

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: P243601

Luminaire Tested: **S124RDR-H350D835-X4F0-XX-UDD-A-W**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P243601
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-H350D835-X4F0-XX-UDD-A-W
Description: DEFINE 4 REGRESSED DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER.
HIGH PERFORMANCE LIGHT ENGINE
Light Source: (184) 3500K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1387.3 lumens
Efficiency: N/A
Efficacy: 123.9 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

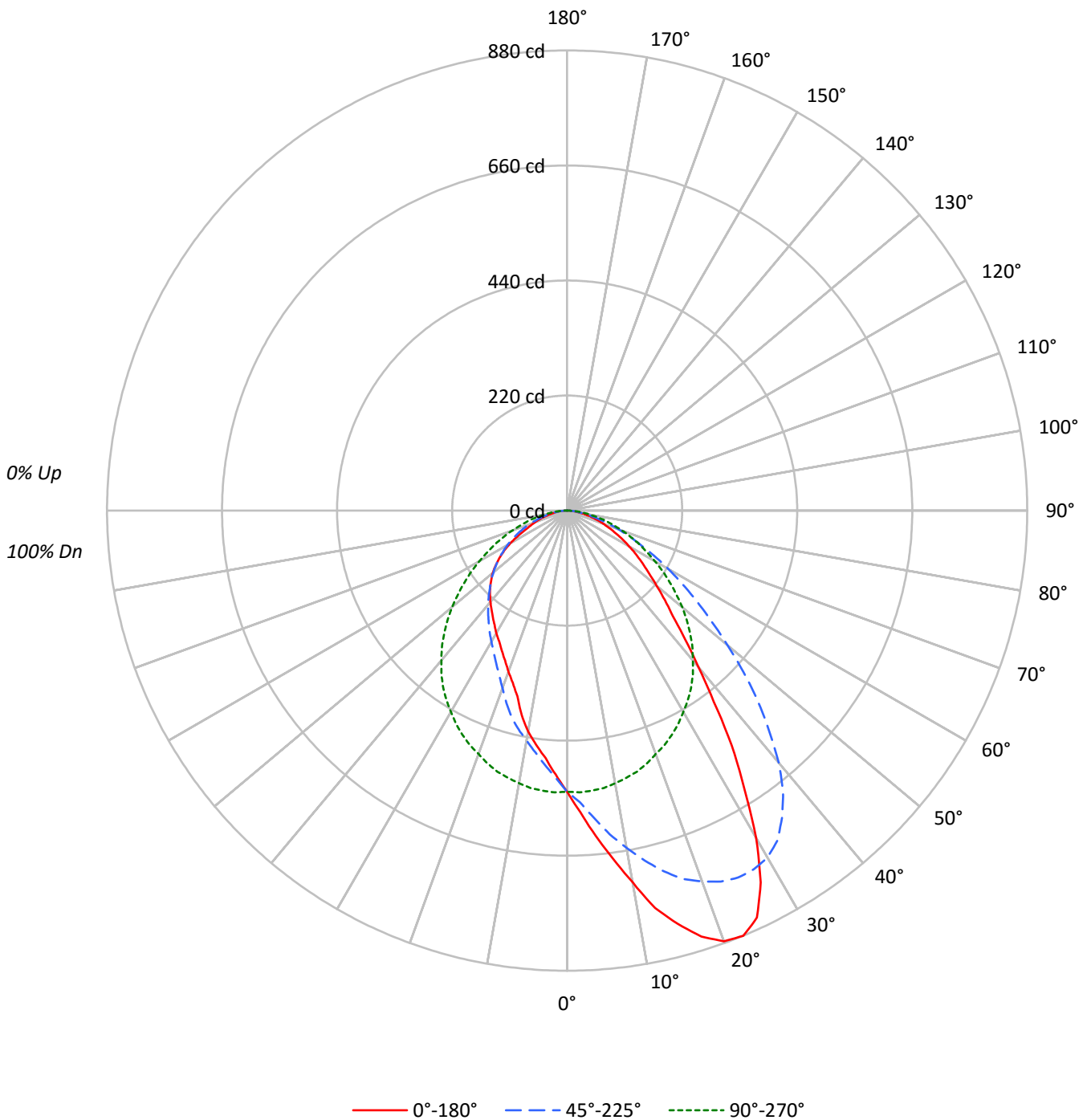
Input Watts (W): 11.2
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P243601

