

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: P243503

Luminaire Tested: **S124DR-H350D840-X4F0-XX-UDD-A-W**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P243503
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-60)
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S124DR-H350D840-X4F0-XX-UDD-A-W
Description: DEFINE 4 DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER.
HIGH PERFORMANCE LIGHT ENGINE
Light Source: (184) 4000K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1485.0 lumens
Efficiency: N/A
Efficacy: 132.6 lumens/watt
Spacing Criteria (0/90/45): 1.35 / 1.22 / 1.45
Luminous Opening: Rectangular (W 3.88' x L: 0.31' x H: 0')
CIE Type: Direct

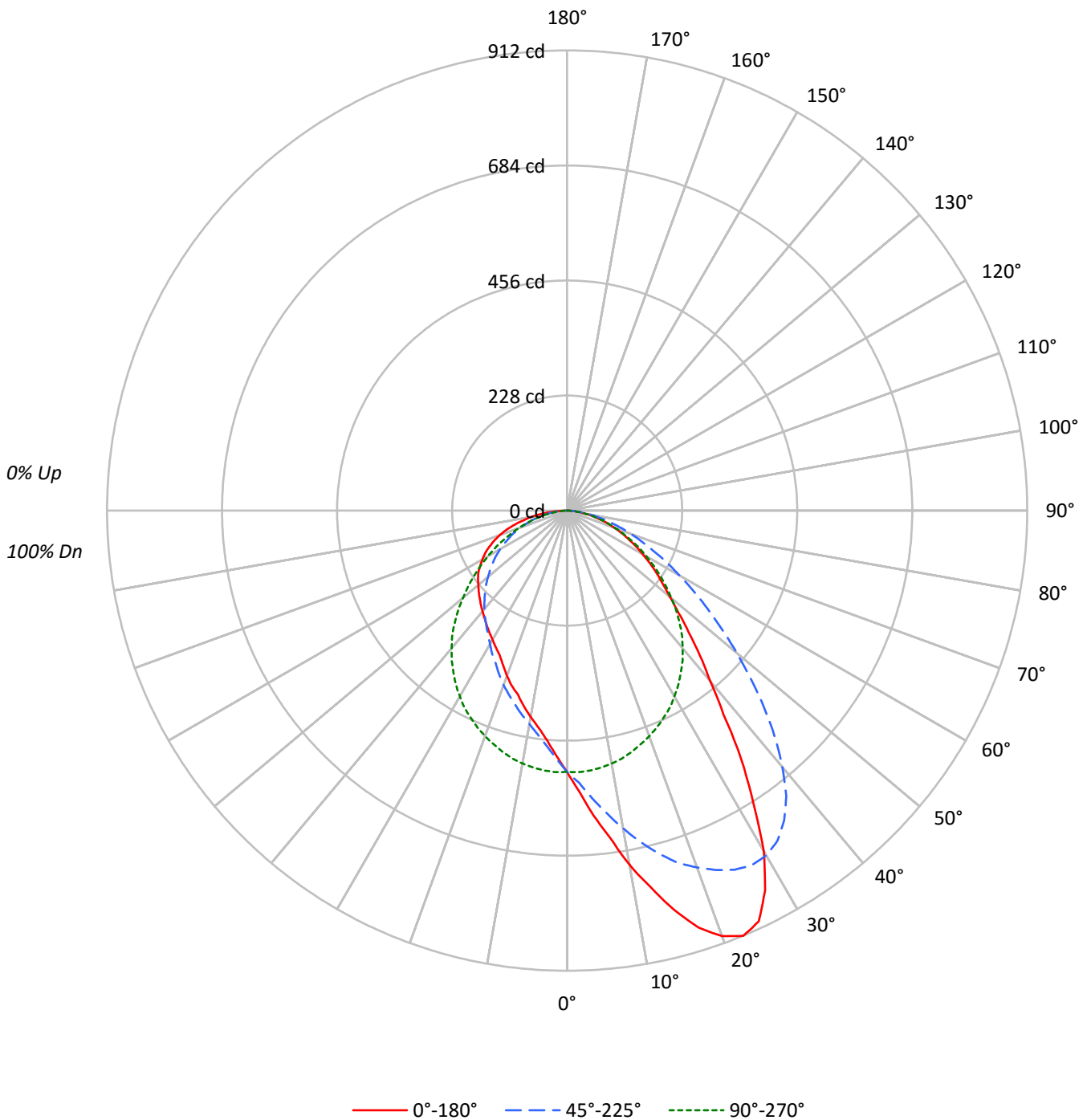
Input Watts (W): 11.2
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P243503

