

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: P242476

Luminaire Tested: **S123DR-S340D930-X4F0-XX-UDD-A-W**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P242476
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-S340D930-X4F0-XX-UDD-A-W
Description: DEFINE 3 DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER
STANDARD LIGHT ENGINE
Light Source: (92) 3000K CCT, 90 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1108.8 lumens
Efficiency: N/A
Efficacy: 95.6 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

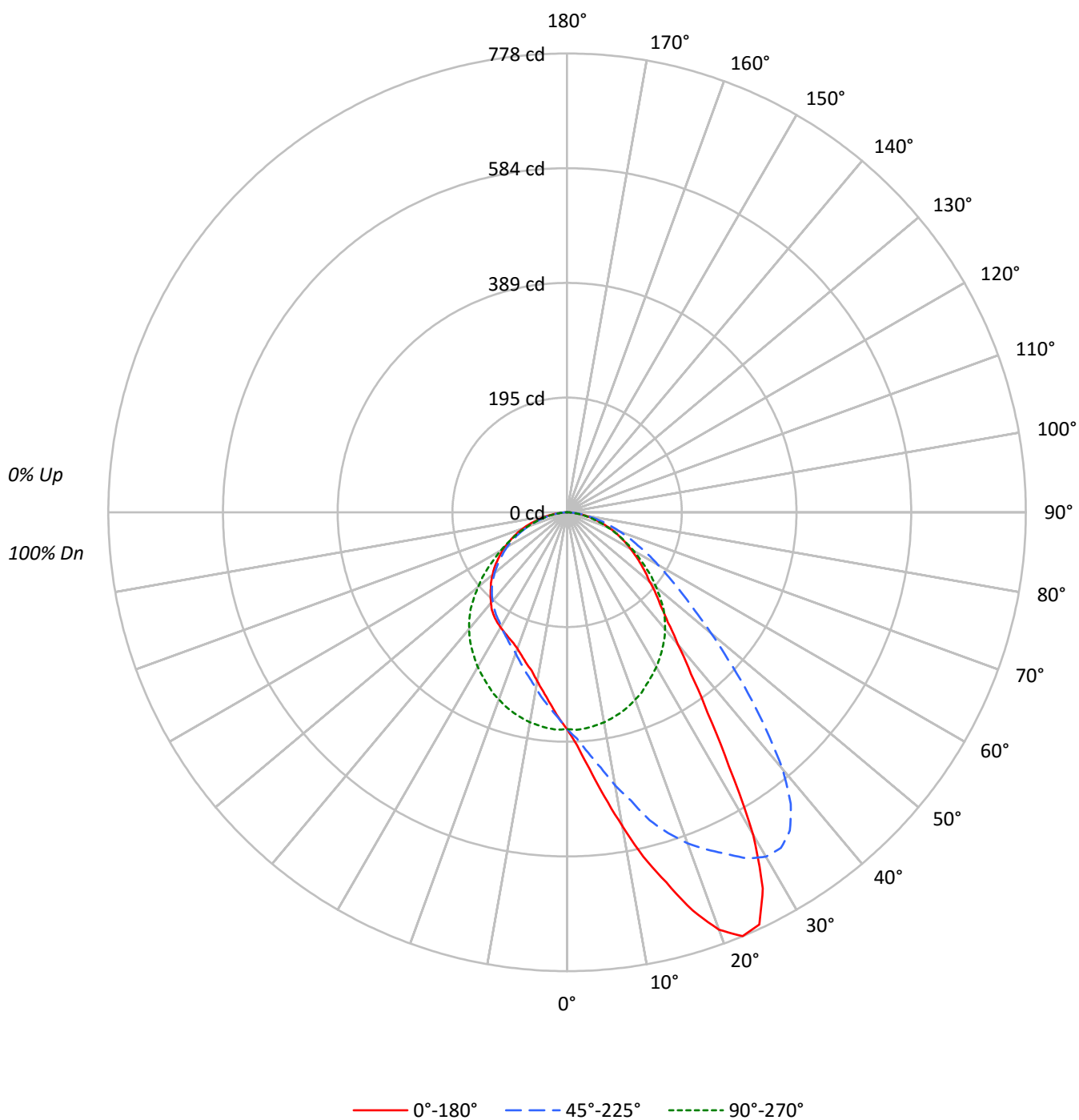
Input Watts (W): 11.6
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P242476