CATALOG NUMBER: S124RDR-H350D835-X4F0-XX-UDD-A-W

Luminous Intensity Polar Plot





TEST NUMBER: P243601

CATALOG NUMBER: S124RDR-H350D835-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	50	30	10	0	
RCR																						
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100				100
1	110	105	102	98	107	103	100	97	99	96	93	95	93	91	92	90	88	86				86
2	101	93	87	82	98	91	86	81	88	83	79	85	81	77	82	78	75	73				73
3	92	83	75	69	90	81	74	68	78	72	67	76	70	66	73	69	65	63				63
4	85	74	66	59	83	73	65	59	70	63	58	68	62	57	66	61	57	55				55
5	79	66	58	52	77	65	57	51	63	56	51	61	55	50	60	54	50	48				48
6	73	60	52	46	71	59	51	45	58	50	45	56	50	45	54	49	44	42				42
7	68	55	46	41	66	54	46	40	53	45	40	51	45	40	50	44	40	38				38
8	63	50	42	36	62	50	42	36	48	41	36	47	41	36	46	40	36	34				34
9	59	46	38	33	58	46	38	33	45	38	33	43	37	33	42	37	32	31				31
10	56	43	35	30	54	42	35	30	41	35	30	40	34	30	39	34	30	28				28

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	4778	4778	4778
5°	5566	4798	4236
10°	6518	4778	3873
15°	7531	4754	3383
20°	8292	4686	3101
25°	8425	4644	2899
30°	7417	4561	2781
35°	5951	4484	2689
40°	4528	4340	2648
45°	3594	4181	2616
50°	3085	3974	2571
55°	2724	3718	2445
60°	2441	3449	2240
65°	2147	3186	1885
70°	1915	2895	1697
75°	1669	2631	1511
80°	1413	2263	1392
85°	1234	1938	1407



TEST NUMBER: P243601

CATALOG NUMBER: S124RDR-H350D835-X4F0-XX-UDD-A-W

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	52.2	3.8
10°-20°	158.2	11.4
20°-30°	246.8	17.8
30°-40°	275.3	19.8
40°-50°	247.4	17.8
50°-60°	195.5	14.1
60°-70°	129.9	9.4
70°-80°	65.1	4.7
80°-90°	17.0	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°	457.2	33.0
0°-40°	732.4	52.8
0°-60°	1175.4	84.7
0°-90°	1387.3	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1387.3	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	538	538	538	538	538	
5°	624	590	538	488	475	62
15°	818	714	517	409	368	233
25°	859	774	474	322	296	384
35°	548	716	413	261	248	341
45°	286	516	333	209	208	227
55°	176	303	240	158	158	158
65°	102	155	152	104	90	102
75°	49	62	77	51	44	52
85°	12	13	19	14	14	14
90°	0	0	0	0	0	