CATALOG NUMBER: S124DR-H350D840-X4F0-XX-UDD-A-W

Luminous Intensity Polar Plot





TEST NUMBER: P243503

CATALOG NUMBER: S124DR-H350D840-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	109	105	101	97	107	103	99	96	98	95	93	94	92	90	91	89	87	85
2	100	92	86	80	97	90	84	79	87	82	77	83	79	76	80	77	74	72
3	92	81	74	67	89	80	73	67	77	71	66	74	69	64	72	67	63	61
4	84	73	64	58	82	71	63	57	69	62	56	66	60	56	64	59	55	53
5	78	65	56	50	75	64	56	50	62	55	49	60	54	49	58	53	48	46
6	72	59	50	44	70	58	50	44	56	49	43	54	48	43	53	47	43	41
7	67	53	45	39	65	53	45	39	51	44	38	50	43	38	48	42	38	36
8	62	49	41	35	61	48	40	35	47	40	35	46	39	34	44	39	34	32
9	58	45	37	31	57	44	37	31	43	36	31	42	36	31	41	35	31	29
10	54	41	34	29	53	41	34	28	40	33	28	39	33	28	38	32	28	26

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	4604	4604	4604
5°	5417	4615	4074
10°	6437	4594	3751
15°	7540	4553	3474
20°	8490	4501	3296
25°	8811	4441	3101
30°	8002	4365	3033
35°	6528	4261	3015
40°	5111	4129	3026
45°	4278	3962	3082
50°	3672	3730	3175
55°	3355	3479	3329
60°	3074	3221	3449
65°	2818	2947	3584
70°	2594	2659	3690
75°	2308	2339	3689
80°	1925	1914	3681
85°	1469	1448	3447



TEST NUMBER: P243503

CATALOG NUMBER: S124DR-H350D840-X4F0-XX-UDD-A-W

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	50.4	3.4
10°-20°	156.1	10.5
20°-30°	250.8	16.9
30°-40°	286.7	19.3
40°-50°	263.9	17.8
50°-60°	215.9	14.5
60°-70°	153.9	10.4
70°-80°	84.5	5.7
80°-90°	22.7	1.5
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°	457.3	30.8
0°-40°	744.1	50.1
0°-60°	1223.9	82.4
0°-90°	1485.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1485.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	518	518	518	518	518	
5°	607	572	517	468	457	61
15°	819	704	495	398	378	234
25°	898	785	453	335	316	403
35°	602	750	393	279	278	374
45°	340	552	315	230	245	266
55°	216	340	224	180	215	194
65°	134	188	140	126	170	134
75°	67	87	68	70	107	72
85°	14	18	14	19	34	17
90°	0	0	0	0	0	