CATALOG NUMBER: S123DR-S340D930-X4F0-XX-UDD-A-W

Luminous Intensity Polar Plot



TEST NUMBER: P242476

CATALOG NUMBER: S123DR-S340D930-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°	4453	4453	4453
5°	5310	4472	3963
10°	6646	4449	3579
15°	8152	4413	3332
20°	9712	4357	3173
25°	10312	4289	3138
30°	8839	4240	3153
35°	6147	4168	3187
40°	4630	4087	3177
45°	3845	3963	3137
50°	3443	3711	3108
55°	3221	3443	3068
60°	3021	3159	3038
65°	2839	2880	2940
70°	2662	2562	2800
75°	2384	2243	2566
80°	2087	1836	2213
85°	1627	1335	1488

TEST NUMBER: P242476

CATALOG NUMBER: S123DR-S340D930-X4F0-XX-UDD-A-W

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	36.1	3.3
10°-20°	116.0	10.5
20°-30°	195.3	17.6
30°-40°	220.7	19.9
40°-50°	197.7	17.8
50°-60°	159.5	14.4
60°-70°	111.2	10.0
70°-80°	58.3	5.3
80°-90°	14.0	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°	347.4	31.3
0°-40°	568.1	51.2
0°-60°	925.3	83.5
0°-90°	1108.8	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1108.8	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	367	367	367	367	367	
5°	436	409	368	333	326	45
15°	650	541	352	277	266	188
25°	771	639	321	238	235	341
35°	415	659	282	211	215	268
45°	224	434	231	180	183	177
55°	152	236	163	139	145	137
65°	99	132	100	94	102	99
75°	51	63	48	48	55	54
85°	12	14	10	9	11	14
90°	0	0	0	0	0	

TEST NUMBER: P242476

CATALOG NUMBER: S123DR-S340D930-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	367.4	367.4	367.4	367.4	367.4	367.4	367.4	367.4	367.4	367.4	367.4
2.5°	395.5	395.1	394.2	394.9	393.5	391.6	391.4	389.6	384.4	384.1	382.7
5°	436.4	435.0	434.8	434.6	432.1	428.8	422.4	421.8	413.3	409.0	403.8
7.5°	485.9	485.4	483.9	482.3	474.0	469.9	463.8	456.0	446.0	436.4	430.4
10°	540.0	545.9	538.6	533.6	529.0	520.2	510.1	497.5	484.8	470.1	458.8
12.5°	598.0	600.2	600.2	595.5	587.7	573.3	553.3	539.1	527.7	500.7	491.1
15°	649.6	660.5	653.6	637.5	637.9	625.3	601.8	576.0	562.2	540.7	511.3
17.5°	708.0	710.0	707.8	692.9	685.6	667.3	646.1	622.0	596.2	570.1	539.6
20°	752.9	751.8	745.6	738.6	723.3	709.8	686.1	658.5	622.9	597.3	563.3
22.5°	777.8	775.8	773.7	768.2	756.1	741.3	720.6	689.9	656.4	618.7	578.1
25°	771.0	773.3	773.7	772.1	767.6	758.9	742.2	718.2	684.3	639.0	598.0
27.5°	718.7	724.6	732.0	737.0	745.0	750.4	745.0	729.9	702.1	661.6	611.2
30°	631.5	624.4	642.0	664.2	679.4	706.1	721.0	721.9	707.8	674.2	625.4
32.5°	510.5	522.0	527.4	556.0	593.6	624.4	657.8	687.5	694.5	674.9	633.8
35°	415.4	425.2	439.4	453.7	489.3	519.9	572.2	617.8	654.1	658.9	632.7
37.5°	345.3	351.0	359.7	374.8	399.2	437.1	478.6	537.9	587.9	623.1	619.6
40°	292.6	294.0	304.2	315.0	333.9	363.8	400.3	451.2	514.2	568.8	591.6
42.5°	253.1	256.7	259.5	269.8	283.9	304.5	337.8	377.7	434.1	499.1	549.1
45°	224.3	227.8	230.5	237.4	248.1	263.2	286.9	325.4	369.3	434.3	494.3
47.5°	204.3	204.0	206.3	211.8	219.5	231.6	249.0	274.6	316.8	371.1	433.9
50°	182.6	185.5	186.2	190.3	196.0	204.3	218.2	239.2	272.3	318.6	375.2
52.5°	167.3	167.7	170.0	172.6	177.4	183.5	195.1	210.4	234.6	272.3	323.2
55°	152.4	152.4	154.3	156.6	159.5	165.3	173.4	185.5	205.2	235.8	278.9
57.5°	138.5	139.2	141.0	141.5	144.0	148.1	155.0	164.6	179.8	204.5	240.1
60°	124.6	126.2	126.0	127.4	129.6	132.6	138.3	145.8	158.9	177.8	206.6
62.5°	112.5	112.0	112.0	113.7	115.9	118.7	121.9	128.1	138.8	155.0	178.5
65°	99.0	98.6	99.8	100.9	101.6	103.8	106.6	112.3	119.8	132.2	151.3
67.5°	87.2	86.1	87.0	87.4	88.6	90.4	93.3	96.8	102.9	113.4	128.7
70°	75.1	74.2	74.0	74.4	75.5	76.7	78.7	82.0	87.6	95.6	106.1
72.5°	62.6	62.1	62.1	63.0	63.4	64.1	65.3	68.3	72.4	78.0	87.6
75°	50.9	50.9	50.9	51.1	51.6	52.3	53.4	55.0	58.4	62.6	69.2
77.5°	40.2	40.4	40.0	39.9	40.8	41.1	41.3	43.1	45.0	48.2	53.4
80°	29.9	29.0	29.4	29.9	30.3	30.4	31.0	31.3	32.9	34.5	37.9
82.5°	20.3	19.6	19.6	20.5	20.5	20.6	21.2	21.7	22.1	23.5	24.9
85°	11.7	11.7	11.9	11.9	12.1	11.9	12.5	12.6	12.6	13.5	14.6
87.5°	5.3	5.0	5.2	5.3	5.2	5.3	5.5	5.7	5.9	6.1	6.2
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: P242476

