

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: P242569

Luminaire Tested: **S123RDR-S340D835-X4F0-XX-UDD-A-W**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P242569
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-30)
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S123RDR-S340D835-X4F0-XX-UDD-A-W
Description: DEFINE 3 REGRESSED DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER
STANDARD LIGHT ENGINE
Light Source: (92) 3500K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1269.9 lumens
Efficiency: N/A
Efficacy: 109.5 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.22 / 1.35
Luminous Opening: Rectangular (W 3.88' x L: 0.23' x H: 0')
CIE Type: Direct

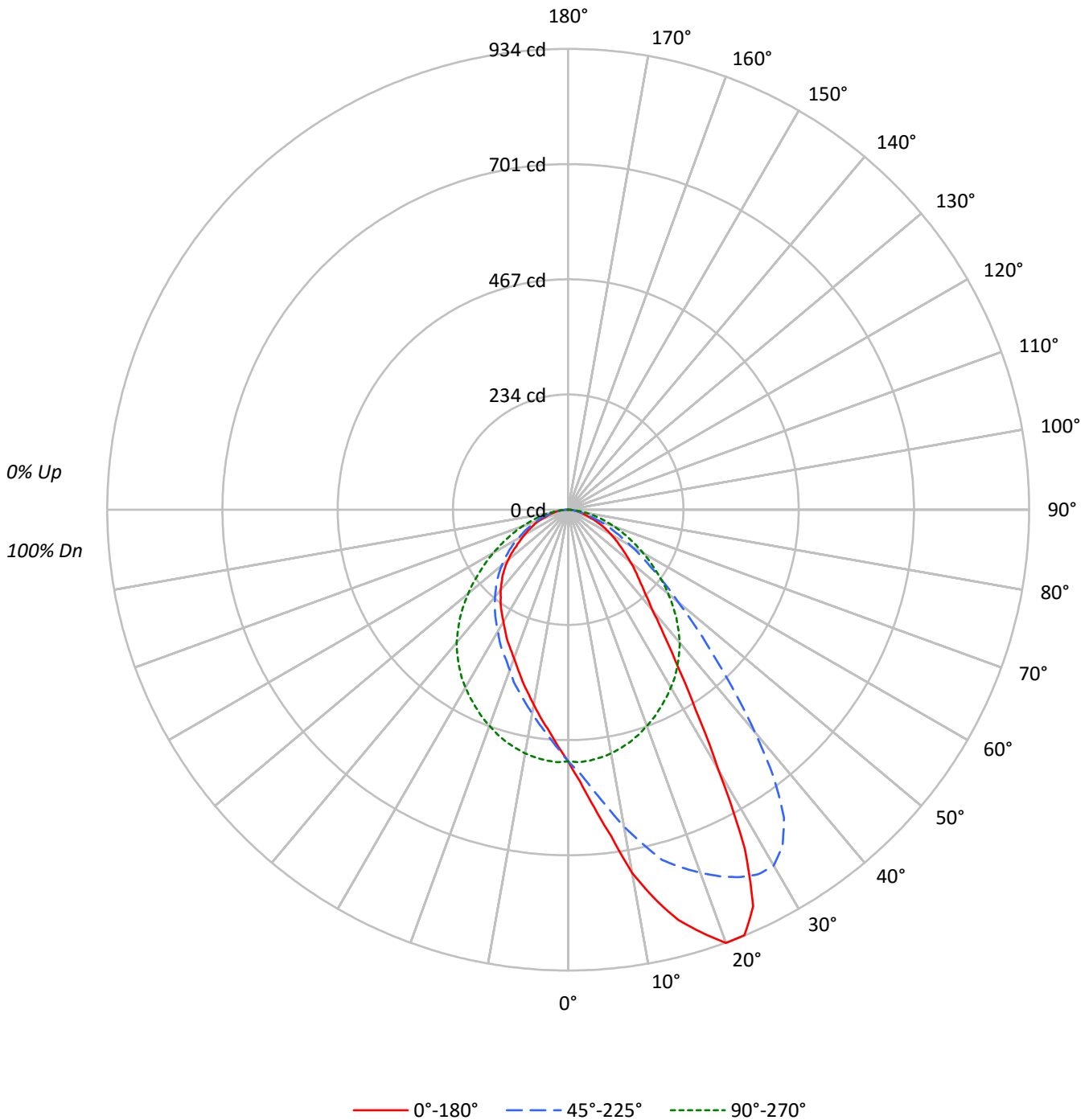
Input Watts (W): 11.6
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