TEST NUMBER: P243503

CATALOG NUMBER: S124DR-H350D840-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	517.9	517.9	517.9	517.9	517.9	517.9	517.9	517.9	517.9	517.9	517.9
2.5°	557.6	555.9	555.1	554.0	553.8	552.8	550.6	547.7	543.9	539.9	539.9
5°	607.1	606.7	603.5	603.7	599.7	595.2	591.9	587.6	579.4	572.4	567.6
7.5°	654.4	658.9	657.8	654.4	648.5	642.2	635.4	629.5	614.3	605.8	598.8
10°	713.2	714.9	711.9	707.1	701.8	689.5	680.6	670.7	654.2	639.8	627.2
12.5°	764.8	768.8	763.5	758.9	746.4	737.3	728.4	708.5	691.2	673.0	654.6
15°	819.3	815.1	817.8	806.4	797.5	788.9	766.3	746.0	726.3	703.9	684.7
17.5°	866.7	866.7	861.6	854.2	844.9	828.6	806.0	783.6	761.8	732.4	705.2
20°	897.5	899.8	893.9	886.1	874.9	858.0	840.0	815.7	786.8	752.5	721.7
22.5°	912.3	912.7	910.6	904.1	895.0	880.6	862.2	838.5	807.9	771.1	738.8
25°	898.4	900.7	900.1	899.6	895.0	886.7	871.9	850.0	822.1	785.3	750.4
27.5°	849.3	855.0	859.9	862.0	867.1	867.5	863.1	849.8	826.9	792.3	753.4
30°	779.6	776.6	789.7	796.3	813.6	824.0	831.4	830.5	817.4	789.3	752.3
32.5°	686.6	694.6	703.9	719.3	739.8	763.9	782.1	795.6	794.4	776.0	745.1
35°	601.6	601.6	613.4	632.5	654.2	683.2	713.6	738.8	754.2	749.6	727.8
37.5°	509.4	515.1	528.7	543.5	570.1	598.0	638.2	671.6	703.9	713.6	702.4
40°	440.5	443.1	457.4	469.9	497.2	526.1	559.7	602.4	639.6	663.5	665.0
42.5°	389.4	389.2	395.1	406.3	428.3	454.0	490.4	532.3	575.8	609.6	625.5
45°	340.3	339.9	346.0	357.4	373.1	395.9	427.4	469.3	513.9	552.3	577.3
47.5°	298.9	302.7	305.4	314.3	327.2	346.7	373.7	407.1	450.0	493.2	526.8
50°	265.5	267.2	273.1	277.3	291.7	305.2	327.0	357.0	393.8	439.0	475.4
52.5°	238.9	239.9	243.5	249.0	257.3	269.1	286.4	314.1	347.3	386.6	424.2
55°	216.5	215.8	218.1	221.7	228.9	238.9	251.5	272.7	301.6	339.5	374.1
57.5°	194.5	194.5	196.6	199.1	203.1	211.4	223.9	240.6	263.8	297.4	328.1
60°	172.9	174.4	175.2	177.8	181.2	187.3	196.6	209.7	229.3	256.8	287.3
62.5°	153.9	153.9	155.4	156.2	160.6	165.1	171.9	183.1	198.5	223.0	246.7
65°	134.0	135.3	135.3	137.0	140.8	144.2	149.4	157.9	170.6	188.1	210.3
67.5°	117.1	117.1	118.2	119.0	121.1	123.4	128.1	134.6	145.4	159.4	179.5
70°	99.8	100.4	100.0	101.0	102.3	104.6	108.0	113.5	121.3	133.4	148.2
72.5°	84.1	83.3	83.7	84.8	85.4	86.9	89.0	93.2	99.6	109.3	120.1
75°	67.2	66.8	68.3	67.9	68.9	70.2	72.1	75.3	80.1	86.9	95.1
77.5°	52.4	51.8	52.4	52.8	53.3	54.3	55.8	57.7	61.1	65.5	72.9
80°	37.6	37.4	37.8	38.3	38.5	40.2	40.6	42.5	44.0	47.3	50.9
82.5°	24.9	25.4	25.6	26.0	25.8	26.6	27.1	28.3	29.6	31.3	34.0
85°	14.4	13.7	14.4	14.4	14.4	15.4	15.2	16.1	16.9	17.8	19.7
87.5°	5.1	5.1	5.3	5.5	5.5	6.1	5.9	6.3	7.2	7.2	7.8
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: P243503

