

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: P242461

Luminaire Tested: **S123DR-S340D830-X4F0-XX-UDD-A-W**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P242461
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-20)
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S123DR-S340D830-X4F0-XX-UDD-A-W
Description: DEFINE 3 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: 1281.8 lumens
Efficiency: N/A
Efficacy: 110.5 lumens/watt
Spacing Criteria (0/90/45): 1.37 / 1.23 / 1.5
Luminous Opening: Rectangular (W 3.88' x L: 0.23' x H: 0')
CIE Type: Direct

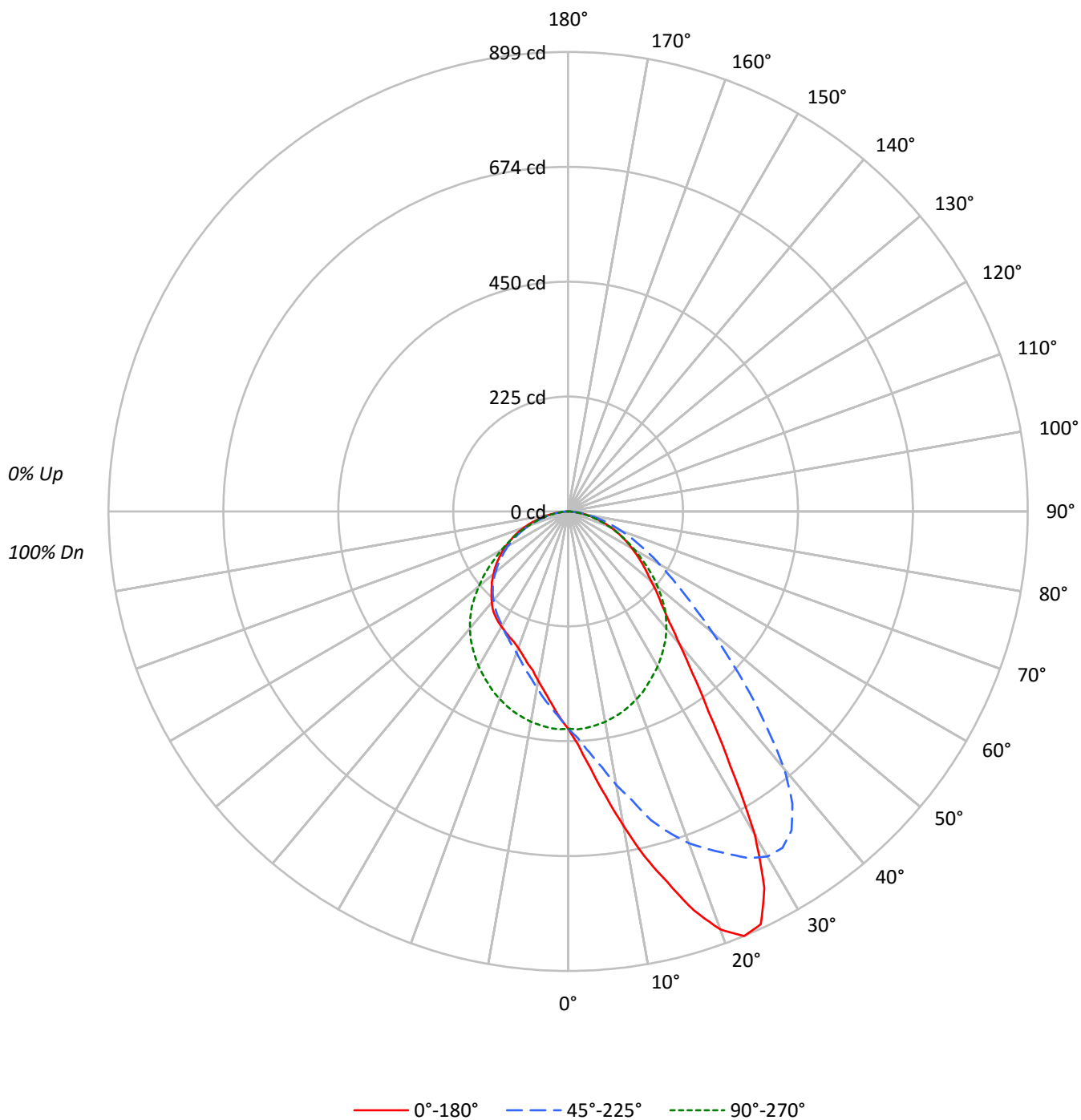
Input Watts (W): 11.6
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P242461