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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	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	100	100	100	100	100		
1	110	106	102	99	108	104	100	97	100	97	94	96	93	91	92	90	89	87	87	87	87	87	87	87		
2	101	94	88	83	99	92	87	82	89	84	80	86	82	78	83	79	77	74	74	74	74	74	74	74		
3	93	84	76	71	91	82	75	70	79	74	69	77	72	68	74	70	66	64	64	64	64	64	64	64		
4	86	75	67	61	84	74	66	61	71	65	60	69	64	59	67	62	58	56	56	56	56	56	56	56		
5	80	68	60	53	78	67	59	53	65	58	53	63	57	52	61	56	52	50	50	50	50	50	50	50		
6	74	62	53	47	72	61	53	47	59	52	47	57	51	46	56	50	46	44	44	44	44	44	44	44		
7	69	56	48	42	67	55	48	42	54	47	42	53	46	42	51	46	41	39	39	39	39	39	39	39		
8	64	52	44	38	63	51	43	38	50	43	38	48	42	38	47	42	37	36	36	36	36	36	36	36		
9	60	48	40	35	59	47	40	35	46	39	34	45	39	34	44	38	34	32	32	32	32	32	32	32		
10	57	44	37	32	55	44	36	32	43	36	31	42	36	31	41	35	31	29	29	29	29	29	29	29		

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	6182	6182	6182
5°	7369	6208	5467
10°	9200	6173	4939
15°	10800	6109	4504
20°	12053	6015	4134
25°	11860	5915	3907
30°	8525	5824	3673
35°	5693	5704	3522
40°	4193	5562	3364
45°	3518	5311	3211
50°	3104	4982	2996
55°	2722	4605	2703
60°	2424	4245	2478
65°	2128	3858	2303
70°	1673	3512	2105
75°	1471	3068	1920
80°	1277	2604	1892
85°	1029	2100	2003