CATALOG NUMBER: S124DR-H350D840-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	517.9	517.9	517.9	517.9	517.9	517.9	517.9	517.9	517.9	517.9	517.9
2.5°	538.6	536.3	534.6	529.7	526.8	524.0	521.5	518.7	515.8	512.0	509.6
5°	562.5	557.4	550.0	543.2	535.6	528.9	523.4	517.2	510.5	503.5	497.4
7.5°	588.9	579.4	568.0	555.5	543.7	533.7	523.4	513.7	504.1	494.8	486.2
10°	615.3	598.8	583.8	566.7	551.1	536.1	522.5	509.0	497.2	484.9	473.9
12.5°	639.8	620.0	598.0	576.6	555.7	536.3	519.6	503.1	487.9	473.3	460.4
15°	658.7	633.7	607.7	582.4	558.3	538.0	516.2	494.8	479.0	461.2	447.1
17.5°	680.2	650.6	624.8	594.4	564.4	531.6	508.6	485.3	466.3	449.2	435.0
20°	694.6	662.0	624.8	590.4	559.5	530.1	502.5	475.8	455.7	435.9	418.7
22.5°	706.0	672.4	631.4	595.5	556.8	521.3	491.2	465.0	441.4	422.6	406.3
25°	711.9	670.9	631.8	588.3	549.6	515.6	481.7	452.8	428.9	408.0	394.0
27.5°	712.1	670.1	623.8	580.7	539.2	502.5	469.1	440.5	413.7	393.6	376.9
30°	711.1	664.6	615.8	568.6	527.4	489.8	454.9	425.3	400.8	379.4	363.6
32.5°	704.3	657.0	603.7	554.2	509.4	471.6	439.5	410.1	383.9	364.4	347.7
35°	689.1	640.3	586.8	535.9	493.4	454.0	422.3	392.7	369.3	348.1	331.0
37.5°	669.7	624.0	569.7	516.4	470.5	433.3	403.5	375.6	351.1	331.7	314.5
40°	645.1	602.2	548.7	493.4	447.5	409.9	381.8	355.8	334.8	315.0	298.3
42.5°	611.5	578.5	523.6	469.7	421.7	386.2	358.9	337.4	315.8	297.8	281.1
45°	575.6	545.6	496.7	443.3	397.2	360.6	335.0	315.2	296.8	278.6	265.1
47.5°	535.9	511.3	466.1	413.9	368.4	336.1	310.9	293.2	276.3	262.3	248.8
50°	488.5	475.6	433.3	386.0	341.8	308.6	287.9	269.7	257.3	243.7	231.0
52.5°	444.5	434.2	399.7	353.2	313.1	283.9	261.7	247.3	235.1	225.1	215.0
55°	396.8	391.5	362.3	322.1	285.8	256.6	237.6	224.5	214.8	205.5	198.1
57.5°	352.8	352.4	326.6	292.1	256.6	231.9	213.7	202.9	194.5	187.9	181.6
60°	307.8	311.4	290.2	258.7	230.6	207.4	190.9	181.2	175.4	169.3	164.0
62.5°	267.0	272.5	253.2	228.5	200.8	181.8	169.1	161.7	155.4	150.9	146.9
65°	227.9	234.8	219.2	197.0	175.9	157.9	147.1	140.1	135.3	132.7	130.0
67.5°	193.4	197.2	186.6	169.3	151.8	136.1	127.3	121.1	116.9	115.8	112.7
70°	159.0	163.4	156.0	140.1	126.6	115.2	107.2	102.3	99.8	98.3	96.2
72.5°	131.3	133.2	125.8	114.8	104.0	94.5	88.6	85.0	82.0	81.4	80.3
75°	102.7	105.5	99.6	91.1	82.2	75.5	71.0	68.1	66.6	65.5	65.5
77.5°	77.6	79.9	76.5	69.1	63.8	57.9	55.0	52.2	51.6	50.5	50.9
80°	55.2	56.2	54.3	49.3	44.6	41.4	38.9	37.4	37.2	36.4	37.2
82.5°	36.6	36.8	34.7	32.3	28.7	27.1	25.4	24.7	24.5	24.5	24.1
85°	20.3	20.7	19.2	17.8	16.5	15.0	14.6	14.2	13.7	14.4	14.8
87.5°	7.8	8.0	7.8	7.2	6.8	6.3	6.1	6.6	5.9	6.3	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: P243503