TEST NUMBER: P243601

CATALOG NUMBER: S124RDR-H350D835-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	537.5	537.5	537.5	537.5	537.5	537.5	537.5	537.5	537.5	537.5	537.5
2.5°	577.3	575.2	575.0	572.3	572.1	569.3	568.5	566.2	561.6	558.0	558.2
5°	623.8	622.1	621.9	619.2	618.3	615.0	609.7	603.5	596.1	590.1	586.1
7.5°	671.5	674.4	671.3	671.3	665.2	661.2	651.0	645.7	633.2	624.4	615.2
10°	722.1	724.9	723.6	721.1	713.1	705.0	694.3	684.0	668.8	654.9	645.7
12.5°	778.7	770.5	775.7	768.0	761.5	748.5	738.3	717.7	705.6	685.5	667.5
15°	818.4	815.3	815.1	809.8	802.7	788.5	777.4	756.0	735.3	714.2	693.9
17.5°	854.0	854.4	851.5	843.1	833.9	820.1	805.0	786.0	762.3	738.9	714.8
20°	876.6	876.8	874.7	870.3	860.3	847.7	832.2	807.3	780.5	754.6	730.5
22.5°	880.0	880.6	880.0	877.2	870.3	860.1	845.8	824.7	797.7	768.0	739.3
25°	859.0	861.1	861.3	865.1	861.5	857.6	847.1	829.3	804.4	774.3	743.1
27.5°	801.7	807.5	813.0	819.7	825.7	831.2	832.0	822.6	801.3	773.2	743.5
30°	722.6	729.5	740.3	747.5	766.3	778.2	794.4	797.9	787.7	766.1	737.4
32.5°	630.5	637.8	642.0	665.4	692.4	711.9	738.7	754.6	758.6	748.3	724.9
35°	548.4	549.7	552.8	579.4	606.2	635.7	669.0	696.6	715.4	716.5	705.0
37.5°	460.5	462.0	474.3	494.6	517.8	550.3	588.6	627.9	662.5	678.4	675.0
40°	390.2	389.7	402.9	420.5	443.1	476.8	516.4	559.3	596.1	629.4	637.4
42.5°	333.2	334.7	346.0	356.3	378.0	401.7	444.0	488.5	535.8	572.3	596.5
45°	285.9	289.7	297.4	307.1	323.4	345.2	379.7	424.1	472.4	516.2	545.3
47.5°	253.3	254.3	258.3	270.2	281.1	298.7	328.2	365.9	408.8	457.8	496.1
50°	223.1	225.6	227.1	234.2	244.9	261.6	284.5	312.5	355.0	400.0	447.9
52.5°	197.2	198.6	201.4	207.9	216.2	227.9	245.9	270.6	306.0	347.7	392.9
55°	175.8	176.0	178.8	183.4	189.8	198.8	216.0	233.8	265.2	303.1	344.1
57.5°	156.6	155.3	157.8	160.5	166.8	174.6	185.7	203.9	228.4	260.6	297.6
60°	137.3	138.4	138.1	141.3	144.6	152.4	161.8	173.7	193.8	223.3	254.7
62.5°	119.3	119.1	121.2	123.1	125.4	131.7	139.4	149.2	164.9	186.7	217.1
65°	102.1	102.6	104.2	105.7	108.2	112.2	118.1	126.0	138.6	155.3	180.8
67.5°	86.7	88.1	89.0	89.4	91.7	94.6	99.6	106.1	114.7	128.1	149.5
70°	73.7	74.1	74.5	76.0	77.0	78.7	82.5	86.0	93.8	103.6	119.1
72.5°	61.5	61.1	62.4	62.8	63.2	64.9	67.2	69.1	74.1	82.5	92.1
75°	48.6	48.8	49.0	49.6	51.3	51.5	52.5	54.6	58.2	61.5	68.0
77.5°	36.4	37.0	36.8	37.5	38.1	38.7	39.1	41.0	43.5	46.3	49.4
80°	27.6	27.6	27.6	28.0	27.6	29.1	29.1	29.7	30.4	31.6	33.9
82.5°	18.8	19.3	19.5	19.7	19.9	19.9	20.1	20.5	21.4	21.8	22.4
85°	12.1	11.7	11.9	11.9	11.9	11.9	12.3	12.8	12.8	13.0	13.6
87.5°	5.4	5.4	5.4	5.4	5.2	5.4	5.7	5.7	5.9	5.9	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