CATALOG NUMBER: S123DR-S340D930-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	367.4	367.4	367.4	367.4	367.4	367.4	367.4	367.4	367.4	367.4	367.4
2.5°	381.6	380.2	378.7	376.3	374.1	371.1	370.2	369.1	365.9	363.1	360.9
5°	401.9	397.6	391.4	385.7	381.1	374.8	371.3	367.5	362.2	357.4	353.5
7.5°	421.3	413.8	405.1	395.7	386.6	377.9	370.9	364.7	357.7	351.0	345.8
10°	445.3	433.2	419.7	405.1	392.6	380.5	370.4	361.5	351.9	343.5	336.6
12.5°	472.7	453.3	433.4	414.9	399.6	381.6	368.8	356.9	345.6	335.1	327.1
15°	493.2	470.4	448.3	424.0	401.5	380.5	365.9	351.7	339.1	328.7	318.8
17.5°	513.5	488.6	460.4	431.1	404.7	380.5	360.6	345.3	329.8	317.3	307.7
20°	530.2	500.8	467.9	437.1	407.2	379.5	357.0	337.8	320.7	307.4	296.2
22.5°	544.6	509.0	474.7	441.2	407.0	376.6	350.4	330.5	311.6	298.7	286.6
25°	553.7	512.6	478.4	439.8	402.6	371.6	343.1	320.7	302.2	286.9	274.6
27.5°	562.2	512.1	473.4	431.8	397.3	366.5	335.9	311.8	292.4	275.9	263.2
30°	570.8	512.9	464.7	423.6	388.7	356.7	327.1	302.9	282.3	265.4	253.6
32.5°	576.1	512.4	456.7	412.2	375.2	347.8	317.7	292.4	271.1	254.5	243.3
35°	577.6	509.4	447.3	395.7	360.4	332.8	307.7	281.7	259.5	244.0	231.2
37.5°	574.5	503.9	436.9	380.7	342.6	315.2	293.3	271.1	249.7	232.4	221.2
40°	564.7	498.5	424.5	364.7	324.1	297.9	280.0	258.3	237.3	221.1	210.7
42.5°	546.0	487.7	410.8	346.9	304.9	278.7	262.5	245.3	225.7	210.7	200.4
45°	513.3	470.9	397.1	329.1	286.0	259.0	244.4	231.2	213.2	198.5	189.6
47.5°	471.5	448.3	377.3	310.4	266.3	240.1	224.8	213.9	199.9	187.9	179.2
50°	427.5	419.1	357.2	291.2	246.5	221.1	206.5	196.8	187.4	175.5	167.7
52.5°	376.8	385.3	333.7	271.2	226.4	201.5	187.9	180.8	172.5	163.2	156.6
55°	329.8	348.5	306.0	248.5	206.5	182.6	169.6	162.9	157.9	150.6	144.7
57.5°	284.2	308.1	277.1	225.5	186.9	166.1	153.2	145.6	142.4	138.3	133.5
60°	244.5	268.0	245.8	202.4	167.1	147.5	136.5	130.3	127.1	124.4	120.5
62.5°	209.1	233.0	215.2	178.9	147.7	129.9	120.7	114.6	112.3	111.2	108.0
65°	177.3	197.7	185.3	154.3	129.4	113.4	104.7	100.4	98.1	97.5	95.4
67.5°	149.7	165.5	155.9	132.6	112.3	97.7	90.1	86.3	84.4	84.2	82.4
70°	122.6	137.2	130.3	109.6	92.7	81.9	75.5	72.3	71.2	71.0	70.1
72.5°	101.6	110.7	105.5	89.2	77.1	67.5	63.2	59.8	58.6	58.9	58.4
75°	78.3	86.0	82.8	70.8	60.3	53.9	50.0	47.9	46.8	47.3	46.6
77.5°	59.8	65.1	61.9	52.9	46.1	41.3	38.3	36.8	35.8	35.8	35.4
80°	42.5	45.4	43.8	38.8	33.5	29.5	27.2	26.3	25.8	25.6	25.5
82.5°	27.2	29.5	27.6	24.6	21.4	19.4	18.3	17.1	16.7	16.9	16.7
85°	15.3	16.2	15.5	13.3	11.9	10.9	10.1	9.6	9.3	9.4	9.1
87.5°	6.6	6.8	6.2	5.5	5.2	4.6	4.6	4.3	3.9	3.9	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: P242476