CATALOG NUMBER: S124DR-H350D840-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	517.9	517.9	517.9	517.9	517.9	517.9	517.9	517.9	517.9	517.9	517.9
2.5°	506.0	504.4	501.8	497.6	494.6	491.5	490.2	490.6	489.3	487.7	488.1
5°	492.7	487.9	483.6	477.7	472.2	467.6	466.1	464.2	462.5	461.4	460.4
7.5°	478.6	471.8	465.5	459.5	453.2	447.3	445.0	443.3	442.4	439.5	438.2
10°	465.0	457.2	449.6	442.6	436.1	429.5	427.2	425.1	422.1	420.9	419.4
12.5°	450.7	442.8	434.6	426.1	419.6	414.3	410.3	408.8	405.9	404.6	403.7
15°	436.7	427.2	420.6	414.1	404.2	398.2	396.6	391.3	389.6	387.0	385.3
17.5°	422.8	413.9	404.2	396.6	390.4	383.0	379.0	376.7	373.5	371.2	368.0
20°	409.0	398.7	391.1	381.5	374.8	368.0	362.9	360.8	358.1	354.9	350.5
22.5°	395.7	384.3	376.9	368.0	359.6	351.7	347.5	344.6	339.1	338.4	334.4
25°	380.1	369.9	360.2	350.9	342.6	334.8	332.1	327.4	325.5	321.7	321.1
27.5°	365.3	354.5	343.9	333.8	326.6	321.1	316.2	313.3	311.4	308.4	308.6
30°	349.8	338.0	328.1	318.8	310.9	305.7	302.5	301.0	298.3	297.8	296.4
32.5°	333.3	322.6	312.2	304.0	295.9	291.3	289.8	288.3	286.6	286.8	286.4
35°	316.9	307.3	296.4	288.7	282.2	279.4	277.1	276.7	276.1	276.5	276.5
37.5°	300.8	290.4	281.3	274.4	270.6	266.8	265.7	265.5	265.7	266.1	267.2
40°	285.2	275.6	266.8	261.1	256.8	255.1	253.7	254.3	255.1	256.6	257.9
42.5°	269.5	260.4	253.0	247.3	243.3	242.5	242.7	243.9	244.1	246.3	248.6
45°	253.0	245.2	238.2	233.8	231.3	230.2	230.6	231.9	233.4	236.3	239.3
47.5°	237.8	230.8	224.7	220.3	218.4	217.9	218.8	220.5	223.9	226.8	230.2
50°	222.4	216.0	210.3	206.3	206.1	204.6	206.5	208.6	212.6	216.7	221.7
52.5°	207.2	201.0	196.2	193.0	192.1	192.1	194.5	198.3	201.9	207.2	211.8
55°	191.3	185.8	181.2	180.1	178.8	179.5	182.0	185.8	190.9	196.8	201.9
57.5°	175.0	170.4	167.0	165.5	164.9	167.0	170.0	174.0	180.5	186.4	191.9
60°	159.6	155.6	152.0	151.6	151.1	153.9	157.5	161.7	168.3	174.2	180.9
62.5°	143.1	139.9	137.6	137.0	137.0	139.7	143.7	149.2	155.4	161.7	168.9
65°	126.4	123.7	123.0	122.2	124.1	125.8	129.8	135.1	141.6	148.6	156.2
67.5°	111.0	109.3	108.0	108.0	109.5	112.7	116.3	121.5	128.3	135.7	142.5
70°	95.5	93.9	92.8	93.9	94.7	98.5	102.3	107.4	113.7	120.9	128.1
72.5°	79.5	79.7	79.9	79.7	80.5	84.1	87.9	92.8	98.9	105.9	112.5
75°	65.3	64.3	64.5	64.9	67.6	69.5	73.3	78.0	84.6	90.9	96.4
77.5°	50.7	50.3	51.4	51.4	53.9	56.2	59.4	64.0	69.8	75.5	79.9
80°	37.2	37.4	38.3	38.5	40.6	43.1	46.5	49.7	54.7	58.8	63.0
82.5°	25.2	25.6	26.6	28.1	29.0	30.4	33.4	36.8	40.4	44.6	47.1
85°	14.6	15.2	16.1	17.1	18.0	19.4	21.6	24.3	26.8	29.2	31.3
87.5°	7.2	7.2	7.8	8.2	8.9	9.7	11.2	12.3	14.0	15.6	16.5
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: P243503

CATALOG NUMBER: S124DR-H350D840-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	517.9	517.9	517.9	517.9
2.5°	487.2	487.0	486.2	486.6
5°	459.8	457.6	457.4	456.6
7.5°	436.1	435.4	435.4	433.8
10°	417.9	416.0	416.4	415.6
12.5°	400.6	399.5	398.2	397.0
15°	381.1	381.1	381.1	377.5
17.5°	365.9	365.7	364.6	364.4
20°	350.0	349.2	346.5	348.4
22.5°	334.0	333.3	331.0	331.4
25°	319.0	318.3	317.9	316.2
27.5°	306.1	306.3	306.7	305.7
30°	296.4	295.7	296.6	295.5
32.5°	287.3	287.3	286.4	286.6
35°	276.9	277.8	278.0	277.8
37.5°	267.8	268.9	269.7	268.9
40°	259.4	260.2	261.1	260.8
42.5°	250.5	252.0	252.6	253.2
45°	242.0	243.9	245.0	245.2
47.5°	233.4	235.7	237.8	237.6
50°	224.9	227.9	229.8	229.6
52.5°	216.5	219.4	221.7	222.8
55°	206.9	210.7	212.9	214.8
57.5°	197.4	201.7	203.8	204.6
60°	186.9	190.7	193.4	194.0
62.5°	175.0	179.0	182.6	183.5
65°	162.8	167.2	170.0	170.4
67.5°	148.6	152.8	155.6	156.8
70°	134.0	137.2	140.1	142.0
72.5°	117.7	121.5	124.3	125.6
75°	100.8	105.1	106.5	107.4
77.5°	83.3	85.8	88.1	88.4
80°	65.7	68.9	69.8	71.9
82.5°	48.4	51.4	50.7	51.6
85°	31.9	33.0	33.6	33.8
87.5°	16.9	17.5	18.0	18.2
90°	0.0	0.0	0.0	0.0

(END OF REPORT)