0
67.5°	98.2	93.2	87.5	83.7	81.3	78.8	76.1	73.9	70.8	68.7	67.7
70°	84.2	79.4	74.7	71.2	68.5	66.3	63.2	61.7	59.7	58.8	57.8
72.5°	70.8	66.5	62.1	59.1	56.2	54.5	52.3	50.8	50.2	50.0	49.0
75°	57.2	53.7	50.4	47.5	45.3	44.0	43.0	42.0	41.6	39.7	38.7
77.5°	44.0	41.6	39.5	37.2	35.8	35.0	32.7	31.3	30.5	29.4	29.2
80°	32.5	30.9	28.8	27.6	25.3	24.5	23.7	23.5	23.3	23.0	22.8
82.5°	22.4	20.8	18.7	18.1	17.9	17.5	17.1	16.9	16.7	16.9	16.9
85°	12.3	11.5	11.5	11.3	11.1	10.9	10.7	10.7	10.5	10.7	10.5
87.5°	5.1	4.9	4.9	4.5	4.7	4.7	4.5	4.5	4.7	4.3	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: P242736

CATALOG NUMBER: S124RDR-S350D830-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	510.7	510.7	510.7	510.7
2.5°	481.7	482.1	480.7	480.3
5°	452.3	451.9	450.8	451.0
7.5°	426.8	425.3	426.4	424.7
10°	403.7	401.5	399.6	398.0
12.5°	372.2	370.4	367.7	368.7
15°	342.8	339.7	334.8	335.4
17.5°	316.5	316.9	314.0	314.8
20°	296.9	295.5	295.7	295.1
22.5°	283.3	281.5	279.6	278.2
25°	267.7	266.5	264.6	264.2
27.5°	253.9	253.7	252.9	251.9
30°	242.2	241.8	241.4	240.7
32.5°	231.7	231.5	231.1	231.3
35°	221.8	221.6	221.2	221.0
37.5°	212.6	213.2	212.8	212.8
40°	202.9	203.1	203.5	203.3
42.5°	194.9	194.9	195.5	194.7
45°	185.0	186.2	186.0	186.0
47.5°	174.5	175.9	176.1	176.1
50°	164.2	163.8	164.4	164.2
52.5°	151.7	151.9	151.7	151.4
55°	138.7	138.9	138.5	138.7
57.5°	124.9	124.1	124.7	124.3
60°	109.9	108.2	107.8	107.0
62.5°	93.0	92.0	90.3	91.4
65°	78.4	77.6	77.0	77.8
67.5°	66.7	66.3	66.3	65.8
70°	57.8	57.2	57.2	56.8
72.5°	48.8	48.1	48.4	48.1
75°	37.4	36.4	36.4	36.6
77.5°	29.2	29.0	29.4	28.8
80°	22.8	22.6	22.4	23.0
82.5°	16.5	16.5	16.5	17.3
85°	10.7	10.3	10.7	10.3
87.5°	4.7	4.5	4.3	4.5
90°	0.0	0.0	0.0	0.0

(END OF REPORT)