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	50.1	3.9
10°-20°	156.8	12.3
20°-30°	246.9	19.4
30°-40°	256.8	20.2
40°-50°	219.7	17.3
50°-60°	167.4	13.2
60°-70°	107.3	8.4
70°-80°	51.4	4.0
80°-90°	13.5	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°	453.8	35.7
0°-40°	710.6	56.0
0°-60°	1097.7	86.4
0°-90°	1269.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1269.9	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	510	510	510	510	510	
5°	606	568	510	461	449	62
15°	861	735	487	383	359	244
25°	887	822	442	316	292	385
35°	385	762	386	258	238	250
45°	205	414	310	204	187	161
55°	129	206	218	147	128	116
65°	74	102	134	92	80	73
75°	31	37	66	47	41	34
85°	7	8	15	14	14	9
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	510.0	510.0	510.0	510.0	510.0	510.0	510.0	510.0	510.0	510.0	510.0
2.5°	551.5	552.3	549.5	549.1	545.8	544.9	544.9	540.3	537.5	533.8	531.6
5°	605.6	609.1	607.4	603.4	596.9	595.3	591.2	584.7	577.2	568.1	563.7
7.5°	667.6	674.8	673.5	667.4	660.4	656.0	644.5	635.1	620.9	608.0	598.0
10°	747.5	742.5	738.6	732.7	726.3	716.1	703.9	687.0	667.6	652.3	635.3
12.5°	807.3	807.6	802.3	796.2	786.6	777.0	761.3	739.9	716.5	692.7	672.6
15°	860.6	861.9	858.6	852.3	839.6	822.4	799.7	791.2	758.9	734.9	710.8
17.5°	898.6	898.8	898.2	889.6	875.9	864.1	842.9	823.1	792.5	760.0	727.9
20°	934.4	932.2	932.6	922.8	913.2	899.0	878.5	846.0	822.0	782.9	749.5
22.5°	933.5	933.5	935.5	933.7	927.4	917.4	902.3	876.1	843.8	804.3	765.6
25°	886.8	885.1	895.3	898.2	909.3	911.3	906.4	891.4	862.3	821.7	775.2
27.5°	775.5	769.1	790.5	811.7	839.9	857.8	876.1	880.3	866.5	833.3	784.6
30°	609.1	629.6	639.2	673.7	712.1	758.0	798.2	836.4	845.8	833.1	794.9
32.5°	479.9	497.1	504.7	533.1	568.3	623.9	689.2	747.3	792.7	808.0	788.8
35°	384.7	384.9	403.2	416.3	449.5	504.7	563.3	635.7	707.8	762.4	768.0
37.5°	317.4	318.3	330.1	343.2	369.8	400.8	455.2	516.3	603.0	684.4	726.8
40°	265.0	267.0	275.3	288.2	306.1	328.1	368.3	425.1	494.5	587.7	663.9
42.5°	231.4	234.9	238.2	247.4	256.7	277.0	307.6	348.2	409.8	496.7	587.5
45°	205.2	207.0	210.2	214.8	224.9	239.3	261.1	290.6	343.0	413.9	501.9
47.5°	185.1	184.0	187.8	191.7	198.4	208.9	224.2	249.8	289.1	348.4	424.6
50°	164.6	164.4	166.8	169.6	176.0	183.2	195.2	213.3	243.0	290.1	358.5
52.5°	145.4	146.5	148.0	151.7	155.9	161.3	171.8	183.6	208.1	247.1	301.3
55°	128.8	129.5	131.9	133.8	137.1	143.0	149.8	160.7	178.1	206.5	253.5
57.5°	114.4	114.2	116.6	116.8	120.9	126.0	131.4	139.9	153.3	175.7	208.5
60°	100.0	99.3	101.3	102.8	104.8	108.7	113.1	121.4	131.4	146.9	174.0
62.5°	86.9	86.7	88.0	89.5	91.0	94.5	98.0	103.9	111.3	123.8	143.9
65°	74.2	74.9	75.5	76.2	77.1	79.2	82.7	87.1	92.6	101.7	117.2
67.5°	61.1	62.0	62.2	63.7	65.5	66.6	68.6	72.7	76.8	85.1	94.3
70°	47.2	46.9	47.2	47.8	50.2	52.6	55.5	58.3	60.7	66.1	73.6
72.5°	38.9	38.4	39.1	39.1	40.0	40.2	41.7	44.3	47.6	50.9	55.7
75°	31.4	31.4	31.4	31.4	32.3	32.7	33.4	34.1	35.1	36.9	40.8