TEST NUMBER: P243601

CATALOG NUMBER: S124RDR-H350D835-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	537.5	537.5	537.5	537.5	537.5	537.5	537.5	537.5	537.5	537.5	537.5
2.5°	557.0	556.4	553.2	549.9	546.7	543.6	542.5	539.4	535.6	532.3	528.5
5°	581.9	576.9	570.0	562.8	555.5	548.8	543.6	537.7	531.0	523.1	516.8
7.5°	607.0	597.8	586.5	576.0	563.5	553.4	543.4	535.0	525.4	514.1	505.5
10°	631.5	616.2	602.4	585.9	570.0	556.2	543.4	529.4	516.6	504.5	492.5
12.5°	651.0	635.7	615.8	595.5	575.0	557.0	539.8	523.3	507.4	492.7	479.5
15°	673.2	651.2	626.7	604.3	576.2	554.1	534.4	516.6	498.4	480.6	466.1
17.5°	689.5	663.5	633.2	607.4	580.4	552.8	529.1	506.8	485.8	467.2	452.3
20°	702.0	671.3	640.9	608.3	576.0	547.8	521.2	495.4	474.3	454.0	438.3
22.5°	707.5	675.0	641.3	606.0	571.6	539.6	512.0	485.4	461.5	440.6	422.4
25°	709.8	674.2	639.2	599.1	564.3	531.7	500.9	473.5	449.0	425.3	407.3
27.5°	707.9	669.8	629.6	591.7	552.4	520.4	487.7	459.9	434.3	411.5	391.4
30°	702.9	659.8	619.8	577.3	539.4	505.7	473.9	444.4	418.6	395.4	375.5
32.5°	689.9	648.5	603.0	561.6	520.8	487.5	458.6	429.5	403.4	379.1	359.8
35°	673.8	633.2	585.7	542.3	501.9	468.2	439.1	413.2	387.4	361.7	342.0
37.5°	653.5	612.2	566.4	519.7	480.2	447.5	420.9	394.8	369.2	345.6	323.6
40°	626.1	588.4	542.3	495.4	455.7	424.3	398.1	374.0	351.4	328.2	304.6
42.5°	591.9	563.3	515.8	469.5	430.6	399.4	376.1	354.6	332.8	308.9	287.6
45°	555.5	531.0	487.9	441.2	404.2	373.8	351.7	332.6	312.1	290.9	268.6
47.5°	514.5	496.3	459.0	412.8	373.8	347.9	327.4	310.0	291.4	272.5	250.8
50°	468.2	457.1	425.3	383.3	346.2	319.8	302.9	287.4	271.5	252.6	234.0
52.5°	422.0	419.9	390.2	353.1	318.2	293.7	277.1	262.9	249.9	232.1	216.4
55°	373.4	379.7	355.0	320.9	289.7	266.0	251.4	239.9	228.6	213.5	198.4
57.5°	330.3	337.4	320.5	289.1	260.0	239.9	227.3	216.9	207.0	193.2	183.2
60°	282.6	295.6	286.6	257.9	232.1	214.1	202.4	194.0	185.9	173.9	165.1
62.5°	244.9	253.9	248.7	227.3	204.5	189.8	179.4	171.6	165.1	155.9	147.4
65°	204.5	215.8	213.1	199.1	179.0	165.6	157.6	151.5	144.8	137.5	130.4
67.5°	168.1	179.8	179.2	169.5	154.7	143.6	136.1	131.7	126.2	119.1	114.7
70°	135.2	146.1	146.5	141.7	131.2	120.8	115.3	111.4	107.2	101.9	98.8
72.5°	105.1	114.9	116.6	114.3	107.6	100.7	95.9	93.1	89.6	85.2	82.5
75°	78.5	85.6	89.6	88.5	85.8	81.2	78.5	76.6	73.1	69.9	67.6
77.5°	55.9	61.5	65.5	67.2	65.9	64.1	61.5	60.1	56.3	54.8	53.6
80°	37.5	42.5	46.0	47.1	47.7	47.3	45.0	44.2	42.3	41.7	40.4
82.5°	23.0	25.7	28.3	31.0	32.2	32.2	31.0	31.2	29.5	28.7	28.3
85°	14.0	14.7	15.1	17.2	18.8	19.5	18.8	19.0	18.4	17.8	17.2
87.5°	6.5	6.5	6.7	7.1	7.5	8.8	9.2	9.8	9.0	9.0	7.5
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: P243601