CATALOG NUMBER: S123DR-S340D930-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	367.4	367.4	367.4	367.4	367.4	367.4	367.4	367.4	367.4	367.4	367.4
2.5°	359.7	358.5	356.7	354.0	351.9	348.5	348.5	349.0	349.0	348.8	348.5
5°	350.3	347.6	344.4	340.7	336.7	332.8	332.1	330.7	329.6	328.9	328.0
7.5°	340.7	336.2	331.8	326.6	322.1	318.4	315.7	313.4	312.0	310.4	309.2
10°	330.9	325.0	319.5	314.0	307.9	303.1	300.1	297.9	296.3	294.9	294.2
12.5°	319.3	312.4	306.1	301.0	294.2	289.2	286.4	285.7	283.7	280.3	278.5
15°	308.1	301.9	294.6	286.6	283.3	277.3	273.9	272.3	271.2	268.9	268.2
17.5°	298.8	290.5	282.1	276.2	270.4	265.5	263.6	261.5	260.0	257.9	257.4
20°	287.3	280.0	272.5	266.1	259.9	254.5	252.9	251.5	250.1	249.2	248.5
22.5°	275.5	268.2	262.3	256.5	249.7	246.7	244.9	243.3	242.4	241.9	241.2
25°	264.7	258.3	251.3	246.0	240.6	238.3	237.3	236.4	235.6	234.8	234.6
27.5°	255.0	247.9	242.1	236.9	233.0	231.0	229.8	229.2	229.2	229.6	229.8
30°	244.0	237.6	233.0	228.7	225.1	223.4	223.2	223.2	223.9	224.1	224.4
32.5°	233.9	228.9	224.3	220.2	217.7	216.6	217.5	217.5	218.0	218.6	219.3
35°	224.1	219.5	215.9	212.3	210.0	210.6	210.9	211.3	212.2	213.2	213.9
37.5°	214.8	210.6	206.8	204.0	202.5	203.6	204.5	205.2	206.3	207.2	207.9
40°	204.7	201.7	198.1	195.6	196.0	196.5	197.2	198.1	199.0	199.5	200.2
42.5°	195.2	192.0	189.6	187.6	188.1	188.8	189.2	189.6	190.6	191.7	192.0
45°	185.6	183.1	180.7	179.4	179.8	180.1	180.5	181.0	181.9	182.6	182.8
47.5°	174.8	173.0	171.4	170.0	170.7	170.5	171.0	172.1	172.5	172.8	173.9
50°	164.5	162.9	160.9	160.5	160.5	160.5	160.7	162.1	162.1	162.9	163.6
52.5°	153.1	152.2	151.1	150.4	150.0	150.0	150.9	151.5	151.8	152.9	153.6
55°	141.9	140.8	139.7	139.2	138.8	139.2	140.6	141.0	141.9	142.4	142.9
57.5°	130.1	129.4	128.5	128.1	128.1	128.3	129.4	130.3	130.5	132.2	133.0
60°	118.5	117.3	116.6	116.6	116.2	117.8	117.5	119.2	119.6	120.7	121.9
62.5°	106.6	104.8	104.7	104.7	105.4	105.5	106.3	106.8	107.9	109.3	110.2
65°	93.6	92.7	94.0	93.8	93.4	94.5	94.5	95.4	96.5	97.7	99.7
67.5°	81.5	80.8	81.2	81.0	81.5	82.2	82.8	83.5	84.7	86.1	87.4
70°	69.2	69.8	68.9	69.6	70.1	70.3	70.7	71.7	73.2	74.0	75.5
72.5°	57.3	57.1	57.5	57.7	58.2	58.6	58.9	60.2	61.8	62.5	63.5
75°	45.9	45.7	46.3	46.3	47.2	47.5	47.9	48.4	49.8	50.9	51.8
77.5°	35.6	35.8	35.6	36.3	36.0	36.1	37.2	37.7	37.9	40.2	40.6
80°	25.3	25.6	25.8	26.0	26.2	25.8	27.1	27.6	27.6	28.8	29.7
82.5°	16.4	16.6	17.1	17.3	17.3	17.8	17.6	18.0	18.5	18.9	20.1
85°	9.1	9.6	9.8	9.6	9.8	9.4	10.0	10.1	10.3	10.3	10.3
87.5°	3.6	3.7	3.6	3.7	3.6	3.7	3.7	3.4	3.4	3.9	3.2
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: P242476