77.5°	24.5	24.5	24.9	25.1	25.3	25.5	26.0	26.6	27.1	27.9	29.9
80°	18.3	18.6	18.3	18.6	18.6	19.0	19.2	19.9	20.1	21.2	21.8
82.5°	12.7	12.4	12.7	12.9	12.9	13.3	13.3	13.8	13.8	14.2	14.8
85°	7.4	7.0	7.4	7.2	7.6	7.2	7.4	7.9	7.9	8.1	9.0
87.5°	2.2	2.6	2.2	2.4	2.4	2.6	2.6	2.6	3.1	2.8	3.1
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	510.0	510.0	510.0	510.0	510.0	510.0	510.0	510.0	510.0	510.0	510.0
2.5°	530.7	530.1	527.0	523.5	518.9	515.9	513.5	512.2	508.2	503.4	500.2
5°	559.1	552.6	545.6	537.1	529.2	521.1	516.1	510.2	503.0	494.9	489.2
7.5°	587.3	575.9	563.5	550.6	537.5	525.9	515.2	506.5	495.6	484.4	476.8
10°	620.7	601.9	582.5	562.6	544.5	527.5	514.4	501.5	487.7	474.4	464.4
12.5°	651.0	624.8	601.7	576.1	551.7	530.5	510.2	494.5	477.2	462.8	451.0
15°	675.7	650.4	623.3	586.2	555.4	529.6	506.7	486.8	466.8	449.3	438.2
17.5°	701.4	663.0	627.4	598.6	558.5	527.2	500.4	477.2	455.4	437.5	423.5
20°	716.3	679.4	639.9	600.4	561.1	525.1	492.5	466.3	443.4	422.4	409.8
22.5°	725.2	682.2	640.1	596.9	554.5	516.8	484.7	455.2	429.9	410.2	393.8
25°	731.8	682.0	636.2	594.3	551.7	511.1	472.9	442.3	415.5	394.3	377.7
27.5°	737.0	679.4	626.8	581.2	538.1	496.9	462.4	429.6	402.8	380.7	362.6
30°	738.3	676.1	615.7	565.2	521.3	484.2	447.1	416.1	387.3	363.5	346.9
32.5°	740.1	668.0	600.6	546.2	501.0	464.4	431.6	402.4	372.7	349.3	332.3
35°	734.0	666.1	585.3	523.7	478.8	443.2	412.8	385.5	356.5	333.8	316.6
37.5°	715.4	655.4	570.0	498.6	452.1	419.4	394.1	369.2	342.3	317.4	301.5
40°	684.2	637.9	551.7	476.1	427.0	393.2	370.9	351.5	325.7	302.8	285.3
42.5°	637.7	614.1	534.2	452.6	398.6	366.3	348.4	330.5	308.7	285.3	269.2
45°	578.8	582.5	509.1	427.2	372.9	340.1	322.5	309.8	289.7	270.5	253.7
47.5°	507.1	538.1	482.3	400.6	344.9	314.2	298.7	287.1	273.1	253.2	237.7
50°	437.3	486.8	448.6	373.8	319.0	288.4	273.1	264.2	252.4	237.5	222.9
52.5°	372.9	427.0	408.0	343.8	290.8	263.5	248.7	241.7	232.9	219.2	206.3
55°	314.6	368.5	363.3	313.7	262.6	237.5	226.2	217.9	211.5	201.1	190.6
57.5°	263.9	316.1	317.2	280.3	238.2	212.6	202.8	196.3	191.9	183.6	173.3
60°	216.6	263.5	272.7	246.5	211.5	189.7	180.1	175.1	171.8	165.5	158.1
62.5°	177.3	215.5	226.2	209.1	186.0	165.9	158.9	154.1	152.2	146.9	140.6
65°	141.7	174.9	184.9	174.4	161.1	144.7	138.6	134.5	132.5	129.5	124.7
67.5°	111.8	137.5	148.5	139.7	134.7	123.1	119.0	116.6	114.8	112.7	108.5
70°	85.6	103.5	114.8	112.9	108.9	103.5	100.6	99.1	97.4	95.6	92.1
72.5°	64.6	75.5	86.0	87.8	84.7	84.7	82.3	81.9	81.0	78.8	77.3
75°	45.6	54.1	61.6	64.4	65.7	66.8	65.7	65.5	65.3	63.5	62.4
77.5°	31.7	37.1	42.1	47.2	48.9	50.4	50.6	51.5	50.9	49.8	49.3
80°	22.9	24.0	27.3	31.4	34.7	36.0	36.9	37.3	37.1	36.9	36.0
82.5°	15.1	15.9	17.0	19.6	22.3	24.7	25.1	24.9	25.5	25.8	25.1
85°	9.0	9.2	9.6	10.0	11.6	14.0	14.6	15.1	15.5	15.5	14.2
87.5°	3.5	3.3	3.7	3.7	4.4	4.6	5.9	7.0	7.2	6.3	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