CATALOG NUMBER: S123DR-S340D830-X4F0-XX-UDD-A-W

Luminous Intensity Polar Plot



TEST NUMBER: P242461

CATALOG NUMBER: S123DR-S340D830-X4F0-XX-UDD-A-W

COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20				20					20					20					20
RC	80				70					50					30					10
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10
RCR																				
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100		
1	110	105	101	98	107	103	99	96	99	96	93	95	92	90	91	89	87	85		
2	100	93	86	81	98	91	85	80	87	82	78	84	80	76	81	78	74	72		
3	92	82	74	68	89	80	73	67	77	71	66	75	69	65	72	68	64	62		
4	84	73	65	58	82	72	64	58	69	62	57	67	61	56	65	60	56	53		
5	78	66	57	51	76	64	56	50	62	55	50	60	54	49	59	53	49	47		
6	72	59	51	44	70	58	50	44	56	49	44	55	48	43	53	48	43	41		
7	67	54	45	39	65	53	45	39	52	44	39	50	44	39	49	43	38	36		
8	62	49	41	35	61	49	41	35	47	40	35	46	39	35	45	39	35	33		
9	58	45	37	32	57	45	37	32	43	36	32	42	36	31	41	36	31	29		
10	55	42	34	29	53	41	34	29	40	33	29	39	33	29	38	33	28	27		

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	5148	5148	5148
5°	6139	5170	4581
10°	7684	5144	4138
15°	9424	5102	3852
20°	11227	5037	3669
25°	11922	4959	3627
30°	10217	4902	3646
35°	7106	4819	3685
40°	5353	4725	3673
45°	4445	4582	3626
50°	3981	4292	3592
55°	3721	3979	3548
60°	3491	3651	3513
65°	3281	3327	3399
70°	3076	2959	3239
75°	2754	2590	2969
80°	2415	2129	2555
85°	1891	1544	1711

TEST NUMBER: P242461

CATALOG NUMBER: S123DR-S340D830-X4F0-XX-UDD-A-W

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	41.8	3.3
10°-20°	134.2	10.5
20°-30°	225.7	17.6
30°-40°	255.1	19.9
40°-50°	228.5	17.8
50°-60°	184.4	14.4
60°-70°	128.5	10.0
70°-80°	67.5	5.3
80°-90°	16.2	1.3
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°	401.6	31.3
0°-40°	656.8	51.2
0°-60°	1069.7	83.5
0°-90°	1281.8	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1281.8	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	425	425	425	425	425	
5°	504	473	425	385	376	52
15°	751	625	407	321	307	217
25°	891	739	371	276	271	394
35°	480	762	326	243	249	310
45°	259	502	267	208	212	204
55°	176	273	188	161	168	158
65°	114	153	116	109	118	114
75°	59	72	55	55	63	63
85°	14	16	11	11	12	16
90°	0	0	0	0	0	