CATALOG NUMBER: S123DR-S340D930-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	367.4	367.4	367.4	367.4
2.5°	347.2	347.1	348.3	347.4
5°	327.0	327.5	325.7	325.7
7.5°	308.6	307.9	308.1	306.8
10°	292.1	291.0	290.6	290.8
12.5°	278.4	278.4	275.5	275.5
15°	268.2	264.8	264.5	265.5
17.5°	257.0	255.0	255.2	254.9
20°	248.5	247.4	247.2	246.0
22.5°	240.6	240.5	240.6	239.2
25°	234.4	235.3	234.6	234.6
27.5°	230.1	230.1	229.6	229.6
30°	225.1	225.0	225.3	225.3
32.5°	220.2	220.5	220.5	220.7
35°	215.0	215.2	215.7	215.4
37.5°	208.2	209.1	209.0	209.3
40°	200.4	200.9	200.8	200.8
42.5°	192.4	192.8	192.2	191.9
45°	183.5	183.1	183.7	183.0
47.5°	173.7	173.9	174.1	174.8
50°	163.9	165.0	165.0	164.8
52.5°	154.3	154.7	155.6	155.6
55°	144.3	144.7	145.1	145.2
57.5°	134.2	134.0	134.7	134.9
60°	123.3	123.3	124.8	125.3
62.5°	111.8	112.5	113.9	112.8
65°	100.6	102.0	101.8	102.5
67.5°	88.8	89.7	91.1	91.1
70°	76.9	77.8	78.5	79.0
72.5°	65.3	65.7	67.6	66.6
75°	53.0	54.3	55.4	54.8
77.5°	41.3	42.9	43.2	42.7
80°	31.0	30.8	31.9	31.7
82.5°	20.6	20.5	20.8	21.0
85°	11.0	11.6	10.9	10.7
87.5°	3.2	3.2	3.0	2.8
90°	0.0	0.0	0.0	0.0

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