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CANDELA DISTRIBUTION (continued):

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	510.0	510.0	510.0	510.0	510.0	510.0	510.0	510.0	510.0	510.0	510.0
2.5°	499.1	496.2	494.3	489.9	487.1	484.0	481.0	482.9	482.7	482.5	482.5
5°	484.4	479.4	474.8	468.9	465.2	460.6	457.2	456.7	457.6	454.5	452.8
7.5°	470.7	464.1	457.6	451.5	444.7	439.5	436.2	434.9	432.5	430.5	428.8
10°	456.1	448.0	441.7	433.6	426.2	419.6	415.5	412.6	411.1	409.6	406.7
12.5°	441.0	433.1	424.6	415.2	408.3	400.4	397.6	394.3	391.0	389.3	385.1
15°	426.4	416.1	407.6	398.0	390.1	382.7	378.3	372.0	371.1	369.0	365.0
17.5°	412.2	400.8	388.4	381.8	374.0	366.1	359.1	357.2	350.6	348.4	344.7
20°	394.7	384.5	375.5	366.1	353.2	346.0	340.8	338.0	332.9	329.9	327.7
22.5°	379.7	369.2	358.5	347.1	337.1	328.8	325.3	320.5	318.3	313.7	311.3
25°	365.5	354.1	341.7	329.9	322.2	316.1	310.0	306.1	302.1	300.2	295.8
27.5°	348.2	336.9	324.9	315.7	307.0	300.8	294.9	291.7	286.6	283.4	281.0
30°	334.5	320.5	310.4	302.4	290.4	284.7	280.5	276.2	272.7	269.2	266.8
32.5°	318.5	306.1	296.7	286.2	277.7	271.4	265.7	262.0	259.1	255.9	253.5
35°	301.7	291.0	281.2	271.1	264.4	258.0	251.7	248.4	245.6	242.5	240.4
37.5°	286.4	276.4	267.2	257.6	249.3	243.9	238.6	236.4	232.5	230.3	228.1
40°	272.5	262.6	252.6	243.4	234.7	230.8	226.2	222.5	219.0	217.4	215.0
42.5°	257.2	247.4	239.3	229.2	222.5	216.8	212.6	208.5	206.1	203.7	202.6
45°	242.1	233.4	225.1	215.3	208.5	203.9	199.1	195.4	193.0	191.5	189.1
47.5°	227.7	218.8	210.5	201.7	195.2	189.9	184.9	182.5	179.2	177.5	175.7
50°	211.8	203.9	195.0	187.1	180.5	175.3	171.4	168.1	165.3	162.9	161.8
52.5°	197.1	188.6	181.2	174.0	167.0	160.9	157.4	153.9	151.9	149.1	147.8
55°	180.8	172.7	166.1	158.9	152.2	147.1	142.8	139.7	137.5	134.5	132.7
57.5°	165.7	158.7	150.6	144.3	137.1	133.2	129.5	125.1	122.5	120.1	118.3
60°	150.4	142.1	135.4	129.5	123.3	117.9	114.6	111.3	108.5	106.1	104.6
62.5°	134.5	127.5	121.2	114.6	109.2	104.6	100.6	98.0	95.6	94.3	92.8
65°	118.1	112.4	105.9	100.6	95.4	91.9	88.9	86.5	84.7	83.6	82.3
67.5°	103.0	97.6	91.7	86.2	82.7	79.9	77.7	75.5	74.7	73.4	72.5
70°	88.4	82.7	77.7	73.8	70.3	68.3	67.0	65.5	64.6	62.9	62.0
72.5°	72.5	68.8	65.5	62.4	59.8	58.1	56.3	54.4	52.8	50.9	50.0
75°	59.6	55.9	53.1	50.9	49.1	46.7	44.3	42.4	41.7	41.0	40.8
77.5°	46.5	44.1	41.9	40.2	37.8	35.6	34.9	34.5	34.3	33.8	33.8
80°	34.7	32.5	31.0	28.8	27.5	27.5	27.5	27.1	27.3	27.3	27.3
82.5°	23.6	21.6	21.0	20.5	20.5	20.7	20.7	21.0	20.7	21.2	21.0
85°	13.3	13.5	14.0	13.8	14.0	14.0	14.4	14.2	14.4	14.0	14.4
87.5°	6.1	6.8	7.0	7.2	7.4	7.2	7.4	7.4	7.6	7.6	7.6
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: P242569

CATALOG NUMBER: S123RDR-S340D835-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	510.0	510.0	510.0	510.0
2.5°	479.9	479.6	479.9	479.0
5°	452.1	451.9	451.3	449.3
7.5°	427.0	426.6	424.8	425.3
10°	405.2	405.4	402.8	401.3
12.5°	384.0	382.7	380.7	379.0
15°	365.9	363.7	358.5	358.9
17.5°	343.4	341.7	341.4	338.4
20°	324.2	323.1	323.5	320.5
22.5°	309.1	308.0	305.6	305.2
25°	294.5	292.8	291.0	292.1
27.5°	279.7	278.4	276.4	276.4
30°	265.7	264.4	263.5	262.4
32.5°	251.5	251.5	249.8	249.8
35°	239.5	238.2	237.7	238.0
37.5°	227.9	226.2	225.3	224.4
40°	215.3	213.5	213.1	212.6
42.5°	201.1	200.6	200.4	199.5
45°	188.4	188.2	186.9	187.3
47.5°	174.9	173.8	173.1	173.8
50°	160.9	160.5	158.5	158.9
52.5°	146.9	145.0	144.5	144.1
55°	131.2	129.2	128.4	127.9
57.5°	115.7	115.1	114.2	114.8
60°	102.4	102.4	102.4	102.2
62.5°	92.1	91.5	91.3	91.7
65°	81.7	81.4	80.6	80.3
67.5°	72.0	71.2	71.2	70.7
70°	60.9	60.5	59.2	59.4
72.5°	48.9	48.5	48.5	48.0
75°	40.6	40.4	40.2	41.0
77.5°	33.8	33.8	34.1	33.6
80°	27.3	27.3	27.1	27.1
82.5°	20.5	20.7	21.0	20.5
85°	14.4	14.2	14.6	14.4
87.5°	8.1	7.6	7.6	7.9
90°	0.0	0.0	0.0	0.0

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