TEST NUMBER: P242461

CATALOG NUMBER: S123DR-S340D830-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	424.7	424.7	424.7	424.7	424.7	424.7	424.7	424.7	424.7	424.7	424.7
2.5°	457.2	456.8	455.8	456.6	454.9	452.7	452.5	450.4	444.4	444.0	442.4
5°	504.5	502.9	502.7	502.5	499.6	495.7	488.3	487.7	477.8	472.8	466.9
7.5°	561.7	561.1	559.5	557.6	547.9	543.2	536.2	527.2	515.6	504.5	497.5
10°	624.3	631.1	622.6	616.9	611.5	601.4	589.7	575.1	560.5	543.4	530.4
12.5°	691.4	693.8	693.8	688.5	679.4	662.8	639.7	623.2	610.1	578.8	567.7
15°	751.0	763.6	755.5	737.0	737.4	722.8	695.7	665.8	650.0	625.1	591.1
17.5°	818.5	820.8	818.3	801.0	792.6	771.4	746.9	719.1	689.3	659.0	623.9
20°	870.4	869.1	861.9	853.9	836.2	820.6	793.2	761.3	720.2	690.5	651.2
22.5°	899.2	896.9	894.4	888.1	874.1	857.0	833.1	797.5	758.8	715.2	668.3
25°	891.4	894.0	894.4	892.6	887.4	877.4	858.0	830.2	791.1	738.7	691.4
27.5°	830.9	837.6	846.3	852.1	861.3	867.5	861.3	843.8	811.7	764.8	706.6
30°	730.0	721.8	742.2	767.9	785.4	816.2	833.5	834.6	818.3	779.4	723.0
32.5°	590.1	603.5	609.7	642.8	686.2	721.8	760.5	794.8	802.9	780.2	732.7
35°	480.2	491.6	508.0	524.5	565.6	601.0	661.5	714.2	756.2	761.7	731.5
37.5°	399.2	405.8	415.8	433.3	461.5	505.3	553.3	621.8	679.6	720.4	716.2
40°	338.3	339.9	351.6	364.2	386.0	420.6	462.8	521.6	594.4	657.6	683.9
42.5°	292.6	296.7	300.0	311.9	328.2	352.1	390.5	436.6	501.8	577.0	634.8
45°	259.3	263.4	266.5	274.5	286.8	304.3	331.7	376.1	427.0	502.1	571.4
47.5°	236.2	235.8	238.5	244.9	253.7	267.7	287.9	317.5	366.3	429.0	501.6
50°	211.1	214.4	215.2	220.0	226.5	236.2	252.3	276.5	314.8	368.3	433.7
52.5°	193.4	193.8	196.5	199.6	205.1	212.1	225.5	243.2	271.2	314.8	373.7
55°	176.1	176.1	178.4	181.1	184.4	191.2	200.4	214.4	237.2	272.6	322.4
57.5°	160.1	160.9	163.0	163.6	166.5	171.2	179.2	190.3	207.8	236.4	277.6
60°	144.0	145.9	145.7	147.3	149.8	153.3	159.9	168.5	183.7	205.6	238.9
62.5°	130.0	129.4	129.4	131.5	133.9	137.2	140.9	148.1	160.5	179.2	206.4
65°	114.4	114.0	115.4	116.7	117.5	120.0	123.3	129.8	138.5	152.9	174.9
67.5°	100.8	99.6	100.6	101.0	102.5	104.5	107.8	111.9	118.9	131.1	148.8
70°	86.8	85.8	85.6	86.0	87.2	88.7	90.9	94.9	101.2	110.5	122.6
72.5°	72.4	71.8	71.8	72.8	73.3	74.1	75.5	79.0	83.7	90.1	101.2
75°	58.8	58.8	58.8	59.1	59.7	60.5	61.7	63.6	67.5	72.4	80.0
77.5°	46.5	46.7	46.3	46.1	47.1	47.5	47.7	49.8	52.1	55.8	61.7
80°	34.6	33.5	34.0	34.6	35.0	35.2	35.8	36.2	38.1	39.9	43.8
82.5°	23.5	22.6	22.6	23.7	23.7	23.9	24.5	25.1	25.5	27.2	28.8
85°	13.6	13.6	13.8	13.8	14.0	13.8	14.4	14.6	14.6	15.6	16.9
87.5°	6.2	5.8	6.0	6.2	6.0	6.2	6.4	6.6	6.8	7.0	7.2
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: P242461