CATALOG NUMBER: S124RDR-H350D835-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	537.5	537.5	537.5	537.5	537.5	537.5	537.5	537.5	537.5	537.5	537.5
2.5°	526.2	523.5	521.4	518.1	515.3	510.9	509.5	509.5	510.3	509.3	510.3
5°	512.4	507.4	501.9	497.1	491.9	488.1	484.4	483.5	483.1	480.6	480.8
7.5°	498.6	491.9	485.0	478.7	472.2	466.4	462.4	460.7	459.2	457.6	455.7
10°	483.7	476.0	467.8	460.7	454.4	446.5	442.5	441.2	437.1	436.2	433.3
12.5°	468.0	460.1	451.9	442.7	436.6	428.9	423.0	420.3	416.3	413.4	409.0
15°	455.7	445.6	434.7	425.7	417.8	409.2	401.3	396.0	390.8	382.6	378.7
17.5°	440.4	428.9	419.5	409.8	398.3	385.8	376.3	368.6	363.0	356.3	352.3
20°	423.9	413.2	401.5	387.9	375.7	361.5	352.9	346.4	342.0	338.0	336.0
22.5°	409.2	396.9	380.7	367.8	350.8	339.5	332.6	328.4	324.2	320.0	318.0
25°	393.3	378.9	359.2	343.3	330.5	321.7	315.0	311.0	306.6	304.1	301.0
27.5°	377.6	359.0	339.3	324.9	314.8	304.6	298.9	295.8	292.4	288.9	286.3
30°	358.6	337.4	321.1	307.9	297.9	289.3	285.1	280.5	277.6	275.5	274.0
32.5°	338.7	318.4	303.5	292.2	282.4	275.9	270.6	267.7	265.2	262.9	261.2
35°	320.0	300.4	287.8	276.9	268.8	261.4	257.5	254.7	252.6	250.8	249.9
37.5°	301.6	284.9	271.3	262.7	254.1	248.2	244.5	242.0	240.7	238.8	239.0
40°	283.4	268.3	257.5	247.6	239.7	234.6	231.7	230.7	228.8	228.2	228.8
42.5°	267.1	253.3	242.8	233.6	226.7	221.9	219.6	218.1	217.5	217.3	217.5
45°	251.2	238.2	228.2	220.6	213.5	209.1	207.2	206.2	205.5	206.6	206.8
47.5°	235.3	223.5	214.5	205.8	199.9	196.8	194.9	194.0	194.7	195.1	196.5
50°	219.6	208.7	199.3	191.5	186.9	184.0	183.4	181.9	182.9	183.6	184.6
52.5°	203.7	193.8	185.5	178.1	173.3	171.4	170.0	169.3	170.8	170.8	171.8
55°	187.5	179.0	171.2	164.5	160.8	158.5	157.4	156.6	157.4	157.6	157.4
57.5°	172.5	164.3	156.1	150.5	147.4	144.8	143.8	143.4	143.2	144.0	143.8
60°	156.6	148.8	142.3	136.5	133.3	131.9	129.6	130.0	130.0	130.0	127.9
62.5°	140.7	132.9	127.3	123.3	119.5	117.0	116.6	116.0	114.7	114.5	111.8
65°	124.3	118.5	113.7	109.7	105.9	103.8	103.2	101.3	99.8	97.1	95.2
67.5°	109.3	105.1	99.4	96.1	92.9	90.4	88.1	86.7	83.7	81.0	79.3
70°	94.2	89.8	86.0	82.5	79.3	77.0	74.3	71.6	69.7	68.0	66.8
72.5°	79.1	75.4	72.2	68.9	65.5	63.2	61.1	59.0	58.2	57.4	56.7
75°	65.1	61.5	58.6	55.9	54.0	51.3	50.2	49.4	48.6	47.5	46.3
77.5°	51.5	48.8	46.5	44.2	42.5	41.0	40.2	37.7	35.6	35.2	34.7
80°	38.3	36.2	34.7	33.1	31.2	29.1	28.5	27.6	27.2	27.2	27.4
82.5°	26.8	25.5	23.9	22.4	21.8	20.9	20.9	20.7	20.5	20.7	20.7
85°	16.3	14.7	14.2	14.0	14.2	14.2	14.2	14.2	14.0	14.2	13.8
87.5°	7.1	7.7	8.0	7.3	7.5	7.1	7.3	7.3	7.3	7.5	7.3
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: P243601

CATALOG NUMBER: S124RDR-H350D835-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	537.5	537.5	537.5	537.5
2.5°	509.1	509.1	507.0	505.3
5°	480.4	477.7	477.2	474.7
7.5°	453.6	453.2	452.1	452.1
10°	432.2	430.8	429.3	429.1
12.5°	402.1	404.2	401.7	401.0
15°	375.7	374.0	372.0	367.6
17.5°	351.2	348.1	347.3	345.4
20°	332.0	329.7	328.8	327.8
22.5°	313.8	313.3	310.8	310.2
25°	300.4	298.3	296.6	295.6
27.5°	285.7	284.3	283.4	281.7
30°	272.3	271.9	270.9	270.9
32.5°	260.2	258.9	258.9	258.7
35°	249.1	249.5	248.2	247.8
37.5°	238.6	238.0	238.2	237.8
40°	228.4	227.9	227.9	228.2
42.5°	217.9	218.1	218.5	218.5
45°	207.4	207.6	208.1	208.1
47.5°	197.6	197.2	197.6	197.2
50°	185.0	186.3	186.1	185.9
52.5°	172.3	171.8	172.7	172.5
55°	158.5	157.8	158.7	157.8
57.5°	143.0	143.2	143.2	142.8
60°	127.5	126.8	126.0	126.0
62.5°	109.5	107.6	106.3	107.2
65°	92.1	90.6	90.2	89.6
67.5°	78.3	76.6	76.0	75.8
70°	66.4	65.5	65.3	65.3
72.5°	56.3	56.3	55.7	55.3
75°	45.8	45.0	44.0	44.0
77.5°	34.3	34.1	33.9	33.9
80°	26.8	26.8	27.0	27.2
82.5°	20.1	20.3	20.5	20.5
85°	13.6	13.6	13.8	13.8
87.5°	7.3	7.3	7.3	7.1
90°	0.0	0.0	0.0	0.0

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