CATALOG NUMBER: S123DR-S340D830-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	424.7	424.7	424.7	424.7	424.7	424.7	424.7	424.7	424.7	424.7	424.7
2.5°	441.1	439.5	437.9	435.0	432.5	429.0	428.0	426.7	423.0	419.7	417.3
5°	464.6	459.7	452.5	445.9	440.5	433.3	429.2	424.9	418.7	413.2	408.6
7.5°	487.0	478.4	468.3	457.4	446.9	436.8	428.8	421.6	413.6	405.8	399.8
10°	514.8	500.8	485.2	468.3	453.9	439.9	428.2	417.9	406.8	397.1	389.1
12.5°	546.5	524.1	501.0	479.6	461.9	441.1	426.3	412.5	399.6	387.4	378.2
15°	570.2	543.8	518.3	490.1	464.2	439.9	423.0	406.6	392.0	380.0	368.5
17.5°	593.6	564.8	532.3	498.4	467.9	439.9	416.9	399.2	381.3	366.9	355.8
20°	613.0	579.0	540.9	505.3	470.8	438.7	412.8	390.5	370.8	355.3	342.4
22.5°	629.6	588.5	548.8	510.1	470.6	435.4	405.1	382.1	360.3	345.3	331.3
25°	640.1	592.6	553.1	508.4	465.4	429.6	396.7	370.8	349.4	331.7	317.5
27.5°	650.0	592.0	547.3	499.2	459.3	423.7	388.3	360.5	338.1	318.9	304.3
30°	659.9	593.0	537.2	489.7	449.4	412.3	378.2	350.2	326.3	306.8	293.2
32.5°	666.0	592.4	528.0	476.5	433.7	402.1	367.3	338.1	313.4	294.2	281.3
35°	667.7	588.9	517.1	457.4	416.7	384.8	355.8	325.7	300.0	282.1	267.3
37.5°	664.2	582.5	505.1	440.1	396.1	364.4	339.1	313.4	288.7	268.7	255.8
40°	652.9	576.3	490.7	421.6	374.7	344.4	323.7	298.6	274.3	255.6	243.6
42.5°	631.3	563.8	474.9	401.0	352.5	322.2	303.5	283.5	260.9	243.6	231.7
45°	593.4	544.4	459.0	380.4	330.7	299.4	282.5	267.3	246.5	229.4	219.1
47.5°	545.1	518.3	436.2	358.8	307.8	277.6	259.9	247.3	231.1	217.3	207.2
50°	494.2	484.6	413.0	336.6	285.0	255.6	238.7	227.6	216.7	202.9	193.8
52.5°	435.6	445.5	385.8	313.6	261.7	232.9	217.3	209.1	199.4	188.7	181.1
55°	381.3	402.9	353.7	287.2	238.7	211.1	196.1	188.3	182.5	174.1	167.3
57.5°	328.6	356.2	320.4	260.7	216.0	192.0	177.2	168.3	164.6	159.9	154.3
60°	282.7	309.9	284.2	233.9	193.2	170.6	157.8	150.6	146.9	143.8	139.3
62.5°	241.8	269.3	248.8	206.8	170.8	150.2	139.5	132.5	129.8	128.6	124.9
65°	204.9	228.6	214.2	178.4	149.6	131.1	121.0	116.0	113.4	112.8	110.3
67.5°	173.0	191.4	180.2	153.3	129.8	113.0	104.1	99.8	97.5	97.3	95.3
70°	141.8	158.6	150.6	126.7	107.2	94.6	87.2	83.5	82.3	82.1	81.1
72.5°	117.5	128.0	122.0	103.1	89.1	78.0	73.0	69.1	67.7	68.1	67.5
75°	90.5	99.4	95.7	81.9	69.8	62.3	57.8	55.3	54.1	54.7	53.9
77.5°	69.1	75.3	71.6	61.1	53.3	47.7	44.2	42.6	41.4	41.4	40.9
80°	49.2	52.5	50.6	44.9	38.7	34.2	31.5	30.5	29.8	29.6	29.4
82.5°	31.5	34.2	31.9	28.4	24.7	22.4	21.2	19.8	19.3	19.5	19.3
85°	17.7	18.7	17.9	15.4	13.8	12.6	11.7	11.1	10.7	10.9	10.5
87.5°	7.6	7.8	7.2	6.4	6.0	5.3	5.3	4.9	4.5	4.5	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: P242461

CATALOG NUMBER: S123DR-S340D830-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	424.7	424.7	424.7	424.7	424.7	424.7	424.7	424.7	424.7	424.7	424.7
2.5°	415.8	414.4	412.3	409.3	406.8	402.9	402.9	403.5	403.5	403.3	402.9
5°	404.9	401.8	398.1	393.8	389.3	384.8	383.9	382.3	381.1	380.2	379.2
7.5°	393.8	388.7	383.5	377.6	372.4	368.1	365.0	362.3	360.7	358.8	357.4
10°	382.5	375.7	369.3	363.0	356.0	350.4	346.9	344.4	342.6	340.9	340.1
12.5°	369.1	361.1	353.9	347.9	340.1	334.4	331.1	330.2	328.0	324.1	322.0
15°	356.2	349.0	340.5	331.3	327.6	320.6	316.7	314.8	313.6	310.9	310.1
17.5°	345.5	335.8	326.1	319.3	312.5	307.0	304.7	302.3	300.6	298.1	297.5
20°	332.1	323.7	315.0	307.6	300.4	294.2	292.4	290.7	289.1	288.1	287.2
22.5°	318.5	310.1	303.3	296.5	288.7	285.2	283.1	281.3	280.2	279.6	278.8
25°	306.0	298.6	290.5	284.4	278.2	275.5	274.3	273.2	272.4	271.4	271.2
27.5°	294.9	286.6	279.8	273.9	269.3	267.1	265.6	265.0	265.0	265.4	265.6
30°	282.1	274.7	269.3	264.4	260.3	258.2	258.0	258.0	258.8	259.1	259.5
32.5°	270.4	264.6	259.3	254.5	251.6	250.4	251.4	251.4	252.1	252.7	253.5
35°	259.1	253.7	249.6	245.5	242.8	243.4	243.8	244.2	245.3	246.5	247.3
37.5°	248.4	243.4	239.1	235.8	234.2	235.4	236.4	237.2	238.5	239.5	240.3
40°	236.6	233.1	229.0	226.1	226.5	227.2	228.0	229.0	230.0	230.7	231.5
42.5°	225.7	222.0	219.1	216.9	217.5	218.3	218.7	219.1	220.4	221.6	222.0
45°	214.6	211.7	208.8	207.4	207.8	208.2	208.6	209.3	210.3	211.1	211.3
47.5°	202.1	200.0	198.1	196.5	197.3	197.1	197.7	199.0	199.4	199.8	201.0
50°	190.1	188.3	186.0	185.6	185.6	185.6	185.8	187.4	187.4	188.3	189.1
52.5°	177.0	175.9	174.7	173.9	173.5	173.5	174.5	175.1	175.5	176.7	177.6
55°	164.0	162.8	161.5	160.9	160.5	160.9	162.6	163.0	164.0	164.6	165.2
57.5°	150.4	149.6	148.6	148.1	148.1	148.4	149.6	150.6	150.8	152.9	153.7
60°	137.0	135.6	134.8	134.8	134.4	136.2	135.8	137.9	138.3	139.5	140.9
62.5°	123.3	121.2	121.0	121.0	121.8	122.0	122.8	123.5	124.7	126.3	127.4
65°	108.2	107.2	108.6	108.4	108.0	109.3	109.3	110.3	111.5	113.0	115.2
67.5°	94.2	93.4	93.8	93.6	94.2	95.1	95.7	96.5	97.9	99.6	101.0
70°	80.0	80.7	79.6	80.5	81.1	81.3	81.7	82.9	84.6	85.6	87.2
72.5°	66.3	66.0	66.5	66.7	67.3	67.7	68.1	69.5	71.4	72.2	73.5
75°	53.1	52.9	53.5	53.5	54.5	54.9	55.3	56.0	57.6	58.8	59.9
77.5°	41.2	41.4	41.2	42.0	41.6	41.8	43.0	43.6	43.8	46.5	46.9
80°	29.2	29.6	29.8	30.0	30.2	29.8	31.3	31.9	31.9	33.3	34.4
82.5°	18.9	19.1	19.8	20.0	20.0	20.6	20.4	20.8	21.4	21.8	23.3
85°	10.5	11.1	11.3	11.1	11.3	10.9	11.5	11.7	11.9	11.9	11.9
87.5°	4.1	4.3	4.1	4.3	4.1	4.3	4.3	3.9	3.9	4.5	3.7
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: P242461

CATALOG NUMBER: S123DR-S340D830-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	424.7	424.7	424.7	424.7
2.5°	401.4	401.2	402.7	401.6
5°	378.0	378.6	376.5	376.5
7.5°	356.8	356.0	356.2	354.7
10°	337.7	336.4	336.0	336.2
12.5°	321.8	321.8	318.5	318.5
15°	310.1	306.2	305.8	307.0
17.5°	297.1	294.9	295.1	294.6
20°	287.2	286.0	285.8	284.4
22.5°	278.2	278.0	278.2	276.5
25°	271.0	272.0	271.2	271.2
27.5°	266.0	266.0	265.4	265.4
30°	260.3	260.1	260.5	260.5
32.5°	254.5	254.9	254.9	255.1
35°	248.6	248.8	249.4	249.0
37.5°	240.7	241.8	241.6	242.0
40°	231.7	232.3	232.1	232.1
42.5°	222.4	222.8	222.2	221.8
45°	212.1	211.7	212.3	211.5
47.5°	200.8	201.0	201.2	202.1
50°	189.5	190.7	190.7	190.5
52.5°	178.4	178.8	179.8	179.8
55°	166.9	167.3	167.7	167.9
57.5°	155.1	154.9	155.8	156.0
60°	142.6	142.6	144.2	144.9
62.5°	129.2	130.0	131.7	130.5
65°	116.3	117.9	117.7	118.5
67.5°	102.7	103.7	105.3	105.3
70°	88.9	89.9	90.7	91.4
72.5°	75.5	75.9	78.2	77.0
75°	61.3	62.8	64.0	63.4
77.5°	47.7	49.6	50.0	49.4
80°	35.8	35.6	36.8	36.6
82.5°	23.9	23.7	24.1	24.3
85°	12.8	13.4	12.6	12.3
87.5°	3.7	3.7	3.5	3.3
90°	0.0	0.0	0.0	0.0

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